

# SCT418 Assembly Instructions

Product Designation: SCT418  
Application: ADAS  
Version: Calibration v1.5  
Date: June 25, 2025



**BOSCH**

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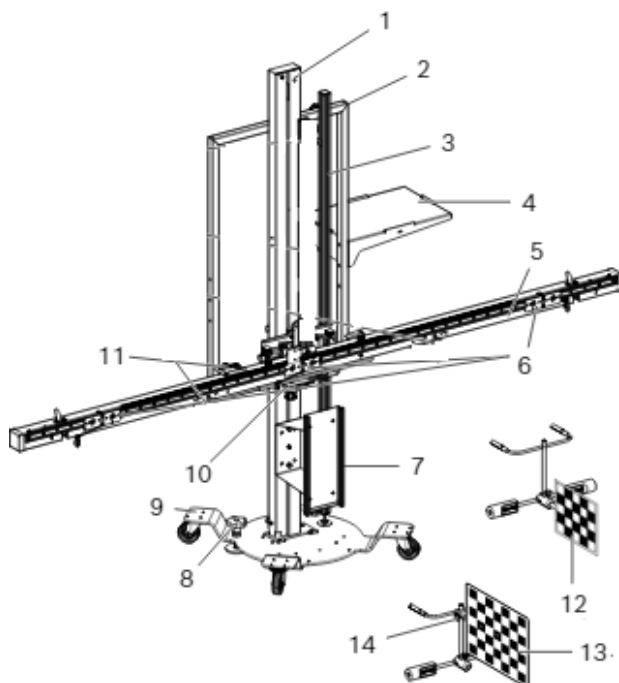
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# QUICK START GUIDE AND INITIAL SET-UP

## 1 SCT418 CALIBRATION TOOL AND ACCESSORIES

### 1.1 OVERVIEW SCT418 AND ACCESSORIES



- (1) Pillar with height adjustment
- (2) Alignment frame
- (3) Ruler for height adjustment
- (4) Shelf for laptop/tablet
- (5) Indicator bar
- (6) Slide for calibration boards (3x)
- (7) Contact plate
- (8) Brake (2x)
- (9) Base plate
- (10) Alignment unit
- (11) Spirit levels for pitch and roll angles
- (12) Wheel clamp + reference board CTA 400-1
- (13) Wheel clamp + reference board CTA 403-1
- (14) Support clamp

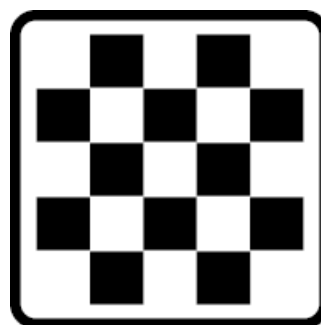
### 1.2 WHEEL CLAMP CTA 100-1 (1 688 120 190)

The wheel clamps are used to position the CTA 400-1 and CTA 403-1 reference boards on the vehicle's wheels.



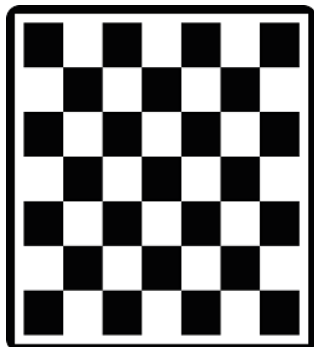
### 1.3 FRONT REFERENCE BOARD CTA 400-1 (1 681 098 014)

Attach the reference boards to the CTA 100-1 wheel clamps. These small target boards are placed on the front wheels.



## 1.4 REAR REFERENCE BOARD CTA 403-1 (1 681 098 019)

Attach the reference boards to the CTA 100-1 wheel clamps. These large target boards are placed on the rear wheels.



## 2 ASSEMBLING THE SCT418

### 2.1 TOOL LIST

- Wrench
- Phillips's screwdriver
- Hexagon socket screwdriver
- Torx screwdriver
- Tape measure/folding ruler

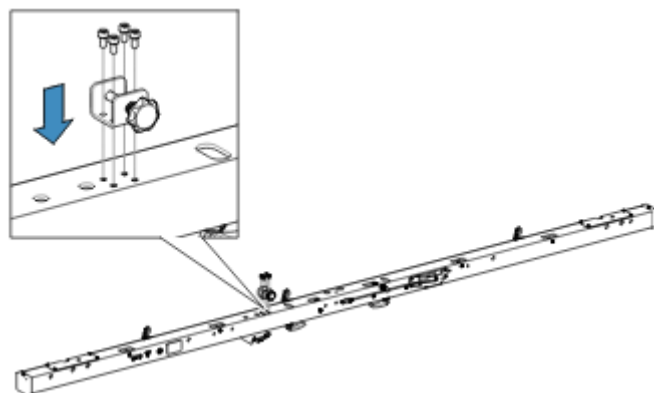
CAUTION



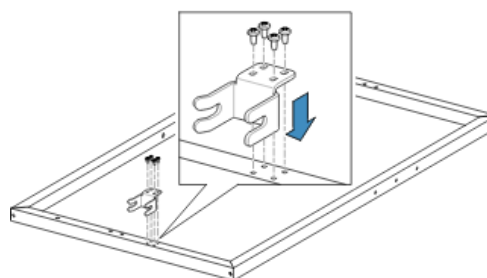
- Danger of head injury from indicator bar, ruler and post. Minor injury.
- Watch out for bystanders when installing protruding objects such as the indicator bar.
- Watch out for nearby objects when installing protruding objects such as the indicator bar.

## 2.2 INSTALLING THE MOUNT FOR INDICATOR BAR STORAGE POSITION

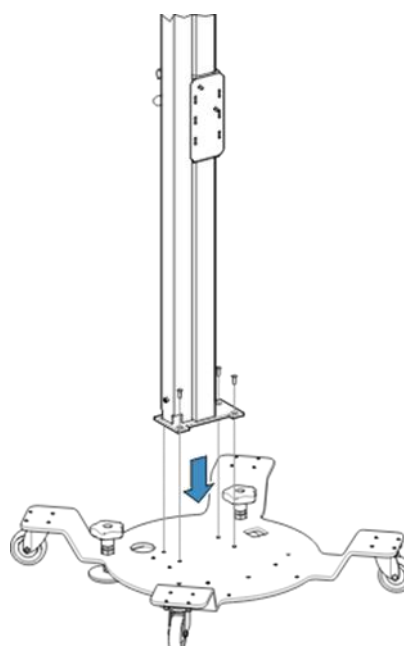
- 1) Install the mount with 4x bolt (15 mm length) to the underside of the indicator bar.



- 2) Install the mount with 4x bolt (11 mm length) to the alignment frame.

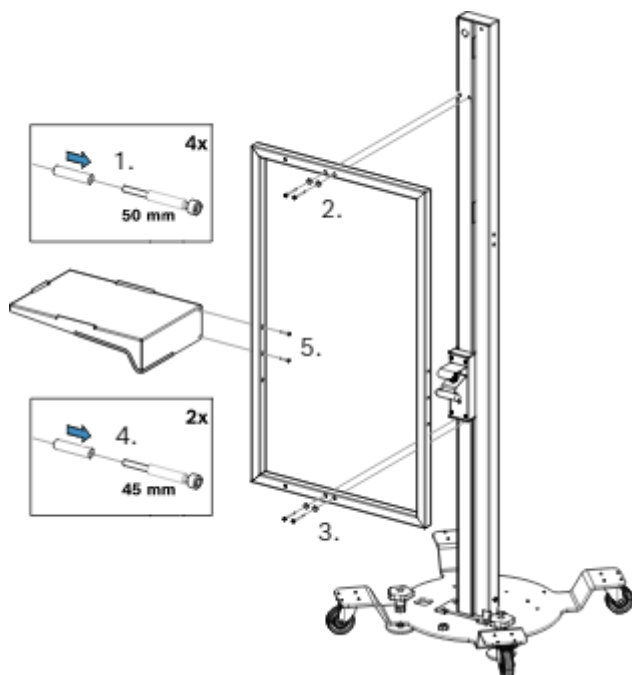


## 2.3 MOUNTING THE POST



- 1) Unscrew 4 screws.
- 2) Use 4 screws to attach the post to the base plate. **Torque to 8.5Nm**

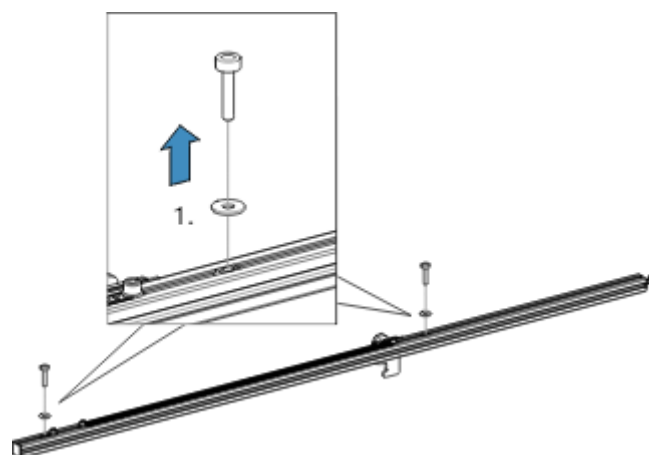
## 2.4 MOUNTING THE ALIGNMENT FRAME AND SHELF FOR LAPTOP/TABLET



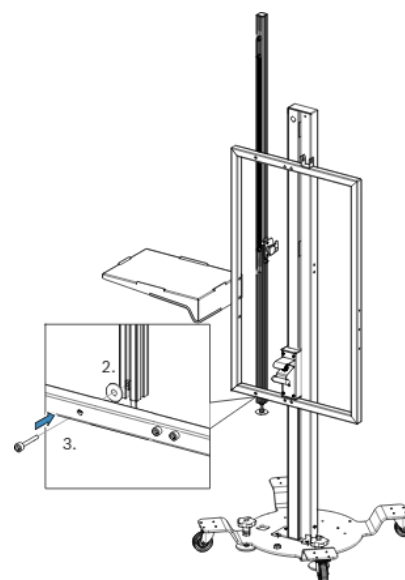
- 1) Place 6x sleeves over the screws.  
To prevent the sleeves from falling into the alignment frame during mounting, the sleeves must be placed over the screws before mounting.
- 2) Fasten the alignment frame to the top of the post using 2 plain washers and 2 screws (50 mm length) with sleeves.
- 3) Fasten the alignment frame to the post below the handle using 2 plain washers and 2 screws (50 mm length) with sleeves.
- 4) Attach the shelf for the laptop/tablet using 2 screws (45 mm length).

## 2.5 MOUNTING THE RULER

- 1) Remove 2x hexagon socket screws and plain washers from the ruler.



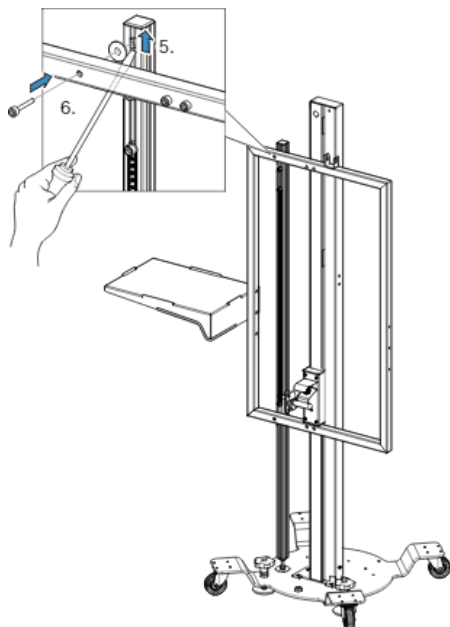
- 2) Bring the ruler with the lower slot nut to the mounting height of the lower hole in the alignment frame.
- 3) Fasten the hexagon socket screw in the lower slot nut.
  - Make sure the washer is placed between the height ruler and alignment frame



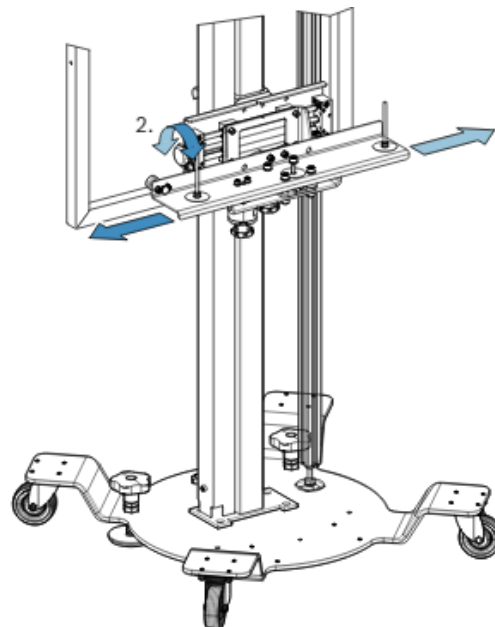
- 4) Lower the ruler on the slot nut to the base plate.
- 5) Bring the upper slot nut in the ruler to the mounting height of the upper hole in the alignment frame using a pointed object (e.g. screwdriver).

- 6) Fasten the hexagon socket screw in the upper slot nut.

- Make sure the washer is placed between the height ruler and alignment frame

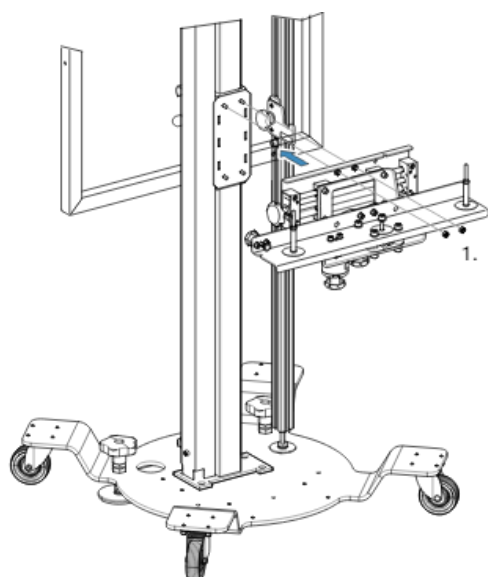


- 2) Adjust the alignment unit via the lateral offset so that one of the two threaded bolts on the bottom side becomes accessible.

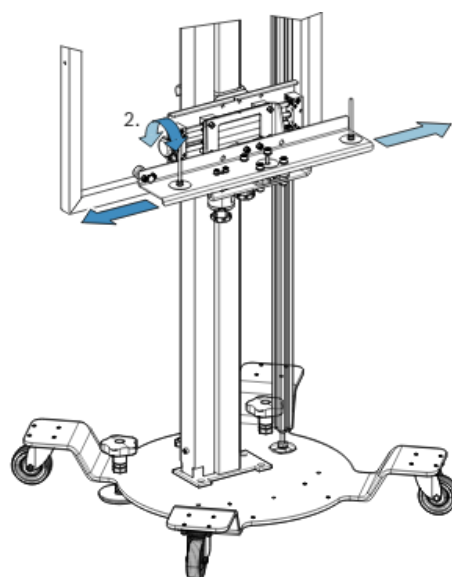


## 2.6 MOUNTING THE ALIGNMENT UNIT

- 1) Place the alignment unit on the 4 threaded bolts on the post and fasten it with 2 nuts on the upper two threaded bolts.

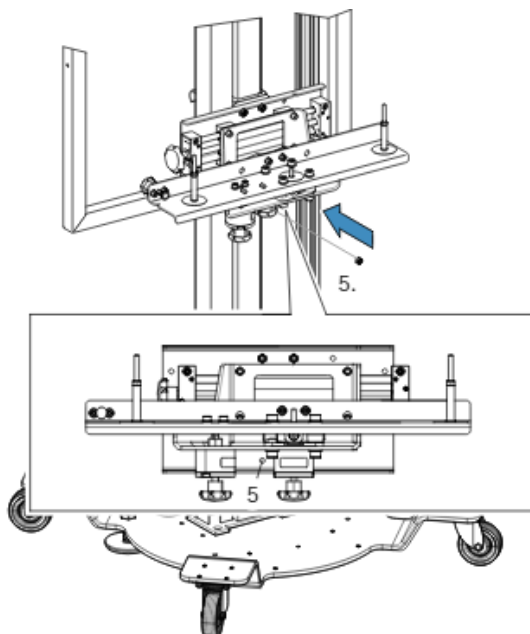


- 3) Fasten a nut to the exposed threaded bolt.



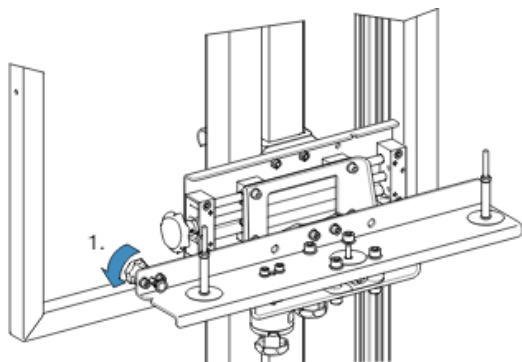
- 4) Adjust the lateral offset of the alignment unit again so that the second threaded bolt becomes accessible.

- 5) Fasten a nut to the exposed threaded bolt.



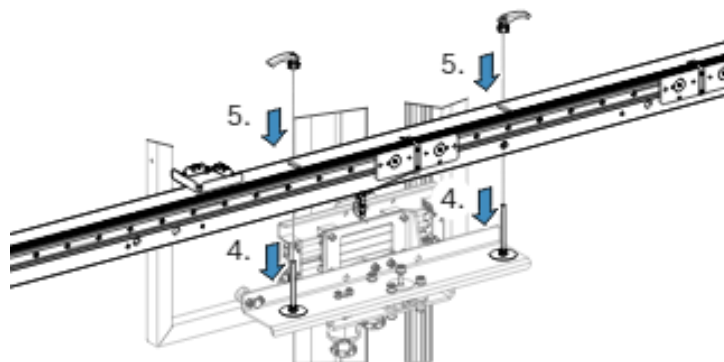
## 2.7 MOUNTING THE INDICATOR BAR

- 1) Unscrew the yaw angle adjusting screw as far as the stop.



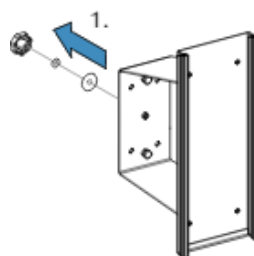
- 2) Place the indicator bar on the alignment unit through the 2 guide screws.
- 3) Make sure the spring protruding from the indicator bar is straight against the alignment unit.

- 4) Secure the indicator bar with 2 tensioning screws.

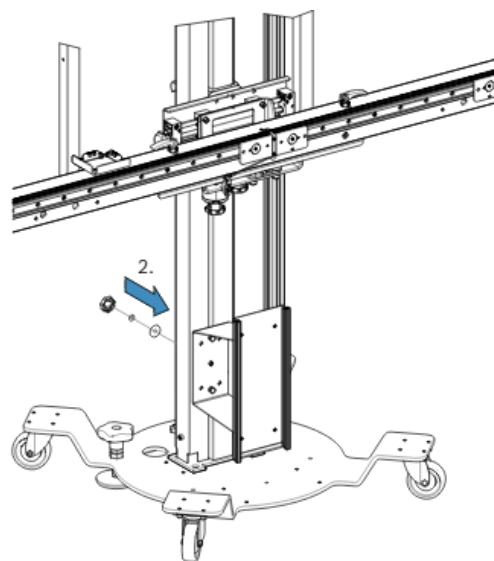


## 2.8 MOUNTING THE CONTACT PLATE

- 1) Remove star knob screw and 2 plain washers from the contact plate.

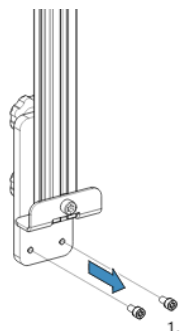


- 2) Mount the contact plate so that the edge protection is pointing downwards and the rating plate on the back is easy to read.
- 3) Fasten the contact plate to the post using the star knob screw and 2 plain washers.

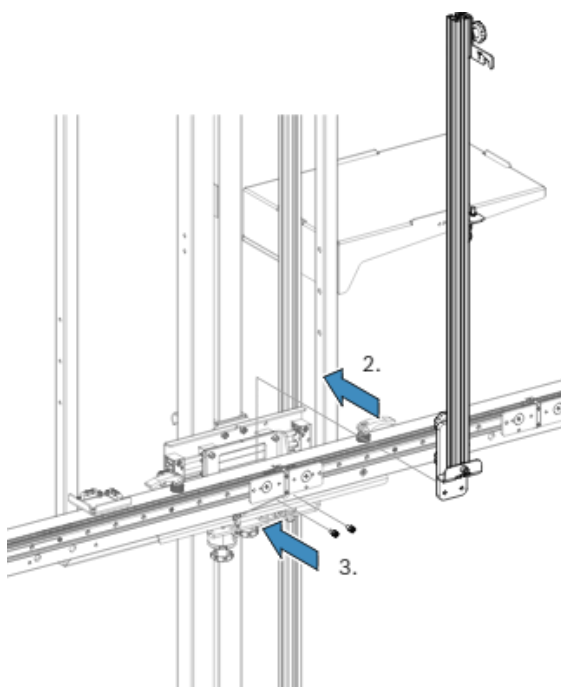


## 2.9 INSTALLING THE MOUNT FOR LARGE CALIBRATION BOARDS

- 1) Remove 2 screws from the retaining plate.



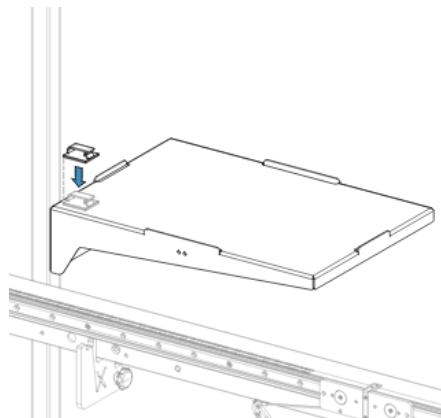
- 2) Insert the retaining plate with mount behind the indicator bar so that the bracket rests flat on the indicator bar.



- 3) Fasten the retaining plate with the two screws previously removed through the recesses provided in the indicator bar.
- 4) If the position of the holes in the retaining plate does not fit the screws, the star handle screw on the mount has to be loosened and the height of the retaining plate adjusted slightly.

## 2.10 MOUNTING THE STRAIN RELIEF FOR USB CABLE

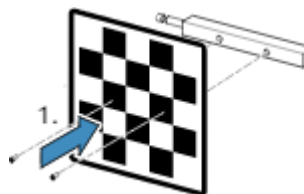
- 5) Remove any dust or grease residues from the bonding surface.
- 6) Remove the backing on the adhesive strip, and apply the strain relief with a distance of approx. 5 mm to both sides according to the drawing.



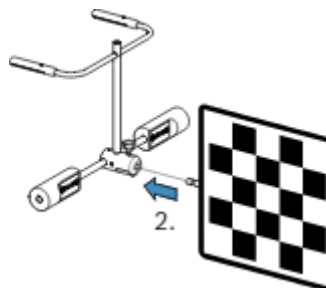
- 7) Secure the USB connecting cable in the strain relief with the second to last spiral winding.

## 2.11 ASSEMBLING FRONT REFERENCE BOARD (CTA 400-1)

- 1) Use 2 screws to fasten the reference board CTA 400-1 to the reference board adapter.



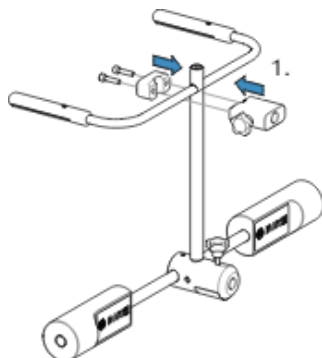
- 2) Insert the reference board with reference board adapter into the wheel holder and fasten with star knob screw.



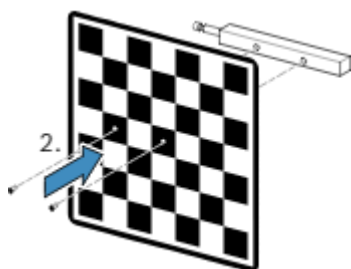


## 2.12 ASSEMBLING REAR REFERENCE BOARD (CTA 403-1)

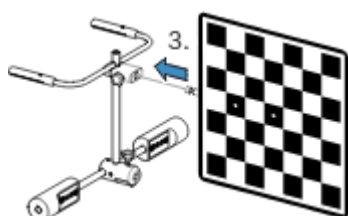
- 1) Mount reference board holder with 2 screws on top of wheel holder, just under the "U" shaped bar.



- 2) Use 2 screws to fasten reference board CTA 403-1 to the reference board adapter.



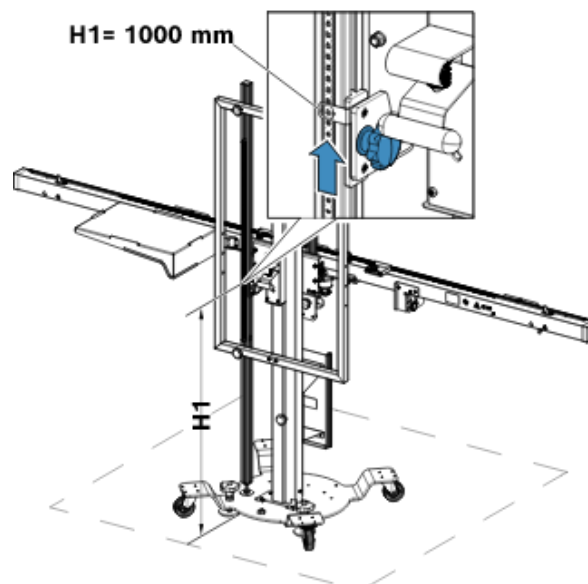
- 3) Insert the reference board with reference board adapter into the wheel holder and fasten with star knob screw.



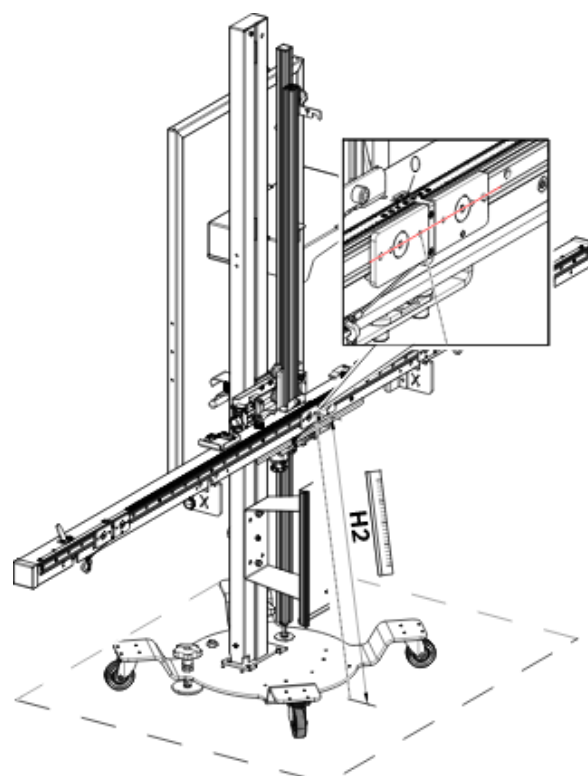
## 3 IMPORTANT: CHECKING AND COMPENSATING FOR HEIGHT OFFSET

*Note: This height is set from the factory and does not need to be adjusted upon initial setup.*

- 1) Set the height H1 on the ruler to 1000 mm and carefully lower the indicator bar to the stop.



- 2) Set the middle slide to "0".
- 3) Release the brakes until the base plate is not lifted.
- 4) Measure the height H2 from one of the two threaded holes of the middle slide past the base plate. The tape measure/folding ruler must be in contact with the base plate.

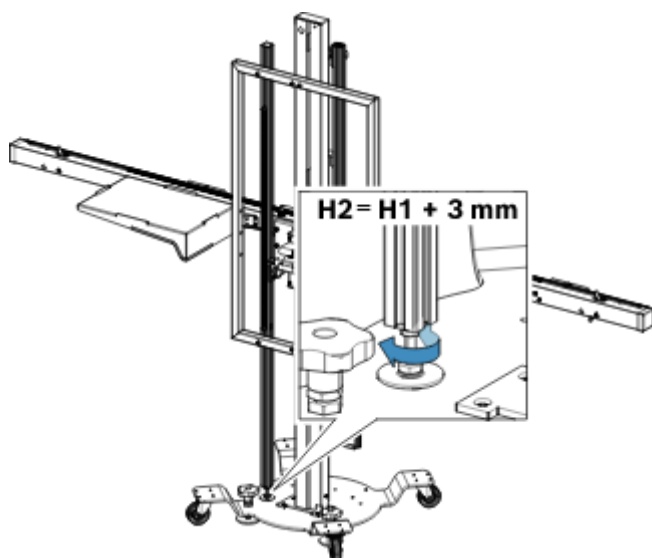


- 5) The measured height H2 must correspond to the set height H1 plus

3 mm ( $\pm 0.5$  mm tolerance) ( $H2 = H1 + 3$  mm)

- 6) If height H2 does not correspond to height  $H1 + 3$  mm: Compensate for the offset via the positioning foot on the ruler.

To be able to set the height offset on the ruler, the 2 screws, which fasten the ruler to the mounting frame have to be loosened.



## 4 INITIALIZING CAMERAS USING QR CODES

- The "Bosch ADAS Positioning" software is installed
- 2x camera QR codes are available

The "Bosch ADAS Positioning" software guides you step by step through the camera initialization.

- 1) Launch "Bosch ADAS Positioning".
- 2) Plug the USB connecting cable into the laptop/tablet.
  - The camera will be initialized.
  - The camera image will be displayed.
- 3) Read and follow the instructions on the screen.

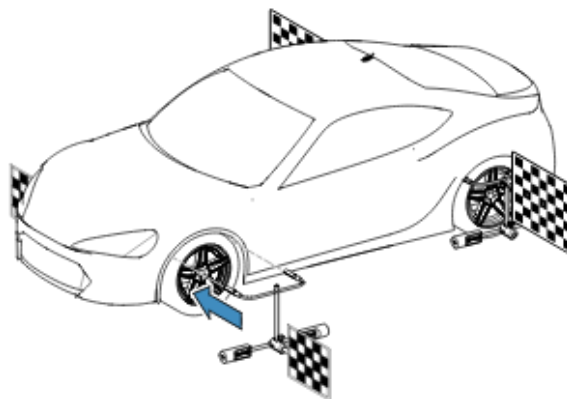
- The two QR codes are specific to the respective camera. If the camera is not recognized during camera initialization, use the other QR code.
  - Both cameras are ready for operation.
  - The serial numbers of the cameras are saved in the settings.

## 5 OPERATION

### 5.1 MOUNTING THE WHEEL CLAMP WITH REFERENCE BOARD

Before positioning the SCT 418, make sure that there are no objects in the calibration area that can be damaged by the indicator bar.

- 1) With its prongs (1), place 4x wheel holders on the tire tread.



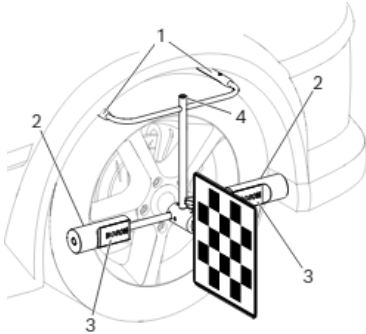
Rear wheels: Use reference boards CTA 403-1.

Front wheels: Use reference board CTA 400-1.

Calibration procedures that use the front bumper as a reference point do not require wheel holders to be attached to the front wheels.

- 2) Make sure the spacers (2) touch the sidewall of the tire.

The spacer must touch the sidewall of the tire. If the spacer touches the wheel, the reference board is not positioned accurately, and it is not possible to align the SCT 418 accurately.



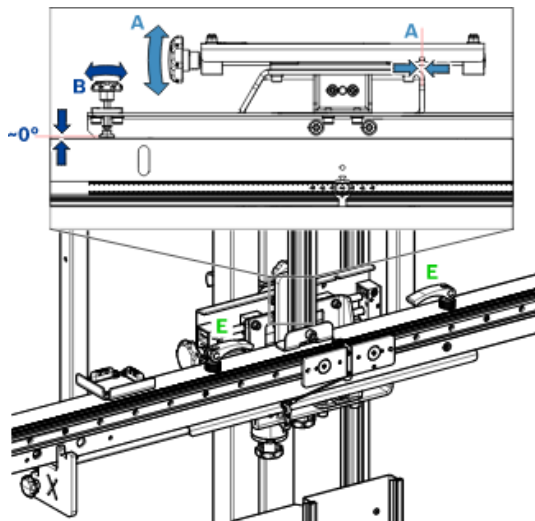
- 3) In case of a protruding wheel: Turn the spacer until the recess (3) in the spacer faces the rim.
- 4) Level the wheel clamp accurately using the spirit level (4).

If the wheel holder is not accurately leveled, the SCT 418 cannot be aligned accurately and the vehicle camera cannot be calibrated accurately.

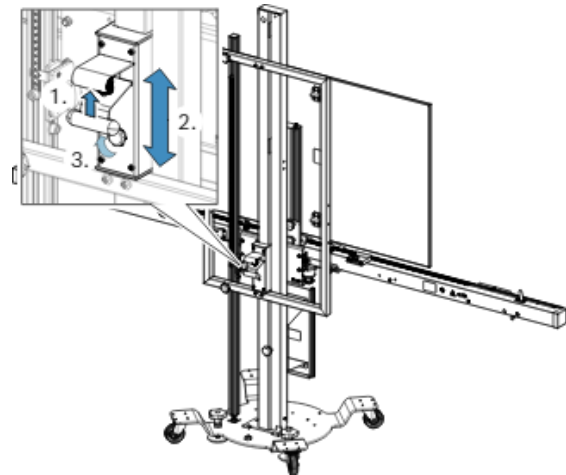
## 5.2 COARSE ALIGNMENT OF THE SCT418

In addition to the alignment of the calibration device, vehicle-specific properties also affect the calibration. This is why additional instructions from the respective vehicle manufacturer must be observed before coarse alignment!

- 1) Loosen the clamping screws (E).
- 2) Set the lateral offset (A) and yaw angle (B) to "0" on the alignment unit.



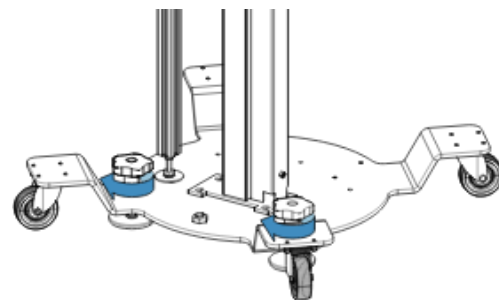
- 3) Tighten the clamping screws (E).
- 4) Set the height stop to the required value (e.g. 1400 mm) and tighten with the star knob screw.



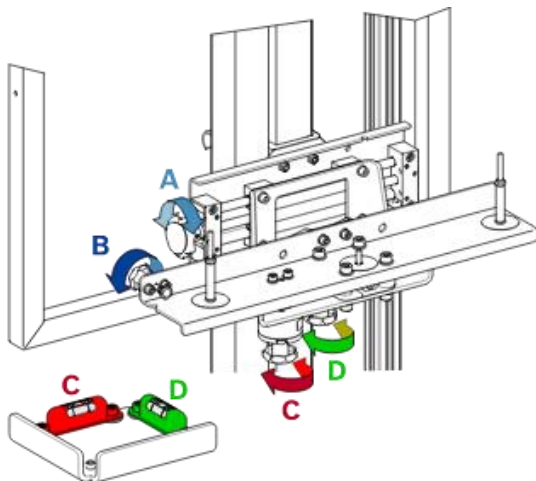
- 5) Lower the indicator bar to the height stop.
- 6) Tighten the indicator bar with the star bolt screw.

The indicator bar can be damaged if the SCT 418 is pulled or pushed by the indicator bar.

- 7) Position the SCT 418 in front of the vehicle using the alignment frame and set the camera position (1, 2, 3) such that the calibration boards are recognized by the "Bosch ADAS Positioning" software.
- 8) Align the SCT 418 in front of the vehicle and make sure that:
  - Yaw angle is less than 1°
  - Distance is in line with manufacturer's specification  $\pm 10$  mm
  - Lateral offset is max. 24 mm from zero point
- 9) Turn the brakes of the base plate downwards until the rollers have approx. 2 mm more clearance to the ground.



### 5.3 FINE ALIGNMENT OF THE SCT418



- 1) Adjust the pitch angle (D) using the spirit level (D).
- 2) Adjust the roll angle (C) using the spirit level (C).
- 3) Check the distance to the vehicle and correct if necessary.
- 4) Adjust the yaw angle via the yaw angle screw (B).

The lateral offset must be less than 30 mm after pre-setting the yaw angle, as the alignment unit can compensate for a maximum lateral offset of 40 mm.

- 5) If the lateral offset greater than 30 mm: Reposition the SCT 418 and repeat the fine alignment.
- 6) Adjust the lateral offset (A) to "0".

### 5.4 ATTACHING CALIBRATION BOARDS

- 1) Position the calibration board in front of the magnetic holder on the slide, observing the position of the mounting pins on the calibration board and on the slide.

The calibration board will be pulled against the left slide by magnetic force.

The mounting pin on the calibration board and the mounting pin on the slide will engage correctly.

- 2) Attach the retaining cable to a lock ring on the back of the calibration board.

The calibration board is now secured and fixed in place.

- 3) Check the position of the calibration boards.

### 5.5 PERFORMING A VEHICLE CALIBRATION WITH THE SCT418

- 1) Vehicle Calibration with the SCT 418
  - a) Start the diagnostic software.
  - b) Perform calibration.
  - c) Follow the instructions in the software.
- 2) Following calibration
  - a) Remove the calibration boards.
  - b) Release the locking device of the indicator bar and lower the indicator bar so that no head injuries can occur.

The indicator bar can be damaged if the SCT 418 is pulled or pushed by the indicator bar.

1. If the SCT 418 is not used for an extended period, [Moving the indicator bar to storage position](#).
2. Use the alignment frame to move the SCT 418 to the desired storage location.

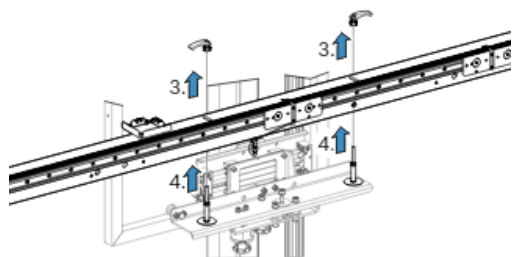
### 5.6 MOVING THE INDICATOR BAR TO THE STORAGE POSITION

- 1) Disconnect the USB connecting cable.
- 2) Remove the clamping screws (E).

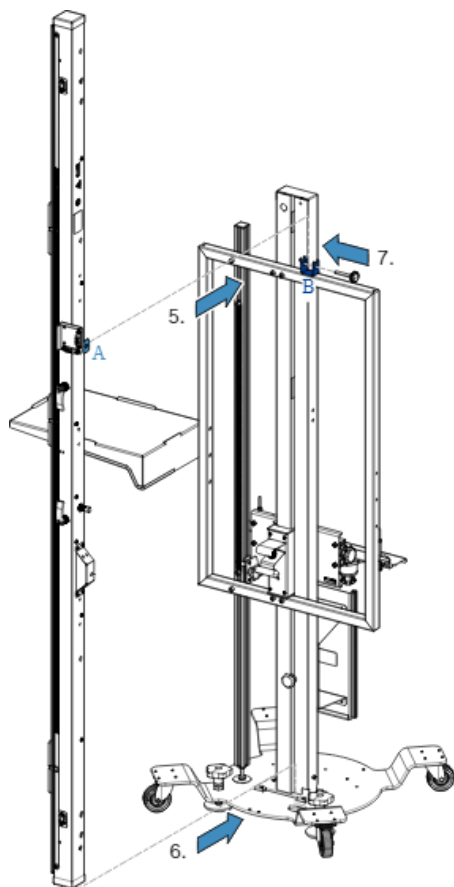
When repositioning the indicator bar, make sure that no bystanders are injured or nearby objects damaged.

The indicator bar or the measuring technology installed in it can be damaged

if the indicator is set down roughly or dropped.



- 3) Lift the indicator bar off the alignment unit.



- 4) Insert mount (A) on the indicator bar in mount (B) on the alignment frame
- 5) Align the indicator bar so that the rubber buffer is located in the provided recess in the base plate.
- 6) Tighten the indicator bar with the star bolt screw.

## 6 MAINTENANCE

### 6.1 CLEANING

Coarse workshop rags and abrasive cleaning agents may damage the product.

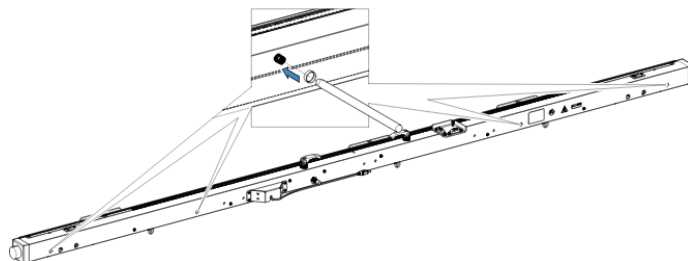
- Use only neutral cleaning agents and soft cloths to clean the product.
- Clean the lenses of the cameras with soft and dry cloths.

### 6.2 EXCHANGING SPRING-LOADED THRUST PIECES FOR DETENT POSITION

Spring-loaded thrust pieces predefine the detent positions for the slides and can be removed or exchanged if required.

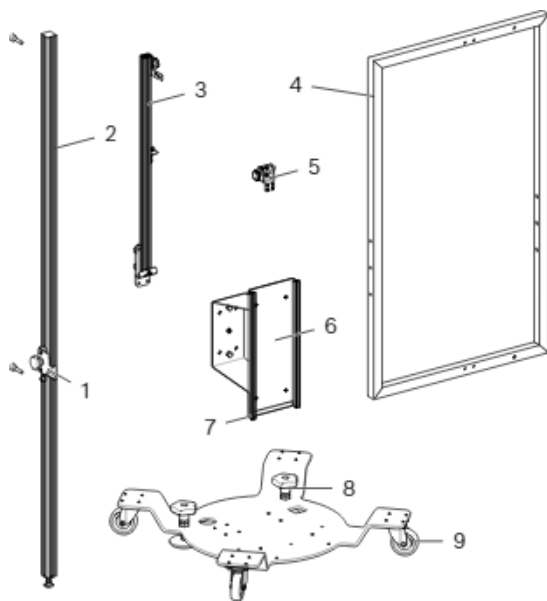
To change the spring-loaded thrust piece for the zero point position, the measuring bar must be removed from the alignment unit.

To avoid damage to the USB connecting lines in the measuring bar, the spring-loaded thrust pieces must be pressed out with a blunt object.



1. Push the spring-loaded thrust piece out from behind through the respective recess in the measuring bar with a blunt object.
2. Push the new spring-loaded thrust piece into the measuring bar from the front.

## 7 SPARE PARTS FOR SCT418



(1) Ruler pointer (1 681 072 081)

(2) Ruler (1 682 329 111)<sup>\*)</sup>

(3) Optional Mount for large calibration boards  
(1 688 005 291)<sup>\*)</sup> (NOT INCLUDED in SP09.000.028)

(4) Alignment frame (1 688 005 286)

(5) Mount for parked position (1 688 005 293)

(6) Contact plate (1 681 320 095)

(7) Contact plate edge protection  
(1 687 010 742)

(8) Brake (1 687 010 765)<sup>\*)</sup>

(9) Roller (1 687 010 764)<sup>\*)</sup>

(10) Optional Retaining adapter X incl. mounting bracket (1 687 016 239) (NOT INCLUDED)

(11) Optional Star handle screw for retaining adapter X (1 686 621 078) (NOT INCLUDED)

(12) Optional Retaining Adapter X  
(1 685 720 424) (NOT INCLUDED)

(13) Slide rail end cap (1 683 212 040)

(14) Clamping screw (1 688 132 055)

(15) Right slide (as viewed from the front) on the indicator bar (1 688 030 215)

(16) Center slide (as viewed from the front) on the indicator bar (1 688 030 220)

(17) Left slide (as viewed from the front) on the indicator bar (1 688 030 222)

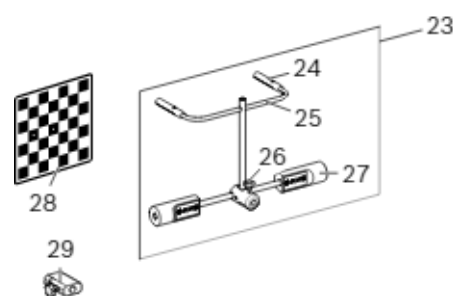
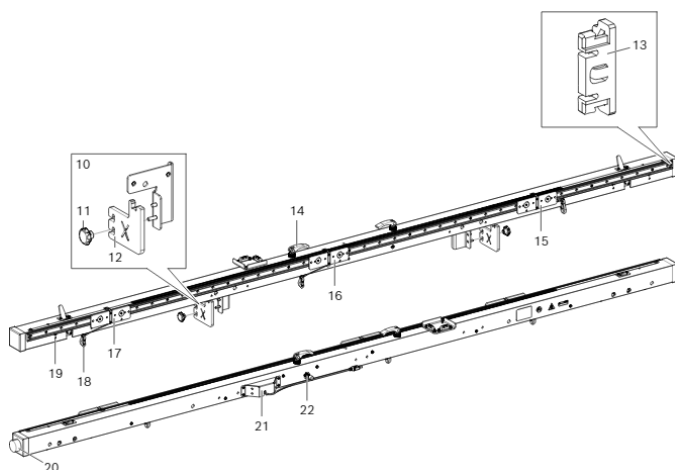
(18) Safety cable for calibration board  
(1 684 712 028)

(19) Spring-loaded thrust piece (5x)  
(1 687 033 027)<sup>\*)</sup>

(20) Indicator bar rubber buffer  
(1 688 990 091)<sup>\*)</sup>

(21) USB hub cover (1 687 370 896)

(22) Pressure spring on indicator bar  
(1 684 614 012)



(23) Wheel Clamp CTA 100-1 (1 688 120 190)<sup>\*)</sup>

(24) Wheel Clamp tire support (1 687 016 230)

(25) Wheel Clamp bracket (1 687 016 228)

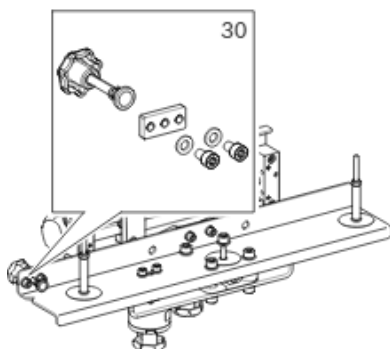
(26) Wheel Clamp star handle screw  
(1 686 621 083)

(27) Wheel Clamp spacer (2x) (1 687 016 229)

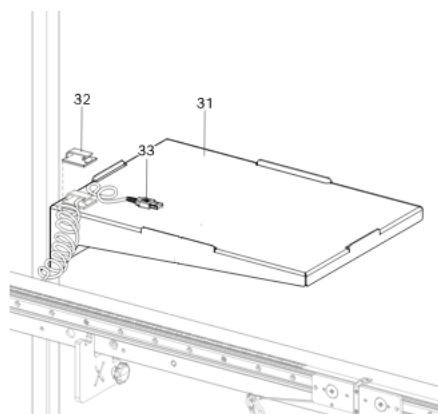


(28) Calibration board CTA 403-x (1 681 098 019)

(29) Support clamp (1 688 040 335)



(30) Yaw angle adjustment spare parts set (1 687 010 766)



(31) Shelf (1 681 321 379)

(32) Cable clip spare parts set (10x) (1 687 010 778)

(33) USB connecting cable – USB 3.0 type A (1 684 465 899)

<) Wearing part

## 8 TROUBLESHOOTING

### 8.1 THE “BOSCH ADAS POSITIONING” SOFTWARE DISPLAYS NO CAMERA IMAGE

The USB cables are not properly connected

- Make sure that the USB cables are properly connected to the laptop/tablet.

- Make sure that the USB cables are properly connected to the cameras.

Camera lens obstructed

- Make sure that the camera lenses are not obstructed.

### 8.2 THE QR CODE CANNOT BE USED TO INITIALIZE THE CAMERA

Incorrect QR code

- Make sure that the serial number of the camera matches the serial number on the QR code printout.

The QR code is not properly placed in front of the camera

- Position the entirety of the QR code inside the green box in the camera image during initialization.
- Level the QR code in front of the camera.
- Make sure that the QR code is not distorted or folded.

Insufficient ambient light

- Make sure that the QR code is adequately illuminated.

### 8.3 THE CAMERAS DO NOT RECOGNIZE THE REFERENCE BOARD

Inadequate ambient light

The cameras are affected by ambient light. The "Bosch ADAS Positioning" software can compensate for inadequate ambient light to a certain degree. Too little or too bright ambient light may prevent the cameras from recognizing the reference boards.

- Make sure that the cameras are not facing a powerful light source. If necessary, darken the area behind the reference boards.
- Make sure that the top of the vehicle is not exposed to excessively bright light.
- Make sure that there is sufficient ambient light.

- Make sure that the camera is not exposed to reflected glare.

The reference boards are not recognized

- Make sure that the reference boards are fully visible in the camera image.
- Make sure that the reference boards are not partially or fully obstructed (for example by cables or the bumper).
- Tilt the reference board slightly back to make sure no shadow is cast on the reference board pattern.

The camera lens is contaminated

- Use a lint-free cloth to clean the camera lens carefully.

The reference boards have not been positioned at the right time

- Position the reference boards as indicated by the "Bosch ADAS Positioning" software.

- Check the calibration board for cracks.
- Check the calibration board for warping.
- Make sure that the calibration board pattern is fully visible.
- Check the pattern for scratches.

## 8.4 THE FRONT CAMERA CANNOT BE CALIBRATED

Inadequate ambient light

- Make sure that there is sufficient ambient light.
- Make sure that no excessive lighting or reflections hit the calibration panel or vehicle camera.

Incorrect calibration board

- Make sure the correct calibration board is being used.

The calibration board is fitted incorrectly

- Make sure the calibration board is positioned correctly.
- Correct height.
- Correct horizontal offset.
- Correct orientation (right side up).

Damaged calibration board

- Make sure that the calibration board is not damaged.