

**USER MANUAL**  
**MAXISYS ADAS MA600**  
**(AUTEL-CSC1500)**



## Patent

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### IMPORTANT

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

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## For Services and Support



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## Safety Information

For your own safety and the safety of others, and to prevent damage to the equipment 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 equipment.

There are numerous procedures, techniques, tools, and parts required for servicing vehicles, as well as the skills 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 equipment, 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 equipment only as described in this manual. Be sure to 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.

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### **DANGER**

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

---

### **WARNING**

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

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## Safety Instructions

The safety messages herein cover situations Autel is aware of at the time of publication. 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.

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## **It is not advised to use headphones at a high volume**

Listening at high volumes for long periods of time may result in loss of hearing.

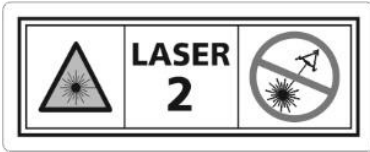
## **Safety Warnings**

- 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's DLC is clean and secure.
- Do not place the test equipment on the distributor of the vehicle. Strong electro-magnetic 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.

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## **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.

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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.

## WEAR SAFETY SHOES



Safety shoes must be worn.

When performing work with risk of injury to the feet, notice about the necessity of wearing protective shoes must be given. 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 “Wear Safety Shoes” at eye level and in a clearly visible manner at the measuring station.
- Operators should always wear the recommended protective shoes.

# CONTENTS

<b>1</b>	<b>USING THIS MANUAL .....</b>	<b>1</b>
1.1	CONVENTIONS .....	1
1.1.1	Bold Text.....	1
1.1.2	Notes and Important Messages .....	1
1.1.3	Hyperlink .....	1
1.1.4	Illustrations.....	2
<b>2</b>	<b>GENERAL INTRODUCTION .....</b>	<b>3</b>
2.1	CALIBRATION KIT (FOR LDW SYSTEM) .....	3
2.1.1	Calibration Frame (AUTEL-CSC1500) .....	3
2.1.2	Two-line Laser (AUTEL-CSC1500/10) .....	4
2.1.3	Five-line Laser (AUTEL-CSC1500/05) .....	4
2.1.4	Storage Bracket (AUTEL-CSC1500/09) .....	5
2.1.5	Plumb Line (AUTEL-CSC1500/07) .....	5
2.1.6	L-shaped Positioning Bracket (AUTEL-CSC1500/04) .....	5
2.1.7	Laser Assisted Reflector (AUTEL-CSC1500/06) .....	6
2.1.8	Laser Measurement Unit .....	6
2.1.9	Laser Reflective Board (AUTEL-CSC1500/08) .....	6
2.1.10	Front Camera Calibrator (AUTEL-CSC0601/09) .....	7
2.2	CALIBRATION KIT (FOR NV SYSTEM) .....	7
2.2.1	Mercedes-Benz NV Calibrator (AUTEL-CSC0803/01) .....	7
2.2.2	12 V Power Adapter .....	8
2.3	TARGET BOARD FOR LANE DEPARTURE WARNING (LDW) SYSTEM .....	8
2.3.1	Target Board (AUTEL-CSC0601/08-L) .....	8
2.3.2	Target Board (AUTEL-CSC0601/08-R) .....	8

2.3.3	Target Board (AUTEL-CSC0601/05) .....	9
2.3.4	Target Board (AUTEL-CSC0601/11) .....	9
2.3.5	Target Board (AUTEL-CSC0601/15) .....	9
2.3.6	Target Board (AUTEL-CSC0601/09) .....	10
2.3.7	Target Board (AUTEL-CSC0601/02) .....	10
2.3.8	Target Board (AUTEL-CSC0601/19) .....	10
2.3.9	Target Board (AUTEL-CSC0601/03-L) .....	11
2.3.10	Target Board (AUTEL-CSC0601/03-R).....	11
2.3.11	Target Board (AUTEL-CSC0601/04-L) .....	11
2.3.12	Target Board (AUTEL-CSC0601/04-R).....	12
2.3.13	Target Board (AUTEL-CSC0601/06-L) .....	12
2.3.14	Target Board (AUTEL-CSC0601/06-R).....	12
2.3.15	Target Board (AUTEL-CSC0601/12) .....	13
2.3.16	Target Board (AUTEL-CSC0601/13-L) .....	13
2.3.17	Target Board (AUTEL-CSC0601/13-R).....	13
2.3.18	Target Board (AUTEL-CSC0601/22-L) .....	14
2.3.19	Target Board (AUTEL-CSC0601/22-R).....	14
2.4	PATTERN BOARD (FOR LDW SYSTEM).....	14
2.4.1	Pattern Board (AUTEL-CSC0601/07) .....	14
2.4.2	Pattern Board (AUTEL-CSC0601/01) .....	15
2.4.3	Pattern Board (AUTEL-CSC0601/14) .....	15
2.5	TECHNICAL SPECIFICATIONS .....	16
2.5.1	Two-line Laser .....	16
2.5.2	Five- line Laser .....	16
2.5.3	Laser Measurement Unit.....	17
2.5.4	Mercedes Benz Night Vision Calibrator.....	18



**3 ADAS CALIBRATION PROCEDURES .....19**

3.1 LANE DEPARTURE WARNING (LDW) SYSTEM .....19

3.1.1 Please Select Reason Calibration is Needed:.....19

3.1.2 Required Calibration Tools.....19

3.1.3 Determine Vehicle Body Height .....20

3.1.4 Calibration Preparations.....21

3.1.5 Auxiliary Tool Positioning .....22

3.1.6 Place the Calibration Frame.....26

3.1.7 Attach the Target Board .....28

3.2 NIGHT VISION (NV) SYSTEM .....29

3.2.1 Please select situation that needs calibration .....29

3.2.2 Required Calibration Tools.....29

3.2.3 Determine Vehicle Body Height .....30

3.2.4 Calibration Preparations.....30

3.2.5 Auxiliary Tool Positioning .....30

3.2.6 Place the Calibration Frame.....33

3.2.7 Attach the Target Board .....34

3.2.8 Install the Laser Measurement Unit .....35

3.2.9 Night Vision Camera Calibration .....36

**4 MAINTENANCE AND SERVICE .....37**

4.1 MAINTENANCE INSTRUCTIONS .....37

4.2 SERVICE PROCEDURES .....37

4.2.1 Technical Support .....37

4.2.2 Repair Service .....39

4.2.3 Other Services .....39

**5 COMPLIANCE INFORMATION .....41**

# 1 Using This Manual

This manual contains equipment usage instructions.

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

## 1.1 Conventions

---

The following conventions are used:

### 1.1.1 Bold Text

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

Example:

- Tap **OK**.

### 1.1.2 Notes and Important Messages

#### *Notes*

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

#### *Important*

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

### 1.1.3 Hyperlink

Hyperlinks are available in electronic documents. Blue italic text indicates a selectable hyperlink; blue underlined text indicates a website link or an email address link.

### **1.1.4 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 on these increasingly popular vehicle systems.

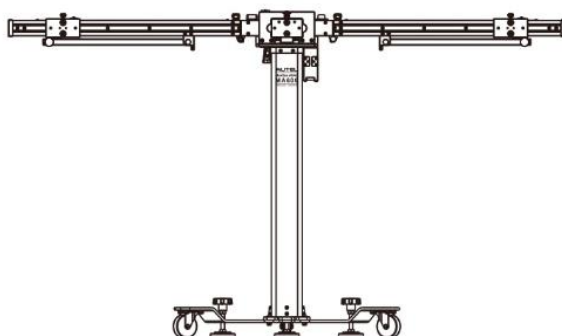
MA600 currently covers vehicles including Volvo, VOLKSWAGEN, Audi, Bentley, VOLKSWAGEN\_CV, Lamborghini, Seat, Skoda, FAW Audi, FAW VOLKSWAGEN, SAIC VOLKSWAGEN, SAIC VOLKSWAGEN SKODA, Porsche, Infiniti, Nissan, DF Nissan, DF Venucia, BMW MINI, BMW, BMW Brilliance, Rolls-Royce, Toyota, Lexus, Toyota China, 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.

## 2.1 Calibration Kit (for LDW System)

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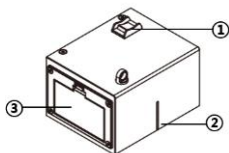
### 2.1.1 Calibration Frame (AUTEL-CSC1500)

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.



## 2.1.2 Two-line Laser (AUTEL-CSC1500/10)

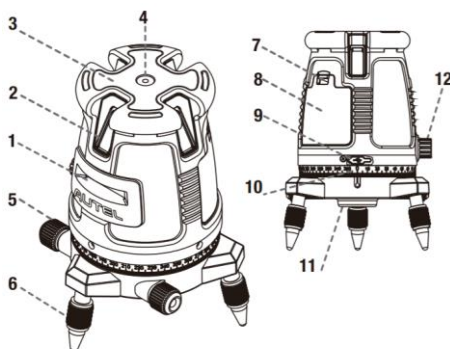
The two-line laser is required for positioning the calibration frame by displaying a cross mark. When the chassis is low, it can identify the vehicle's position instead of the five-line laser.



1. Switch
2. Laser gap
3. Battery cover

## 2.1.3 Five-line Laser (AUTEL-CSC1500/05)

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

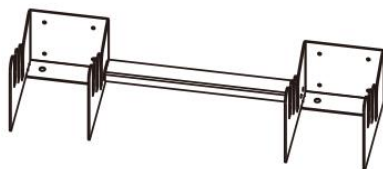


1. Horizontal laser output window
2. Vertical laser output window
3. Keypad
4. Surface level
5. Fine adjustment knob
6. Adjustable support legs

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

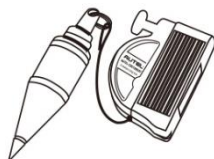
### 2.1.4 Storage Bracket (AUTEL-CSC1500/09)

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



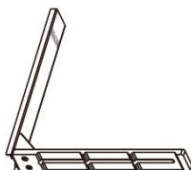
### 2.1.5 Plumb Line (AUTEL-CSC1500/07)

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.



### 2.1.6 L-shaped Positioning Bracket (AUTEL-CSC1500/04)

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



### 2.1.7 Laser Assisted Reflector (AUTEL-CSC1500/06)

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.



### 2.1.8 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.



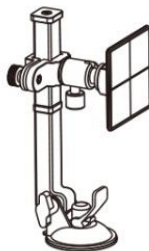
### 2.1.9 Laser Reflective Board (AUTEL-CSC1500/08)

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.



## 2.1.10 Front Camera Calibrator (AUTEL-CSC0601/09)

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

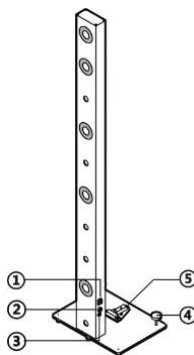


## 2.2 Calibration Kit (for NV System)

---

### 2.2.1 Mercedes-Benz NV Calibrator (AUTEL-CSC0803/01)

NV calibrator, AUTEL-CSC0803/01 is used in the calibration of night vision systems on Mercedes Benz vehicles.

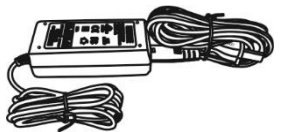


1. Power Switch
2. Fuse Socket
3. DC Power Supply Input Port
4. Horizontal Adjusting Screws



### 2.2.2 12 V Power Adapter

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



## 2.3 Target Board for Lane Departure Warning (LDW) System

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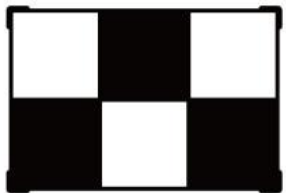
### 2.3.1 Target Board (AUTEL-CSC0601/08-L)

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



### 2.3.2 Target Board (AUTEL-CSC0601/08-R)

Target Board, AUTEL-CSC0601/08-R, LDW system calibration on Honda vehicles.



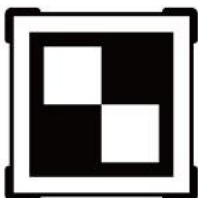
### 2.3.3 Target Board (AUTEL-CSC0601/05)

Target Board, AUTEL-CSC0601/05 for LDW system calibration on Honda vehicles.



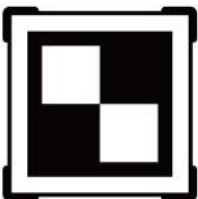
### 2.3.4 Target Board (AUTEL-CSC0601/11)

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



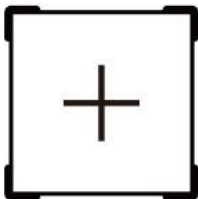
### 2.3.5 Target Board (AUTEL-CSC0601/15)

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



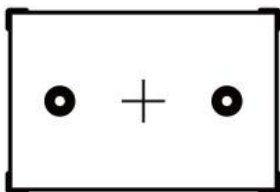
### 2.3.6 Target Board (AUTEL-CSC0601/09)

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



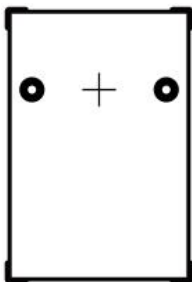
### 2.3.7 Target Board (AUTEL-CSC0601/02)

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



### 2.3.8 Target Board (AUTEL-CSC0601/19)

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



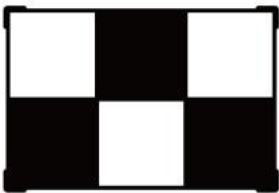
### 2.3.9 Target Board (AUTEL-CSC0601/03-L)

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



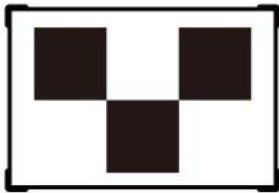
### 2.3.10 Target Board (AUTEL-CSC0601/03-R)

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



### 2.3.11 Target Board (AUTEL-CSC0601/04-L)

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



### 2.3.12 Target Board (AUTEL-CSC0601/04-R)

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



### 2.3.13 Target Board (AUTEL-CSC0601/06-L)

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



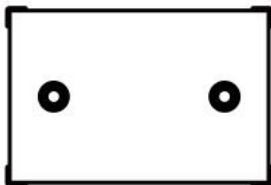
### 2.3.14 Target Board (AUTEL-CSC0601/06-R)

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



### 2.3.15 Target Board (AUTEL-CSC0601/12)

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



### 2.3.16 Target Board (AUTEL-CSC0601/13-L)

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



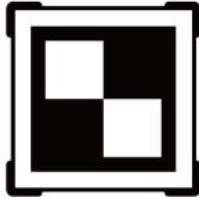
### 2.3.17 Target Board (AUTEL-CSC0601/13-R)

Target Board AUTEL-CSC0601/13-R for LDW system calibration on Mazda vehicles (2).



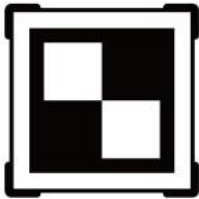
### 2.3.18 Target Board (AUTEL-CSC0601/22-L)

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



### 2.3.19 Target Board (AUTEL-CSC0601/22-R)

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

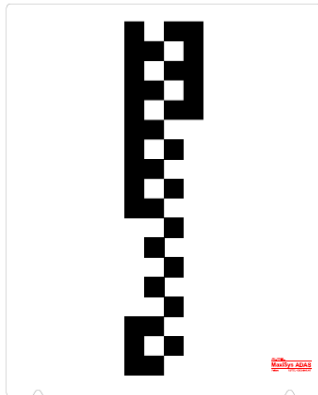


## 2.4 Pattern Board (for LDW System)

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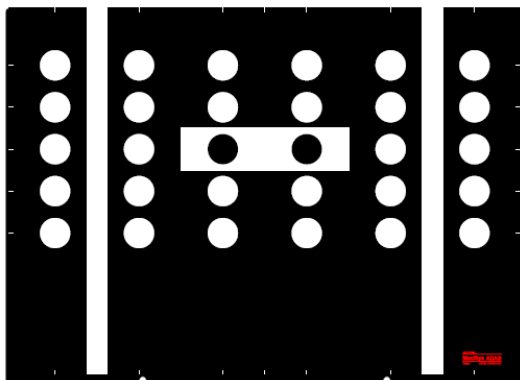
### 2.4.1 Pattern Board (AUTEL-CSC0601/07)

Pattern Board AUTEL-CSC0601/07 LDW calibration for Hyundai and KIA vehicles (1).  
Target board holders used to secure board.



## 2.4.2 Pattern Board (AUTEL-CSC0601/01)

Pattern Board, AUTEL-CSC0601/01 for Lane Keeping Assist (LKA) System calibration on Volkswagen and Porsche vehicles (1). Target board holders used to secure board.



## 2.4.3 Pattern Board (AUTEL-CSC0601/14)

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





## 2.5 Technical Specifications

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### 2.5.1 Two-line Laser

*Two-line Laser Specifications*

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

### 2.5.2 Five- line Laser

*Five- line Laser Specifications*

Function	Specification
Laser beams output	<ul style="list-style-type: none"><li>• Horizontal and forward vertical cross beams</li><li>• Horizontal, forward and backward vertical beams</li><li>• Horizontal and 4 orthogonal vertical beams</li><li>• Plumb down dot appears while vertical beam is ON</li><li>• Horizontal beam</li></ul>
Laser range	<ul style="list-style-type: none"><li>• Indoor -30m (100ft)</li><li>• Outdoor with detector 60m (200ft)</li></ul>
Accuracy Accuracy (plumb Dot)	<ul style="list-style-type: none"><li>• ± 0.2mm/m (± 0.00002in/in)</li><li>• ± 1mm/1.2m</li></ul>
Fan angle	120° ± 5°

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

## 2.5.3 Laser Measurement Unit

### *Laser Measurement Unit Specifications*

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

## 2.5.4 Mercedes Benz Night Vision Calibrator

### *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℃ ~ 50℃

# 3 ADAS Calibration Procedures

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

This chapter discusses tools needed and what preparatory measures to be taken prior to calibration. Follow setup instructions displayed onscreen as procedures vary by vehicle make, model, and/or 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 also varies by vehicle make, model, and year, please follow the step-by-step instruction on the tablet to complete the calibration.

## 3.1 Lane Departure Warning (LDW) System

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

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

### 3.1.1 Please Select Reason Calibration is Needed:

1. Repaired or replaced front video camera;
2. Repaired or replaced front windshield;
3. Adjusted chassis;
4. Adjusted vehicle body height;
5. Relearned vehicle height through vehicle height sensor.

### 3.1.2 Required Calibration Tools

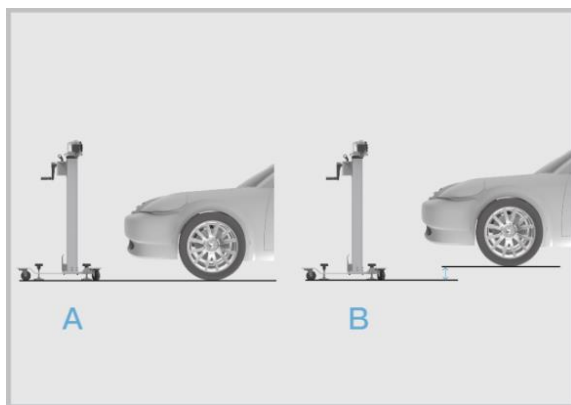
- ✓ Calibration Frame AUTEL-CSC1500;
- ✓ Target Board AUTEL-CSC0601/01;
- ✓ L-shaped Positioning Bracket AUTEL-CSC1500/04;
- ✓ Two-line Laser AUTEL-CSC1500/03;

- ✓ 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).

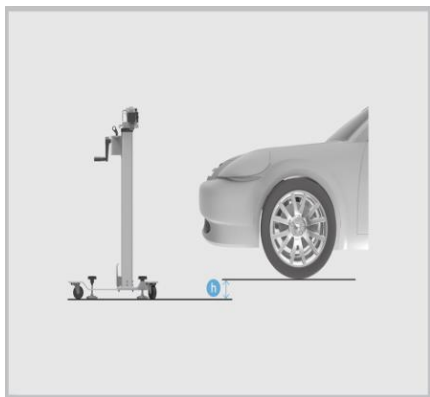
### 3.1.3 Determine Vehicle Body Height

Please choose a parking spot:

1. If it's a level ground like figure A, choose Figure A;
2. Using an Alignment rack where calibration frame and vehicle are not at the same level, choose Figure B;



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



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**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.
- 

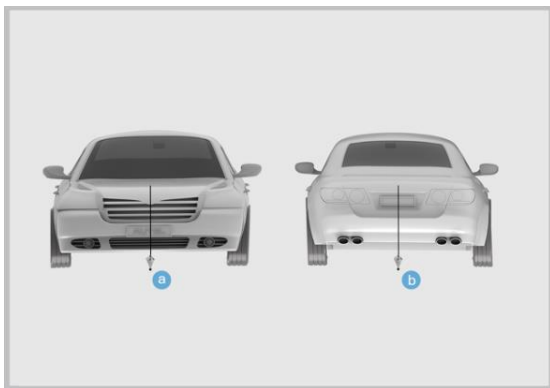
### 3.1.4 Calibration Preparations

1. Park the vehicle on a level surface with its front wheels pointing straight and ensure there are no objects within 3 meters in front of the vehicle;
2. Bring the vehicle to a complete stop, its rear axle steering straight and turn the ignition off;
3. 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);
4. Attach the VCI to the vehicle and connect the diagnostic tool to the vehicle (if connected through cable, please pass cable through window);
5. Close the vehicle doors and turn off all exterior lighting;
6. Adjust the tire pressure to the recommended value;
7. If needed, connect the vehicle to a battery charger to prevent full discharge;
8. For vehicles with air suspension, activate the vehicle jack mode;
9. Ensure the windshield and the camera lenses are clean and unobstructed;
10. Ensure the calibration area is well lit;

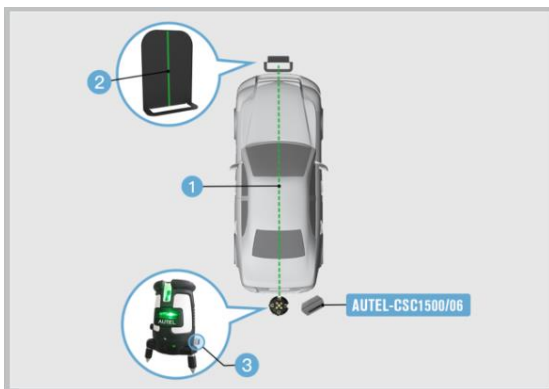
11. Clean the dashboard.

### 3.1.5 Auxiliary Tool Positioning

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

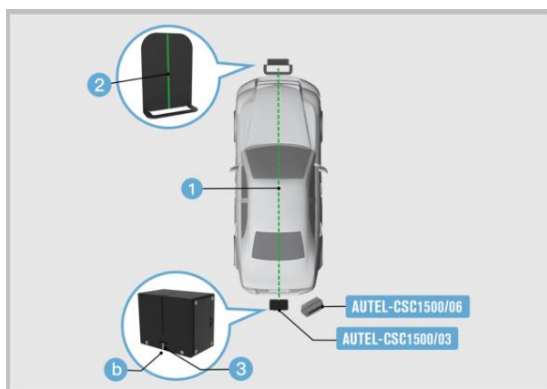


2. Turn on the laser lines of five-line laser AUTEL-CSC1500/05 (Tap Help button for instructions on using the five-line laser);
3. Identify the vehicle's position:
  - Place the five-line laser AUTEL-CSC1500/05 with the side of the device with the Autel logo facing towards the driving direction of the vehicle on mark 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 at point A to 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 displays on reflective stripe (2) of the laser reflective board. This laser line represents the vehicle's center line (1).



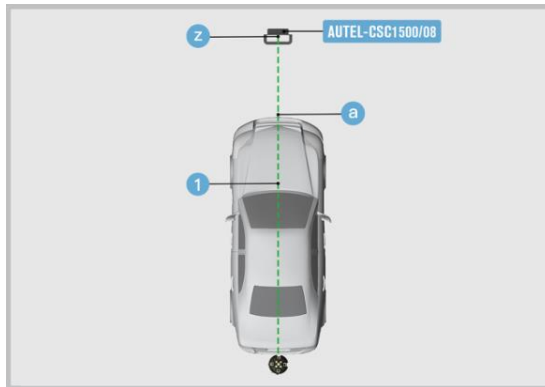
When the chassis is low, the two-line can identify the vehicle's position instead of the five-line laser following the next steps:

- Turn on the laser lines of 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).

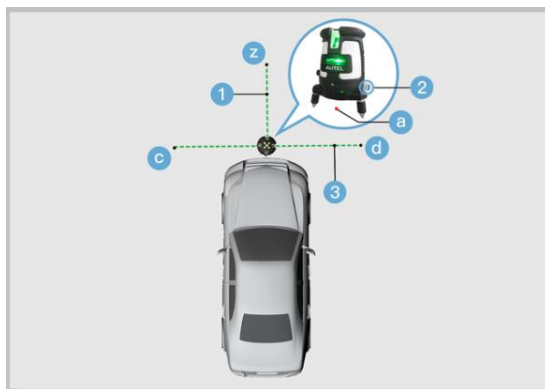




4. Move laser reflective board AUTEL-CSC1500/08 along the vehicle centerline (1), mark point Z in front of the vehicle, and ensure the distance from point Z to point A is 1m (39.37in);
5. Remove laser reflective board AUTEL-CSC1500/08;



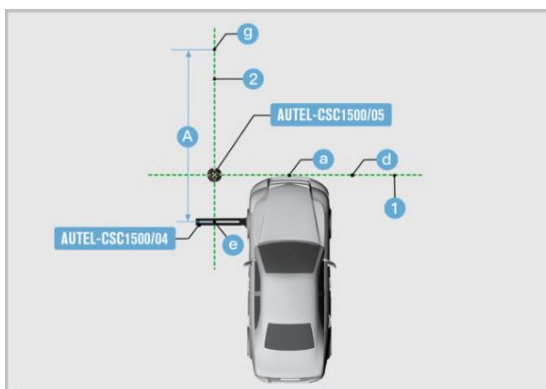
6. Place five-line laser AUTEL-CSC1500/05 (the Autel logo toward the driving direction of the vehicle) on point A to ensure the red dot on the base aligns with point A;
7. Adjust knob (2) on the base to ensure laser line (1) passes through mark point Z;
8. Mark points c and d on laser line (3) on left and right sides of the vehicle respectively, and the distance from point G at the distance of  $A=148.9\text{cm} \pm 2.5\text{cm}$  (58.6 in  $\pm 1.0$  in) (toward the driving direction of the vehicle) from point E;



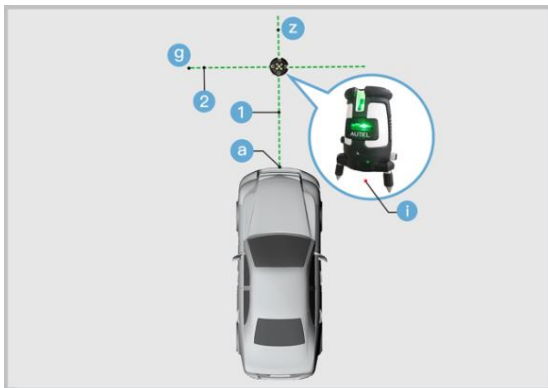
9. Place the L-shaped Positioning Bracket AUTEL-CSC1500/04 on the center of the left front wheel of the vehicle to ensure it is vertically aligned with the left front wheel;



10. 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 mark points A and D, while laser line (2) and the L-shaped Positioning Bracket AUTEL-CSC1500/04 intersect;
11. Mark point E at the intersection of laser line (2) and L-shaped Positioning Bracket AUTEL-CSC1500/04, and mark point G at the recommended distance (toward the driving direction of the vehicle) on the tablet from point E;



12. Place five-line laser AUTEL-CSC1500/05 directly in front of the vehicle to ensure laser line (1) passes through mark point A and Z, while laser line (2) passes through mark point G, and then mark point I at the red point on the base of the five-line laser.

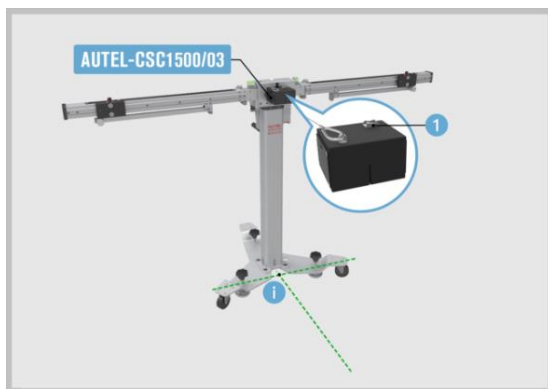


### 3.1.6 Place the Calibration Frame

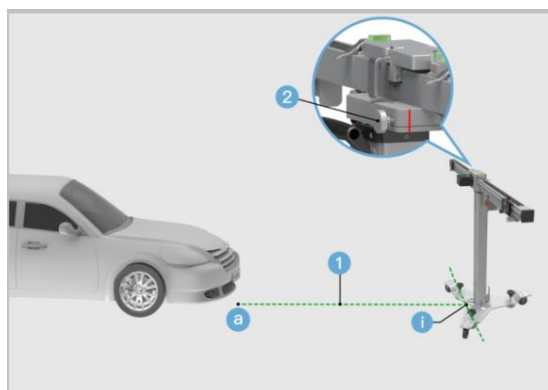
1. Turn off and remove five-line laser AUTEL-CSC1500/05;
2. Move the calibration frame to the level ground in front of the vehicle;
3. Ensure the crossbar at each end of the calibration frame are unfolded and the crossbar is adjusted to the lowest height;
4. Rotate the fine tuning bolt (Pos.1) to align the marked lines in position A;



5. Attach two-line laser, AUTEL-CSC1500/03, on the laser fix-plate of the crossbar, lock the safety snap hook, and then;
6. Hold the handle on the calibration frame to align the intersection of the cross laser line under the base of calibration frame AUTEL-CSC1500 with mark point and the calibration frame faces the vehicle directly;
7. Rotate adjustment bolts on unit base until the frame is secured to the ground;



8. Rotate the fine tuning bolt (Pos.2) to ensure laser line (1) from two-line laser AUTEL-CSC1500/03 passes through mark point A;

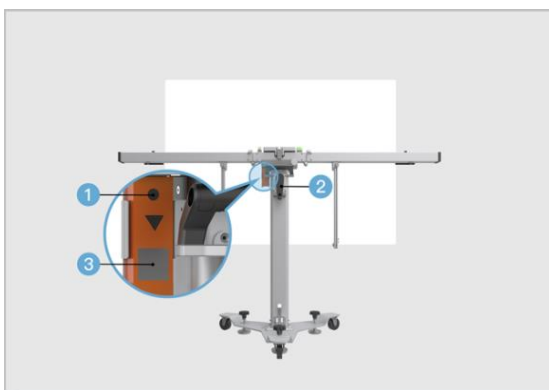


9. Now the calibration frame AUTEL-CSC1500 has been properly placed. Turn off and remove two-line laser AUTEL-CSC1500, and then remove L-shaped Positioning Bracket AUTEL-CSC1500/04;

10. Click Exit to return the calibration preparation interface and click OK to start performing calibration function;
11. Check the calibration frame to ensure it has been properly placed. If it has been properly placed, click OK to continue the calibration function;
12. Do not perform calibration until the calibration frame is properly placed. Tap Cancel to return the calibration preparation screen, where the steps for the placement of the calibration frame are demonstrated.

### 3.1.7 Attach the Target Board

1. Push switch up and lower the laser fixed plate of the crossbar and the target board holder on both sides of the crossbar;
2. Attach target board AUTEK-CSC0601/01 to the calibration frame and fix the target board 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 bubble is at the center of spirit levels.
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.



Follow the instructions displayed until the calibration is successful.

Ensure the ignore is on.

Measure the wheel housing rim heights of every wheel by tape measure. 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.

## 3.2 Night Vision (NV) System

---

The instructions are 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.

### 3.2.1 Please select situation that needs calibration

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

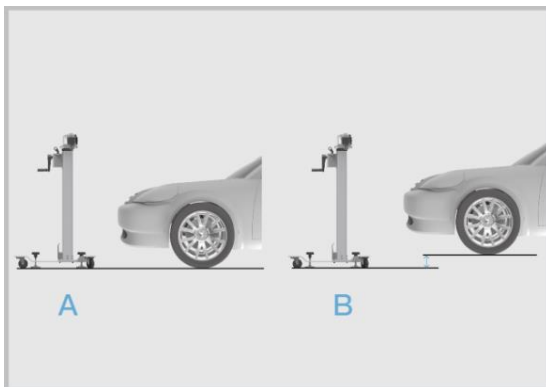
### 3.2.2 Required Calibration Tools

- ✓ 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).

### 3.2.3 Determine Vehicle Body Height

Please choose a parking spot:

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



### 3.2.4 Calibration Preparations

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

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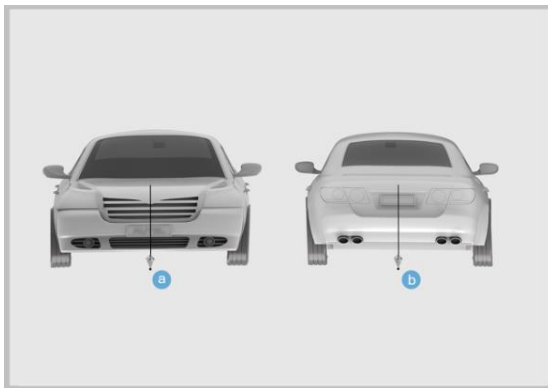
#### NOTE

Tap “Set Up” to view set up frame. After completing the set-up of the calibration frame and gathering the required tools, tap “OK” to start calibration.

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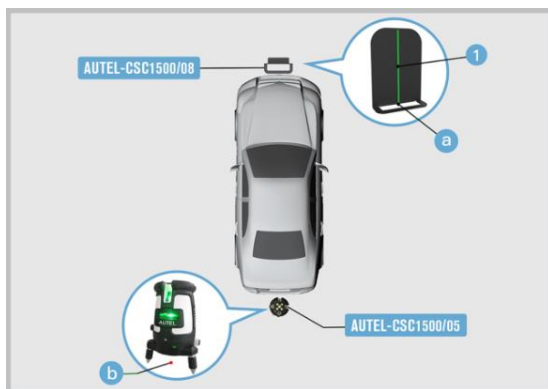
### 3.2.5 Auxiliary Tool Positioning

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. Each mark should be made directly under the plumb bob.



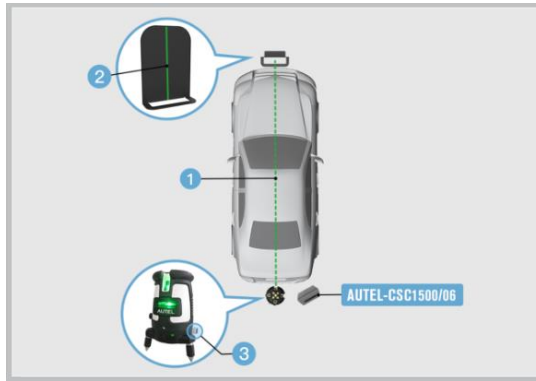
2. Note the vehicle's position:

- Turn on the laser lines of five-line laser AUTEL-CSC1500/05 (click 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.



- 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.
- 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 hit reflective stripe (2) of the laser reflective board. This laser line would be the vehicle's center line (1).



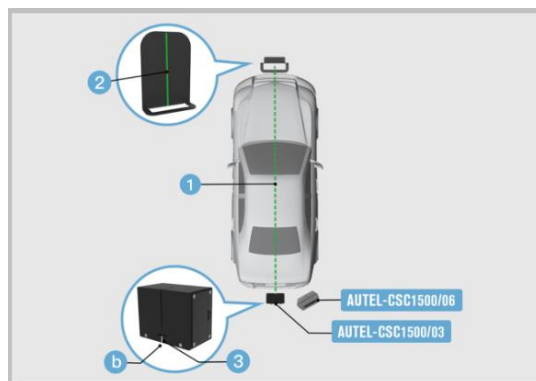


### NOTE

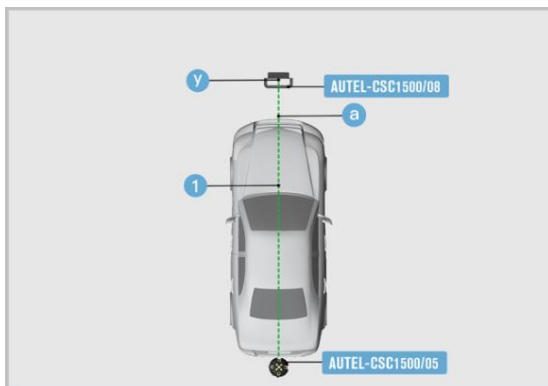
The low chassis height of some vehicles prevents the use of the five-line laser, AUTEL-CSC1500/05. For these vehicles, use the two-line laser, AUTEL-CSC1500/03. (Tap the Help button for instructions on using the two-line laser).

Using the two-line laser:

- Turn on the two-line laser AUTEL-CSC1500/03;
- Place two-line laser AUTEL-CSC1500/03 on mark point b to ensure the marker line (3) on the two-line laser AUTEL-CSC1500/03 aligns with point b;
- Observe the position of the laser line with laser assisted reflector AUTEL-CSC1500/06. Adjust the placement angle of the two-line laser to ensure the laser line hit reflective stripe (2) of the laser reflective board. This laser line would be the vehicle's center line (1).



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 on the tablet;
4. Turn off and remove the five-line laser AUTEL-CSC1500/05;
5. Remove laser reflective board AUTEL-CSC1500/08;

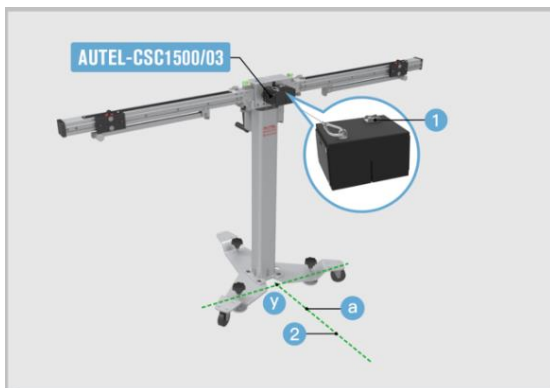


### 3.2.6 Place the Calibration Frame

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 (Pos.1) to align the marked lines in position A;



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 calibration frame AUTEL-CSC1500 with point Y and ensure the laser line (2) passes through point A;



6. Once the calibration frame AUTEL-CSC1500 has been properly placed, turn off and remove two-line laser AUTEL-CSC1500/03;
7. Click Exit to return the calibration preparation interface and tap OK to start performing calibration function;
8. Check the calibration frame to make sure it has been properly placed. If it has been properly placed, click OK to continue the calibration function;
9. Do not perform the calibration function until the calibration frame is placed properly. Click Cancel to return the calibration preparation screen, where the steps for the placement of the calibration frame are demonstrated.

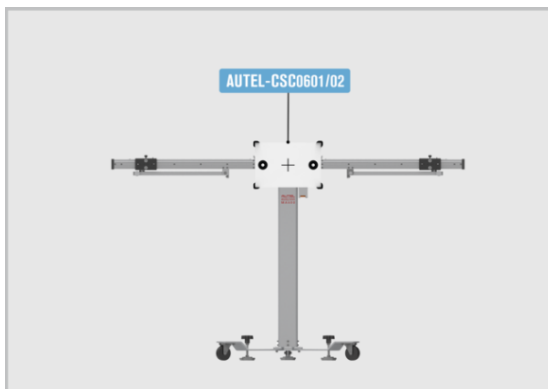
### 3.2.7 Attach the Target Board

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

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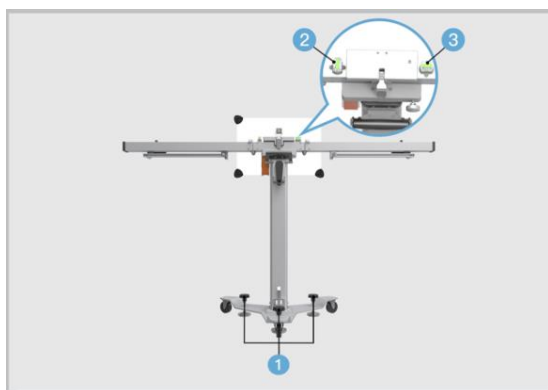
#### NOTE

- Ensure the target board is fully attached.
  - Calibration should be performed in a window-less environment with no bright lights or reflective materials. Ensure nothing with a black and white pattern is behind the calibration pattern.
-



Calibration should be performed in a window less environment with no bright light or reflective materials. Ensure nothing of a similar black and white pattern is behind the calibration Target Board;

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



### 3.2.8 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 crank lever (2) to adjust height (3) of crossbar. Continued to raise the crossbar until the height (3) displayed on the laser measurement unit screen displays the recommended value on the tablet;

3. Turn off the laser measurement unit.



### 3.2.9 Night Vision Camera Calibration

1. Ensure ignition is on;
2. Now the camera automatic adjustment is completed;
3. Select the width of movement;
4. Make adjustment so that the target is within the outer adjustment frame.
5. If the position is correct, then press OK to set the data.

Now the camera manual adjustment is completed.

# 4 Maintenance and Service

## 4.1 Maintenance Instructions

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- 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.

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### NOTE

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

## 4.2 Service Procedures

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

### 4.2.1 Technical Support

If you have any question or problem on product operations, please contact us.

#### **Autel China Headquarters**

- **Phone:** +86 (0755) 8614-7779 (Monday-Friday, 9AM-6PM Beijing Time)

- **Email:** [support@autel.com](mailto:support@autel.com)
- **Address:** Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili Sub-district, Nanshan District, Shenzhen City, China
- **Web:** [www.autel.com](http://www.autel.com)

### **Autel North America**

- **Phone:** 1-855-288-3587 (Monday-Friday, 9AM-6PM Eastern Time)
- **Email:** [ussupport@autel.com](mailto:ussupport@autel.com)
- **Address:** 36 Harbor Park Drive, Port Washington, New York, USA 11050
- **Web:** [www.autel.com/us](http://www.autel.com/us)

### **Autel Europe**

- **Phone:** +49(0)89 540299608 (Monday-Friday, 9AM-6PM Berlin Time)
- **Email:** [support.eu@autel.com](mailto:support.eu@autel.com)
- **Address:** Landsberger Str. 408, 81241 München, Germany
- **Web:** [www.autel.eu](http://www.autel.eu)

### **Autel APAC**

#### **Japan:**

- **Phone:** +81-045-548-6282
- **Email:** [support.jp@autel.com](mailto:support.jp@autel.com)
- **Address:** 6th Floor, Ari-nadoribiru 3-7-7, Shinyokohama, Kohoku-ku, Yokohama-shi, Kanagawa-ken, 222-0033 Japan
- **Web:** [www.autel.com/jp](http://www.autel.com/jp)

#### **Australia:**

- **Email:** [ausupport@autel.com](mailto:ausupport@autel.com)
- **Address:** Unit 5, 25 Veronica Street, Capalaba

### **Autel IMEA**

- **Phone:** +971 585 002709 (in UAE)
- **Email:** [imea-support@autel.com](mailto:imea-support@autel.com)
- **Address:** 906-17, Preatoni Tower (Cluster L), Jumeirah Lakes Tower, DMCC, Dubai, UAE
- **Web:** [www.autel.com](http://www.autel.com)

## **Autel Latin America**

### **Mexico:**

- **Phone:** +52 33 1001 7880 (Spanish in Mexico)
- **Email:** [latsupport@autel.com](mailto:latsupport@autel.com)
- **Address:** Avenida Americas 1905, 6B, Colonia Aldrete, Guadalajara, Jalisco, Mexico

### **Brazil:**

- **Email:** [brsupport@autel.com](mailto:brsupport@autel.com)
- **Address:** Avenida José de Souza Campos n° 900, sala 32 Nova Campinas Campinas – SP, Brazil
- **Web:** [www.autel.com/br](http://www.autel.com/br)

## **4.2.2 Repair Service**

If it is necessary to send back your device for repair, please download and fill out the repair service form from [www.autel.com](http://www.autel.com). 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

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### **NOTE**

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

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### **Send the equipment to your local agent, or to the address below:**

Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili Sub-district, Nanshan District, Shenzhen City, China

## **4.2.3 Other Services**

You can purchase the accessories directly from authorized tool suppliers of Autel, 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.

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### **WARNING**

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

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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



**Autel Intelligent Technology Corp., Ltd.**

**[www.autel.com](http://www.autel.com)**

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