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IMPORTANT

Before operating or maintaining this unit, please read this manual carefully, paying extra attention to the safety warnings and precautions.

For Services and Support



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For details, please refer to the *Technical Support* section in this manual.

Safety Information

For your own safety and the safety of others, and to prevent damage to the device and vehicles upon which it is used, it is important that the safety instructions presented throughout this manual be read and understood by all persons operating or coming into contact with the device.

There are various procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the person doing the work. Because of the vast number of test applications and variations in the products that can be tested with this equipment, we cannot possibly anticipate or provide advice or safety messages to cover every circumstance. It is the automotive technician's responsibility to be knowledgeable of the system being tested. It is crucial to use proper service methods and test procedures. It is essential to perform tests in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area, the device being used, or the vehicle being tested.

Before using the device, always refer to and follow the safety messages and applicable test procedures provided by the manufacturer of the vehicle or equipment being tested. Use the device only as described in this manual. Read, understand, and follow all safety messages and instructions in this manual.

Safety Messages

Safety messages are provided to help prevent personal injury and equipment damage. All safety messages are introduced by a signal word indicating the hazard level.

DANGER

Indicates an imminently hazardous situation that if not avoided, will result in death or serious injury to the operator or to bystanders.

WARNING

Indicates a potentially hazardous situation that if not avoided, could result in death or serious injury to the operator or to bystanders.

Safety Instructions

The safety messages herein cover situations Autel is aware of. Autel cannot know, evaluate or advise you as to all of the possible hazards. You must be certain that any condition or service procedure encountered does not jeopardize your personal safety.

DANGER

When an engine is operating, keep the service area WELL VENTILATED or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to serious personal injury or loss of life.



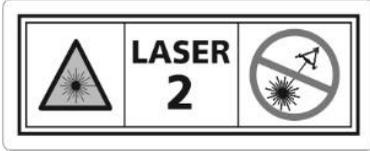
SAFETY WARNINGS

- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area, for exhaust gases are poisonous.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while testing.
- Be extra cautious when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Keep a fire extinguisher suitable for gasoline, chemical, and electrical fires nearby.
- Do not connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the test equipment dry, clean, free from oil, water or grease. Use a mild detergent on a clean cloth to clean the outside of the equipment as necessary.
- Do not drive the vehicle and operate the test equipment at the same time. Any distraction may cause an accident.
- Refer to the service manual for the vehicle being serviced and adhere to all diagnostic procedures and precautions. Failure to do so may result in personal injury or damage to the test equipment.
- To avoid damaging the test equipment or generating false data, make sure the vehicle battery is fully charged and the connection to the vehicle DLC is clean and secure.
- Do not place the test equipment on the distributor of the vehicle. Strong electromagnetic interference can damage the equipment.

LASER RADIATION



Never point the laser beam at people, particularly at their face or eyes.



The term laser equipment refers to devices, systems or test set-ups generating, transmitting or employing laser radiation.

The class of the laser device indicates the level of potential danger associated with its accessible laser radiation. In the case of class 2 laser equipment, the accessible laser radiation is in the visible spectral range (400 nm to 700 nm).

The eyelids provide sufficient protection for inadvertent brief eye contact with such laser radiation. Class 2 laser devices may therefore be used without further precautionary measures if the user is definitely not required to either look into the laser intentionally for extended periods of time (>0.25 s) or repeatedly look into the laser or at directly reflected laser radiation.

WARNING

Taking medication or alcohol consumption will slow down the reflex action of the eyelids. This results in a particular risk. Wearing laser safety glasses of protection level R1 is recommended for anyone who is under the influence of medication.

Persons who are not trained to work with laser equipment and on the hazards of laser radiation, may not enter workplaces where work takes place with laser beams nor a laser emitting device.

Safety measures:

- The operator is to place the warning "Warning of Laser beam" at eye level and in a visible manner at the measuring station.
- Do not look directly into laser source.
- The operator must comply with the intended use.

Use protective boots!

When performing work with risk of injury to the feet, notice must be given of the necessary wearing of protective shoes. Foot injuries can, for example, be caused by falling over or falling tools or work items, trapping the foot, occurrence of nails or metal shavings in the soles, etc.

Safety measures:

- The operator is to place the mandatory sign "Use Safety Shoes" at eye level and in a clearly visible manner at the measuring station.
- Operators should always wear the recommended protective shoes.

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1 Using This Manual

This manual contains device usage instructions.

Some illustrations shown in this manual may contain modules and optional equipment that are not included in your system.

Conventions

The following conventions are used.

Bold Text

Bold text is used to highlight selectable items such as buttons and menu options.

Example:

- Tap **OK**.

Notes and Important Messages

Notes

A **NOTE** provides helpful information such as additional explanations, tips, and comments.

Example:

NOTE

New batteries reach full capacity after approximately 3 to 5 charging and discharging cycles.

Important

IMPORTANT indicates a situation that if not avoided, may result in damage to the tablet or vehicle.

Example:

IMPORTANT

Keep the cable away from heat, oil, sharp edges and moving parts. Replace damaged cables immediately.

Hyperlink

Hyperlinks, or links, that direct you to other related articles, procedures, and illustrations are available in electronic documents. Blue italic text indicates a selectable hyperlink and blue underlined text indicates a website link or an email address link.

Illustrations

Illustrations used in this manual are samples, the actual testing screen may vary for each vehicle being tested. Observe the menu titles and on-screen instructions to make correct option selection.

2 General Introduction

Autel MaxiSys ADAS MA600 is designed to calibrate Advanced Driver-Assistance Systems quickly and easily. The radar and camera used by Lane Departure Warning, Lane Keeping Assist System, and Night Vision System necessitate the utmost precision when calibrating following many camera-related repairs. The MA600 displays vehicle-specific, step-by-step instructions and detailed illustrations to enable the technician to perform efficient and accurate calibrations.

MA600 currently covers vehicles including Volvo, VOLKSWAGEN, Audi, Bentley, VOLKSWAGEN_CV, Lamborghini, Seat, Skoda, FAW Audi, FAW VOLKSWAGEN, SAIC VOLKSWAGEN, SAIC VOLKSWAGEN SKODA, Porsche, Infiniti, Nissan, DF Nissan, DF Venucia, BMW MINI, BMW, BMW Brilliance, Rolls-Royce, Toyota, Lexus, Toyota China, Hyundai, Kia, BJ Hyundai, Dongfeng Yueda Kia, Honda, Acura, DF Honda, GZ Honda, Benz, Sprinter, Smart, Maybach, Ford, Ford EU, Ford China, Mazda, Mazda China, Chrysler, Dodge, Jeep, Peugeot, Citroen, DF Peugeot, DF Citroen, DS, Renault, Samsung, Land Rover, Jaguar, GM USA, GM China, Opel, Vauxhall, Fiat, Alfa, and Lancia.

Calibration Kit (for LDW System)

Calibration Frame

The crossbar can be removed from the column and be folded in three sections. Calibration target boards in different types and sizes can be easily attached to the crossbar via the laser holding plate, sliding plates, and foldable target board holders.

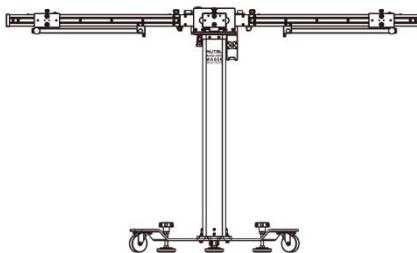


Figure 2-1 Calibration Frame AUTEL-CSC1500

Two-line Laser

The Two-line Laser can be used to aid in positioning the calibration frame when the vehicle chassis is too low for the Five-line Laser to be used.

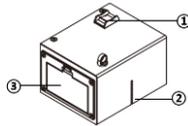


Figure 2-2 Two-line Laser AUTEL-CSC1500/03

1. Switch
2. Laser gap
3. Battery cover

Five-line Laser

The Five-line Laser is used for aiming laser lines in five directions to position the calibration frame and vehicle.

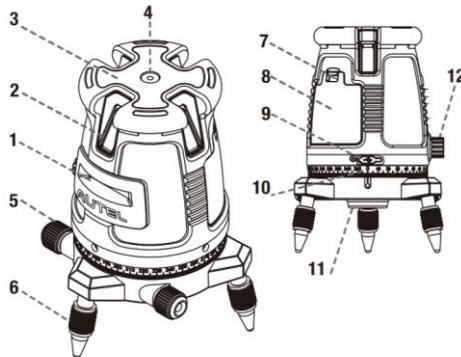


Figure 2-3 Five-line Laser AUTEL-CSC1500/05

1. Horizontal laser output window
2. Vertical laser output window
3. Keypad
4. Surface level
5. Fine adjustment knob
6. Adjustable support legs

7. Battery cover
8. Battery compartment
9. Dust cover/charging interface
10. Graduated scale
11. 5/8" Tripod threaded adaptor
12. Pendulum safety lock

Storage Bracket

The Storage Bracket is for storing larger target boards while not in use.

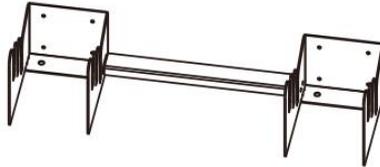


Figure 2-4 Storage Bracket AUTEL-CSC1500/09

Plumb Line

The Plumb Line is for positioning the front and rear center points of the vehicle which assist in the correct positioning of the Five-line Laser.



Figure 2-5 Plumb Line AUTEL-CSC1500/07

L-shaped Positioning Bracket

The L-shaped Positioning Bracket aids in locating the center of the front wheels to correctly position the calibration frame.

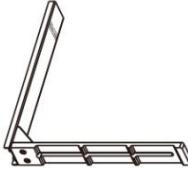


Figure 2-6 L-shaped Positioning Bracket AUTEL-CSC1500/04

Laser Assisted Reflector

The Laser Assisted Reflector is for positioning the center line by ensuring the front and rear center points of the vehicle are on the same line.



Figure 2-7 Laser Assisted Reflector AUTEL-CSC1500/06

Laser Measurement Unit

The Laser Measurement Unit is used to measure the height from the vehicle's mounting target board to the ground to assist in calibrating the front camera.



Figure 2-8 Laser Measurement Unit

Laser Reflective Board

The Laser Reflective Board is used to position the center line by confirming front and rear center points of the vehicle are on the same line.

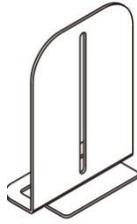


Figure 2-9 Laser Reflective Board AUTEL-CSC1500/08

Front Camera Calibrator

The Front Camera Calibrator, as an alternative to the CSC0601/09, is used to calibrate the LDW systems for Hyundai and KIA vehicles.



Figure 2-10 Front Camera Calibrator CSC0601/09

Calibration Kit (for NV System)

NV Calibrator (Mercedes Benz)

NV calibrator AUTEL-CSC0803/01 is used in the calibration of NV Systems on Mercedes Benz vehicles.

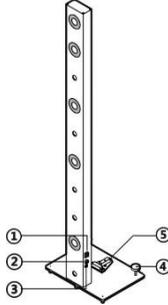


Figure 2-11 NV Calibrator (Mercedes Benz) CSC0803/01

1. Power Switch
2. Fuse Socket
3. DC Power Supply Input Port
4. Horizontal Adjusting Screws

12V Power Adapter

The 12V power adapter CSC0500/08 is for the Mercedes Benz NV Calibrator (CSC0803/01).

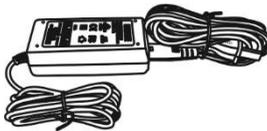


Figure 2-12 12V Power Adapter CSC0500/09

Target Board for Lane Departure Warning (LDW) System

Target Board AUTEL-CSC0601/08-L

Target Board AUTEL-CSC0601/08-L for LDW system calibration on Honda vehicles (1).

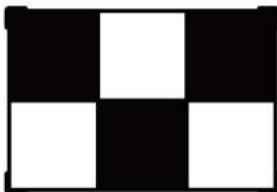


Figure 2-13 Target Board AUTEL-CSC0601/08-L

Target Board AUTEL-CSC0601/08-R

Target Board AUTEL-CSC0601/08-R LDW system calibration on Honda vehicles (2).

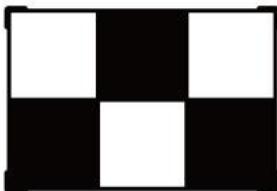


Figure 2-14 Target Board AUTEL-CSC0601/08-R

Target Board AUTEL-CSC0601/05

Target Board AUTEL-CSC0601/05 for LDW system calibration on Honda vehicles (3).



Figure 2-15 Target Board AUTEL-CSC0601/05

Target Board AUTEL-CSC0601/11

Target Board AUTEL-CSC0601/11 for LDW system calibration on Toyota and Lexus vehicles (1).

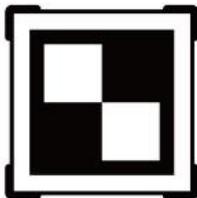


Figure 2-16 Target Board AUTEL-CSC0601/11

Target Board AUTEL-CSC0601/15

Target Board AUTEL-CSC0601/15 for LDW system calibration on Toyota vehicles (2).

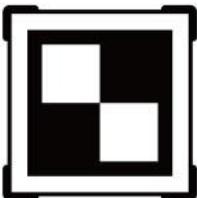


Figure 2-17 Target Board AUTEL-CSC0601/15

Target Board AUTEL-CSC0601/09

The Target Board AUTEL-CSC0601/09 for LDW system calibration on Hyundai and KIA vehicles.

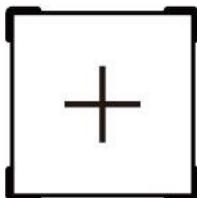


Figure 2-18 Target Board AUTEL-CSC0601/09

Target Board AUTEL-CSC0601/02

Target Board AUTEL-CSC0601/02 for LDW system calibration on Mercedes Benz vehicles (1).

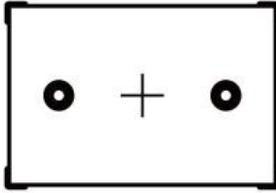


Figure 2-19 Target Board AUTEL-CSC0601/02

Target Board AUTEL-CSC0601/19

Target Board AUTEL-CSC0601/19 for LDW system calibration on Mercedes Benz vehicles (2).

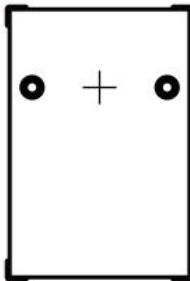


Figure 2-20 Target Board AUTEL-CSC0601/19

Target Board AUTEL-CSC0601/03-L

Target Board AUTEL-CSC0601/03-L for LDW system calibration on Nissan vehicles (1).

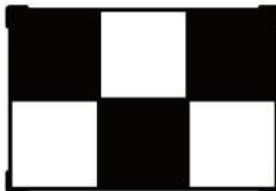


Figure 2-21 Target Board AUTEL-CSC0601/03-L

Target Board AUTEL-CSC0601/03-R

Target Board AUTEL-CSC0601/03-R for LDW system calibration on Nissan vehicles (2).

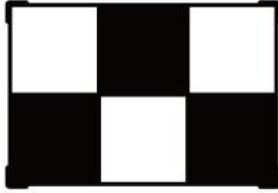


Figure 2-22 Target Board AUTELE-CSC0601/03-R

Target Board AUTELE-CSC0601/04-L

Target Board AUTELE-CSC0601/04-L for LDW system calibration on Nissan vehicles (3).

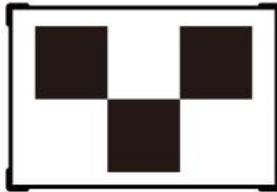


Figure 2-23 Target Board AUTELE-CSC0601/04-L

Target Board AUTELE-CSC0601/04-R

Target Board AUTELE-CSC0601/04-R for LDW system calibration on Nissan vehicles (4).

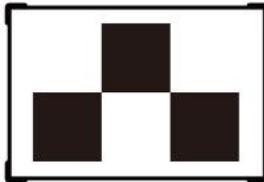


Figure 2-24 Target Board AUTELE-CSC0601/04-R

Target Board AUTELE-CSC0601/06-L

Target Board AUTELE-CSC0601/06-L for LDW system calibration on Nissan and Infiniti vehicles (1).

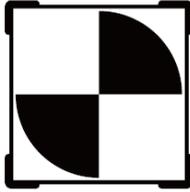


Figure 2-25 Target Board AUTEL-CSC0601/06-L

Target Board AUTEL-CSC0601/06-R

Target Board AUTEL-CSC0601/06-R for LDW system calibration on Nissan and Infiniti vehicles (2).

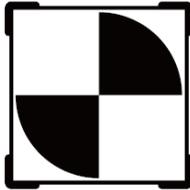


Figure 2-26 Target Board AUTEL-CSC0601/06-R

Target Board AUTEL-CSC0601/12

Target Board AUTEL-CSC0601/12 for LDW system calibration on Mazda vehicles (1).

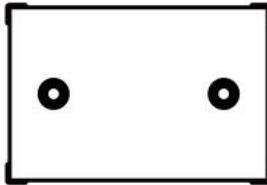


Figure 2-27 Target Board AUTEL-CSC0601/12

Target Board AUTEL-CSC0601/13-L

Target Board AUTEL-CSC0601/13-L is used for Lane Departure Warning system calibration of Mazda vehicles (2).

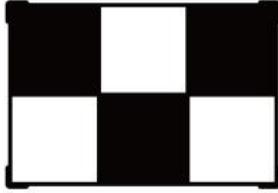


Figure 2-28 Target Board AUTEL-CSC0601/13-L

Target Board AUTEL-CSC0601/13-R

Target Board AUTEL-CSC0601/13-R for LDW system calibration on Mazda vehicles (3).

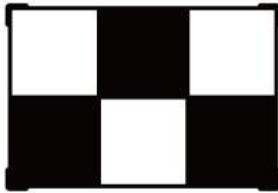


Figure 2-29 Target Board AUTEL-CSC0601/13-R

Target Board AUTEL-CSC0601/22-L

Target Board AUTEL-CSC0601/22-L for LDW system calibration on Mitsubishi vehicles (1).

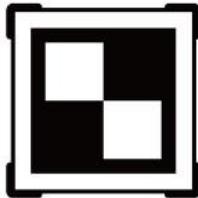


Figure 2-30 Target Board AUTEL-CSC0601/22-L

Target Board AUTEL-CSC0601/22-R

Target Board AUTEL-CSC0601/22-R for LDW system calibration on Mitsubishi vehicles (2).

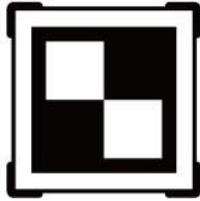


Figure 2-31 Target Board AUTEL-CSC0601/22-R

Pattern Board (for LDW System)

Pattern Board AUTEL-CSC0601/07

Pattern Board AUTEL-CSC0601/07 LDW calibration for Hyundai and KIA vehicles. Target board holders used to secure board.

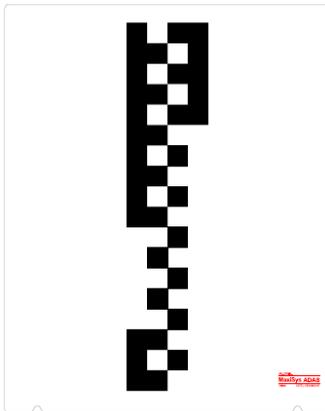


Figure 2-32 Pattern Board AUTEL-CSC0601/07

Pattern Board AUTEL-CSC0601/01

Pattern Board AUTEL-CSC0601/01 for Lane Keeping Assist (LKA) System calibration on Volkswagen and Porsche vehicles. Target board holders are used to secure board.

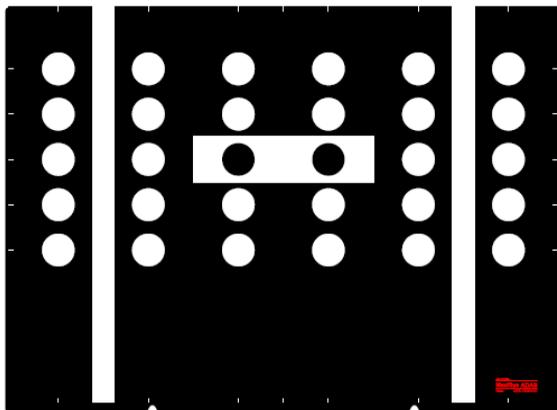


Figure 2-33 *Pattern Board AUTEL-CSC0601/01*

Pattern Board AUTEL-CSC0601/14

Pattern Board AUTEL-CSC0601/14 is used for calibrating LKA systems on Subaru vehicles. Target board holders are used to secure board.



Figure 2-34 *Pattern Board AUTEL-CSC0601/14*

Technical Specifications

Two-line Laser

Table 2-1 Two-line Laser Specifications

Function	Specification
Model	AUTEL-CSC1500/10
Voltage	6V
Current	200mA
Rate	1.2W
Dimensions	108 x 81 x 61mm ³
Operating Temp.	-10~50°C
Storage Temp.	-20~60°C
Laser Class	Class 2
Battery type	AAA 4 x 1.5V
Wavelength	520 ± 10nm

Five- line Laser

Table 2-2 Five-line Laser Specifications

Function	Specification
Laser beams output Target Board	<ul style="list-style-type: none">● Horizontal and forward vertical cross beams● Horizontal, forward and backward vertical beams● Horizontal and 4 orthogonal (composed of right angles) vertical beams Plumb dot displays while vertical beam is ON <ul style="list-style-type: none">● Horizontal beam
Laser range	<ul style="list-style-type: none">● Indoor -30m (100ft)● Outdoor with detector 60m (200ft)
Accuracy Accuracy (plumb Dot)	<ul style="list-style-type: none">● ± 0.2mm/m (± 0.00002in/in)● ± 1mm/1.2m
Fan angle	120° ± 5°
Self-leveling Range	± 2.5°

Laser line width	2mm ± 0.5mm/5m (0.10" ± 0.02" at 20')
Wavelength	520 ± 10nm - Laser Class II
Power supply	Li-Polymer battery pack or 4 AA Alkaline batteries (not included)
Battery life	2.5 hours continuous operation with Li-Polymer 5 hours with 4AA Alkaline batteries
Operating temp.	-10°C + 45°C (14°F + 113°F)
Storage temp.	-20°C + 60°C (-4°F + 140°F)
Water & dust proof	IP54
Dimensions	Ø150mm x 195mm (Ø 6" x 8")
Weight without batteries	1250gr ± 10gr (2.75lbs ± 0.35 ± oz)

Laser Measurement Unit

Table 2-2 Laser Measurement Unit Specifications

Function	Specification
Measuring range	0.2 - 20m
Measuring accuracy	+/- 2mm
Continues measurement	√
Measuring unit	m/mm/in/ft
Laser class	Class 2
Laser type	630-670nm,<1mW
Reference	Rear side + 68mm
Battery type	AAA 2 x 1.5V

Mercedes Benz Night Vision Calibrator

Table 2-3 Mercedes Benz Night Vision Calibrator Specifications

Function	Specification
Model	CSC0803/01
Voltage	12V

Current	4A
Rate	24W
Size	400 x 47 x 240mm
Working Temp.	-20°C ~ 50°C

3 Calibration Procedures

MaxiSys ADAS MA600 supports the calibration of Lane Departure Warning (LDW) and Night Vision Systems (NVS).

This chapter discusses tools and preparatory measures needed for calibration. Follow setup instructions displayed onscreen as procedures vary by vehicle make, model, and year.

The placement of the calibration toolset is followed by the calibration procedure, during which, MaxiSys ADAS MA600 tablet communicates with the vehicle ECU. The calibration procedure varies by vehicle make, model, and year. Please follow the step-by-step instruction on the tablet to complete the calibration.

Lane Departure Warning (LDW) System

An Audi vehicle is used here to demonstrate frame setup and LDW system calibration.

Calibration procedures vary by vehicle. Please follow the instructions displayed on your tablet.

Please Select Reason Calibration Is Needed:

- Repaired or replaced front camera;
- Repaired or replaced front windshield;
- Adjusted chassis;
- Adjusted vehicle body height;
- Relearned vehicle height through vehicle height sensor.

Required Calibration Tools

- Calibration Frame AUTEL-CSC1500;
- Target Board AUTEL-CSC0601/01;
- L-shaped Positioning Bracket AUTEL-CSC1500/04;
- Two-line Laser AUTEL-CSC1500/03;
- Five-line Laser AUTEL-CSC1500/05;
- Laser reflective board AUTEL-CSC1500/08;

- Laser-assisted reflector AUTEL-CSC1500/06;
- Plumb Line AUTEL-CSC1500/07;
- Chalk (not included);
- Tape Measure (not included).

Determine Vehicle Body Height

Select a parking area for calibration:

1. Figure A: level ground;
2. Figure B: Alignment Rack, where the calibration frame and vehicle are not on the same level;

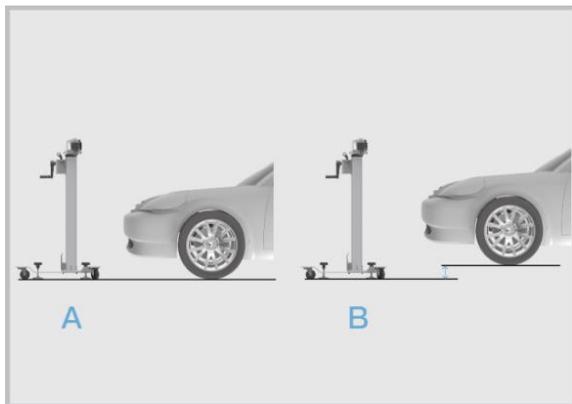


Figure 3-1 Ground Levels

3. If Figure B is selected, measure the height (h) between the two levels, and enter the value (unit: mm) on tablet;

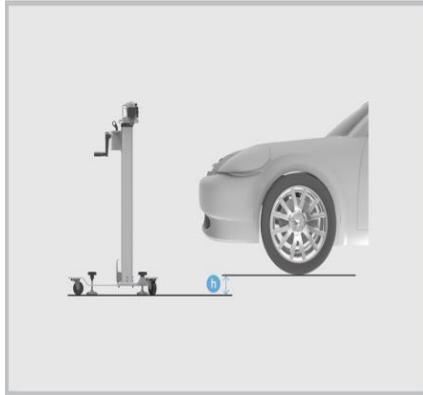


Figure 3-2 Check Height Difference

NOTE

Vehicle body height beyond the adjustable range of the calibration frame;

Lower vehicle body height by 676mm (26.61 in) or park the vehicle on a level surface with sufficient space around it. Reposition the calibration frame before calibration.

Calibration Preparations

- Park the vehicle on a level surface with its front wheels pointing straight and ensure there are no objects within 3 meters of the front of the vehicle;
- Bring the vehicle to a complete stop with its rear axle steering straight. Turn the ignition off;
- Ensure the vehicle's coolant and engine oil are at recommended levels and the gas tank is full. The vehicle should not be carrying any load (passengers or cargo);
- Attach the VCI to the vehicle and connect the diagnostic tool to the vehicle (if connected through cable, pass cable through window);
- Close the vehicle doors and turn off all exterior lighting;
- Adjust the tire pressure to the recommended value;
- If needed, connect the vehicle to a battery maintainer to prevent full discharge;
- For vehicles with air suspension, activate the vehicle jack mode;
- Ensure the windshield and the camera lenses are clean and unobstructed;
- Ensure the calibration area is well lit;
- Clean the dashboard.

Auxiliary Tool Positioning

1. Suspend the Plumb Line AUTEL-CSC1500/07 against the centers of the front and rear vehicle emblems and mark points (a) and (b), respectively on the ground (directly under the plumb);

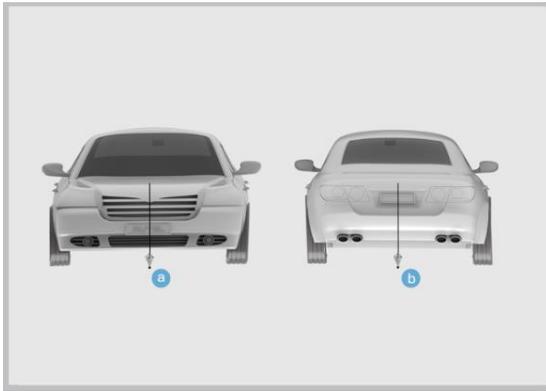


Figure 3-3 Auxiliary Tool Positioning

2. Turn on the laser lines of the Five-line Laser AUTEL-CSC1500/05 (Tap the Help button for instructions on using the Five-line Laser);
 - Place the Five-line Laser AUTEL-CSC1500/05 (the side of the laser unit displaying the logo should face forward in the vehicle's driving direction) on point (b) to ensure the red dot on the case aligns with point (b);
 - Place Laser Reflective Board AUTEL-CSC1500/08 parallel to the vehicle and ensure reflective stripe (1) is aligned with point (a);
 - Observe the position of the laser line with Laser-assisted Reflector AUTEL-CSC1500/06. Adjust knob (3) on the laser to ensure the laser line aligns with the reflective stripe (2) of the laser reflective board. This laser line represents the vehicle's center line (1).

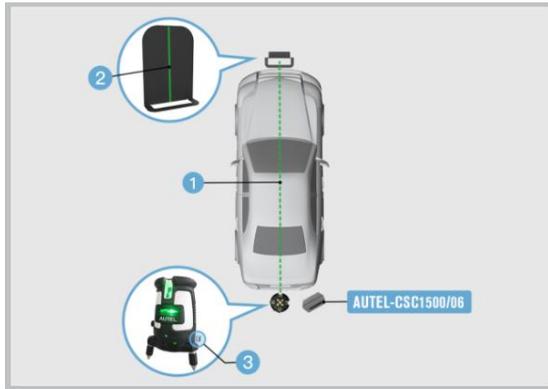


Figure 3-4 Auxiliary Tool Positioning

The low chassis height of some vehicles prevents the use of the Five-line Laser, AUTEL-CSC1500/05. For these vehicles, use the Two-line Laser, AUTEL-CSC1500/03. Follow the instructions displayed to use the Two-line Laser.

- Turn on the Two-line Laser, AUTEL-CSC1500/03;
- Place the Two-line Laser AUTEL-CSC1500/03 so it aligns with point (b);
- Observe the position of the laser line with the Laser-Assisted Reflector, AUTEL-CSC1500/06. Adjust the placement angle of the Two-line Laser to ensure the laser line aligns with reflective stripe (2) of the Laser Reflective Board. This laser line represents the vehicle's center line (1).

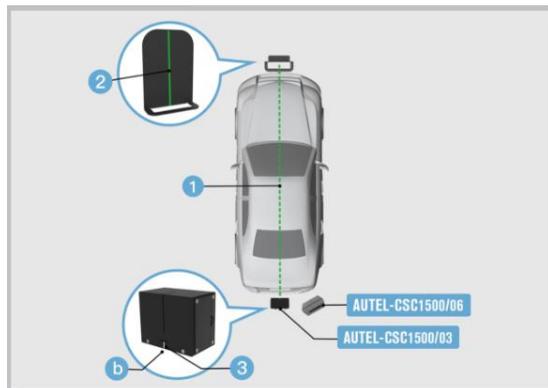


Figure 3-5 Auxiliary Tool Positioning

3. Move the Laser Reflective Board, AUTEL-CSC1500/08, along the vehicle centerline (1), point (z) in front of the vehicle and ensure the distance from point (z) to point (a) is 1m (39.37in);

4. Remove the Laser Reflective Board, AUTEL-CSC1500/08;

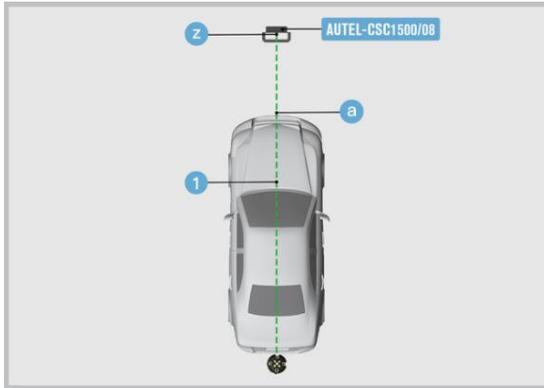


Figure 3-6 Auxiliary Tool Positioning

5. Place the Five-line Laser, AUTEL-CSC1500/05 (the side of the laser unit displaying the logo should face forward in the vehicle's driving direction) on point (a) to ensure the red dot on the base aligns with point (a);
6. Adjust knob (2) on the base to ensure the laser line (1) passes through point (z);
7. Mark points (c) and (d) on the laser line (3) on the left and right sides of the vehicle respectively, and the distance from mark point (a) is 1m (39.37 in).



Figure 3-7 Auxiliary Tool Positioning

8. Place the L-shaped Positioning Bracket, AUTEL-CSC1500/04, on the center of the left front wheel of the vehicle to ensure it is vertically aligned with the left front wheel;



Figure 3-8 Auxiliary Tool Positioning

9. Place Five-line Laser, AUTEL-CSC1500/05, on the left side of the vehicle (subject to the driving direction of the vehicle) to ensure laser line (1) passes through points (a) and (d), while laser line (2) and the L-shaped Positioning Bracket AUTEL-CSC1500/04 intersect;
10. Mark point (e) at the intersection of laser line (2) and L-shaped Positioning Bracket, AUTEL-CSC1500/04, and mark point (g) at the distance of $A=148.9\text{ cm} \pm 2.5\text{ cm}$ (58.6 in ± 1.0 in) (toward the driving direction of the vehicle) from point e;

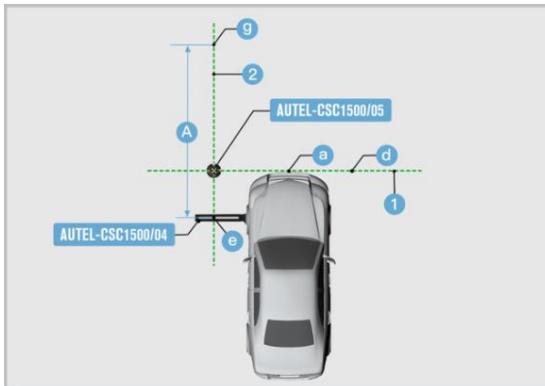


Figure 3-9 Auxiliary Tool Positioning

11. Place the Five-line Laser, AUTEL-CSC1500/05, directly in front of the vehicle to ensure laser line (1) passes through points (a) and (z), while laser line (2) passes through point (g), and point (i) at the red point on the base of the Five-line Laser.
12. Turn off and remove Five-line Laser, AUTEL-CSC1500/05;

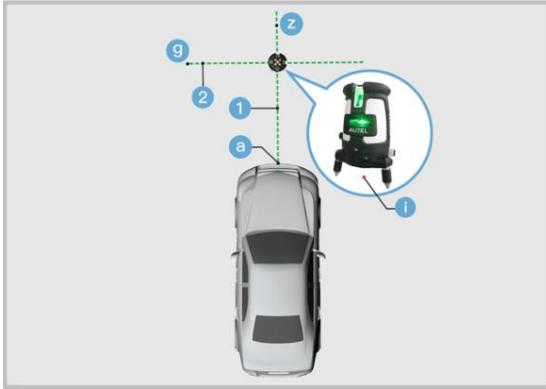


Figure 3-10 Auxiliary Tool Positioning

Place the Calibration Frame

1. Move the calibration frame to the level ground in front of the vehicle;
2. Ensure the crossbar at each end of the calibration frame are unfolded and the crossbar is adjusted to the lowest height;
3. Rotate the fine-tuning bolt (Pos.1) to align the marked lines in position (A);



Figure 3-11 Auxiliary Tool Positioning

4. Attach Two-line Laser, AUTEL-CSC1500/03, on the laser fix-plate of the crossbar, lock the safety snap hook, and then;
5. Holding the handle, move the calibration frame to align the intersection of the cross laser line under the base of calibration frame, AUTEL-CSC1500, with point (i). The frame should be facing the vehicle directly;
6. Rotate the adjustment bolts on the unit base until the frame is secured to the ground;



Figure 3-12 Install the Two-Line Laser

7. Rotate the fine tuning bolt (Pos.2) to ensure laser line (1) from Two-line Laser, AUTEL-CSC1500/03, passes through point (a);

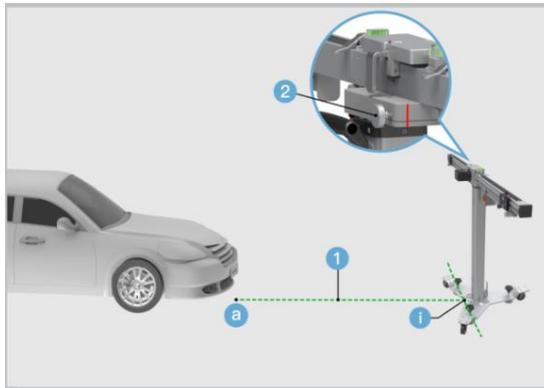


Figure 3-13 Rotate the Fine-Tuning Bolt

8. Now the calibration frame, AUTEL-CSC1500, has been properly placed. Turn off and remove Two-line Laser, AUTEL-CSC1500, and then remove the L-shaped Positioning Bracket, AUTEL-CSC1500/04;
9. Tap Exit to close the calibration instruction screens and tap OK to start performing calibration;
10. Check the calibration frame to ensure it has been properly placed. Click OK to continue the calibration;
11. Do not perform calibration until the calibration frame is properly placed. Tap Cancel to return to the calibration preparation screen, where the steps for the placement of the calibration frame are displayed.

Attach the Target Board

1. Push switch up and lower the laser fix plate of the crossbar and the target board holder on both sides of the crossbar;
2. Attach target board, AUTEL-CSC0601/01, to the calibration frame and fix the target board in place with the two sliding plates on each side of the crossbar;
3. On each side of the crossbar, install the Laser Measurement Unit.
4. Rotate all the bolts on the base to secure the frame to the ground, reference the spirit levels and ensure the bubble is at the center so the frame sits level on the ground.
5. Press and hold button (1) of Laser Measurement Unit until the screen powers on;
6. Use the crank (2) to adjust height (3) of crossbar. Continue to raise crossbar until height (3) displayed on the Laser Measurement Unit screen is 1175 mm (46.26in);
7. Turn off the Laser Measurement Unit.

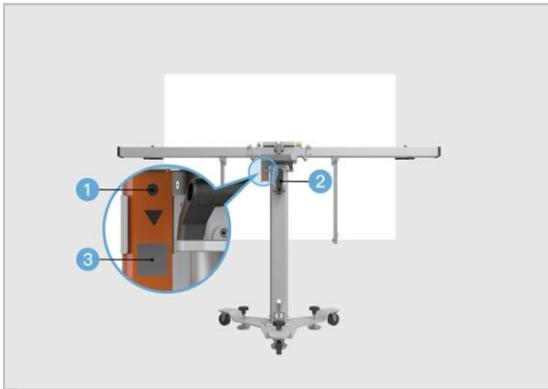


Figure 3-14 Install the Laser Measurement Unit

Follow the instructions displayed on the tablet until the calibration is successful.

Ensure the vehicle ignition is on.

Using a tape measure, measure from the ground to the top of each wheel hub. Input the heights on the tablet. Tap OK.

When the message displays that the calibration is successful, tap "OK". The front camera calibration is now completed.

Night Vision (NV) System

The following instructions discuss the tools needed and the procedures involved in the calibration of a NV system on a Mercedes Benz vehicle.

Calibration procedures vary by vehicle make, model and year. Please follow the instructions displayed on the tablet.

Please select situation that needs calibration

- Replaced night vision camera and/or night vision control unit.

Required Calibration Tools

- Calibration Frame, AUTEL-CSC1500;
- Target Board, AUTEL-CSC0601/02;
- Two-line Laser, AUTEL-CSC1500/03;
- Five-line Laser, AUTEL-CSC1500/05;
- Laser reflective board, AUTEL-CSC1500/08;
- Laser assisted reflector, AUTEL-CSC1500/06
- Plumb Line, AUTEL-CSC1500/07;
- Chalk (not included);
- Tape Measure (not included).

Determine Vehicle Body Height

Select a parking area for calibration:

1. Figure A: level ground;
2. Figure B: Alignment Rack, where the calibration frame and the vehicle are not on the same level;

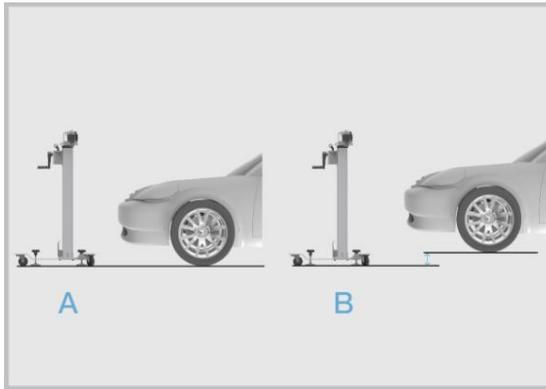


Figure 3-15 Ground Levels

Calibration Preparations

- Turn steering wheel so front wheels point straight;
- Ensure headlights are turned off and all doors are closed;
- Adjust tire pressure to the recommended value;
- Clean the windshield and ensure the camera view is unobstructed.

NOTE

Tap "Set Up" to view instructions for setting up frame. After completing the setup of the calibration frame and gathering the required tools, tap "OK" to start calibration.

Auxiliary Tool Positioning

1. Suspend the Plumb Line, AUTEL-CSC1500/07, against the centers of the front and rear vehicle emblems and mark points (a) and (b), respectively, on the ground directly under the plumb bob.

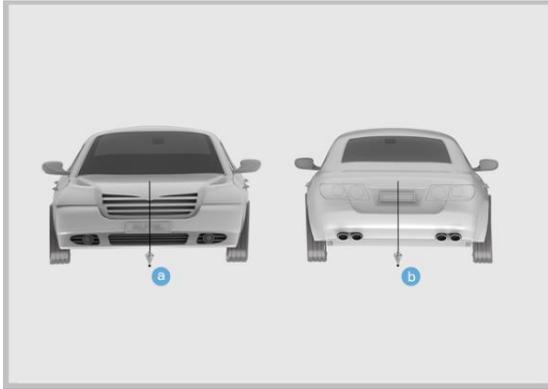


Figure 3-16 Auxiliary Tool Positioning

2. Note the vehicle's position:

- Turn on the laser lines of Five-line Laser, AUTEL-CSC1500/05 (tap the Help button for usage of the Five-line Laser);
- Place the Five-line Laser, AUTEL-CSC1500/05 on point (b). The side of the laser unit displaying the logo should face forward in the vehicle's driving direction. Ensure the red dot on the base aligns with point (b).
- Place the Laser Reflective Board, AUTEL-CSC1500/08, parallel to the vehicle on point (a). Center the board so the reflective line (1) aligns with point (a).

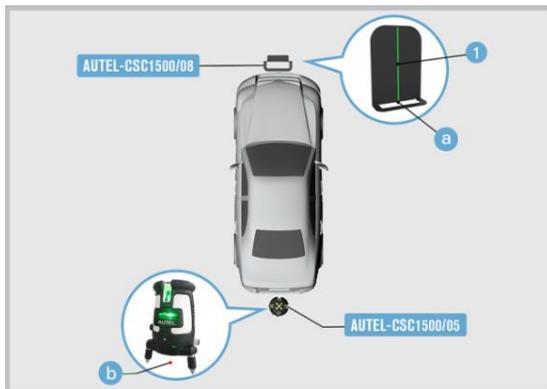


Figure 3-17 Auxiliary Tool Positioning

- Observe the position of the laser line with the Laser Assisted Reflector, AUTEL-CSC1500/06. Adjust the knob (3) on the laser to ensure the laser line aligns with the reflective stripe (2) of the laser reflective board. This laser line represents the vehicle's center line (1).

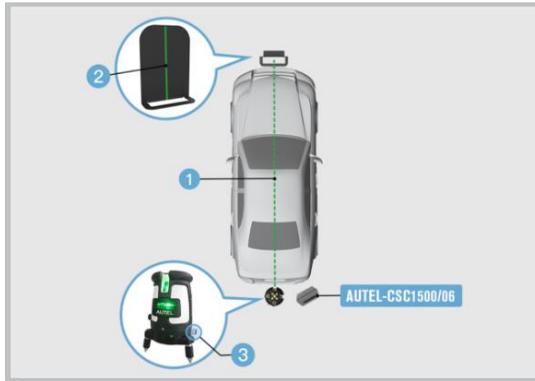


Figure 3-18 Auxiliary Tool Positioning

NOTE

The low chassis height of some vehicles prevents the use of the Five-line Laser, AUTEL-CSC1500/05. For these vehicles, use the Two-line Laser, AUTEL-CSC1500/03. (Tap the Help button for instructions on using the Two-line Laser).

Using the two-line laser:

- Turn on the Two-line Laser, AUTEL-CSC1500/03;
- Place the Two-line Laser, AUTEL-CSC1500/03 on point b to ensure the marked line (3) on the Two-line Laser, AUTEL-CSC1500/03, aligns with point (b);
- Observe the position of the laser line with the Laser Assisted Reflector, AUTEL-CSC1500/06. Adjust the placement angle of the Two-line Laser to ensure the laser line aligns with the reflective stripe (2) of the Laser Reflective Board. This laser line would be the vehicle's center line (1).

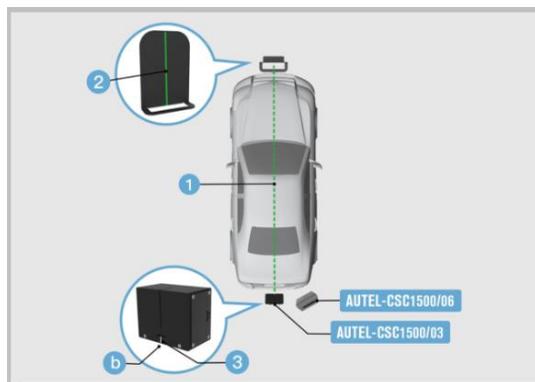


Figure 3-19 Auxiliary Tool Positioning

3. Move Laser Reflective Board AUTEL-CSC1500/08 along the vehicle centerline (1), mark point (y) in front of the vehicle, and ensure the distance from point (y) to point (a) is the recommended value displayed on the tablet;
4. Turn off and remove the Five-line Laser AUTEL-CSC1500/05;
5. Remove Laser Reflective Board AUTEL-CSC1500/08;

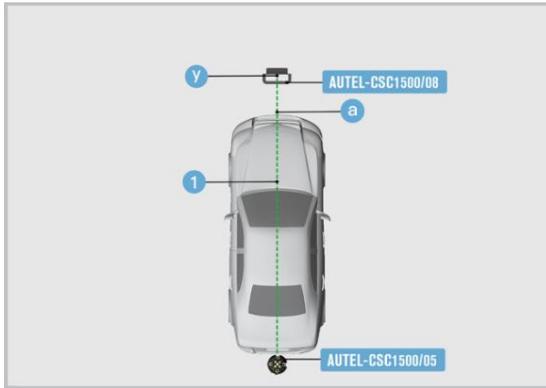


Figure 3-20 Auxiliary Tool Positioning

Place the Calibration Frame

1. Move the calibration frame to the level ground in front of the vehicle;
2. Ensure the crossbar at both ends of the calibration frame are unfolded and the crossbar is adjusted to the lowest height;
3. Rotate the fine-tuning bolt (1) to align the marked lines in position (A);



Figure 3-21 Rotate the Fine Tuning Bolt

4. Install Two-line Laser AUTEL-CSC1500/03 on the laser fixed plate of the crossbar, lock the safety lever in place, and then turn on power switch (1);
5. Hold the handle on the calibration frame to align the intersection of the cross laser line under the base of the calibration frame AUTEL-CSC1500 with point (y) and ensure the laser line (2) passes through point (a);
6. Rotate all the bolts on the base until they touch the ground.



Figure 3-22 Install the Two-Line Laser

7. Once the calibration frame AUTEL-CSC1500 has been properly placed, turn off and remove Two-line Laser AUTEL-CSC1500/03;
8. Tap Exit to close the calibration instruction screens and tap OK to start performing calibration;
9. Check the calibration frame to ensure it has been properly placed. If it has been properly placed, tap OK to continue the calibration function;
10. Do not perform the calibration function until the calibration frame is placed properly. Tap Cancel to return to the calibration preparation screen, where the steps for the placement of the calibration frame are displayed.

Attach the Target Board

1. Attach the target board AUTEL-CSC0601/02 to the fixing plate in the middle of the crossbar, and lock the safety snap hook;

NOTE

Ensure the target board is fully attached.

Calibration should be performed in a window-less environment with no bright lights or reflective materials. Ensure there is no black and white pattern behind the calibration pattern.

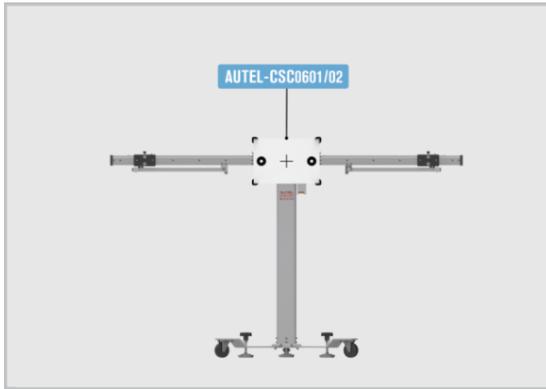


Figure 3-23 Attach the Target Board

2. While referencing the spirit (bubble) level, rotate bolts (1) on the base until level (2) and (3).

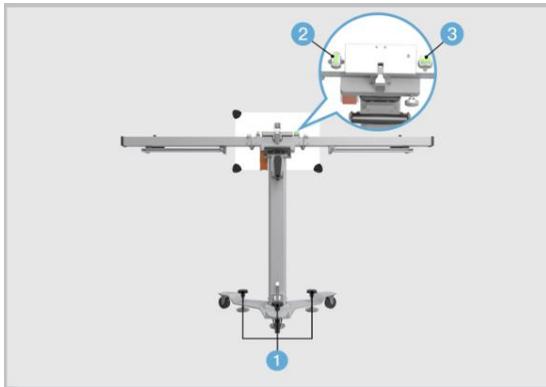


Figure 3-24 Adjust Base until Level

Install the Laser Measurement Unit

1. Press and hold button (1) of Laser Measurement Unit until the screen lights (Tap the Help button for instructions on using the laser unit);
2. Use the hand crank (2) to adjust height (3) of crossbar. Continued to raise the crossbar until the height (3) displayed on the Laser Measurement Unit screen is at the recommended value on the tablet;
3. Turn off the Laser Measurement Unit.



Figure 3-25 Install the Laser Measurement Unit

Night Vision Camera Calibration

1. Ensure ignition is on;
2. Now the camera automatic adjustment is completed.

4 Maintenance and Service

Maintenance Instructions

- Keep the calibration tools clean at all times.
- Do not use any abrasive, corrosive cleansers or detergent.
- Do not immerse the calibration tools in water or other fluids.
- Maintain the tools in dry conditions and keep them within normal operating temperatures.
- Do not store the tools in humid, dusty or dirty areas.
- Use only authorized battery chargers and accessories. Any malfunction or damage caused by the use of unauthorized battery charger and accessories will void the limited product warranty.
- Ensure that the battery charger does not come in contact with conductive objects.
- If the calibration tools should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center for Autel tools.

DANGER

1. The built-in Lithium-ion Polymer battery is factory replaceable only; incorrect replacement or tampering with the battery pack may cause an explosion.
 2. Do not use a damaged battery charger.
-

Service Procedures

This section introduces information for technical support, repair service, and application for replacement or optional parts.

Technical Support

If you have any questions or problems with the operation of the product, please contact us (see the following contact info) or your local distributor.

AUTEL CHINA HQ

- Phone: 0086-755-8614 7779
- Website: www.autel.com

- Email: support@autel.com
- Address: 6th-10th floor, Building B1, Zhiyuan, Xueyuan Road, Xili, Nanshan, Shenzhen, 518055, China

AUTEL NORTH AMERICA

- Phone: 855-AUTEL-US (855-288-3587) Monday-Friday 9am-6pm EST
- Website: www.autel.com
- Email: ussupport@autel.com
- Address: Suite 200, 175 Central Avenue, Farmingdale, New York, USA. 11735

AUTEL EUROPE

- Phone: 0049 (0) 61032000522
- Website: www.autel.eu
- Email: sales.eu@autel.com/support.eu@autel.com
- Address: Robert-Bosch-Strasse 25, 63225, Langen, Germany

AUTEL SOUTH AMERICA

- Phone: (+507) 308-7566
- Website: www.autel.com/es
- Email: sales.latin@autel.com/latsupport@autel.com
- Address: Office 103, Building 3845, International Business Park, Veracruz, Panamá Pacífico, Panamá

AUTEL AUSTRALIA

- Phone: 03 9480 2978 / +61 476293327
- Website: www.autel.com.au
- Email: sales@autel.com.au
- Address: 155 Islington Street, Melbourne, Collingwood, VIC

Repair Service

If it becomes necessary to return your device for repair, please download the repair service form from www.autel.com, and fill it in. The following information must be included:

- Contact name
- Return address
- Telephone number
- Product name
- Complete description of the problem

- Proof-of-purchase for warranty repairs
 - Preferred method of payment for non-warranty repairs
-

NOTE

For non-warranty repairs, payment can be made with Visa, Master Card, or with approved credit terms.

Send the device to your local agent, or to the below address:

8th Floor, Building B1, Zhiyuan,
Xueyuan Road, Xili, Nanshan,
Shenzhen, 518055, China

Other Services

You can purchase the optional accessories directly from Autel's authorized tool suppliers, and/or your local distributor or agent.

Your purchase order should include the following information:

- Contact information
- Product or part name
- Item description
- Purchase quantity

5 Compliance Information

FCC Compliance

This device complies with Part 15 of the FCC rules and Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme aux CNR exempts de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes:

1. Ce dispositif ne peut causer des interférences; et
2. Ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

WARNING

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

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

RoHS COMPLIANCE

This device is declared to be in compliance with the European RoHS Directive 2011/65/EU.

CE COMPLIANCE

This product is declared to conform to the essential requirements of the following Directives and carries the CE mark accordingly:

EMC Directive 2014/30/EU

R&TTE Directive 1999/5/EC

Low Voltage Directive 2014/35/EU

6 Warranty

Limited One Year Warranty

Autel Intelligent Technology Corp., Ltd. (the Company) warrants to the original retail purchaser of this MaxiSys Diagnostic Device, that should this product or any part thereof during normal consumer usage and conditions, be proven defective in material or workmanship that results in product failure within one (1) year period from the date of purchase, such defect(s) will be repaired, or replaced (with new or rebuilt parts) with Proof of Purchase, at the Company's option, without charge for parts or labor directly related to the defect(s).

The Company shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the device. Some states do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

This warranty does not apply to:

- a) Products subjected to abnormal use or conditions, accident, mishandling, neglect, unauthorized alteration, misuse, improper installation or repair or improper storage;
- b) Products whose mechanical serial number or electronic serial number has been removed, altered or defaced;
- c) Damage from exposure to excessive temperatures or extreme environmental conditions;
- d) Damage resulting from connection to, or use of any accessory or other product not approved or authorized by the Company;
- e) Defects in appearance, cosmetic, decorative or structural items such as framing and non-operative parts.
- f) Products damaged from external causes such as fire, dirt, sand, battery leakage, blown fuse, theft or improper usage of any electrical source.

⚠ IMPORTANT

All contents of the product may be deleted during the process of repair. You should create a back-up copy of any contents of your product before delivering the product for warranty service.
