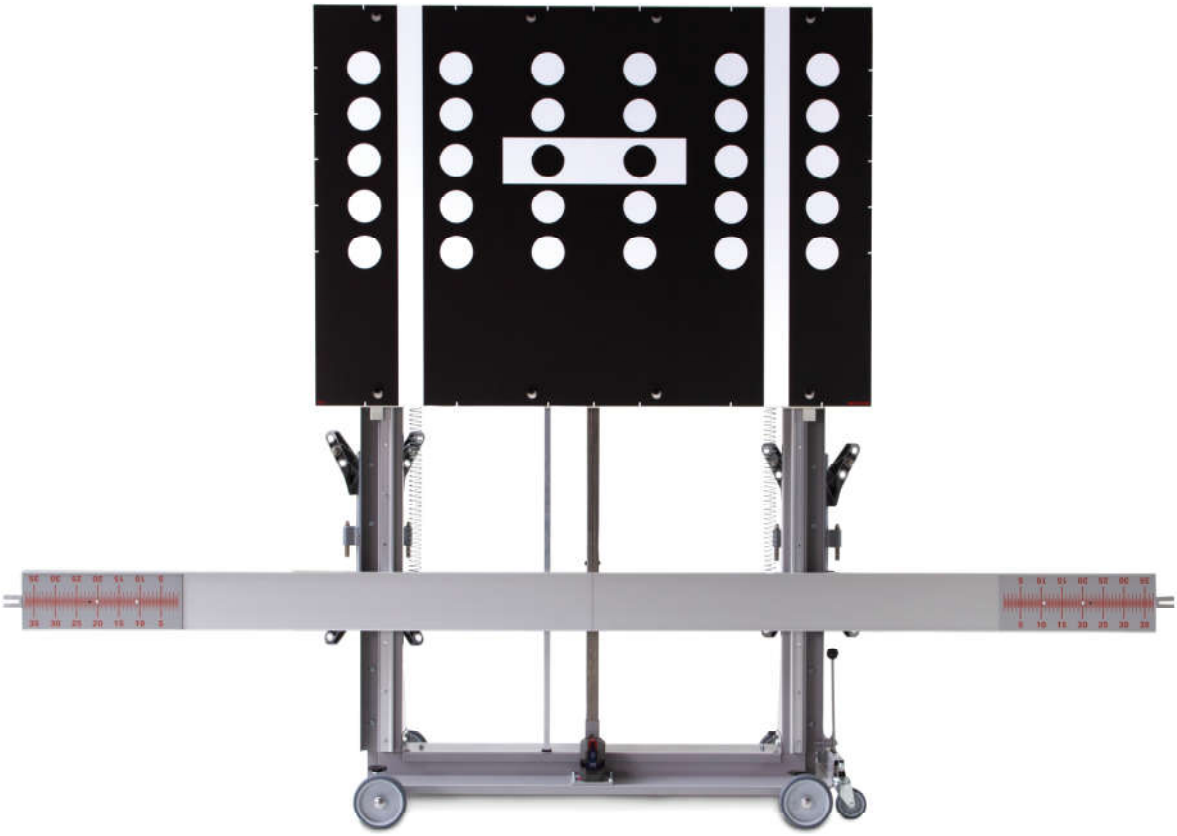
ACS cars - user manual

Advanced Calibration system Cars



Autocom Diagnostic Partner AB
Grafitvägen 23B
SE-461 38 Trollhättan
Sweden

Content

1 Safety instructions

The ACS cars system is exclusively designed for use on vehicles for the calibration of driver assistance systems. In order to use ACS cars, the operator must have knowledge of automotive technology and knowledge of potential hazards and risks in the workshop or the vehicle.
All measures and safety instructions in the instruction manual, which are given below, must be observed. In addition, all general legal regulations and rules of conduct that apply when working in the workshop must be observed.

1.1 Safety instructions for the ACS cars trolley

In order to avoid incorrect operation and resulting injury to the operator or damage to the ACS cars system, the following points must be observed:

- The setup and training for ACS cars should only be carried out by our service engineers.
- Protect ACS cars and the laser pointer from water (not waterproof).
- Protect ACS cars from hard impacts (do not drop it).

1.2 Safety precautions relating to the laser pointer

When working with the laser pointer, there is a risk of injury due to possible glaring.
Please observe the following:

- Wear suitable anti-glare goggles.
- Never aim the laser beam at people, doors or windows.
- Never look directly into the laser beam.

1.3 Safety precautions relating to risk of injury

When working on the vehicle, there is a risk of injury due to the vehicle rolling away.
Please observe the following:

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

2 Product description

2.1 Intended use

ACS cars is a system for calibration of driver assistance systems, which is suitable for use in the multi-brand segment. Using expandable accessories, manufacturer-specific adjustments can be made to a wide range of assistance systems.
In conjunction with a diagnosis system and the corresponding accessories from Autocom, WOW! or WABCOWÜRTH, the assistance systems installed in the vehicle, such as the camera for the lane departure warning system or the radar sensor for the ACC (Adaptive Cruise Control), can be calibrated.

2.2 Scope of delivery

Check the scope of delivery on or immediately after delivery, so that any damage or missing parts can be reported immediately.

Quantity	Designation
1	Trolley with target board carrier (without targets)
2	RH4-4/22 wheel clamps
1	Left laser carrier bar, laser mounted
1	Right laser carrier bar with stud bolts, laser mounted
1	Accessory case with contents
2	Mirror scale units (MSU)
4	Measuring tape holders
1	Measuring tape
1	Line laser
1	Laser viewing glasses
8	Grooved screws, black
8	Grooved screws, white

2.3 ACS cars trolley

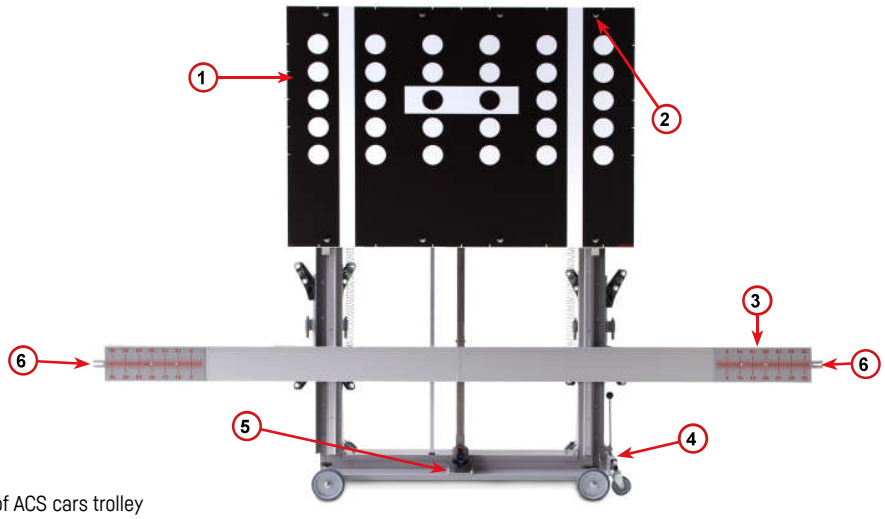


Fig. 001 Front of ACS cars trolley

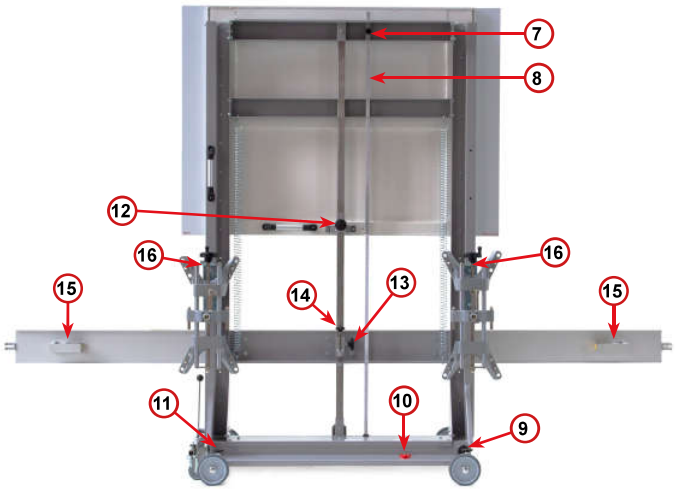


Fig. 002 Back of ACS cars trolley

Legend

Number	Description
1	Calibration target board holder. Different calibration target boards are used depending on the vehicle manufacturer. These are available options.
2	8 x grooved screws for securing the calibration boards
3	Laser carrier bar with adjustment scale
4	Manoeuvring unit
5	Mount for line laser
6	Measuring tape holder
7	Grooved screw for measuring scale
8	Measuring scale for height adjustment of calibration board holder and laser carrier bar
9	Fine adjustment screw for board carrier
10	Spirit level

Number	Description
11	4 x star grip screws for levelling the trolley
12	Grooved screw for height adjustment of the calibration board holder
13	Grooved screw for height adjustment of the laser carrier bar
14	Fine adjustment screw for laser carrier bar
15	Left and right laser
16	Wheel clamp holder

2.4 Wheel clamps and mirror scale unit

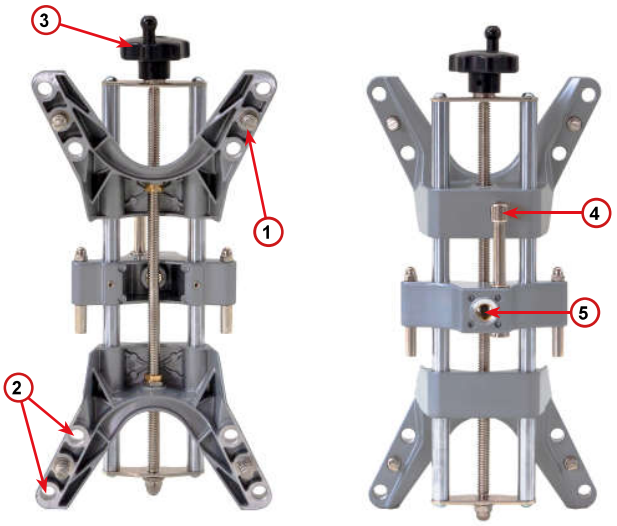


Fig. 003 Wheel clamps

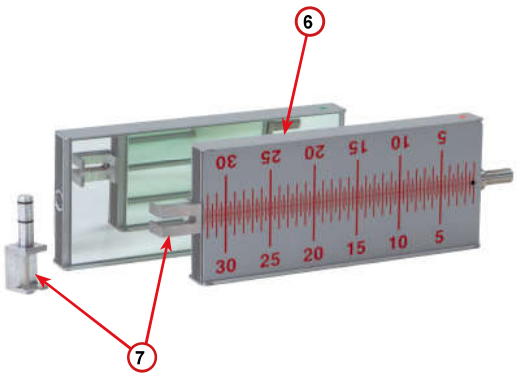


Fig. 004 Mirror scale unit (MSU)

Number	Description
1	Double-profile claws (4* per wheel clamp)
2	Slot for double-profile claws
3	Handwheel for tightening the wheel clamp
4	Mounting screw for MSU
5	Socket for MSU
6	Mirror scale unit (MSU)
7	Measuring tape holders

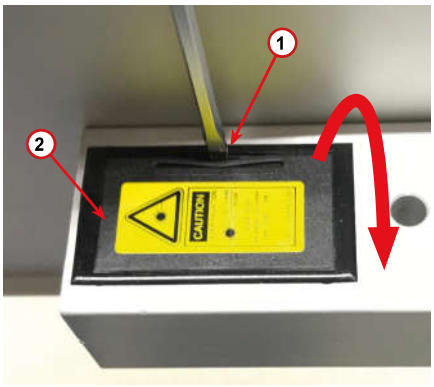
1.1 Laser on the laser carrier bar

2.4.1 Replacing the battery

Battery type: 2 x Mignon AA 1.5V

CAUTION! For installation direction, observe the polarity of the batteries.

1. Using a suitable screwdriver, gently push the locking mechanism (1) and open the cover (2) upwards.



2. Replace the two Mignon AA 1.5V batteries (3) and close the cover again.
CAUTION! Observe the polarity of the batteries.

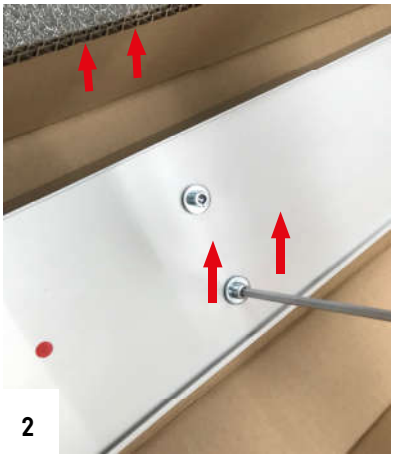
3 Assembly instructions for ACS cars

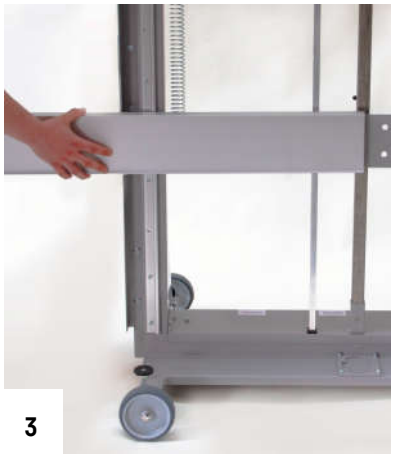
ACS cars is largely pre-assembled, all that remains to be done it to mount the laser carrier bars.

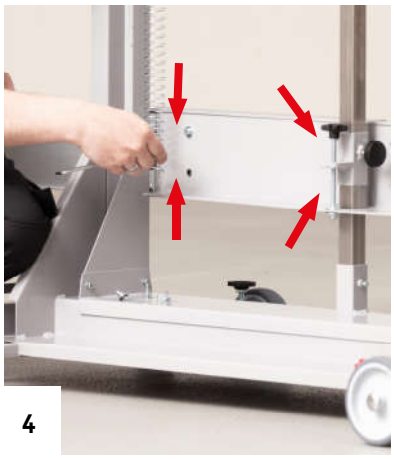
Tools required:

- Allen key 5 mm

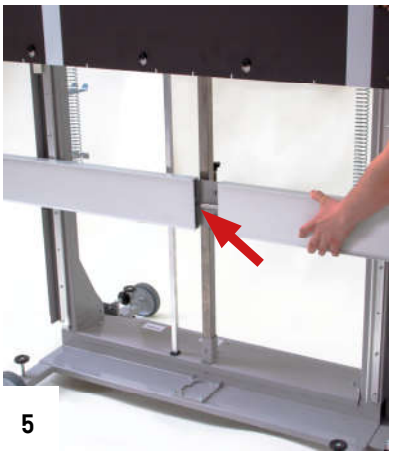
Method:



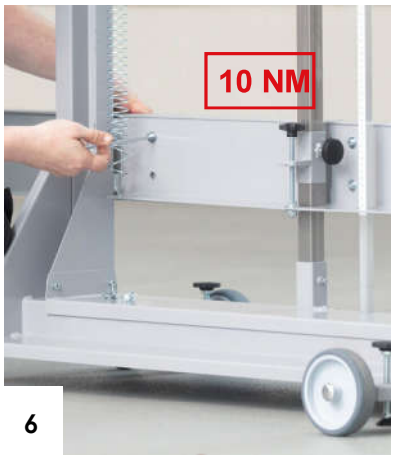




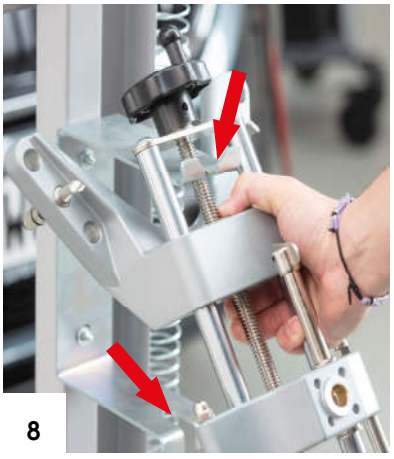
Insert bolts but do not tighten.



Slide in right laser carrier bar.



Tighten all 8 bolts to 10 Nm.



4 Working with ACS cars

The following steps are necessary to position the ACS cars. These vary depending on the vehicle manufacturer.

1. Observe manufacturer-specific instructions and help.
2. Adjust the height of the calibration target board and laser carrier bar.
3. Position ACS cars in front of the vehicle.
4. Position ACS cars parallel to the vehicle.
5. Position ACS cars centrally in front of the vehicle.

4.1 Prerequisite for use

Please ensure the following before positioning the ACS cars:

- The vehicle and the ACS cars are standing absolutely level.
- The vehicle systems work faultlessly.
- No faults are stored in the fault memory of the control unit.
- Tyre pressure is set according to the manufacturer's specifications.
- Any vehicle-specific preparations are carried out, see manufacturer's information.
- Tracking of the rear axle is correctly set.
- Vehicle is unloaded.
- Windscreen in the area of the camera has been cleaned.

4.2 Requesting manufacturer-specific instructions and help

Method:

1. Connect the diagnostic device to the vehicle and select the vehicle.
2. In the Diagnosis menu, select the system to be calibrated. Go to Function > Calibration > Help to view the manufacturer-specific instructions.
3. Attach the manufacturer-specific calibration board to the ACS cars

4.3 Positioning ACS cars in front of the vehicle

Method:

NOTE! The vehicle and the ACS cars must be standing absolutely level.

1. To manoeuvre the ACS cars trolley, lower the manoeuvring unit. To do this, push the lifter lever (1) down.
   This makes the ACS cars trolley easier to manoeuvre.
2. Position the ACS cars trolley in front of the vehicle.

4.4 Adjusting the height of the calibration board and laser carrier bar

Tools required:

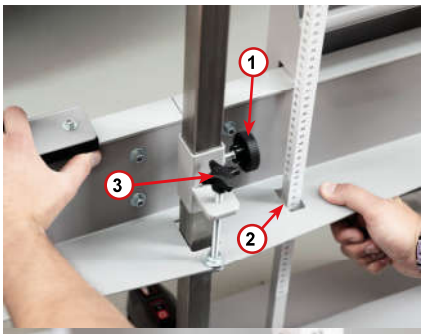
- Measuring tape from the ACS cars accessory case.

Method:

1. Determine the height from the ground to the centre of the wheel hub.

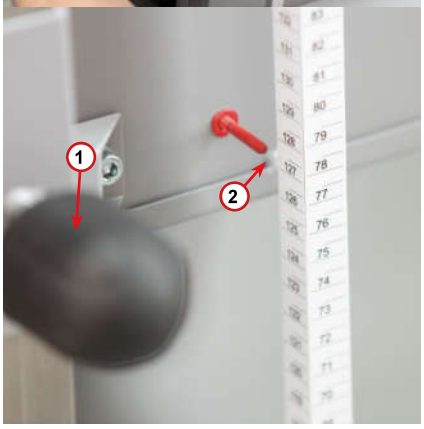
2. Loosen the grooved screw on the measuring scale (1) and lower the measuring scale to the floor.

WARNING! Risk of injury
Laser carrier and calibration board holder are pre-tensioned.
When loosening the star grip screw, apply counter-pressure to the laser carrier or calibration board holder with your hand.



3. Loosen the grooved screw of the laser carrier bar (1) and set the measured height of the centre of the wheel hub (2). Tighten the knurled screw again. Fine adjustment can be carried out with the fine adjustment screw (3).

4. Loosen the grooved screw on the calibration board holder (1) and set the calibration board height (2) according to the manufacturer's specifications from the information in the diagnostic program help text. Tighten the grooved screw again.
5. Secure the measuring scale in its original position to prevent damage to the scale when moving the ACS cars trolley.



4.5 Positioning the ACS cars

Tools required:

- Measuring tape
- Wheel clamps
- Mirror scale unit (MSU)
- Measuring tape holders

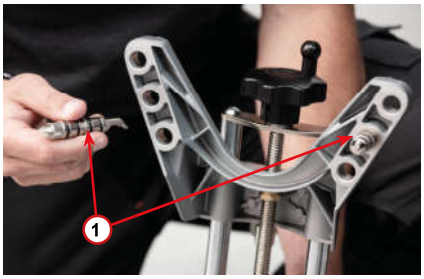
Method:

4.5.1 Mounting the wheel clamps on the front wheels

CAUTION! Risk of damage to the rims if used incorrectly! - advantageously use lubricant at the mounting points on the rim.
Using the wrong double-profile claws can result in the rims becoming scratched. Carefully attach the wheel clamps to the rims.
Make sure to use the correct double-profile claws for aluminium or steel rims.

The procedure may vary depending on the manufacturer. Current information can be found in the Autocom diagnostic software.

1. Insert double-profile claws (1) for aluminium or steel rims into the wheel clamp sockets the right way round.



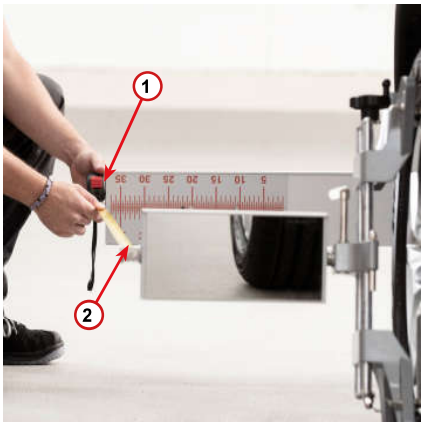
2. Adjust the wheel clamp to the size of the rim using the star grip screw (1).
3. Carefully place the double-profile claws on the rim flange (2) and tighten with the star grip screw (1).
4. Check that the wheel clamp is fitted securely.

5. Mount the mirror scale unit (MSU) (1) on the wheel clamp.

4.5.2 Adjusting the distance of ACS cars to the vehicle

TIP: Adjust the distance on the left side of the vehicle first. The manoeuvring aid on the right side of the ACS cars trolley makes it easier to position.

1. Attach the 1st measuring tape holder (2) to the mirror scale unit (MSU).
2. Attach the 2nd measuring tape holder to the left laser carrier (1).
3. Hang the measuring tape on the 1st measuring tape holder (2) on the front axle.
4. Adjust the distance to the laser carrier by manoeuvring the ACS cars trolley. Follow the manufacturer's specifications.
5. Repeat steps 1–4 on the right side.



NOTE: The distance from the ACS cars trolley to the vehicle must be the same on both sides.

6. When both sides have been adjusted, position the lifter lever of the manoeuvring aid upwards so that the ACS cars trolley is standing on all 4 wheels.

4.5.3 Placing ACS cars centrally in front of the vehicle

WARNING! When working with the lasers, there is a risk of injury due to dazzling. Never look directly into the laser beam.

Tools required:

- Line laser

Method:

1. Insert the line laser (1) from the accessory case into the mount on the ACS cars trolley and switch it on.
   (See also the instruction manual from the manufacturer.)
2. Position the ACS cars trolley with the line laser in the centre of the vehicle.
   TIP: The brand logo, for example, can be used as a reference point.
3. Switch off the line laser again.

4.6 Positioning ACS cars parallel to the vehicle

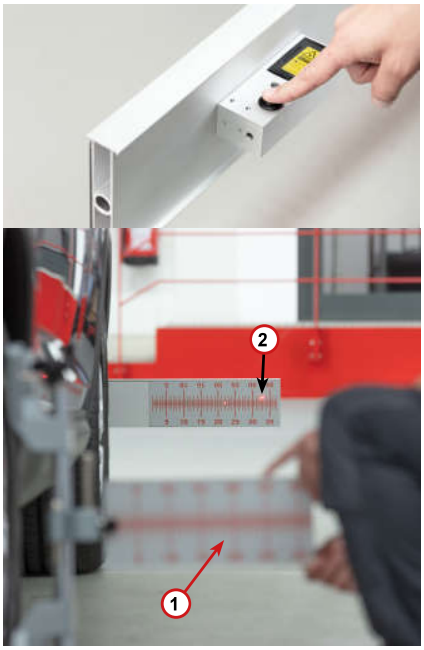
Tools required:

- Wheel clamps
- Mirror scale unit (MSU)

Method:

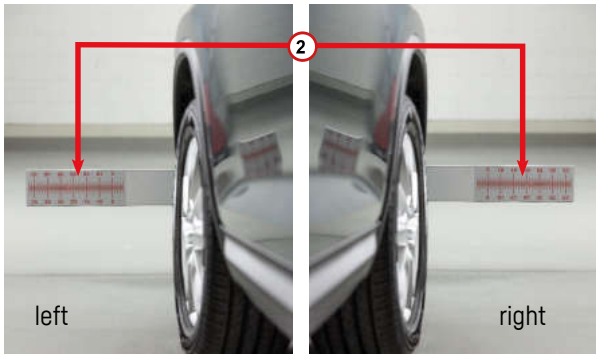
1. Remove the wheel clamps together with the MSU on the front wheels and mount them on the rear wheels.
2. Switch on the laser pointers on the left and right.

WARNING! Risk of graring/blinding!
Always tilt the mirrors downwards to avoid graning/blinding.



3. Turn the mirror side of the MSU (1) towards the direction of travel and adjust so that the reflected laser spot (2) is visible on the scale of the laser carrier bar.

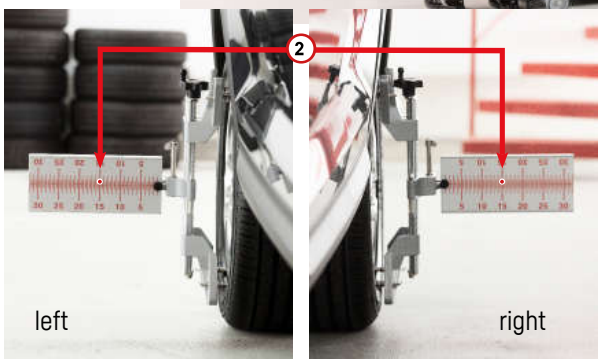
4. Turn the fine adjustment screw (1) to set the laser spots on the measuring scales on the laser carrier bar on the driver and passenger side to the same value (2).



5. Turn the measuring scale side of the MSU (1) towards the direction of travel so that the laser spot on the measuring scale of the MSU is visible on the rear axle.

6. Move the ACS cars trolley (1) parallel with the front of the vehicle until the same value is set on the left and right of the measuring scales (2).

7. Switch off the laser on the laser carrier bar.
   Positioning is complete.
8. The calibration can now be performed with the diagnosis system.

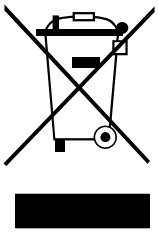


5 General information

5.1 Maintenance and care

- The ACS cars should be handled with care.
- Lubricate moving parts regularly. Use only acid-free and resin-free lubricants.
- Check mounting bolts regularly for tightness.
- Clean the ACS cars regularly. Use a soft cleaning cloth and a non-aggressive cleaning agent.
- Replace damaged accessory components immediately and only with original spare parts.

5.2 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 device can be disposed of (stating the date of purchase and the serial number) at:

Autocom Diagnostics Partner AB
Grafitvägen 23B
SE-461 38 Trollhättan
Sweden

6 Manufacturer compliant

autocom

ACS CARS

MANUFACTURER-COMPLIANT CALIBRATION OF CAMERA AND RADAR SYSTEMS

DEAR LADIES AND GENTLEMEN,

ACS cars from Autocom offers you a 100% manufacturer-compliant, flexible and cost-effective system for camera and radar calibration of all relevant vehicle brands and is therefore ideal for independent workshops, car glass companies, body shops or tire dealers. Together with the hardware and software solutions from Autocom, ACS cars is the optimal solution for the demanding everyday workshop life.

The ACS cars calibration system was designed with the original manufacturer's specifications in mind:

- **ACS cars calibration board carrier**
  Powder-coated, height-adjustable, spring-balanced calibration board carrier (1.0 m to 1.85 m) respectively trolley with manoeuvring wheels, handle and knurled screw for quick and easy assembly. Height adjustable and separable laser carrier (0.27 m to 1.0 m) with additional fine adjustment with two mounted laser pointers. Measuring scale for height adjustment of calibration board holder and laser carrier. Two self-centered four point-wheel clamps (for 11 - 25 inch wheel).
  Fast and easy alignment of the vehicle's geometric driving axis with respect to the calibration board. With short set-up times of the ACS cars calibration device for precise positioning of the vehicle with the aid of the wheel holders, laser units and scales.

- **Calibration boards**
  Our calibration board are a 100% image of the original samples specified by the manufacturers. Compared to the original calibration boards, our boards always have at least the same or even a higher product quality and accuracy.

- **Diagnostic software**
  The calibration process in the diagnostic software also takes place taking into account and complying with the manufacturer's specifications:

  - **Distances**
    We comply 100% with the distances and distances specified by the original manufacturers. The calibration process is also carried out in the software on the basis of these distances.

  - **Calibration Procedure**
    We following the original manufacturer specifications for the front camera and radar calibration procedure to 100%.

  - **Calibration certificate**
    In order to prove that the front camera or the front radar system has been calibrated correctly according to the manufacturer's specifications, a calibration certificate can be stored in the diagnostic software and printed out there all performed procedures are documented in step-by-step.