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1 Safety Precautions

The X-431 ADAS calibration tool is exclusively intended for use on a vehicle. To avoid personal injury, property damage, or accidental damage to the product, read all of the information in this section before using the product:

- To operate the X-431 ADAS calibration tool properly, user must have knowledge of automotive technology and is therefore aware of the sources of danger and risks in the repair shop and on vehicles.
- All notes given in the individual sections of the operating instructions apply. In principle it is required to follow the steps and safety precautions stated below.
- Furthermore, pay attention to all general instructions from labor inspectorates, trade associations and vehicle manufacturers as well as all laws, legal ordinances and instructions which have to be commonly obeyed by a repair shop.

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

On Using X-431 ADAS Calibration Tool

In order to avoid incorrect handling and injury to the user or destruction of the X-431 ADAS calibration tool arising from this, pay attention to the following:

- Only assemble the X-431 ADAS calibration tool according to the operating instructions.
- Protect the X-431 ADAS calibration tool from water and strong impacts.
- Protect the X-431 ADAS calibration tool from long periods of exposure to solar radiation.
- Do a regular check and service for the X-431 ADAS calibration tool.

On Using Vehicle

When working on the vehicle, please carefully read the following information:

- Put blocks in front of the driver wheels to protect vehicle against rolling away.
- The park position should also be engaged in automatic vehicles.
- Always attach the protective cylinder set to the rim flange or tyre to prevent it from scratching surfaces or damage to wheel rims.
- After a calibration is completely performed, remember to unplug the VCI device

from the vehicle's diagnostic socket.

On Using Laser Module

There is a risk of injury through dazzling the eyes when working with the laser.

Therefore regard the following:

- Do not direct the laser beam towards persons, doors or windows.
- Never look directly into the laser beam because it may cause damage to/destruction of the retina.
- Ensure the calibration room is properly illuminated.
- While moving the laser module, hold it tightly to protect it from falling down on the floor.
- While installing a laser module, please make sure it is firmly and securely attached.
- Only use a straight screwdriver to adjust the laser beam radius.

2 Product Description

2.1 Profile

Advanced Driver Assistance Systems (ADAS) are electronic components in vehicles, which include a wide range of safety features for vehicles such as autonomous emergency braking (AEB), lane departure warning (LDW), lane keep assist, blind spot elimination, night vision cameras and adaptive lighting.

Initially only found on premium segment, the number of modern mid-class and compact vehicles equipped with Advanced Driver Assist Systems is growing at a rapid rate.

The cameras and sensors used by these systems have to be precisely calibrated and adjusted. Incorrect calibration resulting from windscreen replacement or wheel alignment can cause the system to deliver incorrect results or even fail completely, resulting in a serious accident or even a fatality.

In light of this, Launch has developed the X-431 ADAS calibration tool. As a comprehensive and flexible calibration tool, it enables you to effectively and accurately calibrate a wide range of camera-based & radar-based driver assistance systems, e.g. the front camera for the lane departure warning system, the radar sensor for the ACC (Adaptive Cruise Control) or the camera for adaptive headlights. Repair and service shops do not require a fully equipped wheel alignment station or a leveled workshop ground or platform lift in order to work with X-431 ADAS calibration tool. There are two main components to the X-431 ADAS calibration tool:

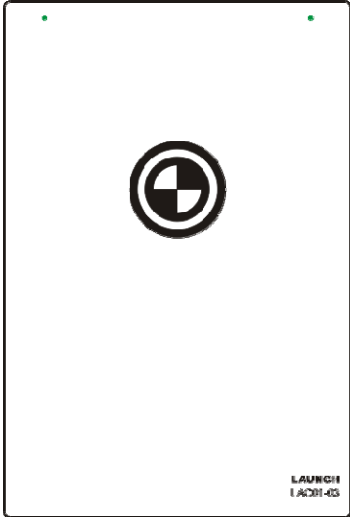


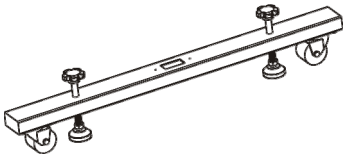
- Calibration Tool – It is designed to calibrate the position of the vehicle sensor and target. It mainly consists of calibration frame (calibration panel available in packages or individual), cross member, wheel clamp, laser module and radar kit etc.
- Diagnostic Tool (sold separately) – The calibration tool can be exclusively operated in conjunction with a Launch's diagnostic tool. Diagnostic tools from other manufacturers will not be supported.

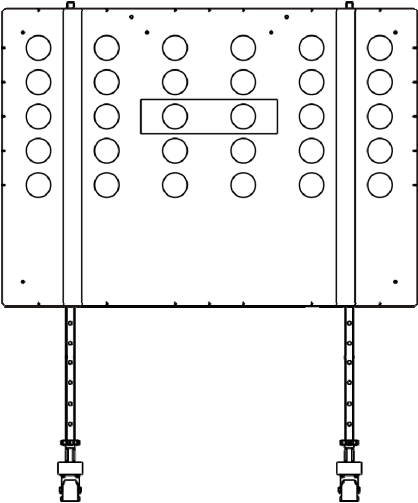
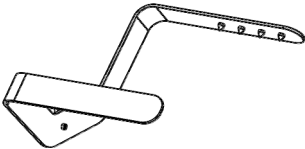
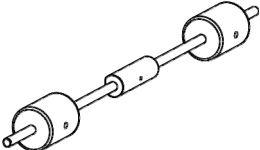
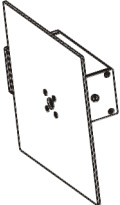

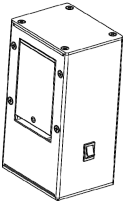
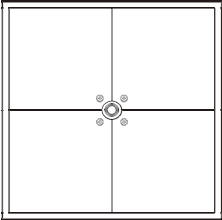
2.2 Packing List

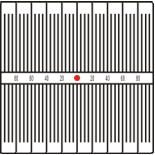
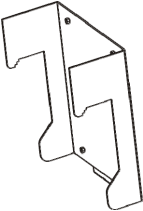
Please check the packing list upon receiving your tool so that complaints can be issued immediately regarding potential damage or missing parts. For different destinations, the accessories may vary. For details, please consult from the local dealers or check the included packing list.

*While unloading, please note:

The heavy tool may drop down and cause injuries, remember to always unload the tool with the aid of a second person or use suitable aid as necessary.

Items	Pictures	Qt.
Calibration panel	 <p>(*Note: Different vehicle makes has different calibration reference patterns. This item is available as in packages or individual.)</p>	(Optional)
Cross member		1
Dipstick		1
Starter base on caster wheels		2

Calibration frame			1
Wheel clamp	Attachment bracket for vehicle tyre		1
	Protective cylinder set		1
	Laser module		1
	Handle		1
Laser module of cross member			2
Radar kit	Radar reflector		1

	Magnetic laser		1
	Attachment bracket of cross member		1

3 Knowledge of X-431 ADAS Calibration Tool

3.1 X-431 ADAS Calibration Tool

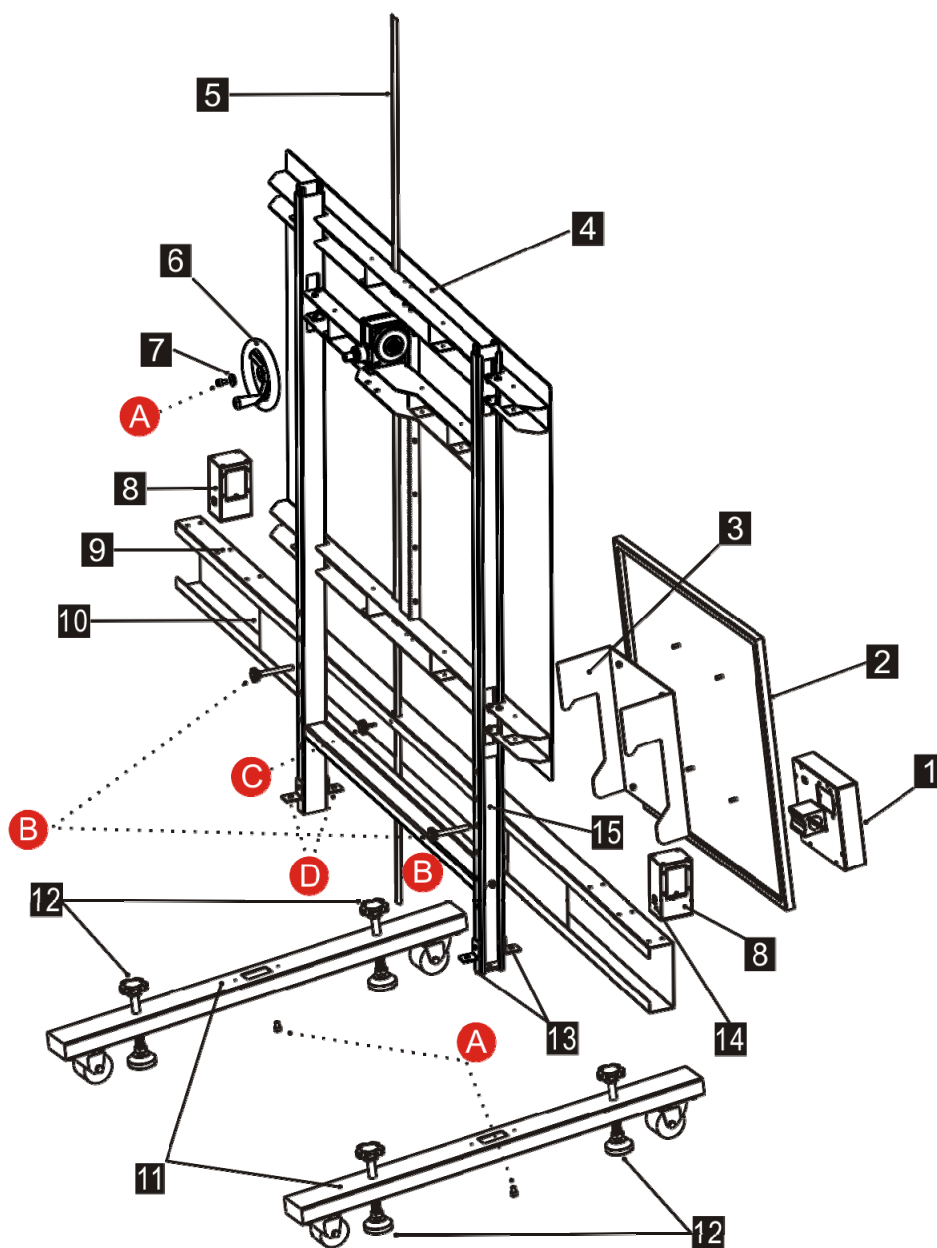


Fig. 3-1

No.	Description
1	Radar magnetic laser Here you will need different reference panels depending on the car manufacturer. These are optionally available.

2	Radar reflector
3	Attachment bracket of cross member Here the radar reflector can be attached to the cross member.
4	Calibration panel Here you will need different calibration patterns depending on the car manufacturer. These are optionally available.
5	Dipstick Here you can read the height of the calibration panel.
6	Crank handle Use this handle to move the calibration panel upwards or downwards.
7	Screw cushion
8	Laser module
9	Mounting hole for laser module of cross member
10	Cross member
11	Base support
12	Adjustment screws of the base support Use the adjustment screws to balance the level gauge of the base support.
13	Cross connector
14	Switch of laser module Turns on/off the laser module.
15	Calibration frame
A	Hexagon socket head cap screw
B	Set screw on cross member Use the set screw to fix the cross member at the appropriate height.
C	Set screw on dipstick Use it to fix the dipstick.
D	Set screw on cross connector Use it to fasten the calibration frame on the base support to prevent the calibration frame from getting loose.

3.2 Wheel Clamp

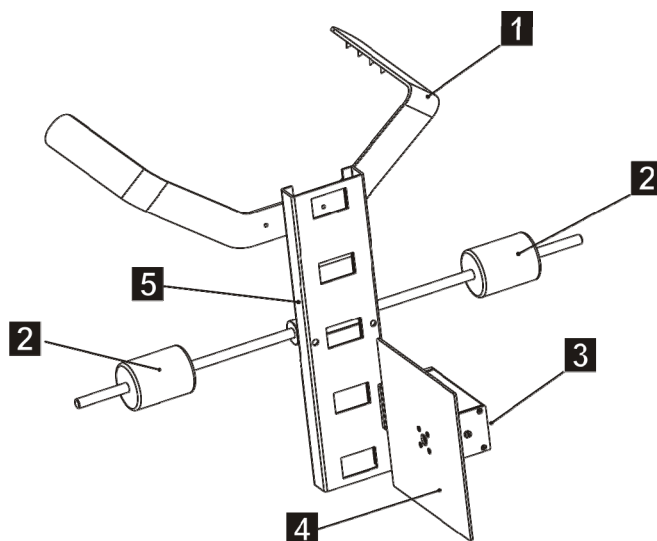


Fig. 3-2

No.	Description
1	Attachment bracket for vehicle tyre Attach it to the vehicle's tyre.
2	Protective cylinder set This protects the wheel rim from damage.
3	Laser module The actual value can be projected onto the scale of the cross member of the calibration panel with the help of the laser. *Note: This laser module features the same functions as that installed on the cross member. It is integrated with the scale of the wheel clamp.
4	Scale of the wheel clamp Here you can check whether the calibration panel is placed parallel to the vehicle.
5	Handle To attach protective cylinder set and adjust the height of the laser module.

3.3 Laser Module

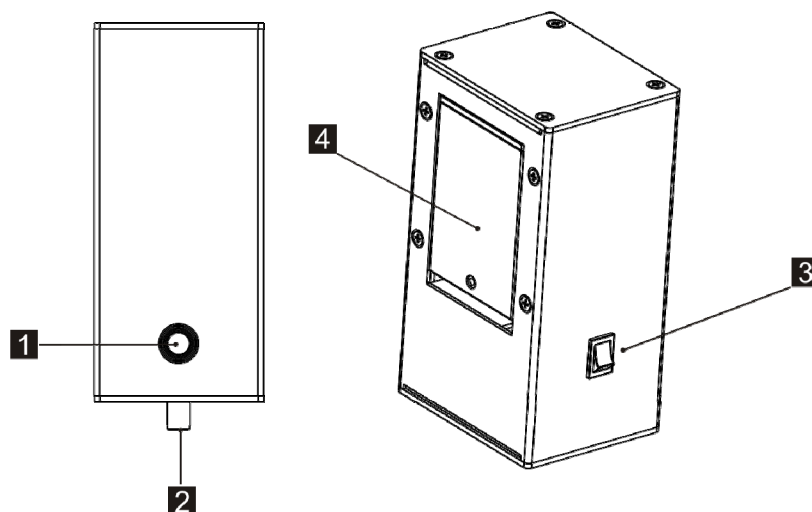


Fig. 3-3

No.	Description
1	Output of the laser beam Output for laser beam. Use the laser beam to read the actual value at the scales of the cross member and at wheel clamp.
2	Mounting bolt Use this to secure the laser module on the cross member.
3	Switch Switch the laser on and off.
4	Battery compartment cover 3 type AA batteries can be inserted into the battery compartment.

3.3.1 Replacing the batteries

Proceed as follows to replace the batteries:

1. Switch off the laser beam (1) with the switch (3).
2. Loosen the screw of the battery compartment cover (4), and then push it along the indicator to remove it.
3. Take out the batteries individually and follow the correct installation direction/battery polarities to install the new batteries.
4. Reassemble the battery compartment cover in reverse order.

3.3.2 Adjusting the laser beam spot size

Proceed as follows to to adjust the the radius of laser beam:

1. Switch on the laser beam (1) with the switch (3).
2. Use the straight screwdriver (not included) to adjust the laser beam radius as desired.

*Caution: Laser radiation may cause damage to/destruction of the retina. Never look directly into the laser beam.

*Note: To avoid the intuitive distinction, you are suggested to keep the beam radius of the laser modules as same as possible.

3.4 Radar kit

There are three main components to the radar kit: radar reflector, magnetic laser and attachment bracket.

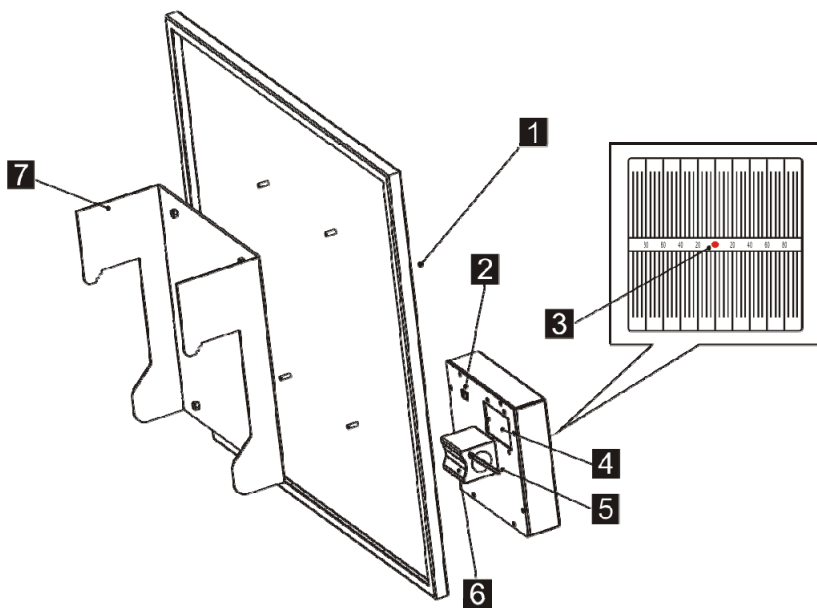


Fig. 3-4

No.	Description
1	Radar Reflector
2	Switch Switch the laser on and off.

3*	Output of laser beam Use the laser beam to read the actual value at the scale of the magnetic laser.
4*	Battery Compartment Cover Insert two AA batteries here.
5*	Tuning Lever (Magnet base) Switch the electromagnet on and off.
6*	Electromagnet To mount the radar kit on the cross member. Switch the electromagnet on so that it can firmly attach on the radar reflector. To detach it, turn the lever off.
7	Attachment Bracket To mount the radar kit on the cross member.

*Note: Items 3~6 are main parts of the magnetic laser.

Replacing the batteries

Proceed as follows to replace the batteries:

1. Switch off the laser beam (3) with the switch (2).
2. Loosen the screw of the battery compartment cover (4), and then push it along the indicator to remove it.
3. Take out the batteries individually and follow the correct installation direction/battery polarities to install the new batteries.
4. Reassemble it in reverse order.

4 Initial Use

4.1 Installing the ADAS Calibration Tool

Follow the steps mentioned below to proceed:

1. Align the calibration frame (13) and base support (11), and then tighten the screw (A) to lock the calibration frame (See Fig. 4-1). To prevent the calibration frame from getting loose, fasten the set screws (D) on the right and left cross connectors (13) respectively (See Fig. 4-2).

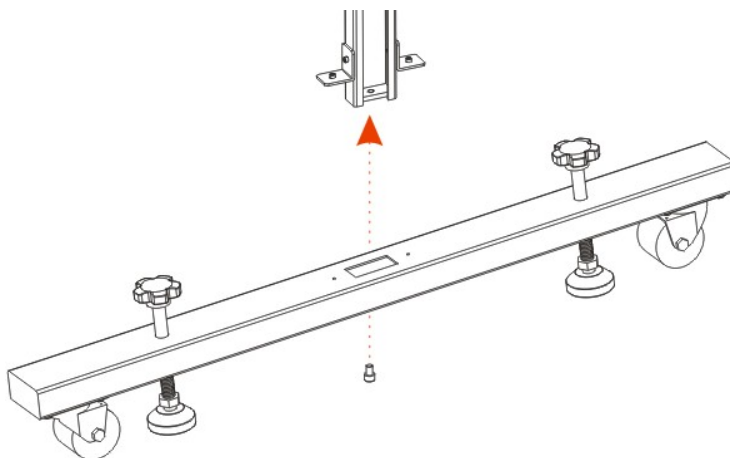


Fig. 4-1

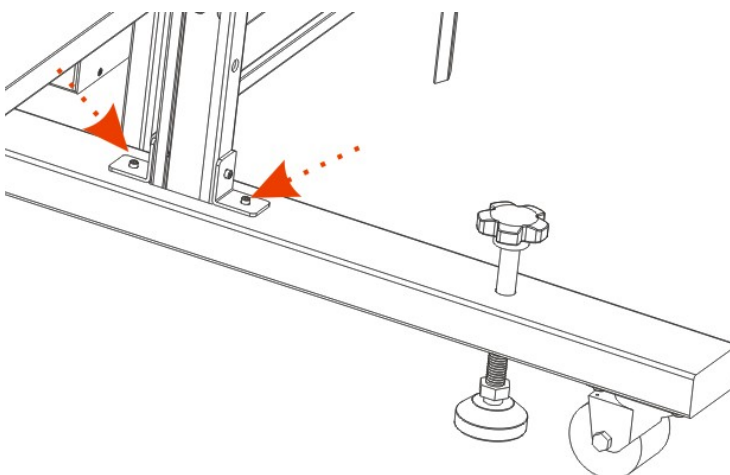


Fig. 4-2

2. Align the cross member (11) and calibration frame, and then use the set screw (B) to fix the cross member at a certain height.

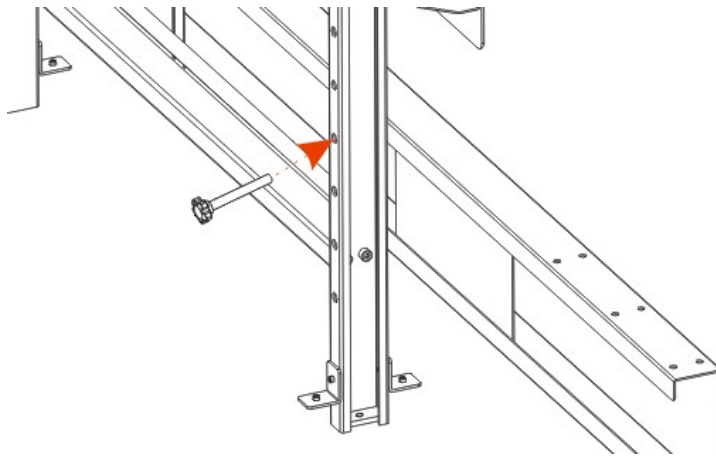


Fig. 4-3

3. Insert the dipstick (5) from the top of the calibration frame until it reaches the falt floor surface (See Fig. 4-4), and then fix it using the set screw of dipstick (C) (See Fig. 4-5).

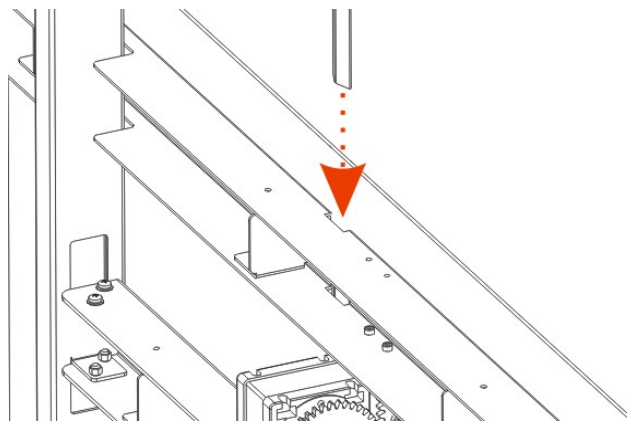


Fig. 4-4

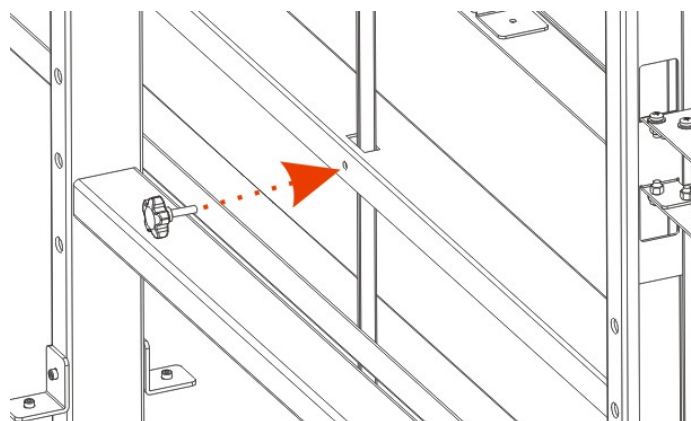


Fig. 4-5

4. Attach the crank handle (6) to the lift mechanism of the calibration frame, and use

the screw (A) and screw cushion (7) to fasten it (See Fig. 4-6).

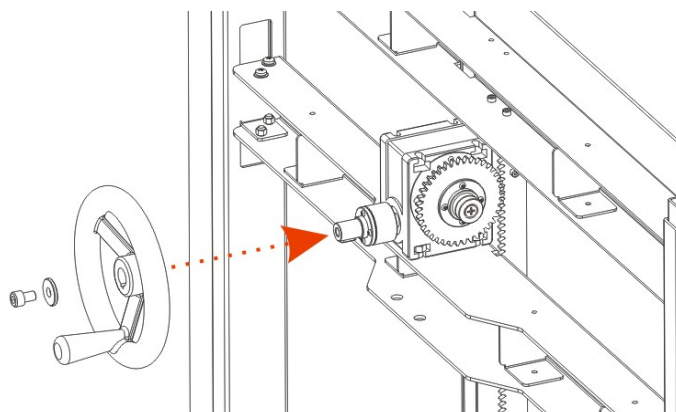


Fig. 4-6

4.1.1 Installing the laser modules on the cross member

There are four laser modules available. Two laser modules (Refer to Chapter 4.2 for installation) are attached on the attachment brackets, projecting the laser beam onto the scales of the cross member, and the other two laser modules are installed on the cross member to direct the laser beam onto the scales of the attachment brackets.

1. Switch off the laser beam (8) with the switch (3).
2. Align the two laser modules with the holes (evenly distributed) of the left and right end of the cross member (10) ensuring the output of laser beam (1) aimed at the wheel clamp, and then attach it onto the cross member respectively.

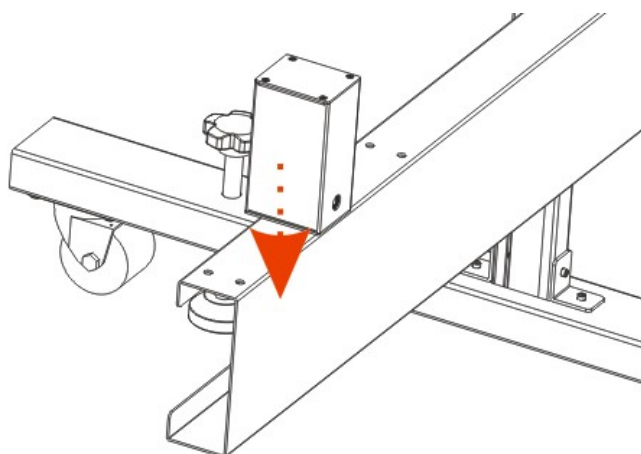


Fig. 4-7

*Notes: Make sure the laser modules are fixed in a way that the left and right laser modules are symmetrically located on the both ends of the cross member.

4.1.2 Installing the radar kit

To calibrate the radar-based ADAS system, a radar kit is required.

1. Switch off the laser beam (3) with the switch (2).
2. Attach the radar reflector (1) to the cross member (10). The radar reflector must be within the radar sensor area and the level gauge bubble must be centred.

4.1.3 Installing the calibration reference pattern

Before calibrating, you need to install the vehicle-specific calibration panel. Follow the steps below to proceed.

1. There are two mounting holes on each of calibration panels for front camera. Align it with the top horizontal holes of calibration frame (13).

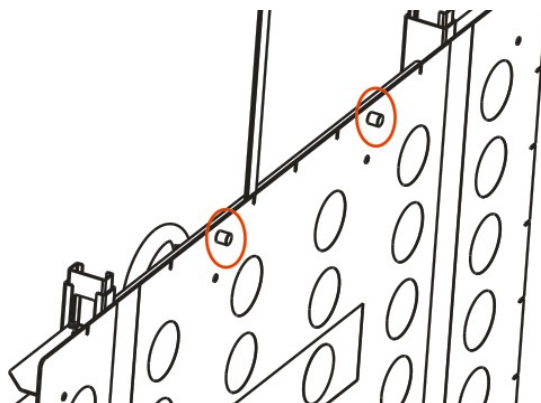


Fig. 4-8

2. Use the screws to fasten it on the calibration panel.

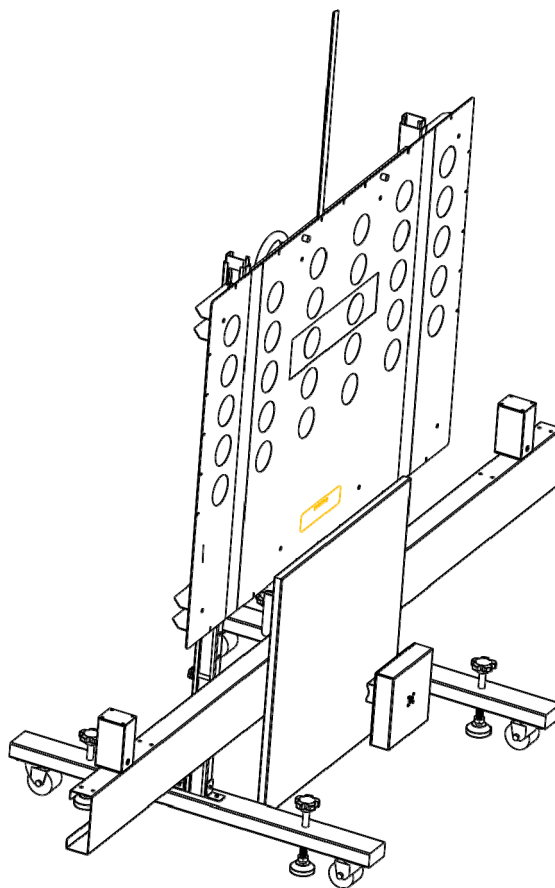


Fig. 4-9

*Caution: The radar reflector may drop when attaching it to the cross member and may cause injuries. You are strongly suggested to ask a second person to attach the radar reflector to the cross member.

4.2 Installing the Wheel clamp

Follow the steps mentioned below to proceed:

1. Align the center of the attachment bracket for vehicle tyre (1) and fixed handle (5), and use the screws to fix it on the handle.

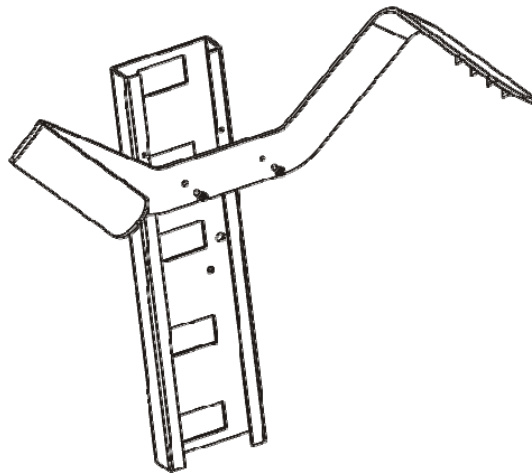


Fig. 4-10

2. Align the protective cylinder set (2) and fixed handle (5), and use the screw to secure it on the handle. See Fig. 4-11.

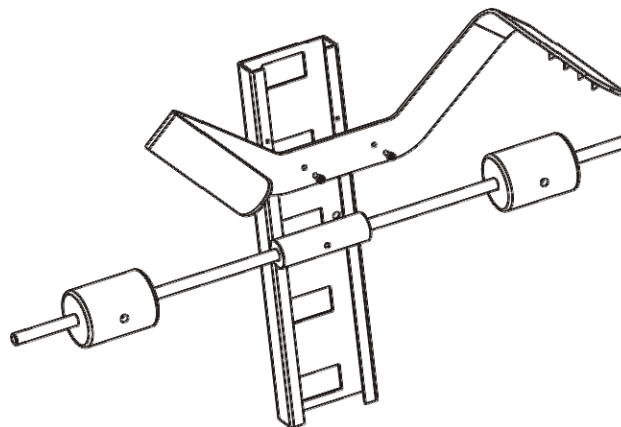


Fig. 4-11

3. Align the two laser modules (3) with the desired opening (several fixing notches are evenly distributed for height adjustment) of the wheel clamp, and hang it on the wheel clamp respectively.

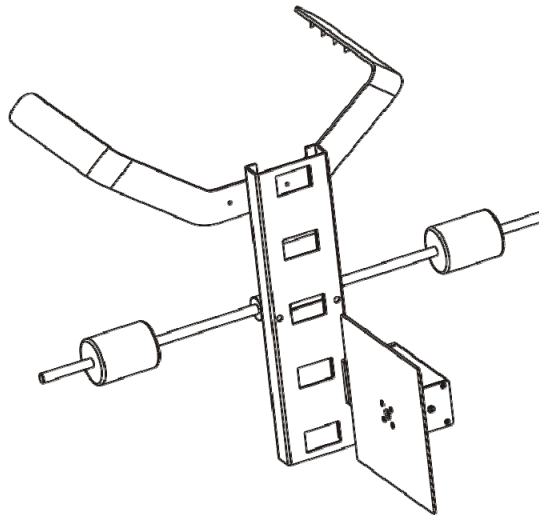


Fig. 4-12

*Note: Make sure the laser modules are fixed in a way that the left and right laser modules locate at the same height.

5 Working with the ADAS Calibration Tool

The following steps are necessary to work with the ADAS Calibration System:

1. Place the ADAS calibration panel in front of (for front camera)/behind (for rear camera) the vehicle (Refer to Chapter 5.2.1.1/Chapter 5.2.2.1 respectively).
2. Place the ADAS calibration panel centred in front of (for front camera)/behind (for rear camera) the vehicle (Refer to Chapter 5.2.1.2/Chapter 5.2.2.2 respectively).
3. Place the ADAS calibration panel in parallel with the vehicle (Refer to Chapter 5.2.1.3/Chapter 5.2.2.3 respectively).
4. Adjust the height of the calibration panel (See Chapter 5.2.1.4).

5.1 Precondition for the Use of the ADAS Calibration Tool

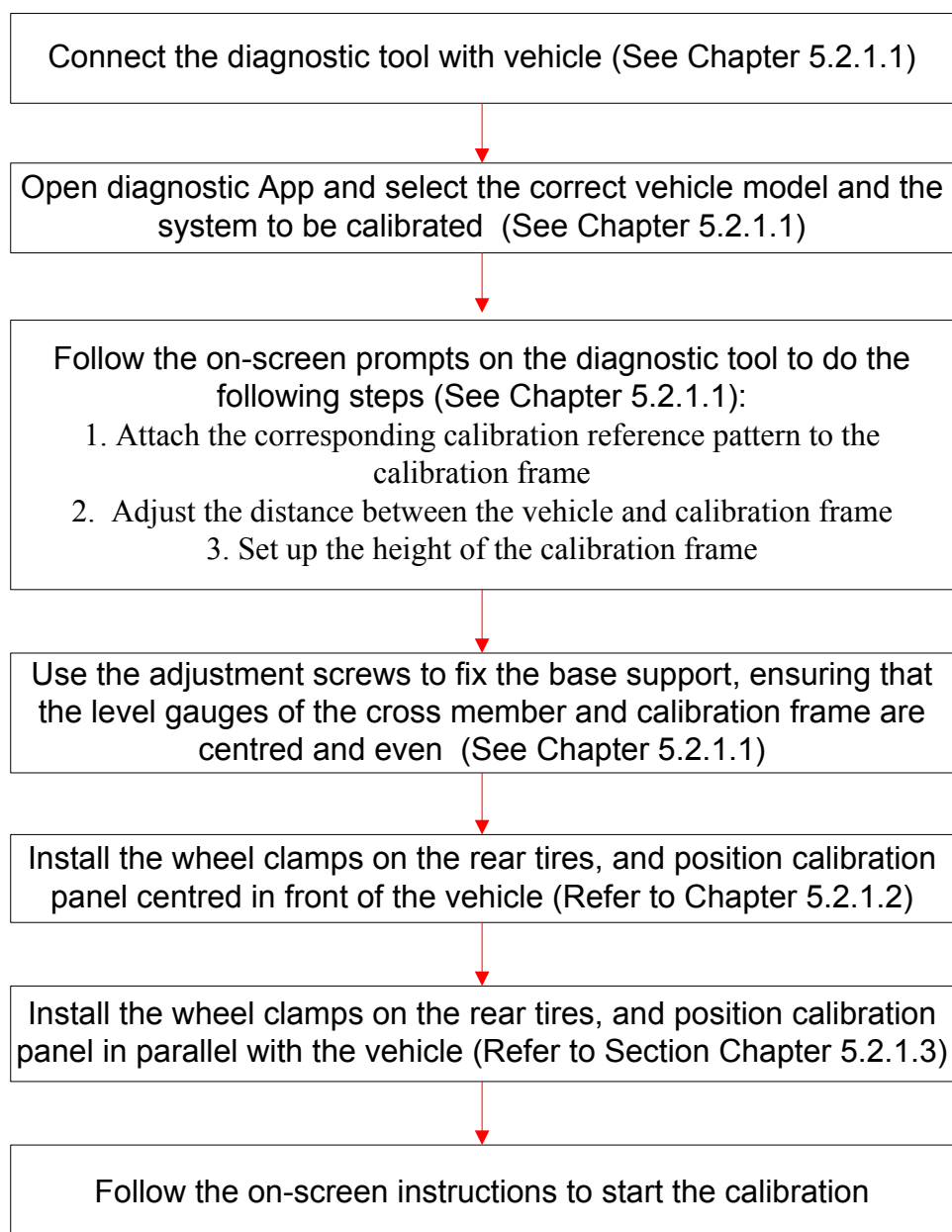
Regard the following in order to use the ADAS calibration tool:

- Vehicle system is working properly.
- No trouble codes stored in ECU memories.
- Prepare vehicle-specific calibration reference pattern.
- A LAUNCH's diagnostic tool supporting ADAS system calibrating is required (sold separately).
- Make sure the vehicle is parked with all wheels on an even floor surface.
- Front & rear axle track is properly adjusted.

5.2 Calibrating Camer-based ADAS

5.2.1 Calibrating the front camera

Generally, you have to experience the following steps to calibrate the vehicle's front camera.



5.2.1.1 Placing the ADAS calibration panel in front of the vehicle

Proceed as follows to place the ADAS calibration panel in front of the vehicle:

1. Connect the diagnostic tool to the vehicle.

1). Locate the vehicle's DLC (Data Link Connector).

The DLC (Data Link Connector or Diagnostic Link Connector) is typically a standard 16-pin connector where diagnostic code readers interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the center of the instrument panel (dash), under or around the driver's side for most vehicles. If DLC is not located under dashboard, a label should be there telling location. For some

Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. If the DLC cannot be found, refer to the vehicle's service manual for the location. See Fig. 5-1 for DLC location.

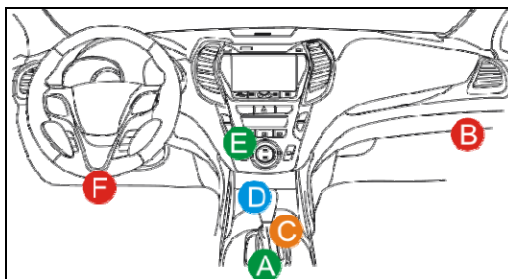


Fig. 5-1

- 2). Plug the VCI device into the vehicle's DLC socket. The power LED of the VCI device illuminates solid red.
- 3). Turn the diagnostic tool on and enter the home screen.
- 4). Bluetooth setup: Enter Bluetooth setting screen by tapping "Settings" -> "Bluetooth", slide the Bluetooth switch to ON and the handset starts searching for all available Bluetooth device. Tap the desired VCI device to pair and match. By default, the Bluetooth ID of the connector is 9*****00 (where ***** stands for 9 digits). If the Bluetooth pair request pops up on the screen, enter the request pin code (default code: 0000 or 1234). Once the VCI is paired with the diagnostic tool, it will be shown under the paired device tab.

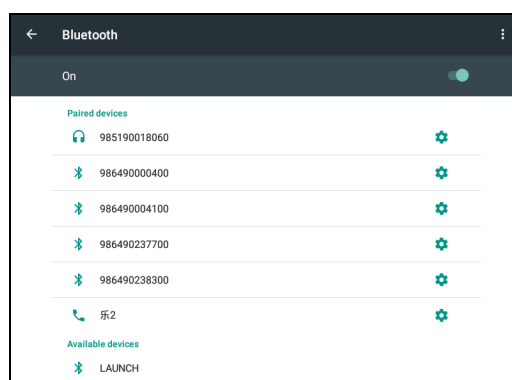


Fig. 5-2

2. Launch the diagnostic/ADAS App.
3. Follow the on-screen instructions to select the identified vehicle model and the system to be calibrated, e.g. MFK.
4. A window with information and instructions appears.

Special Function	
Calibration	
Notes on the subsequent operation steps:	
1.Park the vehicle with all four wheels on a flat surface without any additional load.	
2.All the doors of the vehicle must be closed.	
3.The headlamps must be switched off.	
4.Check the ride height on the front axle and rear axle and adjust as needed according to LAC-01	
5. Check the tire pressure and correct it when needed.	
6.Start combustion engine and allow to idle.	
Set up of calibration aid	
1.The headlamp aimer must be set up on the same horizontal and level surface as the vehicle.	
2.Position the headlamp aimer as close as possible to the bumper. If necessary, lift the housing of the headlamp aimer over the engine hood.	
3.Then position the headlamp aimer at the center of the bumper.	
No	Yes

Fig. 5-3-a

Special Function	
3.Then position the headlamp aimer at the center of the bumper.	
4.Ensure that calibration aid is parallel with the bumper.	
5.Ensure unobstructed view for camera.	
6.If necessary, clean the windshield in the area of the camera.	
Important notes:	
1.Attach calibration aid to pipe of headlamp aimer at a distance of $h=1275\text{mm}/50.2\text{ inch}$ measured from the setup plane to the center of the crosshairs.	
2.Ensure that calibration aid is not tilted horizontally. The spirit level on the calibration aid can be used for alignment.	
Question	
Was the headlamp aimer positioned directly on the bumper?	
No	Yes

Fig. 5-3-b

A. Attach the calibration reference pattern to the calibration frame: According to the prompt message in Fig. 5-3-a, choose the corresponding calibration reference

pattern and attach it to the calibration panel (Refer to Chapter 4.1.3).

B. To adjust the distance between the calibration panel and the vehicle: follow the instructions on the screen to proceed, if necessary, use a yard stick (not included in the packing list) to measure from the vehicle to the calibration panel.

C. To set up the height of the calibration frame: Position the dipstick on the flat floor surface. Use the crank handle to move the calibration panel up to the height indicated in the diagnostic tool (Fig. 5-3-b).

*Note: Slightly push the dipstick upwards from the floor and fix it with the set screw of the measuring rod. Then it cannot be damaged when moving the calibration frame again.

5. Use the adjusting screws of the base support to adjust so that the horizontal and the vertical level gauge of the cross member and calibration frame are centred respectively.

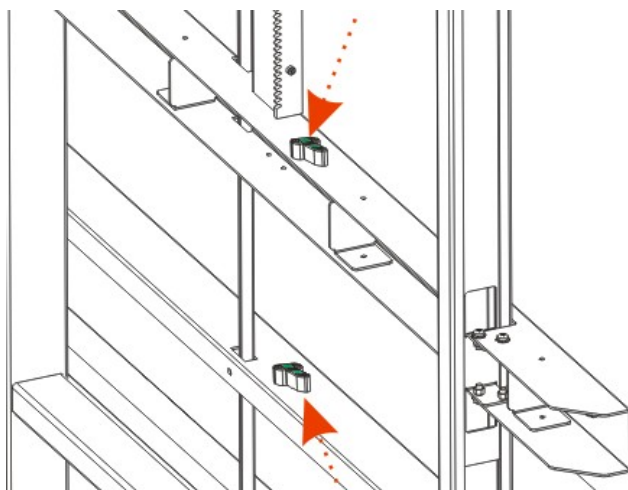


Fig. 5-4

Now the calibration panel is placed correctly in front of the vehicle.

5.2.1.2 Placing the ADAS calibration panel centred in front of the vehicle

Proceed as follows to place the ADAS calibration panel centred in front of the vehicle:

1. Attach one wheel clamp on the left rear wheel.

***Note:** You are strongly recommended to install the wheel clamp on the rear wheel since the farther distance (between the calibration panel and wheel clamp) makes the calibration more accurate.

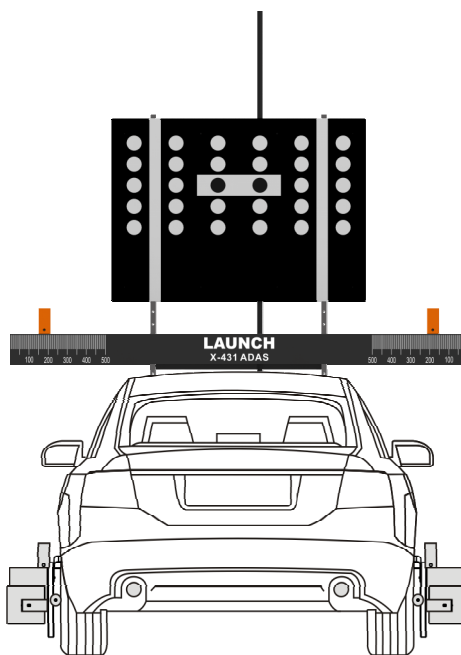


Fig. 5-5

2. Align the scales of the wheel clamp at a right angle.

*Note: Ensure that the level gauge bubbles of both wheel clamps are centred.

3. Switch on the laser beam of the laser module with the switch.

*Caution: Laser radiation may cause damage to/destruction of the retina. Never look directly into the laser beam.

4. Align the laser module by setting a desired height on the scale of the cross member.

*Tips: If the laser beam of the wheel clamp positions at a greater value on the cross member, slightly push the calibration frame rightwards.

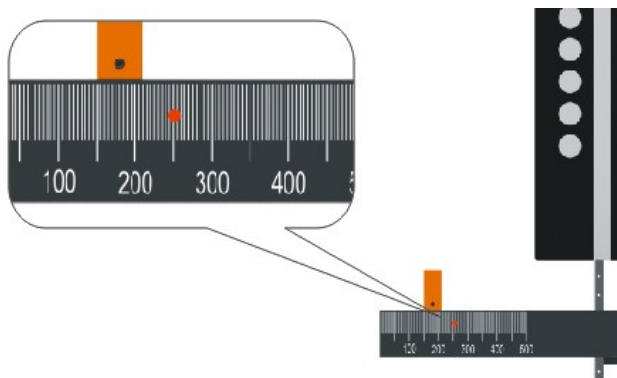


Fig. 5-6

5. Perform steps 3-4 for the second laser module of wheel clamp.
6. **By moving the calibration frame laterally, place the panel in a way that the left and right scale of the cross member projected from the wheel clamp laser show the same values.**

Now the calibration panel is placed centred in front of the vehicle.

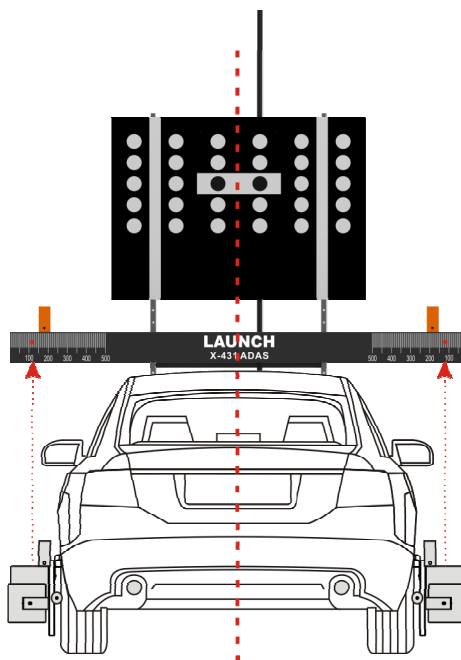


Fig. 5-7

5.2.1.3 Placing the ADAS calibration panel in parallel with the vehicle

Proceed as follows to place the ADAS calibration panel in parallel with the vehicle:

1. Switch on the laser beam of the laser module with the switch.
2. Align the laser beam of the laser module on the cross member with the scale of the wheel clamp. The laser beam will be projected onto the scale of the wheel clamp.
3. Perform step 1-2 with the second laser beam.
4. **By axially turning the calibration frame, place the frame in a way that the left and right scale of the wheel clamp reflected from the laser modules on the cross member show the same values.**

Now the calibration panel is placed in parallel with the vehicle.

5.2.2 Calibrating the rear camera

5.2.2.1 Placing the ADAS calibration panel behind the Vehicle

Proceed as follows to place the ADAS calibration panel behind the vehicle:

1. Connect the diagnostic tool to the vehicle.
2. Launch the diagnostic/ADAS App.
3. Follow the on-screen instructions to select the identified vehicle model and the system to be calibrated, e.g. MFK.
4. A window with information and instructions appears.
 - A. Attach the calibration reference pattern to the calibration frame: According to the prompt message, choose the corresponding calibration reference pattern and attach it to the calibration panel (Refer to Chapter 4.1.3).
 - B. To adjust the distance between the calibration panel and the vehicle: follow the instructions on the screen to proceed, if necessary, use a yard stick (not included in the packing list) to measure from the vehicle to the calibration panel.
 - C. To set up the height of the calibration frame: Position the dipstick on the flat floor surface. Use the crank handle to move the calibration panel up to the height indicated in the diagnostic tool.

*Note: Slightly push the dipstick upwards from the floor and fix it with the set screw of the measuring rod. Then it cannot be damaged when moving the calibration frame again.

5. Use the adjusting screws of the base support to adjust so that the horizontal and the vertical level gauge of the cross member and calibration frame are centred respectively.

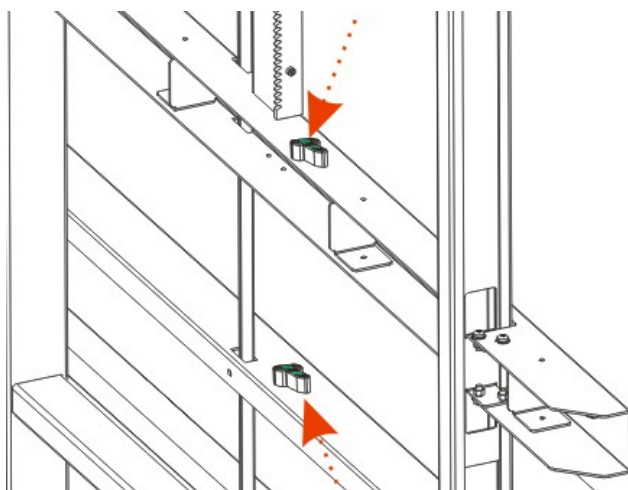


Fig. 5-8

Now the calibration panel is placed correctly in rear of the vehicle.

5.2.2.2 Placing the ADAS calibration panel centred in rear of the Vehicle

Proceed as follows to place the ADAS calibration panel centred behind the vehicle:

1. Attach one wheel clamp on the left front wheel.
2. Align the scales of the wheel clamp at a right angle.

*Note: Ensure that the level gauge bubbles of both wheel clamps are centred.

3. Switch on the laser beam of the laser module with the switch.

*Caution: Laser radiation may cause damage to/destruction of the retina. Never look directly into the laser beam.

4. Align the laser module by setting a desired height on the scale of the cross member.
5. Perform steps 3-4 for the second laser module of wheel clamp.
6. By moving the calibration frame laterally, place the frame in a way that the left and right scale of the cross member projected from the wheel clamp laser show the same values.

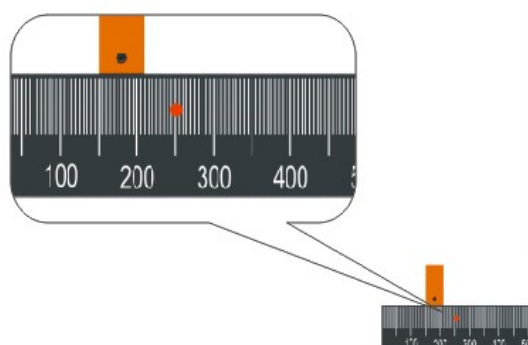


Fig. 5-9

Now the ADAS calibration panel is placed centred in rear of the vehicle.

5.2.2.3 Placing the ADAS calibration panel in parallel with the vehicle

Proceed as follows to place the ADAS calibration panel parallel to the vehicle:

1. Switch on the laser beam of the laser module with the switch.
2. Align the laser beam of the laser module on the cross member with the scale of the wheel clamp. The laser beam will be projected onto the scale of the wheel clamp.
3. Perform step 1-2 with the second laser beam.
4. By axially turning the calibration frame, place the frame in a way that the left and right scale of the wheel clamp reflected from the laser modules on the cross member show the same values.

Now the ADAS calibration panel is placed in parallel with the vehicle.

4. Switch off the laser beam of the laser module with the switch.

5.2.2.4 Placing the ADAS calibration panel of rear camera behind the vehicle

1. After properly placing the ADAS calibration frame, follow the instructions on diagnostic tool to proceed.
2. Remove the calibration frame and place the calibration panel of rear camera on the floor, and then move it in a right position behind the vehicle according to the plumb line.
4. Start the calibration following the on-screen instructions on the diagnostic tool.

5.3 Calibrating Radar-based ADAS

X-431 ADAS calibration system provides a Radar expansion kit for the calibration of the radar-based Advanced Driver Assist Systems (ADAS). Compatible with the systems used by VAG and on certain ADAS-equipped Mercedes-Benz models, it extends the capability of the X-431 ADAS calibration tool beyond just camera-based systems.

Before proceeding this step, please make sure the following conditions must be met:

- Place the X-431 ADAS calibration panel in front of the vehicle.
- Ensure the vehicle is stopped on even surface.
- Level gauge bubble of radar reflector is centred.

Depending on vehicle manufacturer, model and year of manufacture, the radar sensor can be calibrated directly (without magnetic laser) or must be calibrated with the magnetic laser.

5.3.1 Calibrating the radar sensor with magnetic laser

Proceed as follows to calibrate the radar sensor with the magnetic laser:

1. Connect the diagnostic tool to the vehicle.
2. Launch the diagnostic App and select “Local Diagnosis” on the Job menu.
3. Follow the on-screen instructions to select the identified vehicle model and the system to be calibrated.

A window with information and instructions appears.

*Caution: The radar reflector may drop when attaching it to the cross member and may

cuase injuries. You are strongly suggested to ask a second person to attach the radar reflector to the cross member.

4. Refer to Chapter 4.1.2 to attach the radar reflector to the cross member. The radar reflector must be within the radar sensor area.
 5. Turn the tuning lever at the manget base of the magnetic laser to ON. The electromagnet becomes activated and the magnetic laser can be fixed onto the radar reflector.
 6. Switch on the laser beam with the switch of the magnetic laser.
-

*Caution: Laser radiation may cause damage to/destruction of the retina. Never look directly into the laser beam.

7. Fix the magnetic laser onto the radar reflector. Make sure that the radar reflector must be within the radar sensor area.
8. Direct the laser beam at the magnetic laser centred to the mirror of the radar sensor. The laser beam will be reflected from the mirror to the scale of the magnetic laser.
9. Shift the magnetic laser slowly so that the horizontal and vertical level gauge bubbles are centred.
10. Observe the on-screen prompt information and instructions to calibrate the radar sensor.
11. After calibrating the radar sensor, switch off the laser beam on the magnetic laser.

5.3.2 Calibrating the radar sensor without magnetic laser

Proceed as follows to calibrate the radar sensor without the magnetic laser:

1. Connect the diagnostic tool to the vehicle.
2. Launch the diagnostic App and select “Local Diagnosis” on the Job menu.
3. Follow the on-screen instructions to select the identified vehicle model and the system to be calibrated.

A window with information and instructions appears.

*Caution: The radar reflector may drop when attaching it to the cross member and may cuase injuries. You are strongly suggested to ask a second person to attach the reflector to the cross member.

4. Refer to Chapter 4.1.2 to attach the radar reflector to the cross member. The radar reflector must be within the radar sensor area.
-

5. Follow the instructions on the screen to calibrate the radar sensor.

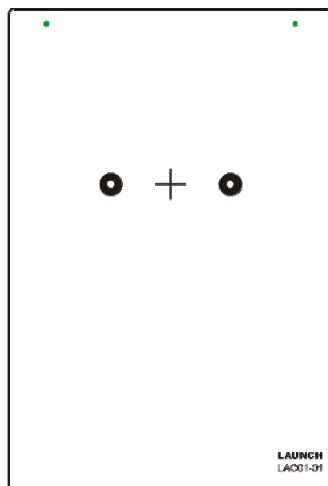
6 Care & Maintenance

- For every spare part, the ADAS calibration tool should also be handled with care.
- Regularly lubricate moving parts with acid-free and resin-free grease or oil.
- Clean the ADAS calibration tool with non-aggressive cleaning agents on a regular basis.
- Use commercial household cleaning detergents and a moistened, soft cleaning cloth.
- Always use original spare parts to replace damaged accessories immediately.

Appendix: Car ADAS Reference Pattern Kit

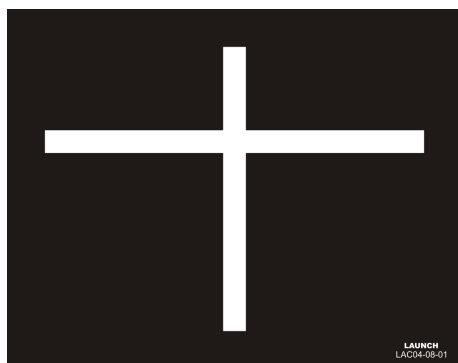
MERCEDES Type 1

(Front)



MERCEDES

(Surround)



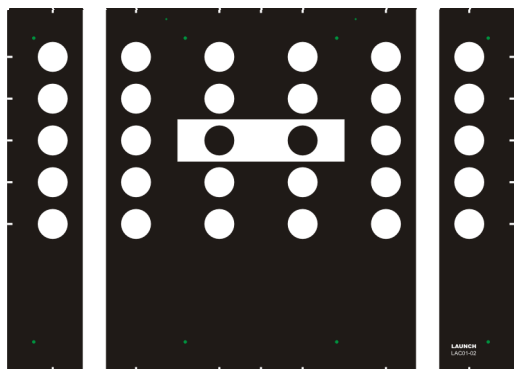
MERCEDES

(Rear)



VAG Type 1

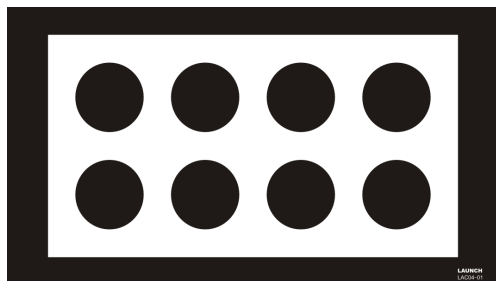
(Front)



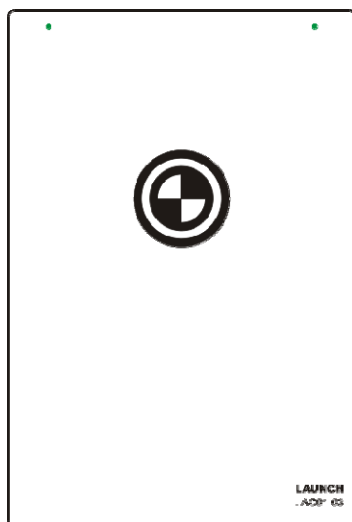
VAG Type 2
(Surround)



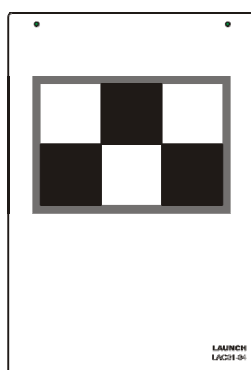
HONDA Type 1
(Surround)



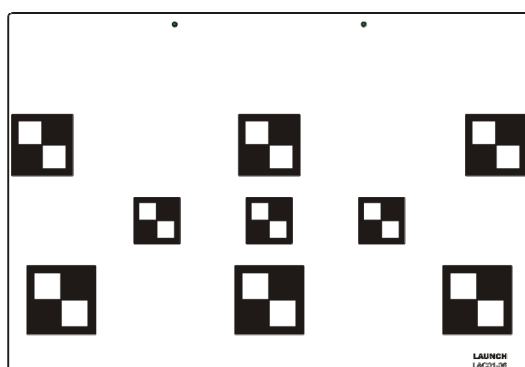
HONDA/ACURA Type 1
(Front)



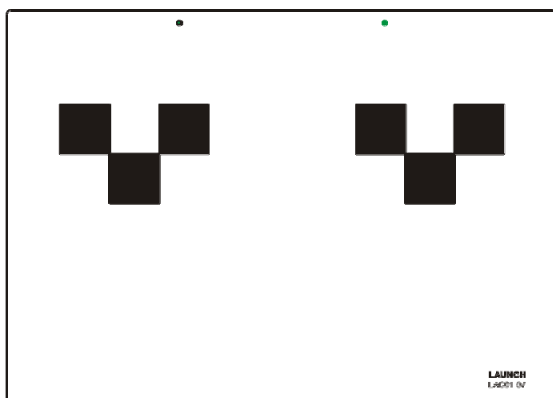
HONDA/ACURA Type 2 (Front)



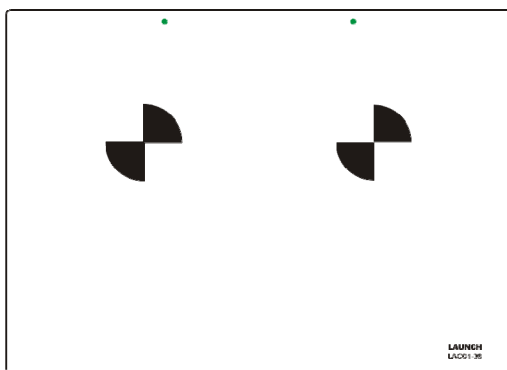
TOYOTA/LEXUS Type 2 (Front)



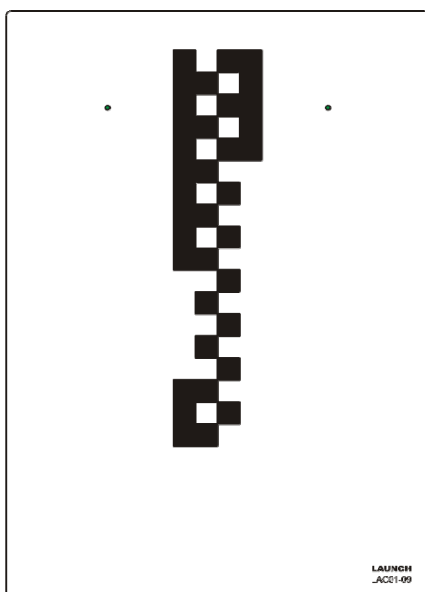
NISSAN/INFINITI Type 1 (Front)

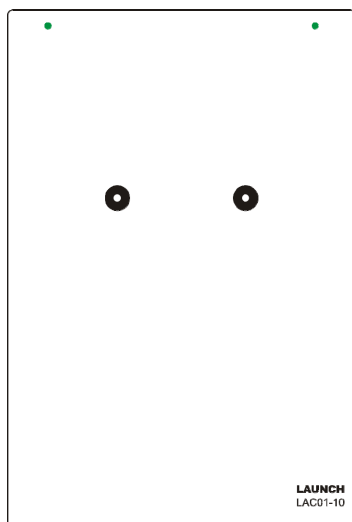
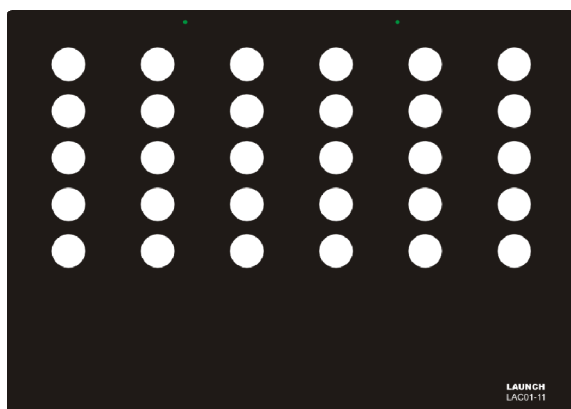


NISSAN/INFINITI Type 2 (Front)



KIA/HYUNDAI (Front)



MAZDA**(Front)****ALFA/GIULIA****(Front)****DAHATSU****(Front)**

