

User Guide



Safety Cautions

- This information is essential to protect your safety and prevent property damage.
- Make sure to read this thoroughly before using Carman Magic.
- This information is subject to change or add without notice.
- Please refer to Homepage of Carman IT Co., Ltd. for the latest version.

Grade A Equipment (Communication Equipment for business purpose) Pay attention that this is electromagnetic compatibility equipment for business purpose (Grade A). It is permitted to use except a house.

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Cautions in use

Safety Instruction

Cautions in Use

Carman Magic mentioned in this User's Guide is designed for those who have basic qualifications for using this system. Users should follow the safety instructions for safe and efficient use of the product.



Warning!

The cautions of use are as follows:

- Do not drop Carman Magic.
- Always use it in the rubber shroud to protect it.
- Do not place Carman Magic on the power distributor.
- Although Carman Magic is manufactured to internally prevent the interference from the electromagnetic waves, the strong interference by excessive electromagnetic waves may damage the product.
- Excessive surge or electric shock fed by a power cable may damage the power supply system of Carman Magic. So, do not use the product while the power supply is unstable.
- The voltage rating of the AC/DC adapter is 12V DC.
- Be sure to use an AC/DC adaptor with the rated voltage.
- Be careful not to let water or oil get into the product. The product can be severely damaged.
- Please check if there is short circuit through communication connectors of OBD-II or a vehicle in the case of flooded cars. It can cause damage of scanner.

- Be sure to use the USB cable supplied by Carman IT only. Otherwise, your PC or product can be damaged.
- Wireless update or wireless communication requires no hurdle between scanner and wireless devices. Also, it is recommended to communicate within 10 km.

Chapter 1: General Descriptions

1. Product Features

Carman Magic can check vehicle ECU information and malfunction status through the OBD-II/EOBD and CAN communication.

You can connect Carman Magic to the vehicle diagnostic connector with a diagnosis cable to check if any of the Engine, Automatic transmission, ABS, Airbag, Power steering and other devices has an error, view current data and use actuator drive features.

Carman Magic has the following features:

- ▶ Diagnoses Korean, Japanese and European vehicles.
 - Support OBD-II/EOBD, MOBD
 - Support CAN, SAE-J1850, ISO9141-2/KWP2000, J1587

- ▶ Supports vehicle troubleshooting and current data search.
 - You can diagnose vehicles with their sensors and switches, and save and reload the current data.

- ▶ Supports automatic actuator inspection.
 - This function runs/stops the actuator and switches forcibly in order to check if the corresponding active device is normal.

- ▶ You can use saved data and upgrade the diagnosis program by connecting the product to your PC with wire or wireless.

- ▶ You can change the sound effects and display unit of the Carman Magic.

Chapter 1: General Descriptions

- ▶ You can check the latest data and update it automatically.
- ▶ Support Log Data function to save / send the data in the case of communication error so that fast customer support and newest communication is available.
- ▶ Support remote assistance for usage of product by connecting PC and scanner with USB connector.

Chapter 1: General Descriptions

2. Product Specifications

Item		Specification
Dimension		215mm*100mm*35mm
Weight		350gr
CPU	Diagnosis	ARM7
Memory		8GB (Micro SD) 16GB(Optional)
Display		3.2" TFT
Operating Temp		0~45°C (32~113°F)
Storage Temp		-20~70°C(-4~158°F)
Protocol		All Flexibility <ul style="list-style-type: none"> - Dual CAN(2.0A,2.0B), Single wire CAN - ISO914-2, KWP2000, J1850P, J1587 - K/L-line High Speed Serial, Flashing Code - Ethernet
Button		Power button, 20 Operating button
Operating Voltage		8V ~ 35V

Chapter 1: General Descriptions

A red oval with a black border containing the word "Warning" in white, bold, sans-serif font.

Warning







- Please note that if Carman Magic has been under 0°C(32F), it has to stay in room temperature over 2 hours surely before using it over 0°C.

-If Carman Magic moves from low temperature to room temperature, condensations inside the device can be generated and it can cause damage or malfunction. So, please do not place this device in the cold if possible.

Chapter 1: General Descriptions

3.Component List:

1. Basic kit:

NO	Description	picture
1	Carman Magic Main Body	
2	DLC Main Cable (16P 2M)	
3	Cigarette Lighter Power Cable	
4	Power adapter (2A)	
5	USB Cable	
7	Carrying Case	

Chapter 1: General Descriptions

4.Component Figures and Descriptions:

Basic kit

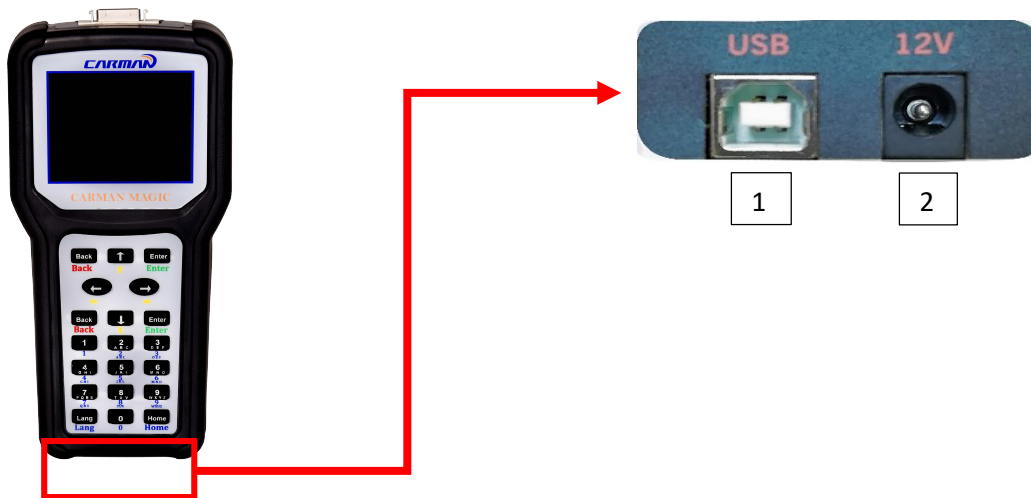
4-1. Main Module



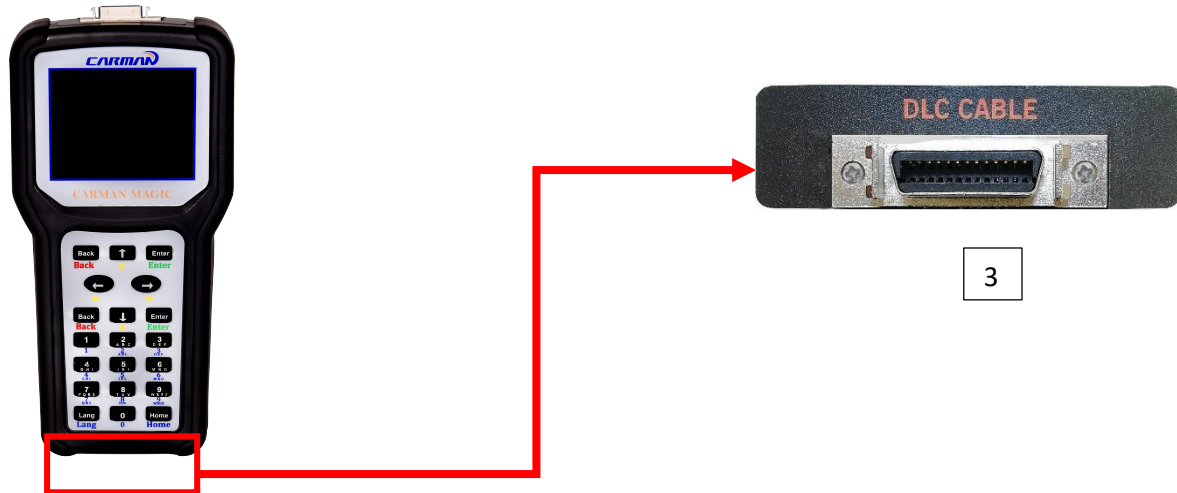
-Carman Magic Main Module-

* The exterior might be changed without any notice in advance.

4-2. Connectors and Key



Chapter 1: General Descriptions



- Connector on the bottom –

1. Power connector: It is for a AC/DC power adaptor and a cigar jack.
2. USB Cable: USB port for updating.
3. DLC connector: It is for DLC communication cable to diagnose vehicles.

4-3. Carman Magic Carrying Case



-Carman Magic Carrying Case-

Chapter 1: General Descriptions

-Carman Magic includes a number of adaptors and cables for diagnosing vehicles. When the product is not in use, store it in the supplied carrying case to prevent damage and loss.

4-4. USB Cable



-USB Cable-

-The USB cable connects the USB ports of Carman Magic and your PC to update the diagnosis software or to use PC based software of AUTO-i Diag.

Warning!

- Please use a USB cable for Carman Magic only. Other USB cables can cause contact problem.

Chapter 1: General Descriptions

4-5. Cigarette Cable



-Cigarette Cable-

-This cigarette cable connects Carman Magic and a vehicle so that it can supply power.

4-6. DLC Cable



-DLC Cable-

-The DLC cable is also called the OBD-II cable. All vehicles released recently have built-in OBD-II connectors compatible to the OBD-II specification. It is possible to diagnose new model vehicles by directly connecting the DLC cable. It is not necessary to connect any additional power source as power is feed through the diagnostic connector.

Chapter 1: General Descriptions

4-7. AC/DC electrical power adapter



-AC/DC electrical power adapter-

-you can use this AC/DC electrical power adapter to feed power.

5. Power Supply:

1. Cigarette Lighter Power Cable

-Power is fed through the cigarette lighter power cable. However, when the vehicle ignition switch is in the “OFF” position or upon starting a vehicle, power is not supplied to the cigarette lighter socket.

Chapter 1: General Descriptions

2. Vehicle Battery

-Connect the red clip of the battery extension cable to the (+) battery terminal, and black clip to the (-) terminal. Connect the cigarette lighter power cable between the battery extension cable and the product. In this case, power is supplied anytime regardless of the ignition switch status or vehicle starting. (Be careful not to discharge the battery.)



Warning!

-Be careful when connecting the cable, as incorrect polarity may damage the main module.

4. DLC Cable

-Where the vehicle satisfies the OBD-II communication convention and uses a certain manufacturer's diagnostic connector, the DLC main cable can supply power to the product directly without a separate power supply.

5. AC/DC Power Adapter

-If the AC/DC adaptor is used for power supply, the battery will be automatically recharged depending on programs and it is also used for power supply to the main module.

Chapter 2: Menu Configuration

1. Diagnosis

-When turning ON Carman Magic, the main screen with the menu is displayed as follow:



-Main Screen –

01. Maker

-After pressing Enter key you will see the following page:



-Maker-

-This menu provides scanner's own functionality such as vehicle diagnosis, service data search, actuator activation, etc.

Chapter 2: Menu Configuration

-Depending on your option, you can perform diagnosis on Asian, Korean, Indian, Japanese, European, Australian and USA vehicles by choosing your maker.

02.OBD II//EOBD

-Move the highlighter by Left and Right keys.



-OBD II//EOBD-

-This menu is to diagnose and test some parts that are related with exhaust gas only if user's vehicle has OBD II/EOBD.

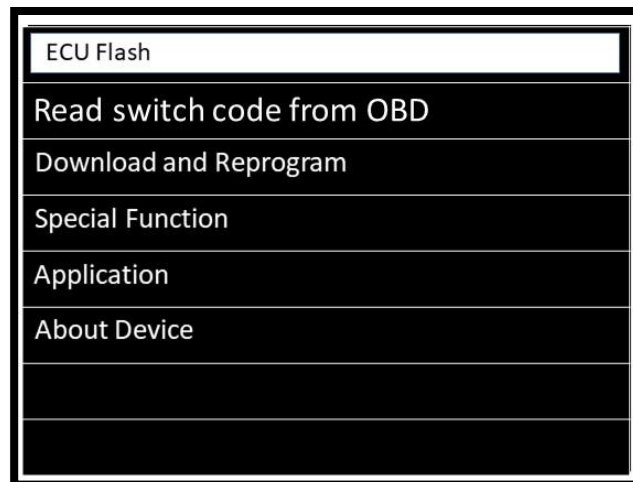
Chapter 2: Menu Configuration

2. Repair

-This menu is available to help user diagnosis vehicles and access to common problems easily.



01. ECU Flash

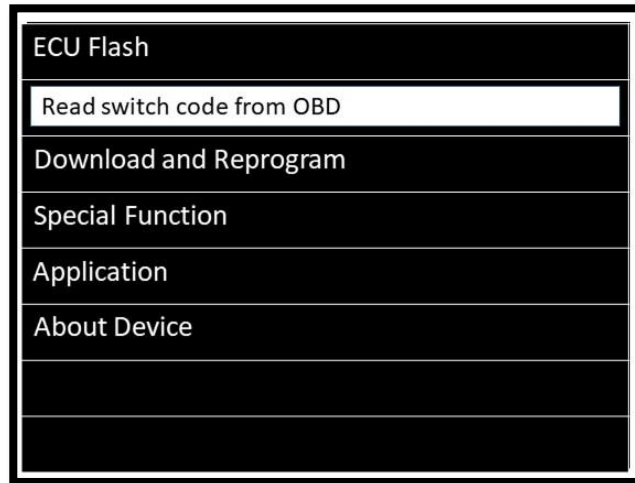


-ECU Flash-

-This menu resets ECU to factory setup.

Chapter 2: Menu Configuration

02. Read switch code from OBD

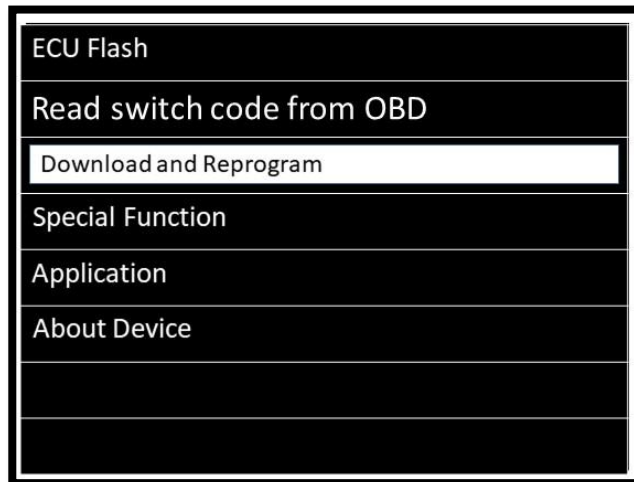


-Read code-

-This menu reads access code from immobilizer systems.

03. Download and Reprogram

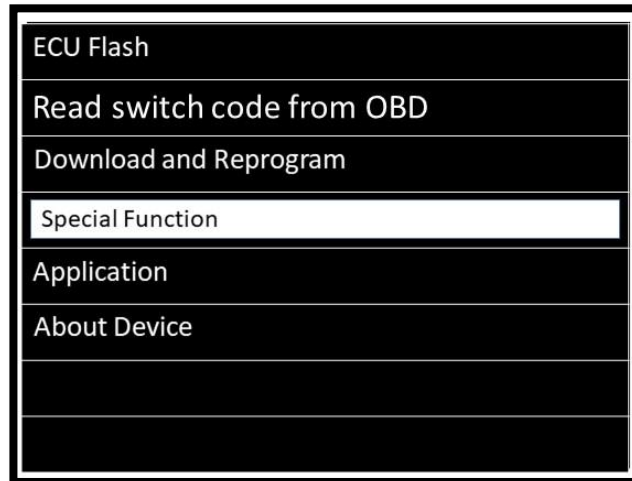
-This menu is used to clear and reprogram engine ECU.



-Download and Reprogram-

Chapter 2: Menu Configuration

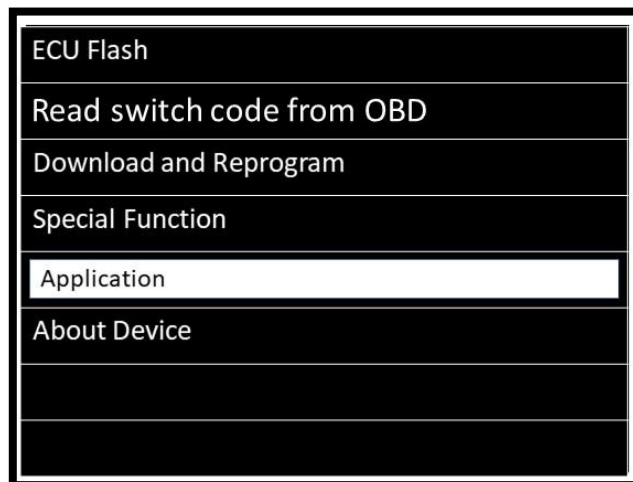
04. Special Function



-Special Function-

-This menu is for changing access code and mileage set.

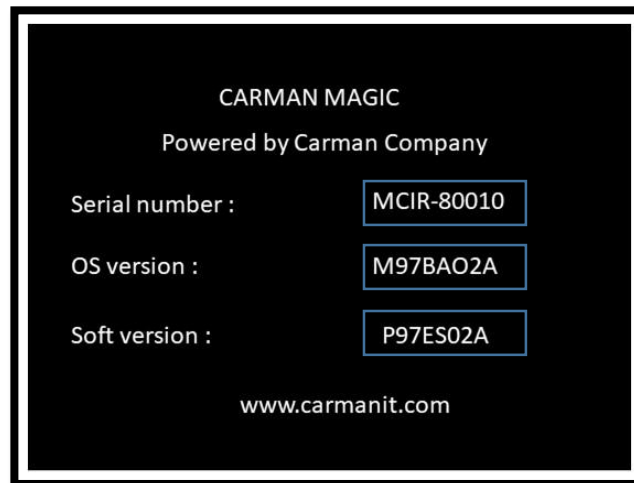
05. Application



-In this menu you can use clips functions.

Chapter 2: Menu Configuration

06. About:



-About-

-All information about your device is available here.

3. Setting

-This menu helps users to change some options as explained below:



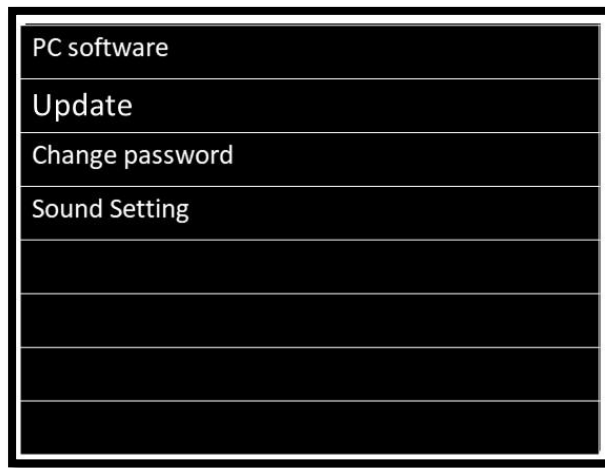
-Setting-

Chapter 2: Menu Configuration

-Press Enter then use “UP” and “DOWN” buttons to choose a different menu.

Then press Enter again.

01. PC software



-USB-

-This menu is used to connect Carman Magic to PC in order to use PC based software (AUTO-i Diag).

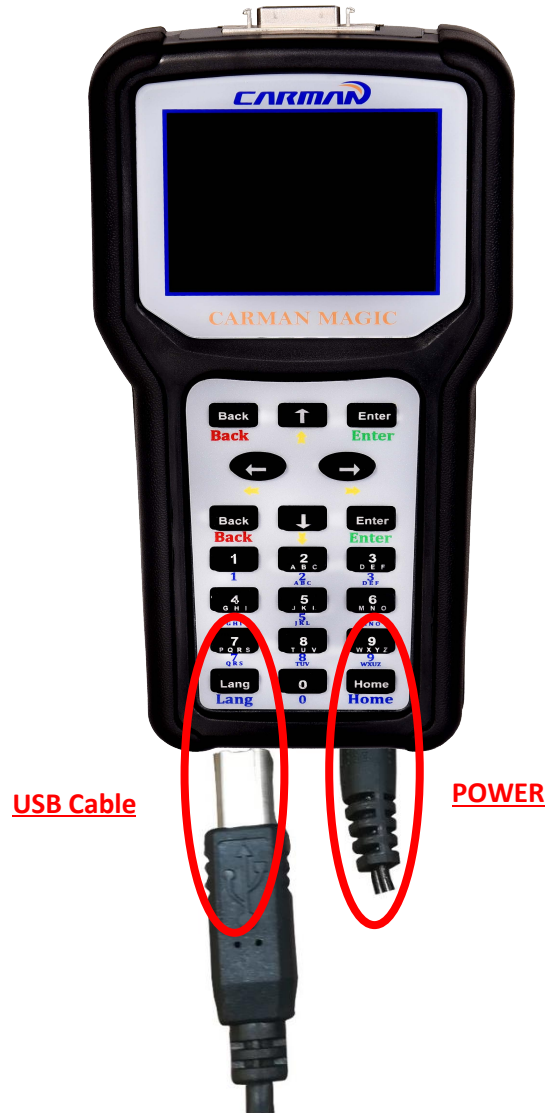
-Press “ENTER” to connect to PC.



-Connect USB cable to PC and Carman Magic.

-Make sure that adaptor is connected to Carman Magic device.

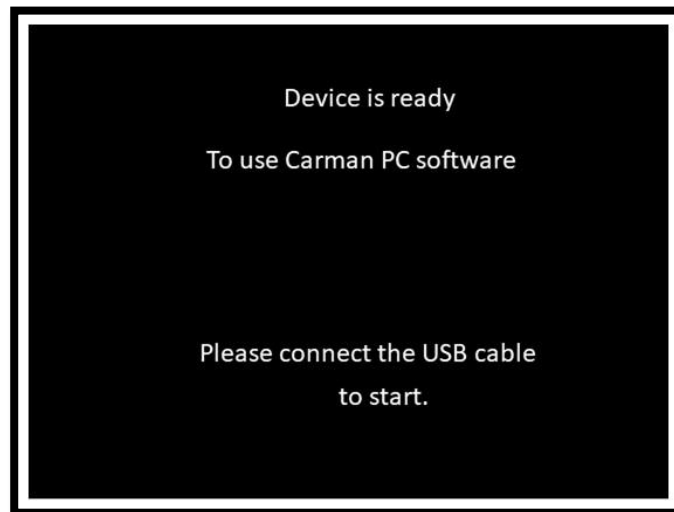
Chapter 2: Menu Configuration



Chapter 2: Menu Configuration



-Connect USB to PC-



-Carman Magic is ready to connect to PC and use PC based program.

Chapter 2: Menu Configuration

02. Update



-Update-



- Connect USB to PC and Carman Magic.
- Make sure that adaptor is connected to Carman Magic device.

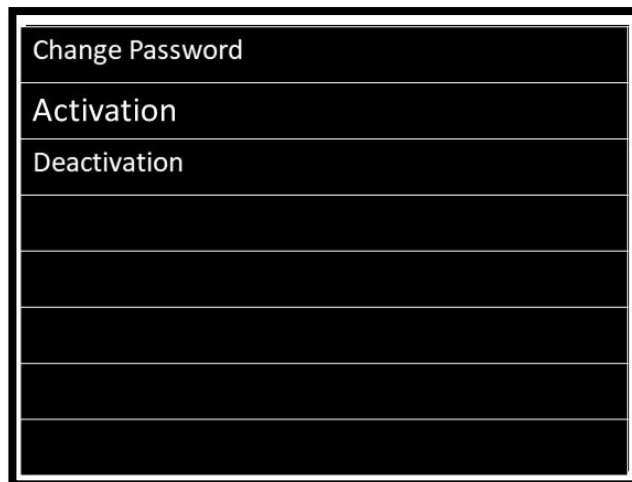


Chapter 2: Menu Configuration

-Carman Magic is ready for Update. (Check update manual on chapter 6 for more information.)

03. Password

-This menu is available to make your Carman Magic more secure.



03-1. Password change



-Password-

Chapter 2: Menu Configuration

-Press Enter to continue.

-The four-digit password must be entered in this menu using keypad buttons and press Enter.



-Password change-

-Input your password again to confirm.



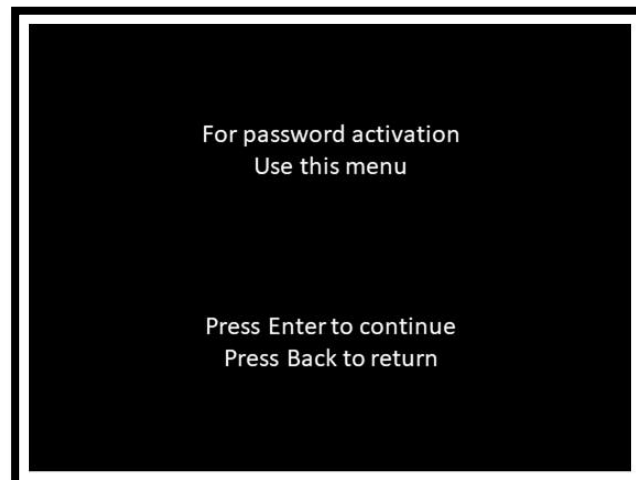
Chapter 2: Menu Configuration



-Password will be available on first page after restarting.

03-2. Password activation

-This menu is used to make password active by pressing "Enter".



-Active Password-

-Press Enter to continue or Back to cancel.

Chapter 2: Menu Configuration



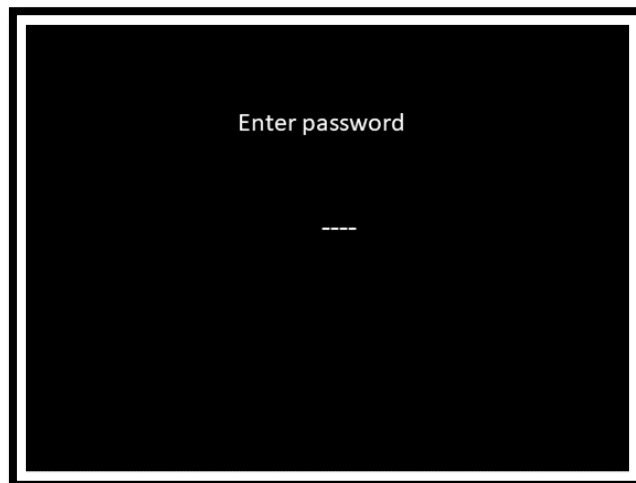
-Input your password again to confirm.



Chapter 2: Menu Configuration



-After activating password, it will appear on first page of Carman Magic when it is turned on. Input the password and continue.



03-3. Password Deactivation

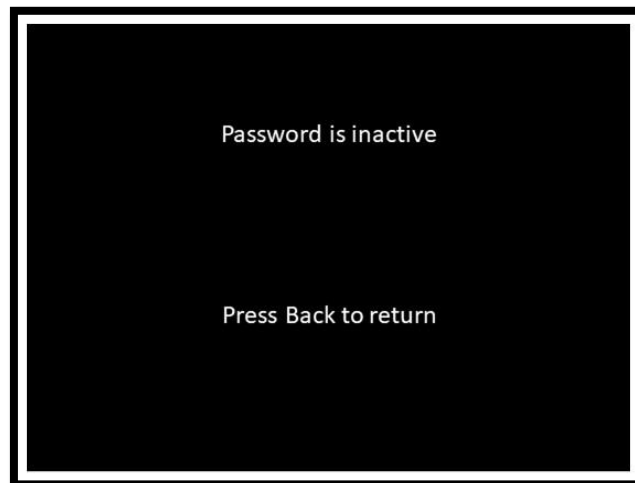
-This menu is used to make password deactive by pressing "Enter".

Chapter 2: Menu Configuration



-Press Enter to continue or Back to cancel.

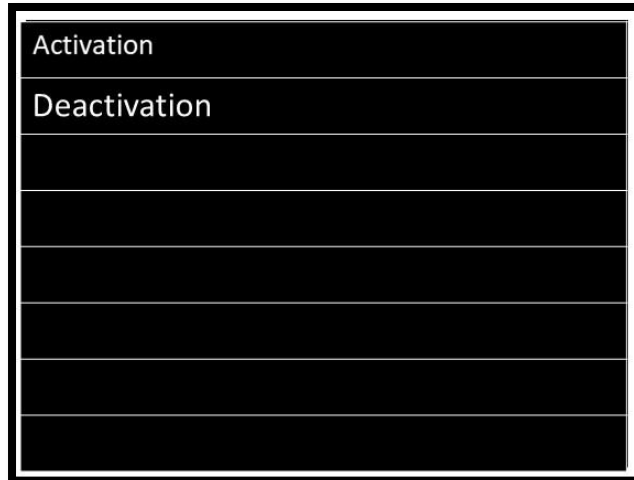
-Press Enter to inactive password.



04. Sound

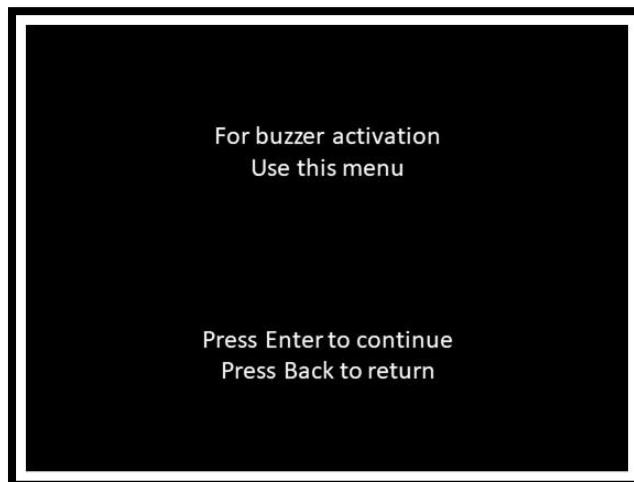
-Carman Magic produces a beep sound while pushing buttons, it can be active or Inactive in this menu by pressing "ENTER".

Chapter 2: Menu Configuration



-Sound-

-Press Enter on Activation.



-activation-

-Press Enter to continue or Back to cancel.

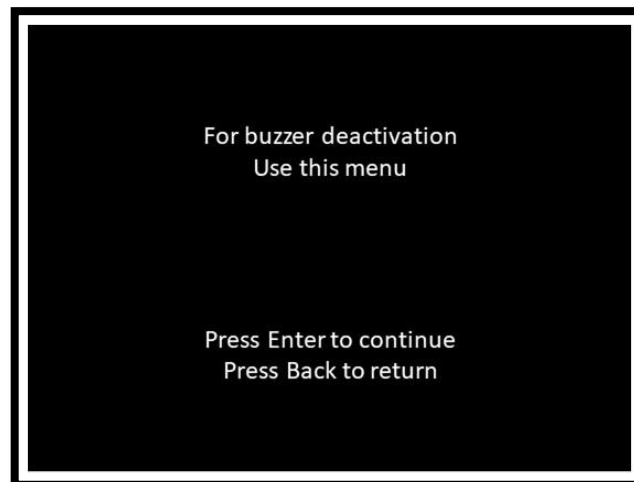
-Press Enter to activate sound.

Chapter 2: Menu Configuration



-Activation-

-Press Enter on Deactivation.



-Deactivation-

-Press Enter to continue or Back to cancel.

-Press Enter to deactivate sound.

Chapter 2: Menu Configuration



-Deactivation-

Chapter 3: Diagnosis Menu

1. How to Connect Diagnostic Connector and Select Diagnosis Program (It is common to Asian, Korean, Japanese, European, Australian and USA vehicles)

1. Locate the diagnostic connector in the vehicle.
 - Most vehicles released after year 2002 conform to the OBD-II Protocol and have OBD-II diagnostic connectors.
 - Most OBD-II vehicles have their diagnostic connectors on the section over the brake pedal under the steering wheel.



-Location of OBD-II diagnostic connector-

Chapter 3: Diagnosis Menu

2. Use the DLC main cable to connect the vehicle's diagnostic connector and Carman Magic.



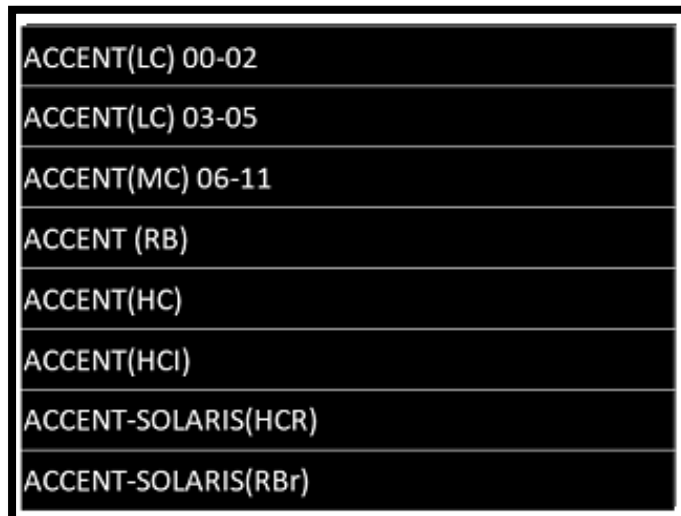
Chapter 3: Diagnosis Menu

3. Select the maker of the vehicle to diagnose.



-Maker-

4. Select a vehicle on diagnosis menu.



-Vehicle menu-



-Be careful to choose the correct year of the vehicle.

2018MY
2017MY
2016MY
2015MY
2014MY
2013MY
2012MY
2011MY

-Year menu-

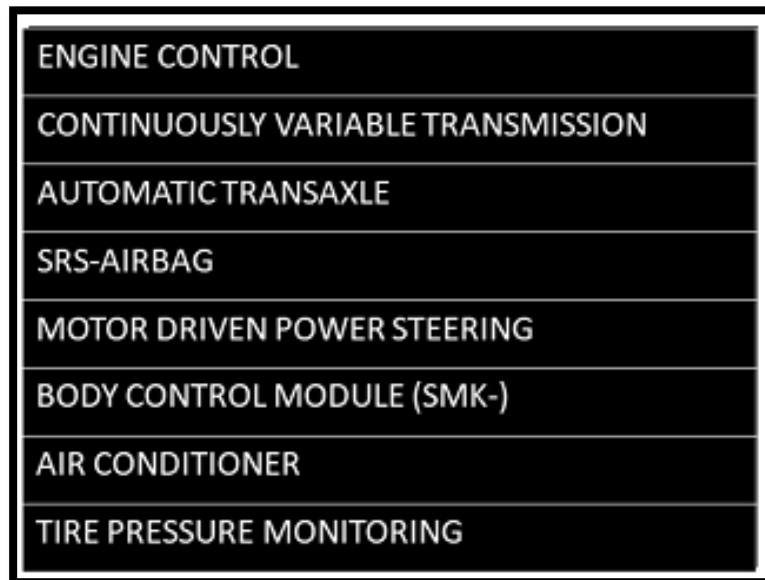
5. Control Unit

Control Unit
Auto Search
Service And Repair Info.
Part and Fuse

-Control unit-

Chapter 3: Diagnosis Menu

6. Select the system to be diagnosed.



-Vehicle's systems-

Chapter 4: Vehicle Diagnosis

1.Read faults

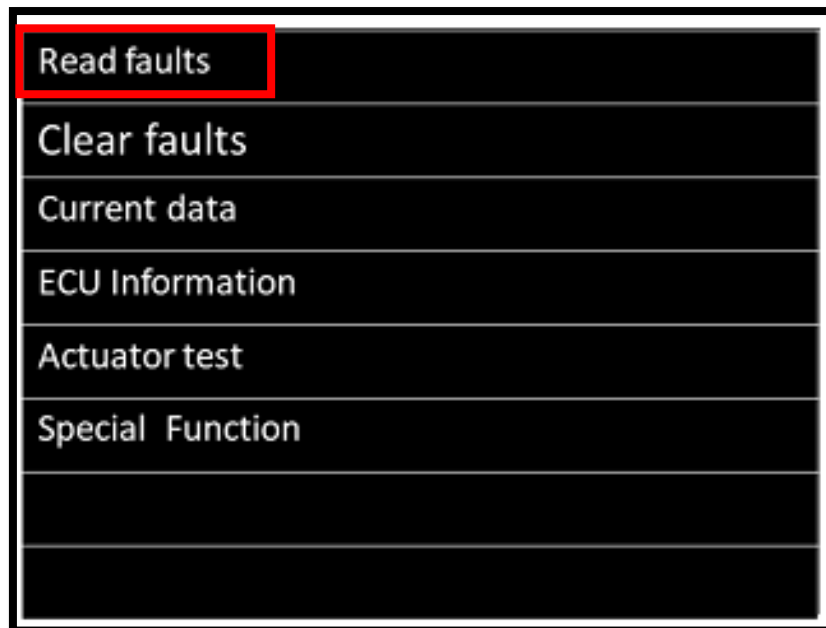
- In this menu, it is possible to check for any malfunction of the selected vehicle system through the communication with the ECU in the vehicle. As Carman Magic displays DTCs (Diagnostic Trouble Codes), you can easily check where malfunction occurs. Also, the description and picture for DTCs is displayed as well to help you service your vehicle.



-In order to diagnose DTC correctly, please check the connection between connector and Carman Magic. Please refer to Chapter3: Diagnosis menu and check details such as Vehicle maker, model and displacement etc.

The help function may differ between vehicle makers.

Note - Items of DTC Codes may differ from depending on makers and models.



-Read faults-

Chapter 4: Vehicle Diagnosis

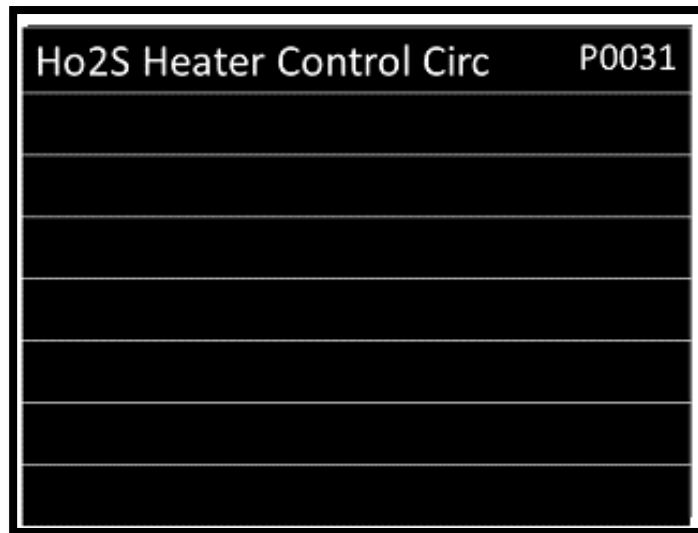
1. If a car and a system are selected correctly in the Vehicle Diagnosis menu and communication with vehicle is stable, the above picture will be shown.



-If it does not show a menu like last picture and shows "Connection Failed" or does not communicate stably, please check first status of the target car or connection of cables.

2. The DTC search screen appears. Now, you can check details of current and history DTCs and erase them.

(History DTCs are marked as H and Current DTCs are marked as C)



Ho2S Heater Control Circ	P0031

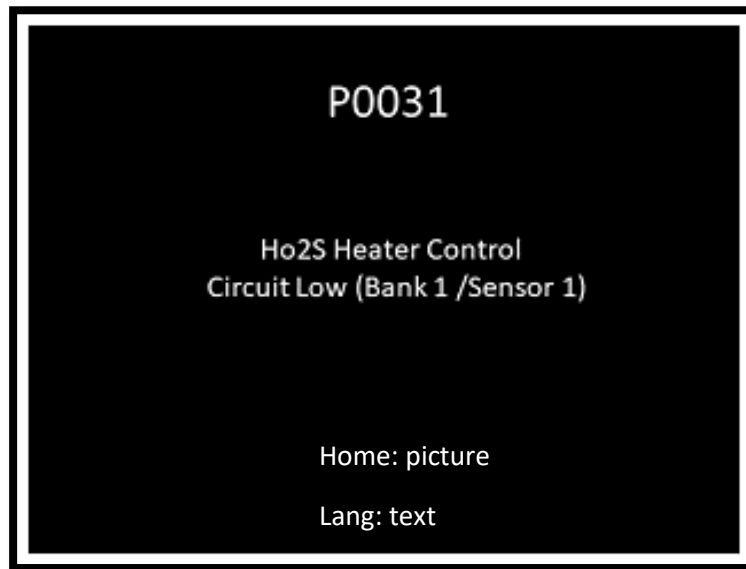
-DTC list-

-Press Enter to see the details.

Chapter 4: Vehicle Diagnosis

3.DTC GUIDE

-After pressing ENTER on a DTC you will see the full description.

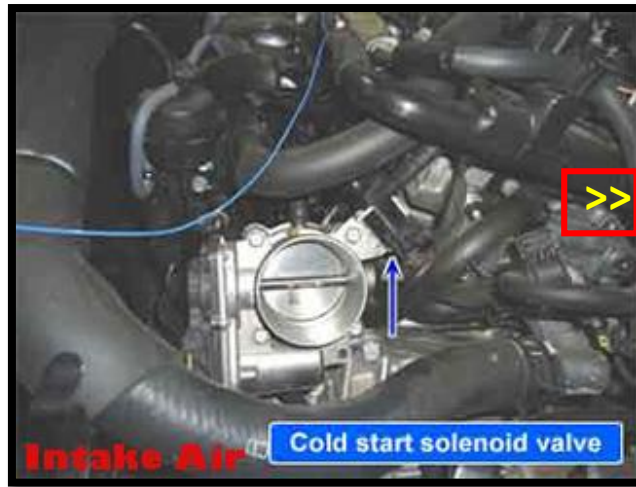


-Details-

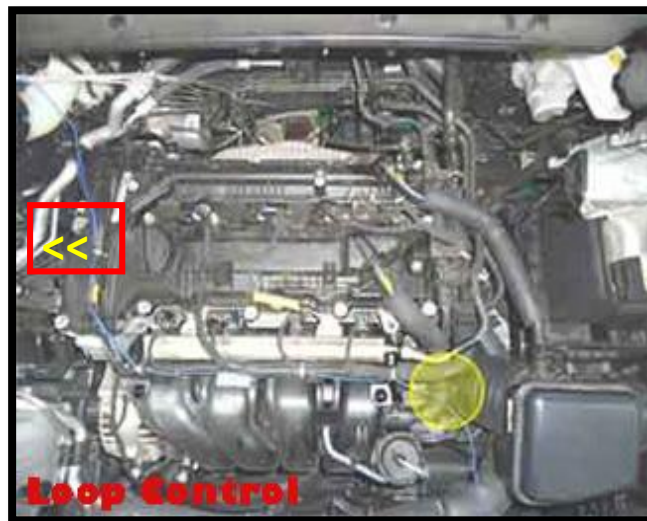
BUTTON	Operation
Home	Picture: The picture of DTC location on vehicle
Lang	Text: Description of the probable causes and solution of the DTC

Chapter 4: Vehicle Diagnosis

F1:



-Picture1-



-Picture2-

Chapter 4: Vehicle Diagnosis



-The DTC might have more than one picture depend on a problem. Use “LEFT” and “RIGHT” buttons to change the picture.

F2:

General Description
FFV(Flexible Fuel Vehicle) uses pure alcohol or mixed alcohol with gasoline
This system uses alcohol in normal condition except cold starting. Gasoline is used only at cold starting. It is composed of auxiliary gasoline tank, motor and solenoid. ECU controls gasoline fuel pump relay, motor and solenoid at cold starting. Gasoline is supplied by controlled solenoid.

DTC Description
P0006 is set when the circuit of cold start solenoid valve is short to low.

[UP/DOWN]: Scroll

-Text-



-You can use “UP” and “DOWN” buttons to scroll and see the rest of the text.

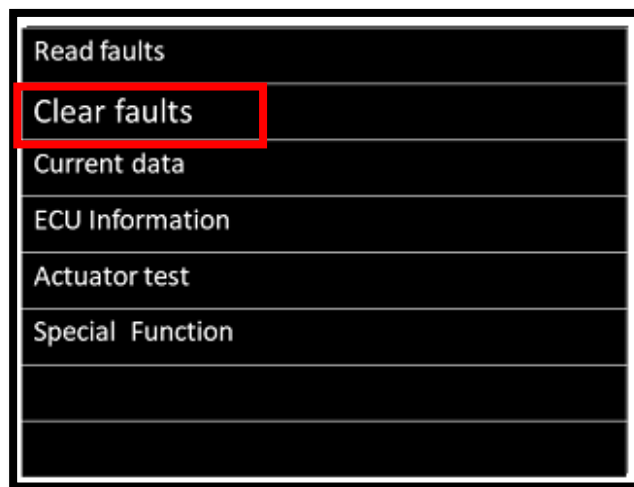
Note – If any of “Home” or “Lang” buttons are not active on the DTC, they are not available and they may be added on the next update.

Chapter 4: Vehicle Diagnosis

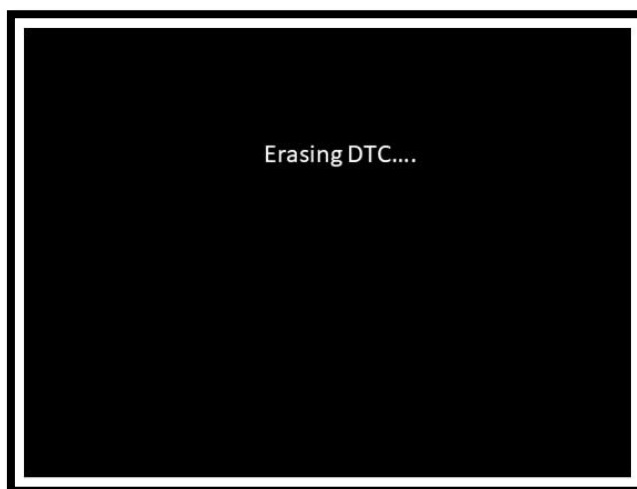
2. Clear faults

1. If you select a car and a system correctly on the menu and if communication with a car works successfully, it shows the DIAG MENU like a picture below.

choose the Clear faults menu.



-Clear faults-



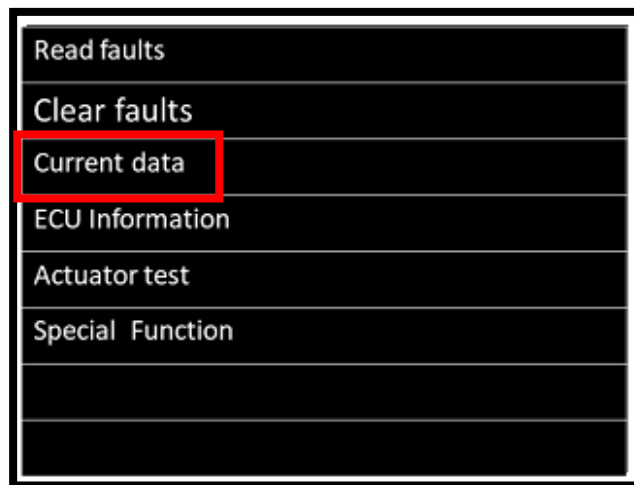
Chapter 4: Vehicle Diagnosis

-DTC has been erased-

-After erasing DTC Carman Magic starts reading DTC again.

3. Current Data

In the Current Data menu, the module can communicate with the vehicle ECU to check data and control values of each sensor of the selected system and to check conditions of various switches and actuators.



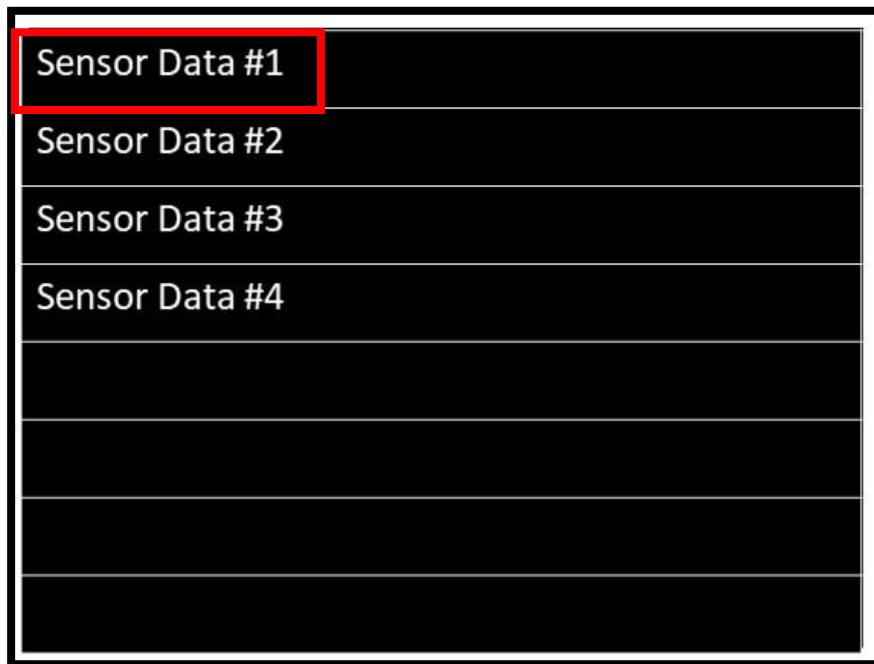
-Current Data-

-It is important to select the vehicle specifications correctly for accurate sensor data measurement. Make sure to set the vehicle displacement, manufactured year, fuel, etc. correctly. The Current data list can differ even with the same vehicle models.

Note- The menu for Current data selection, shown in the picture, can differ by vehicle makers and models.

Chapter 4: Vehicle Diagnosis

1. When selecting the correct vehicle model and system from the menu and communication with the vehicle is properly established, the menu appears as the picture above. Select Current.5 Data and press the “ENTER” button.



-Group list-

Note- You may need to choose a group of parameter in order to see the list.

2. The Current Data list is displayed as shown in the picture below.

Chapter 4: Vehicle Diagnosis

Engine Speed	544 RPM
Battery Voltage	12 V
Injection Time	118.0 mS
Fuel Cut off	YES
Coolant Temperature	45 C

-Current data list-

-Use “UP” and “DOWN” buttons to see more parameters.

4. ACTUATOR TEST

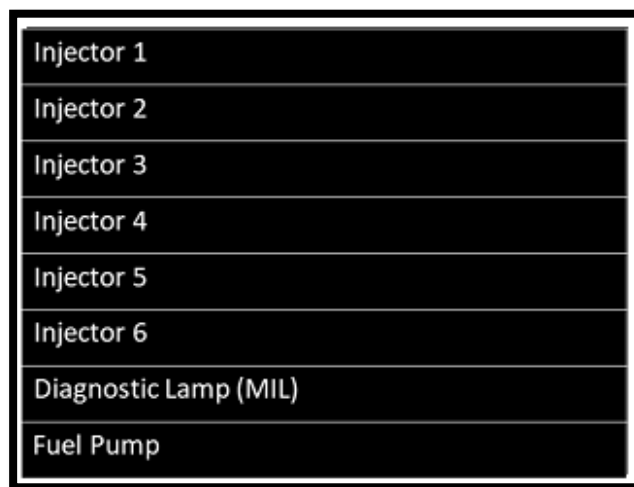
- In this menu, you can start and stop actuators and switches forcibly to diagnose them.

- The actuation function is available depending on vehicle makers and models.

Read faults
Clear faults
Current data
ECU Information
Actuator test
Special Function

Chapter 4: Vehicle Diagnosis

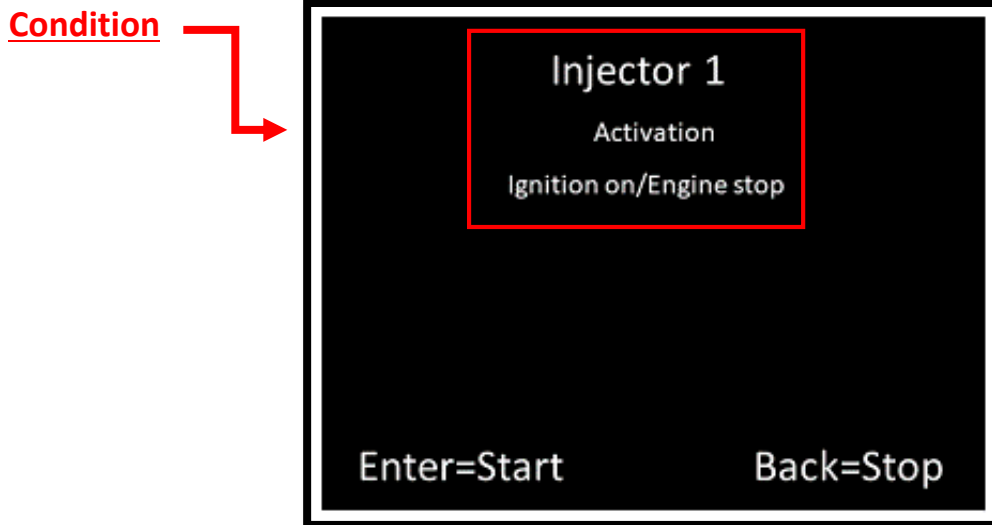
1. If a car and a system are selected correctly in the Vehicle Diagnosis menu and communication with vehicle is stable, the above picture will be shown Select an Actuator Test.
2. The screen as below appears.



-Actuator list-

3. Choose any actuator that you want to diagnose and press “ENTER”.
 4. Press “Enter” to start testing and “Back” to finish the test.
- Before starting actuation, make sure to check the operating condition to inspect the system in the proper condition.
 - The actuator time differs by the actuated items.

Chapter 4: Vehicle Diagnosis



-Actuator's details-

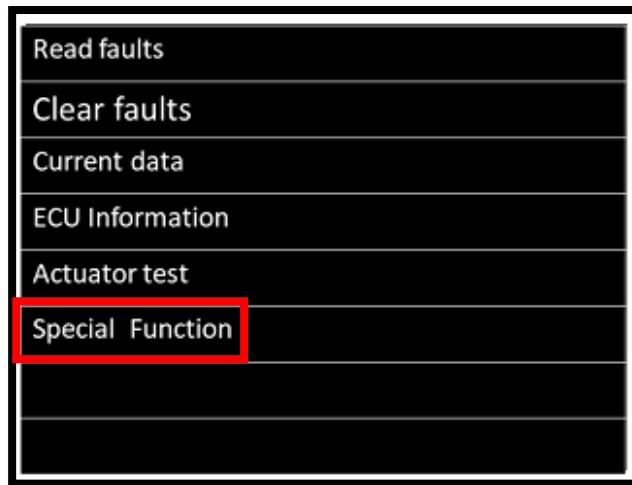


-The actuation result is judged by noise from the running actuator or switch and vehicle RPM change.

Therefore, it is recommended to perform the actuation test in a quiet area and use current data values as a reference.

Chapter 4: Vehicle Diagnosis

5.Special Function



-Special Function-

Examples of special function:

5-1. Resetting Adaptive Values.

- The resetting adaptive values initiates ECU by clearing values of sets in ECU.
- The clearing learning values may be different depend on car makers and models.

5-2. Evap. Leakage Test

-Choose this Special Function to check if there is leakage from an oil tank.

5-3. PCM Lock(MEC) Setting

- This function is to prevent data or programs from adjustment.
- System information differs from depend on car makers and models.

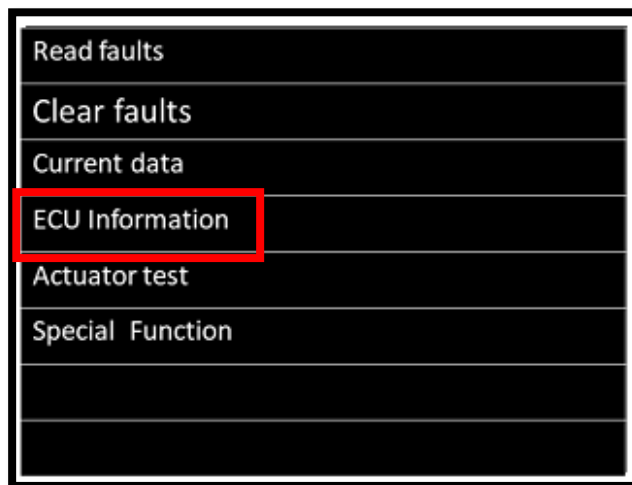
Chapter 4: Vehicle Diagnosis

5-4. Misfire Delay Reason

- This function is to check the number of misfire in each cylinders.
- System information differs from depend on car makers and models.

6.ECU Information

-ECU Information shows information related with system such as system model and software version etc.



-ECU Information-

- ECU Information differs depend on car makers and models.

Chapter 4: Vehicle Diagnosis

No item	A7315678

-ECU Information's list-

Chapter 5: Program Download

It is necessary to download the vehicle diagnosis program to your product in order to use it. If there is any update due to a new model, system or development, the program should be updated to the latest one. Also, the latest firmware and PIC data are provided for update to ensure the best performance of your product. For this update, the dedicated program is needed. The following describes how to install the program.

How to Install download program

- Use the USB supplied by our company to connect the PC and Carman Magic.
- Use the AC/DC Adaptor supplied by our company to turn on Carman Magic.
- Download new software after check how to download it in our website.

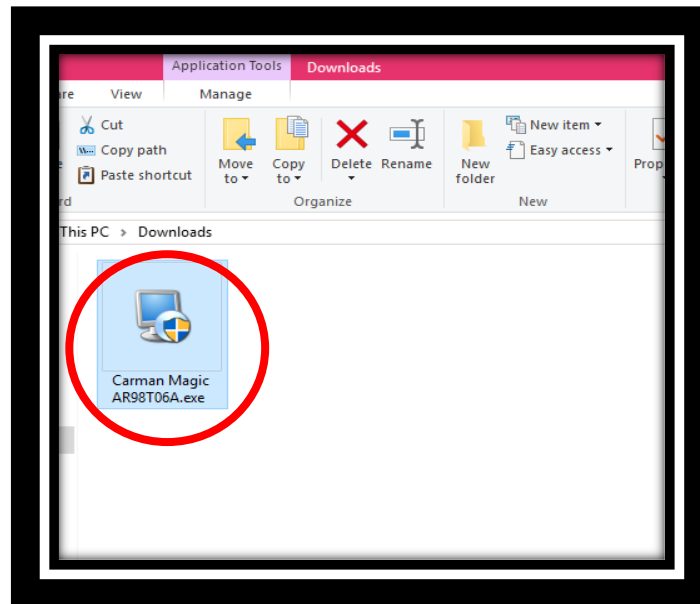
Website: <http://www.carmanit.com>

- Please contact to where you purchased about downloading latest software.

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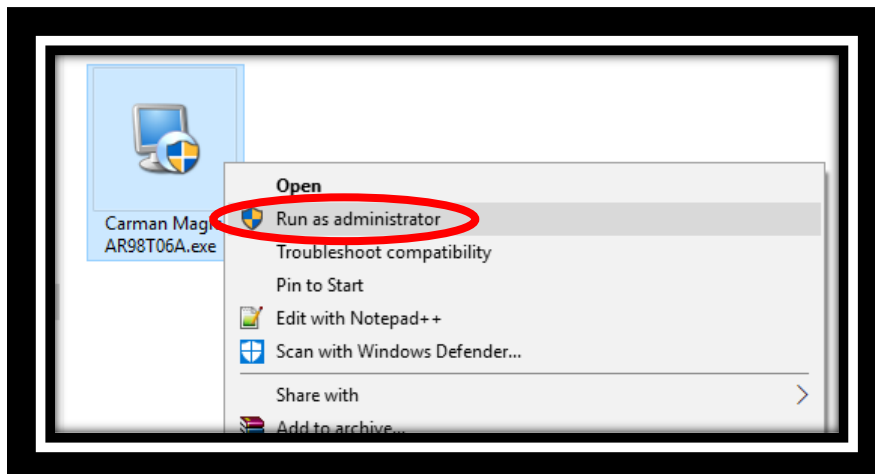
After downloading the update file, follow the steps of this document to update your Carman Magic.

1. Go to download folder on your computer.



- You can see the version of the update in parenthesis

2. Right click on Carman Magic.exe and choose run as administrator.

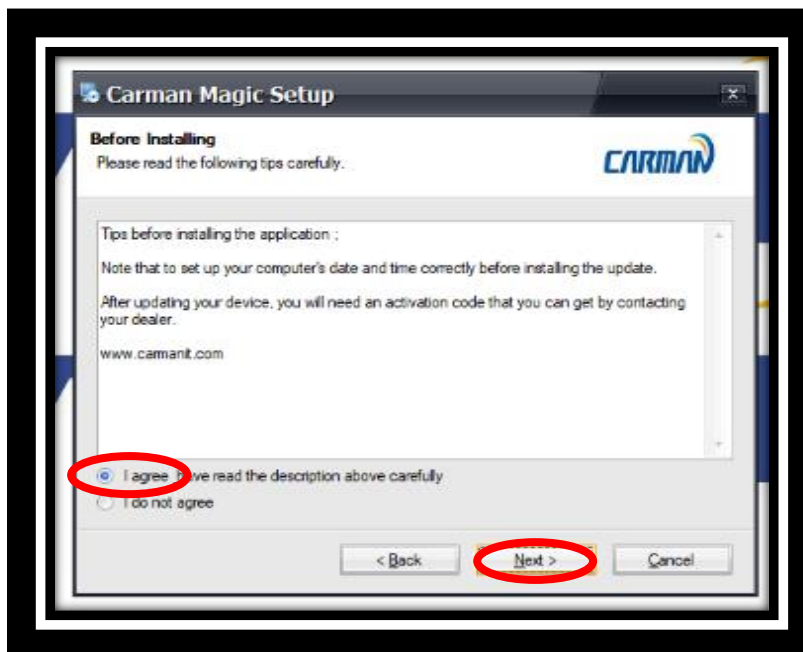


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3. Choose Next to continue.

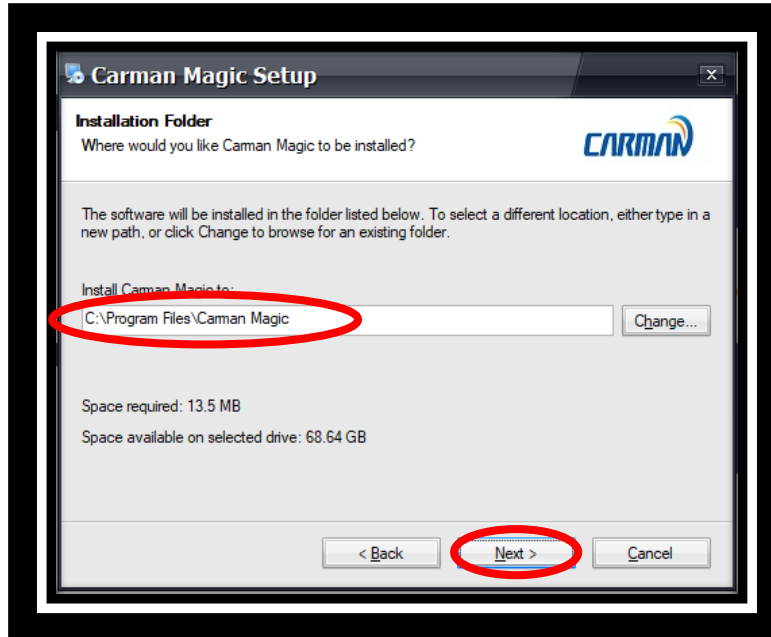


4. Select "I agree" and then click Next.

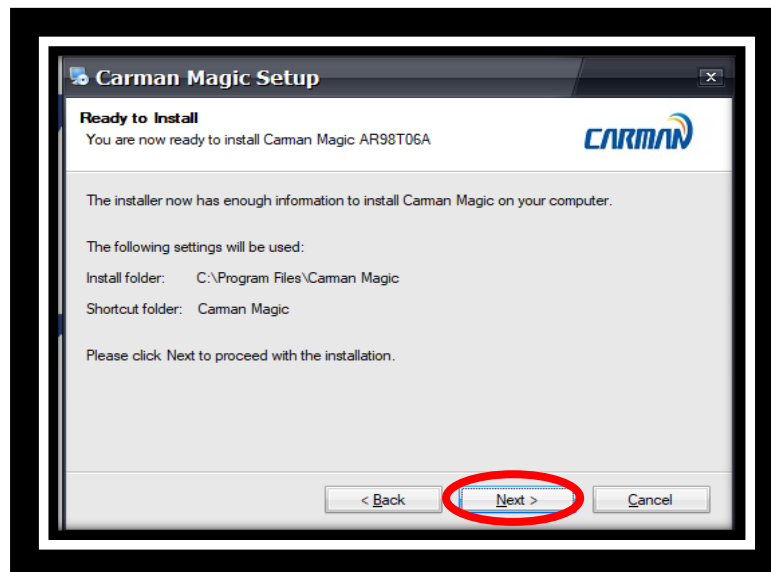


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5. Choose the path that you want to install the Carman Magic program and click Next.

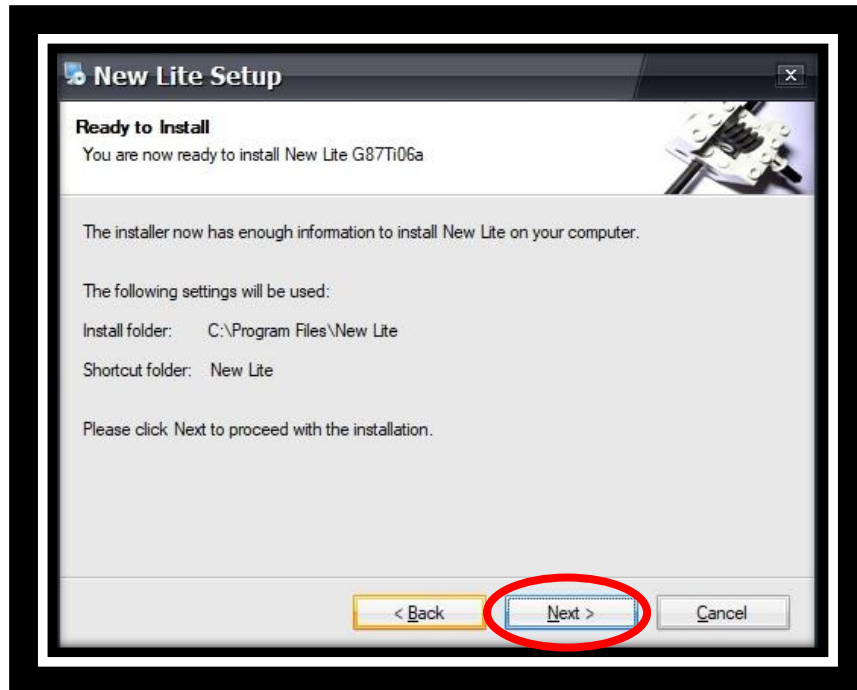


6. Choose Next to continue.

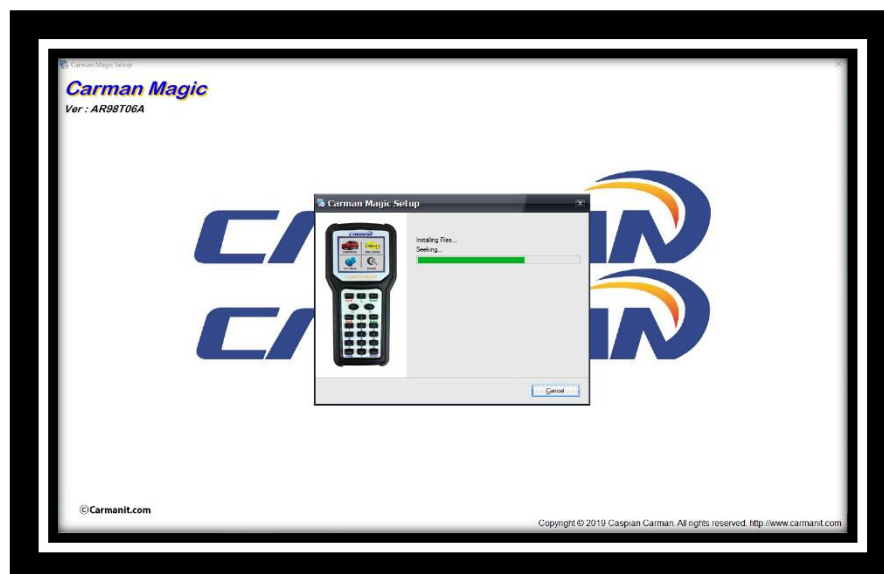


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7. Click Next to continue installing.



8. The Carman Magic update is installing.

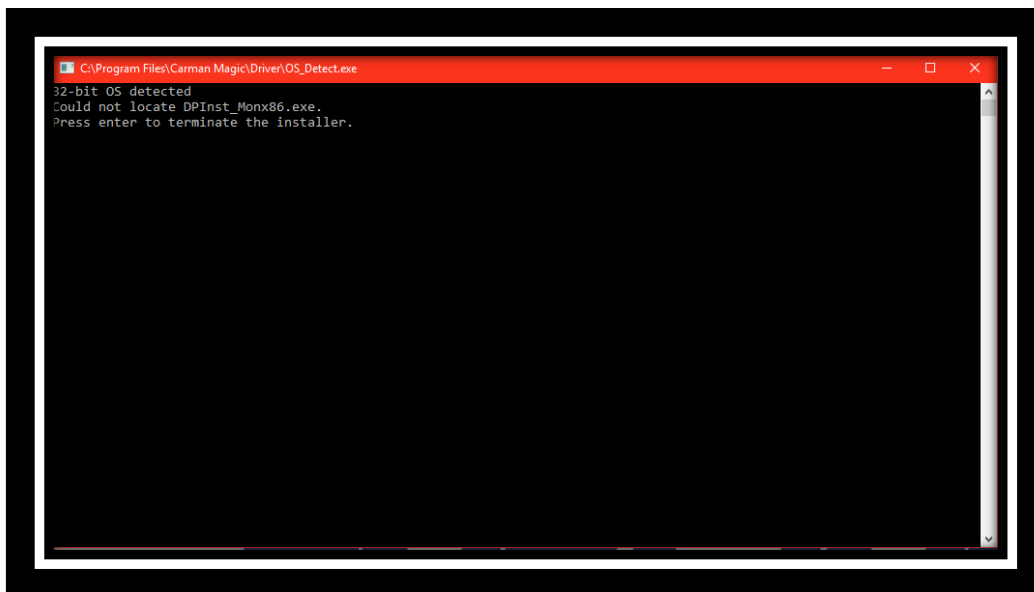


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9. Carman Magic is installed. Click on OK.



10. Press Enter to install all the features.



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11. Installation is finished. Click on finish.

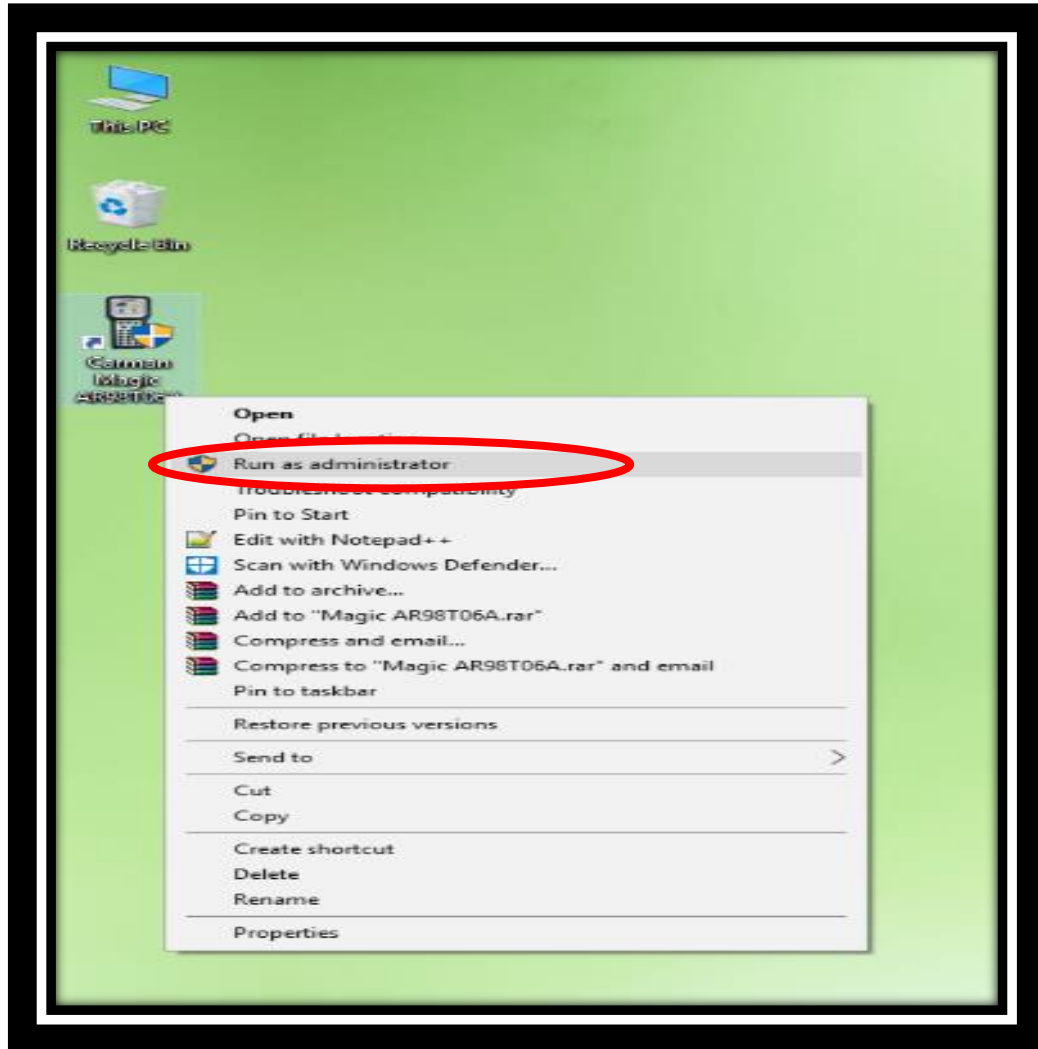


12. Now you can see the shortcut of this update on your desktop.



13. Right click on Carman Magic shortcut and choose run as administrator.

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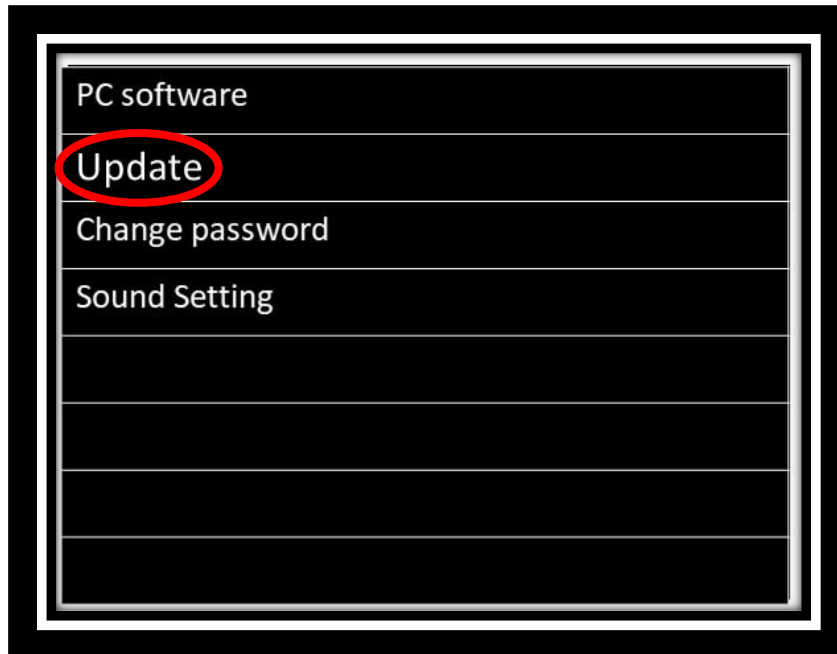


14. Make sure that your device is connected to the computer and adaptor.

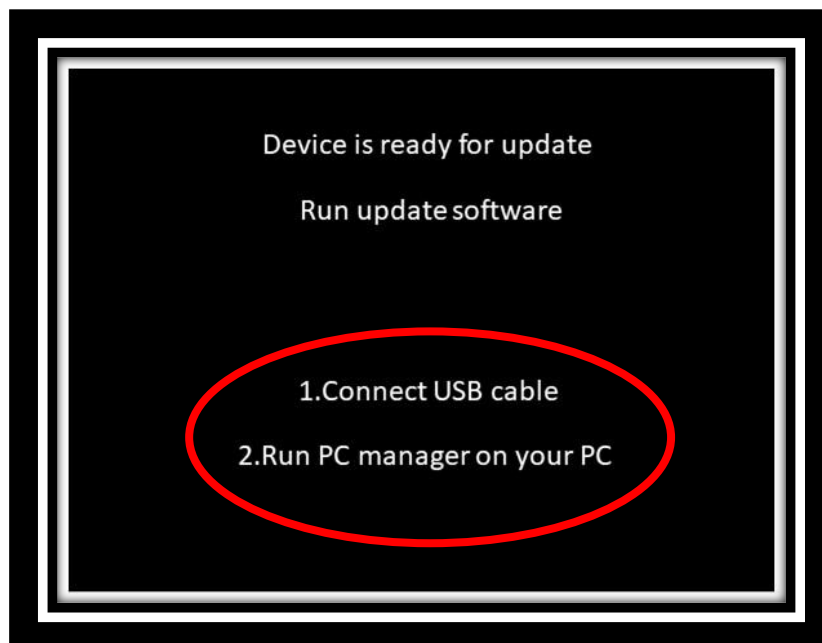


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15. Go to Update section on your Carman Magic and press ENTER.

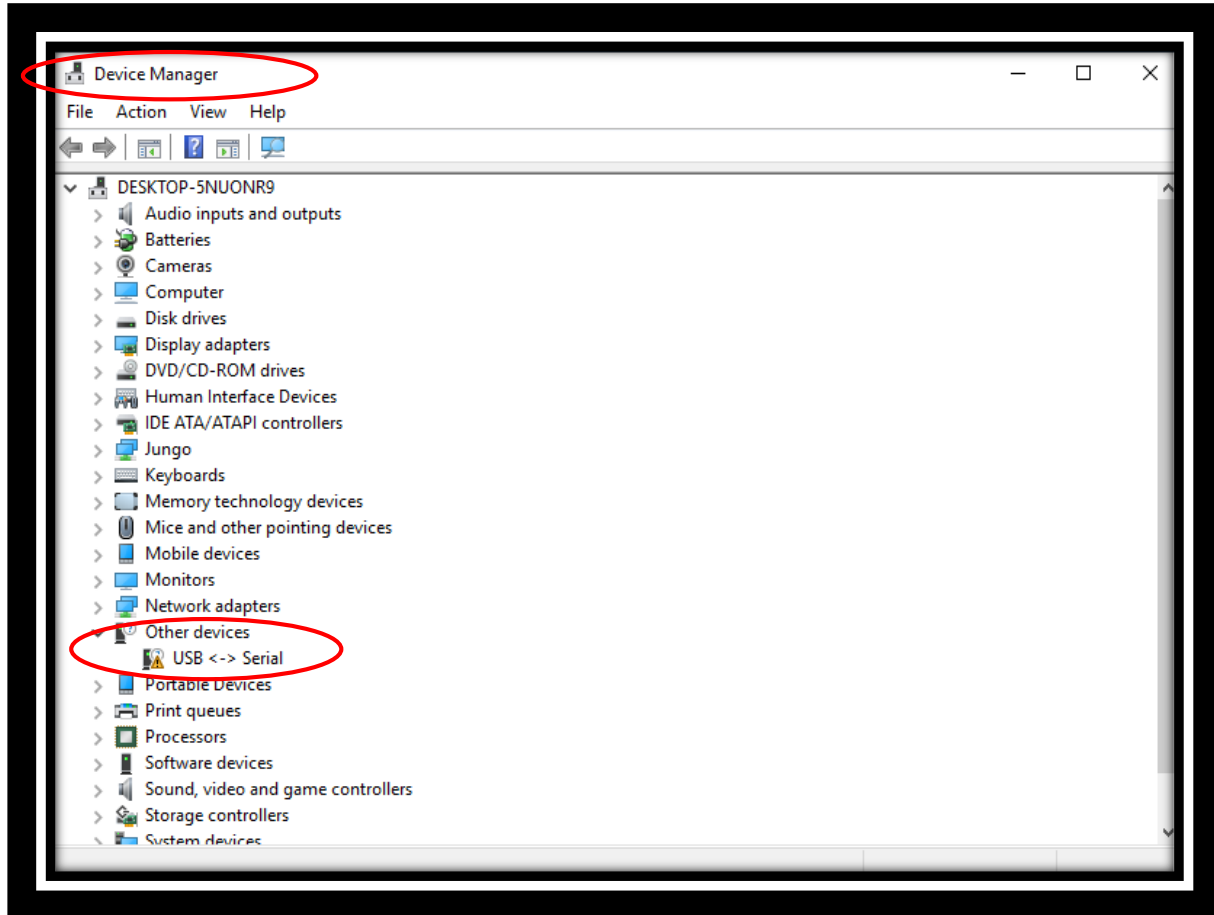


16. Press ENTER.



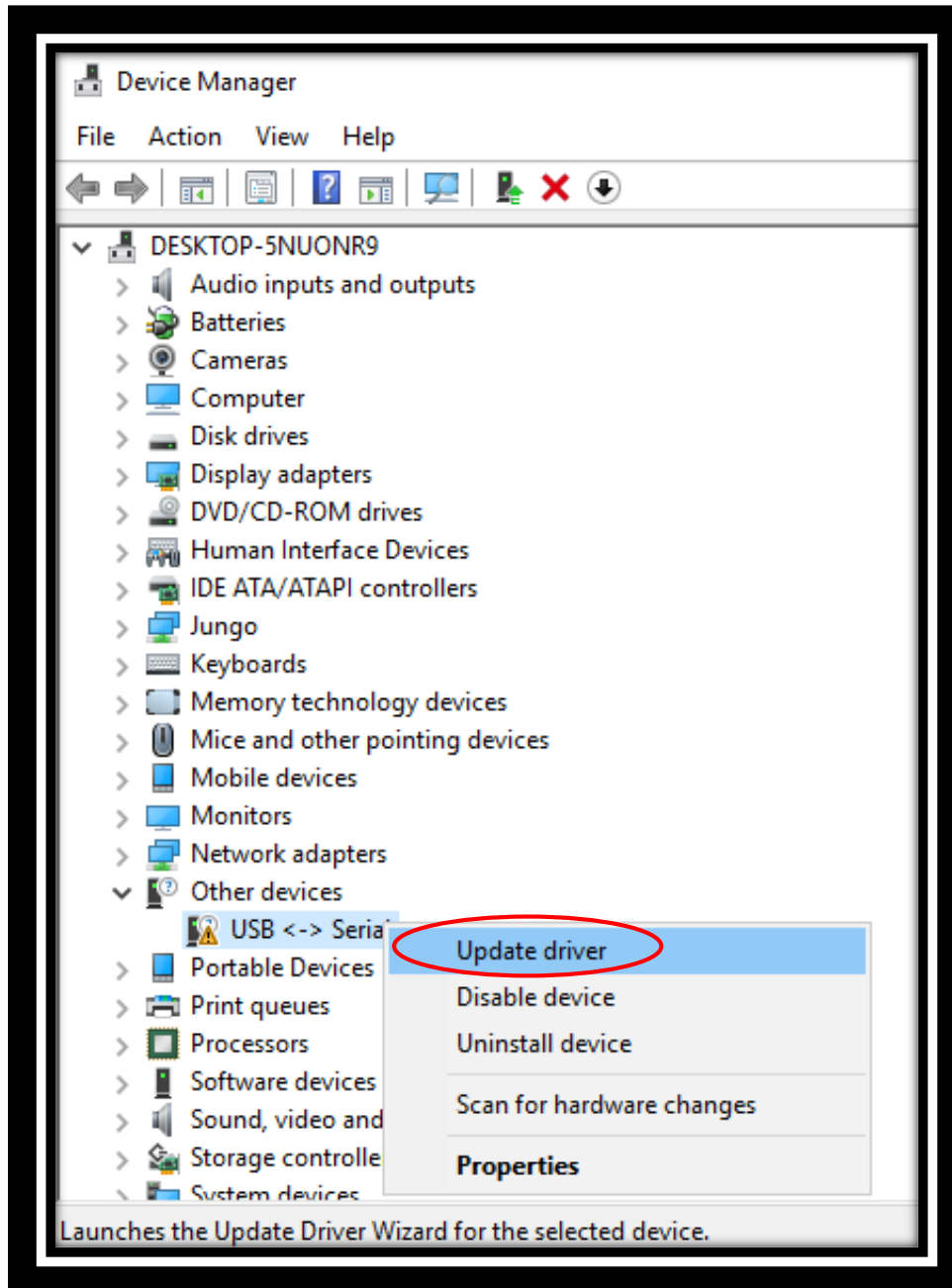
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17. Before starting the update procedure, go to Device Manager on your PC.



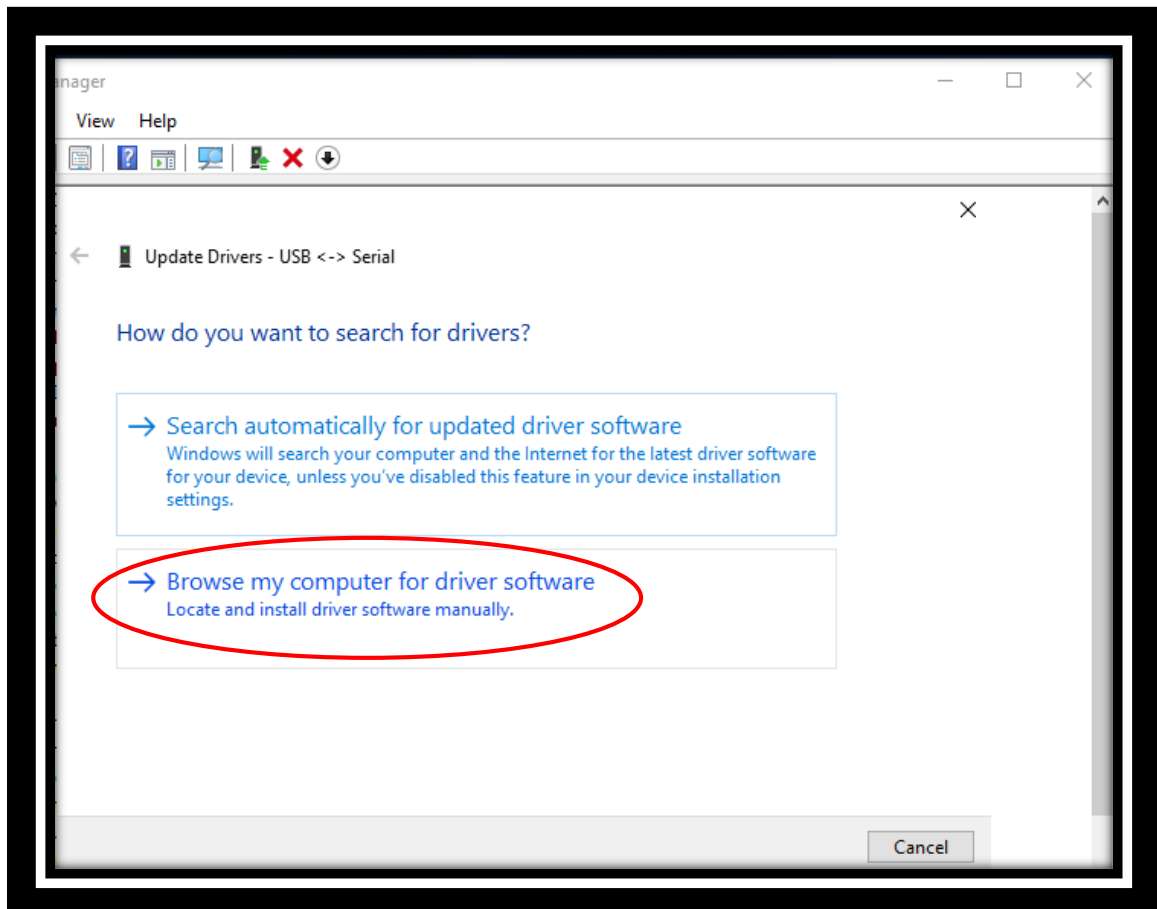
18. Right click on USB<-> serial and choose Update driver

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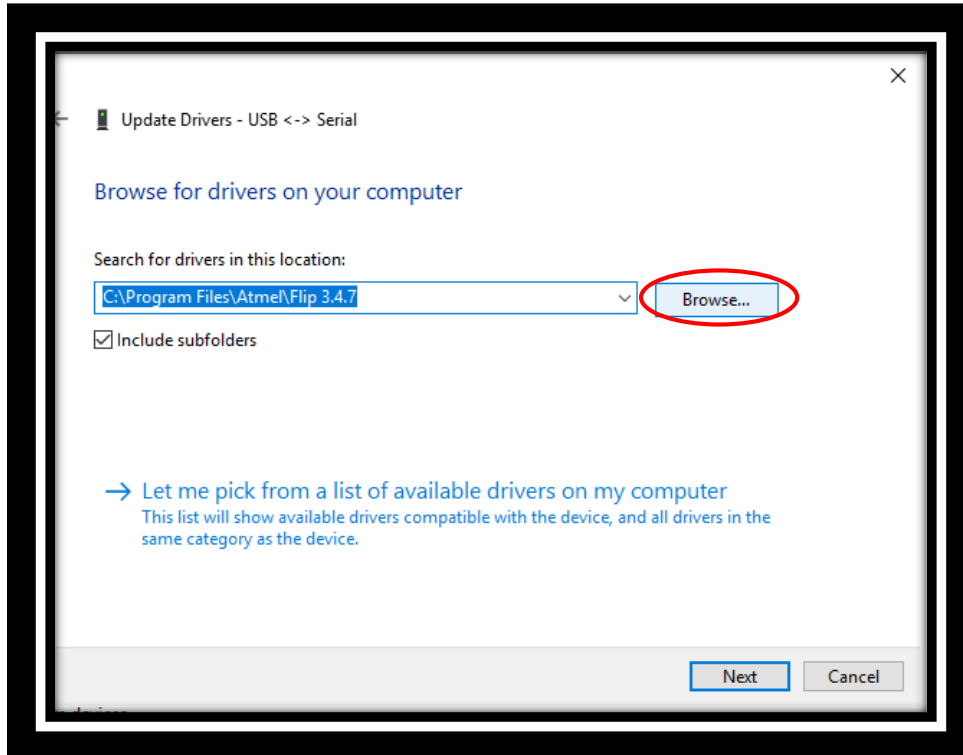
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19. Choose Browse.

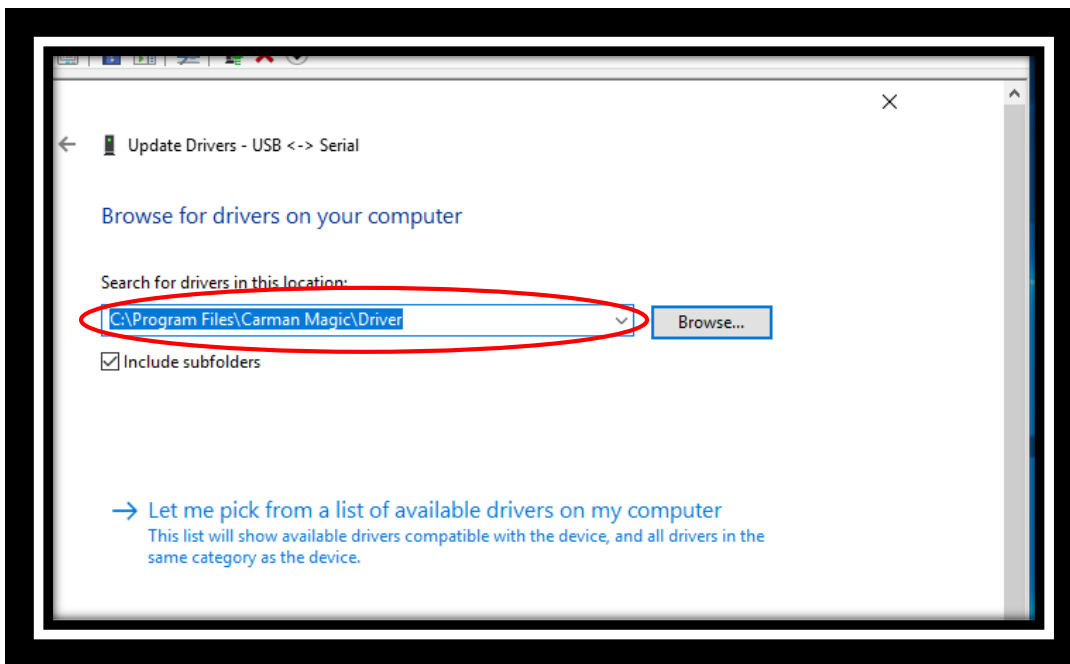
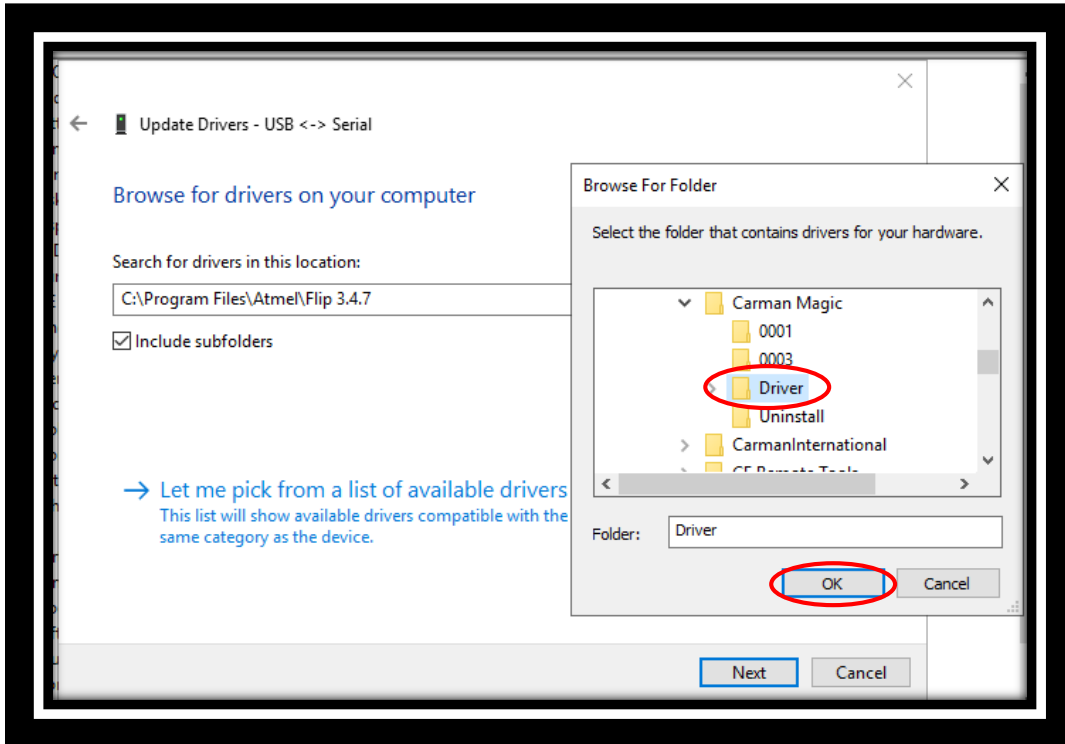


20. Choose Browse and choose the folder that is shown in the picture below and click on ok.

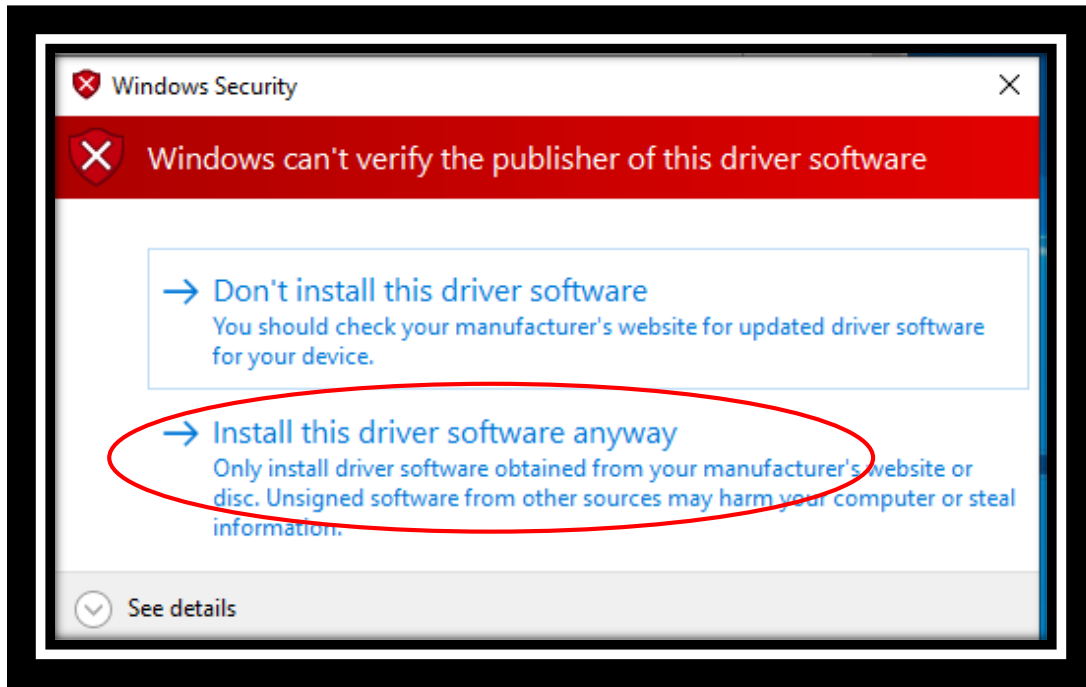
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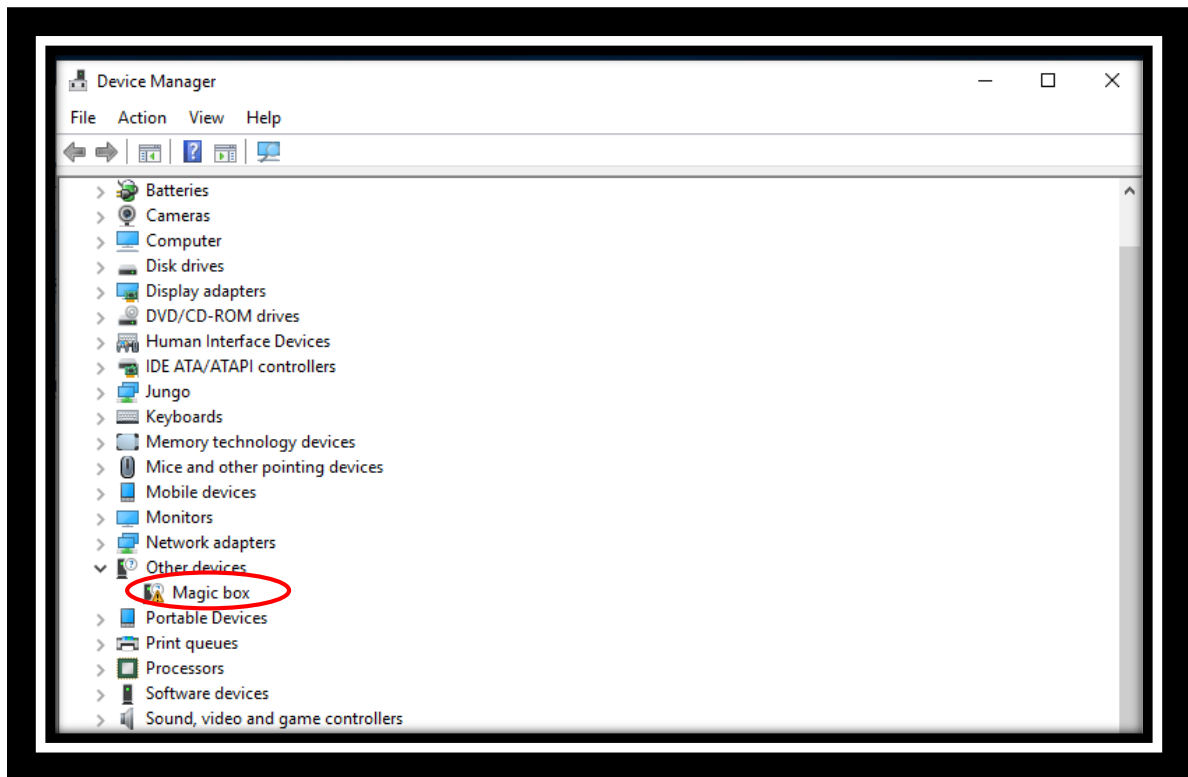
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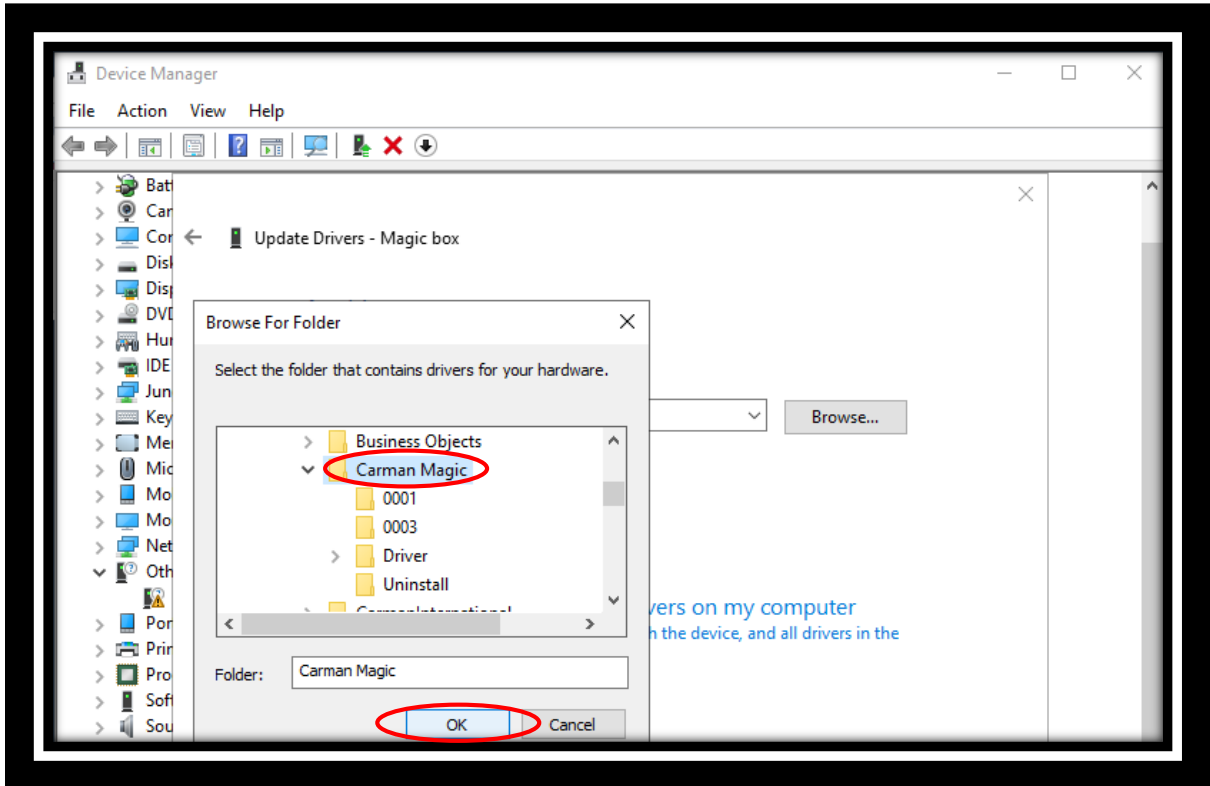
21. This driver has been updated successfully.

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22. Right click on USB Serial Port and choose update driver. You will see Magic Box on your device manager. Right Click on Magic Box and choose Update driver again. Follow the steps exactly like previous driver update. But choose Carman Magic folder as shown below. Then click on OK.

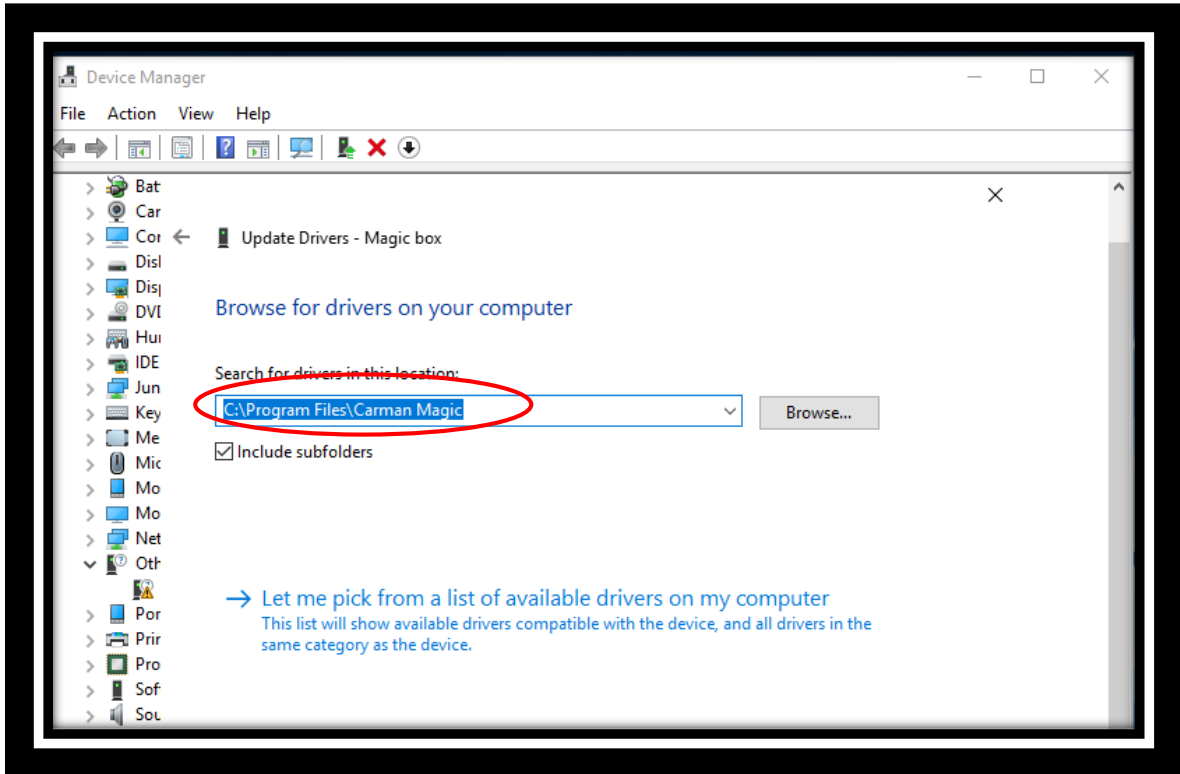


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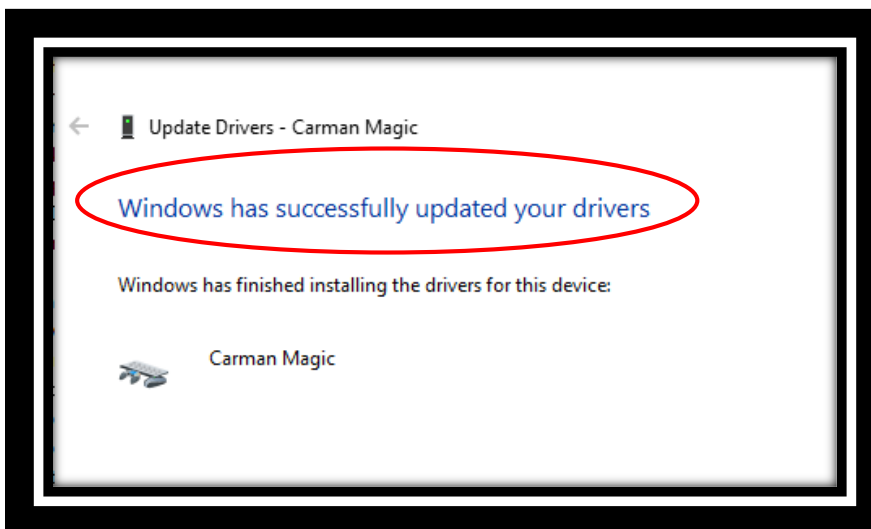


23. Pay attention to the location.

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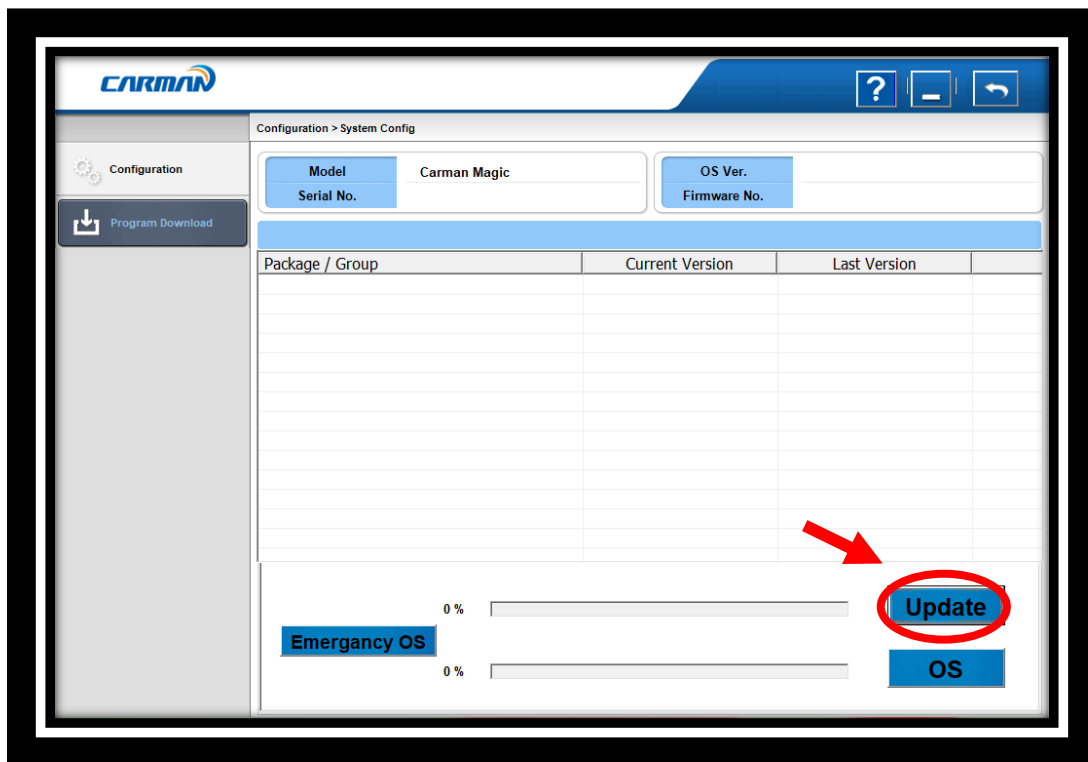
24. The second driver is installed successfully.



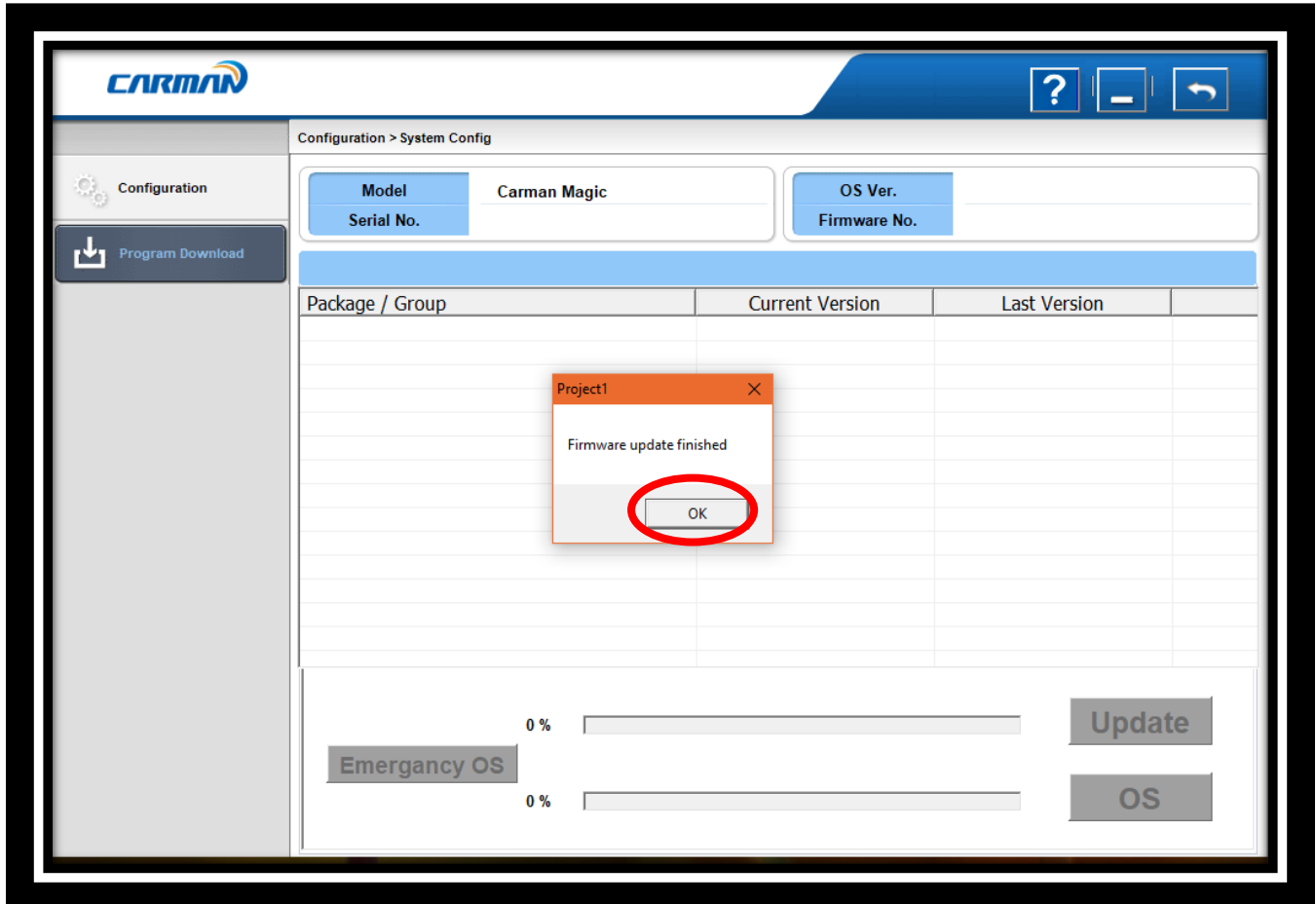
25. Disconnect Carman Magic from power and USB completely and connect again.

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26. Open Carman Magic shortcut on PC and choose update. Wait until the end. Then click on OK.

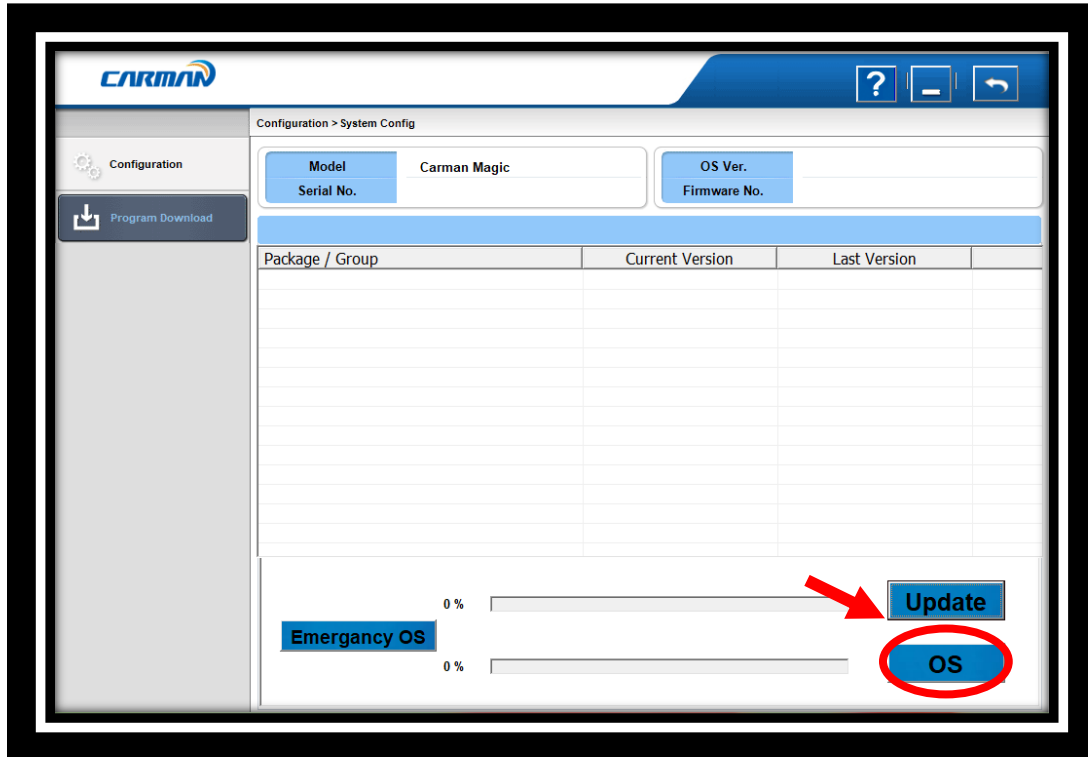


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27. Disconnect Carman Magic from power and USB completely and connect again. Then choose OS. Wait until the end and then click on OK.

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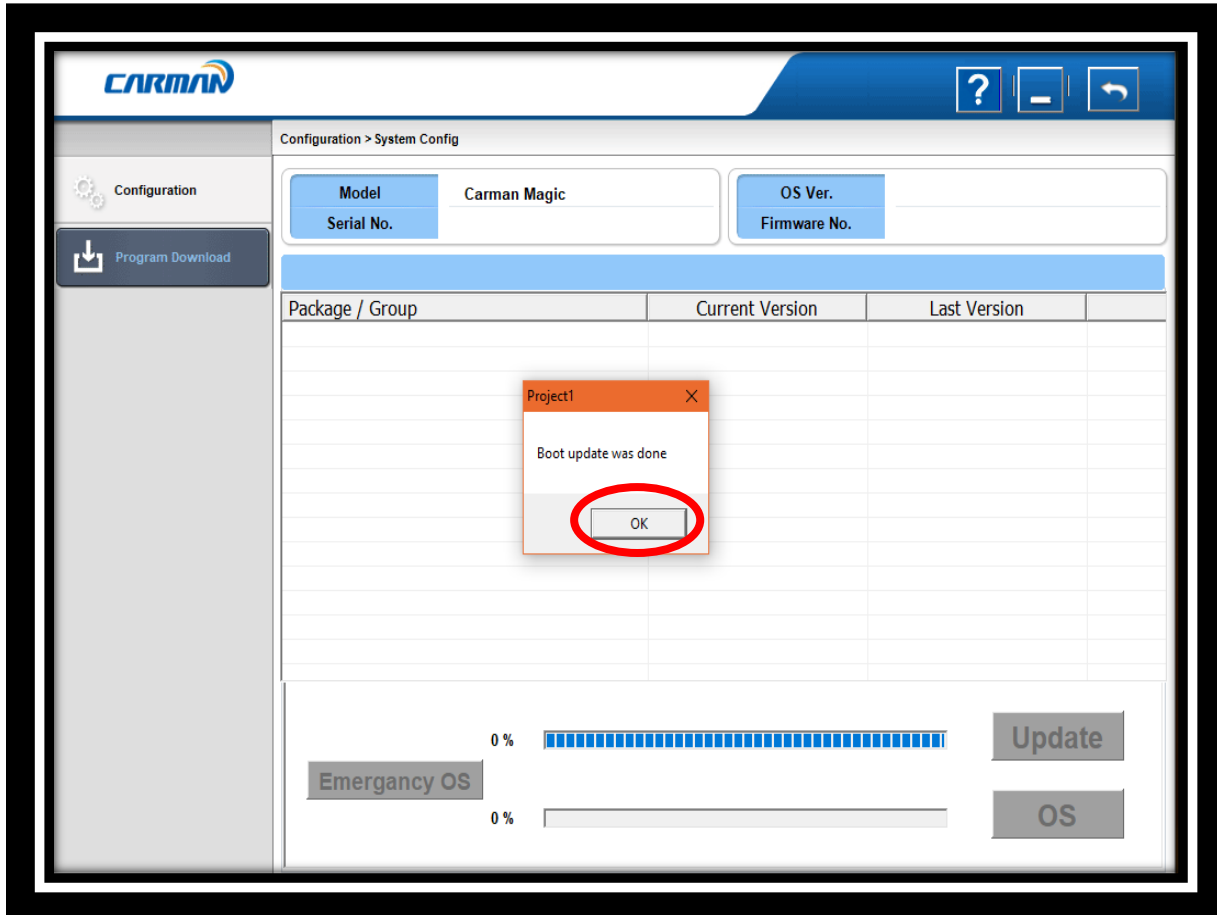


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The screenshot shows the 'Configuration > System Config' page in the Carman Magic interface. The page includes a sidebar with 'Configuration' and 'Program Download' options. The main content area has fields for 'Model' (Carman Magic), 'Serial No.', 'OS Ver.', and 'Firmware No.'. Below these is a table with columns for 'Package / Group', 'Current Version', and 'Last Version'. At the bottom, there are progress bars for 'Emergency OS' (0%) and another 'OS' (0%), with an 'Update' button highlighted by a red circle.

Package / Group	Current Version	Last Version

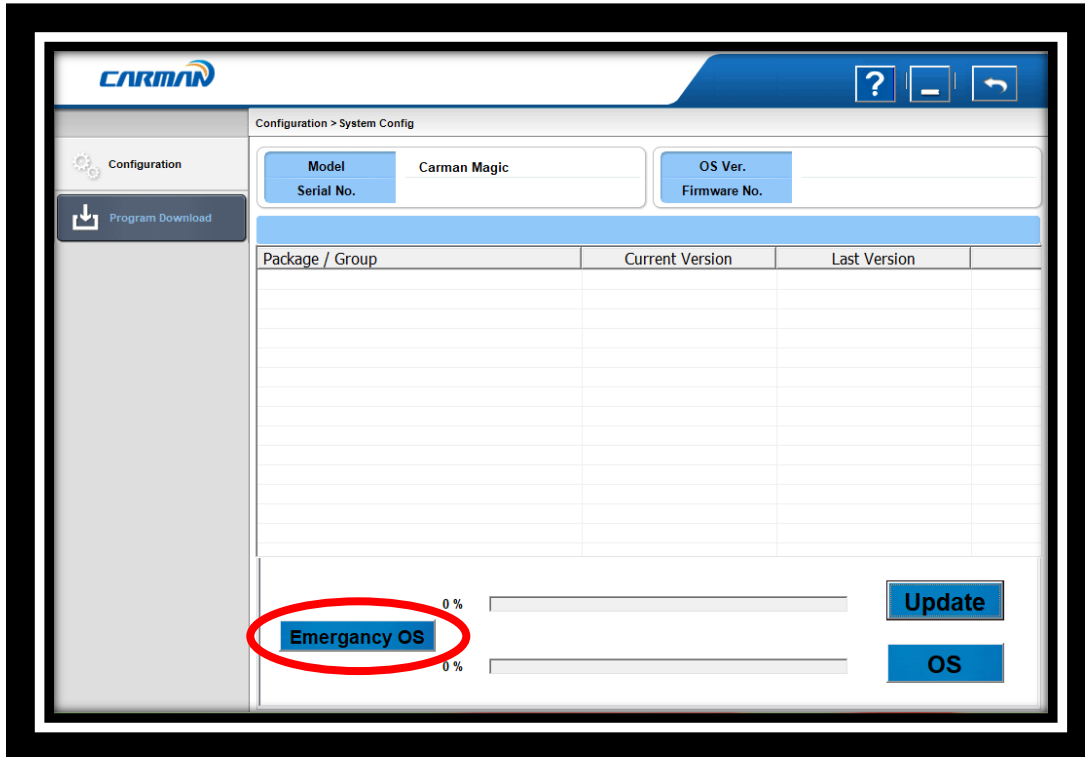
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28. Your Carman Magic is now up to date.

If the updating process failed for any reasons, Choose Emergency OS and wait until the end. Then start updating process from step 26.

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Certificate of Information and Communication Equipment

[Certification Label for Information and Communication Equipment]

Manufacturer: Carman IT Co., Ltd.

Equipment: Vehicle diagnosis device

Model: Carman Magic

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