

BOYO[®]

VISION

Model: VTC500DIY

Rear View Camera System 5" Monitor and Bracket Mount Camera



Installation and Owner's Manual

Welcome



Congratulations on purchasing your new 5" backup camera kit. This product uses the latest technology to ensure performance, reliability and durability.

The compact design and quick connectors make the system simple to install and ideal for DIY installation.

Please read all of the installation instructions carefully before installing this system. Improper installation will void manufacturer's warranty. These installation instructions do not apply to all types of vehicles, and are only guidelines to assist in installing the system.



BEFORE using this reversing system, please read the safety information provided in this user manual.

ALWAYS use the product as outlined in this user manual.

Applicable Car Models & Help



This kit is designed for 12V & 24V DC automotive system.



Great for

This kit is designed for Cars (Sedans), Vans, Pickups, Small Buses and Trucks.



Please insure this product is applicable to your vehicle before installation. Otherwise, please return it to the stores with complete packaging.

Any question, please call **1 888 941 3060** for help.

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Safety Information



WARNING

A failure to read, understand and follow these warnings and instructions may result in a serious accident, including damaged property or a serious injury, including loss of life.

- This Reversing Camera system is designed as an aid to the driver in detecting large stationary objects to help avoid damaging the vehicle or property. However, the driver must use it safely and properly. Use of this system is not a substitute for safe, proper and legal driving.
- Adhere to all applicable traffic laws and motor vehicle regulations applicable to the device and consult local laws and regulations for any restrictions on installation or use.
- Never allow children to play with the device. Small parts may be a choking hazard.
- ALWAYS engage Parking/Emergency/Hand Brakes of the vehicle when testing the system.

- The area displayed by the reversing camera system is limited. The system cannot display objects that are close to or below the bumper, underneath the vehicle, or objects out of the camera's field of view. The area displayed on the screen may vary according to vehicle orientation or road conditions.
- The colors of objects on the rear view monitor may differ somewhat from those of the actual object.

- Be sure to check the camera's position and mounting angle before each use.
- If the back of the vehicle is hit, the position and mounting angle of the Digital Backup Camera may change, and need to be readjusted.
- When washing the vehicle with high pressure water, be sure not to spray it around the camera. Otherwise, water may enter the camera unit causing water condensation on the lens, malfunction or fire.
- Do not strike the camera. It is a precision instrument. Otherwise, it may malfunction or cause damage.
- This product will only provide images of items that are within the field of view of the camera. Thus, it is imperative that the camera should be kept clean and unobstructed, and should be mounted so that its field of view includes the entire area behind your vehicle.
- There is a plastic cover over the camera. Do not scratch the cover when cleaning dirt, dust or snow from the cover.
- Do not use alcohol, petrol or thinner to clean the camera. This will cause discoloration. To clean the camera, wipe with a clean cloth dampened with mild cleaner diluted with water and then wipe with a dry cloth.

Safety Information

- The camera has a water resistant construction. Do not detach, disassemble or modify it. This may cause incorrect operation. Camera is waterproof.
- Do not submerge camera in water, which can cause internal damage to the camera.
- Never back up while looking only at the screen. You should always check behind and around the vehicle when reversing. Always make sure your intended path is clear. If you back up while looking only at the monitor, you may hit a vehicle, pedestrian, child, pet, or other object resulting in damage, injury or death. Always reverse slowly.
- Never depend on the reversing system entirely when reversing up. Objects viewed in the rear view monitor differ from actual distance because the wide-angle lens is used. Use the inside mirror or glance over your shoulder to properly judge distances to other objects.
- Make sure the trunk, hatch, or backdoor is completely and securely closed when reversing.
- If the temperature changes rapidly, such as when hot water is poured on the vehicle in cold weather, the system may not operate normally. The Digital Camera can withstand the effects of rain, snow, and inclement weather.
- When strong light directly enters the camera or screen, objects may not be displayed clearly.
- The screen may flicker under fluorescent light.

Safety Around and Behind Other Vehicles

- Using a Backup Camera is not enough to completely overcome a vehicle's blind spot. Many preventable injuries and deaths occur in driveways or parking lots when drivers do not see children, pets, or others near their vehicles. Here are a few safety tips that will help you to avoid a back-over accident.
- Walk completely around your vehicle before getting in. Check for kids, toys, and pets before entering the vehicle and starting the engine.
- Know where children are. Have children stand in a place where they are in full view.
- Be aware of young children. Young children are small and hard to see.
- Parents, caregivers and all adults need to be vigilant in supervising children, especially when children are in the yard, driveway or parking lot playing near parked cars.
- Roll down your window so you will be able to hear what is happening outside your vehicle.
- Owners of SUVs, trucks, and vans need to take extra care to avoid hitting or running over a child.
- Teach children to move away from a vehicle whenever it is started.

Package Contents

Please check all the components listed below are in the kit



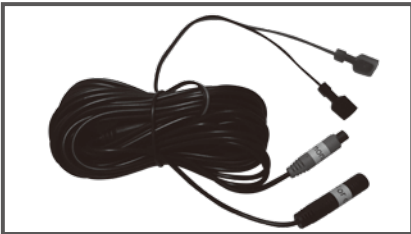
Part A

1 x 5" monitor with dash mount



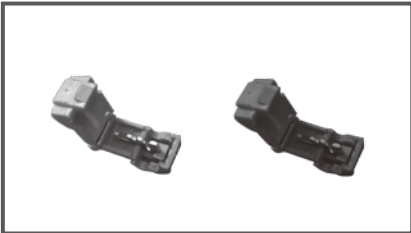
Part B

1 x camera with mounting bracket and 3m (9.84 feet) cable



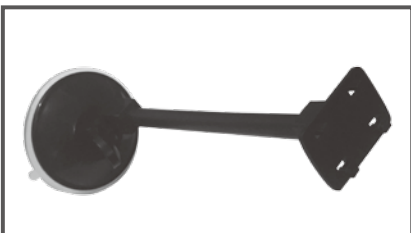
Part C

1 x 26 feet main cable with quick connectors



Part D

1 x pair of quick connectors



Part E

1 x suction cup mount

Product Specification

5-inch Color TFT LCD Monitor

Operation Voltage	12V DC & 24V DC
Resolution	480(RGB)x272
Power Consumption	< 2.5W
Operating Temperature	-20 ~ +70°C

Camera

High Definition Color CMOS

TV System	NTSC
Resolution	420TV Lines
Lens Angle (Approx.)	170° (Diagonal Angle) 110° (Horizontal Angle)
Power Supply	12V DC & 24V DC
Operating Temperature	-20 ~ +70°C
Waterproof	IP68

Extension Power Cable

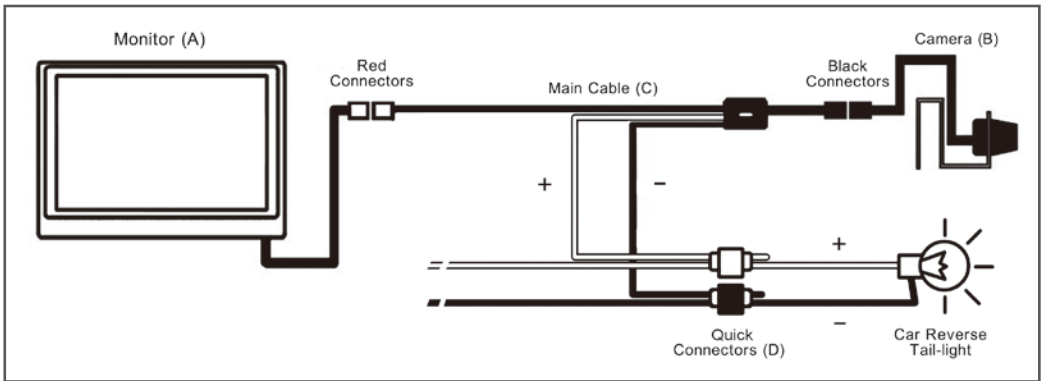
Total 26 feet reach

This is how this product works

Both the camera and the monitor are powered by reverse light. You don't need a 12V socket or to wire the monitor into the fuse box.

Quick connectors are used for easy connection.

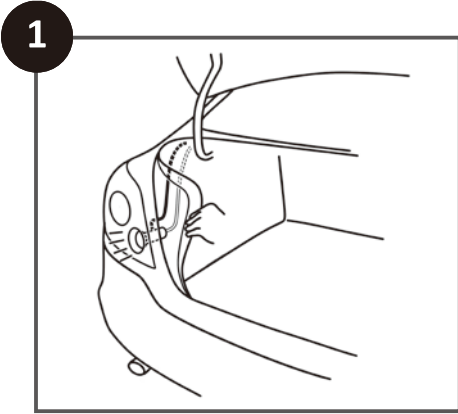
When you reverse your car, the reverse light is on and will provide power to the camera and monitor, and the back view image will appear automatically.



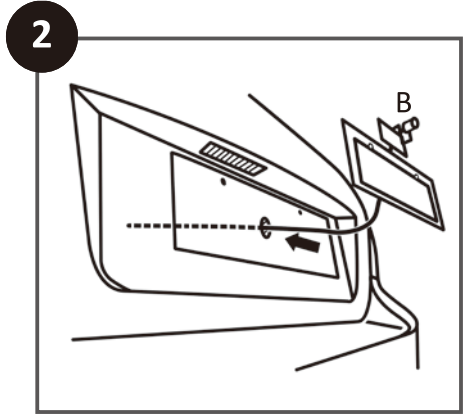
1. During installation you may be required to remove interior panels to run the camera cable from outside to inside the trunk. Panels and the retaining methods vary from vehicle to vehicle, and are too varied to be covered in this document. However, most panels are either secured with screws or spring loaded retaining clips and can be unscrewed or carefully removed by levering. Care should be taken in removing panels to make sure the panel won't distort or break.
2. A set of pliers, a flat screwdriver and a screwdriver or spanner, to remove the license plate are required during the installation.
3. A power drill might be required for drilling a small hole for routing the camera cable.

Installation

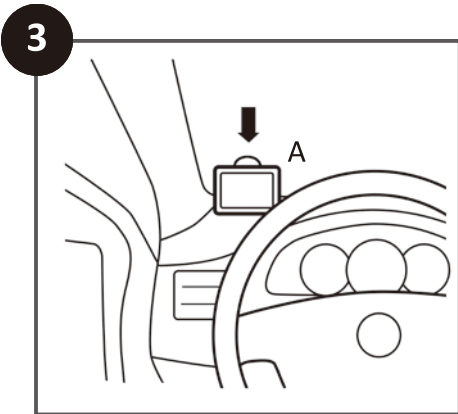
There are four steps to install the backup camera



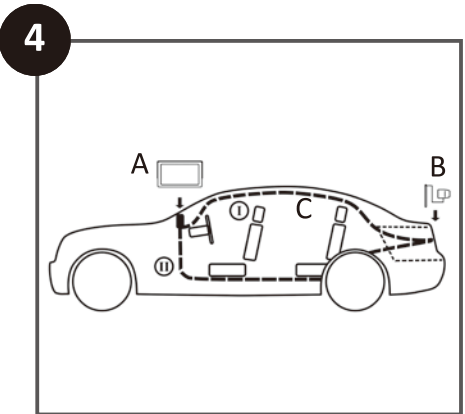
Connection with reverse light.



Install camera (B).



Install monitor (A).

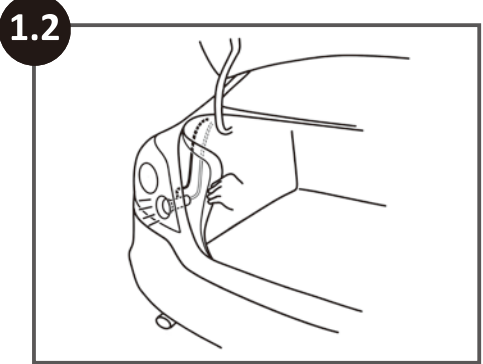
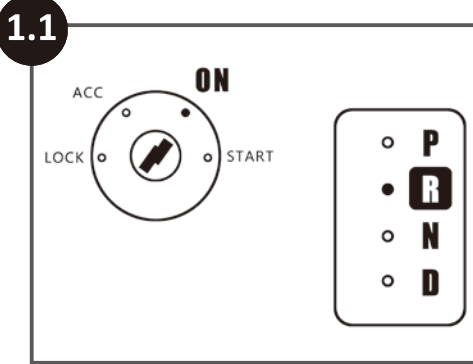
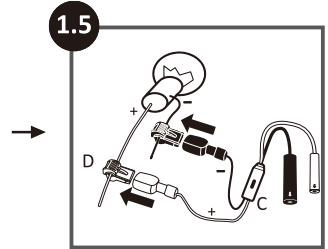
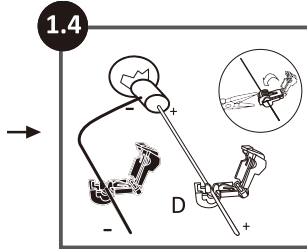
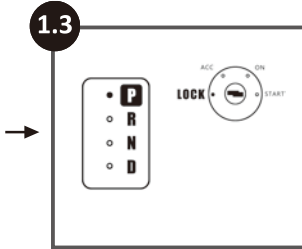
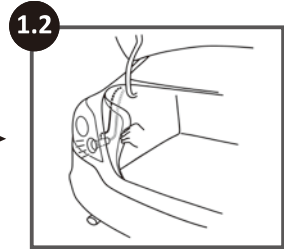
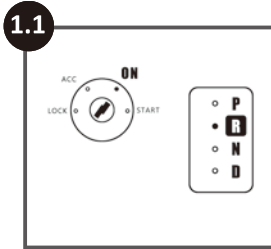


Running main cable (C) from the monitor (A) to the camera (B).

Installation

Step 1

Connection with reverse light



Locate your reverse light by shifting the gear to reverse position while turning the car ignition switch to "ON" position.

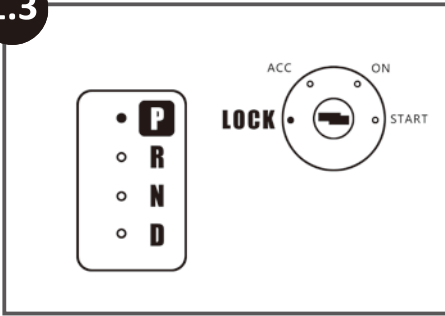
Remove the tail-light cover to access the reverse light. Locate the wiring behind the reverse light.

You may wish to remove the reverse light bulb holder by carefully twisting while pulling, then check that the removed bulb glows. Now locate the positive and negative wires to this bulb, a test light or voltmeter may be used.

! *If you are not sure of the power wires, please contact your vehicle manufacturer or reference a wiring diagram in your vehicle manual.*

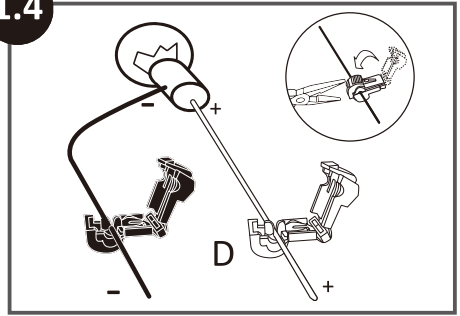
Installation

1.3



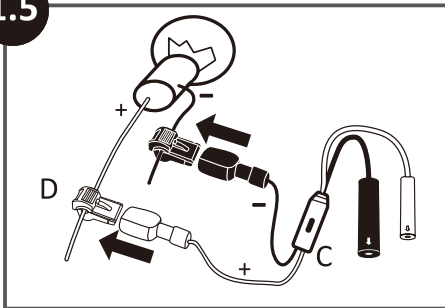
Shift the gear to "P" position and turn the car ignition switch to "Lock" position.

1.4



Attach the wire quick connectors (D) to the reverse light positive wire and negative wire separately. Ensure the wire sits well in the metal slot of the connector. Snap the cap of the connector over and use a clamp to squeeze the cap to ensure solid connection.

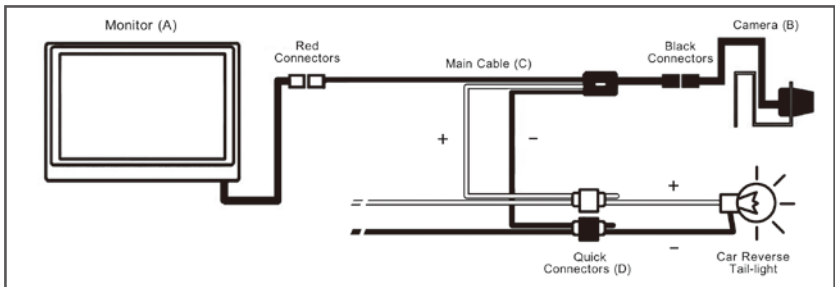
1.5



Attach the quick connectors (female end) of the main cable (C) with the quick connectors (D) on the reverse light wire. Ensure positive wire connect with positive wire and negative wire with negative wire.



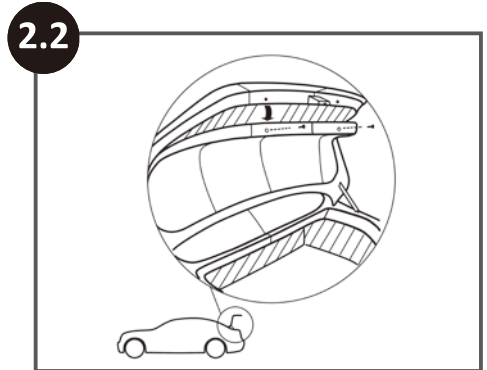
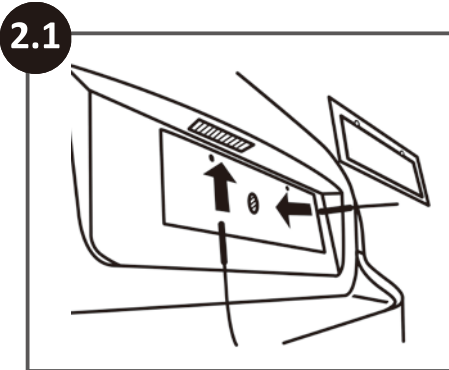
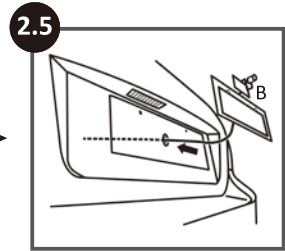
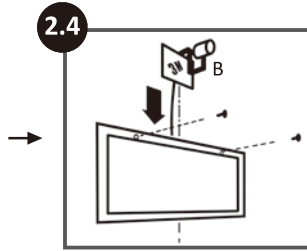
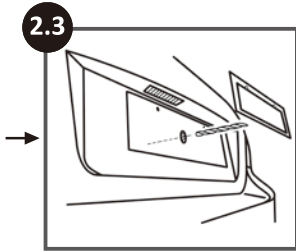
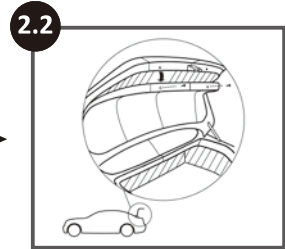
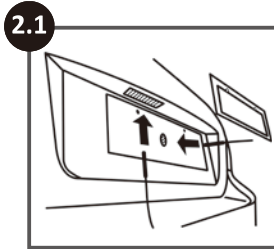
Before you start the next step, we suggest you simply connect the camera (B) and the monitor (A) with the main cable (C) and then test whether the backup camera system works well. Please refer to the following illustration. When you turn the ignition switch to "ON" and shift the gear to "R", the monitor should show the backup image clearly. Then you can continue the next step. Otherwise, please go back to Step 1 and check the connections between the reverse light and the main cable (C).



Installation

Step 2

Install camera (B)



Remove your license plate and check whether there is a hole that allows the camera cable to go through. Please see the above two positions that possibly exist in many cars.

Remove part of the interior panel of the trunk to ensure the hole you find (in the last step) allows the camera wire to go from outside to inside of the trunk.



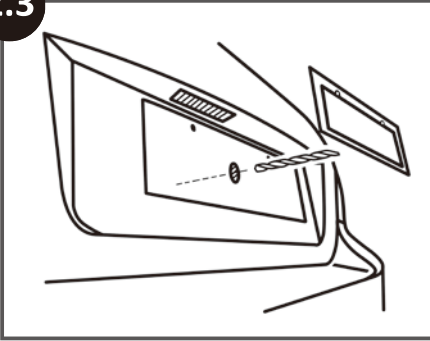
Most panels are either secured with screws or spring loaded retaining clips.



Please consult your car manufacturer or professional if you don't know how to remove it.

Installation

2.3

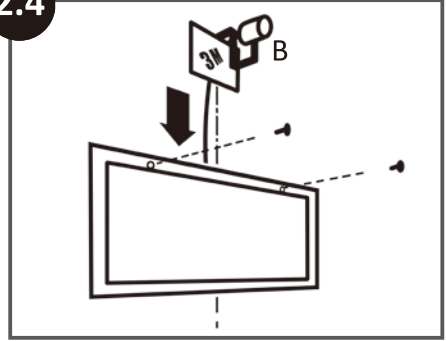


If you can't find a hole for the camera cable, you need to drill a hole behind or around the license plate.



Before drilling a hole, please ensure there is no obstacle behind the position you decide and the camera cable can go through without getting blocked.

2.4

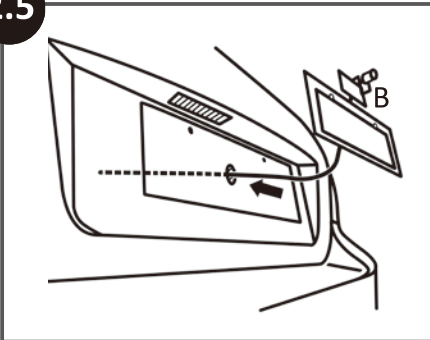


Mount the camera (B) on the license plate. We suggest mounting the camera on the top-middle of the license plate.



Please clean your license plate before mounting the camera with the double sided tape.

2.5

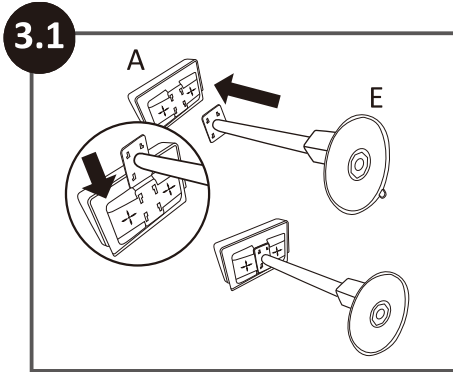
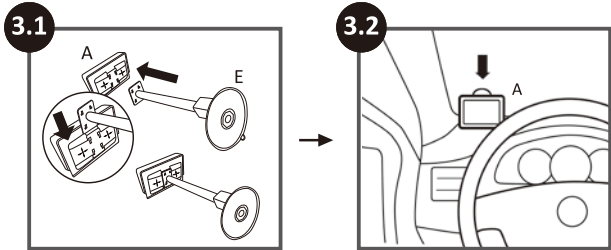


Run the camera (B) cable inside the trunk through the hole drilled or found in previous steps. Then position the license plate back onto the trunk.

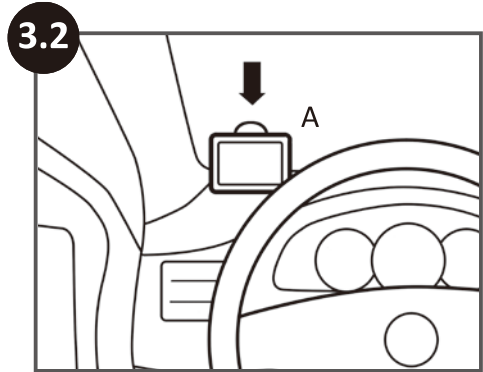
Installation

Step 3


Install monitor (A)




Attach the suction cup mount (E) with the monitor (A) and ensure the connection is secure.



Find your preferred position to mount the monitor (A) on the windshield of the vehicle with provided suction cup mount.

 **Please ensure it does not impede the vision of the driver while driving, but can be clearly seen when reversing.**

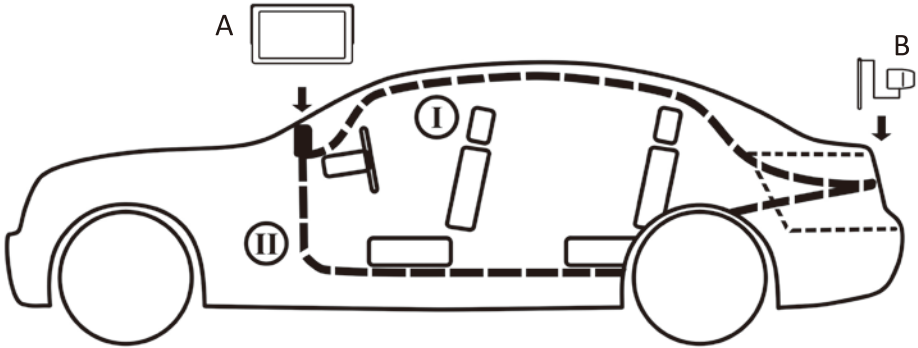
 **Make sure the mounting area is clean and grease free.**

Installation

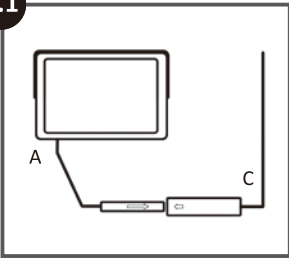
Step 4

Running wire from the monitor (A) to the camera (B).

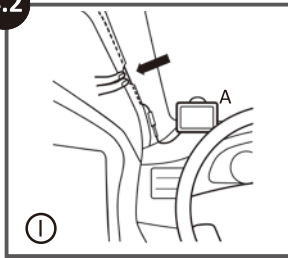
See wiring diagram below for an overview



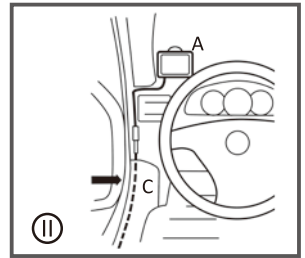
4.1



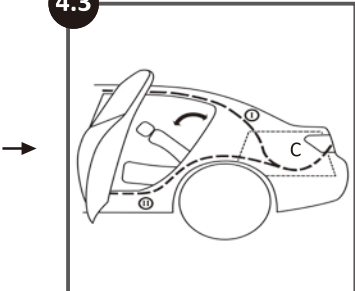
4.2



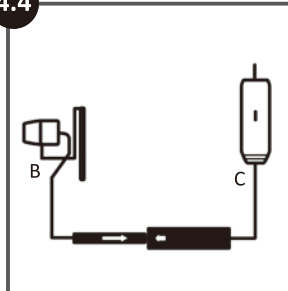
OR



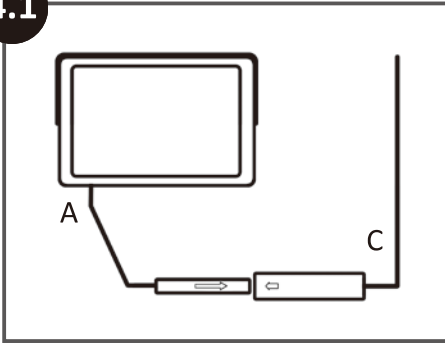
4.3



4.4



4.1

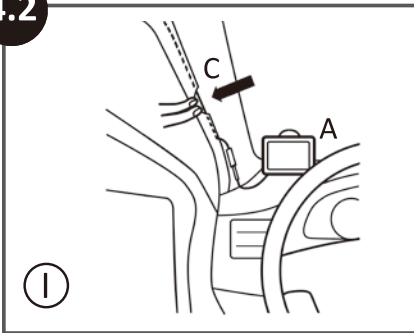


Locate the “For monitor” (colored red) end of the main cable (C) and connect with the monitor (A) cable plug. Please ensure the connection is firm.

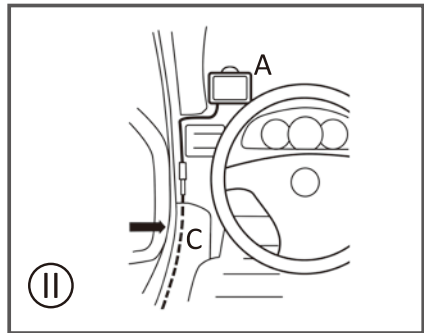


Please note that the monitor cable plug has a locator and must be in-line with the locator on the main cable (C).

4.2



OR



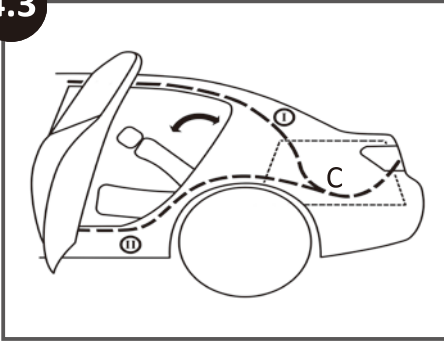
Run the main cable (C) from the monitor (A) backward to the trunk of the car. You can route your cables under the vehicle floor covering or route in the following two ways.

Route I - Conceal the cable behind the rubber seal of the doors of your vehicle until you reach the rear seat.

Route II - Conceal the cable under the edge of the plastic strip that holds the floor covering in place until you reach the rear seat.

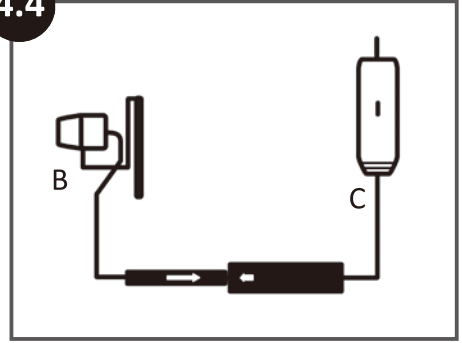
Installation

4.3



Run the main cable (C) to the trunk of your car. For many cars, the rear seat can be folded and the cable can go through easily. For other cars, you can push the cable around the bottom corner of the rear seat. Then push it over the edge of the panel and get it into the trunk.

4.4



Locate the “For camera” end (colored black) of the main cable (C) and plug the camera (B) cable into this socket. Please ensure the connection is firm.

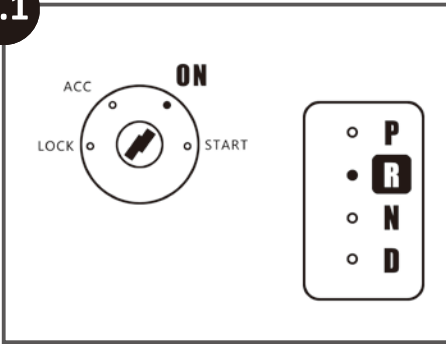


Please note that the plug has a locator and must be in-line with the locator on the main cable (C).

Now all the wire connections are complete and you are ready to test your backup camera.

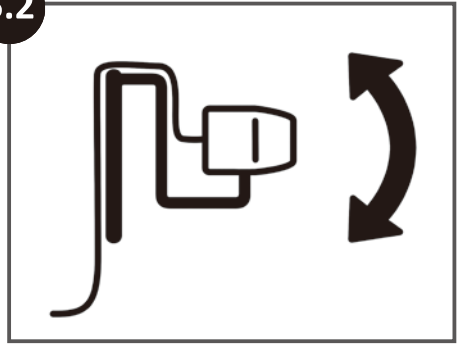
Testing & Adjustment

5.1



Have your car ignition switch to "ON" position, then shift the gear to reverse position, the monitor and the camera will be powered by the reverse light and the back-view image will appear on the monitor automatically until the gear is changed.

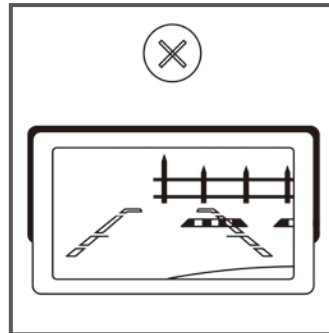
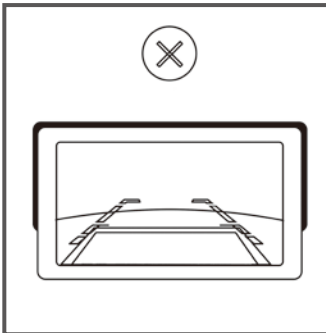
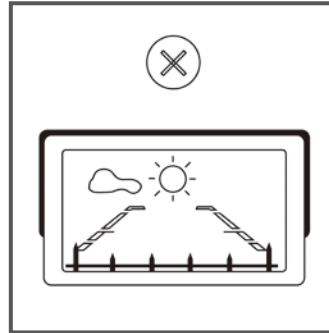
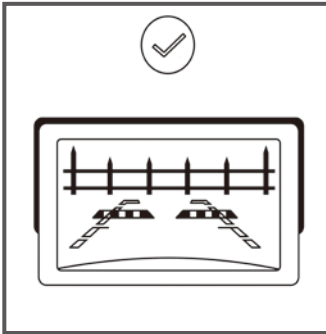
5.2



Please make sure you have the best view you desire. You can bend the camera (B) bracket gently to achieve that.



You don't have to bend the bracket much to see a big change on the monitor (A).

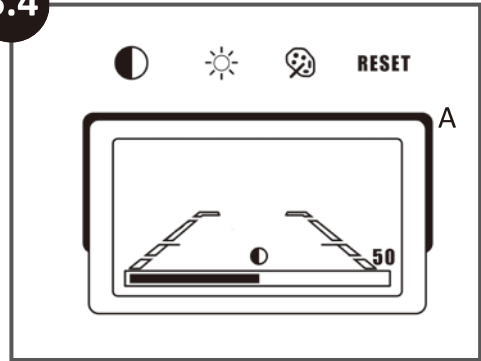


Testing & Adjustment

5.3

Organize your wires and tidy up. When testing is done and the camera system is functioning correctly, please put all the interior and trunk panels back into position, and conceal any surplus cables.

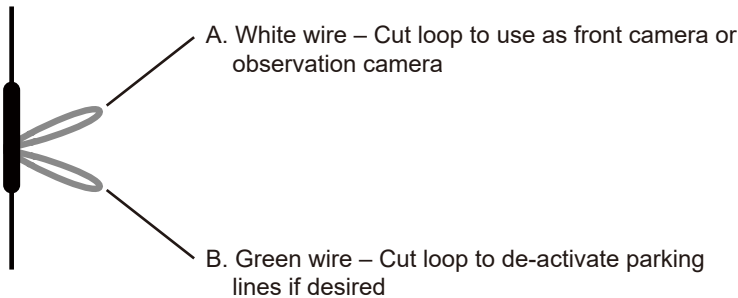
5.4



The camera can be adjusted for brightness, color, contrast and RESET. You can press "M" to select the function you want and press "+" or "-" to adjust the image effect you prefer. These 3 buttons are located at the back of the monitor (A).

5.5

Camera loop wire function



Congratulations on the successful installation of your backup camera!

Trouble Shooting

Phenomenon	Diagnose	Solution
The back-up image doesn't appear	Check whether the gear is in reverse position.	Shift the gear to reverse position.
	Check that the reverse lights work.	Have reverse lights repaired.
	Check whether the wiring connections with the reverse light are secure.	Please use the plier to ensure connection is secure.
	Check whether the positive wire and negative wire are connected reversed between power wire and reverse light.	Please connect the wires correctly.
	Check both ends of the main cable (between camera & monitor) are connected correctly.	Unplug & reconnect.
The back-up image is not clear	Check the camera whether there are stains on it.	Clean the camera with soft cloth.
	Check whether the monitor display is not at the best settings.	Adjust the monitor setting.

Maintenance

Camera

- If dirt, rain or snow attaches to the camera, the monitor may not clearly display objects. If water droplets, snow or mud adhere to the camera lens, rinse with water and wipe with a dry cloth.
- Do not use alcohol, benzene or thinner to clean the camera. This will cause discoloration. To clean the camera, wipe with a clean cloth dampened with mild cleaner diluted with water and then wipe with a dry cloth.

Monitor

- Turn off the monitor. If the screen is dark, it will be easier to see the areas that are dirty or oily.
- Use a dry, soft cloth and very gently wipe the screen.
- If the dry cloth did not completely remove the dirt or oil, do not press harder in an attempt to scrub it off. Pushing directly on the LCD screen can often cause pixels to burn out.
- If necessary, dampen the cloth with distilled water or with an equal ratio of distilled water to white vinegar. The plastic edge that surrounds the screen can be cleaned with any multipurpose cleaner but take care to avoid contact with the screen itself.
- Avoid using paper towels, toilet paper, tissue paper, or something like your shirt to wipe the LCD screen. These non-ultrasoft materials can easily scratch the screen.
- Avoid cleaning products that contain ammonia, ethyl alcohol, acetone, toluene, ethyl acid, or methyl chloride. These chemicals can react with the materials that the LCD screen is made of which could yellow the screen or cause other kinds of damage.
- Never spray liquid directly on the LCD screen or it could run inside the monitor and cause damage.

Always keep your receipt as proof of purchase!



We're here to help! You are covered with one year manufacturer's warranty against defects in workmanship and materials. If you have any questions or comments call our toll-free hotline: **1 888 941 3060 for help.**



Vision Tech America, Inc.

1452 E. Valencia Dr, Fullerton, CA 92831

Ph: 888-941-3060

www.visiontechamerica.com