

ACS TRUCKS Calibration - user manual

Advanced Calibration System for trucks

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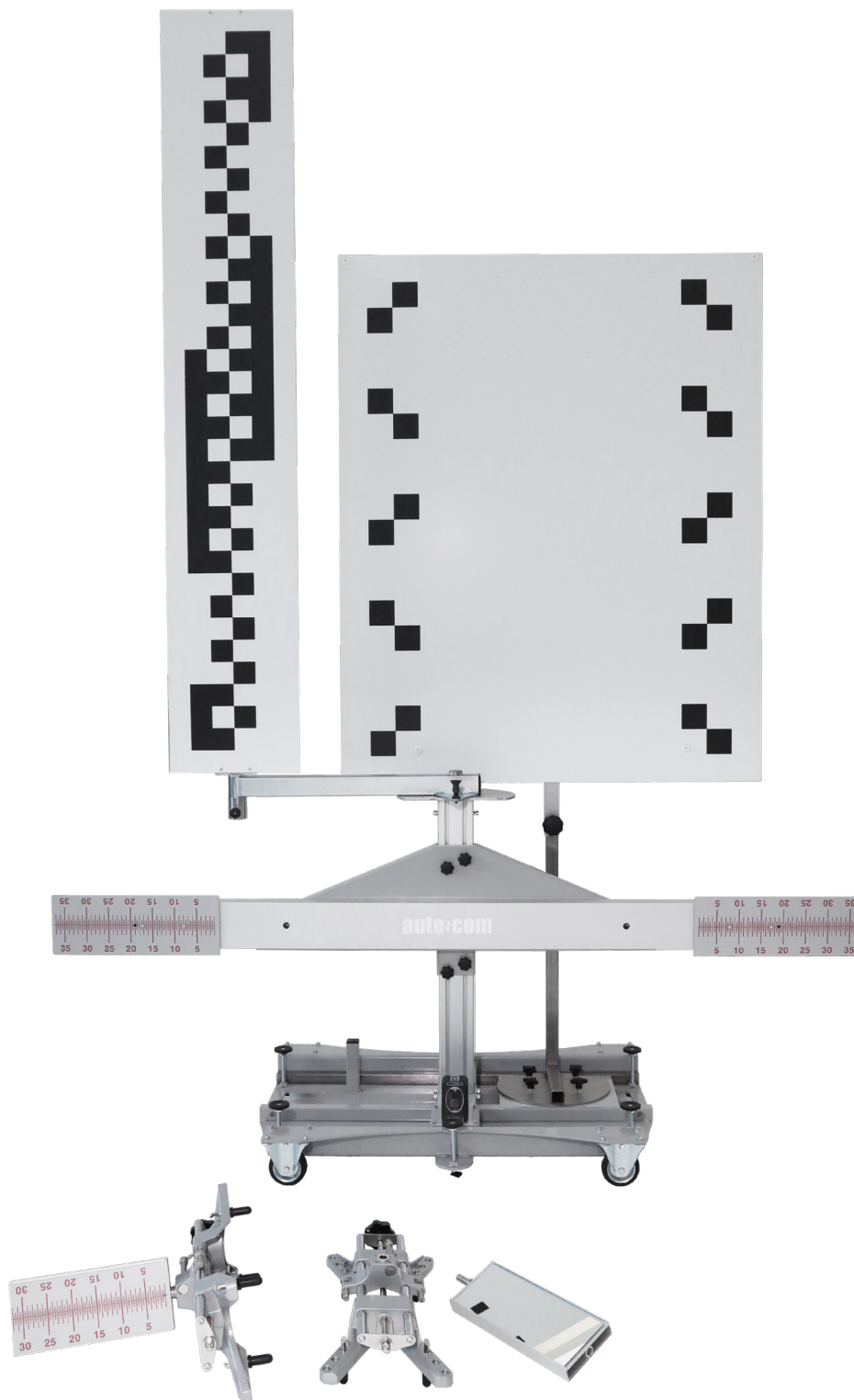
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1 DEVICE DESCRIPTION

1.1 Scope of delivery

Part no
W074311500

Designation
ACS TRUCKS Calibration rig



Trolley with mounting pole and double tube extension



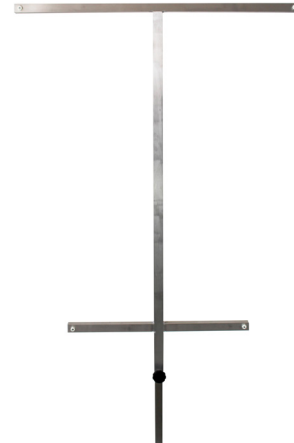
Swivel arm



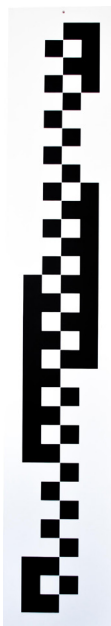
Mounting fixture for Volvo target and universal holding frame for vans



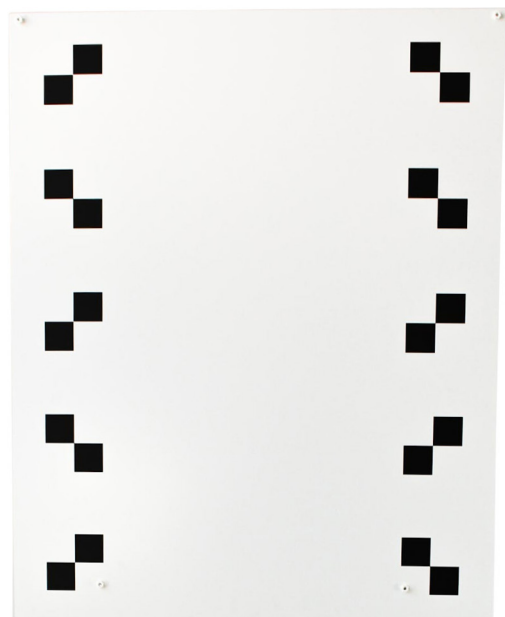
Volvo holding frame



MAN/Iveco/Scania target



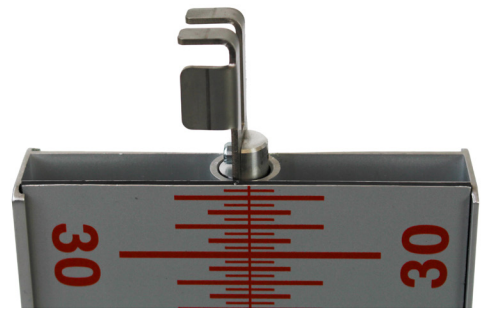
Volvo/Renault target



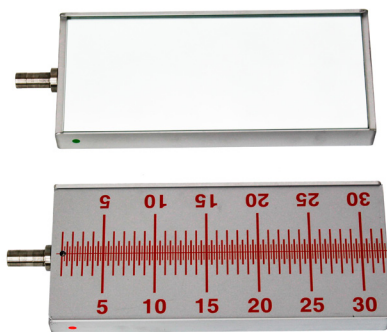
Accessory case



Swivel scale with mounted tape measure holder
[4 tape measure holder in case]



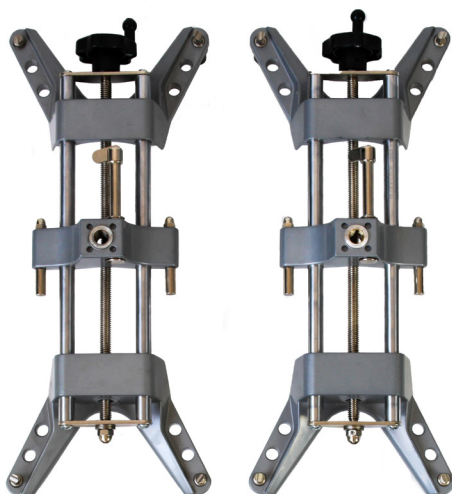
Measuring scale/mirror for wheel clamp
[2 pcs. in case]



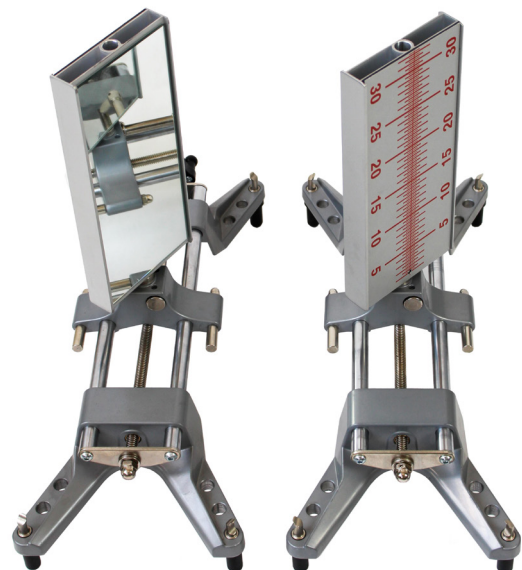
Measuring scale with integrated measuring laser
[pre-assembled in the double tube support]



RH4/4 wheel clamp
[2 pcs.]



Wheel clamp with swivel scale/mirror SPSK
[2 swivel scales SPSK in case]



Tape measure
[1 pc. in case]



Cross line laser *
[1 pc. in case]
* Product may differ from the picture



Tape measure holder
[4 pc. in case]



Auxiliary holder for tape measure
[1 pc. in case]



1.1.1 Checking the scope of delivery

Check the scope of delivery on or immediately after delivery, so that any damage or missing parts can be reported immediately. To check the scope of delivery, proceed as follows:

1. Check the delivery package for any external damage. If external transport damage is visible, open the delivery package in the presence of the deliverer and check the product for hidden damage. Have any transport damage to the delivery package and damage to the ACS TRUCKS Calibration rig recorded by the deliverer in a damage report
2. Open the delivery package and check for completeness using the enclosed delivery note
3. Remove the product from the packaging
4. Check the product for damage and completeness

1.2 TECHNICAL FEATURES

1.2.1 Dimensions of the ACS TRUCKS Calibration rig (packaged)

Dimensions of the ACS TRUCKS Calibration rig system in its packaged state (LxWxH) 120 x 80 x 206 cm.

1.2.2 Dimensions of the ACS TRUCKS Calibration rig (assembled)

Dimensions of the ACS TRUCKS Calibration rig system in its assembled state.

Width	min. 160 cm	max. 310 cm
Depth	min. 80 cm	max. 100 cm
Height (incl. target)	min. 200 cm	max. 320 cm

1.2.3 Dimensions of the ACS TRUCKS Calibration rig (mobile use)

Dimensions of the ACS TRUCKS Calibration rig system in mobile use (LxWxH) 120 x 80 x 95 cm.

1.2.4 The laser module

Wavelength	635 nm
Power output	1 mW
Class	2
Working range	0-10 m
Voltage supply	2.7-3.3 V DC
Batteries	2x 1.5 V AA
Ambient temperature	0-35°C
Working range	0-50°C

1.2.5 The cross line laser

Wavelength	635 ± 5 nm
Leveling accuracy	±4.5mm/15m
Class	2
Working range	0-15 m
Operating time	Approximately 15 hours
Batteries	4x AA
Ambient temperature	-10°-50°C
IP Rating	IP54

1.2.6 Legend of the symbols

General warning sign



Warning of laser beam



Warning of hand injuries



2 SAFETY INSTRUCTIONS

2.1 General safety instructions

All instructions in the instruction manual given in the individual chapters apply. The following precautions and safety instructions must also be observed.

2.2 Safety instructions for the product

To avoid incorrect handling and resulting injuries to the user or destruction of the ACS TRUCKS Calibration rig, please observe the following safety instructions:

Always set up the ACS TRUCKS Calibration rig according to the assembly instructions.

- Protect the product from prolonged exposure to the sun
- Protect the product from water (not waterproof)
- Protect the product from hard impacts (do not drop it)
- Perform regular maintenance on the product

2.3 Safety precautions relating to risk of injury

When working on the vehicle, there is a risk of injury due to the vehicle rolling away. The following instructions must therefore be observed.

- Put automatic vehicles into the park position
- Secure the vehicle against rolling away



2.4 Safety precautions relating to the laser pointer/cross line laser

When working with the laser pointer/cross line laser, there is a risk of injury due to dazzling. Therefore observe the following instructions.



- Do not aim the laser beam at people, doors or windows
- Never look directly into the laser beam
- The glasses included in the scope of delivery do not provide a protective function! They are purely for increasing the contrast
- Ensure good room lighting
- Avoid trip hazards
- Secure mechanical parts against falling/coming loose



3 Intended use

The ACS TRUCKS Calibration rig is a system for calibrating driver assistance systems. Using expandable modules, brand-specific adjustments can be made to a wide range of systems. With the aid of ACS multi-brand diagnostics for commercial vehicles, the front camera can be calibrated for the lane departure warning system, and the radar sensor or the camera can be calibrated for an adaptive light system.

4 Set-up instructions

4.1 Assembling the ACS TRUCKS Calibration rig

Due to the special, patented design of the ACS TRUCKS Calibration rig, a level floor is sufficient, which does not necessarily have to be horizontal. Likewise, two distances to the vehicle can be achieved using a rotating mechanism without having to realign the system. The system is delivered largely pre-assembled.



The following steps are necessary for the finished set-up:

1. Screw the double tube bar on



2. Unpack the case



The following contents are in the accessory case:

2 swivel scales SPSK
2 measuring scales with integrated measuring laser (pre-assembled on double tube)
4 tape measure holder
1 tape measure
1 pair of laser visibility glasses
1 auxiliary holder for tape measure
1 cross line laser
4 batteries

4.2 Using the targets

First select the vehicle-specific target and mount it on the ACS TRUCKS Calibration rig. For commercial vehicles, fixed targets are also used. When calibrating trucks and buses, the measuring scales with integrated measuring laser are extended to their maximum width.

4.2.1 Volvo/Renault target

Volvo/Renault use fixed target mounting. The height adjustment range is very large.



Highest board position for calibration on trucks.



Lowest board position for calibration on buses.

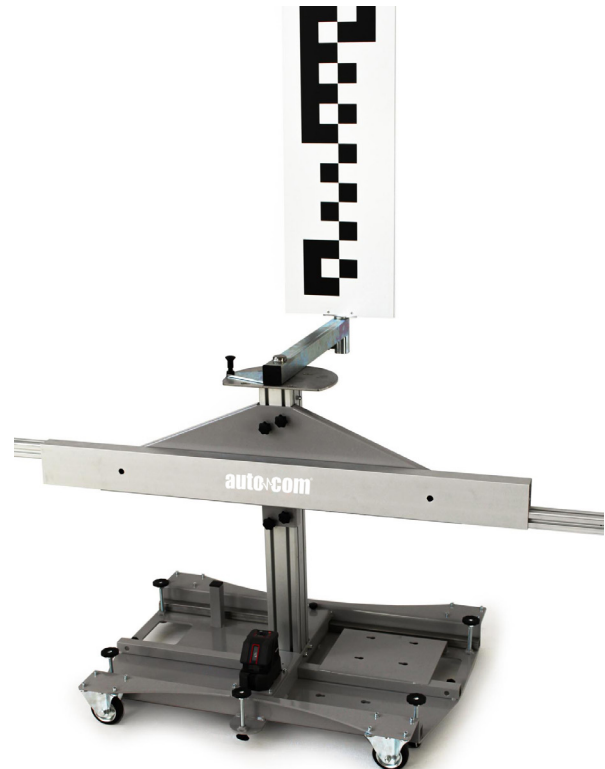
4.2.2 MAN/Scania/Iveco daily target

For Scania and MAN, the swivel arm with the board in the format (HxW) 170x30 cm is used.
Two positions of the target are required for calibration.

Position 1: swivel arm pointing forwards



Position 2: swivel arm pointing backwards

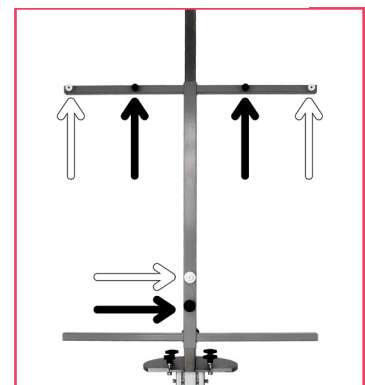
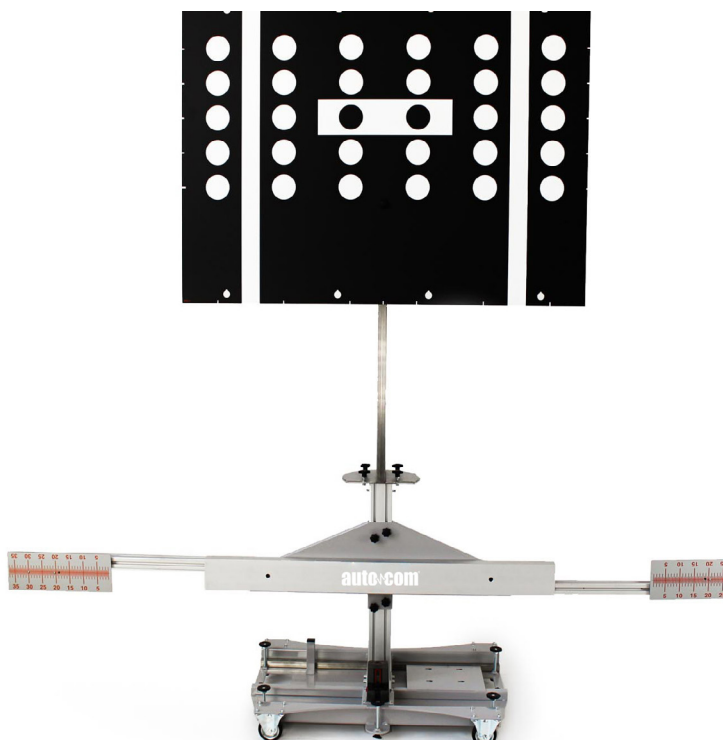
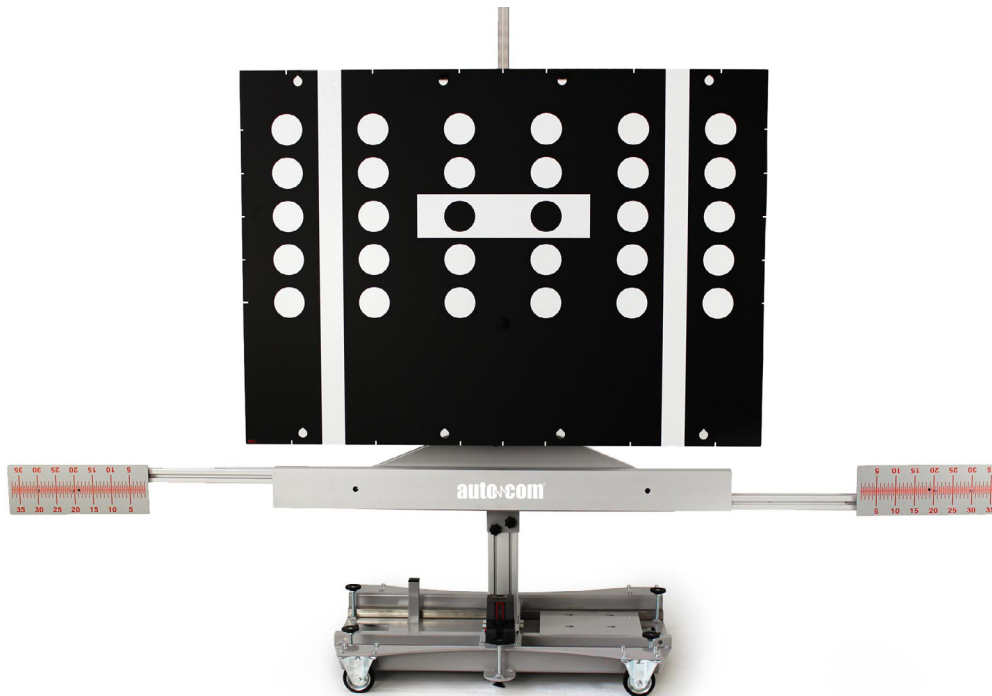


4.2.3 VAG target

When calibrating light commercial vehicles, the measuring scales with integrated measuring laser are extended to medium length [position 2].

Required accessories [not included in scope of delivery]:

- Calibration board [target] VAG + MB (TFC-1/TFC-2) [Part no W074321000]
- Universal target holder for calibration boards [Part no W074331500]

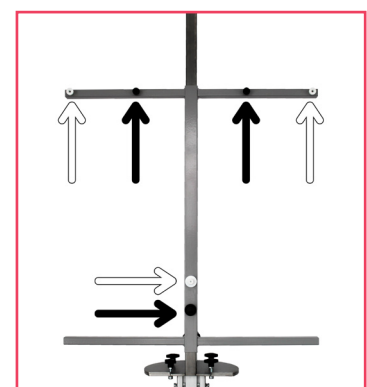


Always use the black mounting kit to attach the VAG target.

4.2.4 Mercedes-Benz target

Required accessories (not included in scope of delivery):

- Calibration board (target) VAG + MB (TFC-1/TFC-2) (Part no W074321000)
- Universal target holder for calibration boards (Part no W074331500)



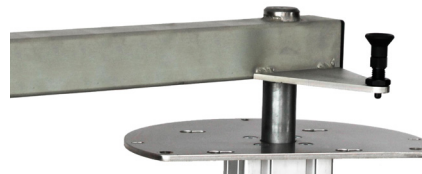
Always use the white mounting kit to attach the Mercedes-Benz target.

4.3 Mounting the targets

4.3.1 Volvo/Renault target

The following steps are required to mount the target on the ACS TRUCKS Calibration rig:

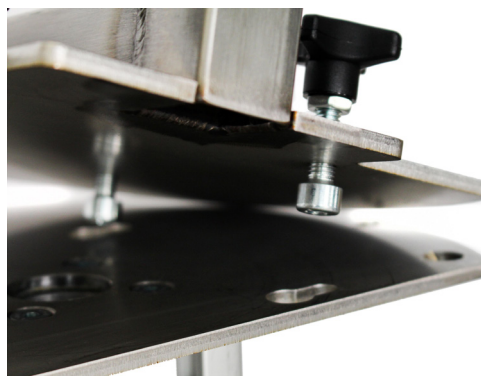
1. Remove the swivel arm if necessary



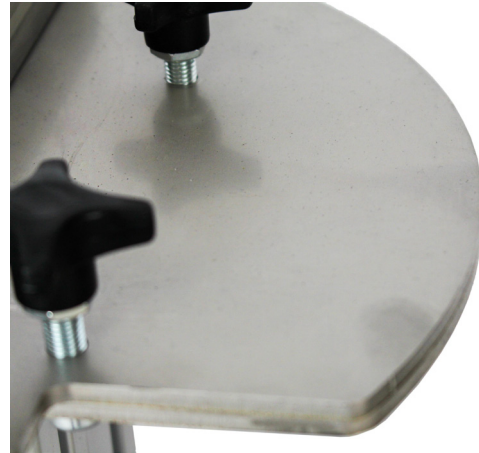
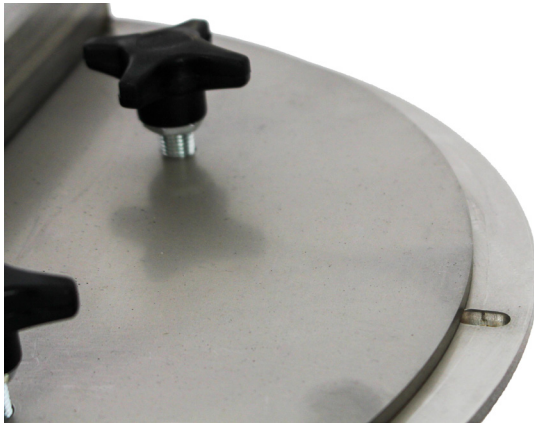
2. Screw the mounting fixture into the carrier plate



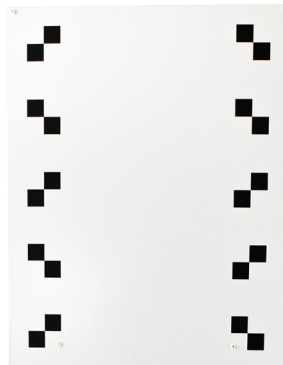
3. Insert the mounting fixture into the drill holes



4. Slide the mounting fixture until it is flush
5. Tighten the star grips



6. Attach the target of the selected brand



7. Put the ACS TRUCKS Calibration rig with Volvo target in a high position



4.3.2 Universal target holder (VAG/Mercedes/Fiat/PSA/Renault)

Required accessories (not included in scope of delivery):

- Calibration board (target) VAG + MB (TFC-1/TFC-2) (Part no W074321000)
- Calibration board (target) FCA + Alfa Romeo (TFC-5/TFC-6) (Part no W074321001)
- Universal target holder for calibration boards (Part no W074331500)

The following steps are required to mount the universal target holder on the ACS TRUCKS Calibration rig.

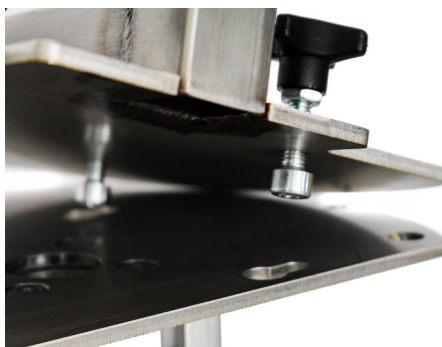
1. Screw the mounting fixture into the carrier plate



Universal target holder for LCV

2. The universal target holder is supplied with two white and two black knurled nuts as well as a white and a black fixing magnet

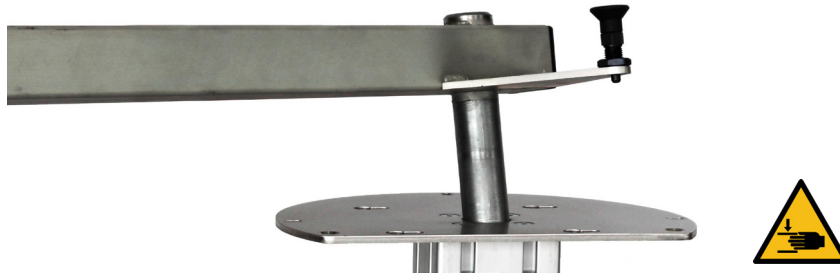
3. Depending on the basic colour of the board (VAG black, Mercedes-Benz white), the matching colour fastenings are to be used
4. When inserting the boards, ensure that the knurled screws are in the correct position
5. The target must also be secured with the magnetic holder
6. Note the extension width of the measuring laser



4.3.3 MAN/Scania/Iveco target

The following steps are required to mount the target on the ACS TRUCKS Calibration rig.

1. Insert the swivel arm with target holder into the base



2. Place the target on the mounting fixture



4.4 Calibration station

4.4.1 Floor conditions

Deviations of up to 1% in a level surface can generally be tolerated.

4.4.2 Calibration environment

The calibration station should be free from interference light sources, such as sunlight. Similarly, geometric shapes in the colours black and white that correspond to the calibration symbol should be avoided in the background of the board.

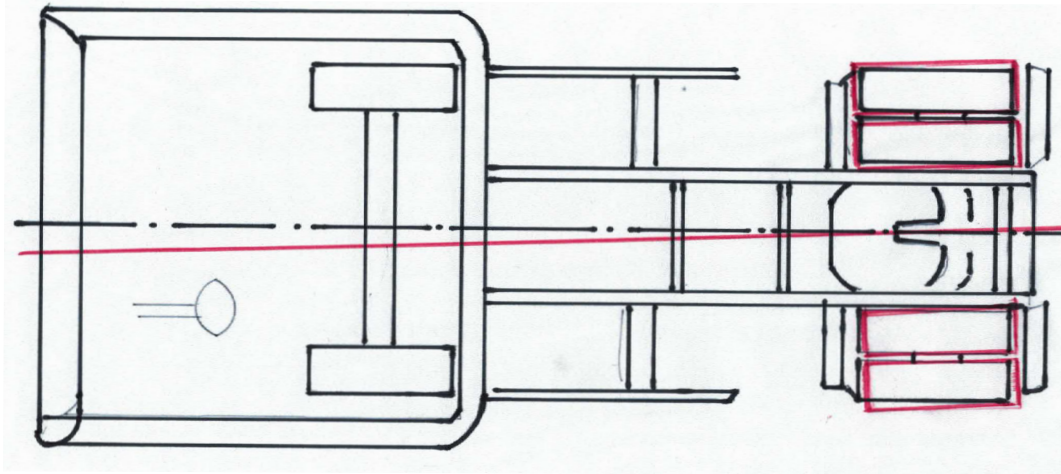
5 Alignment with the vehicle

There are two possible approaches for alignment with the vehicle:

- Alignment with the centre of the vehicle
- Alignment with the geometric driving axis (in relation to the driven rear axle)

Relevant information can be found in the diagnostic device.

The system can be used on horizontal or level surfaces.



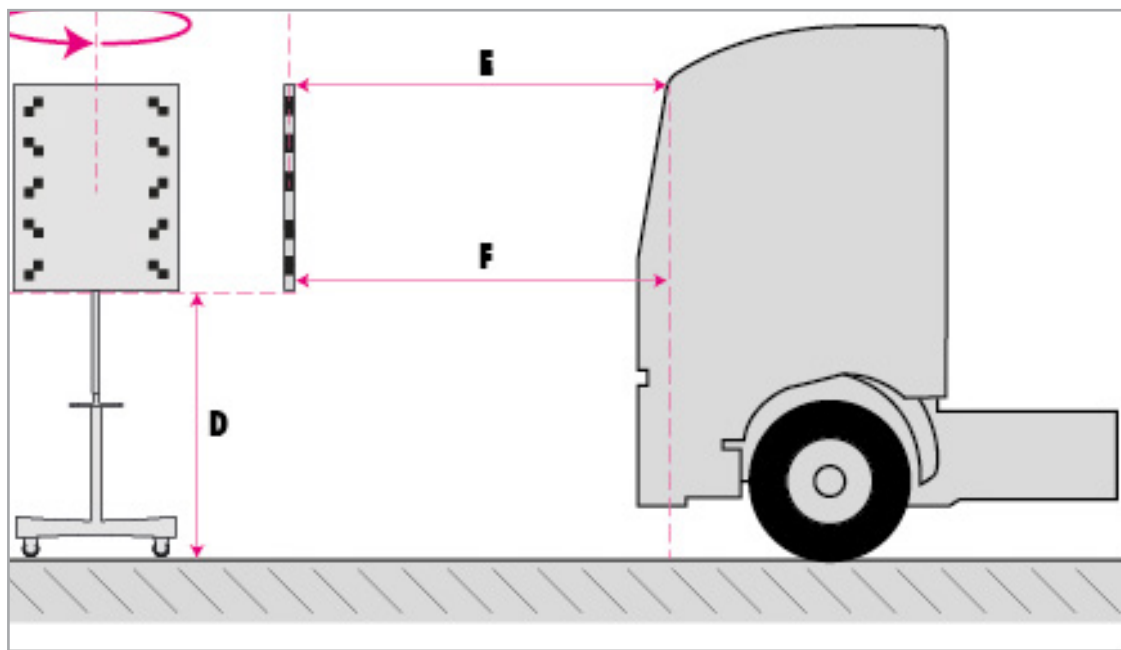
Red = geometric driving axis

Black = axis of symmetry

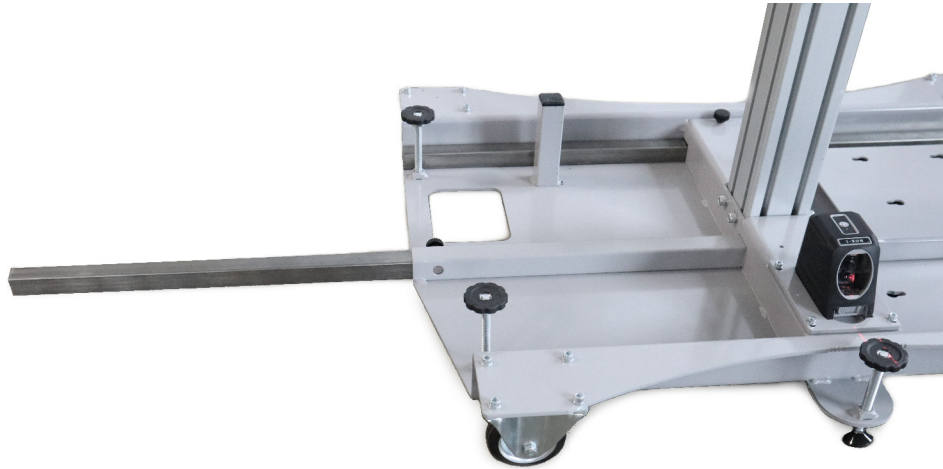
5.1 Alignment with the centre line of the vehicle (example: Volvo)

Alignment with the centre line of the vehicle is carried out in several steps.

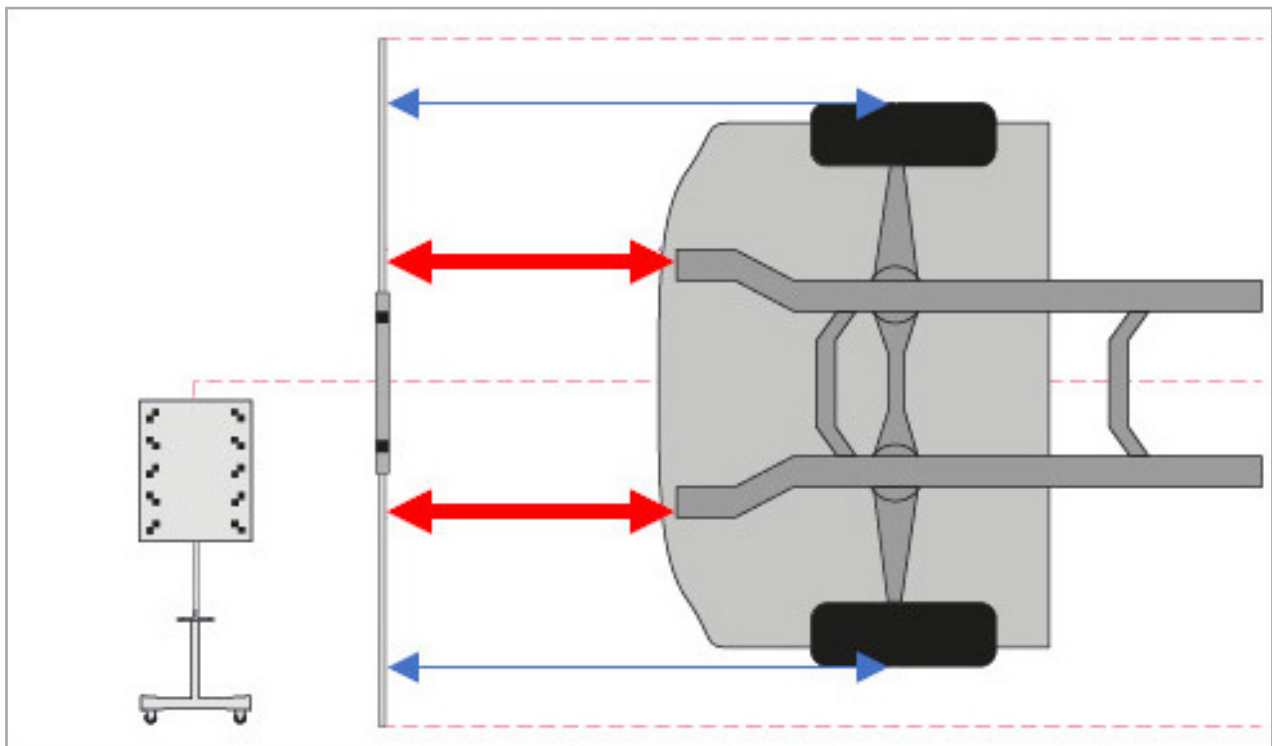
1. Position the ACS TRUCKS Calibration rig at the specified distance and at the specified height in front of the vehicle (see diagnostic tool)



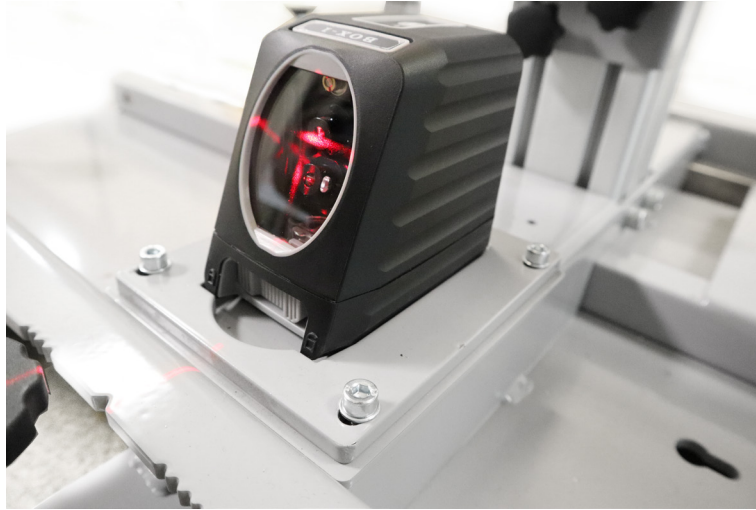
2. The positioning guides should be extended to the vehicle width
Measurements are taken to the centre of the wheel hub of the respective wheel or to the frame tip



3. The ACS TRUCKS Calibration rig must be positioned parallel to the vehicle axle with the same distance on both sides to the **centre of the wheel hub** or at the same distance from both **frame tips**.



4. Now the ACS TRUCKS Calibration rig is moved laterally so that the vertical laser line runs through the centre of symmetrical vehicle parts (manufacturer symbol, number plate holder, radiator grille)



5. Now the camera can be calibrated



5.2 Alignment with the geometric driving axis (example: MAN)

Two wheel clamps are mounted on the rear axle for alignment with the geometric driving axis. The following steps are necessary:

1. Insert the swivel units into the wheel clamp



2. Secure with the mounting screw



3. Mount the two wheel clamps on the rear axle of the vehicle

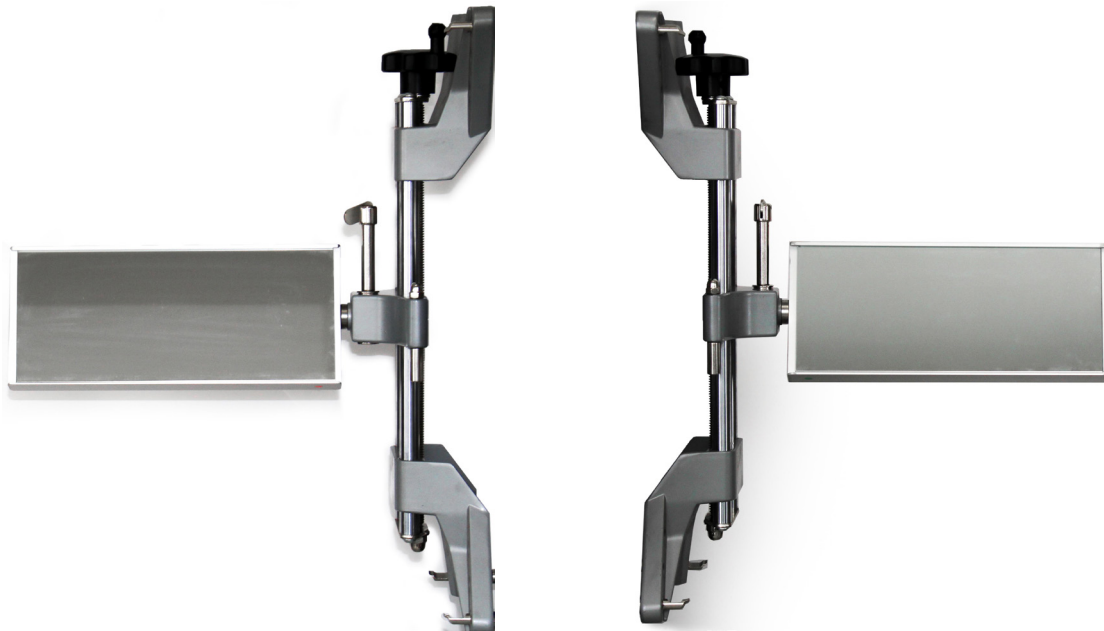


Gripper attachment on steel and aluminium rims



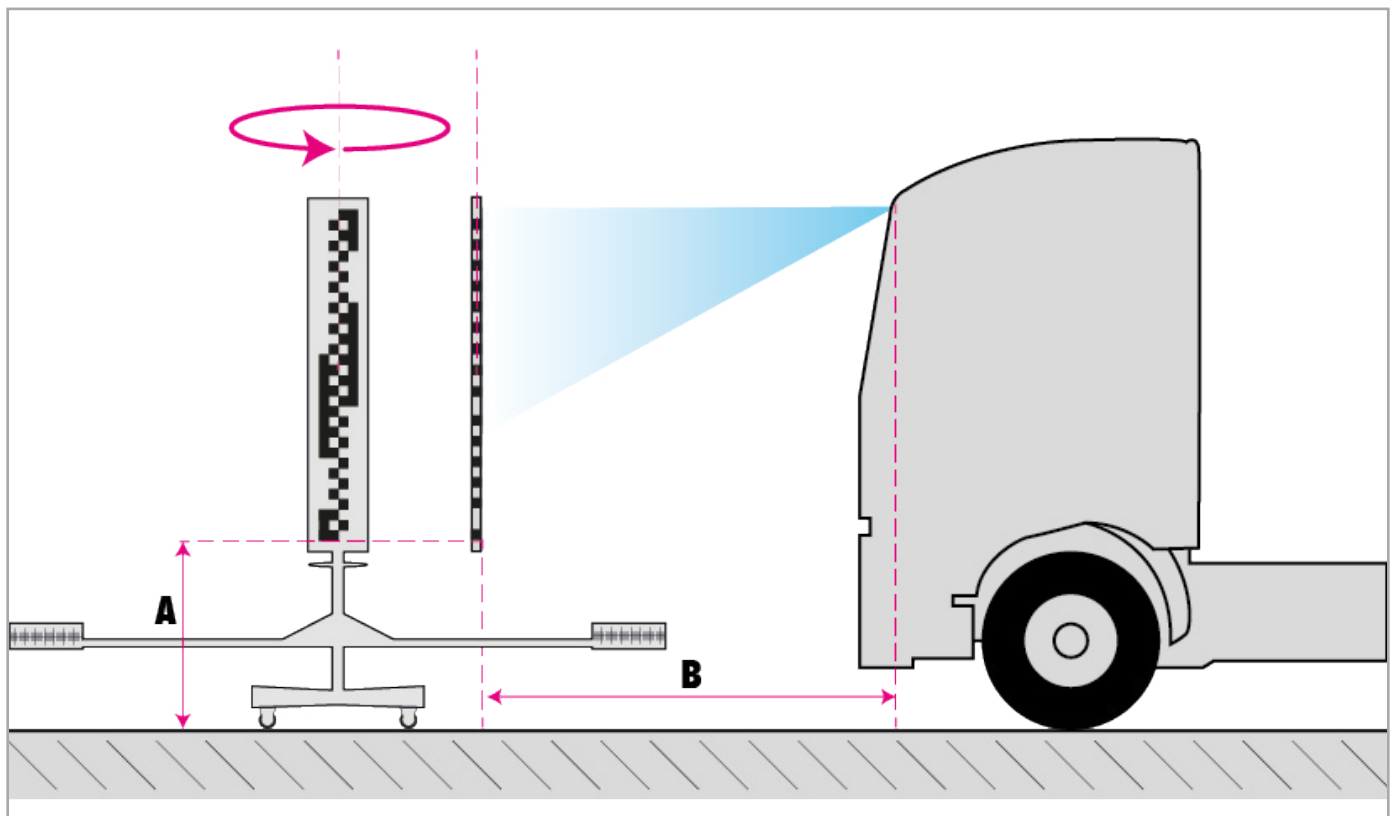
Long gripper side with mounted hubcaps

4. Swivel the mirror sides to the front

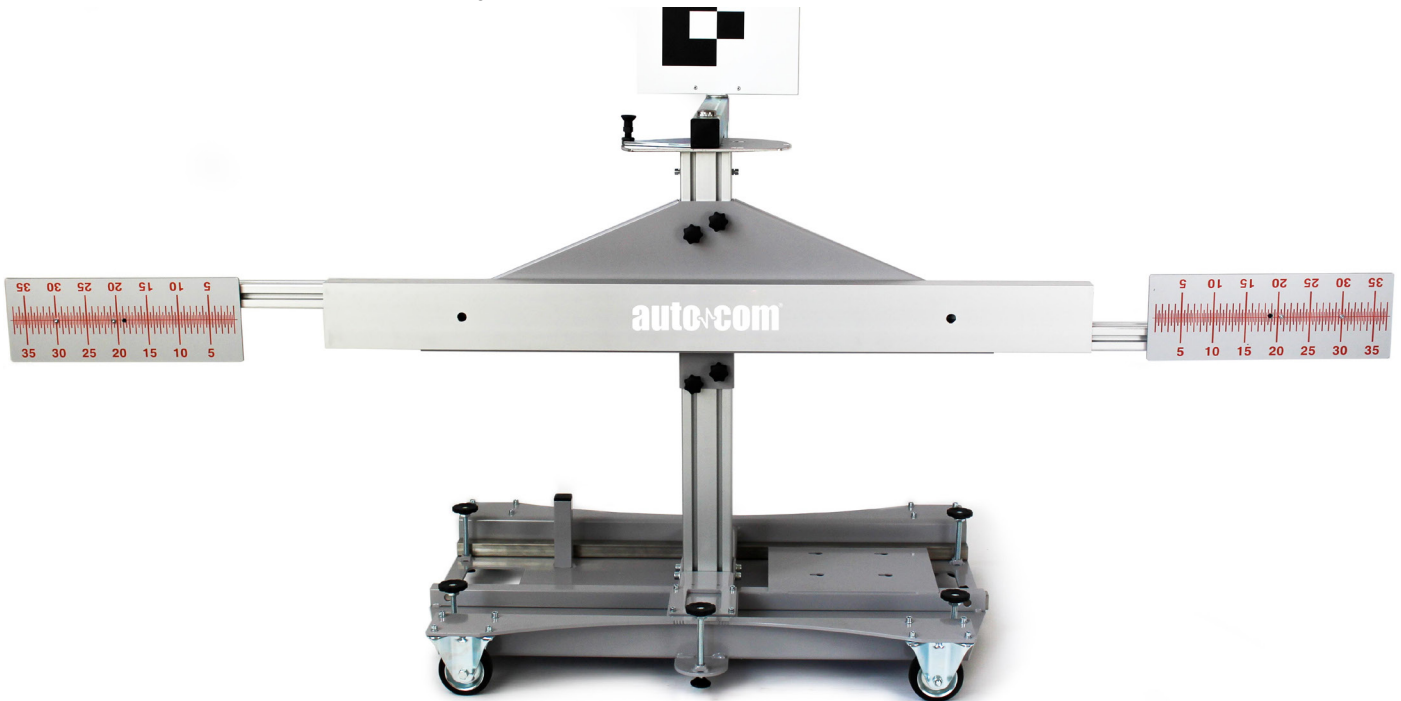


5. Position the ACS TRUCKS Calibration rig with the board swivelled towards the vehicle at the specified distance [B] and at the specified height [A] in front of the vehicle

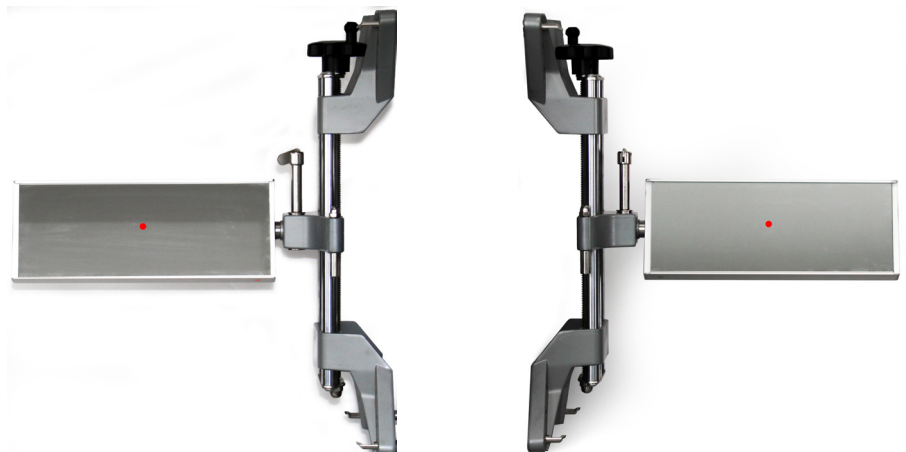
Position 1 = 170 cm from the camera to the target



6. Switch on the laser
7. Adjust the laser beam to the height of the centre of the wheel hub



8. On a level, flat surface, the lasers on the measuring bars now hit the mirror scales of the rear axle



9. Turn the mirror so that the reflected laser hits the scale at the laser aperture

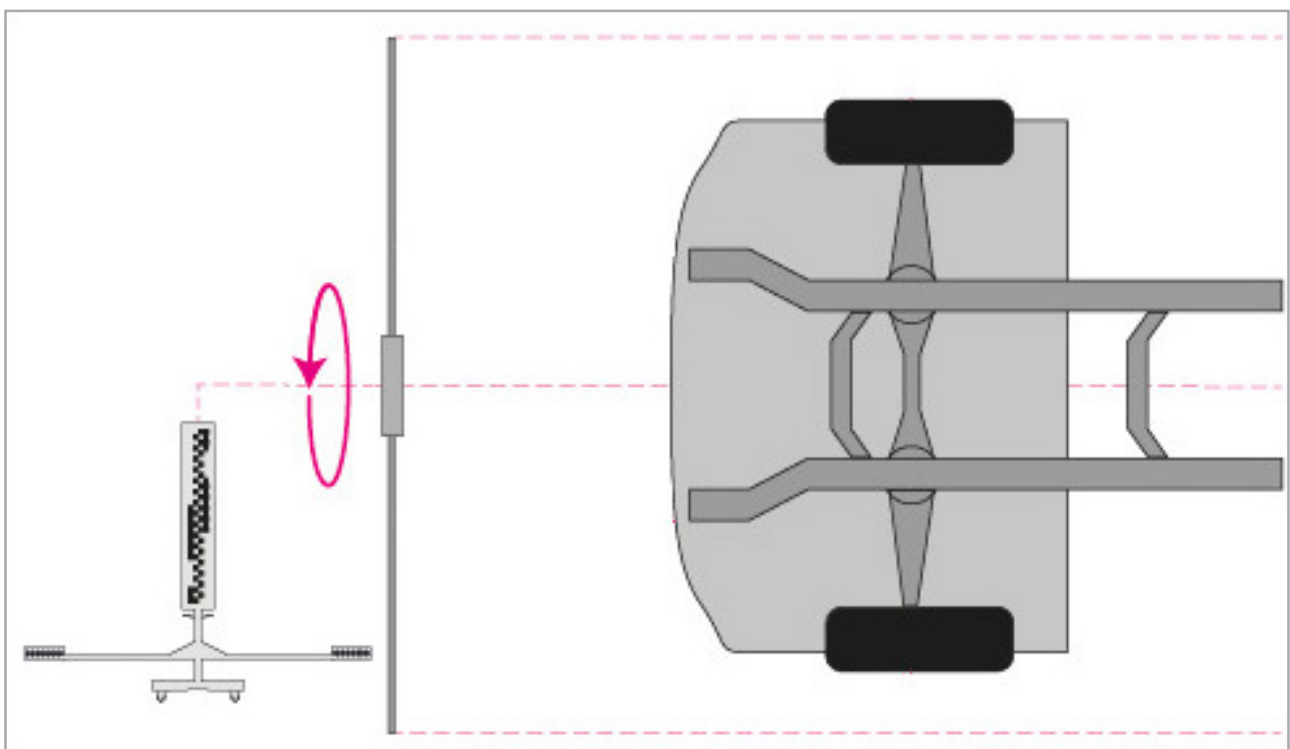
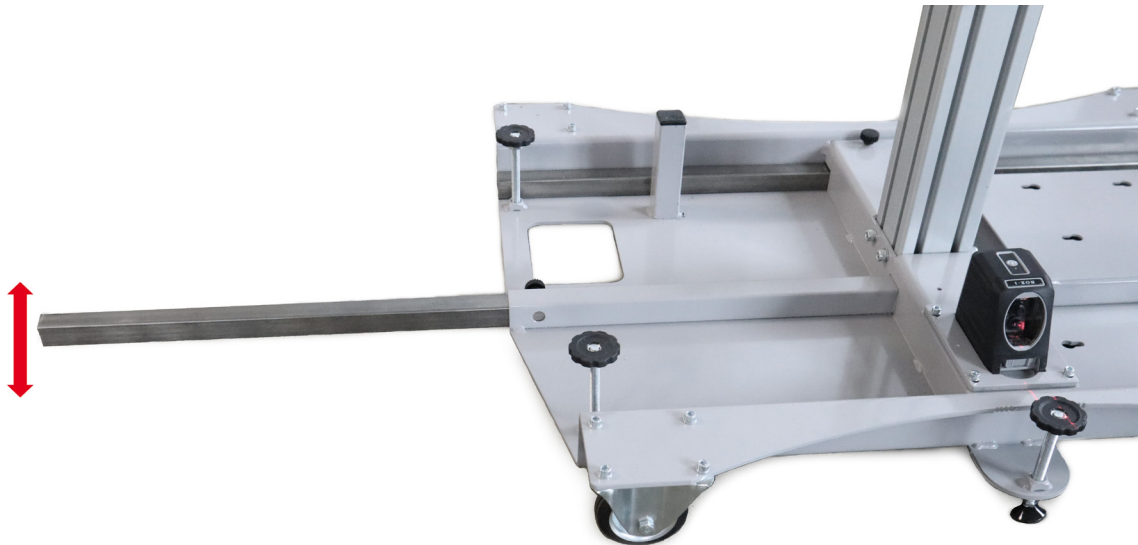


10. In the example, the values 25 and 15 are displayed
These are added together and the total is then halved

Example: $25 + 15 = 40$
 $40 : 2 = 20$

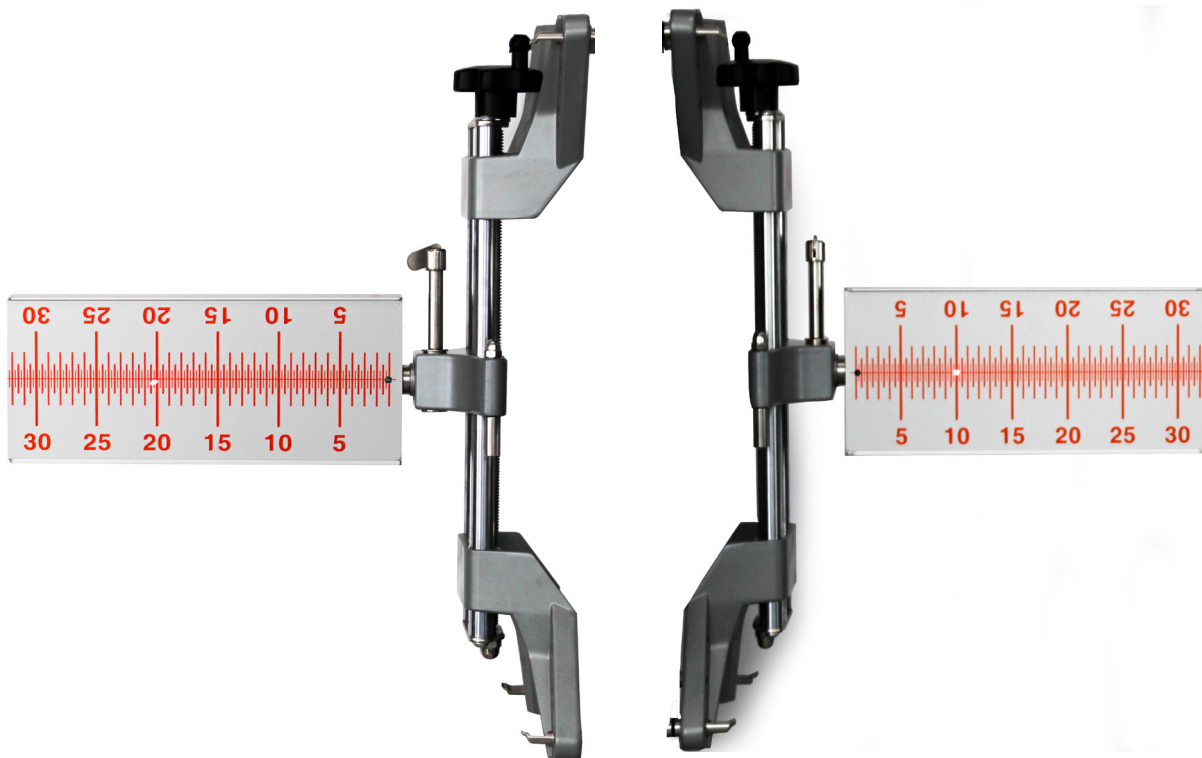
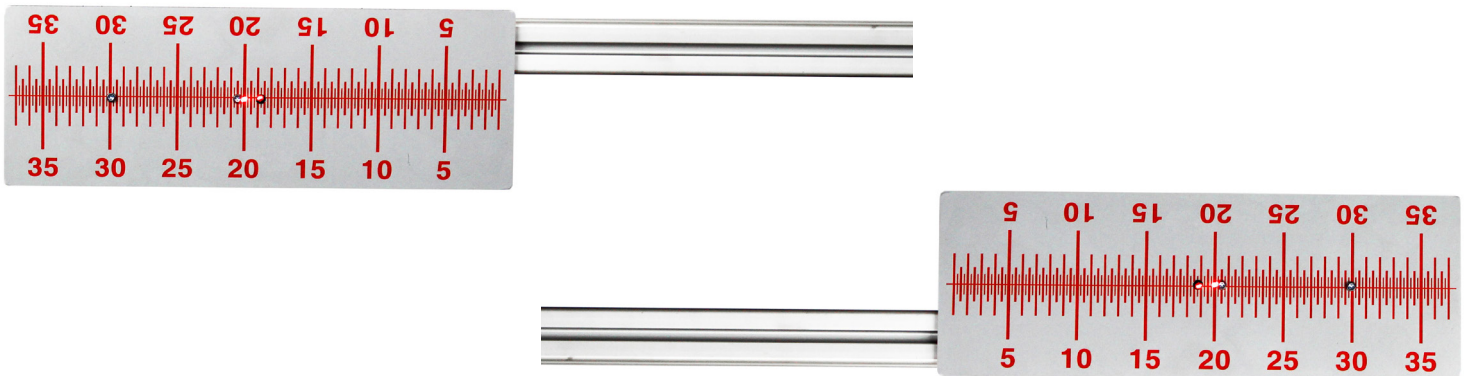
By turning the system, the value 20 should now be set on both sides
The positioning guide should be used for alignment

11. Pull out the positioning guides and turn the system so that it is aligned with the geometric driving axis



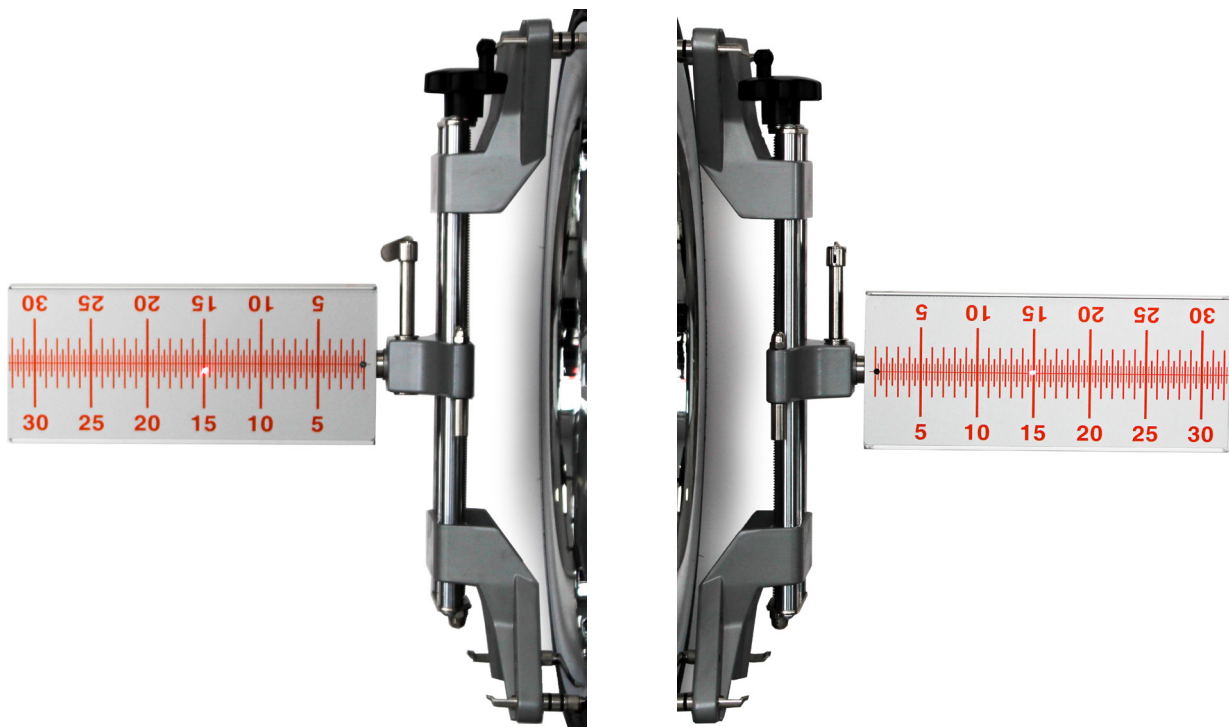
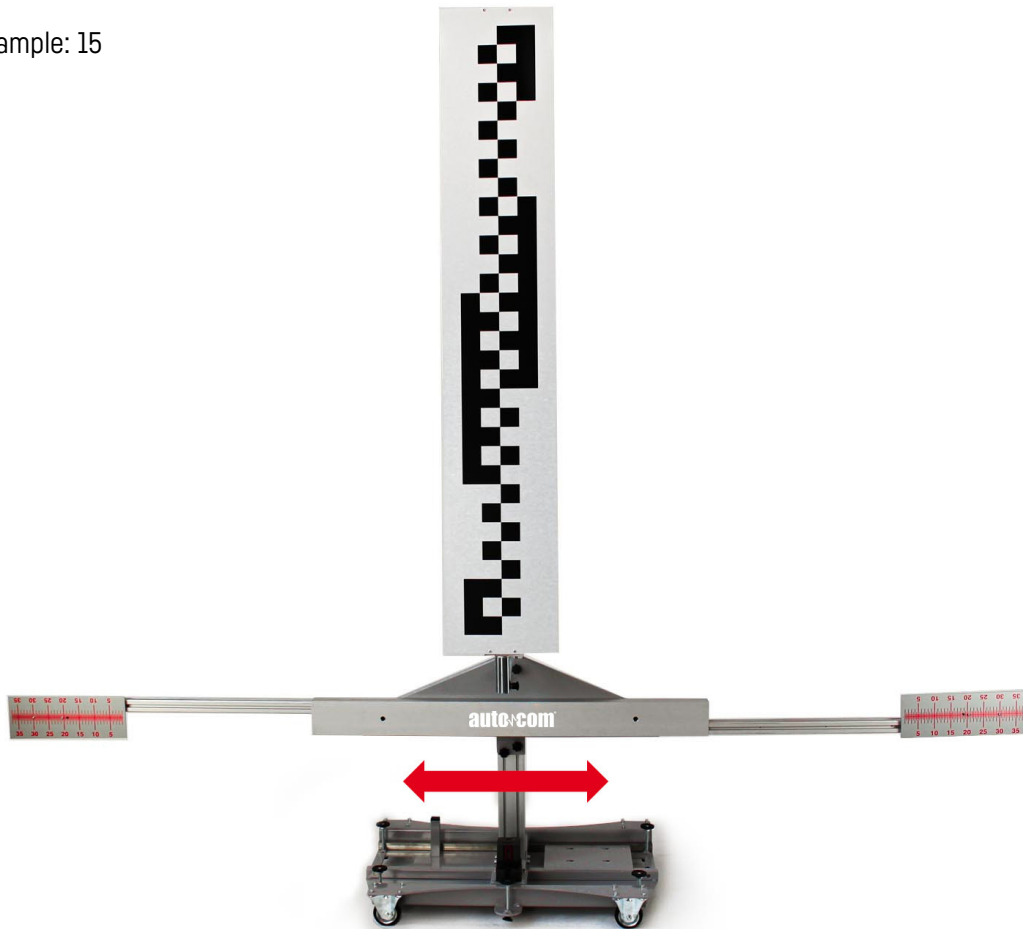
12. Turn the scale on the wheel clamps on the rear axle to the front
In the example, the incident laser point shows 20 on the right and 10 on the left
Here too, the total is calculated and halved

Example: $20 + 10 = 30$
 $30 : 2 = 15$



13. Adjust the ACS TRUCKS Calibration rig so that the same value is displayed on the left and right scales

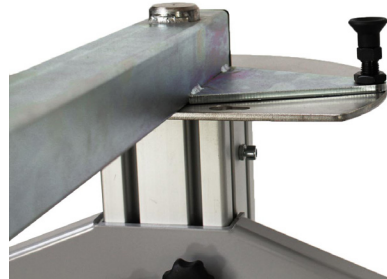
Example: 15



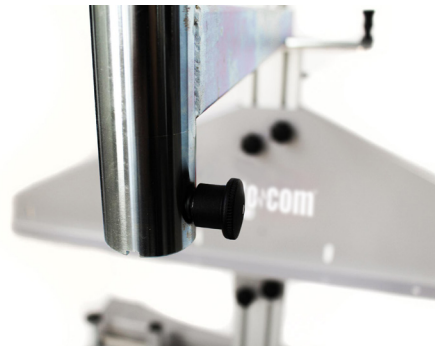
14. Calibration in position 1



15. Swivel the scale holder to the back and swivel the scale towards the truck. Then tighten the locking bolts on the swivel arm and on the scale support

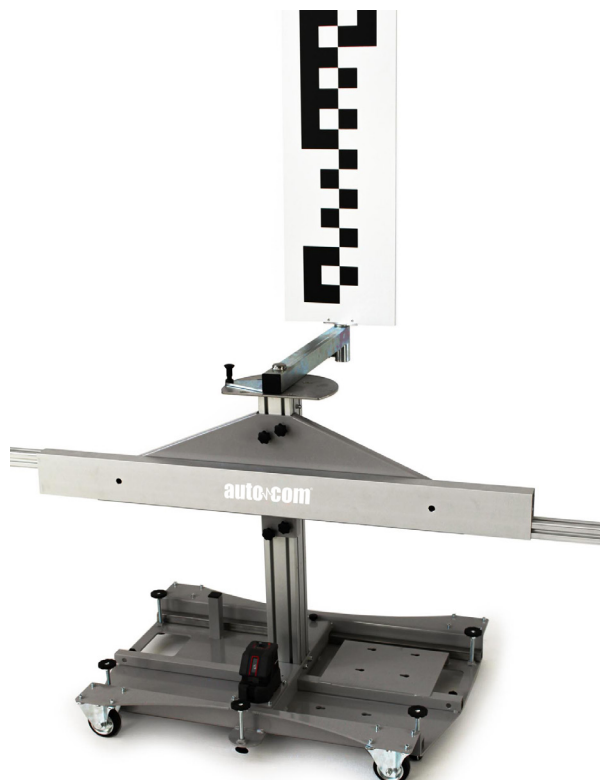


Locking bolt on the swivel arm



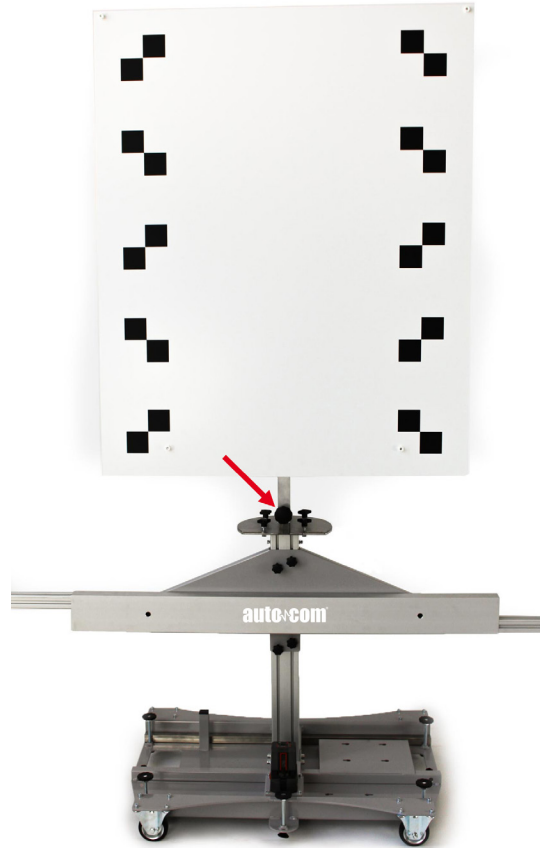
Locking bolt on the scale support

16. Position 2 is now reached. This can now be calibrated



6 Using the universal target holder

The base stand for universal target carriers and the Volvo target carrier is used for this application. Remove the swivel unit from the base and insert the base stand in the holes provided. Tighten the star grips [\[see page 18-19\]](#).



6.1 Volvo base frame

Note the height of the space as different heights of the target have to be reached. For details, please see the instructions for the diagnostic device. The target is attached with white knurled screws.



A fairly low position is necessary for buses



A high position is required for trucks

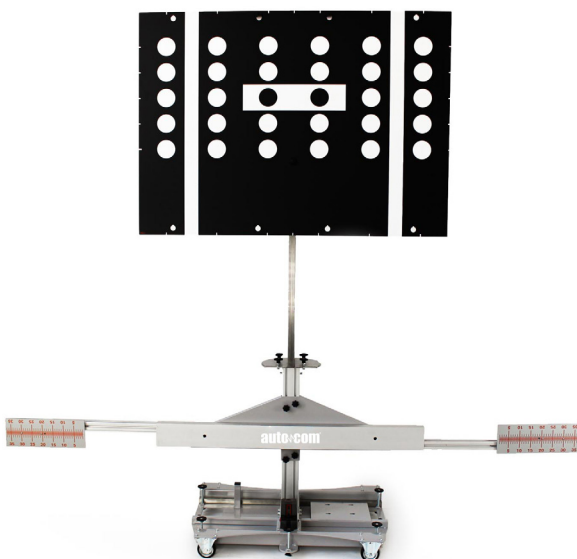
6.2 Universal target holder for LCV calibration boards

The universal target holder is supplied with two white and two black knurled nuts as well as a white and a black fixing magnet. Depending on the basic colour of the board, the matching colour fastenings are to be used (VAG black, Mercedes-Benz white). When inserting the boards, ensure that the knurled screws are in the correct position.



Example: VAG

Also secure the board with the magnetic holder.



Example: Mercedes-Benz

Also secure the board with the magnetic holder.



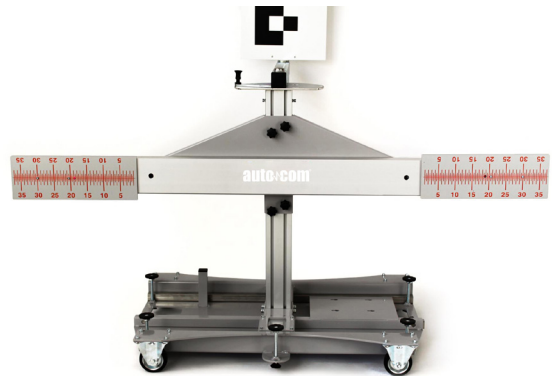
6.3 Adapting the system to the vehicle width

The double tube system offers the possibility to quickly and easily adapt the system to different width vehicle types. There are four locking positions, and continuous adjustment is also possible. It must always be ensured that both sides are pulled out equally.

Position 0



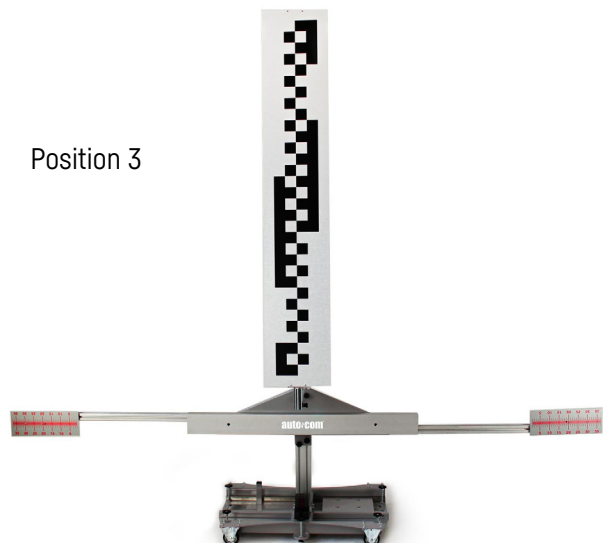
Position 1



Position 2



Position 3



Continuously adjustable



Four locking positions: Pos. 0, Pos. 1, Pos. 2, Pos. 3



Accessories for using the ACS TRUCKS Calibration rig on light commercial vehicles and similar are also available.

7 Maintenance and cleaning

Like any device, the product should be treated with care.

- Lubricate moving parts regularly with acid-free and resin-free grease or oil
- Re-tighten the mounting screws regularly
- Clean the product regularly with non-aggressive cleaning agents
- Use commercially available household cleaners and a dampened, soft cleaning cloth
- Replace damaged accessories immediately
- Use only original spare parts

8 Warranty

A voluntary 24-month warranty is given on all hardware components as standard.

Autocom Diagnostic Partner AB does not give a warranty for damage caused by external influences and Acts of God. Modifications or repairs to products that have not been approved by Autocom Diagnostic Partner AB and the incorrect use of Autocom Diagnostic Partner AB products will lead to immediate cancellation of the warranty.

We accept no liability for printing errors.

9 Environmental conditions

9.1 Prerequisites for using the product

In order to use the ACS TRUCKS Calibration rig, please ensure the following:

- The vehicle system works faultlessly
- No faults are stored in the fault code memory of the control unit
- Any vehicle-specific preparations have been carried out
- The axle geometry is set correctly
- Both the ACS TRUCKS Calibration rig and the commercial vehicle should be positioned on a level floor with a maximum angular deviation of 3°

9.2 Replacing the AA batteries

To replace the batteries, proceed as follows.

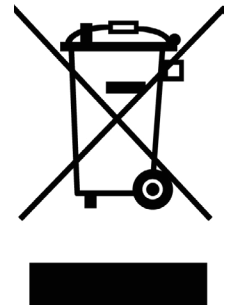
1. Turn off the laser beam using the switch
2. Remove the battery compartment cover.
3. Fold up from the bottom
4. Take out the batteries one by one
5. Reassemble in reverse order

10 Disposal

Power tools, accessories and packaging should be disposed of in an environmentally friendly manner. Do not place power tools in your household waste.

For EU countries only:

According to European Directive 2012/19/EC on Waste Electrical and Electronic Equipment and its transposition into national law, power tools that are no longer usable must be collected separately and recycled in an environmentally friendly manner. According to Directive 2006/66/EC, defective or used batteries must be recycled.



Accumulators/Batteries:

Do not place batteries in the household waste, fire or water. Batteries must be collected, recycled or disposed of in an environmentally friendly manner.

Since this device is exclusively for commercial use [B2B], it must not be disposed of via public waste disposal companies.

The ACS TRUCKS Calibration rig can be disposed of [stating the date of purchase and the serial number] at:

Autocom Diagnostic Partner AB
Grafitvägen 23b
461 38 Trollhättan
Sweden

info@autocom.se

11 DECLARATION OF CONFORMITY

Autocom Diagnostic Partner AB confirms that ACS Calibration meets the necessary and relevant safety requirements of one or more directives and standards.



Autocom Diagnostic Partner AB

Grafitvägen 23b
461 38 Trollhättan
Sweden
info@autocom.se
www.autocom.se

02/2025

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