USER MANUAL

INTELLIGENT WHEEL ALIGNMENT SYSTEM

IWA500 (AUTEL-CSCW500)

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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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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.

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.

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.

It is not advised to use headphones at a high volume

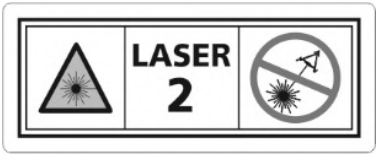
Listening at high volumes for long periods of time may result in loss of hearing.

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.

⚠ **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.

INFRARED RADIATION

Infrared device inside. Avoid direct eye exposure.

Hot surface. Avoid contact directly.

Safety measures:

- The operator is to place the warning “Warning of Infrared Radiation” at eye level and in a visible manner at the measuring station.
- Do not look directly into IR source.
- The operator must comply with the intended use of the product.

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.

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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. Contact your sales representative for the availability of other modules and optional tools or accessories.

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

1.1.2.1 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.

1.1.2.2 Important

IMPORTANT indicates a situation which, 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.

1.1.3 Hyperlinks

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

As the 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.

The illustrations are based on the default settings in **Wheel Alignment Settings**, and you can change the settings according to your needs and actual situations. Please refer to *Wheel Alignment Settings* for details.

The illustrations involving clamps in this manual are based on the use of rim clamps. Since the calibration procedures for using rim clamps and tire clamps are basically the same, the procedures for using tire clamps for calibration are not illustrated in this manual.

1.1.5 Procedures

An arrow icon indicates a procedure.

Example:

➢ **To install the brake pedal depressor**

1. Snap the brake pedal into the brake pedal contact brace.
2. Press down hard and adjust the quick-release adjustment system to make the hooks stuck in the seat to lock the brake pedal.

2 General Introduction

Autel IWA500 is a tablet-controlled intelligent wheel alignment system. It optimizes the entire workflow, including automatic vehicle identification, setup, guided adjustments, and final reporting, with support from Autel's vehicle database and original equipment manufacturer (OE) specifications.

2.1 Safety Instructions and Precautions

1. Check the power supply, and make sure the power supply voltage is stable and properly grounded.
2. Carefully position the cord so that it does not snag or tangle.
3. To reduce the risk of electric shock, do not use it on rainy or wet ground.
4. Do not use or store the equipment in places with heavy smoke, dust, and fog.
5. When the wheel alignment frame is moved to a desired position, rotate the adjustable feet clockwise to prevent the wheel alignment frame from moving.
6. Avoid using the wheel alignment frame in environments with strong vibration or strong wind, as frame instability will lead to inaccurate measurement results.
7. Read and follow all cautions and warning labels affixed to the wheel alignment frame and other tools. Improper use may cause personal injury and shorten the life of the frame.
8. Please follow the instructions in this manual to use the wheel alignment frame and other tools.

2.2 Product Description

2.2.1 Wheel Alignment Frame

The IWA500 wheel alignment frame is supplied flat-packed, with four main components for shipment: base, stand, crossbar, and tablet holder. The package also includes standard accessories. For proper assembly, refer to the instructions in the quick reference guide.

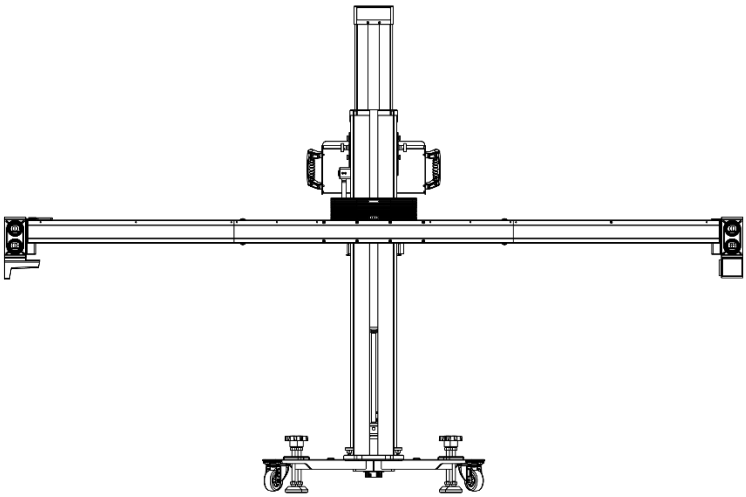


Figure 2-1 ***Wheel Alignment Frame AUTEL-CSCW500***

NOTE

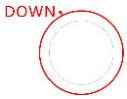
- A clear & level surface measuring 4 m/13.2 ft in length and 5.33 m/17.5 ft in width is required for placing the wheel alignment frame.
- A 10 m/32.8 ft long and 5 m/16.4 ft wide area is required for completing the whole wheel alignment function.

Table 2-1 ***Wheel Alignment Frame Specifications***

Item	Description
Model	AUTEL-CSCW500
Rated Power	260 W
Power Supply	100–264 V, 50/60 Hz
Current	5 A Max
Frame Dimensions **(D x W x H)**	2671.60 x 1016.74 x 2406 mm (105.18 x 40.03 x 94.72 in)
Frame Height Range	1456–2406 mm (57.32–94.72 in)
Crossbar Height Range	300–2200 mm (11.81–86.61 in)

Item	Description
Crossbar Length	2671.60 mm (105.18 in)
Camera Numbers	5
Single Camera Pixel	3072*2048
Operating Temp.	-10–50 ℃ (14 °F–122 °F)
Storage Temp.	-20–60 ℃ (-4 °F–140 °F)
Compatible Tablet	MaxiAlign IWA500

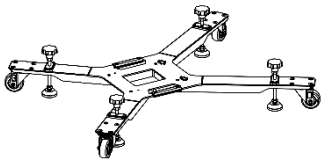
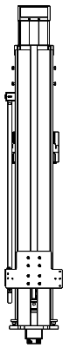
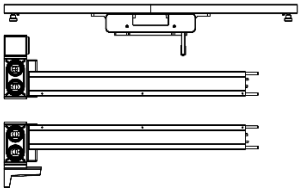
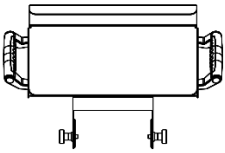
Table 2-2 ***Explanations of Symbols on the Wheel Alignment Frame***

Symbol	Name	Explanation
	UP	Press it to lift the crossbar.
	**DOWN**	Press it to lower the crossbar.
	EMERGENCY STOP	Press it in an emergency.
	USB Interface	For plugging in the USB cord.
	HDMI Interface	For plugging in the HDMI cord.

Symbol	Name	Explanation
	CAUTION	Warning mark.
	Infrared device inside. Avoid eye exposure.	Warning mark.
	Hot surface. Avoid contact.	Warning mark.
	Protect from water	Warning mark.
	Protect from sunlight	Warning mark.
	Fragile	Warning mark.
	Protect from grease	Warning mark.

2.2.1.1 *Frame Components*

Table 2-3 *Wheel Alignment Frame Components*

Component Name	Illustration	Description
Base		Serves as a stable and supportive foundation, allowing the wheel alignment frame to be easily moved around as needed.
Stand		Supports crossbar installation.
Crossbar		Consists of three sections: left arm, arm connector, and right arm. The camera kit is attached to the crossbar.
Tablet Holder		Supports holding a tablet during wheel alignment operations.

2.2.1.2 *Adjustable Feet*

Four adjustable feet are located beneath the wheel alignment frame. To keep the frame stable and prevent movement, rotate the adjustable feet clockwise.

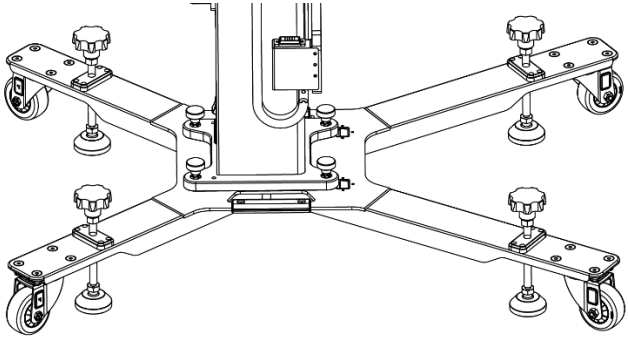


Figure 2-2 *Adjustable Feet*

2.2.1.3 *Control Buttons*

Three control buttons are available: EMERGENCY STOP, UP, and DOWN. The EMERGENCY STOP button stops the crossbar from lifting or lowering in an emergency; the UP button lifts the crossbar; the DOWN button lowers the crossbar.

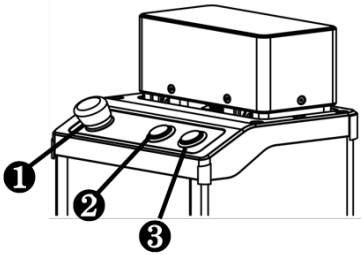


Figure 2-3 *Control Buttons*

1. EMERGENCY STOP Button
2. UP Button
3. DOWN Button

2.2.1.4 *Camera Kit*

One right camera unit and one left camera unit are installed on the crossbar. The camera kit serves as an essential component when performing the wheel alignment function.

NOTE

When facing the front of the wheel alignment frame, the left camera unit is on the left side, and the right camera unit is on the right side.

- Right Camera Unit

  The right camera unit, featuring three cameras, is used to identify its designated target.

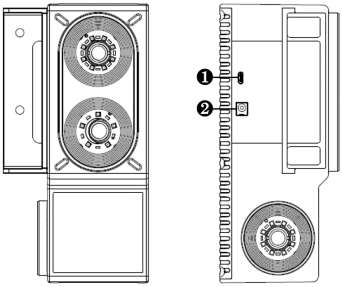


Figure 2-4 ***Right Camera Unit AUTEL-CSC0500/18***

1. USB Port
2. Power Port

- Left Camera Unit

  The left camera unit, featuring two cameras, is used to identify its designated target.

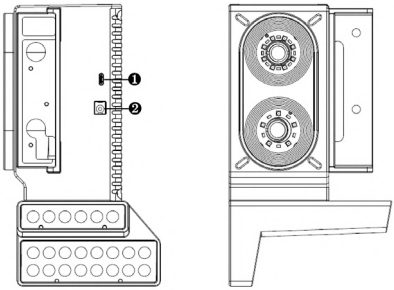


Figure 2-5 ***Left Camera Unit AUTEL-CSC0500/18***

1. USB Port
2. Power Port

3 Accessories Introduction

3.1 Standard Accessories

Table 3-1 ***Standard Accessories in Wheel Clamp (Rim Clamp) Version***

Name	Model	Quantity
Wheel Clamp (Rim Clamp)	AUTEL-CSC0500/19/LF AUTEL-CSC0500/19/RF AUTEL-CSC0500/19/LR AUTEL-CSC0500/19/RR	4 pcs
Target	AUTEL-CSC0500/16/LF AUTEL-CSC0500/16/RF AUTEL-CSC0500/16/LR AUTEL-CSC0500/16/RR	4 pcs
Brake Pedal Depressor	AUTEL-CSC0500/26	1 pc
Steering Wheel Holder Stand Tool	AUTEL-CSC0500/27	1 pc
Wheel Chock	N/A	2 pcs
12/24 V Power Cord	N/A	1 pc
AC Power Cord	N/A	1 pc
Screw (M5 x 20)	N/A	5 pcs
Screw (M4 x10)	N/A	3 pcs; spare
Hex L-wrench (2.5 mm)	N/A	1 pc

Name	Model	Quantity
Hex L-wrench (4 mm)	N/A	1 pc
Equipment Cover	N/A	1 pc

Table 3-2 ***Standard Accessories in Wheel Clamp (Tire Clamp) Version***

Name	Model	Quantity
Wheel Clamp (Tire Clamp)	AUTEL-CSC0500/17/LF AUTEL-CSC0500/17/RF AUTEL-CSC0500/17/LR AUTEL-CSC0500/17/RR	4 pcs
Target	AUTEL-CSC0500/16/LF AUTEL-CSC0500/16/RF AUTEL-CSC0500/16/LR AUTEL-CSC0500/16/RR	4 pcs
Brake Pedal Depressor	AUTEL-CSC0500/26	1 pc
Steering Wheel Holder Stand Tool	AUTEL-CSC0500/27	1 pc
Wheel Chock	N/A	2 pcs
12/24 V Power Cord	N/A	1 pc
AC Power Cord	N/A	1 pc
Screw (M5 x 20)	N/A	5 pcs

Name	Model	Quantity
Screw (M4 x10)	N/A	3 pcs; spare
Hex L-wrench (2.5 mm)	N/A	1 pc
Hex L-wrench (4 mm)	N/A	1 pc
Equipment Cover	N/A	1 pc

3.1.1 Wheel Clamp (Rim Clamp)

The wheel clamp (rim clamp) AUTEL-CSC0500/19 is installed onto the vehicle wheel to secure the designated target AUTEL-CSC0500/16 for detection by the camera kit.

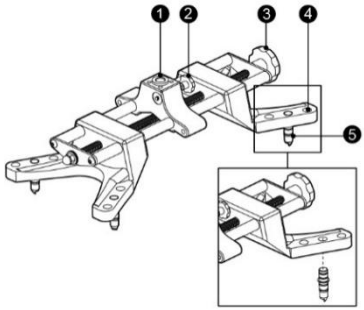


Figure 3-1 ***Wheel Clamp (Rim Clamp) AUTEL-CSC0500/19***

1. Fixing Axle Slot — for inserting the fixing axle of the target.
2. Tightening Screw — for tightening the inserted fixing axle of the target.
3. Locking Knob — for tightening the wheel clamp (rim clamp) on the wheel.
4. Pawl Slots — for inserting the pawls into appropriate positions based on wheel diameter.
5. Pawls — for attaching the wheel clamp (rim clamp) to the wheel.

3.1.2 Wheel Clamp (Tire Clamp)

Four wheel clamps (tire clamps) are included in a kit, one to be installed on each corresponding vehicle tire. Each clamp features three gears to accommodate tires of different diameters. The applicable tire diameter range for each gear is as follows:

- First Gear: 19-27 inches
- Second Gear: 24-32 inches
- Third Gear: 30-37 inches

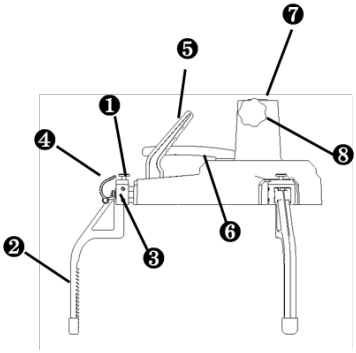


Figure 3-2 ***Wheel Clamp (Tire Clamp) AUTEL-CSC0500/17***

1. Control Button
2. Pawl
3. Pawl Slot
4. Pull Handle
5. Lift Handle
6. Locking Handle
7. Fixing Axle Slot
8. Locking Knob

➢ **To assemble the wheel clamp (tire clamp)**

1. Hold the lift handle (5), and press the control button (1) on the pawl slot (3).
2. Insert the matching pawl into the pawl slot.

NOTE

Be sure to install the pawl with pull handle first and install it into the pawl slot nearest the lift handle, and then install the other two pawls in the same way.

3. When the pawl is fully inserted into the pawl slot, release the control button — the pawl is installed well.
4. After all three pawls are well installed, adjust the gear according to the tire diameter.
5. Press the control button, and pull the pawls up or down to adjust the gear.
6. When you hear a "click", it indicates the gear has been adjusted successfully. Then release the control button.

NOTE

After adjusting the gear, when no number is displayed, it is in the first gear, and you can only pull the pawls outward; when the number 2 is displayed, it is in the second gear; when the number 3 is displayed, it is in the third gear. Be sure the three pawls are in the same gear. Assemble the other three tire clamps as described above.

➢ **To install the target**

1. Once the wheel clamp (tire clamp) is assembled, take out the target that matches the tire clamp.
2. Hold the lift handle (5) and release the locking knob (8).
3. Insert the target positioning pin into the corresponding mounting hole so that the target can be inserted into the fixing axle slot (7).
4. Tighten the locking knob after the target is well inserted.

NOTE

The wheel clamp (tire clamp) and the target should be matched. For example, the left rear target should be installed on the left rear wheel clamp (tire clamp).

➢ **To install wheel clamp (tire clamp) on a tire**

1. Before installing wheel clamp (tire clamp) on a tire, be sure the target is installed well, and the gear is adjusted according to the tire diameter.
2. Hold the lift handle (5), and lift the pull handle (4) to install the wheel clamp (tire clamp) on the corresponding tire.
3. After all the pawls are tightly attached to the tire, release the pull handle and lock the locking handle (6).
4. The wheel clamp (tire clamp) with target is installed well.

3.1.3 Target

There are four targets. The front targets are inserted into the left front wheel clamp and right front wheel clamp, and the rear targets are inserted into the left rear wheel clamp and right rear wheel clamp. All the four targets are used to accurately read the wheel alignment parameters.

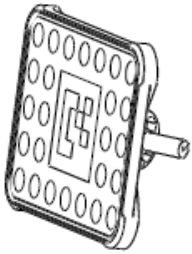


Figure 3-3 ***Target AUTEL-CSC0500/16***

➢ **To install wheel clamp (rim clamp) and target on wheel**

1. Remove the covers from the pawls of the rim clamp.
2. Insert pawls into suitable pawl slots according to the wheel size (fits wheels between 14" and 23" in diameter).
3. Loosen the locking knob (3) to install the wheel clamp (rim clamp) on the wheel.
4. Adjust according to needs, and then tighten the locking knob to make the wheel clamp (rim clamp) installed on the wheel securely.
5. Loosen the tightening screw (2), and insert the fixing axle of the target into the fixing axle slot (1) with the target positioning pin inserted into the corresponding mounting hole. Tighten the tightening screw after the target is well installed.

NOTE

The wheel clamp (rim clamp) and the target should be matched. For example, the left rear target should be installed on the left rear wheel clamp (rim clamp).

3.1.4 Brake Pedal Depressor

The brake pedal depressor assists in depressing the brake pedal.

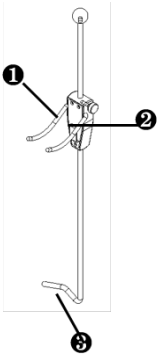


Figure 3-4 ***Brake Pedal Depressor AUTEL-CSC0500/26***

1. Hook
2. Quick Release Adjustment System
3. Brake Pedal Contact Brace

➢ **To install the brake pedal depressor**

1. Snap the brake pedal into the brake pedal contact brace.
2. Press down hard and adjust the quick-release adjustment system to make the hooks stuck in the seat to lock the brake pedal.

3.1.5 Steering Wheel Holder Stand Tool

The steering wheel holder stand tool is used to fix the steering wheel position and align the vehicle.

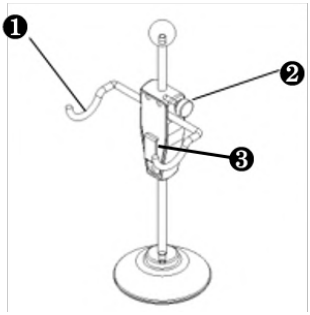


Figure 3-5 ***Steering Wheel Holder Stand Tool AUTEL-CSC0500/27***

1. Hook
2. Locking Knob
3. Quick Release Adjustment System

➢ **To install the steering wheel holder stand tool**

1. Put the steering wheel holder stand tool on the seat.
2. Loosen the locking knob.
3. Adjust the quick-release adjustment system so that the hooks contact the steering wheel to limit the rotation of the steering wheel.
4. Tighten the locking knob to fix it.

3.1.6 Wheel Chock

The wheel chock is placed behind the wheel to prevent the vehicle from rolling away.

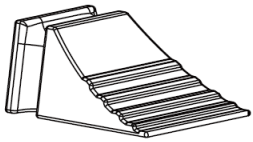


Figure 3-6 *Wheel Chock*

➢ **To place the wheel chock**

1. Park the vehicle in a flat place.
2. Wedge the wheel chock into the wheel as shown to prevent the wheel from rolling away.

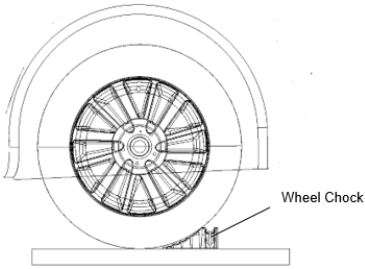


Figure 3-7 *Place the Wheel Chock*

3. Store away after use.

3.1.7 12 V/24 V External Power Cord

The 12 V/24 V external power cord is attached to the handle. Plug one end of the cord into the DC output port in the wheel alignment frame, plug the 12 V input cord into the power input port of Autel tablet or Autel NV calibrator to charge the devices via the frame.

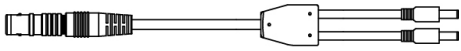


Figure 3-8 1*2 V/24 V External Power Cord*

3.2 Required Accessories (Not Included)

Table 3-3 *Required Accessories*

Name	Model
Calibration Bar	AUTEL-CSC0500/10 AUTEL-CSC0500/12
MaxiAlign IWA500 Tablet	N/A

3.2.1 Calibration Bar

The calibration bar, with high measuring precision, is a professional tool for performing wheel alignment. When performing Aligner Calibration, or Accuracy Check, or Wheel Clamp Target Calibration, a calibration bar is required.

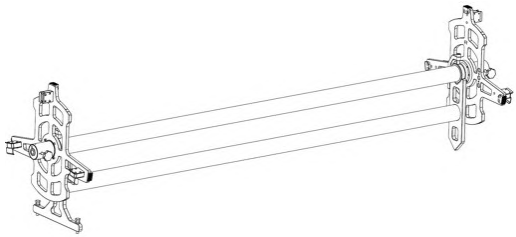


Figure 3-9 *Calibration Bar*

➢ **To install a wheel clamp (rim clamp) on the calibration bar**

1. Remove the covers from the pawls of the wheel clamp (rim clamp).
2. Insert pawls into suitable pawl slots according to the size of the calibration bar.
3. Loosen the locking knob of the wheel clamp (rim clamp) to install it on the calibration bar.
4. Adjust as required, and then tighten the locking knob to securely install the wheel clamp (rim clamp) on the calibration bar.

➢ **To install a wheel clamp (tire clamp) on the calibration bar**

1. Hold the lift handle, and lift the pull handle of the tire clamp to install the pawls into the slots on the calibration bar.
2. When the wheel clamp (tire clamp) is well installed on the calibration bar, rotate the locking handle to securely lock the wheel clamp (tire clamp) on the calibration bar.

3.2.2 MaxiAlign IWA500

The IWA500 wheel alignment frame needs to be used with the MaxiAlign IWA500 tablet, and you can perform the wheel alignment function only when the IWA500 wheel alignment frame is connected to the MaxiAlign IWA500 tablet.

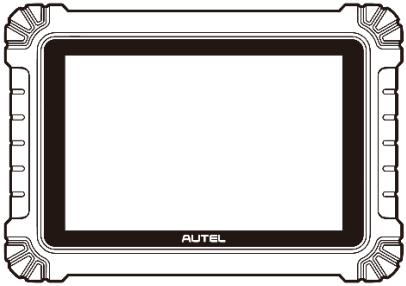


Figure 3-10 ***MaxiAlign IWA500 Tablet***

- **Wheel Alignment Frame Connection**

Connect the tablet to the wheel alignment frame via the IWA500 Wi-Fi to establish communication.

NOTE

Before connecting the wheel alignment frame, check the Country/Region Settings in the Android system of the tablet.

➢ **To connect the tablet to the wheel alignment frame**

1. Turn on the tablet. Tap the **Settings** application on the Job Menu.
2. Tap **Wheel Alignment Settings** on the left column.
3. Select **Wheel Alignment Frame Connection** to enter the screen.

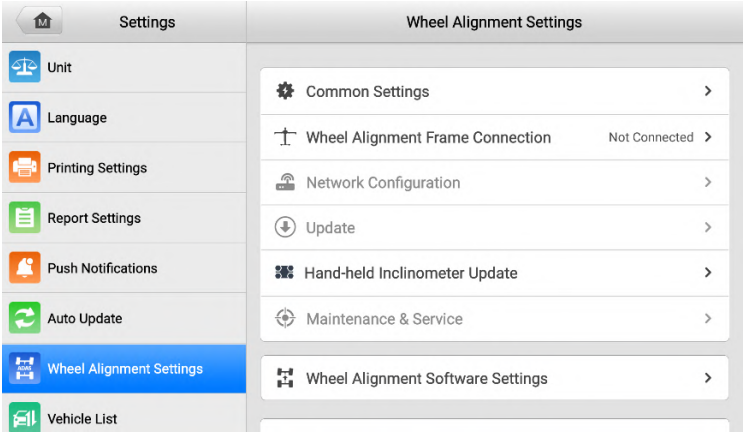


Figure 3-11 ***Connect IWA500 via Wi-Fi 1***

4. Tap the Wi-Fi toggle switch to enable Wheel Alignment Wi-Fi. The tablet will search for available units. The Wi-Fi name of the frame will be "ADAS", suffixed with a serial number. Tap the appropriate unit to connect. When a connection is established, the connection status reads "Connected"

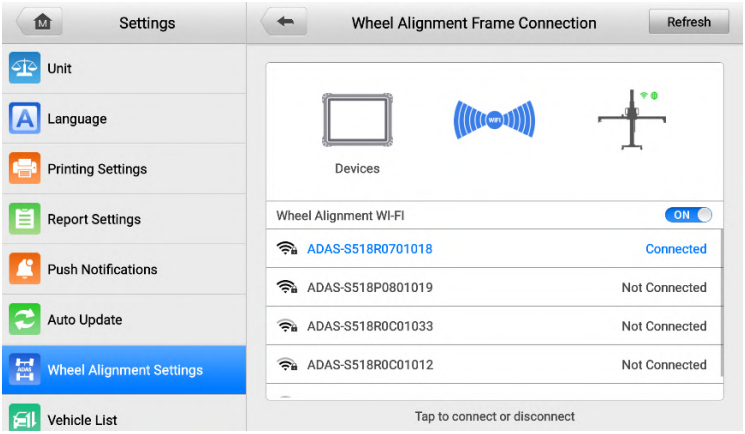


Figure 3-12 ***Connect IWA500 via Wi-Fi 2***

NOTE

It may take up to 30 seconds to connect the tablet to a wheel alignment frame. Please wait patiently.

- **Network Configuration**

After the tablet is connected to the IWA500 Wi-Fi, connect the tablet to Internet accessible Wi-Fi through the following settings.

➢ **To connect the tablet to the Internet Accessible Wi-Fi**

1. Tap the **Settings** application on the Job Menu.
2. Tap **Wheel Alignment Settings** on the left column.
3. Tap **Network Configuration** (ensure the IWA500 Wi-Fi is connected, or it will not be activated).

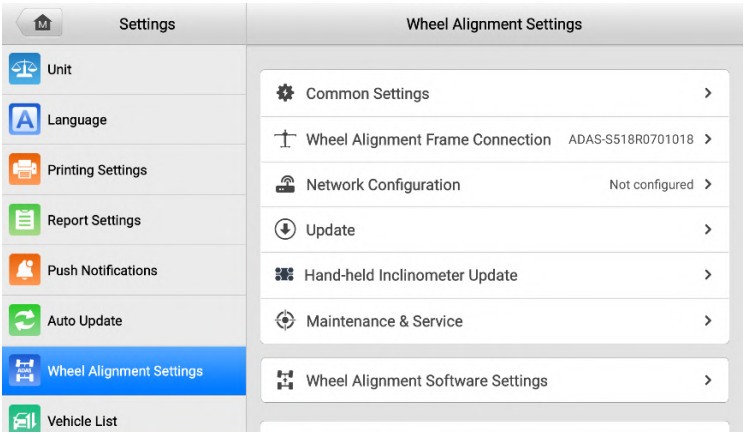


Figure 3-13 ***Connect to Internet Accessible Wi-Fi 1***

4. Tap the dropdown button on the right side of the Wi-Fi name display box to select the Wi-Fi network, and then enter the Wi-Fi password.

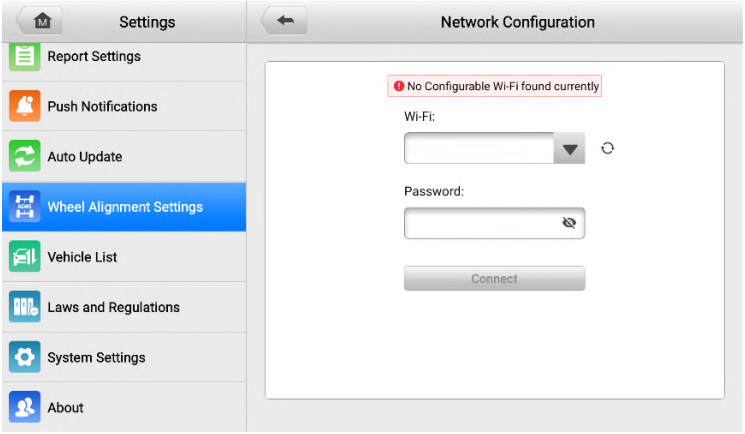


Figure 3-14 ***Connect to Internet Accessible Wi-Fi 2***

5. Tap **Connect** to connect to the selected Wi-Fi network. Once connected successfully, a confirmation message will appear.

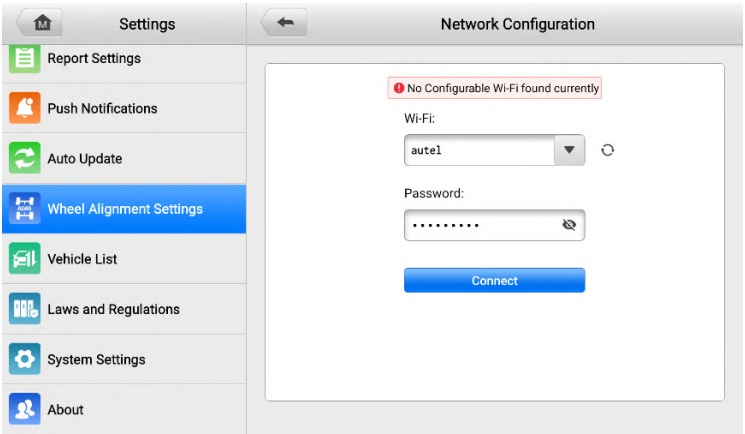


Figure 3-15 ***Connect to Internet Accessible Wi-Fi 3***

- **Establish Vehicle Communication**

Before performing the wheel alignment function, proper communication between the vehicle and the IWA500 tablet needs to be established.

➢ **To establish proper communication between the vehicle and tablet**

1. Connect the VCI device to the vehicle's DLC for both communication and power source.
2. Connect the VCI device to the tablet via Bluetooth pairing or USB connection.
3. When the above steps are completed, check the VCI navigation button at the bottom bar on the screen. If a green BT or USB icon displays in the lower right corner, the tablet is ready to perform wheel alignment function.

4 Wheel Alignment Settings

Before wheel alignment, carry out the necessary related settings in advance to guarantee the smooth execution of the wheel alignment function.

Turn on the IWA500 tablet. Tap the **Settings** application on the Job Menu. Then tap **Wheel Alignment Settings** on the left column to access the function.

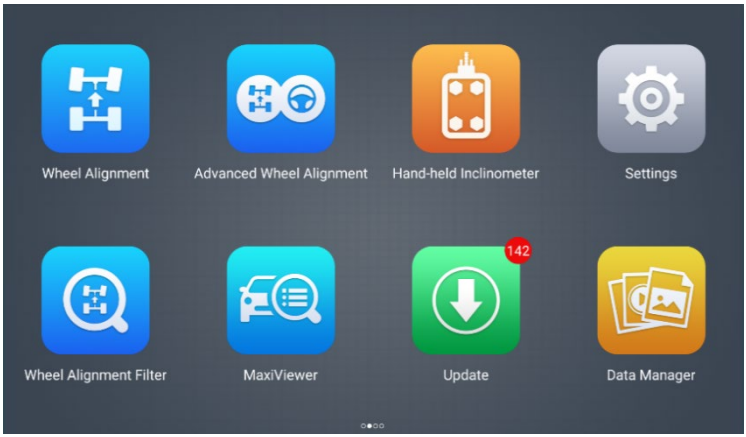


Figure 4-1 ***IWA500 Job Menu Screen***

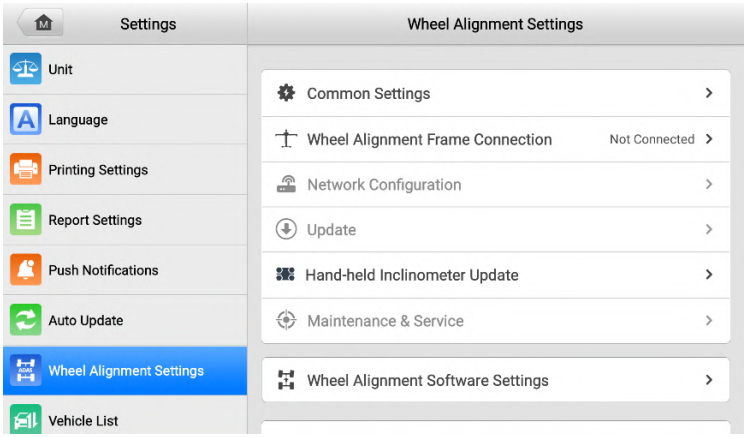


Figure 4-2 ***Wheel Alignment Settings Screen***

4.1 Common Settings

Common settings include Unit Settings, Graphical Result Display Setting, Select Clamp Type, Connect Tread Measuring Tool, Select Tire Pressure Measuring Device, Select Height Measuring Tool, Mercedes Chassis Level Measuring Tool, and Beep Setting.

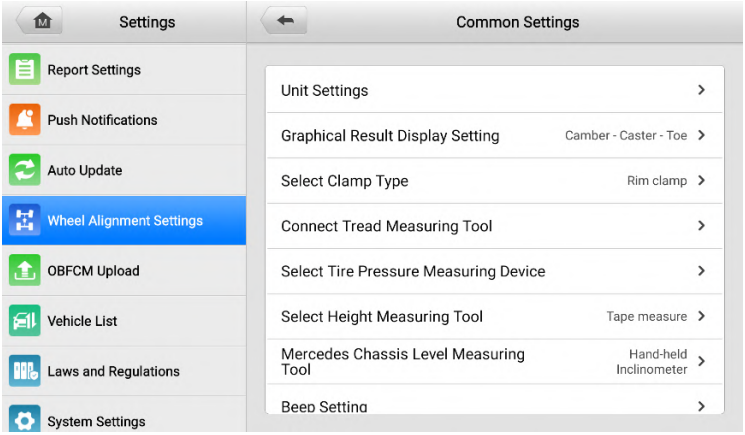


Figure 4-3 ***Common Settings Screen***

4.1.1 Unit Settings

In Unit Settings, you can switch the display format and unit of the standard values and measured values.

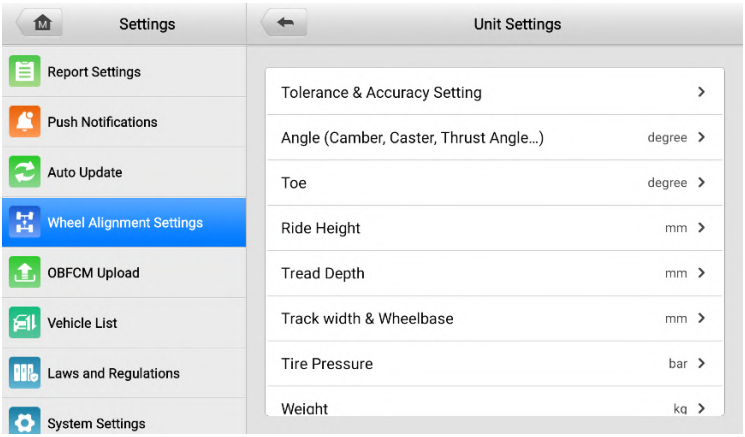


Figure 4-4 ***Unit Settings Screen***

4.1.2 Graphical Result Display Setting

This setting allows you to switch the layout of the measured results in the wheel alignment function.

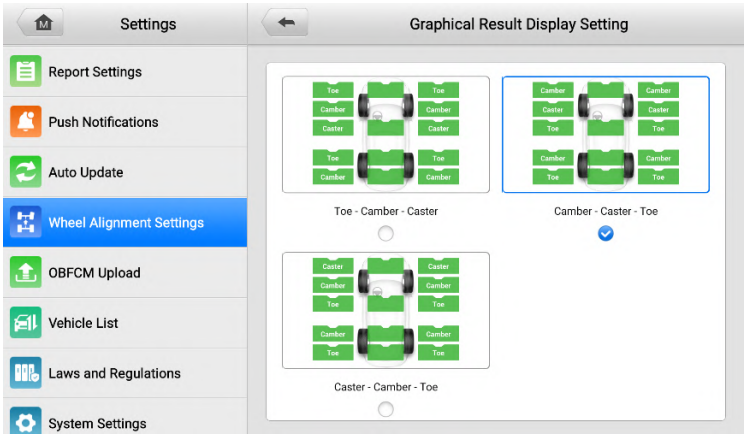


Figure 4-5 ***Graphical Result Display Setting Screen***

4.1.3 Select Clamp Type

Select a compensation clamp type (rim clamp or tire clamp), and the tablet will guide you with the corresponding wheel alignment operation.

NOTE

Rim clamp is selected by default.

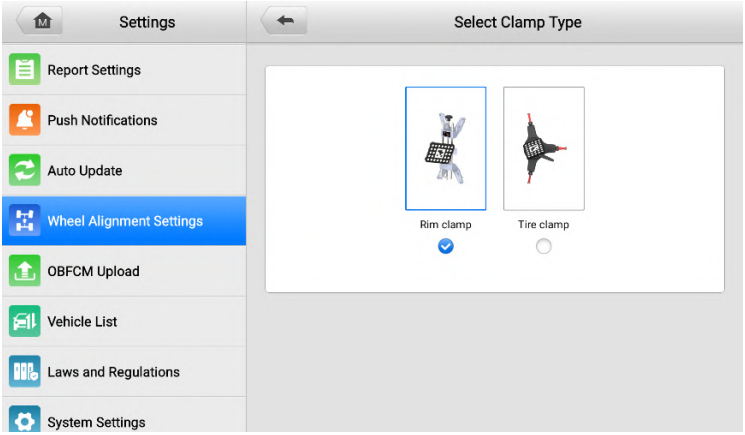


Figure 4-6 *Select Clamp Type*

4.1.4 Connect Tread Measuring Tool

This setting enables you to connect the TBE device for measuring tread.

➢ **To connect MaxiTPMS TBE Device**

1. Tap **Common Settings,** and select **Connect Tread Measuring Tool**.
2. Tap the **ON/OFF** button on the right of the screen to search available device(s).
3. Follow the screen guides to connect the TBE device and the diagnostic tool to the same Wi-Fi.

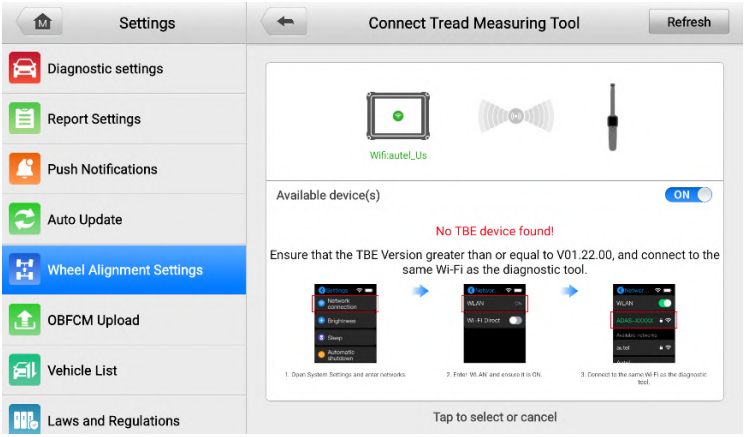


Figure 4-7 *Connect Tread Measuring Tool Screen*

4. After the TBE device and the tablet are connected to the same Wi-Fi, tap the device you need in the available devices list to connect. Once the MaxiTPMS TBE device is connected, the connection status displays as “Paired.”

4.1.5 Select Tire Pressure Measuring Device

This setting enables you to connect the ITS600 device for measuring tire pressure.

➢ **To connect the ITS600 Device**

1. Tap **Common Settings,** and tap **Select Tire Pressure Measuring Device**.
2. Tap the **ON/OFF** button on the right of the screen to search available device(s).
3. Follow the screen guides to connect ITS600 device and the diagnostic tool to the same Wi-Fi.

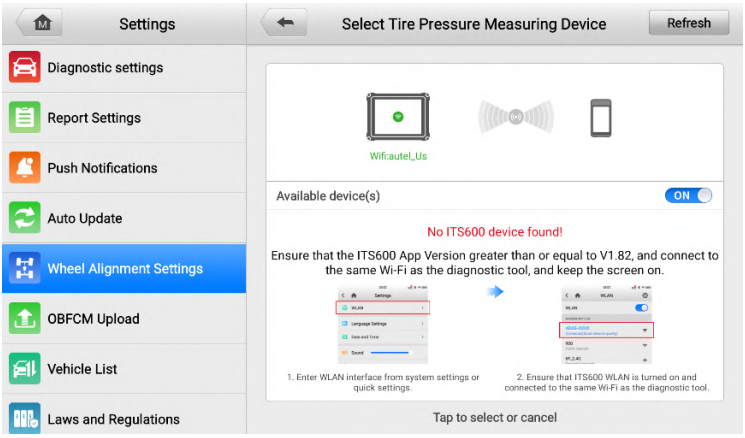


Figure 4-8 ***Connect Tire Pressure Measuring Device Screen***

4. After the ITS600 device and the tablet are connected to the same Wi-Fi, tap the device you need in the available devices list to connect. Once the ITS600 device is connected, the connection status displays as “Paired.”

4.1.6 Select Height Measuring Tool

This section allows you to select a ride height measuring tool (Tape measure or Ride height target). Selecting Tape measure requires manual measurement and value input as guided; selecting Ride height target enables automatic crossbar adjustment, target detection, and ride height calculation and display. For details, refer to *Ride Height Measurement*.

NOTE

Tape measure is selected by default.

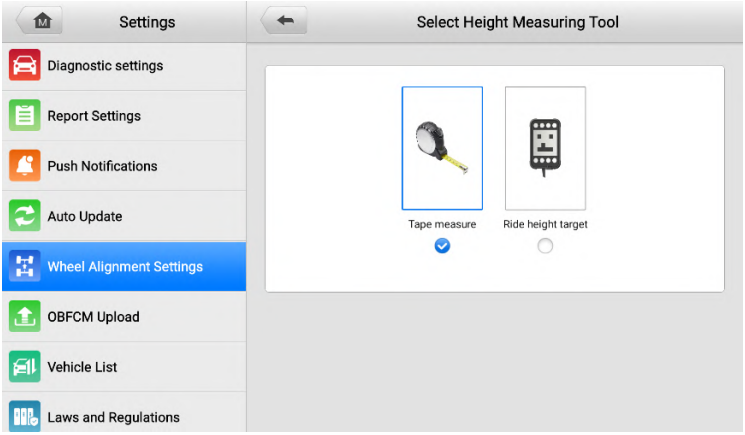


Figure 4-9 ***Select Height Measuring Tool Screen***

4.1.7 Mercedes Chassis Level Measuring Tool

Mercedes vehicles must use a special tool to measure the vehicle height. Failure to measure the vehicle height will result in no available specification value. You can select Autel Hand-held Inclinometer or other tools to measure the vehicle height.

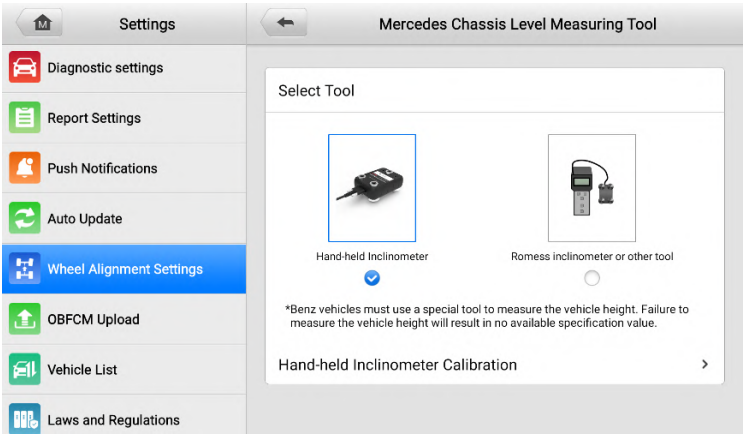


Figure 4-10 ***Select Benz Chassis Measuring Tool Screen***

If the hand-held Inclinometer provides inaccurate measurements after being dropped, tap **Hand-held Inclinometer Calibration** to recalibrate it.

➢ **To perform a hand-held inclinometer calibration**

1. Place the hand-held inclinometer on a flat and level surface.

Figure 4-11 ***Perform Hand-held Inclinometer Calibration 1***

2. Turn the hand-held inclinometer 180°.

Figure 4-12 ***Perform Hand-held Inclinometer Calibration 2***

3. Roll the hand-held inclinometer 180°.

Figure 4-13 ***Perform Hand-held Inclinometer Calibration 3***

4. Turn the hand-held inclinometer 180°. Then the calibration is completed.

Figure 4-14 ***Perform Hand-held Inclinometer Calibration 4***

4.1.8 Beep Setting

This setting allows you to enable beep or not when performing rolling compensation, lifting compensation, and Caster/SAI measurement.

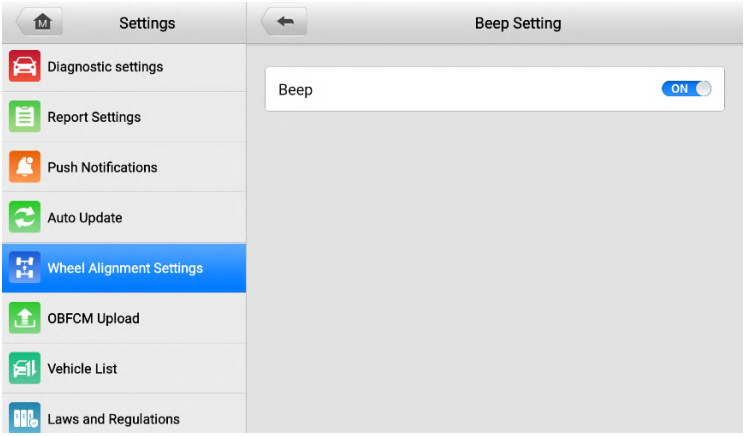


Figure 4-15 ***Beep Setting Screen***

4.2 Wheel Alignment Frame Connection

The wheel alignment frame connection method is covered in the previous section. For details, refer to *Wheel Alignment Frame Connection*.

4.3 Network Configuration

The network configuration is covered in the previous section. For details, refer to *Network Configuration*.

4.4 Update

After the wheel alignment frame is connected and the network is configured, tap **Update** from **Wheel Alignment Settings** to update the frame.

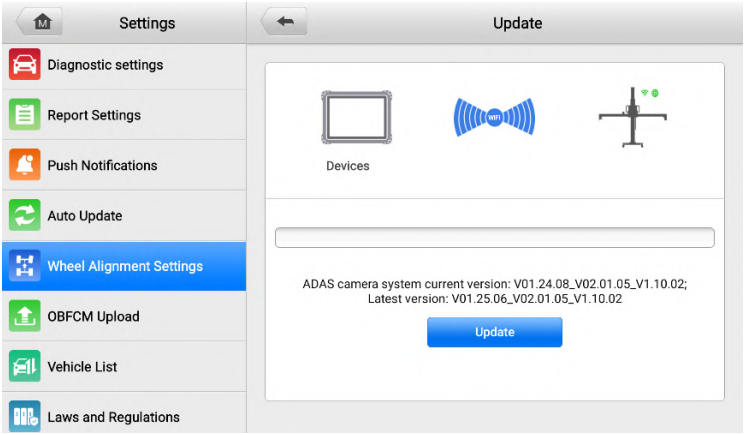


Figure 4-16 ***Update Screen***

4.5 Maintenance & Service

This section covers Calibration & Inspection, Calibration Record Report, Accuracy Check Interval, and Target Cleaning Interval.

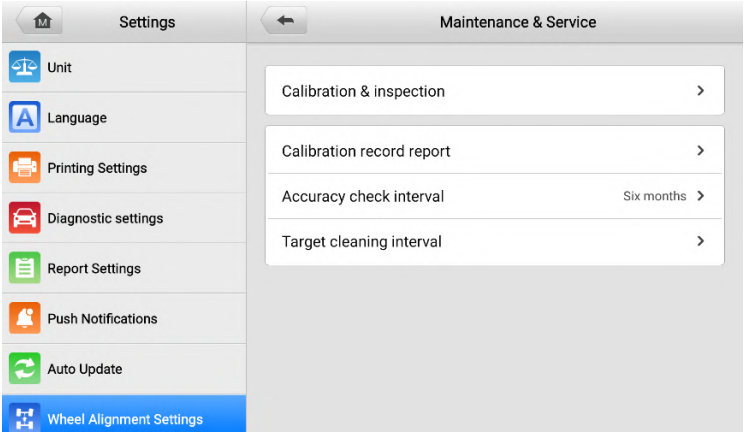


Figure 4-17 ***Maintenance & Service Screen***

NOTE

Ensure the wheel alignment frame Wi-Fi is connected; otherwise, the maintenance & service function cannot be activated.

4.5.1 Calibration & Inspection

NOTE

To perform Aligner Calibration, Wheel Clamp Target Calibration, and Aligner Accuracy Check, a calibration bar (AUTEL-CSC0500/10; AUTEL-CSC0500/12) is required. Contact your local dealer or manufacturer for purchase.

4.5.1.1 Aligner Calibration

The aligner needs to be calibrated when:

1. The camera has been disassembled.
2. Accuracy check has failed.

➢ **To calibrate the aligner**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Aligner calibration**.
2. Place the calibration bar about 2.2 m in front of the wheel alignment frame. Install the front wheel targets on the calibration bar, align the location pin with the locating hole, and tighten the nut.

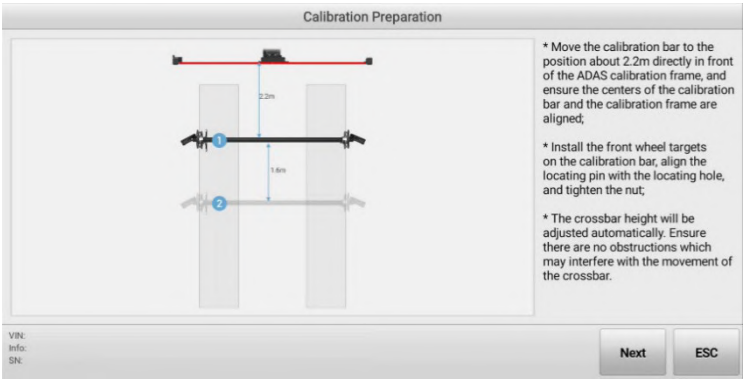


Figure 4-18 *Aligner Calibration Preparation*

3. Tap **Next**, and the crossbar height will be adjusted automatically, and search for the target. Then follow the screen guide to move the calibration bar so that the values of ‘Offset’, ‘L-Distance’, and ‘Distance Diff’’ are displayed in green.

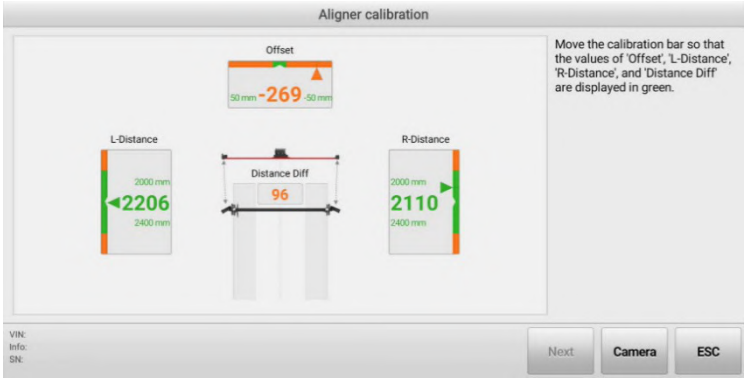


Figure 4-19 ***Aligner Calibration 1***

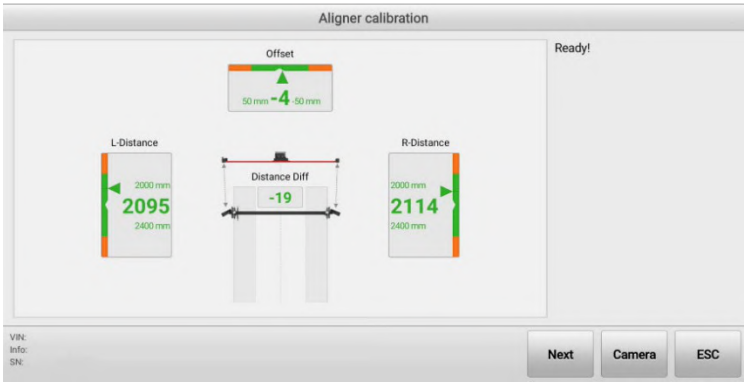


Figure 4-20 ***Aligner Calibration 2***

4. Tap **Next** to enter the following screen. Rotate the calibration bar according to the screen prompts to collect data. When the arrows and the indicated block images turn green, stop rotating the crossbar.

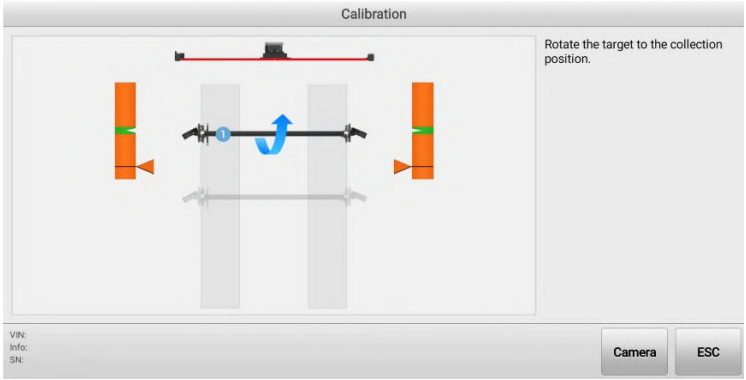


Figure 4-21 *Calibration 1*

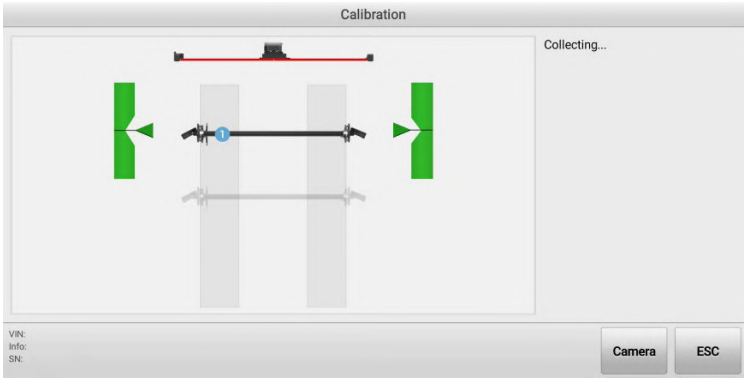


Figure 4-22 *Calibration 2*

5. Then place the calibration bar about 3.8 m in front of the wheel alignment frame and complete the calibration steps as shown in the screen guides to collect the corresponding data.

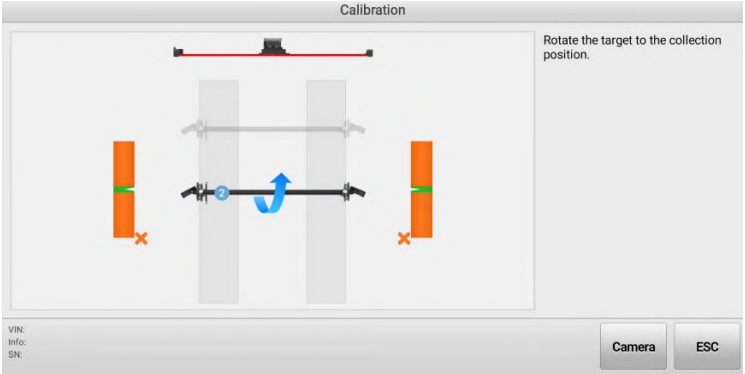


Figure 4-23 ***Calibration 3***

6. After the data of the front wheel targets are collected, remove the targets from the calibration bar and install the rear wheel targets on the calibration bar. Complete the calibration steps as shown in the screen guides.

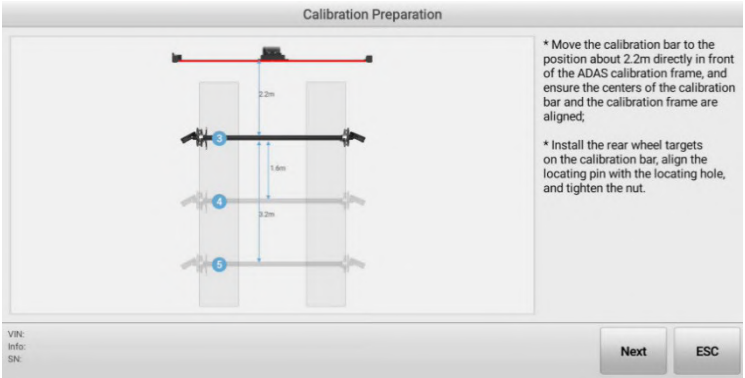


Figure 4-24 ***Calibration 4***

7. After the data of the four targets are collected, the calibration result screen will be displayed. indicates a successful calibration; while indicates a failed calibration that requires recalibration.

Figure 4-25 *Calibration Result Screen*

4.5.1.2 Wheel Clamp Target Calibration

When the matching wheel clamp (rim clamp/tire clamp) or the target has been replaced, the newly assembled wheel clamp (rim clamp/tire clamp) or target needs to be recalibrated.

NOTE

The illustrations involving clamps in this manual are based on the use of rim clamps.

1. Use Calibration Bar

➢ **To calibrate the wheel clamp (rim clamp) and target by using calibration bar**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Wheel clamp target calibration**.
2. Select **Wheel clamp target calibration — with calibration bar**.

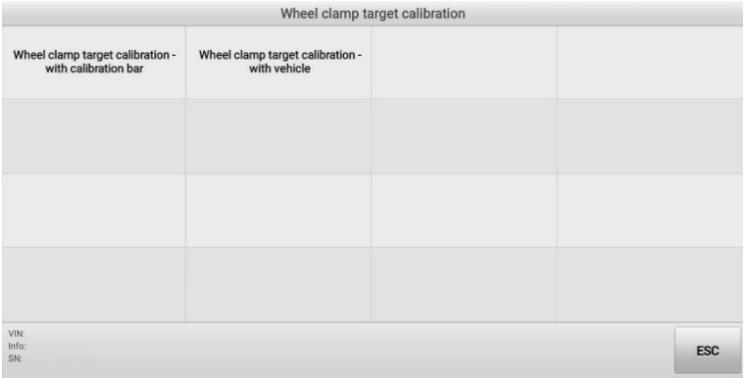


Figure 4-26 *Select Calibration Method*

3. Then select the target that needs to be calibrated. The Right Rear Wheel Target (properly installed on the right rear rim clamp) is used for illustration.

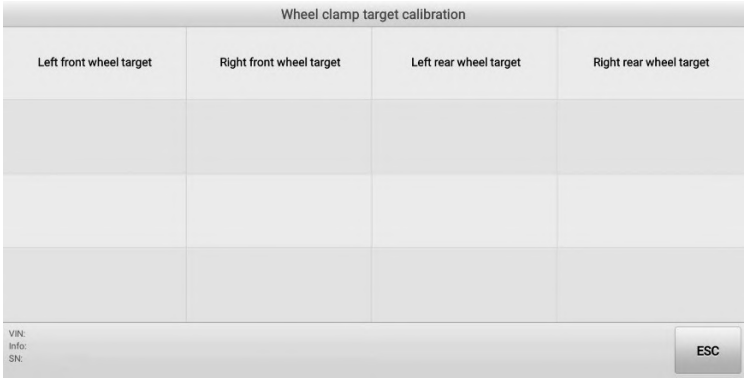


Figure 4-27 ***Select Target for Calibration***

4. The tablet will automatically display the calibration preparations. Follow the screen guides to move the calibration bar to a position about 2.2 m directly in front of the wheel alignment frame. Then install the right rear wheel clamp (rim clamp) and right rear target on the calibration bar, align the locating pin with the locating hole, and tighten the nut.

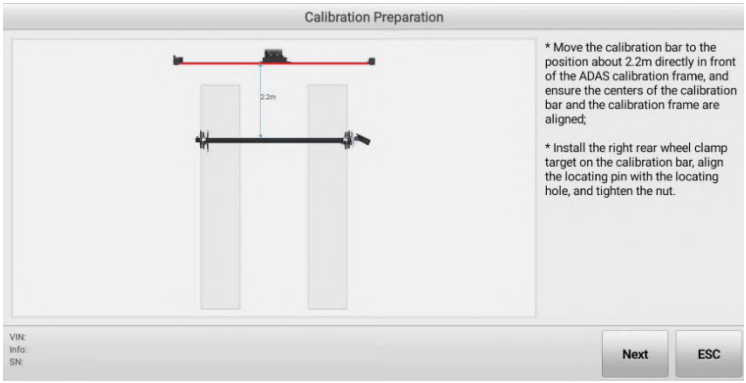


Figure 4-28 ***Calibration Preparation (Use Calibration Bar)***

5. Tap **Next** when the distance is adjusted to the required range, and the tablet will indicate that it is ready for subsequent operations.

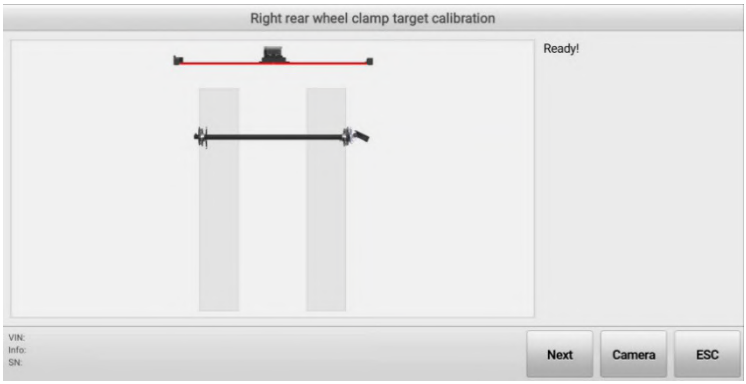


Figure 4-29 ***Start Calibration (Use Calibration Bar) 1***

6. Tap **Next** to continue. Follow the screen guide to rotate the calibration bar so that the targets are in the collection position.

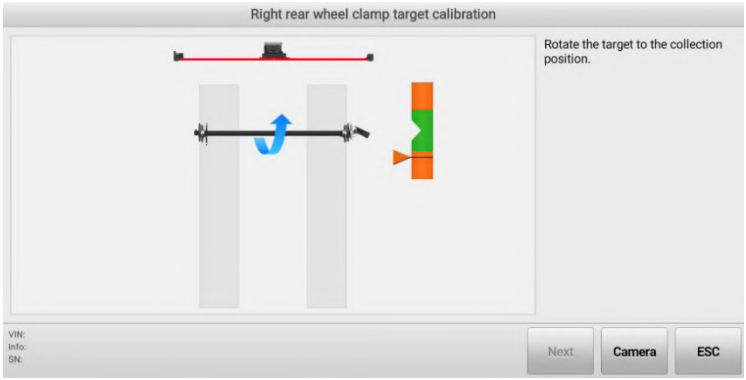


Figure 4-30 ***Start Calibration (Use Calibration Bar) 2***

7. When the arrows and the indicated block images turn green, stop rotating the crossbar, and the tablet will start data collecting automatically.

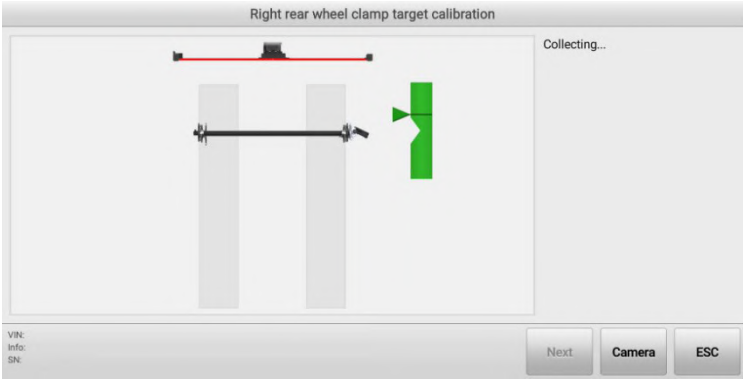


Figure 4-31 ***Start Calibration (Use Calibration Bar) 3***

8. After data collection, the calibration result screen will be displayed. indicates a successful calibration, and you can tap **ESC** to exit the function; while indicates a failed calibration, and you can tap **Recalibrate** to calibrate again.

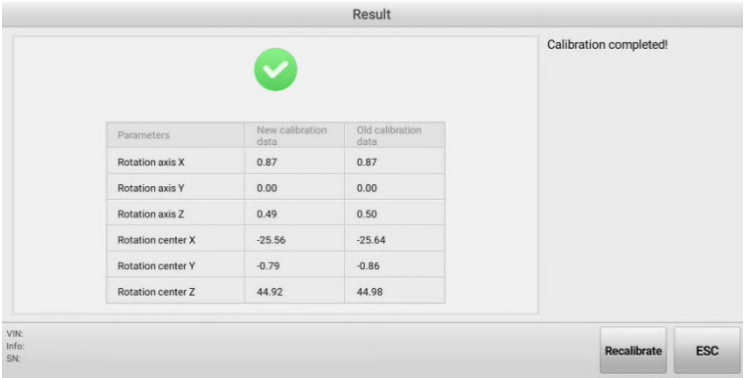


Figure 4-32 ***Calibration Result Screen***

2. Use Vehicle

➢ **To calibrate the wheel clamp (rim clamp) and target by using vehicle**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Wheel clamp target calibration**.

2. Select **Wheel clamp target calibration — with vehicle**. Refer to *Figure 4-26 Select Calibration Method* for details.

3. Then select the target that needs to be calibrated. The Right Front Wheel Target (properly installed on the right front rim clamp) is used for illustration. Refer to *Figure 4-27 Select Target for Calibration* for details.

4. As shown in the screen guides, drive the vehicle onto the lift, steer ahead, lock steering wheel holder stand tool, place transmission in neutral, and release parking brake. Then install the right front wheel clamp on right front wheel, and raise the front axle.

Figure 4-33 ***Calibration Preparation (Use Vehicle) 1***

5. Tap **Next** to continue. Follow the screen guides to place the wheel alignment frame about 2.2 m from the center of the front wheel, and ensure that the centers of the frame and the vehicle are aligned. Then press the **UP** and **DOWN** buttons on the back of the frame to adjust the crossbar height so that the crossbar is roughly at the same height as the center of the front wheel.

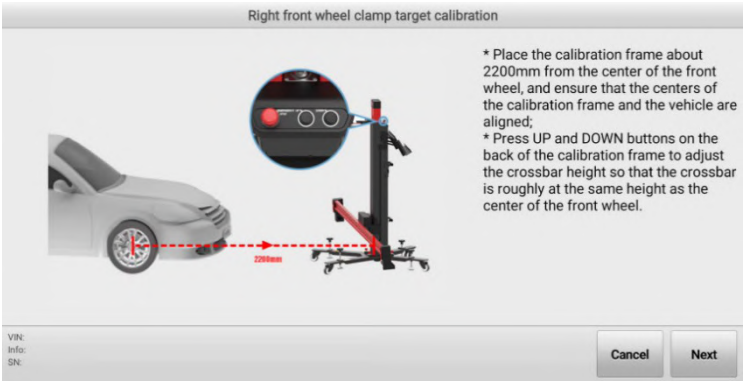


Figure 4-34 ***Calibration Preparation (Use Vehicle) 2***

6. Tap **Next** when the distance is adjusted to the required range, and the tablet will indicate that it is ready for subsequent operations.

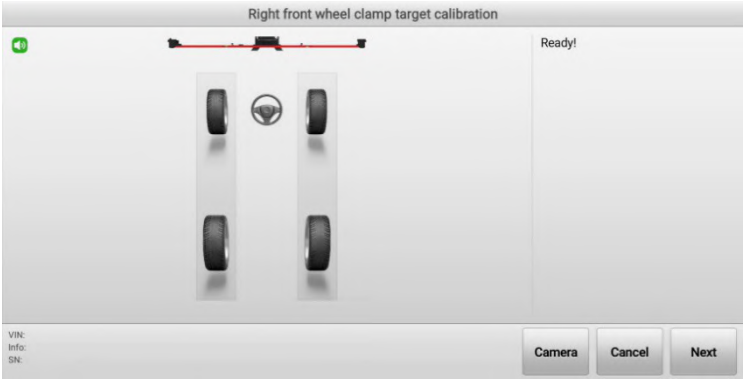


Figure 4-35 ***Start Calibration (Use Vehicle) 2***

7. Rotate the wheel as shown in the screen guides.

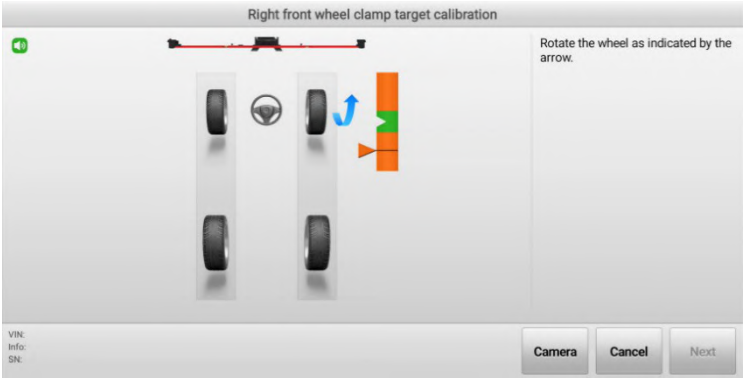


Figure 4-36 ***Start Calibration (Use Vehicle) 1***

8. When the arrows and the indicated block images turn green, stop turning the wheel, and the tablet will start data collecting automatically.

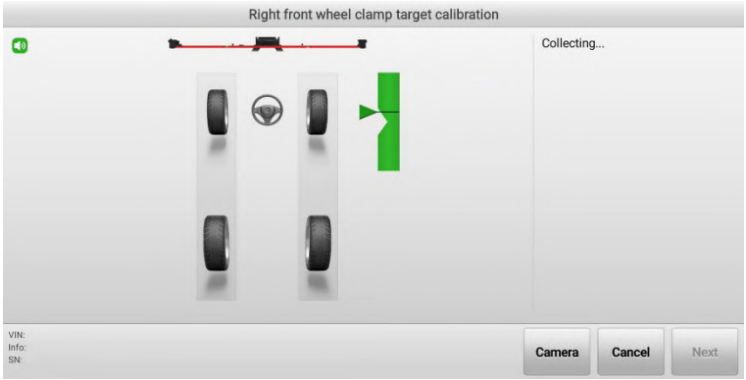
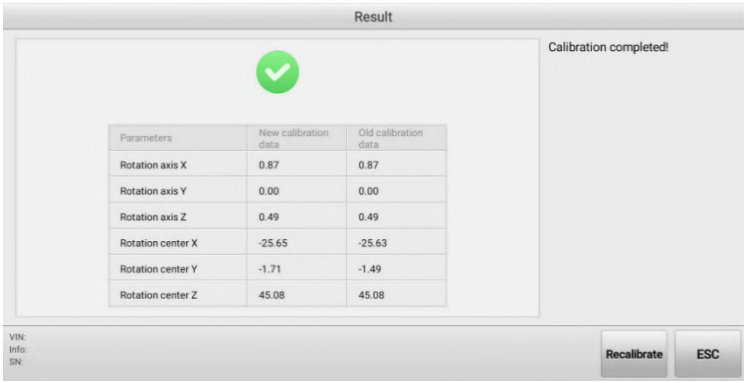


Figure 4-37 ***Start Calibration (Use Vehicle) 2***

9. After data collection, the calibration result screen will be displayed. indicates a successful calibration, and you can tap **ESC** to exit the function; while indicates a failed calibration, and you can tap **Recalibrate** to calibrate again.



Parameters	New calibration data	Old calibration data
Rotation axis X	0.87	0.87
Rotation axis Y	0.00	0.00
Rotation axis Z	0.49	0.49
Rotation center X	-25.65	-25.63
Rotation center Y	-1.71	-1.49
Rotation center Z	45.08	45.08

Figure 4-38 ***Calibration Result Screen (Use Vehicle)***

4.5.1.3 Aligner Accuracy Check

Aligner accuracy check is recommended when:

1. The aligner suffered a high-intensity collision.
2. The accuracy check has not been performed for more than six months.

The software provides three kinds of accuracy check methods: Aligner Accuracy Check using Calibration Bar, Aligner Accuracy Check using Vehicle, and Quick Accuracy Check.

1. Use Calibration Bar

Accuracy check can be performed with a calibration bar, enabling the overall accuracy of the measurement system (comprising cameras, rim clamps, and targets) to be verified accurately and reliably.

➢ **To perform an accuracy check with calibration bar**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Aligner Accuracy Check.**
2. Select **Accuracy Check – with calibration bar**.
3. According to the screen guides, move the calibration bar to a position about 2.2 m directly in front of the wheel alignment frame. Install the front wheel clamps (rim clamps) and targets on the calibration bar, align the locating pin with the locating hole, and tighten the nut.

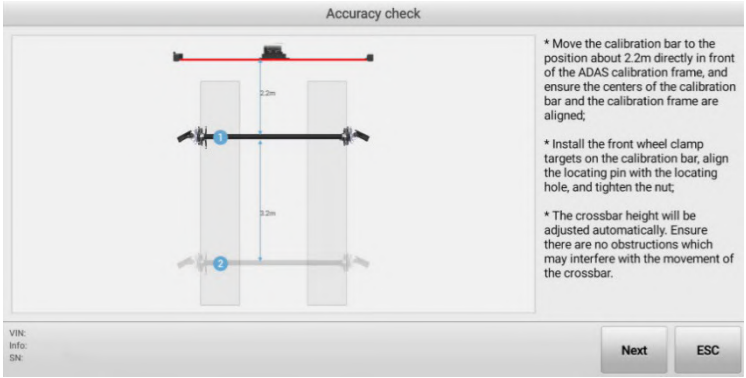


Figure 4-39 ***Accuracy Check (Use Calibration Bar) 1***

4. Tap Next. The crossbar height will be adjusted automatically, and the system will proceed to the next screen. As shown in the screen guide, move the calibration bar so that the values of ‘Offset’, ‘L-Distance’, and ‘Distance Diff’’ are displayed in green.

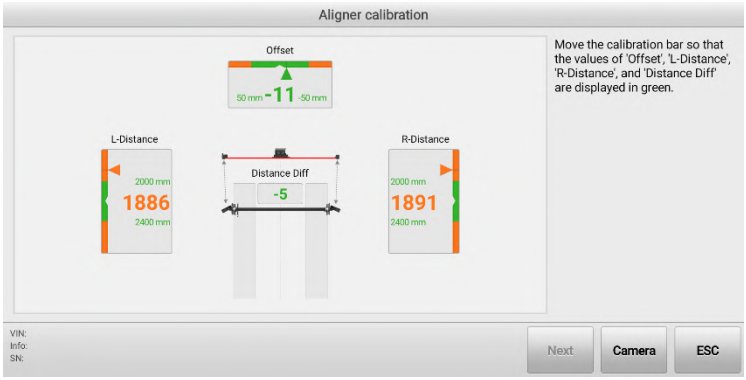


Figure 4-40 ***Accuracy Check (Use Calibration Bar) 2***

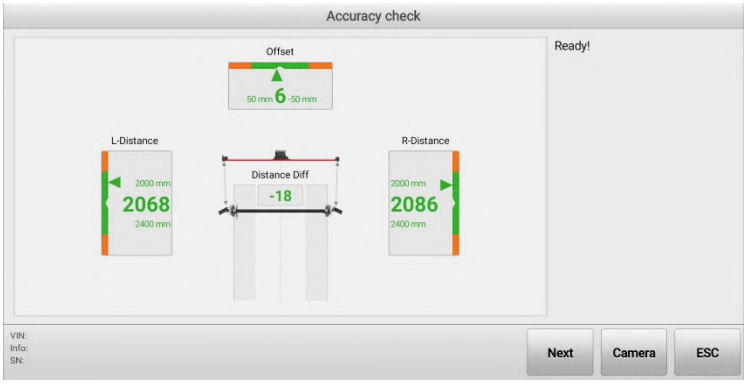


Figure 4-41 ***Accuracy Check (Use Calibration Bar) 3***

5. Then tap **Next** to enter the following screen. Rotate the calibration bar according to the screen prompts to collect data. When the arrows and the indicated block images turn green, stop rotating the calibration bar.

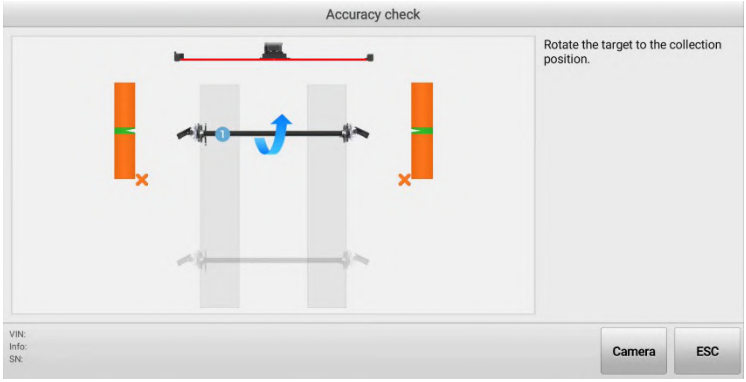


Figure 4-42 ***Accuracy Check (Use Calibration Bar) 4***

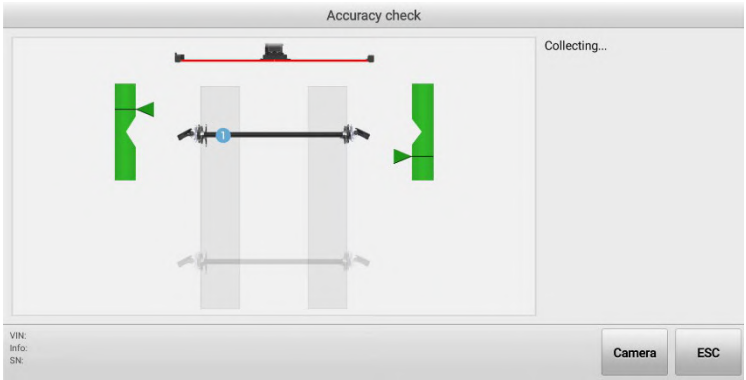


Figure 4-43 ***Accuracy Check (Use Calibration Bar) 5***

6. Then place the calibration bar about 5.4 m in front of the wheel alignment frame and complete the calibration steps as shown in the screen guides to collect the corresponding data.

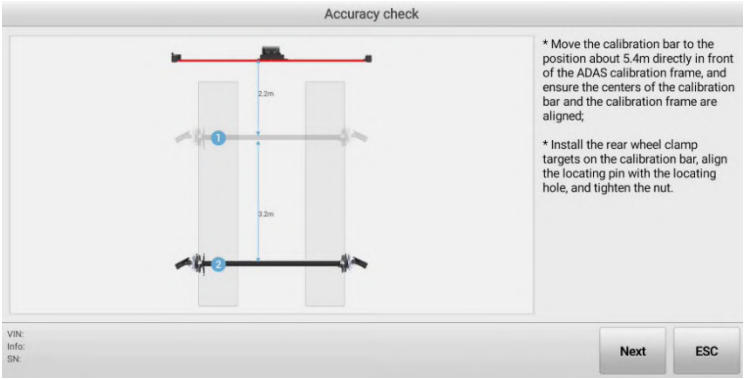


Figure 4-44 ***Accuracy Check (Use Calibration Bar) 6***

7. After data collection, the calibration result screen will be displayed. indicates a successful calibration, and you can tap **ESC** to exit the function; while indicates a failed calibration, and you can tap **Recheck** to calibrate again.

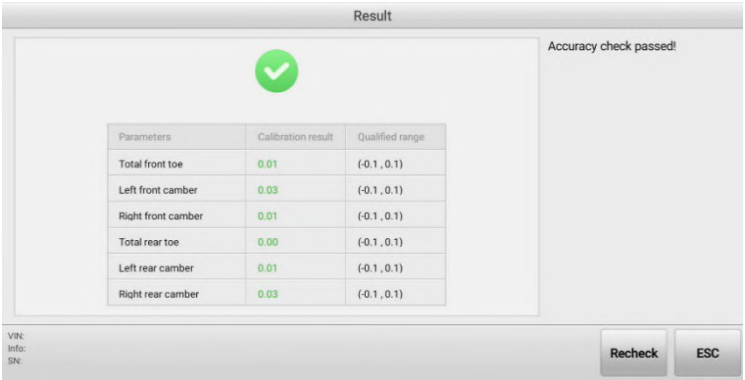


Figure 4-45 ***Accuracy Check Result Screen***

2. Use Vehicle

Accuracy check can be performed with a vehicle, allowing the overall accuracy of the measurement system (comprising cameras, rim clamps, and targets) to be verified without using a calibration bar. Since inspection accuracy is affected by vehicle condition, it is recommended to use a well-maintained sports vehicle for this check.

➢ **To perform an accuracy check with vehicle**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Aligner Accuracy Check.**

2. Select **Accuracy Check — with vehicle**.

3. Follow the screen guide to set the vehicle to the required status.

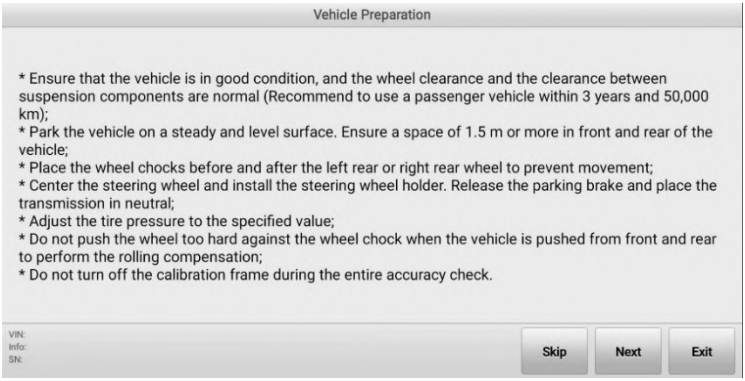


Figure 4-46 ***Vehicle Preparation***

4. Tap **Next** and follow the guides shown on the screen to place the wheel alignment frame and install the wheel clamps (rim clamps) and target on the wheels properly.

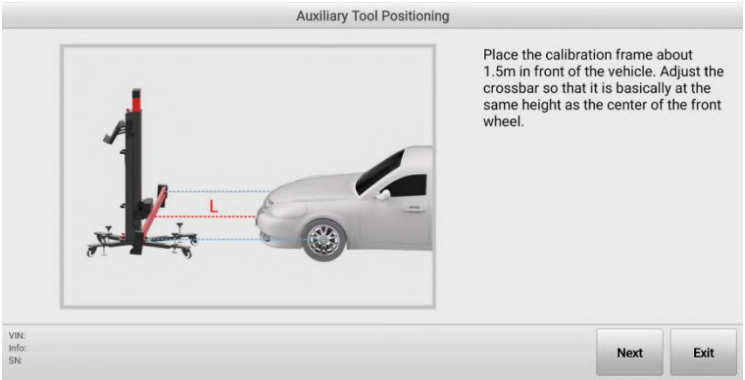


Figure 4-47 ***Auxiliary Tool Positioning 1***

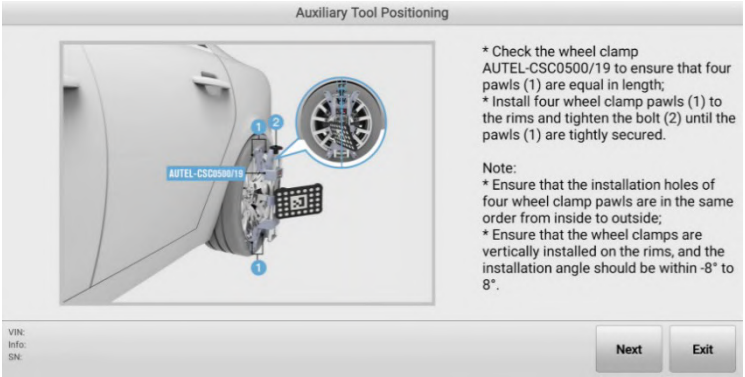


Figure 4-48 ***Auxiliary Tool Positioning 2***

5. Then tap **Next**, the crossbar will be adjusted automatically, search for the target, and the tablet will enter the following screen. Follow the screen guide to move the rear wheel chock backward for about 30 cm, and push the vehicle backward, so that the values are displayed green. When the arrows and indicated block images are displayed green, stop pushing the vehicle and wait for the tablet to enter the next screen.

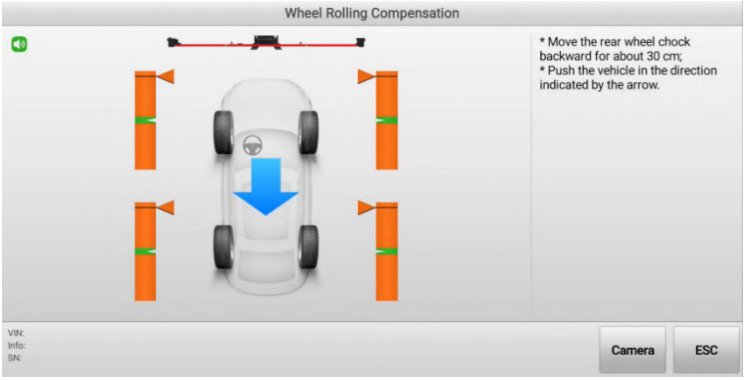


Figure 4-49 ***Wheel Rolling Compensation 1***

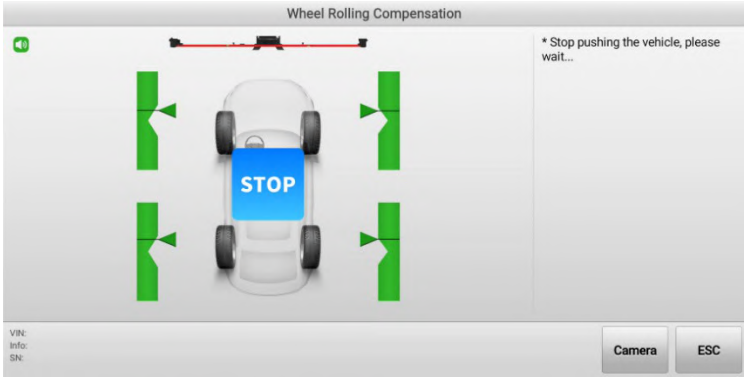


Figure 4-50 ***Wheel Rolling Compensation 2***

6. Then push the vehicle forward. When the arrows and indicated block images are displayed green, stop pushing the vehicle and wait for the tablet to enter the next screen.

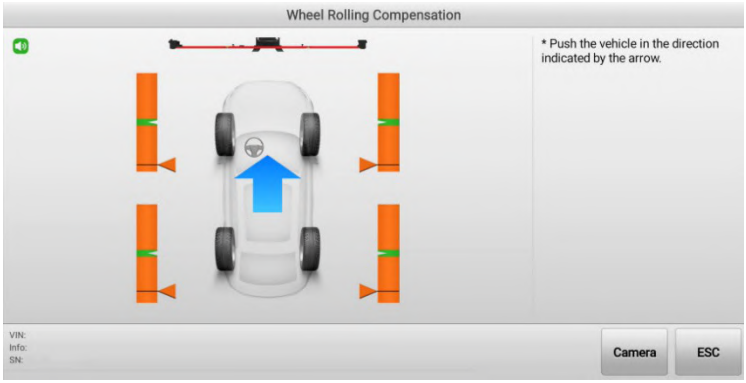


Figure 4-51 ***Wheel Rolling Compensation 3***

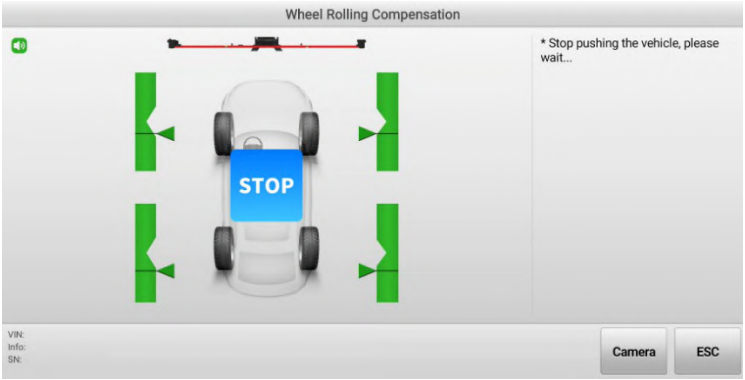


Figure 4-52 ***Wheel Rolling Compensation 4***

7. Place the wheel alignment frame directly behind the rear of the vehicle, and follow the screen guides to complete the procedures.

8. After the operation is completed, the calibration result screen will be displayed. indicates a successful calibration; while indicates a failed calibration that requires recalibration.

3. Quick Accuracy Check

A quick accuracy check is performed automatically every six months by default. The accuracy check interval can be modified in the settings of the wheel alignment software. The quick accuracy check can detect faults in the measurement system consisting of cameras and targets, but does not cover wheel clamps.

➢ **To perform a quick accuracy check**

1. Tap **Maintenance & Service**, and then select **Calibration & inspection > Aligner Accuracy Check**.

2. Select **Quick accuracy check**.

3. Follow the screen guide to set the vehicle to the required status.

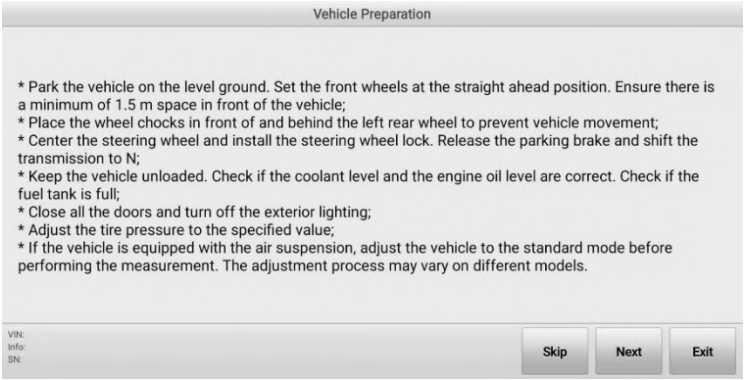


Figure 4-53 ***Vehicle Preparation***

4. Tap **Next** and follow the guides shown on the screen to place the wheel alignment frame and install the wheel clamps (rim clamps) and target on the wheels properly.

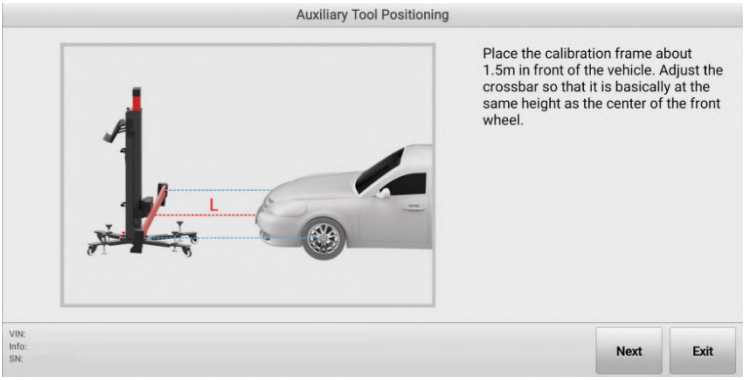


Figure 4-54 ***Auxiliary Tool Positioning 1***

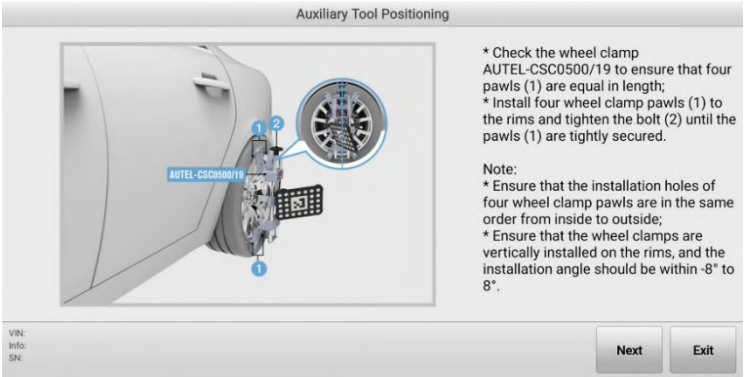


Figure 4-55 ***Auxiliary Tool Positioning 2***

5. Tap the **Next** button, the crossbar height will be adjusted automatically and search for the target, and will enter the following screen.

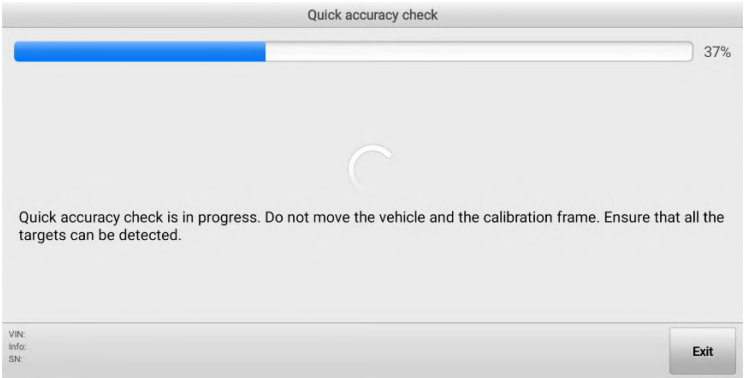


Figure 4-56 ***Quick Accuracy Check***

6. The quick accuracy check result will be displayed after the check progress is completed. indicates a successful calibration; while indicates a failed calibration that requires recalibration.

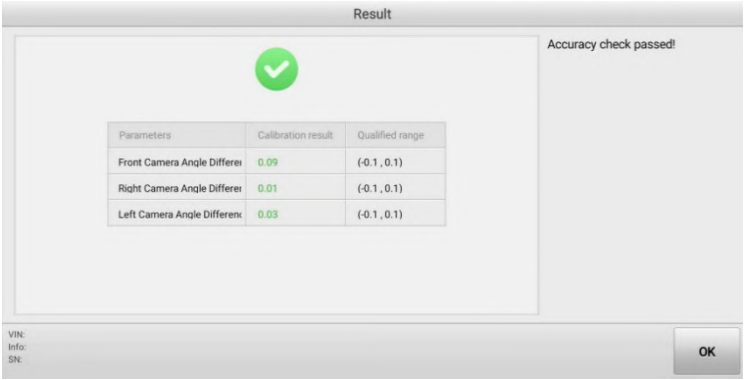


Figure 4-57 ***Quick Accuracy Check Result***

4.5.1.4 Camera Check

The Camera Check function is performed to check the status of the five cameras on the wheel alignment frame.

➢ **To preform camera check**

1. Tap **Maintenance & Service**, then select **Camera check**. The views and status of the cameras, including the distance measuring camera, self-calibration camera, LF target camera, LR target camera, RF target camera, and RR target camera, will be displayed on the screen.

2. Tap **Description** to check the explanations for each icon displayed on the screen.

Table 4-1 ***Camera Descriptions***

Icon	Name	Explanation
	Normal Target Dots	Target dots can be recognized normally.
	Abnormal Target/Target Dots	The target is dirty or blocked; clean it or remove the obstructions.
	Enabled Camera	The camera works normally.
	Not Enabled Camera	The camera is not used in the current function.

Icon	Name	Explanation
	Abnormal Camera	The diagnostic tool fails to communicate with the cameras. Follow the steps below: 1. Check if the power is ON; 2. Check if the current camera connection is normal; 3. Check if the diagnostic tool is connected to the camera Wi-Fi; 4. Record and upload logs. Fill in the problem description in detail.

4.5.1.5 Hardware Check

This section allows you to check the status of various components of the wheel alignment frame.

4.5.1.6 Version Information

This section allows you to check the version information of various components of the wheel alignment frame.

4.5.2 Calibration Record Report

All the calibration records are saved here; you can view when and what type of calibration the equipment was performed.

4.5.3 Accuracy Check Interval

This function enables you to set the accuracy check intervals. Four options are available: three months, six months, one year, or never. The default accuracy check interval is six months.

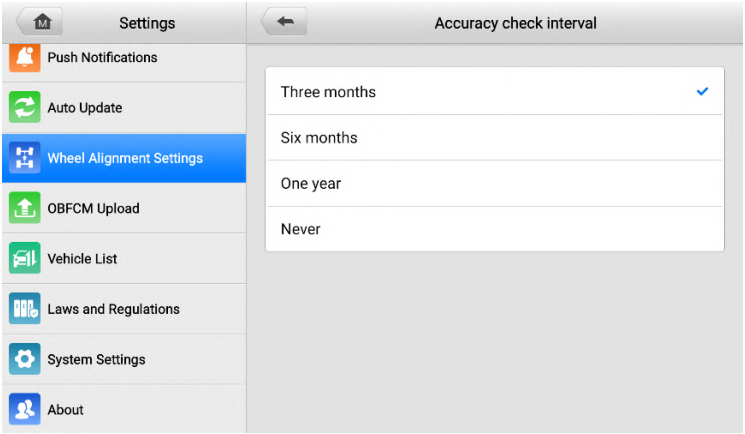


Figure 4-58 ***Accuracy Check Interval Setting Screen***

4.5.4 Target Cleaning Interval

This function helps in reminding the operator about the target cleaning frequency, which can be selected in terms of alignment numbers or intervals.

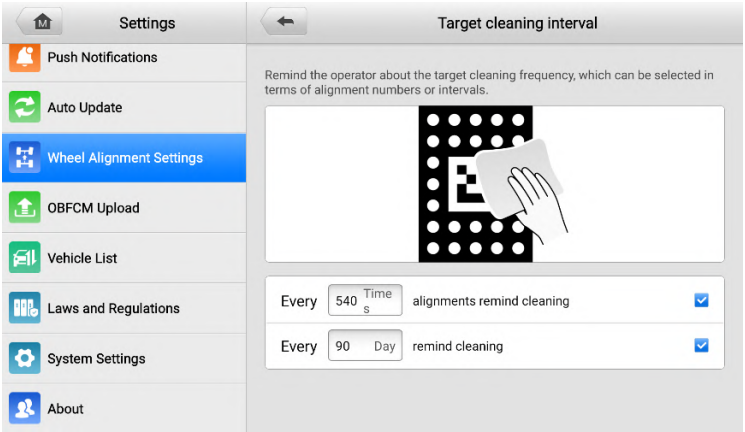


Figure 4-59 ***Target Cleaning Interval Setting Screen***

4.6 Wheel Alignment Software Settings

Vehicle Inspection, Measurement Preparation, Measurement Results, Overhaul Report, Customized Specifications Management, and Restore Default Settings are included in this section.

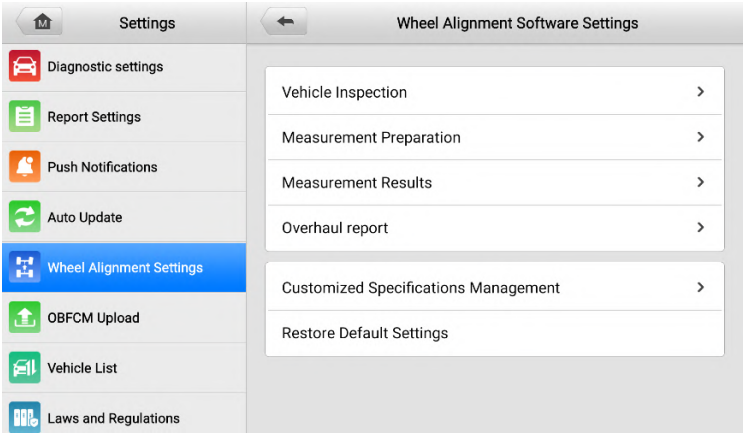


Figure 4-60 ***Wheel Alignment Software Settings Screen***

4.6.1 Vehicle Inspection

This function enables you to:

1. Set whether to enable tire inspection or not. This setting will affect whether the tablet will guide you to perform Tread Depth & Pressure Inspection in the Vehicle Inspection procedure. For more details, refer to *Tread Depth & Pressure Inspection*.

   - If the tire inspection is activated, you can set:

     1) Tread Depth Measuring Method: Single Check or All Tread Check.

     2) Minimum Tread Depth: When the tread depth is less than the minimum tread depth value you set, the tablet will prompt you to replace the tire immediately.

     3) Warning Tread Depth: When the tread depth is less than the value you set, the tablet will issue a warning.

2. Set whether to enable chassis inspection or not. This setting will affect whether the tablet will guide you to perform Chassis Inspection in the Vehicle Inspection procedure. For more details, refer to *Chassis Inspection*.

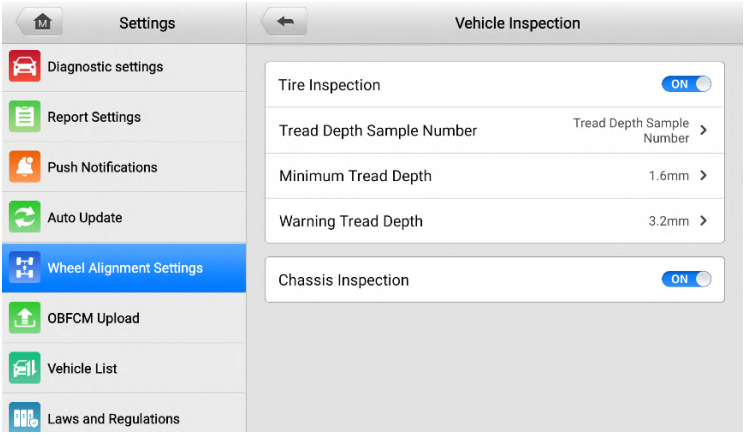


Figure 4-61 ***Vehicle Inspection Settings Screen***

4.6.2 Measurement Preparation

This function enables/disables measurement preparation, and will affect whether the tablet will guide you to measure ride height. For more details, refer to *Ride Height Measurement*.

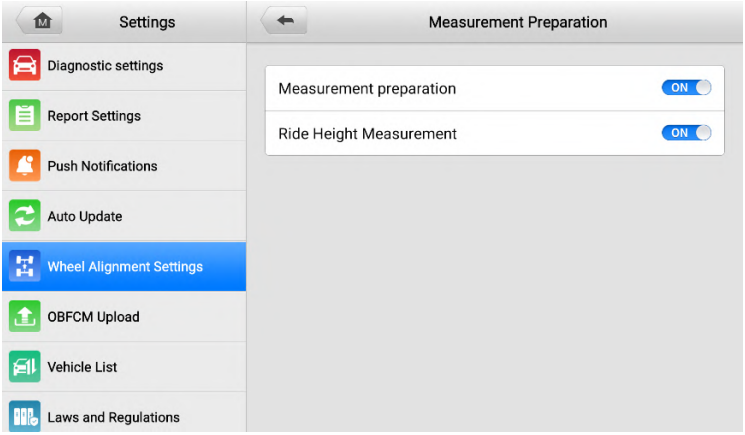


Figure 4-62 ***Measurement Preparation Setting Screen***

4.6.3 Measurement Results

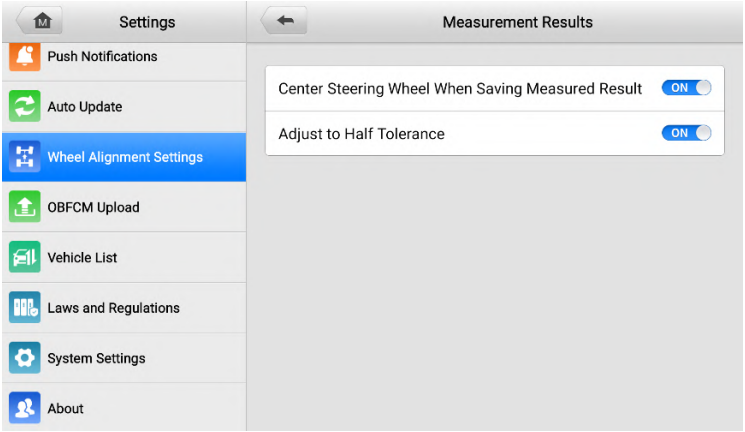


Figure 4-63 ***Measurement Results Setting Screen***

This function enables you to:

1. Whether to center the steering wheel when saving the measured result.

   - Turn on the function

   1) If the wheels are not in straight ahead position, tap **Save Before Repair** in the Measured Result screen, and the guide for setting the wheels straight ahead will be displayed on the screen.

Figure 4-64 ***Save Before Repair Screen 1***

   2) When the wheels are in straight ahead position, the tablet will save the data automatically and display the following screen.

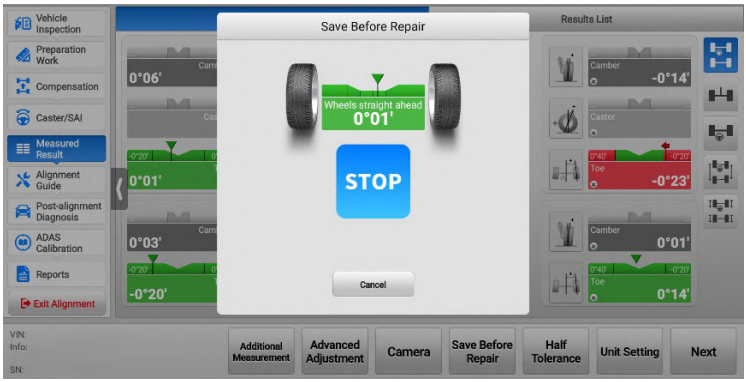


Figure 4-65 ***Save Before Repair Screen 2***

- Turn off the function: the data will be saved directly after tapping **Save Before Repair** in the Measured Result screen.

2. Whether to change to Half Tolerance mode.

   1) If the Half Tolerance mode is enabled, the Measured Result will be displayed in Half Tolerance mode, and the screen looks like the image below.

Figure 4-66 ***Measured Result (Half Tolerance) Screen***

   2) If the Half Tolerance mode is disabled, the Measured Result will be displayed in Full Tolerance mode, and the screen looks like the image below.

Figure 4-67 ***Measured Result (Full Tolerance) Screen***

4.6.4 Overhaul Report

This setting allows you to enable or disable the display of the chassis safety diagnostic report on the report screen after a wheel alignment operation. For more details, refer to *Reports*.

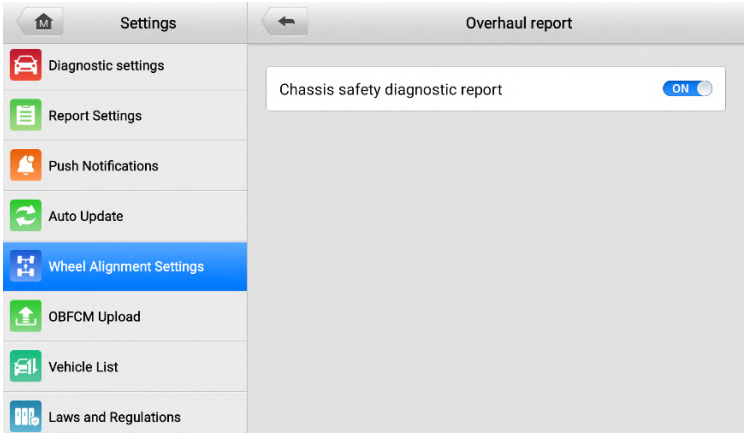


Figure 4-68 ***Overhaul Report Setting Screen***

4.6.5 Customized Specifications Management

The function enables you to view or delete the customized specification data that have been stored for the vehicle. If you have not stored any customized specification data, the screen will display that no data is available when tapping the **Customized Specification Management** button.

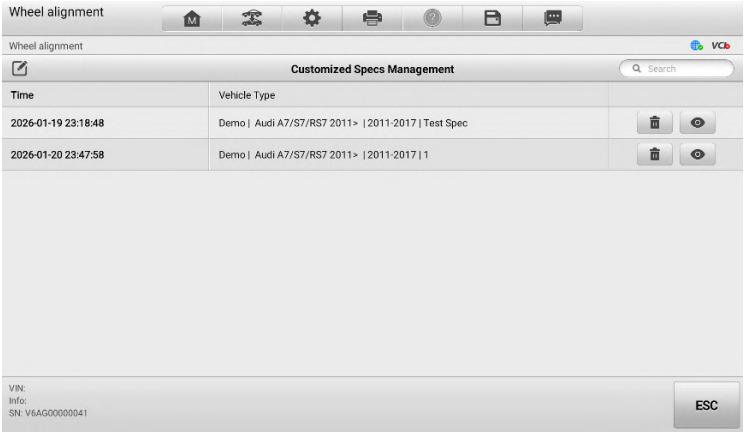


Figure 4-69 ***Customized Specs Management Screen***

4.6.6 Restore Default Settings

This function restores the default settings of wheel alignment software.

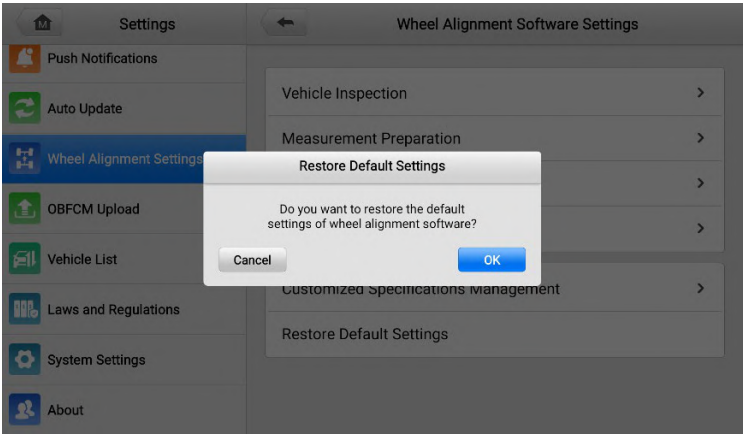


Figure 4-70 ***Restore Default Settings Screen***

The default settings are as follows:

Table 4-2 *Default Settings*

Item	Default Setting
Angle Display Format	Degree & Minute
Toe Display Format	Degree & Minute
Ride Height Unit	mm
Tread Depth Unit	mm
Track Width & Wheelbase Unit	mm
Tire Pressure Unit	bar
Weight Unit	kg
Clamp Type	Rim Clamp
Connect Tread Measuring Tool	Enable TBE Device Searching
Select Height Measuring Tool	Tape Measure
Benz Chassis Level Measuring Tool	Hand-held Inclinometer
Beep Setting	Turn On
Accuracy Check Interval	Six Months
Target Cleaning Interval	Times: 540 Times Days: 90 Days
Vehicle Inspection	Turn On
Tread Depth Sample Number	All Tread Check

Item	Default Setting
Minimum Tread Depth	1.6 mm
Warning Tread Depth	3.2 mm
Chassis Inspection	Turn On
Measurement Preparation	Turn On
Center Steering Wheel When Saving Measured Result	Turn Off
Adjust to Half Tolerance	Turn On

5 Wheel Alignment Function

A vehicle's four wheels, steering mechanism, and front and rear axles are designed to maintain a specific relative position — a factory-set standard specification. This relative position may shift following component reinstallation or prolonged operation. The process of adjusting these parts back to their standard positions is defined as wheel alignment.

Proper wheel alignment ensures straight-line driving stability, enhances steering responsiveness, and reduces excessive tire wear and unnecessary power consumption. For these reasons, wheel alignment is a necessary procedure before vehicle operation.

In this chapter, technical specifications, precautions in use, wheel alignment preparations, and wheel alignment procedures are addressed.

5.1 Technical Specifications

The technical specifications are shown in the table below.

Table 5-1 *Technical Specifications*

Item	Description
Recommended Working Distance	2667 mm (105 in)
Supported Axle Distance	2032–5588 mm (80–220 in)
Supported Wheel Distance	1270–2490 mm (50–98.03 in)
Supported Rim Diameter (With Rim Clamp)	279–609 mm (11–24 in)
Supported Tire Diameter (With Tire Clamp)	482.6–939.8 mm (19–37 in)
Measurement Frequency (typ.)	9 times/s
Crossbar Lift Speed	50 mm/s
Operating Temp.	-10–50 ℃ (14 °F–122 °F)

Item	Description
Storage Temp.	-20–60 ℃ (-4 °F–140 °F)

5.2 Precautions in Use

1. When the vehicle is on the lift, make sure the front wheels are centered with the steering wheel in the straight-ahead position.
2. After the vehicle is driven on the lift, wheel chocks should be placed on the front and rear of the two rear wheels to prevent the vehicle from rolling away.
3. Be careful when lifting the vehicle. Follow the safe operating procedures to lift vehicles.
4. When the vehicle is lifted to the required height, the vehicle can only be started after the insurance is in effect and safety is ensured.
5. Operating the lift is strictly prohibited when personnel are working underneath or around the vehicle.
6. Make sure the camera lens and target are clean.
7. When wheel clamps are required, ensure the pawls on each wheel clamp are in the same gear.
8. Strictly follow the software procedures and on-screen prompts.

5.3 Before Wheel Alignment

5.3.1 Preparatory Work

Before performing wheel alignment, please check and prepare:

1. The tablet is connected with IWA500 Wi-Fi and Internet accessible network. Refer to *Wheel Alignment Frame Connection* and *Network Configuration* for details.
2. The ignition is turned off, and the IWA500 is connected to the charger to avoid battery drain, since the complete wheel alignment procedure may take a long time.
3. Prepare the following tools:
   1) Wheel clamps (rim clamps), wheel clamps (tire clamps), and targets
      - To install wheel clamps (rim clamps) and targets on wheels, refer to *Target*.

- To install wheel clamps (tire clamps) and targets on tires, refer to *Wheel Clamp (Tire Clamp)*.

NOTE

Here we select wheel clamps (rim clamps) for illustration.

2) Turnplate

3) Steering wheel holder stand tool and brake pedal depressor

4) Wheel chock

5) Steering wheel level

5.3.2 Function Selection

Two applications, Wheel Alignment and Advanced Wheel Alignment, are available on the Job Menu.

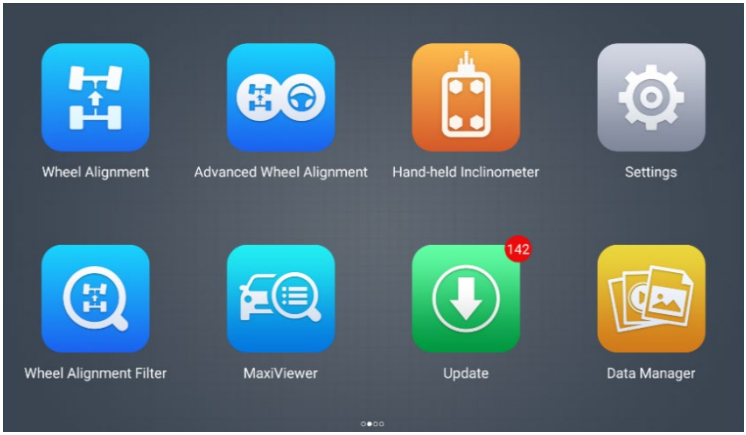


Figure 5-1 *IWA500 Job Menu Screen*

1) Select the **Wheel Alignment** application to perform the wheel alignment function.

2) Select the **Advanced Wheel Alignment** application to perform the wheel alignment and steering angle reset functions. Establish proper communication between the vehicle and tablet by connecting the VCI device to the vehicle's DLC. Refer to *Establish Vehicle Communication* for details.

NOTE

VCI Connection is not required for the Wheel Alignment function; while it is mandatory for the Advanced Wheel Alignment function.

Table 5-2 *Function Comparison*

Function / Procedures	Wheel Alignment	Advanced Wheel Alignment
Vehicle Inspection	✓	✓
Preparation Work	✓	✓
Compensation	✓	✓
Caster/SAI	✓	✓
Measured Result	✓	✓
Alignment Guide	✓	✓
SAS and Other Diagnosis Function		✓
ADAS Calibration		
Reports	✓	✓

5.3.3 Vehicle Information Identification

After selecting an application to perform the desired functions, select an appropriate method to identify vehicle information. The supported identification methods for the two applications are detailed as follows:

Table 5-3 ***Methods to Identify Vehicle Information***

Application / Method	Wheel Alignment	Advanced Wheel Alignment
Auto Detect		✓
Manual Input	✓	✓
Scan VIN/License	✓	✓
Manual Selection	✓	✓

➢ **To identify vehicle information via auto detect**

1. Tap the blue **VID** button on the top left of the screen.

Figure 5-2 ***Auto Detect Screen 1***

2. Select **Auto detect** from the drop-down menu. Then the vehicle will be identified automatically.

Figure 5-3 ***Auto Detect Screen 2***

Figure 5-4 ***Auto Detect Screen 3***

➢ **To identify vehicle information via manual input**

1. Select the blue **VID** button on the top left of the screen.
2. Select **Manual input** from the drop-down menu.

Figure 5-5 ***Manual Input Screen 1***

3. Tap the input box and enter the correct VIN or license number. Then tap **OK,** and the vehicle will be identified.

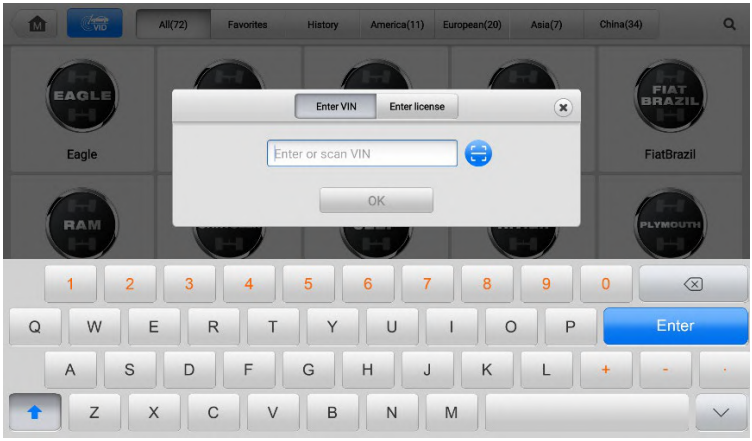


Figure 5-6 ***Manual Input Screen 2***

➢ **To identify vehicle information via VIN/license scanning**

1. Select the blue **VID** button on the top left of the screen.
2. Select **Scan VIN/License Plate** from the drop-down menu.

Figure 5-7 ***VIN Scanning Screen 1***

3. Position the camera so that the VIN (located on the vehicle dash or vehicle door jamb) appears within the scanning frame. Then the VIN is scanned and recognized automatically, and the result will appear in the Recognition Result dialog box.

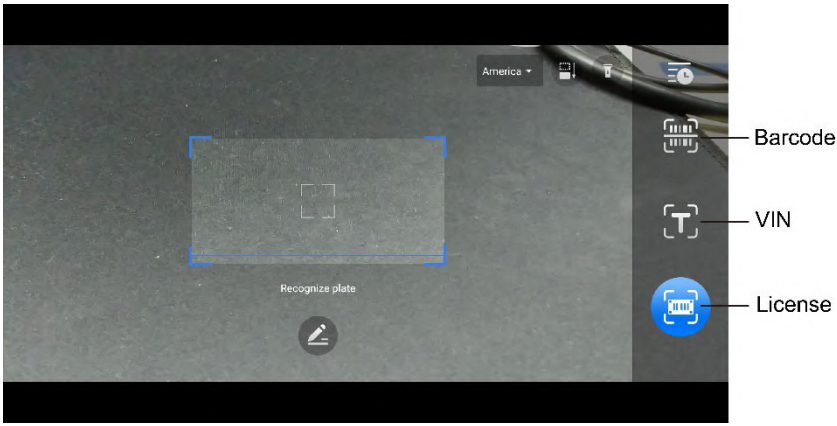


Figure 5-8 ***VIN Scanning Screen 2***

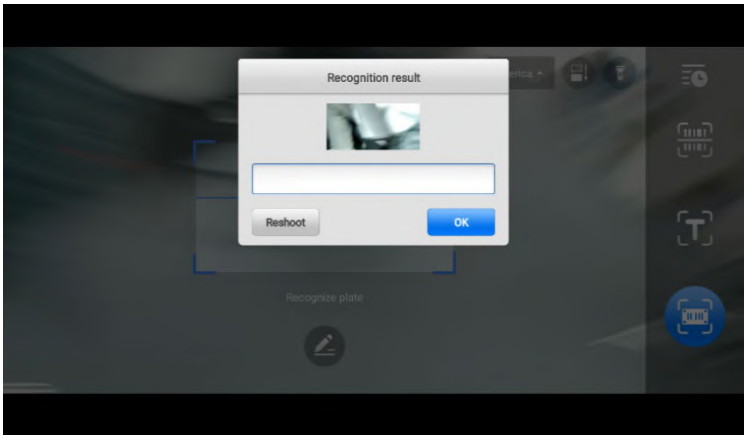


Figure 5-9 ***VIN Scanning Screen 3***

4. Tap **OK** to confirm the VIN.

➢ **To identify vehicle information via manual selection**

1. Select the vehicle manufacturer icon.

Figure 5-10 ***Manual Selection Screen 1***

2. Select **Manual Selection**. Then select the vehicle information, such as Brand, Model, Capacity, Engine Type, and Model Year. Then tap **OK** to confirm the VIN.

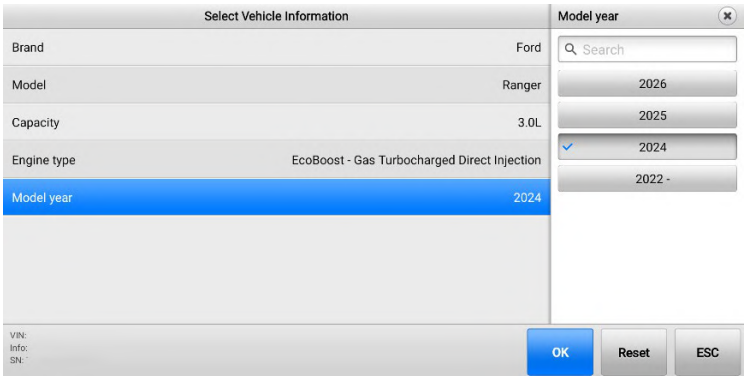


Figure 5-11 ***Manual Selection Screen 2***

5.3.4 Parameters Customization

After vehicle information is selected, the **Specs** button becomes available in the function button section at the bottom of the screen. This button allows you to check and customize the wheel alignment parameters. It applies to vehicles whose parameters deviate from the original factory settings after chassis modification.

➢ **To customize wheel alignment parameters (Take Audi vehicles as an example):**

1. Tap the **Specs** button to check the wheel alignment parameters. Then tap the **Customize Specs** button if any parameters require editing.

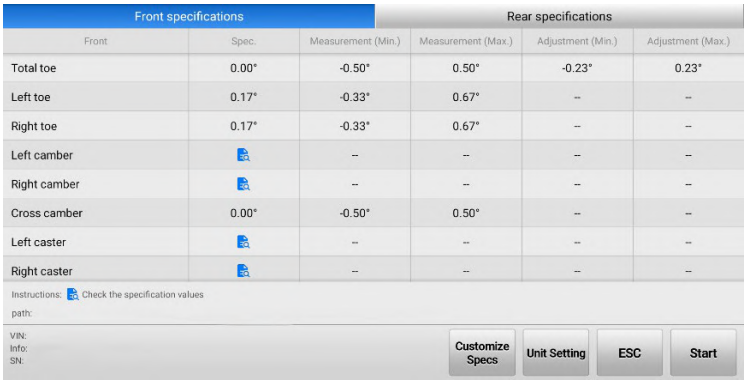


Figure 5-12 ***Alignment Specifications Screen***

2. Tap to delete the parameters that need edited and input the correct values.

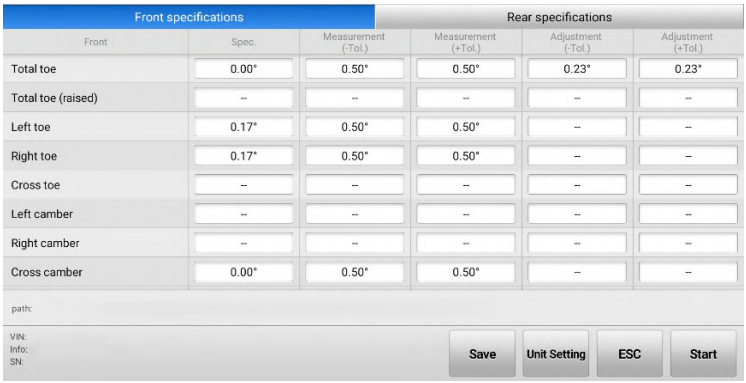


Figure 5-13 ***Edit Alignment Specifications Screen***

3. Tap **Save** to enter Save Specifications screen. Input the vehicle model and annotation for easy identification and retrieval. Then tap **OK** to save the parameters.

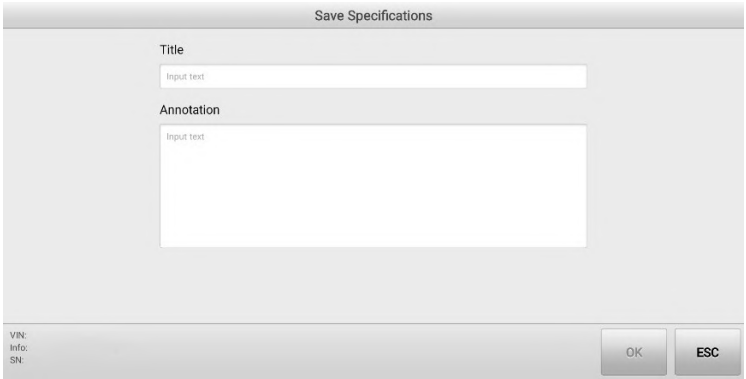


Figure 5-14 ***Save Specifications Screen 1***

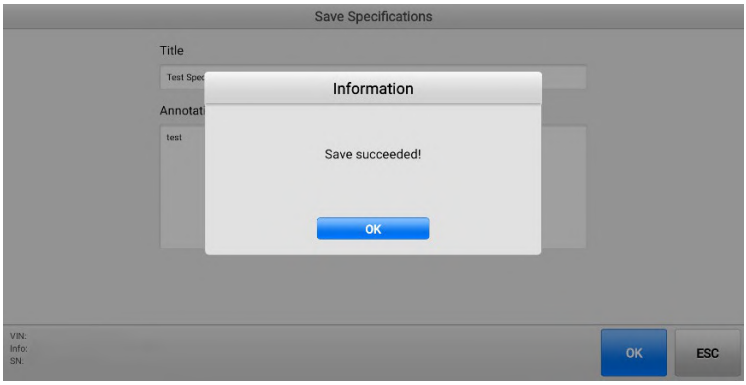


Figure 5-15 ***Save Specifications Screen 2***

4. After the parameters are edited and saved, the tablet will return to the Wheel Alignment Parameters screen. Tap the **ESC** button, and the saved parameters will be automatically selected on the configuration information screen.

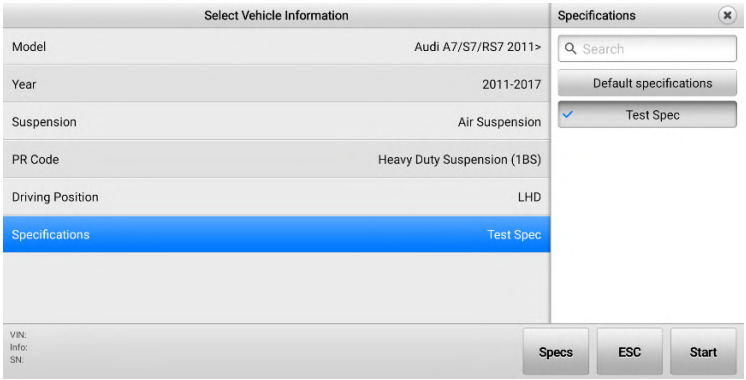


Figure 5-16 ***Select Configuration Screen***

5. Tap **Start** and follow the screen step by step to continue to enter an information screen and finally enter the Vehicle Inspection screen.

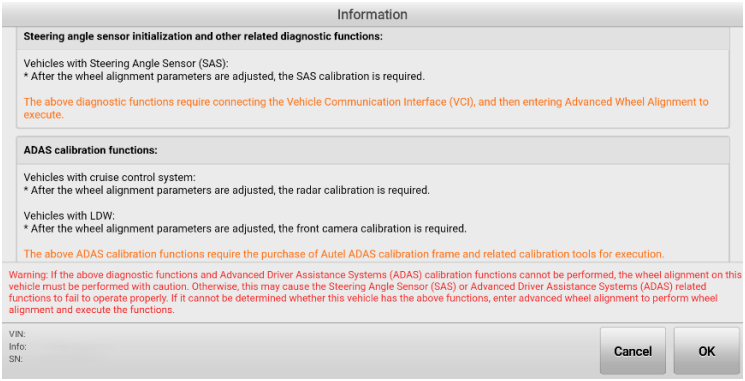


Figure 5-17 ***Wheel Alignment Information Screen***

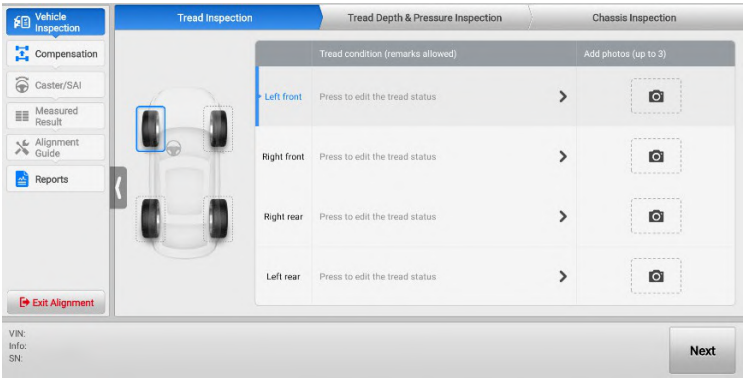


Figure 5-18 ***Wheel Alignment Procedure Screen***

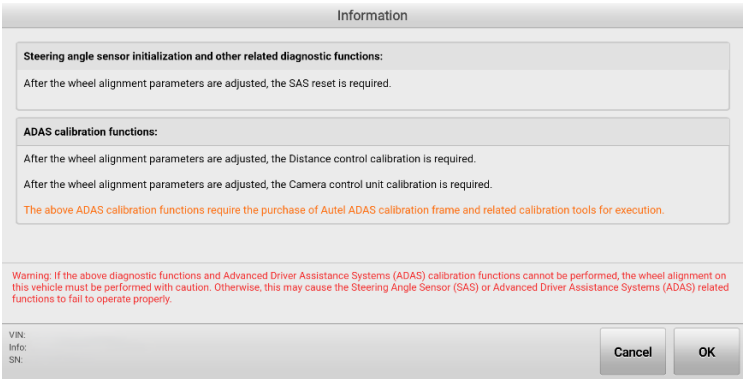


Figure 5-19 ***Advanced Wheel Alignment Information Screen***

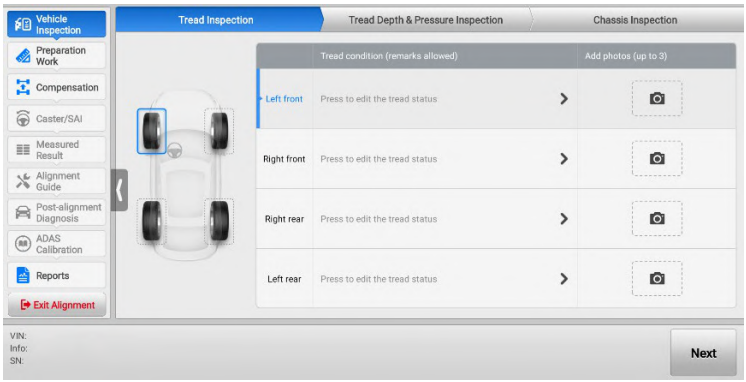


Figure 5-20 ***Advanced Wheel Alignment Procedure Screen***

NOTE

The Advanced Wheel Alignment Application includes an additional SAS and Other Diagnosis Function compared with the Wheel Alignment Application, while all other functions are identical. Therefore, the following steps for the wheel alignment function are described using the Advanced Wheel Alignment App as an example.

5.4 Wheel Alignment Procedures

5.4.1 Vehicle Inspection

Vehicle Inspection includes checking the tire tread condition and depth, adjusting the tire pressure to the vehicle's standard value, and inspecting chassis components based on fault types or vulnerability points — all of these steps are essential before performing wheel alignment, as tire abnormalities, pressure deviations, or faulty chassis parts can affect the accuracy of test results.

IMPORTANT

Prior to performing wheel alignment procedures, access the settings menu via **Settings** > **Wheel Alignment Settings** to adjust the settings according to specific requirements and actual working conditions. All wheel alignment procedures are based on the default settings in **Wheel Alignment Settings**.

5.4.1.1 *Tread Inspection*

a) Tread condition (remark allowed) column

Tap the tread status description area to select the corresponding status for each tread and add notes if needed. Then tap **OK** and check the color indicator of the four tires. If any tire indicator is red or yellow on the screen, replace or repair the tire according to the actual condition.

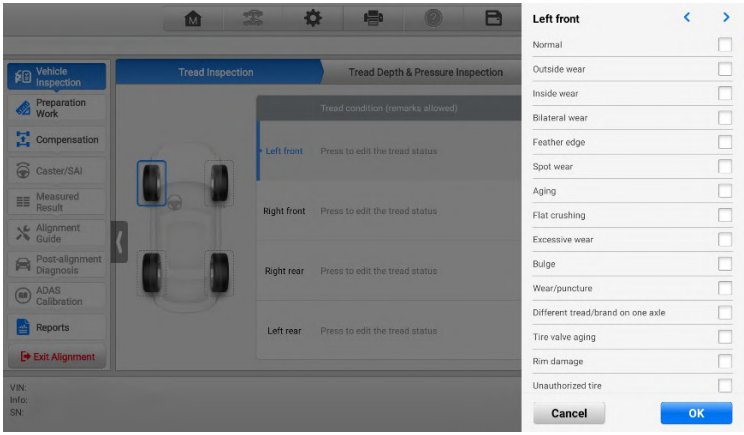


Figure 5-21 ***Tread Condition Screen***

b) Add photos column

For better tread condition evaluation, tap the camera icon in the **Add Photos** column to add up to three photos per tread.

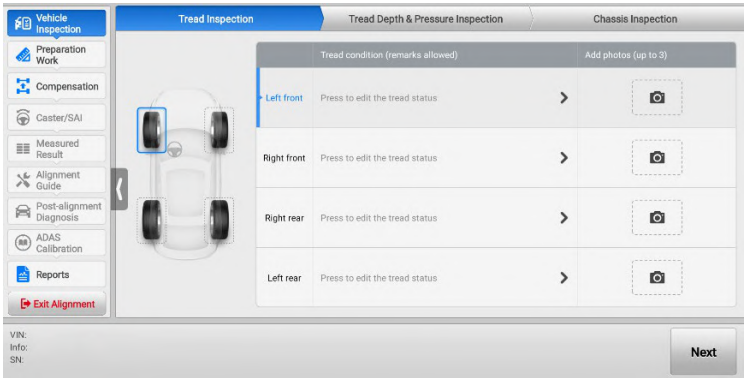


Figure 5-22 ***Tread Inspection Screen***

5.4.1.2 *Tread Depth & Pressure Inspection*

Tap **Tread Depth & Pressure Inspection** to check the tread depth and pressure.

Figure 5-23 ***Tread Depth & Pressure Inspection Screen 1***

1. Tread Depth Inspection

   a) Two modes are available for tread depth measurement: All Tread Check and Single Check. Tap **All Tread Check** or **Single Check** to switch the measurement mode.

      - All Tread Check: Measures the tread depth at three positions, including outside, middle, and inside of the tire (close to the vehicle body).
      - Single Check: Measures the tread depth at one of the following positions: outside, middle or inside of the tire (close to the vehicle body).

   b) A tread depth measurement tool — such as the Autel MaxiTPMS TBE series device (hereinafter referred to as the **TBE device**) — is required for tread depth measurement. If you use the TBE device, the measured values will be automatically displayed in the corresponding input box; if using other tools, manually enter the values into the corresponding input box.

NOTE

After entering all the tread depth values and tread pressure values, check the color indicator of the four tires on the screen, and replace or repair the tire according to the actual condition.

When using the MaxiTPMS TBE200 (not included; contact the local dealers to purchase) for tread depth measurement, connect the device to the tablet, and the tablet will automatically recognize and upload the tread depth data. The data can also be synchronized by pressing the **Load Tread Data** button.

Tap the blue **Connect Tread Measuring Tool** button and follow the on-screen prompts to pair the TBE device with the tablet. Alternatively, refer to *Connect Tread Measuring Tool* to achieve the connection prior to performing the wheel alignment function.

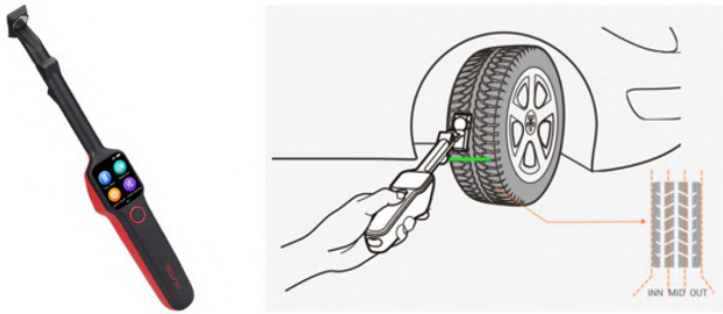


Figure 5-24 *MaxiTPMS TBE Device and Use Diagram*

2. Tread Pressure Inspection

   a) Input the standard tread pressure into the corresponding input box. The standard tire pressure is found on the tire and loading information placard, normally located on the B-pillar.

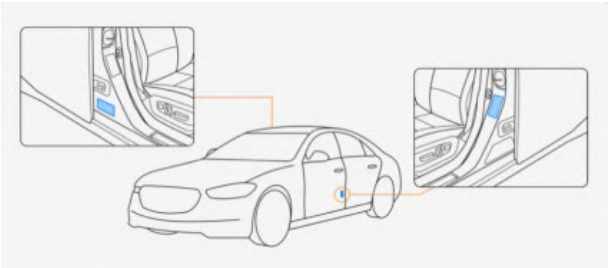


Figure 5-25 *Standard Tire Pressure Value Location*

   b) A tire pressure measurement tool — such as the Autel ITS600 series device (hereinafter referred to as the ITS600 device) — is required for tire pressure measurement. If you use the ITS600 device, the measured values will be automatically displayed in the corresponding input box; if using other tools, manually enter the values into the corresponding input box.

When using the ITS600 device (not included; contact the local dealers to purchase) for tire pressure measurement, connect the device to the tablet, and the tablet will automatically recognize and upload the tire pressure data. The data can also be

synchronized by pressing the **Load Pressure Data** button.

Tap the blue **Connect Tire Pressure Measuring Tool** button and follow the on-screen prompts to pair the TBE device with the tablet. Alternatively, refer to *Select Tire Pressure Measuring Device* to achieve the connection prior to performing the wheel alignment function.

Figure 5-26 ***ITS600 Device and Use Diagram***

Figure 5-27 ***Tread Depth & Pressure Inspection Screen 2***

5.4.1.3 Chassis Inspection

Chassis inspection enables quick and accurate troubleshooting of chassis component faults and records the inspection process.

Chassis inspection covers eight systems listed in the right-hand column, each with multiple subdivided inspection items. Follow the on-tablet operation guides to inspect all eight systems sequentially, or inspect specific items by filtering. Tap any inspection item to view the component description, associated symptoms, and repair methods in the main section.

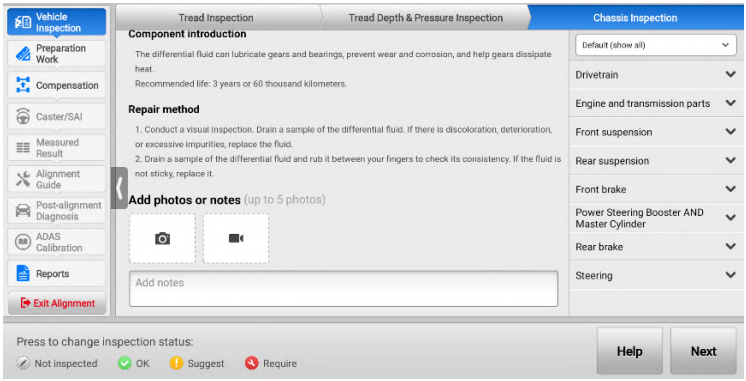


Figure 5-28 ***Chassis Inspection Screen 1***

Tap the icon to change the inspection status. For details about each status icon, tap the **Help** button.

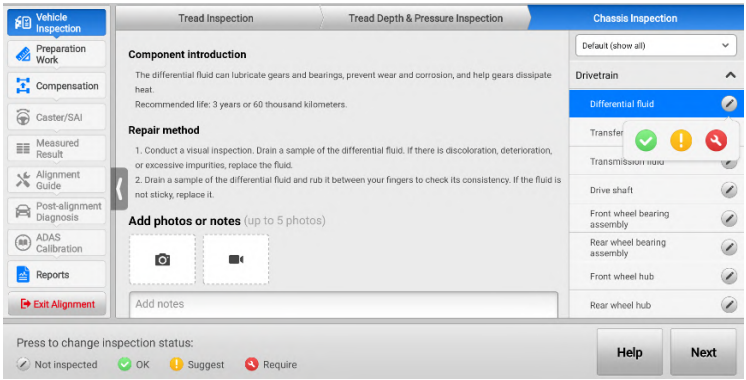


Figure 5-29 ***Chassis Inspection Screen 2***

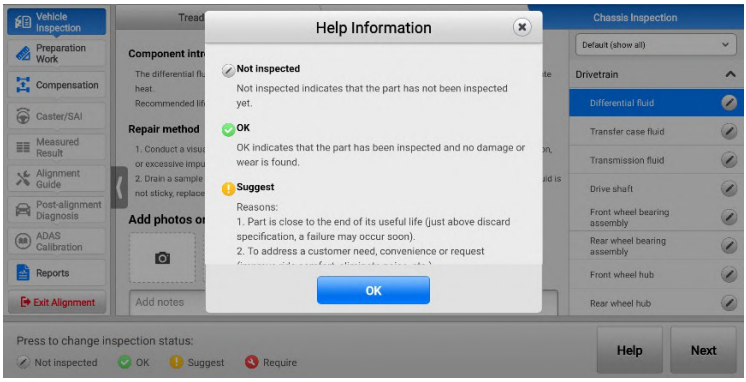


Figure 5-30 ***Chassis Inspection Status Icon Explanation Screen***

a) Tap the button in the main section to capture and upload up to 5 images of the related component. Tap the button to record and upload a 2–10 second video of the component.

b) Tap the drop-down box in the upper right corner of the screen to display the items to be inspected, categorized by faults.

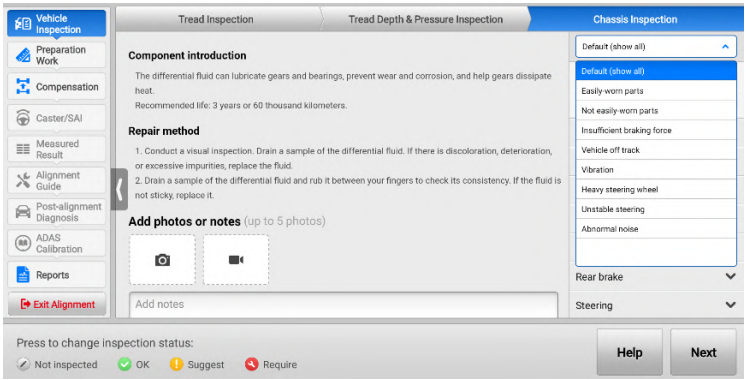


Figure 5-31 ***Chassis Inspection Screen 3***

5.4.2 Preparation Work

For performing wheel alignment, the OE of some vehicle models has special requirements. In order to ensure the accuracy of the measurement results, the following preparations may be required before measuring the parameters related to wheel alignment.

1. Pre-alignment Notes

2. Diagnostic Functions

3. Ride Height Measurement

5.4.2.1 Pre-alignment Notes

The proper placement of the vehicle's fuel tank, spare tire, and jack in their dedicated positions is critical to accurate wheel alignment measurements. Additionally, the status of the comfort system (whether activated or deactivated) on certain vehicle models impacts the installation of the brake pedal depressor and steering wheel holder. OEMs impose strict requirements for these conditions. Therefore, it is mandatory to carefully verify the vehicle status in accordance with the pre-alignment notes before performing wheel alignment.

Pre-alignment requirements vary by vehicle model in accordance with OEM procedures. Carefully review and adhere to these requirements before operation.

Figure 5-32 ***Pre-alignment Notes (Sample 1)***

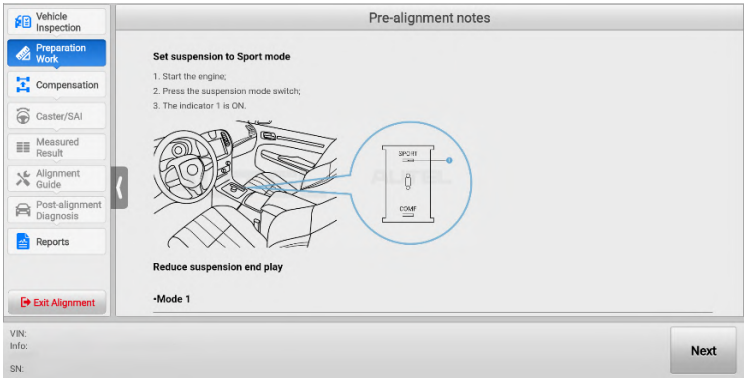


Figure 5-33 ***Pre-alignment Notes (Sample 2)***

5.4.2.2 Diagnostic Functions

To ensure measurement accuracy and successful wheel alignment, the OE process for certain models requires relevant diagnostic functions (e.g., height adjustment, mode selection, and RDC reset) to be completed before wheel alignment parameter measurement.

NOTE

1. The diagnostic functions are only performed when you select the **Advanced Wheel Alignment** application.
2. The diagnostic functions vary by vehicle model. In the process of performing the diagnostic function, you need to read the notes carefully and follow the steps shown on the screen to operate.

Take the ride height adjustment on BMW vehicles as an example. Ride height adjustment is required before measuring ride height in Load mode.

➢ **To perform ride height adjustment**

1. Follow the guides shown on the screen to ensure that the following conditions are met:
   1) The brake pedal depressor is already removed.
   2) The ignition is ON.
   3) The engine is OFF.
   4) The VCI is connected properly.
2. If all the above conditions are met, tap **Next** to continue. Since the ride height adjustment procedure is precise and sensitive, adjustment errors can be caused by even the slightest disturbing influences acting on the vehicle, which adversely affect driving stability and comfort, so please carefully read the precautions for height adjustment and operate as required:
   1) The vehicle is parked with all four wheels on flat ground.
   2) The load status of the vehicle must not be changed.
   3) The vehicle is not raised or placed on a vehicle lift.
   4) The front wheels are in the straight-ahead position.
   5) The doors must not be open.

6) The engine must not be started.

7) The battery charger should be connected.

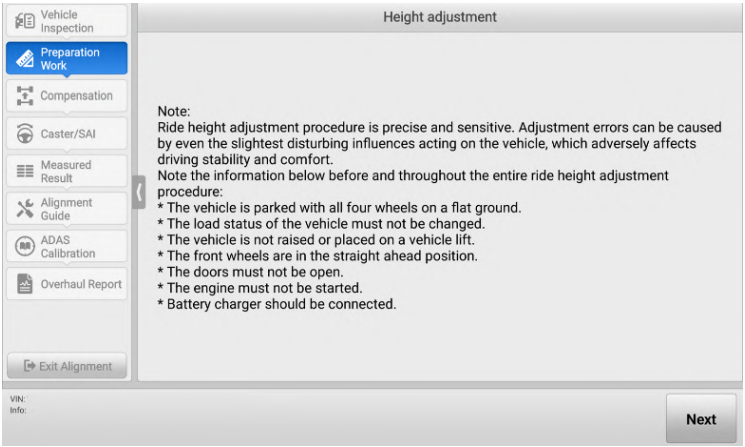


Figure 5-34 ***Height Adjustment Screen 2***

3. Tap **Next** to continue if all the above conditions are met. The tablet will guide you to measure and enter the corresponding vehicle height value according to the actual situation.

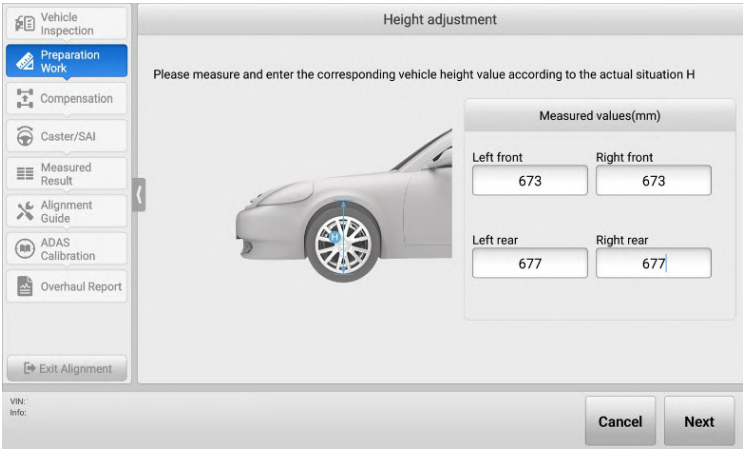


Figure 5-35 ***Height Adjustment Screen 3***

4. After measuring and entering the vehicle height values, tap **Next** to write the values to the Vertical Dynamics Platform (VDP) control unit.

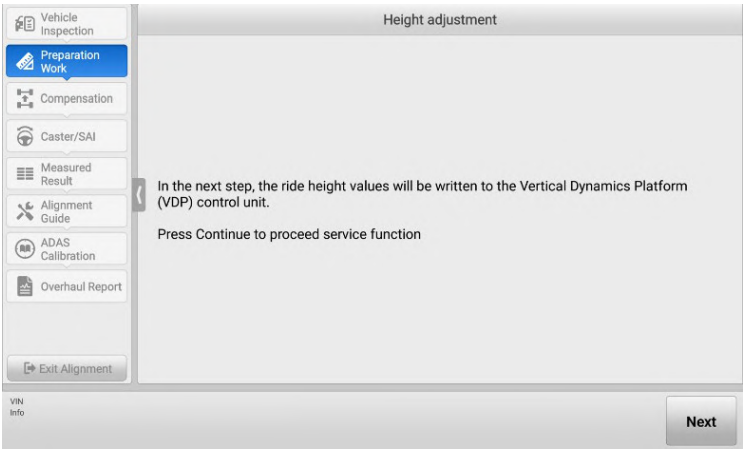


Figure 5-36 ***Height Adjustment Screen 4***

5. Tap **Next** to continue. If the tablet displays the following screen, it indicates the ride height adjustment was successful.

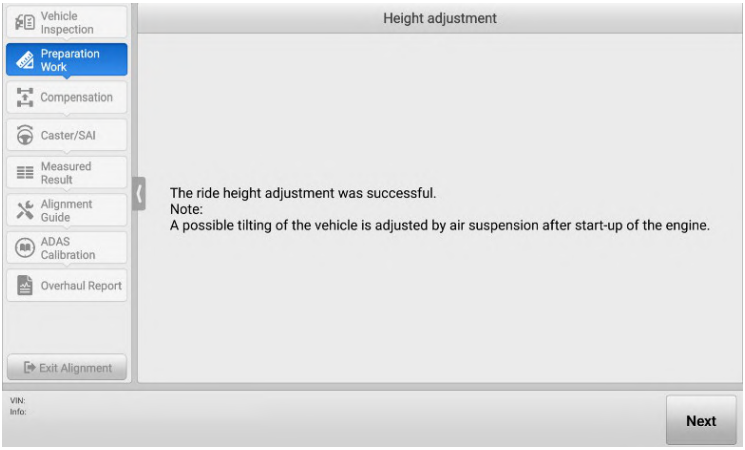


Figure 5-37 ***Height Adjustment Screen 5***

5.4.2.3 Ride Height Measurement

The ride height measurement needs to be performed when the following conditions exist in the OE process of some vehicle models:

1. There is a standard value for the ride height.
2. The ride height value affects the standard value for wheel alignment.

NOTE

If the measured ride height value is not within the range of the standard value for ride height, you need to check if the vehicle body or the component on the chassis is deformed or damaged.

1. Measure with tape or other tools

   a) For vehicles (e.g., Volkswagen) with a standard ride height, use a tape measure or other tools to measure the ride height, and enter the values into the corresponding input box.

Figure 5-38 ***Measure Ride Height with Tape 1***

   b) For vehicles (e.g., Renault) without standard values for the ride height or those requiring multiple measurements per tire, use a tape measure or other tools to measure the ride height, and enter the values into the corresponding input box.

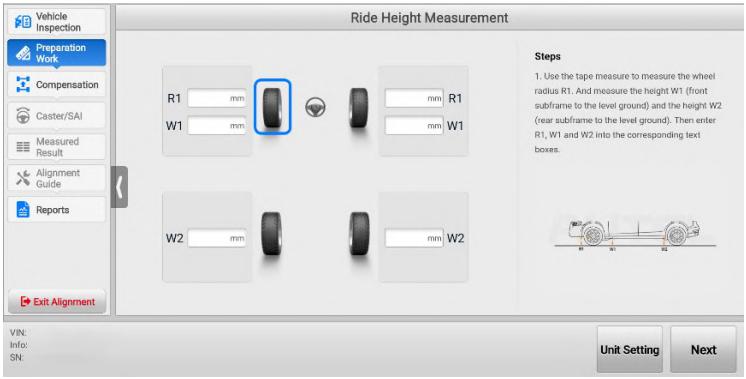


Figure 5-39 ***Measure Ride Height with Tape 2***

2. Measure with the ride height target

The ride height can be measured with the ride height target if one of the following conditions is met:

a) There is a standard value for the ride height, and the ride height is measured from the lower edge of the wheel trim to the center of the wheel rim.

b) BMW vehicles, for which the ride height is measured from the lower edge of the wheel trim to the center of the wheel rim, and the rim size is selected before entering the whole wheel alignment procedures screen.

NOTE

- A dedicated ride height target to measure the ride height is required, and can be purchased by contacting the local dealer or manufacturer.
- After measuring the ride height, be careful to remove the ride height target to avoid vehicle body damage.

➢ **To install a ride height target for ride height measurement**

1. Follow the guide shown on the screen: install the wheel clamps (rim clamps), wheel targets, and ride height targets after ensuring the distance between the frame and the front wheel center is within 2.03–3.30 m (7.23–10.83 ft).

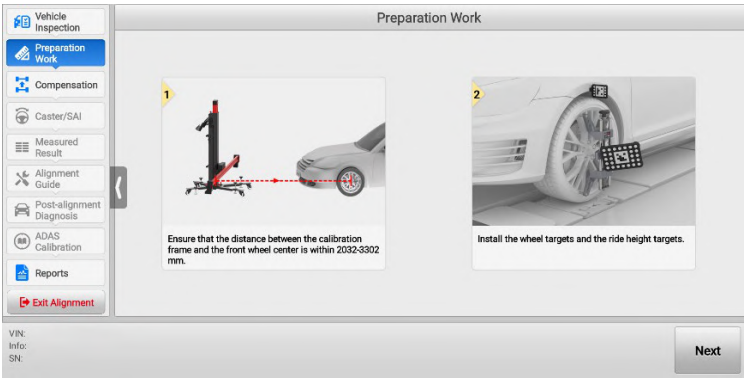


Figure 5-40 ***Preparation Work***

2. Tap **Next** to enter the following screen. The crossbar height will be automatically adjusted to search for the targets. The ride height value will automatically display in the corresponding input box.

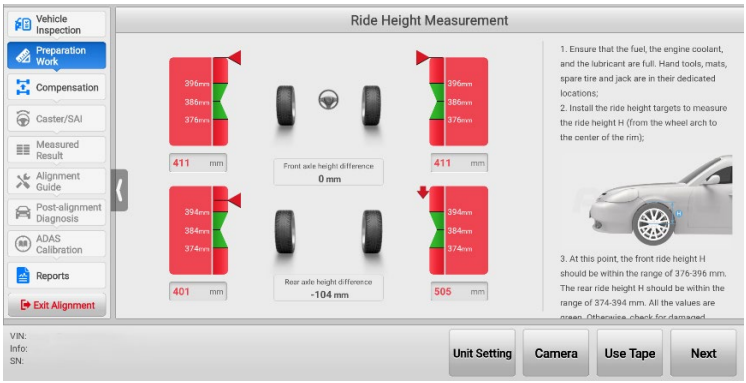


Figure 5-41 ***Measure Ride Height with Ride Height Target***

3. Indicated by Tilt Angles

   For vehicles (e.g., Mercedes-Benz), the ride height is indicated by the tilt angles. Use the Inclination Sensor (for Mercedes-Benz) to measure the tilt angles of the corresponding chassis components, and enter the tilt angles into the corresponding input box.

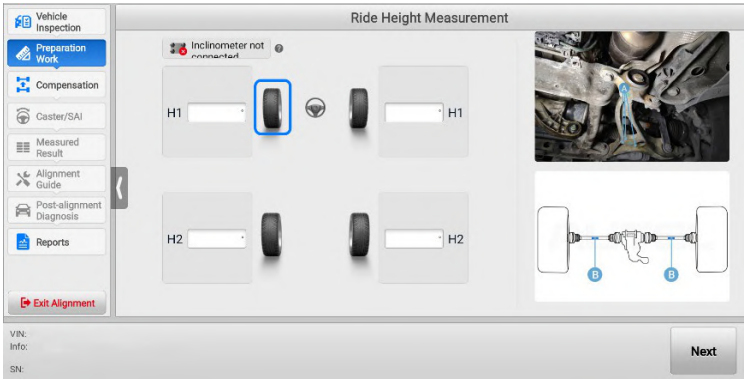


Figure 5-42 ***Measure and Input Tilt Angles***

When using the hand-held inclinometer (not included; contact the local dealers to purchase) for ride height measurement, connect the device to the tablet as shown in the picture below. Press **OK** to measure the tilt angle. The hand-held inclinometer will automatically upload the data to the tablet.

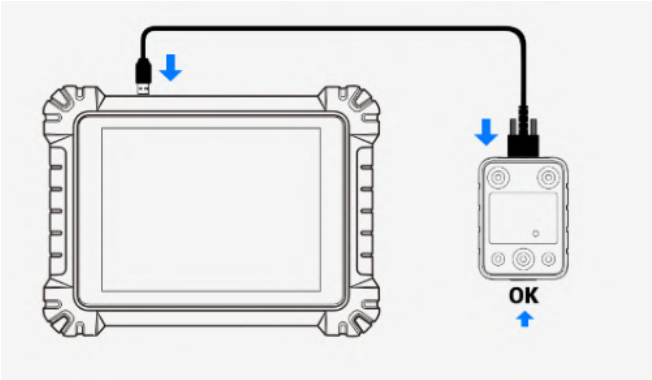


Figure 5-43 ***Connect Hand-held Inclinometer***

5.4.3 Compensation

This function is mainly used to compensate for errors caused when installing tools such as the wheel clamp (rim clamp/tire clamp) and target.

NOTE

- If the wheel clamp (rim clamp/tire clamp) or target is removed or loosened during compensation, it will result in inaccurate measurement results. In this case, perform the compensation again.
- Do not obstruct the target during the compensation.

5.4.3.1 Rolling Compensation

1. Follow the guides shown on the tablet to complete the following preparations:
   - Insert turnplate/slip plate pins and install the turnplate bridge.
   - Drive the vehicle on the alignment rack and place the wheel chocks to prevent movement.
   - Steer ahead, lock steering wheel, place transmission in neutral, and release parking brake.
   - Install the wheel clamps (rim clamps) and targets (if not previously installed).

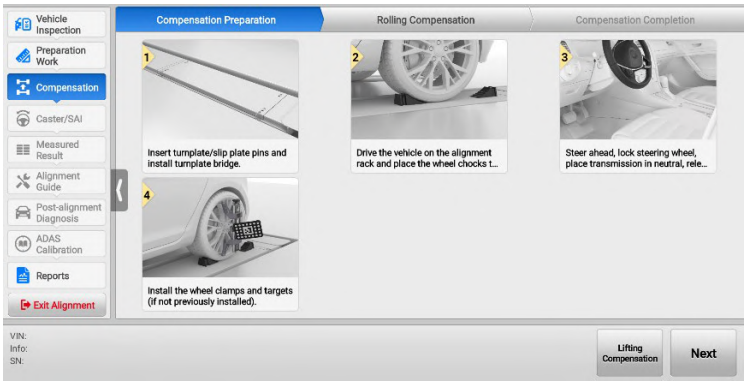


Figure 5-44 ***Rolling Compensation Preparations (Use Rim Clamp)***

NOTE

1. When driving the vehicle onto the lift, the width from the turntable bridge to each wheel should be the same, and the front wheel of the vehicle should stop at the center of the turnplate.
2. To install the wheel clamp (rim clamp) and target the wheel, refer to *Target* for details.

2. Tap **Next**. The crossbar height will be adjusted automatically to search for the targets. Then follow the guides shown on the tablet to push the vehicle backward and forward to complete compensation.

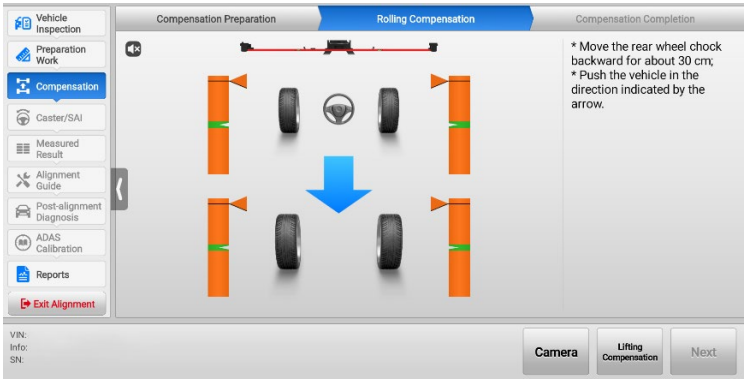


Figure 5-45 ***Start Rolling Compensation 1 (Use Rim Clamp)***

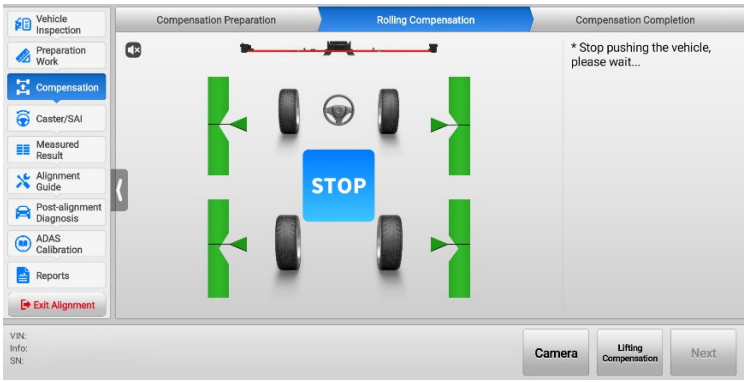


Figure 5-46 ***Start Rolling Compensation 2 (Use Rim Clamp)***

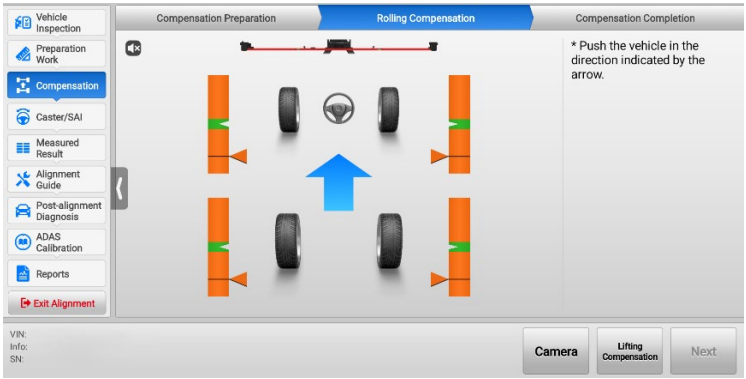


Figure 5-47 ***Start Rolling Compensation 3 (Use Rim Clamp)***

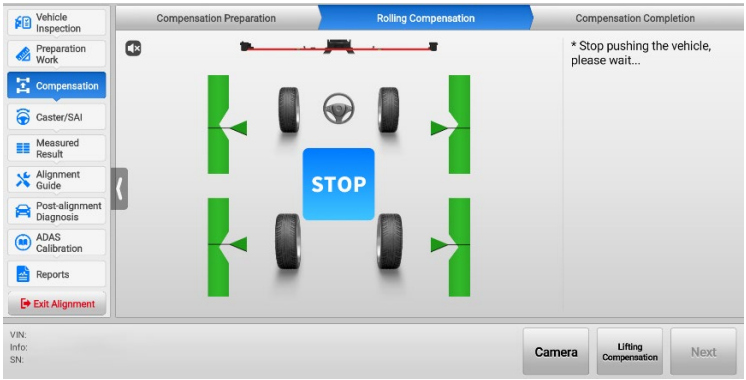


Figure 5-48 ***Start Rolling Compensation 4 (Use Rim Clamp)***

NOTE

Do not touch the wheel clamps and targets when pushing the vehicle.

3. After the compensation is completed, the tablet will enter the next screen automatically. Follow the illustration shown on the tablet to place wheel chocks in the front and rear of the wheel to prevent wheel movement.

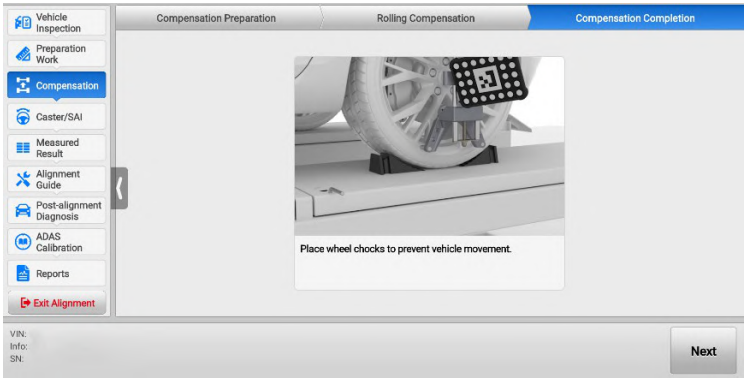


Figure 5-49 ***Complete Rolling Compensation (Use Rim Clamp)***

5.4.3.2 Lifting Compensation

1. Follow the guides shown on the tablet to complete the preparations:

- Steer ahead, lock steering wheel, place transmission in neutral, and release parking brake.
- Raise the vehicle.
- Install the wheel clamps (rim clamps) and targets (if not previously installed).

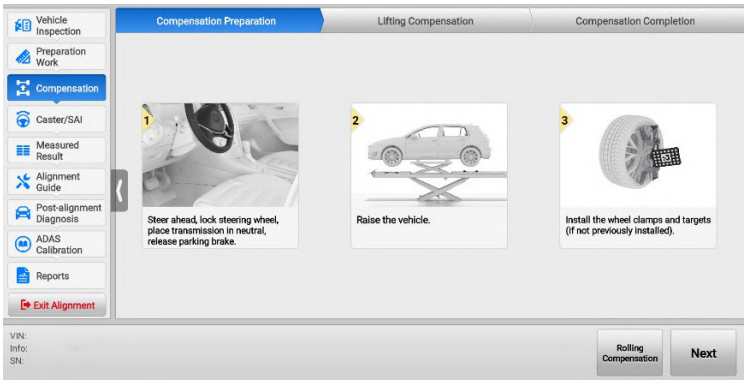


Figure 5-50 ***Lifting Compensation Preparation (Use Rim Clamp)***

2. Tap **Next**. The crossbar height will be adjusted automatically to search for the targets. Then follow the guides shown on the tablet to rotate the tire to the collection range.

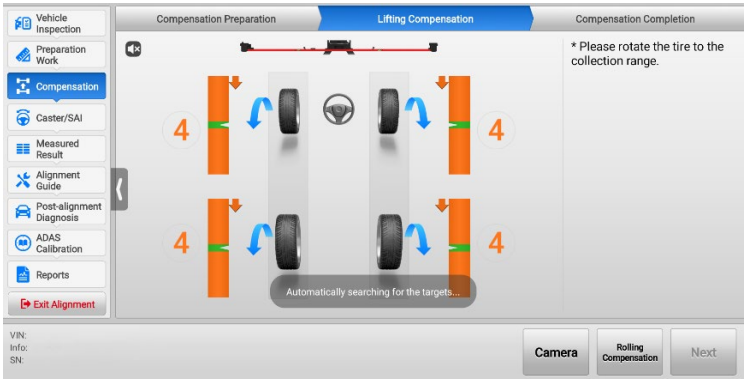


Figure 5-51 ***Start Lifting Compensation 1 (Use Rim Clamp)***

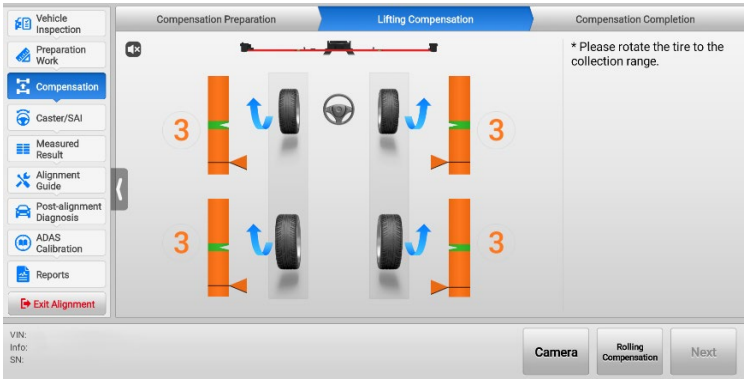


Figure 5-52 ***Start Lifting Compensation 2 (Use Rim Clamp)***

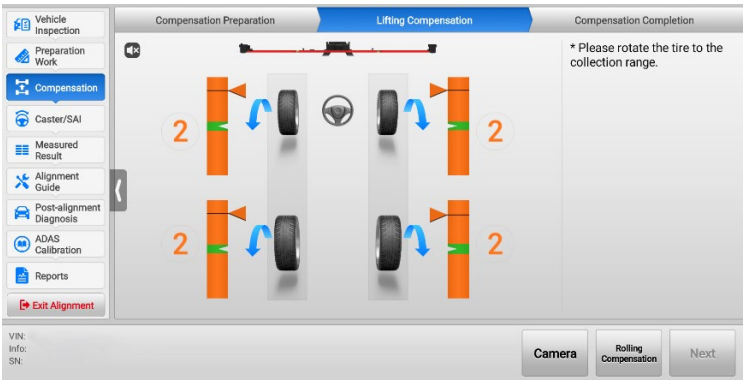


Figure 5-53 ***Start Lifting Compensation 3 (Use Rim Clamp)***

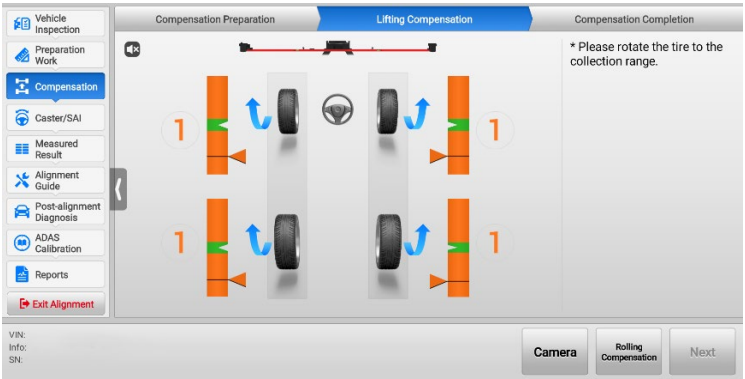


Figure 5-54 ***Start Lifting Compensation 4 (Use Rim Clamp)***

3. After the compensation is completed, the tablet will enter the following screen automatically. Follow the guides shown on the tablet to complete the following operations:

   - Remove turnplate/slip plate pins and remove turnplate bridge.
   - Lower the wheels and jounce the vehicle.
   - Place wheel chocks to prevent vehicle movement.

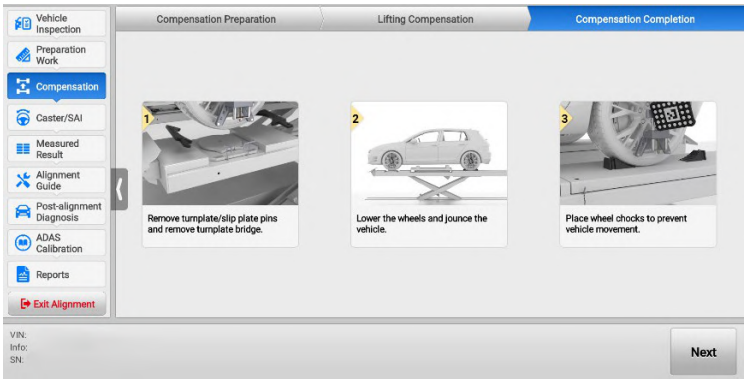


Figure 5-55 ***Complete Lifting Compensation (Use Rim Clamp)***

NOTE

- Make sure the four targets installed on wheels are level before lowering the vehicle. If the targets are not level, both subsequent measured results and wheel alignment results may be adversely affected.
- Before lowering the vehicle, the turnplate, slip plate pins, and turnplate bridge must be removed. Otherwise, the measurement results may be inaccurate due to the unnatural force on the vehicle.
- Before lowering the vehicle, shake it so that the components of the chassis are evenly stressed.

5.4.4 Caster/SAI/IA Angle Measurement

This function guides measuring the Caster angle, SAI (Steering Axis Inclination) angle, IA (Included Angle) angle, toe-out on turns, and maximum steering angle. Measuring these angles facilitates the identification of potential issues in the vehicle's front suspension and steering system.

5.4.4.1 Select Measurement Angle

a) The Caster angle, SAI angle, and IA angle are measured by default.

b) Select toe-out on turns to measure the Caster angle, SAI angle, IA angle, and toe-out on turns together.

c) Select the maximum steering angle to measure the Caster angle, SAI angle, IA angle, and maximum steering angle together.

d) Select both toe-out on turns and the maximum steering angle to measure the Caster angle, SAI angle, IA angle, toe-out on turns, and maximum steering angle together.

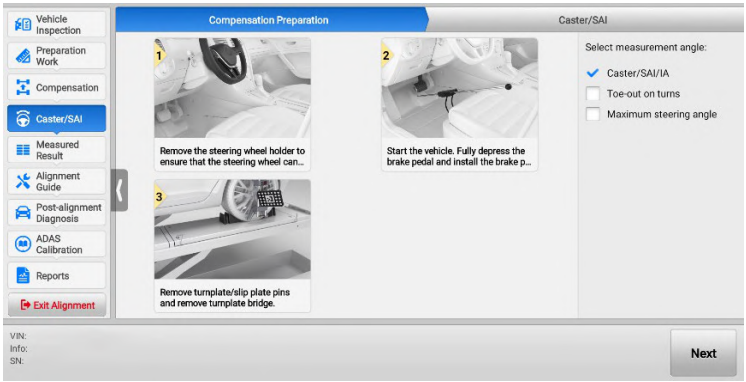


Figure 5-56 *Caster/SAI/IA Measurement*

5.4.4.2 Angle Measurement Preparation

Follow the guides shown on the tablet to complete the following operations:

1. Remove the steering wheel holder to ensure that the steering wheel can be turned.
2. Start the vehicle. Fully depress the brake pedal and install the brake pedal depressor. Stop the vehicle.
3. Remove turnplate/slip plate pins and remove turntable bridge.
4. Install wide-angle targets on front wheels (This step is required only when measuring the maximum steering angle).

NOTE

- If the brake pedal depressor is installed without starting the vehicle, the brakes will not be locked properly, which may result in inaccurate measurement data.
- The measured results of toe-out on turns and maximum steering angle will be displayed on the Result Lists in the Measured Result section.

5.4.4.3 Start Angle Measurement

After the above preparations are successfully made, tap **Next** to start angle measurement. Then follow the guides shown on the tablet to turn the steering wheel left or right to the collection range step by step. Once the measurement procedures are completed, it will enter the Measured Result section automatically.

5.4.5 Measured Result

This section enables the following functions:

1. View measured results for toe, camber, caster, symmetry value, rolling angle, etc.

2. View and modify wheel specifications.

5.4.5.1 *Graphical Result*

Figure 5-57 *Measured Result Screen (Graphical Result)*

a) Tap the single image on the screen, and the selected image will be zoomed in.

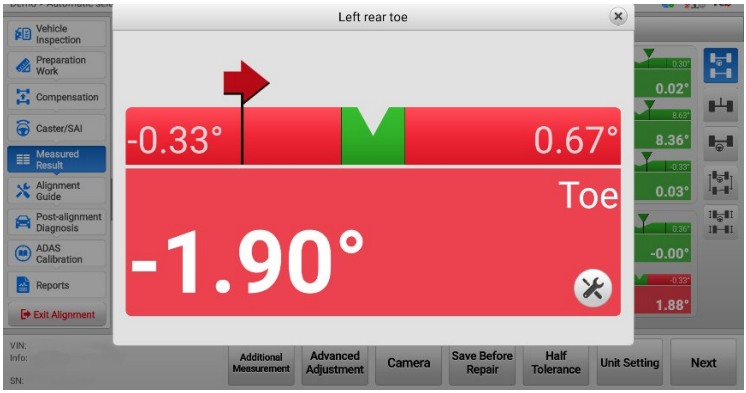


Figure 5-58 *Zoom-in Image*

b) Tap the button on the above screen to open the adjustment guide screen. The guide for the selected image will then be displayed; follow the on-screen instructions to perform adjustments. Once the adjustment is completed, tap to exit the adjustment guide screen.

c) Tap the buttons such as in the middle part of the screen to view the Parameter Descriptions. Refer to *Glossary* for details.

d) Tap the buttons such as on the right side of the screen to view the Graphical Result-Rear, the Graphical Result-Front, the Graphical Result-Symmetry Value, and the Graphical Result-Rolling Diameter, respectively.

e) Tap **Additional Measurement** to perform bump steer measurement. Refer to *Additional Measurement*.

f) Tap **Advanced Adjustment** > **Raise Vehicle** to raise the vehicle for adjustment. Refer to *Raise Vehicle*.

g) Tap **Advanced Adjustment** > **Wheel Off Adjustment** to remove the vehicle for adjustment. Refer to *Wheel Off Adjustment*.

h) Tap the **Camera** button to check the cameras' working condition.

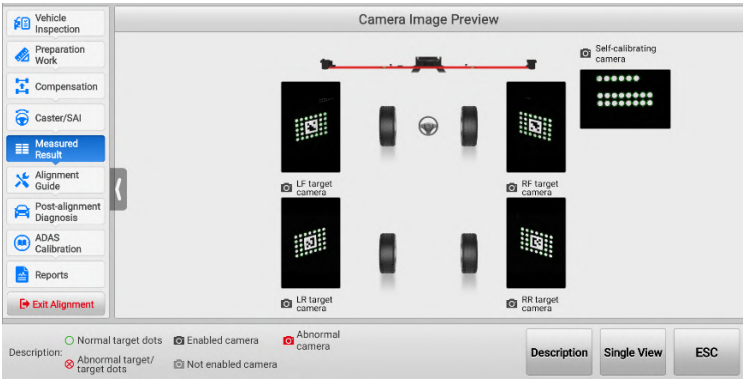


Figure 5-59 ***Camera Image Preview Screen***

- The **Camera** button is available at any time for checking the working status of the cameras, and its functionality is not restricted to the current screen.
- Tap **Description** to check the explanations for each icon displayed on the screen. Refer to *Table 4-1 Camera Descriptions* for details.
- Tap **Full view** or **Single view** to switch the preview method for the camera image.
- Tap **ESC** to exit the Camera Image Preview screen.

i) Tap **Save Before Repair** to save the measurements before alignment. Then the tablet will prompt you and ask if you want to overwrite it.

j) Tap **Full Tolerance** or **Half Tolerance** to switch the graphical display mode.

- **Full Tolerance**: equals the OE specification's tolerance.
- **Half Tolerance**: half of the OE specification's tolerance.

k) Tap **Unit Setting** to switch the units.

l) Tap **Next** to enter the Alignment Guide section.

5.4.5.2 *Additional Measurement*

This function works by lifting the vehicle to simulate suspension movement during real-world driving and collects toe and camber angle data to identify potential bump steer problems.

➢ **To perform a bump steer measurement**

1. Tap **Additional Measurement** on the Measured Result screen to view relevant information about bump steer. Then tap **OK**.

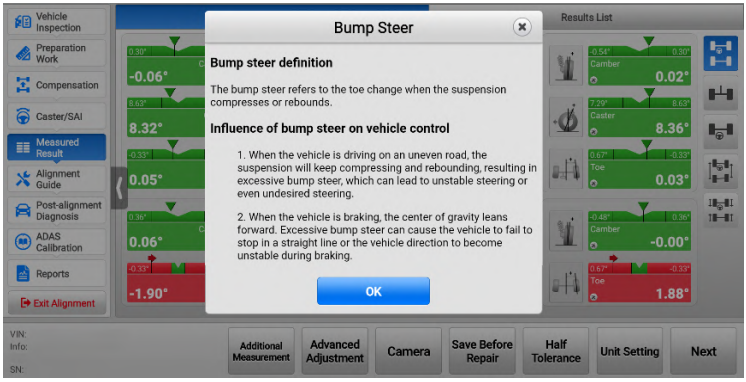


Figure 5-60 ***Bump Steer***

2. Follow the guides shown on the tablet to prepare for the measurement.

   1) Steer ahead and lock the steering wheel of the vehicle.

   2) Install the ride height target.

   3) Remove turnplate/slip plate pins and remove turnplate bridge.

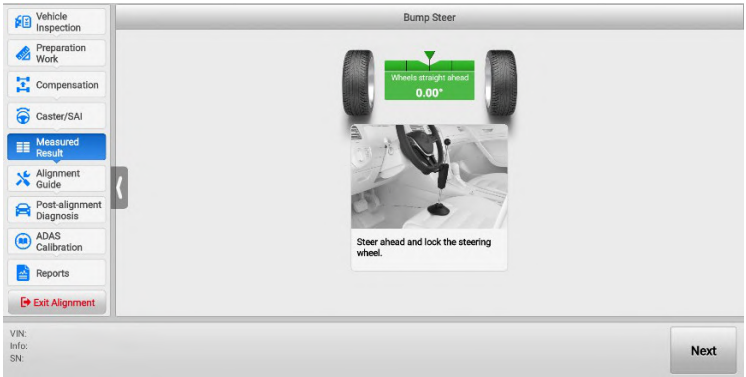


Figure 5-61 ***Measurement Preparation 1***

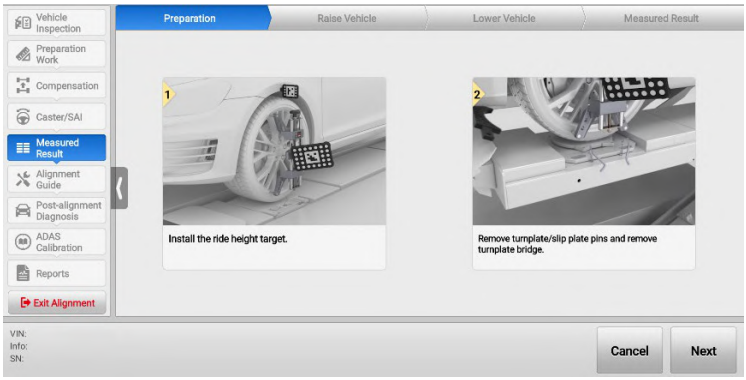


Figure 5-62 ***Measurement Preparation 2***

3. Follow the guides shown on the tablet to raise the vehicle until the ride height falls within the green range. Once data collection is completed, the tablet will enter the vehicle lowering screen automatically.

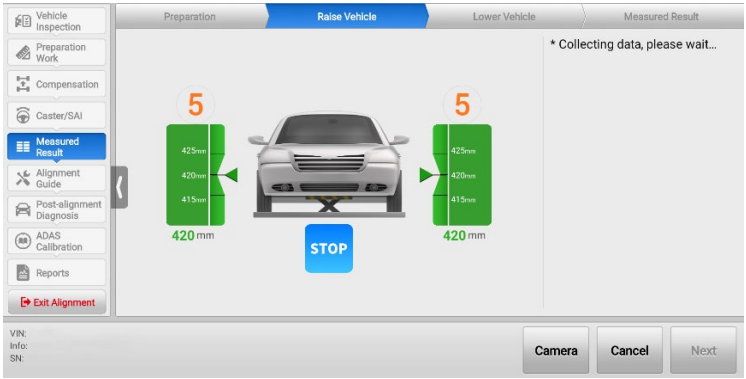


Figure 5-63 ***Raise Vehicle 1***

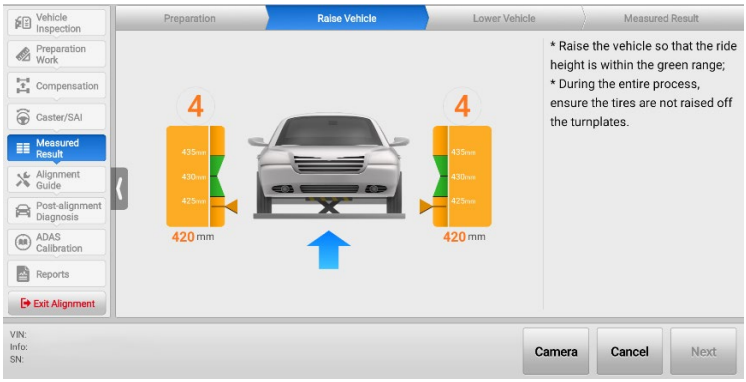


Figure 5-64 ***Raise Vehicle 2***

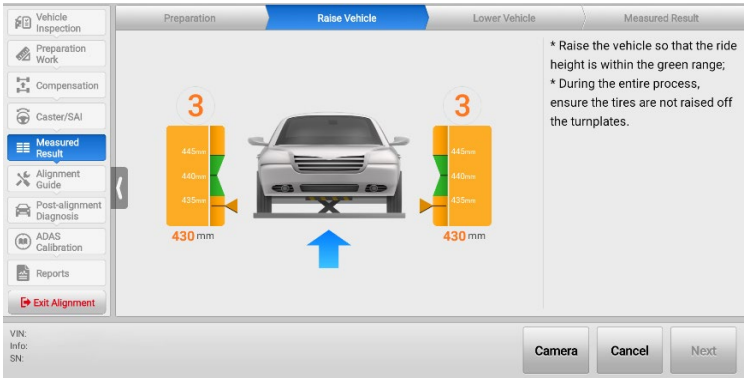


Figure 5-65 ***Raise Vehicle 3***

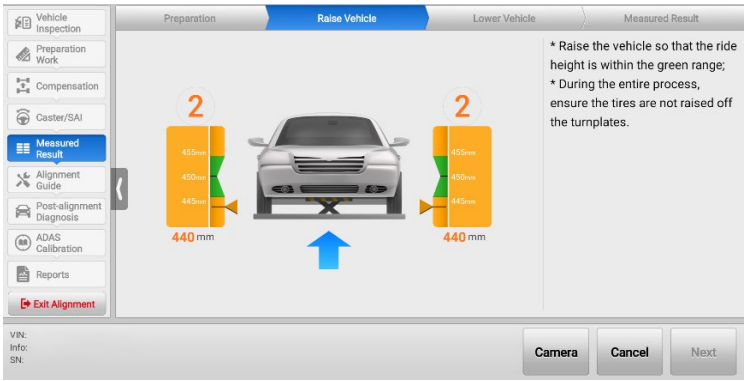


Figure 5-66 ***Raise Vehicle 4***

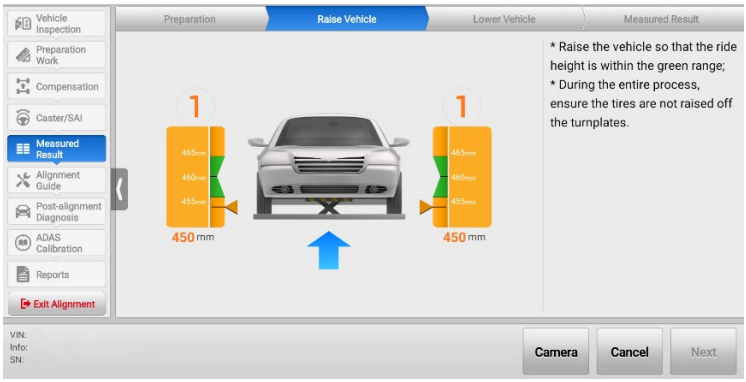


Figure 5-67 ***Raise Vehicle 5***

4. Lower the vehicle and jounce the vehicle.

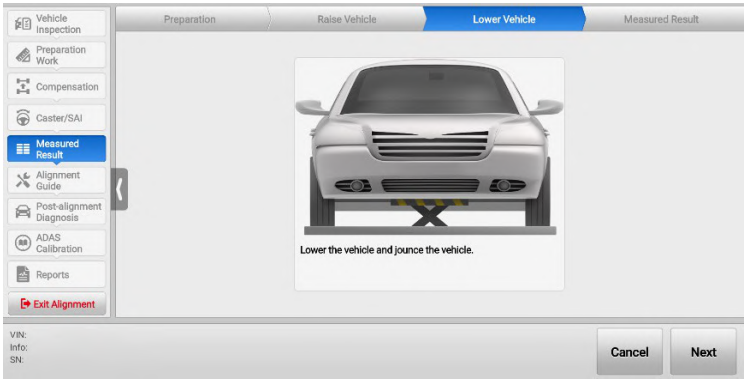


Figure 5-68 ***Lower Vehicle***

5. Then tap **Next** to view the measured results. You can tap the **Adjustment Help** button to view adjustment suggestions and follow the guides to adjust the bump steer.

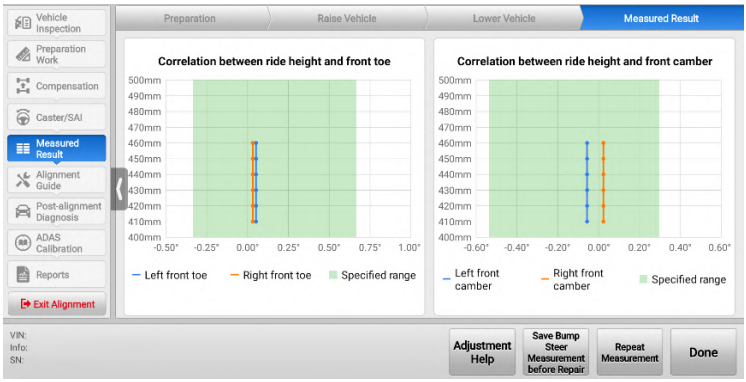


Figure 5-69 ***Measured Result Screen***

Figure 5-70 ***Adjustment Help Screen***

5.4.5.3 Raise Vehicle

This function applies to vehicles that need to be raised to adjust the wheel alignment parameters.

➢ **To raise a vehicle**

1. Tap **Advanced Adjustment > Raise Vehicle** on the Measured Result screen.
2. Follow the guides shown on the tablet to raise the vehicle:
   1) Set the steering wheel at center position. Lock the steering wheel.
   2) Start the engine, install the brake pedal depressor, and then stop the engine.
   3) Raise the vehicle and lock the lift.

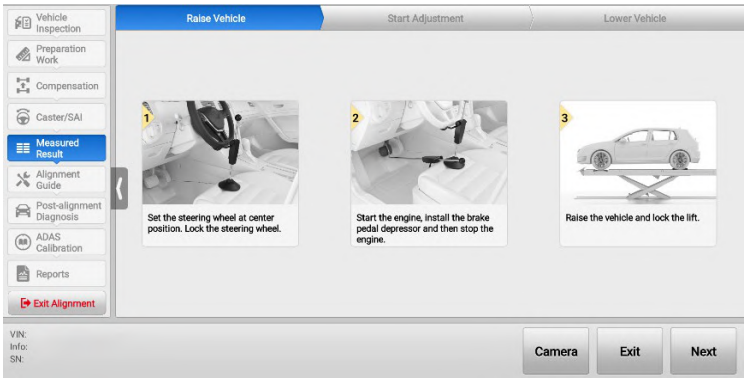


Figure 5-71 ***Raise Vehicle***

3. After the vehicle is raised and the lift is locked, tap **Next** to collect data, and the tablet will enter the Start Adjustment screen. Tap **Next** to perform the adjustment, and the tablet will enter the Lower Vehicle screen automatically.

➢ **To lower the vehicle**

1. Lower the vehicle as shown in the guides on the screen.

   1) Remove turnplate/slip plate pins and remove turnplate bridge.

   2) Lower the wheels and jounce the vehicle.

   3) Place wheel chocks to prevent vehicle movement.

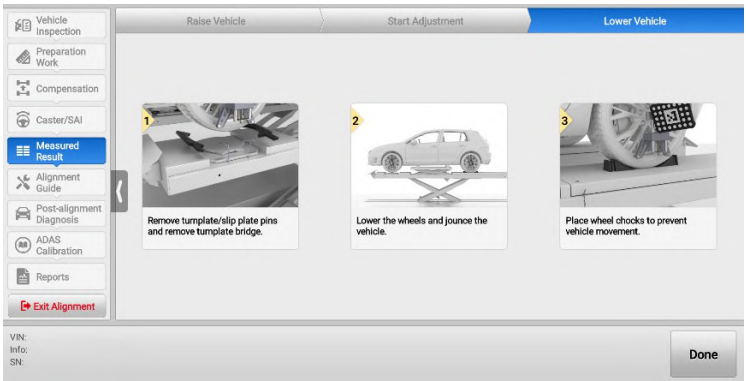


Figure 5-72 ***Lower Vehicle***

2. After lowering the vehicle, tap **Done**. The tablet will return to the Measured Result screen.

5.4.5.4 *Wheel Off Adjustment*

This function applies to vehicles that need to have their wheels removed to adjust the wheel alignment parameters.

➢ **To raise a vehicle**

1. Tap **Advanced Adjustment > Wheel Off Adjustment** on the Measured Result screen.
2. Follow the guides shown on the tablet to raise the vehicle:
   1) Set the steering wheel to the center position. Lock the steering wheel.
   2) Start the engine, install the brake pedal depressor, and then stop the engine.
   3) Raise the vehicle and lock the lift.

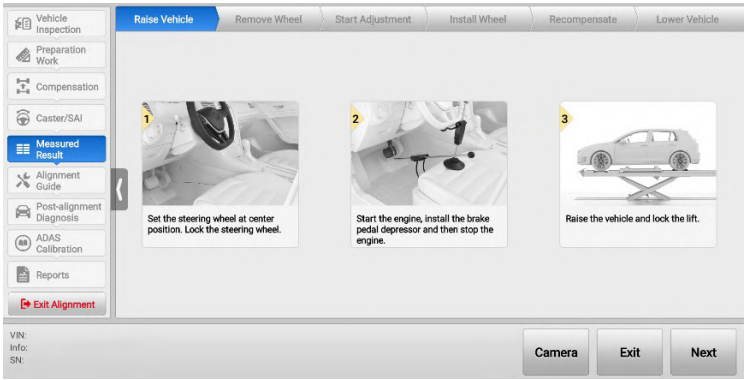


Figure 5-73 ***Raise Vehicle***

3. After the vehicle is raised and the lift is locked, tap **Next** to collect data. Then the tablet will enter the Remove Wheel screen.

➢ **To remove the wheel**

1. After raising the vehicle, follow the guides on the screen to remove the wheels:
   1) Remove the wheel clamps (rim clamps) and targets.
   2) Remove the wheels.
   3) Install the hub adapters and targets.

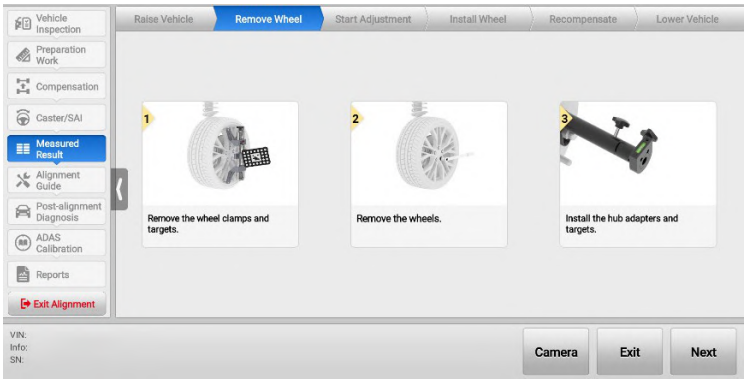


Figure 5-74 *Remove Wheel*

2. After the wheels are removed, tap **Next** to collect data, and the tablet will enter the Start Adjustment screen. Tap **Next** on the screen to perform the adjustment, and the tablet will enter the Install Wheel screen automatically.

➢ **To install the wheel**

1. Install the wheels as shown in the guides on the screen:
   1) Remove the targets and hub adapters.
   2) Install the wheels.
   3) Install the wheel clamps (rim clamps) and targets.
   4) Remove the brake pedal depressor.

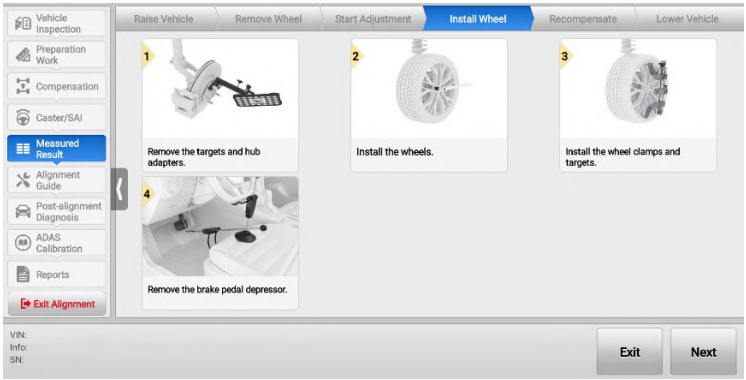


Figure 5-75 *Install Wheel*

2. After the wheels are installed, tap **Next** to enter the Recompensate screen.

➢ **To perform lifting recompensation**

1. The crossbar height will be adjusted automatically to search for the targets. Then follow the guides shown on the tablet to rotate the tire to the collection range.

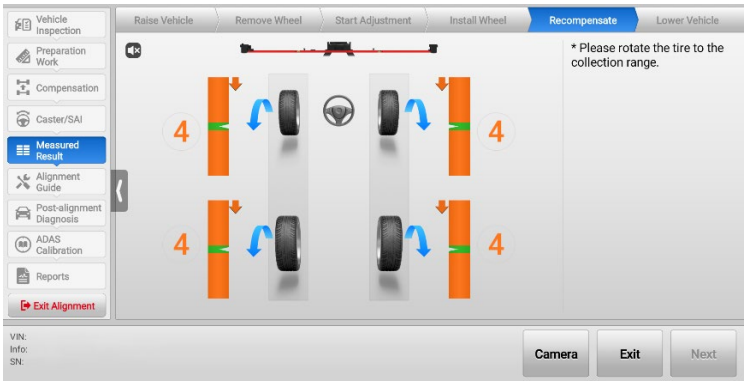


Figure 5-76 ***Start Lifting Compensation 1***

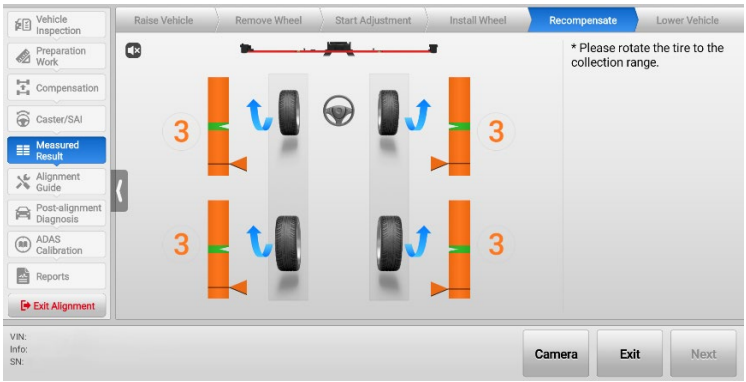


Figure 5-77 ***Start Lifting Compensation 2***

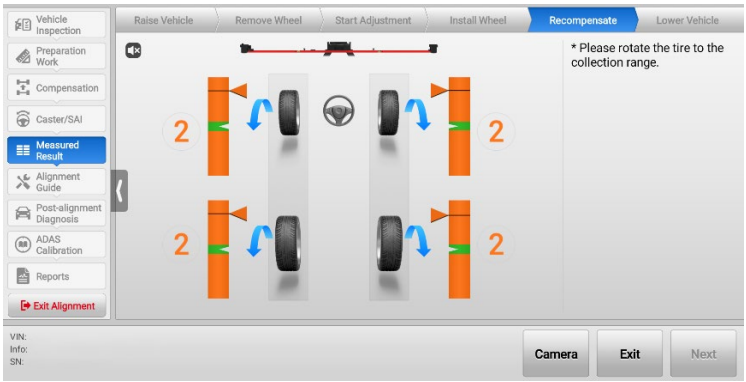


Figure 5-78 ***Start Lifting Compensation 3***

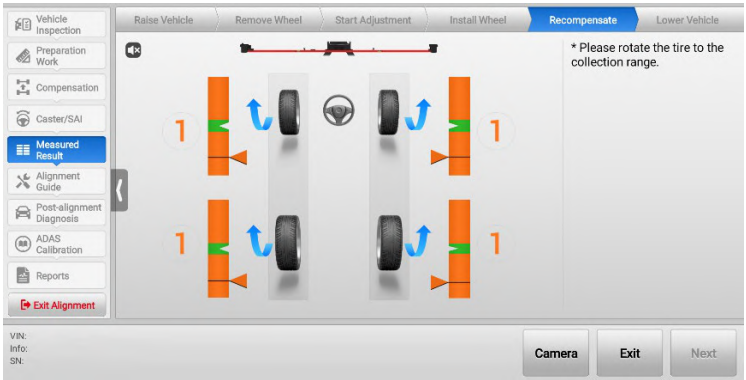


Figure 5-79 ***Start Lifting Compensation 4***

2. After the collection is completed, the tablet will enter the Lower Vehicle screen automatically.

➢ **To lower the vehicle**

1. Lower the vehicle as shown in the guides on the screen:

   1) Install the brake pedal depressor.

   2) Remove turnplate/slip plate pins and remove turnplate bridge.

   3) Lower the wheels and jounce the vehicle.

   4) Place wheel chocks to prevent vehicle movement.

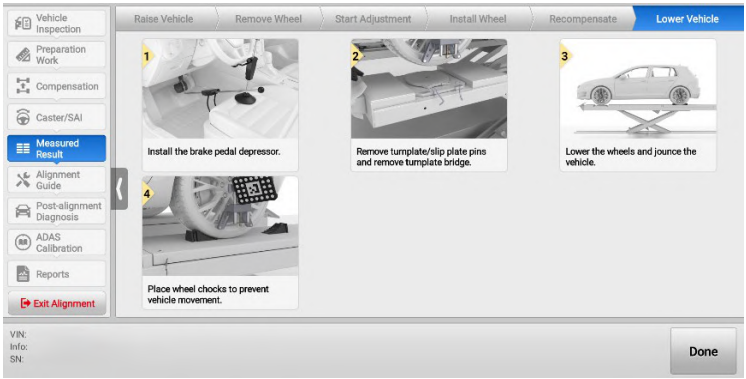


Figure 5-80 ***Lower Vehicle***

2. After lowering the vehicle, tap **Done**, and the tablet will return to the Measured Result screen.

5.4.5.5 Results List

The results can also be displayed in a list format. You can save the list before wheel alignment.

Figure 5-81 ***Measured Result Screen (Results List)***

5.4.6 Alignment Guide

In the Alignment Guide section, the detailed alignment procedures with illustrations on the screen make the adjustment of wheel specifications more convenient and faster.

NOTE

1. During front toe adjustment, some vehicle models support both Normal Mode and Guide Mode. The Guide Mode is enabled by default. You can tap either mode to switch between them as needed.
2. To reduce the influence of other alignment adjustments on the front caster, remeasure the caster angle before front caster adjustment.

5.4.6.1 Alignment Procedures

According to the OE process requirements, the detailed and complete alignment procedures will be provided to guide you to adjust the wheel specifications.

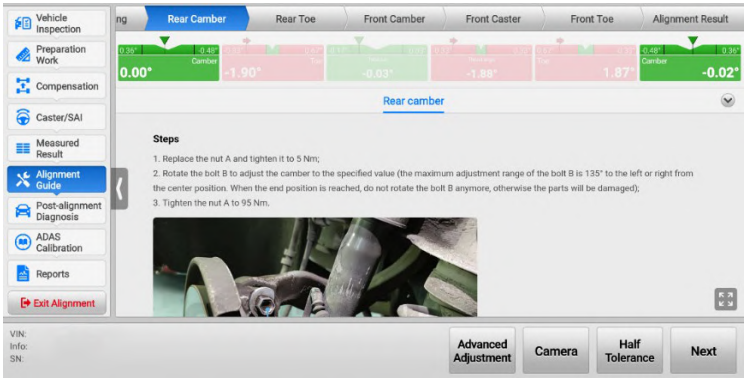


Figure 5-82 ***Parameters Adjustment Procedures Screen 1***

a) Follow the sequence displayed at the top of the main screen section to complete all wheel alignment parameter adjustments. The adjustment sequence is critical; failure to follow the specified order (Rear Camber - > Rear Toe - > Front Caster - > Front Toe - > Alignment Result) will lead to redundant operations.

b) Check the highlighted red images on the screen, and perform adjustments as shown in the screen guides. Once the angle parameters are adjusted to their correct values, the red highlights will switch to green highlights. Tap **Next** to adjust the remaining parameters using the same method.

c) For certain wheel specifications, the OE process does not provide an adjustment method, and the tablet will display the interface as below.

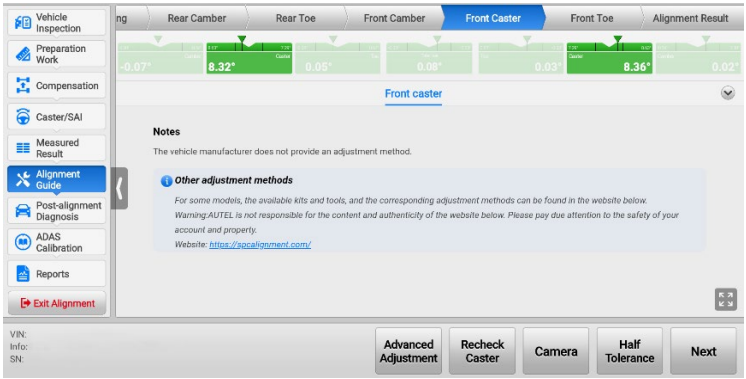


Figure 5-83 ***Parameters Adjustment Procedures Screen 2***

d) After finishing all the wheel specifications adjustments, tap **Next** to enter the Alignment Result screen. Check the image color (for adjustment results), and make sure all the images are green. Otherwise, it needs to be readjusted.

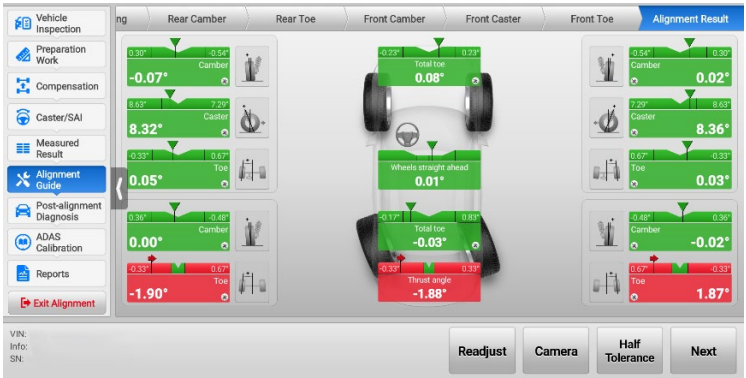


Figure 5-84 ***Alignment Result Screen***

5.4.6.2 Guide Mode on Front Toe

For some vehicle models, two modes are available for front toe adjustment: Guide Mode and Normal Mode. The Guide Mode provides detailed instructions to ensure a simpler and more efficient workflow, and is set by default.

In Guide Mode, there are four steps for adjusting the Front Toe: preparation, adjust right tie rod, adjust left tie rod, and center steering.

1. Follow the guides shown on the tablet to complete the following preparations:

   1) Set the steering wheel at the center position (A steering wheel level is recommended).

2) Start the engine, install the brake pedal depressor, and then stop the engine.

NOTE

If the brake pedal depressor is installed without starting the vehicle, inaccurate measurement results from unlocked brakes.

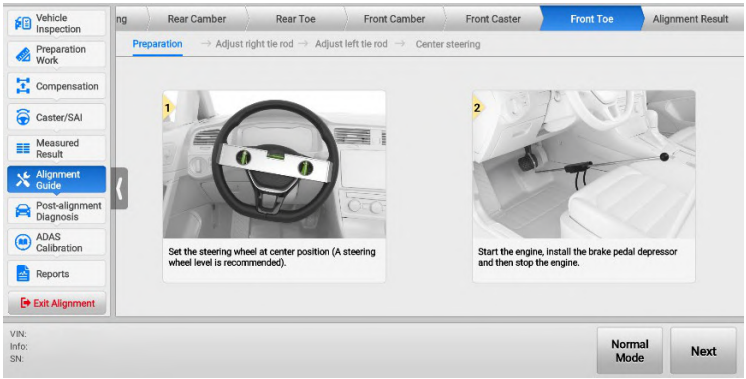


Figure 5-85 ***Front Toe Adjustment Preparation***

2. Tap **Next** to collect data and follow the screen guides to adjust the right tie rod.

   1) Loosen the lock nut and adjust the right tie rod to the tolerance range.

   2) Jounce the front part of the vehicle to set all bottom components in their natural status.

   3) Tighten the lock nut.

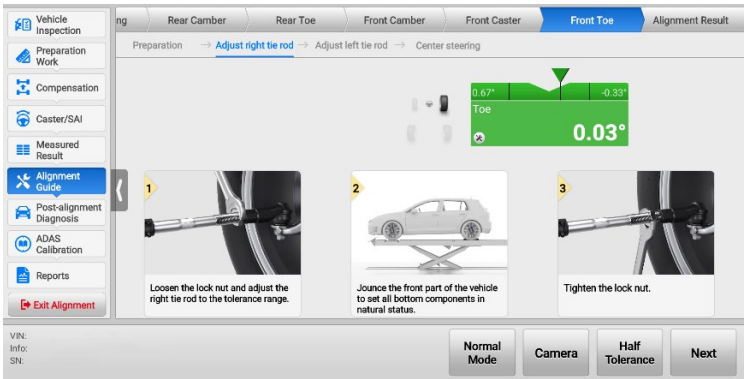


Figure 5-86 ***Adjust Right Tie Rod***

3. Tap **Next** to collect data and then enter the left tie rod adjustment guide screen.

1) Loosen the lock nut and adjust the left tie rod to the tolerance range.

2) Jounce the front part of the vehicle to set all bottom components in their natural status.

3) Tighten the lock nut.

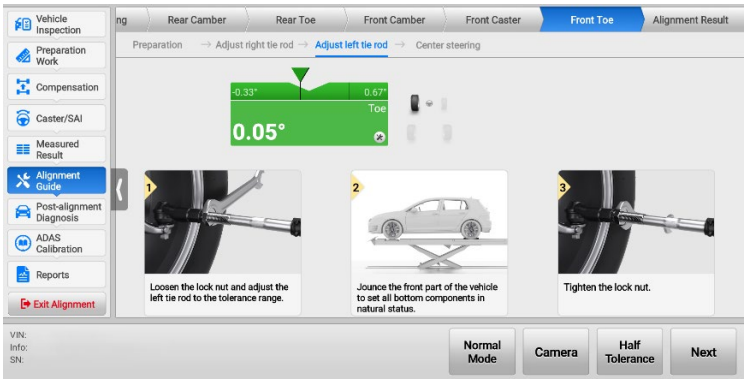


Figure 5-87 ***Adjust Left Tie Rod***

4. Tap **Next**. Then follow the guide shown on the tablet to set the wheels straight ahead. If the steering wheel is not centered, tap **Readjust** to adjust the front toe again.

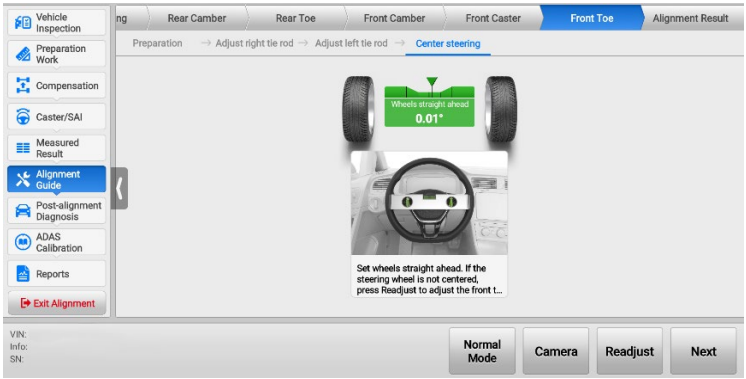


Figure 5-88 ***Center Steering***

5.4.6.3 Recheck Caster

In some OE manuals, the caster angle must be rechecked after front caster adjustment to ensure it falls within the standard range. When rechecking, neither the crossbar nor the vehicle should be raised or lowered.

➢ **To recheck the caster**

1. Tap **Recheck Caster** on the Front Caster screen. Follow the screen guides to complete the following operations:

   1) Remove the steering wheel holder stand tool to ensure that the steering wheel can be turned.

   2) Start the vehicle. Fully depress the brake pedal and install the brake pedal depressor. Stop the vehicle.

   3) Remove the turnplate/slip plate pins and remove the turnplate bridge.

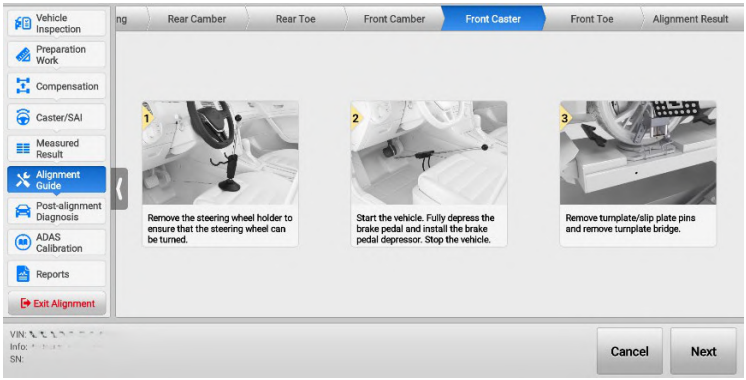


Figure 5-89 ***Recheck Caster Preparations***

2. After completing the above preparations, tap **Next** to enter the next screen.

3. Then turn the steering wheel left or right to the collection range. Once centered, stop, and the tablet will automatically return to the Front Caster screen.

Figure 5-90 ***Steering Wheel Adjustment***

5.4.7 Post-alignment Diagnosis

Some vehicles need to perform related diagnostic functions after the wheel alignment parameters are adjusted, such as SAS reset.

5.4.7.1 Steering Angle Sensor (SAS) Reset

After adjusting the thrust angle and toe angle, a SAS reset is required under some circumstances. Failure to perform a SAS reset may affect the functionality of security systems such as VSC, ESC, TCS, etc.

➢ **To perform a SAS reset**

1. Follow the guides shown on the tablet to check if the following conditions are met:

   1) The ignition is ON.

   2) The engine is OFF.

   3) The VCI is connected properly.

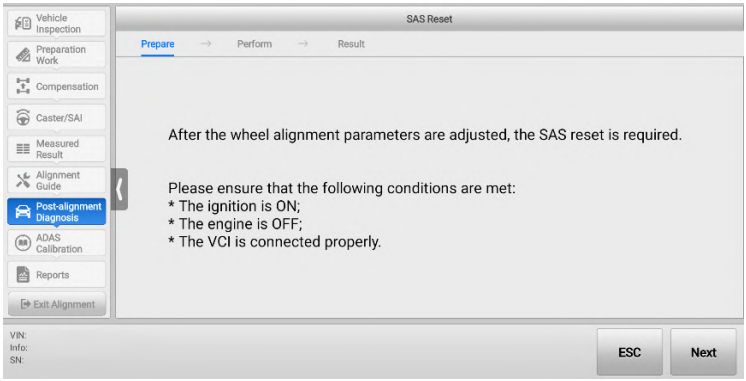


Figure 5-91 ***SAS Reset Screen 1***

2. If the above conditions are met, tap **Next** to enter the next screen. Then follow the screen guide to turn the steering wheel slowly to the center position, set the front wheels straight ahead, and release the steering wheel.

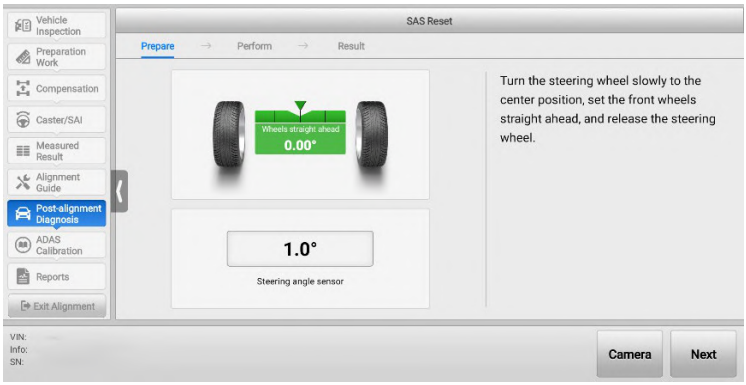


Figure 5-92 ***SAS Reset Screen 2***

3. Tap **Next**. Follow the on-screen instructions to turn the steering wheel to the right for about 30° and then perform the following steps:

   1) Turn the steering wheel slowly to the left end stop and hold for about 5 s;

   2) Turn the steering wheel slowly to the right end stop and hold for about 5 s;

   3) Turn the steering wheel slowly to the center position, set the front wheels straight ahead, and release the steering wheel.

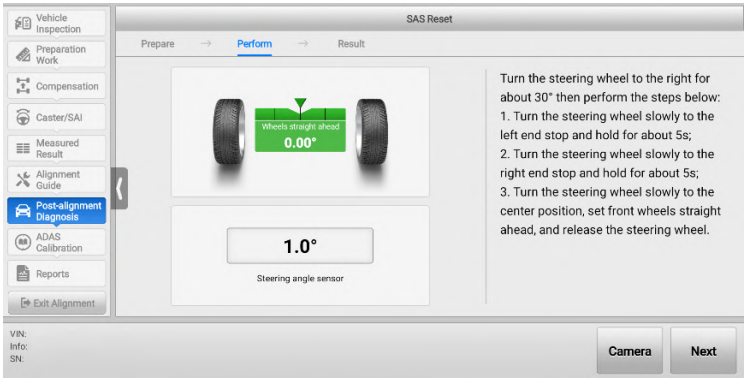


Figure 5-93 ***SAS Reset Screen 3***

4. If the above operations are completed, tap **Next** to enter the SAS reset result screen. indicates successful SAS reset; indicates failed SAS reset.

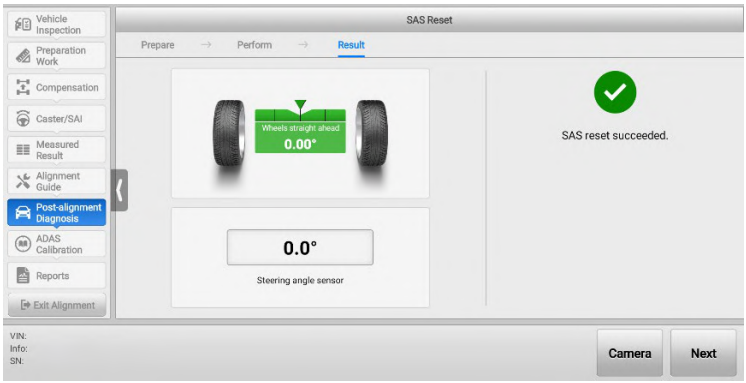


Figure 5-94 ***SAS Reset Screen 4***

5.4.8 Reports

In this section, after performing wheel alignment, you can:

1) Check the Wheel Alignment Report, the wheel alignment parameters, etc.

2) Save reports and share reports to the cloud.

5.4.8.1 Fill in Customer Information

Before accessing the Reports section, complete the customer information. As shown in the customer information table below, the items marked with an asterisk (*) are mandatory fields that require corresponding information to be filled in.

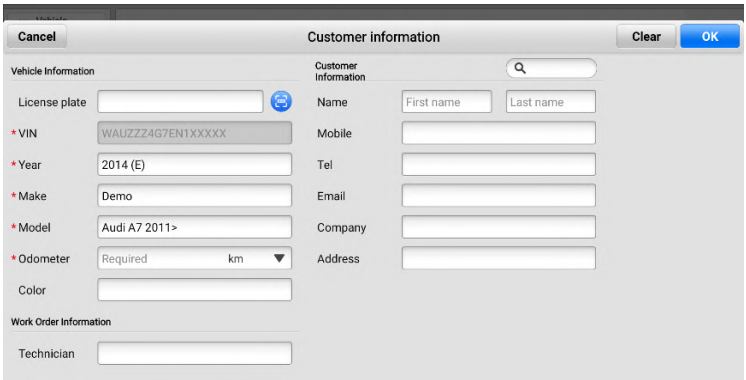


Figure 5-95 ***Customer Information Table***

5.4.8.2 *Report Types*

Ten reports can be seen if all the functions are enabled during the whole wheel alignment procedure, including reports of Chassis Safety Diagnostics, Wheel Alignment, Pre-repair & Post-repair, Pre-repair, Current Values, Symmetry Value, Chassis Inspection, Tire Inspection, Ride Height, and Bump Steer.

1) Chassis Safety Diagnostic Report: Inspection items, including tread, tread depth, chassis, and the four-wheel conditions; repair suggestions according to the inspections.

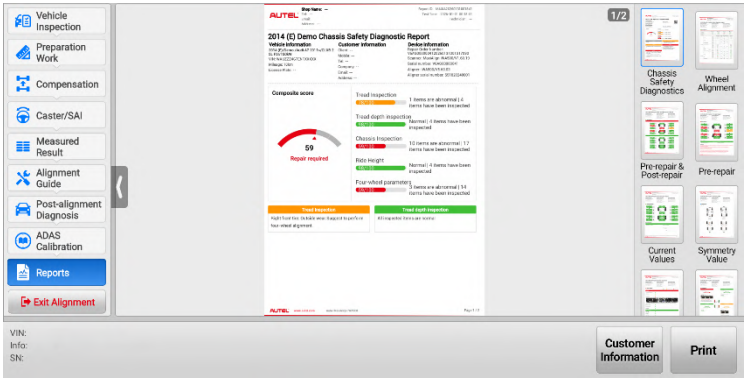


Figure 5-96 *Chassis Safety Diagnostics Report*

2) Wheel Alignment Report: All inspection results, including tread depth, tire pressure, rolling diameter, ride height, front axle specifications, and rear specifications.

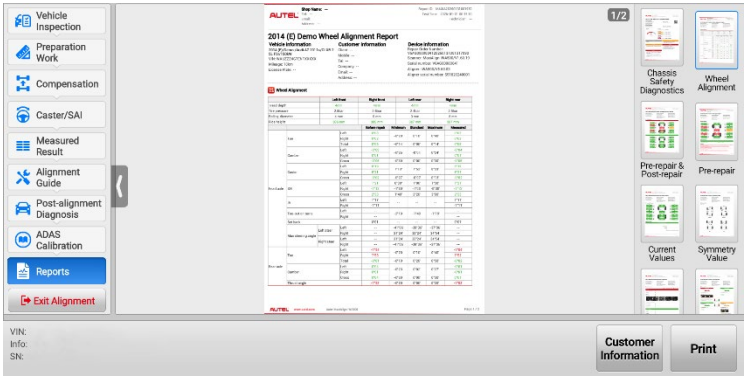


Figure 5-97 *Wheel Alignment Report*

NOTE

- The tread depth values and tire pressure values are available only when the tread depth & pressure inspection is performed.
- The ride height values are available only when the ride height measurement is performed.

3) Pre-repair & Post-repair Report: A comparative graph of pre-repair and post-repair results.

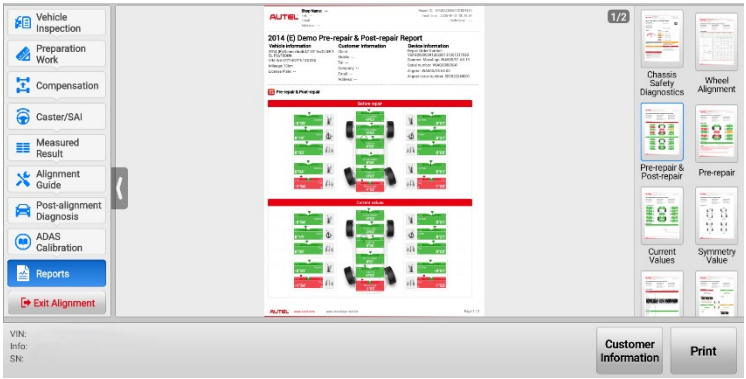


Figure 5-98 ***Pre-repair & Post-repair Report***

4) Pre-repair Report: A graph of pre-repair results. Additional symptom description will be provided if any of the measured values deviate from the specification value.

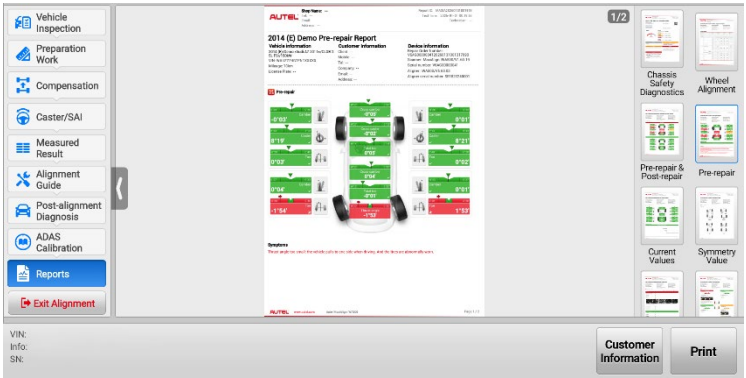


Figure 5-99 ***Pre-repair Report***

5) Current Value Report: A graph of current wheel alignment results. Additional symptom description will be provided if any of the current values deviate from the specification value.

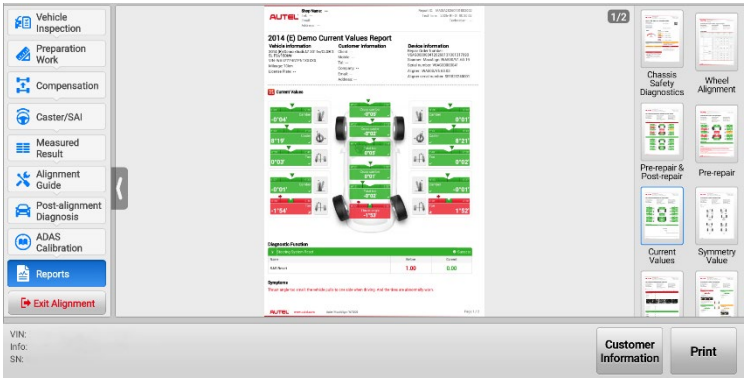


Figure 5-100 ***Current Value Report***

6) Symmetry Value Report: A graph of vehicle axles, wheel axles, lateral offset, etc.

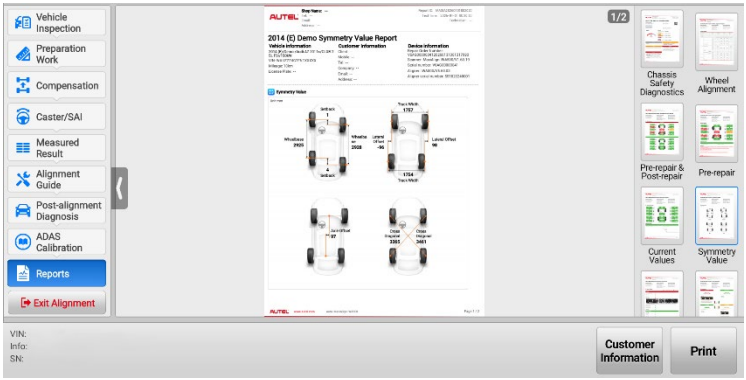


Figure 5-101 ***Symmetry Value Report***

7) Chassis Inspection Report: Record chassis inspection data. This report is only available if the chassis inspection has been performed.

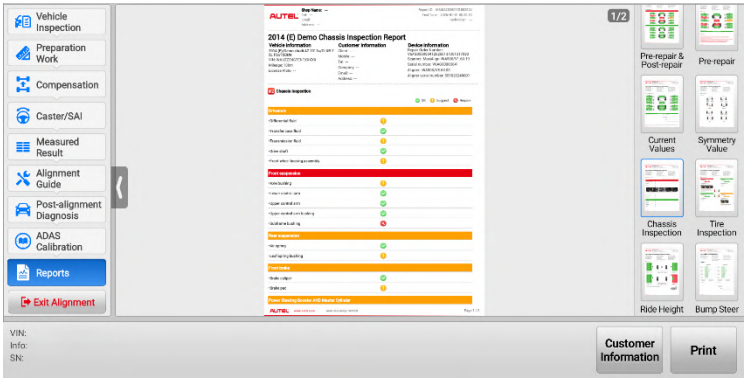


Figure 5-102 ***Chassis Inspection Report***

8) Tire Inspection Report: Record the check data of tread condition, tread depth, and tire pressure. This report is available only if the tread depth & pressure inspection has been performed.

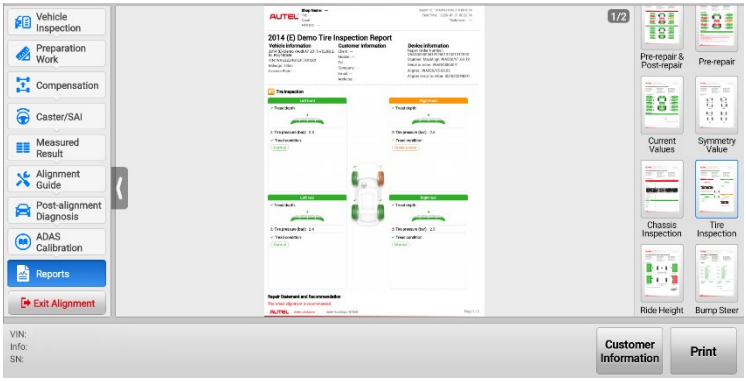


Figure 5-103 ***Tire Inspection Report***

9) Ride Height Report: A graph of ride height or ride height difference. This report is available only if the ride height measurement has been performed.

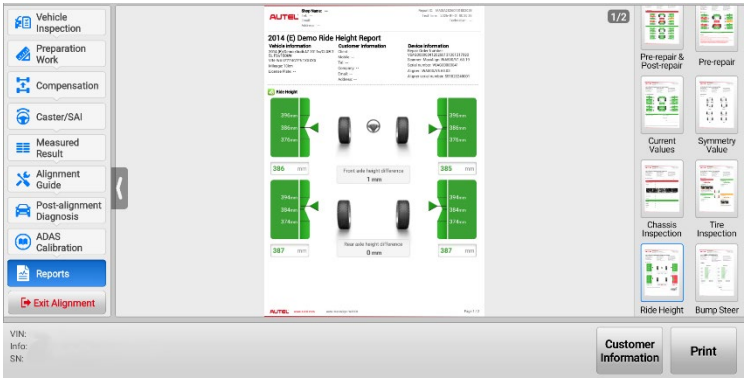


Figure 5-104 ***Ride Height Report***

10) Bump Steer Report: Two graphs illustrating the correlation between ride height and front toe, and between ride height and front camber, respectively. This report is only available if the bump steer measurement has been performed.

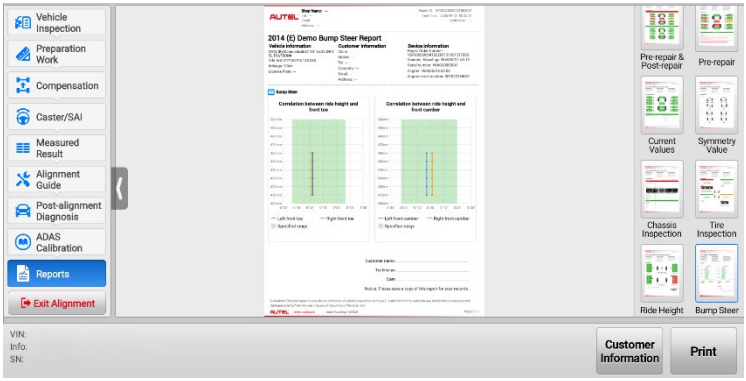


Figure 5-105 ***Bump Steer Report***

If a report displays a icon and no measurement data appear when tapped to view, it indicates the corresponding function has not been performed. You may tap the procedure button on the left to perform the function; the corresponding report data will then be generated.

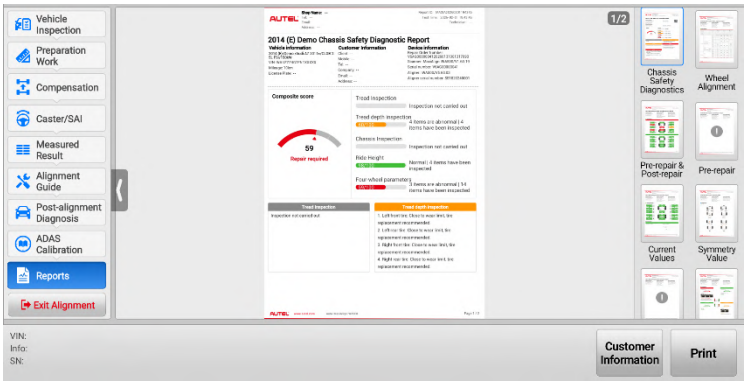


Figure 5-106 ***Report with No Data Generated 1***

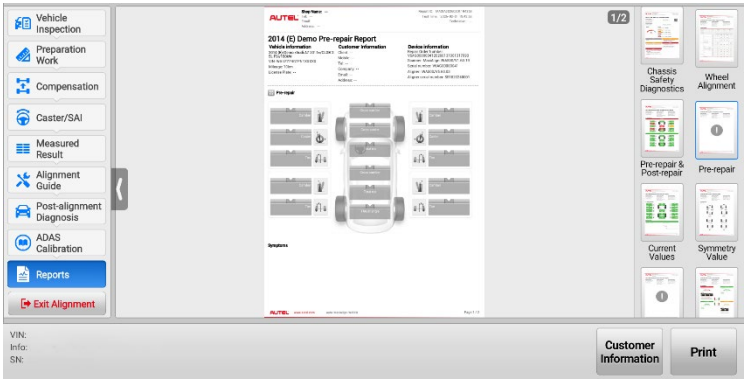


Figure 5-107 ***Report with No Data Generated 2***

5.4.8.3 Save Report and Report Cloud Sharing

After performing a vehicle inspection and wheel alignment, you can save the reports and share them to the cloud, and then share the cloud reports via QR code, email, or SMS to customers in real time.

➢ **To save reports**

1. In the Wheel Alignment Reports screen, tap the button on the top toolbar to open the drop-down list.

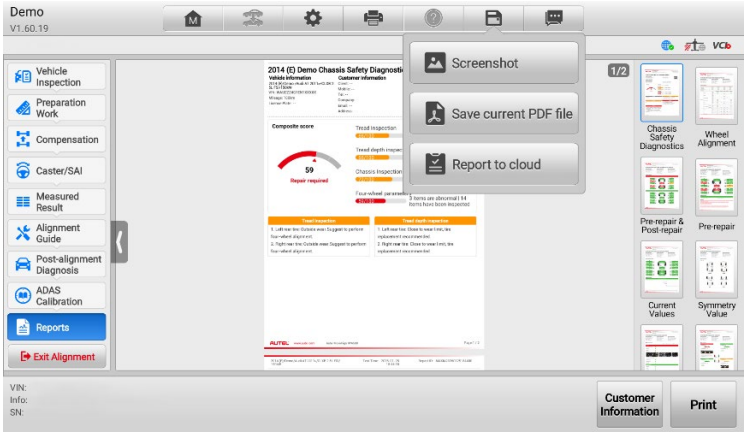


Figure 5-108 ***Save Report Screen 1***

2. Tap **Save current PDF file** to enter the Save as PDF screen.

Figure 5-109 ***Save Report Screen 2***

3. Input the file name and tap **Save.** Once the tablet displays the following screen, it indicates that the reports have been saved successfully. Tap **OK** and return to the Reports screen.

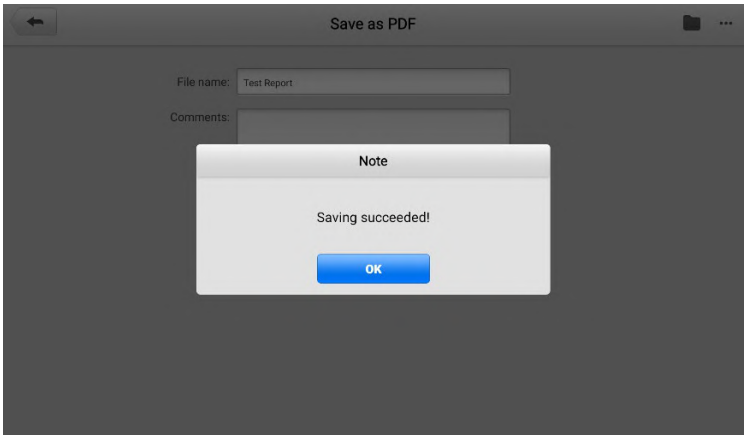


Figure 5-110 ***Save Report Screen 3***

4. Tap the **Data Manager** application, and select the **PDF** icon to view the reports saved locally.

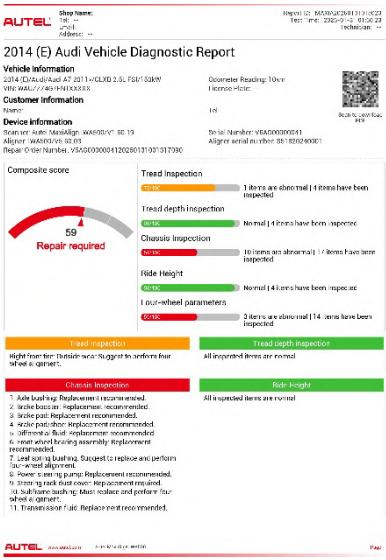
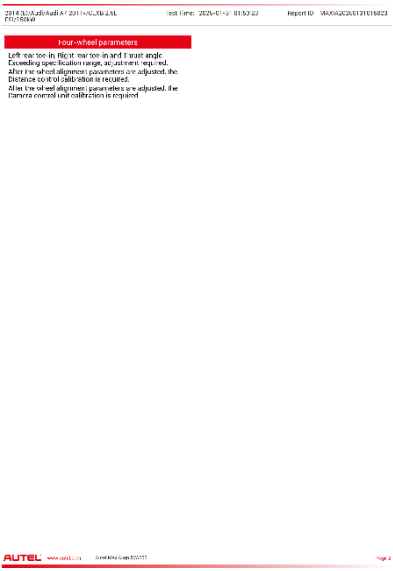


Figure 5-111 ***PDF Report Sample, Page 1***



2014/2/Audi/Audi A7 2011>/C7/3.0/3.0L FSI/180kW

Test Time: 2020-01-21 01:53:23

Report ID: VAG0A20201310103023

Four-wheel parameters

Left rear toe-in, Right rear toe-in and Thrust angle Exceeding specification range, adjustment required.
After the wheel alignment parameters are adjusted, the Distance control calibration is required.
After the wheel alignment parameters are adjusted, the Camera control unit calibration is required.

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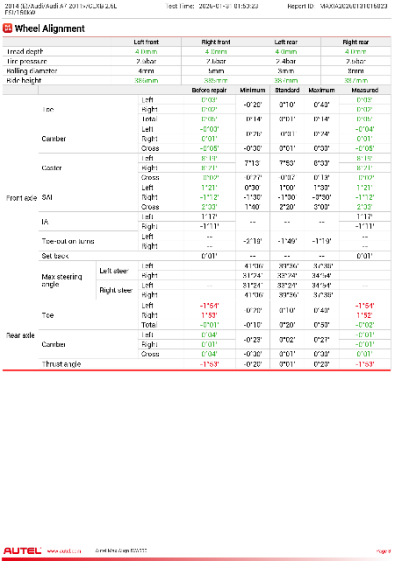
Figure 5-112 ***PDF Report Sample, Page 2***



2014/2/Audi/Audi A7 2011>/C7/3.0/3.0L FSI/180kW

Test Time: 2020-01-21 01:53:23

Report ID: VAG0A20201310103023

Wheel Alignment

	Left front	Right front	Left rear	Right rear
Tread depth	4.0mm	4.0mm	4.0mm	4.0mm
Tire pressure	2.4bar	2.4bar	2.4bar	2.4bar
Rolling diameter	4mm	1mm	3mm	3mm
Ride height	38.5mm	38.5mm	38.0mm	38.0mm

				Before repair	Minimum	Standard	Maximum	Measured
Front axle	Toe		Left	0°03'	-0°20'	0°10'	0°43'	0°03'
			Right	0°07'				0°07'
			Total	0°06'	0°14'	0°01'	0°14'	0°06'
	Camber		Left	-0°03'	0°26'	0°31'	0°74'	-0°04'
			Right	0°01'				0°01'
			Cross	-0°05'	-0°30'	0°01'	0°33'	-0°05'
	Caster		Left	8°11'	7°13'	7°53'	8°33'	8°11'
			Right	8°21'				8°21'
			Cross	0°10'	0°27'	-0°33'	0°19'	0°10'
	SAI		Left	11°21'	0°30'	11°00'	11°33'	11°21'
			Right	-1°12'	-1°30'	-1°30'	-0°30'	-1°12'
			Cross	2°33'	1°40'	2°20'	3°00'	2°33'
	IA		Left	1°12'	--	--	--	1°12'
			Right	-1°11'				-1°11'
	Toe-out on turns		Left	--	-2°19'	-1°49'	-1°19'	--
			Right	--				--
	Set back			0°01'	--	--	--	0°01'
	Max steering angle	Left steer	Left		41°06'	39°36'	37°30'	
			Right		31°24'	33°24'	34°54'	
		Right steer	Left		31°24'	33°24'	34°54'	
			Right		41°06'	39°36'	37°30'	
Rear axle	Toe		Left	-1°54'	0°10'	0°10'	0°43'	-1°54'
			Right	1°53'				1°53'
			Total	-0°01'	-0°10'	0°20'	0°53'	-0°02'
	Camber		Left	0°04'	-0°23'	0°02'	0°27'	-0°01'
			Right	-0°01'				-0°01'
			Cross	0°04'	-0°30'	0°01'	0°32'	0°01'
	Thrust angle			-1°53'	-0°20'	0°01'	0°23'	-1°53'

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Figure 5-113 ***PDF Report Sample, Page 3***

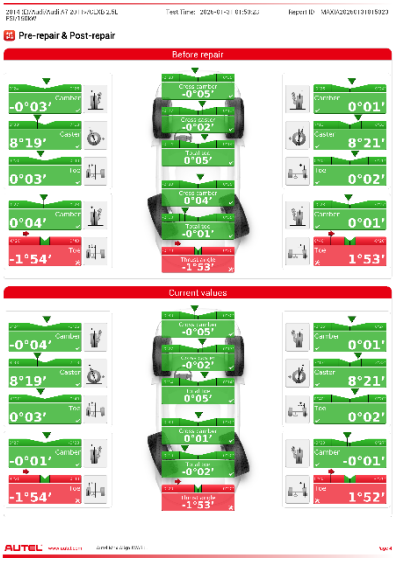


Figure 5-114 ***PDF Report Sample, Page 4***

Figure 5-115 ***PDF Report Sample, Page 5***

➢ **To report to the cloud**

1. In the Wheel Alignment Reports screen, tap the button to open the drop-down list, and tap the **Report to Cloud** button.

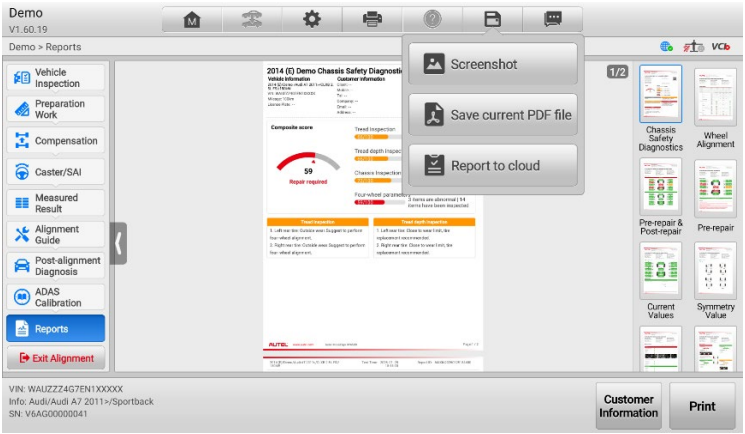


Figure 5-116 ***Report to Cloud Screen 1***

2. Once the tablet displays the following screen, it indicates that the reports are saved to the cloud successfully. Tap **Close** to return to the Reports screen, or tap **View Report** to view the report.

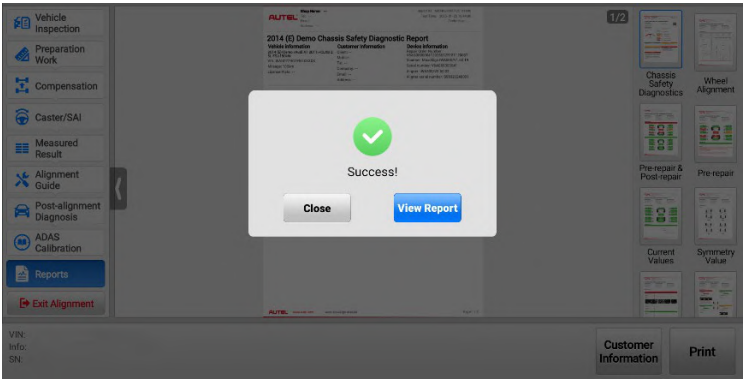


Figure 5-117 ***Report to Cloud Screen 2***

➢ **To share reports**

1. Either tap **View Report** (refer to *Figure 5-110 Save Report Screen 3*), or tap the **Data Manager** application, select the **Cloud Report** icon, and select a specific report—to access the Test Report screen.

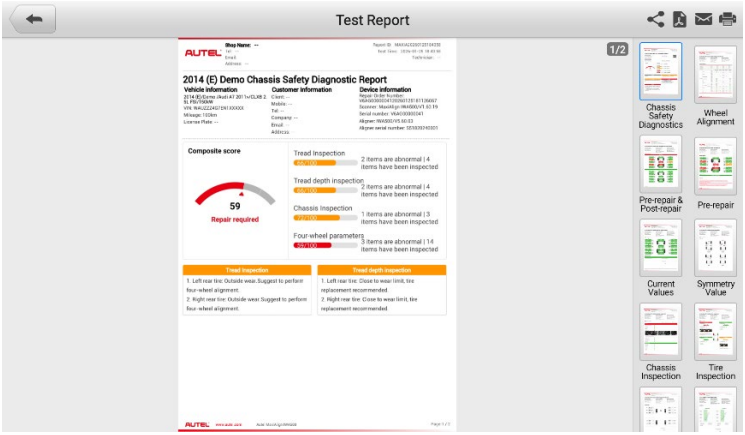


Figure 5-118 ***Test Report Screen***

NOTE

On the *Report List* screen under **Data Manager > Cloud Report**, a report marked with indicates that it has been successfully uploaded to the cloud and can be shared with others; while a report marked with indicates a failed cloud upload and cannot be shared.

2. Tap the button on the top toolbar to share the report.

1) Scan the QR to view the report directly. The QR code for each report is different.

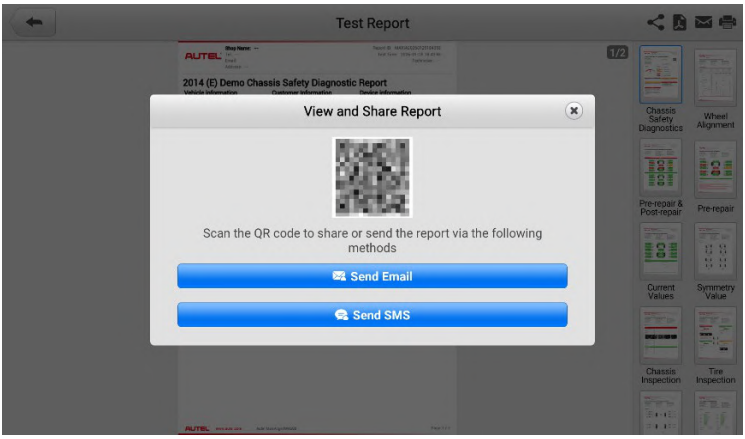


Figure 5-119 ***Report Cloud Sharing Method Screen***

2) Tap **Send Email**, input the Email address, and then tap **Send** to share the report.

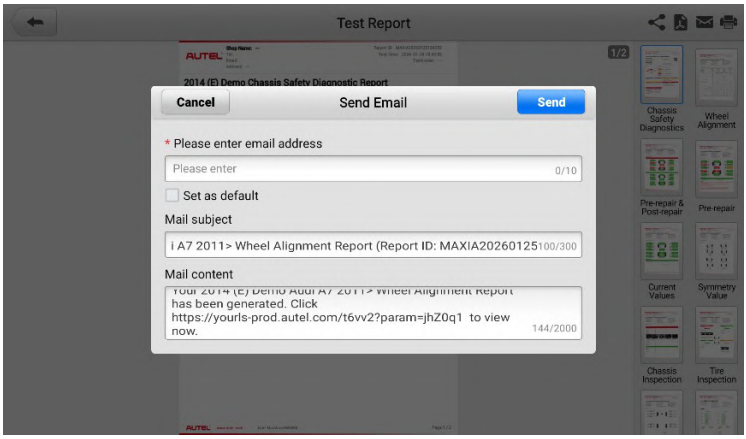


Figure 5-120 ***Send Email Screen***

3) Tap **Send SMS**, input the phone number, and then tap **Send** to share the report.

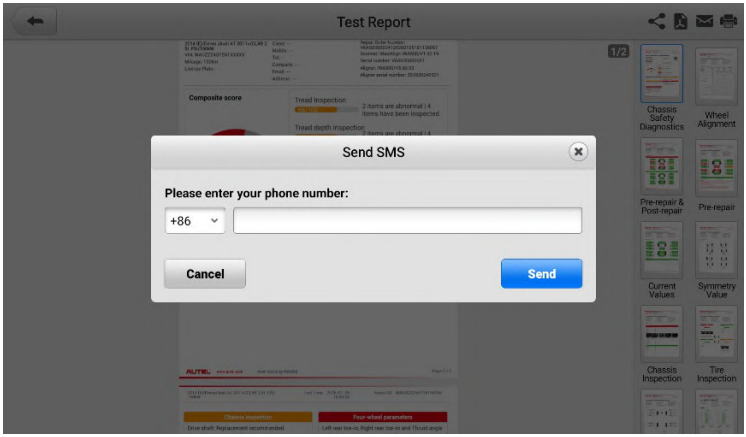
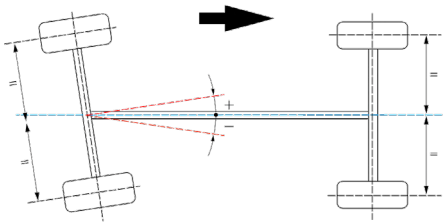


Figure 5-121 ***Send SMS Screen***

5.5 Glossary

5.5.1 Geometry Centerline

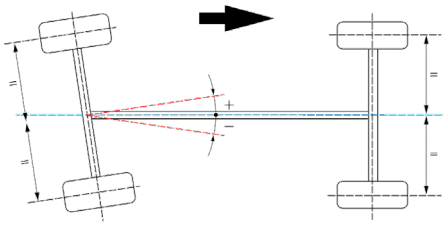
Geometry Centerline refers to the intersection of the longitudinal center plane of the body and the horizontal plane of the front and rear axles (blue dotted line).



5.5.2 Thrust Angle

✧ Definition

The thrust angle is the angle between the longitudinal geometric center plane of the vehicle and the thrust line (the driving axis is the perpendicular line of the rear axle center). As shown in the picture below.



✧ Function

Ensure that the vehicle is driven straight ahead.

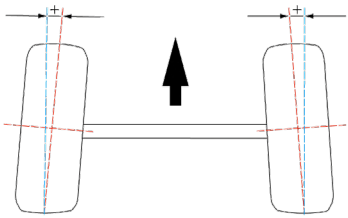
✧ Effects of abnormal thrust angle

- The steering wheel is tilted when the vehicle is driven straight ahead.
- The tires are abnormally worn and the vehicle pulls to one side.

5.5.3 Toe

✧ Definition

The toe is the angle between the center plane of the wheel rotation and the longitudinal plane of the vehicle (as shown in the picture below).



✧ Function

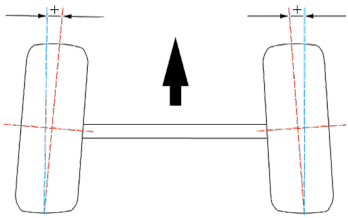
Eliminate or reduce the adverse effect when the front ends of the two wheels spread outward due to the camber in driving. Ensure that the wheels do not roll outwards. Prevent the wheels from sliding laterally. And reduce tire wear and fuel consumption.

✧ Effects of abnormal toe

- One side of the tire is abnormally worn.
- The vehicle has excessive vibrations when driving at high speed.
- The steering wheel is tilted when driving straight ahead.

5.5.4 Total Toe

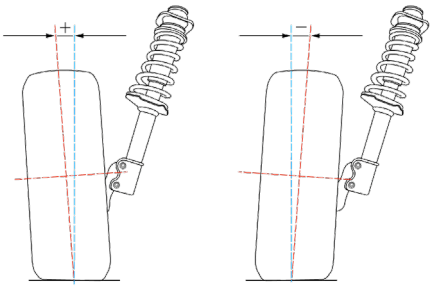
The sum of the toe-in of the coaxial left and right wheels.



5.5.5 Camber

✧ Definition

The camber is the angle between the wheel rotation plane and the longitudinal plane perpendicular to the vehicle bearing plane. If the upper of the wheel is tilted outward relative to the rotation plane, it is the positive camber. If the upper of the wheel is tilted inward, it is the negative camber (as shown in the picture below).



✧ Function

Improve the safety of the front wheels and make the steering lighter when driving.

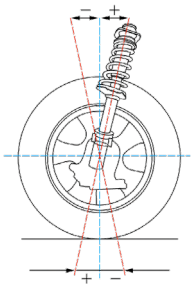
✧ Effects of abnormal camber

- When the camber is too large, the outer side of the wheel is worn. The vehicle has excessive vibrations and the steering wheel is unstable when driving at high speed.
- When the camber is too small, the inner side of the wheel is worn. The steering is heavy and there is not enough force to return the steering wheel automatically to the center position.
- When the left camber and the right camber are not equal, the vehicle slides laterally and deviates when driving.

5.5.6 Front Caster

✧ Definition

The kingpin is the center of rotation when the wheel is turning. The caster is the angle between the kingpin axis and the perpendicular line of the vehicle bearing plane (as shown in the picture below).



✧ Function

Create the force to return the steering wheel automatically to the center position. Ensure the vehicle stability when driving straight ahead. And make the steering wheel lighter and easier to return after the vehicle changes direction.

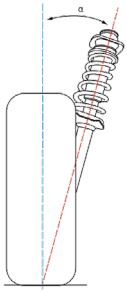
✧ Effects of abnormal caster

- When the left caster and the right caster are not equal, the left wheels are not synchronized with the right wheels when the vehicle changes direction. And, the vehicle deviates when driving.
- When the caster is too small, the steering wheel is unstable.
- When the caster is too large, the steering is heavy.

5.5.7 Steering Axis Inclination (SAI)

✧ Definition

The steering axis inclination is the angle between the kingpin axis and vertical line in the lateral vertical plane of the vehicle (as shown in the picture below).



✧ Function

When the wheels deviate from the straight ahead position due to external force, the front wheels will automatically return to the straight ahead position.

✧ Effects of abnormal steering axis inclination

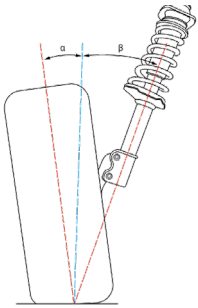
- When the steering axis inclination is too large, the required steering force becomes larger and the steering becomes difficult.
- When the steering axis inclination is too small, the steering system cannot fully return to the center position after the vehicle makes a turn.

- When the left steering axis inclination and the right steering axis inclination are not equal, the vehicle may pull to one side.

5.5.8 Included Angle (IA)

✧ Definition

The included angle is the angle Y between the kingpin axis and the wheel axis. The value of the included angle is the sum of the steering axis inclination α and the camber β (as shown in the picture below).



✧ Function

The included angle is used for diagnosing the suspension system misalignment and the suspension components deformation.

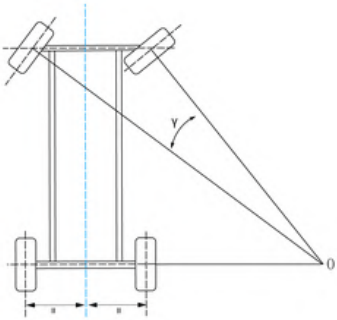
✧ Effects of abnormal included angle

- When the included angle is too small, the steering axis inclination is normal and the camber is too small, the shaft journal may be bent.
- When the included angle is normal, the steering axis inclination is too small and the camber is too large, the lower control arm may be bent.
- When the included angle is normal, the steering axis inclination is too large and the camber is too small, the upper control arm may be bent.
- When the included angle is too large, the steering axis inclination is too small and the camber is too large, the lower control arm and the shaft journal may be bent.

5.5.9 Toe-out on Turns

✧ Definition

The Ackerman angle is the difference between the outer wheel steering angle and the inner wheel steering angle when the vehicle makes a turn.



✧ Function

Ensure that the two front wheels point to the correct direction for more grip.

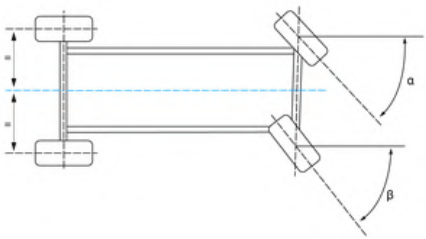
✧ Effects of abnormal Ackerman angle

- The tires may have feathering condition.
- The tires may slide laterally or jump or have abnormal noise due to insufficient grip when the vehicle makes a turn.

5.5.10 Maximum Steering Angle

✧ Definition

The maximum steering angle is the angle that the wheel rotation plane covers when the front wheels turn from the straight-ahead position to the left or right limit position.



✧ Function

Control the minimum turning radius and ensure the vehicle driving stability and maneuverability.

✧ Effects of abnormal maximum steering angle

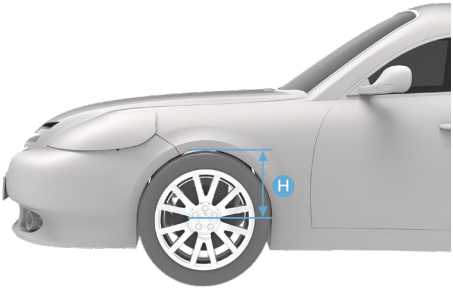
- The vehicle may slide during driving.
- There may be noise when the vehicle makes a turn.

- The steering wheel may shake.
- The steering is heavy.
- In extreme cases, the vehicle may roll over.

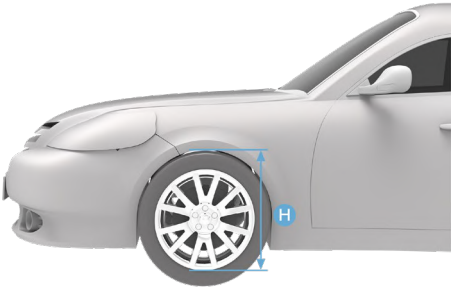
5.5.11 Ride Height

The location and method of ride height vary by vehicle manufacturer. See below for details.

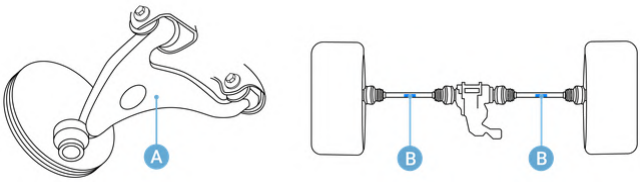
- Ride height of vehicle manufacturers such as Volkswagen, Audi, Porsche, etc.



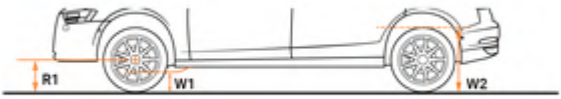
- Ride height of vehicle manufacturers such as BMW.



- Ride height of vehicle manufacturers such as Mercedes-Benz, Maybach, and etc., determined by measuring the inclination of chassis-related components.



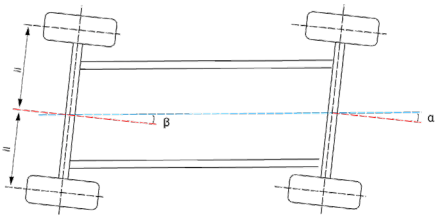
- Ride height of vehicle manufacturers such as Renault, Peugeot, more than one value that needs to be measured on one tire position.



5.5.12 Setback Angle

✧ Definition

The setback angle is the angle between the vertical line of the wheel center connecting line and the thrust line.



✧ Function

To diagnose the axle deformation.

✧ Effects of abnormal setback angle

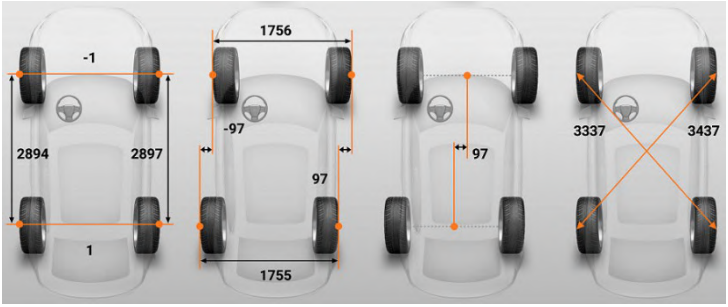
- The setback angle leads to the difference between the left and right wheelbases, and the vehicle pulls to the side of shorter wheelbase.

5.5.13 Wheel Straight Ahead

Half of the difference value of front wheel left toe minus right toe.

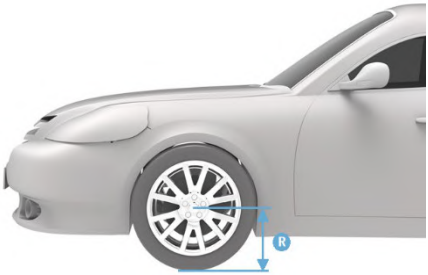
5.5.14 Symmetrical Value

The geometric dimensions of the vehicle are usually symmetrical, which is used to preliminarily judge whether the vehicle has had an accident and the health status of the chassis, and assist the four-wheel alignment.



5.5.15 Rolling Diameter

The rolling radius R is equal to the distance from the center of the wheel to the ground. The rolling diameter is equivalent to two rolling radius R.



6 Maintenance and Service

6.1 Maintenance Instructions

6.1.1 Wheel Alignment Frame Maintenance

6.1.1.1 Camera Maintenance

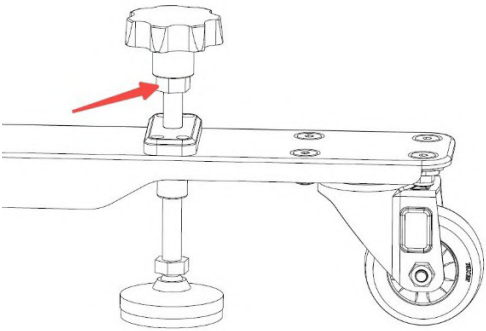
Keep hands and tools away from the camera lens area.

DO NOT attempt to clean the camera lens with standard window cleaner and a cloth, or by blowing on them with shop air. If cleaning ever becomes necessary, it should be done with special optical cleaning fluid and/or canned air.

6.1.1.2 Adjustable Feet Adjustment

If the adjustment foot does not contact the ground even after the knob is fully tightened, adjust its height.

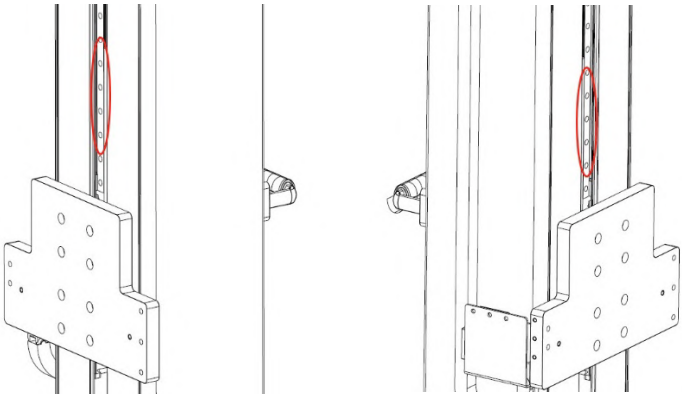
Use an adjustable wrench to fit it onto the upper hex nut of the adjustable foot and loosen the nut. Rotate the knob to the desired height, and then rotate the upper nut counterclockwise to secure the adjustable foot.



6.1.1.3 Guide Rail Maintenance

To maintain smooth vertical movement of the wheel alignment frame, lubricate the two guide rails with grease every six months.

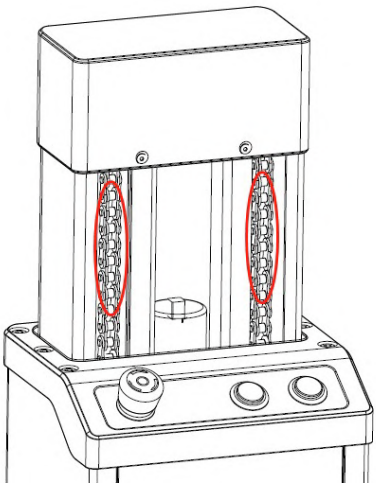
Use a grease gun to fill the two grease fittings in the gaps on both sides of the frame (as shown below).



6.1.1.4 Chain Maintenance

To maintain smooth vertical movement of the wheel alignment frame, lubricate the two chains with rust-preventative oil every six months.

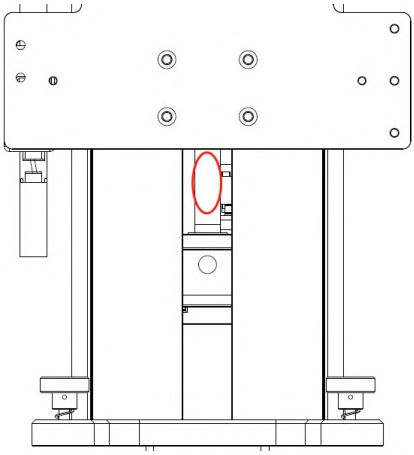
Press the **UP** button to raise the inner column of the frame, locate the chains, and apply rust-preventative oil along the surface of the chains.



6.1.1.5 Lead Screw Maintenance

To maintain smooth vertical movement of the wheel alignment frame, lubricate the lead screw with grease every six months.

Use a grease gun to apply grease to the lead screw exposed at the center of the frame (as shown below).



6.1.2 Target Maintenance

DO NOT use hard objects to strike or scratch the surface of the target, as this may render the target unidentifiable. Note that accumulated dirt, oil, or grease can also cause target identification failures.

If the red icon shown below appears over the target pattern on the target display screen, the target may require cleaning.

Red icon: Target not found.

Do not use shop towels or rags to clean the target, as their fibers may retain grease and leave a thin film on the target surface during wiping.

Clean the target with a mild detergent and soft paper towels.

DO NOT hose down, submerge in water, or spray cleaner directly on the target, as this can damage the optical components. Be sure to wipe the entire target surface completely.

6.2 Service Procedures

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

6.2.1 Self-inspection

1. The lifting mechanism of the wheel alignment frame does not work.
   - Check if the power cord is well connected.
   - Check if the power switch of the wheel alignment frame is on.
   - Check if the EMERGENCY STOP button is on.
   - Check if you have waited more than 5 seconds for the system to turn on.
   - Check if the wheel alignment frame reaches the lower limit position/upper limit position.
2. The lifting mechanism of the wheel alignment frame is difficult to lift or lower.
   - Check if charging cords or other cords are tangled.
   - Check whether there are obstacles around the wheel alignment frame.
3. The camera does not work.
   - Check if the power cord is connected to the power socket and the power switch of the wheel alignment frame is on.
   - Check if the power cords and USB cords on the crossbar are securely connected.

6.2.2 After-sales Services

6.2.2.1 On-site Maintenance

1. The lifting mechanism of the wheel alignment frame still does not work after self-inspection.
   - Enter factory mode by after-sales service personnel to check the status of each sensor and motor brake.
   - Remove the back cover to check whether the cables are loose, broken, or have other defects.
2. The lifting mechanism of the wheel alignment frame is still difficult to lift or lower after self-inspection.

- Check whether the structure of the wheel alignment frame is deformed by after-sales service personnel on site.
- Enter the factory mode and check the status of each sensor and motor brake.
- Remove the back cover to check whether the cables are loose, broken, or have other defects.

3. The wheel alignment frame lifts and falls with obvious abnormal noise and is stuck.
   - Enter factory mode by after-sales service personnel to check the status of each sensor and motor brake.
   - Remove the back cover to check whether the cables are loose, broken, or have other defects.
4. When the wheel alignment frame is powered on, it cannot stand still at any height or descend by itself.
   - Enter the factory mode by after-sales service personnel to check the state of the motor brake.
   - Remove the back cover to check whether the cables are loose, broken, or have other defects.
5. The key parts of the wheel alignment frame are slightly loose.
   - On-site inspection by after-sales service personnel to determine whether it is normal, or whether it needs to be repaired or replaced.
6. Other issues that cannot be resolved by the user through self-inspection.

6.2.2.2 Return to Branch

1. The question still remains unsolved after after-sales service personnel on-site inspection.
   - The branch staff will contact the R&D department of the headquarters to check the wheel alignment frame structure, hardware, software, etc., and provide solutions collaboratively.

6.2.2.3 Return to Headquarters

1. The question remains unsettled after after-sales service personnel on-site inspection.
   - The R&D personnel of the headquarters will check the wheel alignment frame structure, hardware, software, etc.
2. When the wheel alignment frame is powered off, it cannot stand still at any height and will descend by itself.

- The R&D personnel of the headquarters will check all parts of the wheel alignment frame structure to troubleshoot.

3. Serious loosening or breakage of key components of the wheel alignment frame.
   - The R&D personnel of the headquarters will check all parts of the wheel alignment frame structure to troubleshoot.

6.2.3 Parts Replacement

✧ Parts that can be replaced by the user

1. Casters
2. Adjustable Feet
3. The front cover of the outer column
4. The front cover of the inner column
5. External cords such as power cord, charging cord, cords of monitor, etc.
6. Chain
7. Tablet Holder
8. Monitor mount
9. Monitor
10. Top cover of inner column

✧ Parts that need to be replaced by the after-sales service personnel

1. Base
2. Back cover
3. Inside cords
4. Internal hardware
5. 12 V/24 V charging port
6. Handle or handle holder
7. Control buttons panel
8. Chain
9. Camera (recalibration needed)

✧ Parts that need to be returned to branch for replacement

1. Electric pushrod or motor
2. Column system
3. Crossbar
4. Master control
5. Guide rail for inner column

6.2.4 Technical Support

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

Autel China Headquarters

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

Autel North America

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

Autel Europe

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

Autel APAC

Japan:

- **Phone:** +81-045-548-6282
- **Email:** 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

Australia:

- **Email:** ausupport@autel.com
- **Address:** Unit 5, 25 Veronica Street, Capalaba

Autel IMEA

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

Autel Latin America

Mexico:

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

Brazil:

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

6.2.5 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:

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

6.2.6 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

7 Compliance Information

FCC Statement **FCC ID: WQ8-DA2211**

This device complies with Part 15 of the FCC Rules. 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.

⚠ **WARNING**

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

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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

IC Warning **IC: 10826A-DA2211**

This device complies with Industry Canada's licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil nedoit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

⚠ **WARNING**

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to IC 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.

IC Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

CE Compliance

RED Directive 2014/53/EU.

RoHS Compliance

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

8 Warranty

8.1 Limited One-Year Warranty

Autel Intelligent Technology Corp., Ltd. (the Company) warrants to the original retail purchaser of this 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 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).

NOTE

If the warranty period is inconsistent with local laws and regulations, please comply with the relevant local laws and regulations.

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 limitations 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 backup copy of any content of your product before delivering the product for warranty service.

Autel Intelligent Technology Corp., Ltd.

www.autel.com

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