Number: TW-ALL-DS-20120809
Date: August 9th, 2012

Subject: User's Manual of VDS Diagnostic System

Model code: ALL

Scope of Application

MG3/MG350/MG5/MG750 new model

Foreword

The content of this user's manual is based on the current version of VDS diagnostic system. Along with the update of VDS, the user's manual of the latest version may be released accordingly. As of the release of the updated version, this manual shall be invalid automatically. Please pay attention to the new version release of this manual.

This user manual mainly introduces the download, installation, activation, upgrade and specific diagnostic functions of SAIC new generation diagnostic tool VDS in practical application, with the aim to allow service engineers to understand and use the diagnostic tool in routine work in a correct and thorough manner so as to improve the work efficiency.

Chapter I of the manual introduces the download, installation, upgrade of the software installation programs related to VDS diagnostic system as well as the main function and related operation instructions of VDS in detail.

Chapter II of the manual introduces the precautions in the application of VDS diagnostic system in detail.

If any questions arise in the specific operation, please feed back to After-sales Department of SAIC TAC via ServiceNow system and phone calls.
ServiceNow website: http://dmsportal.saicmotor.com/dmsportal/

Version Information

Released File	Released Version	Release Date	Description
User's Manual of VDS Diagnostic System	V1.0	2012-08-09	First release. Covers MG350(AP11)、MG5(AP12)、MG750 new model (BP12)、MG3 (ZP11).

Contents

Chapter I Brief Introduction of VDS Diagnostic System

VDS (Vehicle Diagnostic System) is the new generation diagnostic tool developed by SAIC, used for the diagnosis and service of the electronic control system of vehicle.

VDS Diagnostic System consists of VDS diagnostic software and VDI (Vehicle Diagnostic Interface) vehicle communication interface. VDI consists of VCI Manager and VDI hardware. The VDI hardware applicable to VDS diagnostic software is shown in Figure 1.0.1.

Figure 1.0.1

I. VDS Diagnostic Software

VDS diagnostic software will be installed on a local computer via installation program, and then connected to the vehicle through VDI to achieve the diagnosis and service of the vehicle.

In order to ensure the stable operation of VDS diagnostic software, please only use the specialized diagnostic computer designated by SAIC, the model is DELL Latitude E6520. The After-sales Service Department of SAIC TAC shall provide the technical support for specialized diagnostic computer.

To prevent any compatibility problems between diagnostic software and other softwares, it is prohibited to install any application software not validated and approved by SAIC on the computer.

Validated and approved application softwares are listed as follows:
- Windows 7 Professional 32-bit, English version
- T5 (inc. T5 VCI drive) English version
- Oscilloscope software English version
- VDS English version
- TAC Manager
- VDI manager 1.4.87 English version
- GDS English version
- MS Office 2010 English version
- PDF (included in MS Office)
- Adobe Reader X 10.1.3 English version
- Symantec Endpoint Protection 12.1.671.4971 English version
- WinRAR 4.11 English version
- Vpro English version

1 Introduction of VDS Main Interface

The shortcut icon of VDS diagnostic software: 

, double click to run VDS diagnostic software. After the startup of VDS, the system automatically enters into the main interface, as shown in Figure 1.1.1. VDS can also enter into the main interface by disconnecting VDI or clicking the "Main Interface". In the main interface, other diagnosis and service functions can be used only after the completion of the vehicle identification. Table 1-1 provides the brief introduction of the main icon, button and tab functions of VDS, for detailed information, please refer to "Introduction of VDS

Figure 1.1.1

Item	Description	Function
1	Main Interface	During the operation of VDS, VDS will return to the main interface after clicking "Main Interface" (Figure 1.1.2).
2	System Management	Includes system information, activation, deactivation, setting function buttons.
3	VDI	Click to open VCI Manager.
4	Switch	Cannot be used temporarily.
5	Record	Click to start all operations of recording VDS.
6	Print	Includes printing the current screen, printing the current diagnostic information and print setup function.
7	Remote Support	Cannot be used temporarily.
8	VDI Connection Mode	While VDI is wirelessly connected,, the strength of signal can be displayed.
9	PC Power	Display PC charging status or the dump energy of PC.
10	Exit	Exit the VDS diagnostic program.
11	VIN	Display the frame number identified during vehicle identification.
12	Vehicle Description	Information of the vehicle being serviced.
13	Path	The current operation path of VDS.
14	Vehicle Identify	Includes the HalfAuto Identification and Manual identification.
15	Diagnostic	Includes Full Vehicle Scan, DTC, Real-time Display, IOC, ECU Information function.
16	Reprogram	Includes Configuration, Personalization, Replace ECU, Refresh ECU, Key Match functions.
17	Shortcut	Includes PDI, Maintenance, Study Adjust and Other functions.
18	Data Management	Includes Real-time Data Playback, Animation Playback, LOGFILE output function.

Table 1-1

2 Operational Condition of VDS Diagnostic Software

To ensure the normal operation of VDS diagnostic software, the following basic conditions shall be met:

- ✓ The computer hardware meets the configuration requirement.
- ✓ The computer software meets the configuration requirement.
- ✓ While VDS is in use, please close the firewall of the operating system and that of the antivirus software temporarily.
- ✓ VDS diagnostic software has been activated. After the installation and full-upgrade of VDS, the program can be used normally only after the activation. For detailed information, please refer to Section "Activation".
- ✓ The program version of VDS diagnostic software is the latest version. Please timely update the VDS diagnostic software according to the VDS diagnostic software upgrade notice released on servicenow system, so as to obtain the new model, system and function upgrade.
- ✓ VDI works normally and is not occupied by VDI manager. For information related to VDI, please refer to the newly released "Vehicle Communication Interface (VDI) User's Manual".

1) VDS Account and Activation

The VDS account, purchased from ACTIA (China) Automotive Electronics Co., Ltd, is used to activate VDS diagnostic software.

A. Account Management

Tips

1. Once the VDS user name and password is obtained, please change the password as soon as possible.
2. To ensure the security of the account, please change the password on a regular basis.

Users can change the passwords through the website https://licensing.actia.com.cn/saic/. If the password is lost, please contact TAC to reset the password.

Steps to Change Password:

Step 1: Log in the website: https://licensing.actia.com.cn/saic/, click "click here" after "if you are a customer".

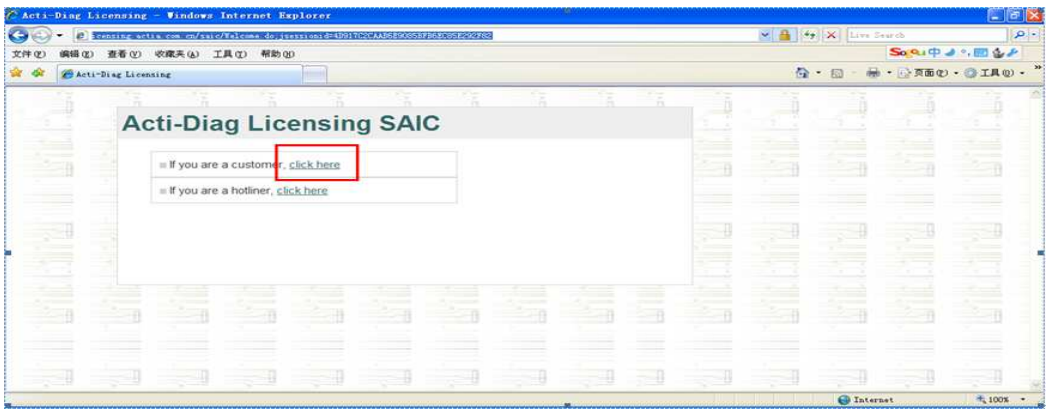


Figure 1.1.2

Step 2: Input the user name and password, click "Validate" to log in.

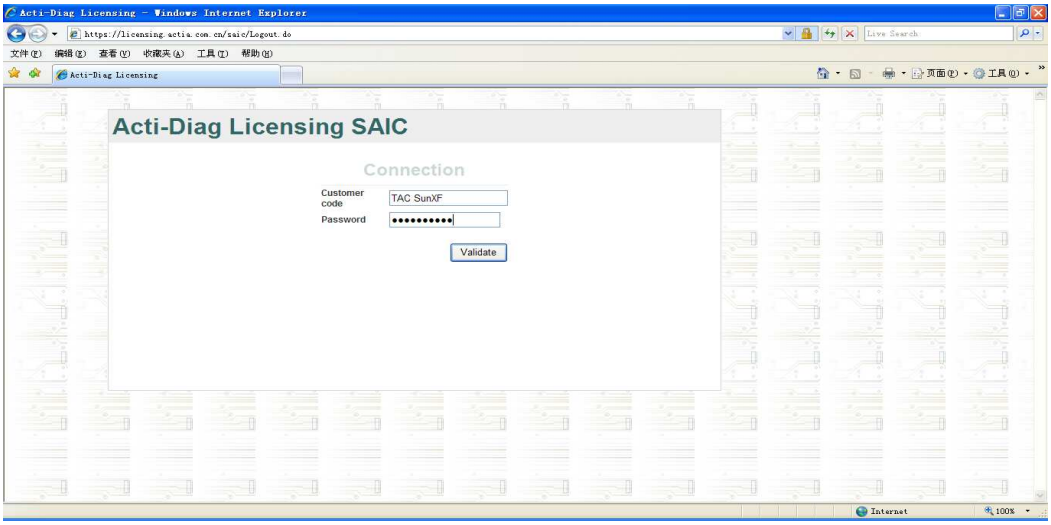


Figure 1.1.3

Step 3: Input the new password twice in "My account" tab, click "Validate".

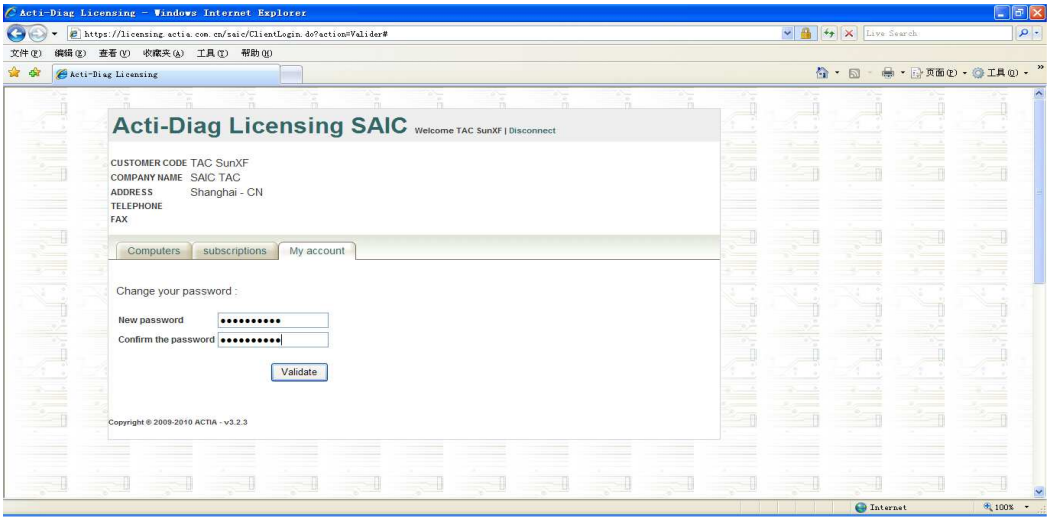


Figure 1.1.4

Step 4: The content in the red box shows that the password has been changed successfully.

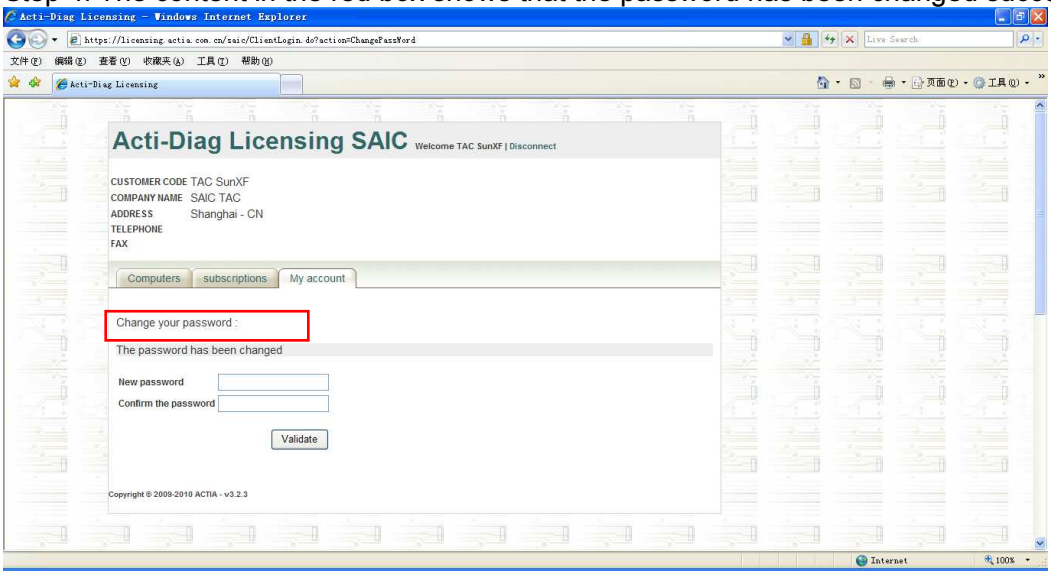


Figure 1.1.5

B. VDS Activation

VDS diagnostic software can be used normally only after activated with a licensed account on a regular basis, for detailed steps, please refer to "Activation" section. The main related information of account and activation is as below:

- ✓ During the activation of VDS, it is required to input the user name and password. A VDS account should be purchased, the purchase procedures shall be noticed separately.
- ✓ Each VDS account can only activate one VDS diagnostic software (one computer) at one time. After activating the VDS, the user name and the computer are bound. If the user needs to activate VDS on another computer with the same account, firstly it is required to deactivate the VDS activated on the previous computer, then activate VDS on the other computer. If the computer with VDS prompts "VDS license has expired", then the account shall not be used directly on another computer. In this case, it is required to activate VDS on the computer whose license has expired, and deactivate the activated computer, then the account can be used to activate VDS on another computer. For the deactivation steps, please refer to "Deactivation" section.
- ✓ The same computer cannot be activated with different accounts;
- ✓ After the installation and full-upgrade of VDS software, VDS can be used normally only after activation.
- ✓ The VDS activation period is 14 days, in case the license has expired, re-activation is required; When the VDS activation period is not over, if VDS is reactivated, , the activation period count will be started anew.
- ✓ After the startup of VDS every time, the system will prompt activation related information through pop-up dialog box. The common interface is shown as below:

a) You are prompted that VDS is not activated. It is required to activate VDS. For detailed steps, please refer to "Activation" section.

Figure 1.1.6

b) You are prompted that the license (of activation) has expired. It is required to activate VDS. For detailed steps, please refer to "Activation" section.

Figure 1.1.7

c) You are prompted that the activation status is normal, the activation period of the software has not expired. It also suggests the remaining activation period.

Figure 1.1.8

II.VDI Vehicle Diagnostic Interface

VDI vehicle diagnostic interface is the auxiliary tool of VDS diagnostic system, used for connecting the computer and the vehicle so as to transmit the data. VDI vehicle diagnostic interface consists of VDI hardware and VDI Manager. VDI hardware can be configured with VCI Manager. Please refer to Figure 1.1.9 and Table 1-2 for VDI hardware kit and its description. The shortcut icon of VDI manager is: , and the main interface of VCI Manager is as shown in Figure 1.1.10. For the operation and function introduction of VDI vehicle diagnostic interface, please refer to the newly released "Vehicle Communication Interface (VDI) User's Manual".

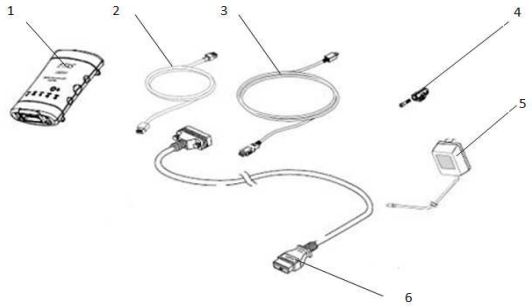


Figure 1.1.9

Item	Description	Function
1	VDI Hardware	VDI Mainframe
2	Ethernet cable	Network connecting wire
3	USB cable	Connecting wire between VDI and PC
4	USB cable clip	Fix USB cable
5	VDI power supply	Provide 12V power supply to VDI
6	OBD cable	Connecting wire between VDI and vehicle

Table 1-2

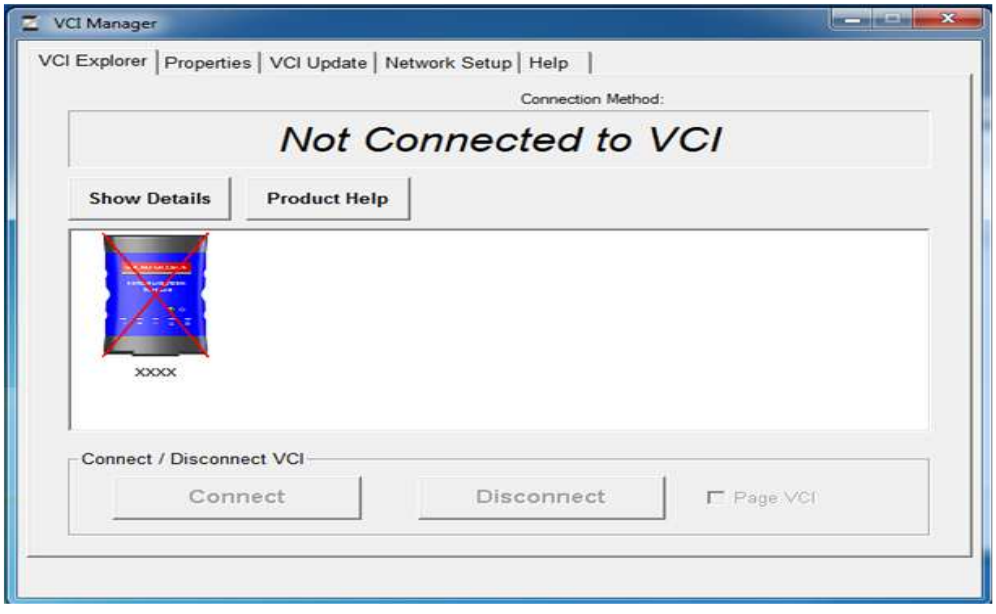


Figure 1.1.10

Chapter II Download and Installation of VDS Diagnostic System Software

I. Download of Software Installation Program

Similar to other commonly used software, VDS diagnostic software should be installed on the local computer with installation source for further use.

The technical support center of SAIC After-sales Service Department releases the software installation/ upgrade program via disk and/or Servicenow official website. For the first release and full-upgrade, it shall be released via disk due to its large data volume; and for incremental upgrade, Servicenow official website is a common way. The specific release path will be indicated in each release notice.

Login the following website https://servicenow.saicmotor.com with your personal account to download the VDS diagnostic software and VDI Manager software through the path: "iTAC→ Technical Information Browser→SDIS→VDS Software".

II. Software Installation

1 Installation of VCI Manager

For the installation and upgrade of VCI Manager program, please refer to the newly released “Vehicle Communication Interface (VDI) User's Manual”.

2 Installation of VDS Diagnostic Software Program

Tips

After successful installation of VDS, please activate it so that it can diagnose and service the vehicle. For relevant procedures of activation, please refer to "Activation" section.

If the VDS diagnostic software has an old version installed, during installation, you will be prompted if you want to uninstall the old version, please select to uninstall the old version and proceed with the installation.

After VDS is installed, the interface shortcut icon of VDS diagnostic software appears on the computer desktop. Double click the icon to open and run VDS diagnostic software.

Installation Steps of VDS Diagnostic Software:

Step 1: Confirm if the installation program version is the latest one, click "Next" to continue.

Figure 2.2.1

Step 2: Please carefully read the license agreement, click “I agree” to continue.

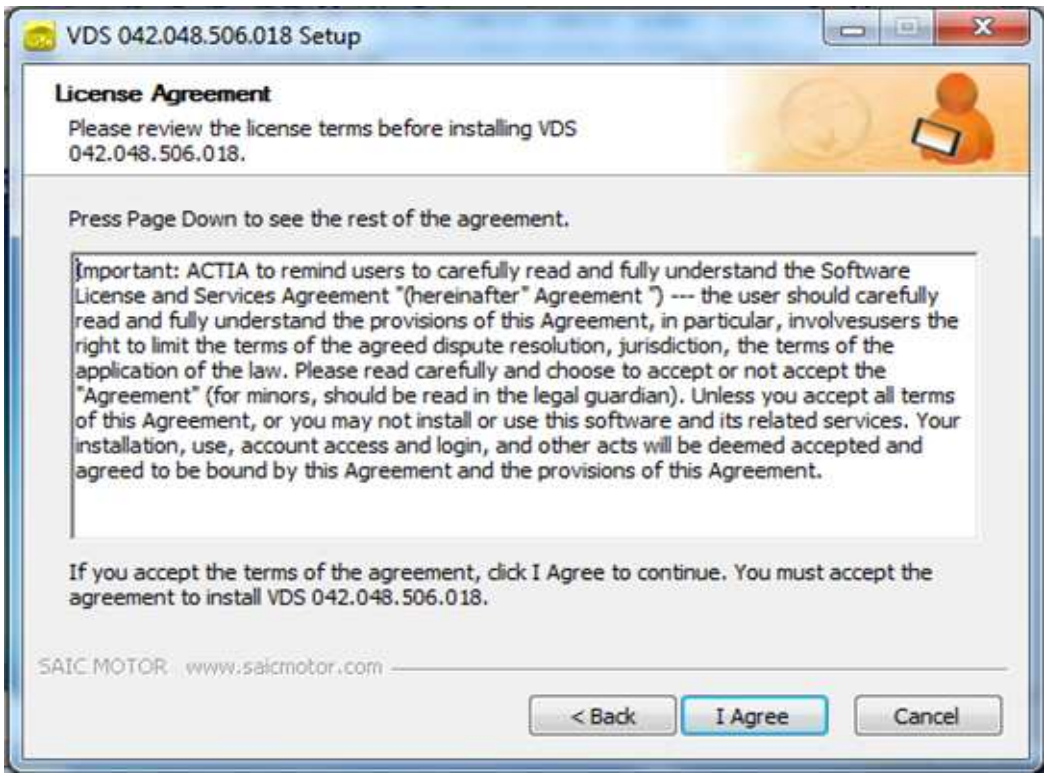


Figure 2.2.2

Step 3: Select the installation language of VDS, click “Next” to continue.

Figure 2.2.3

Step 4: Confirm or choose the installation path. It is recommended to install it in the root directory of C disk, click "Next" to continue.

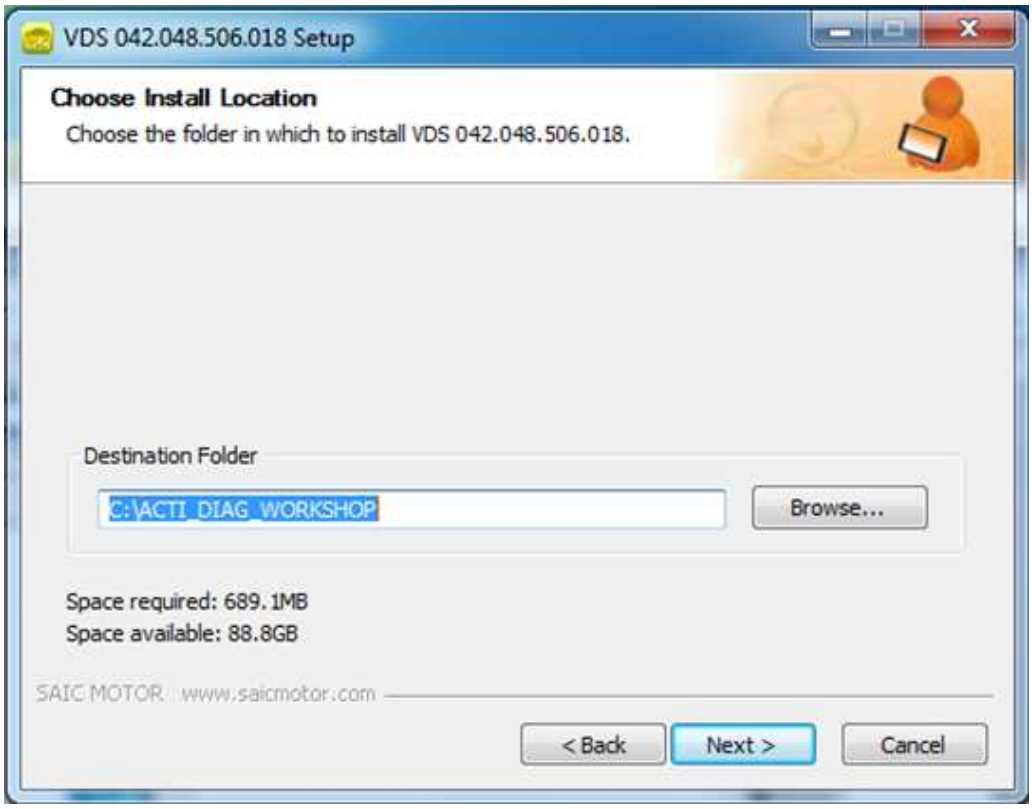


Figure 2.2.4

Step 5: Confirm selected language and installation path, click “Back” to revise, or click "Next" to continue.

Figure 2.2.5

Step 6: VDS is being installed, please wait.

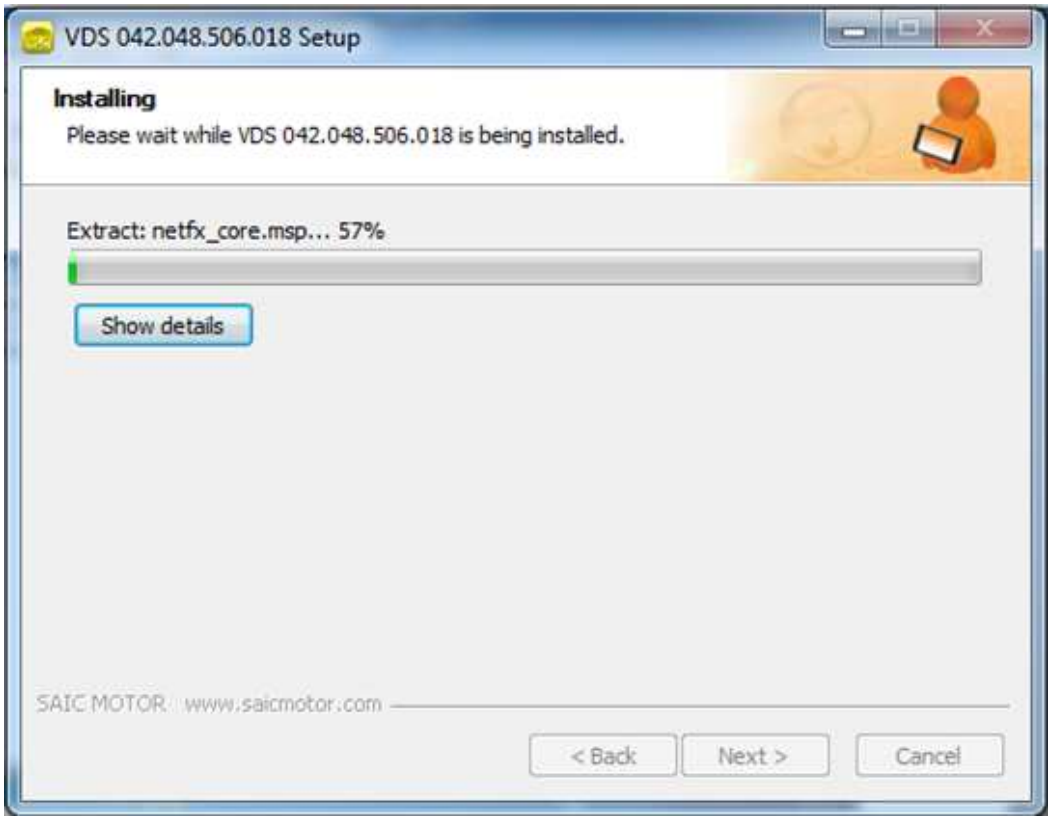


Figure 2.2.6

Step 7: The software has been installed, click "Finish", the shortcut icon of VDS diagnostic software shall appear on the computer desktop.

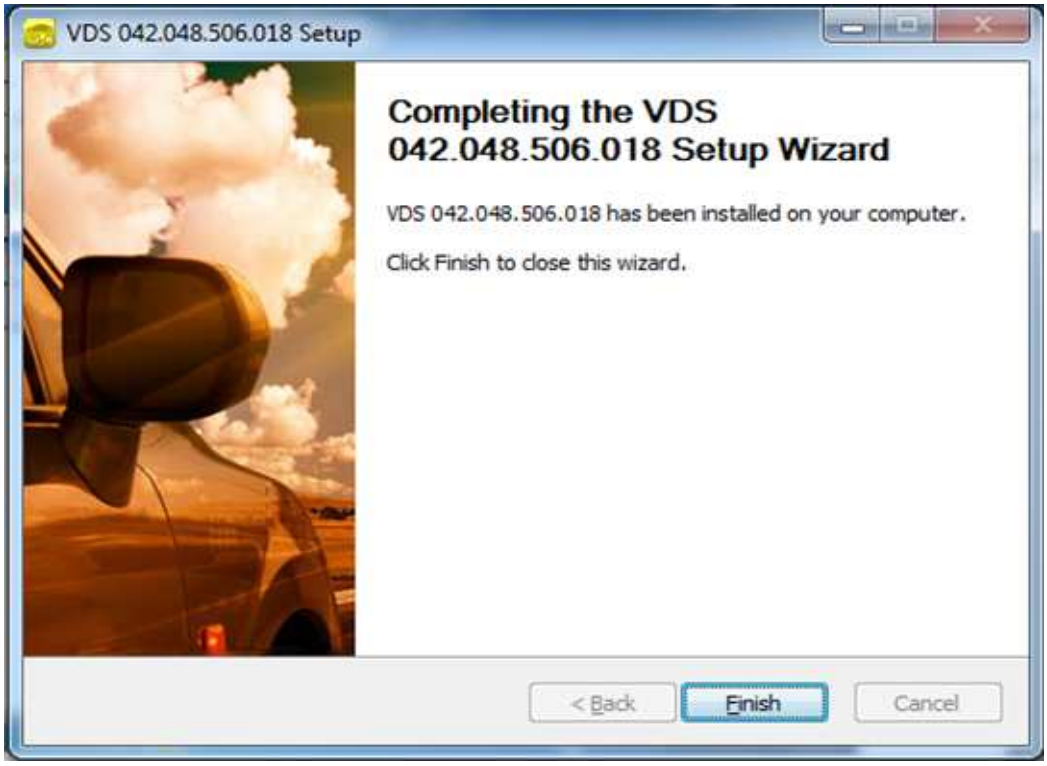


Figure 2.2.7

Chapter III Introduction of VDS Diagnostic Software Function

After VDS has been installed, double click the shortcut icon on the desktop to open VDS. The main function interface of VDS is as shown in Figure 3.0.1.

VDS diagnostic software is able to achieve the functions such as system management, vehicle identification, diagnosis, reprograming, Shortcut and data management etc. This Section mainly focuses on the detailed description of interface and operation of each function item.

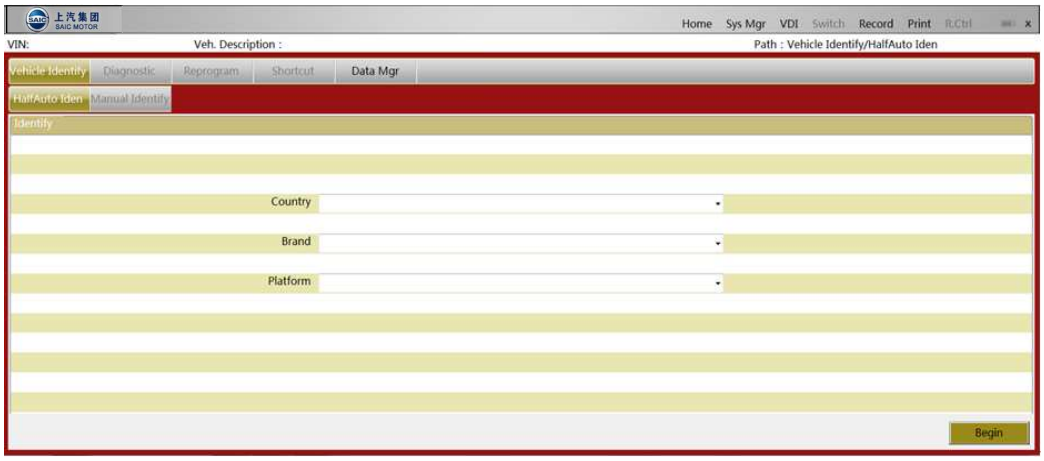
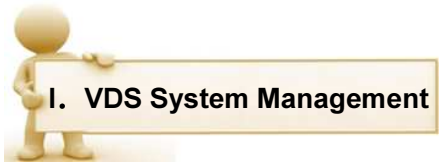


Figure 3.0.1



Click the button "Sys Mgr" on the main interface to conduct VDS system information check, VDS activation and deactivation, setting, upgrading and password change, please refer to Figure 3.1.1.

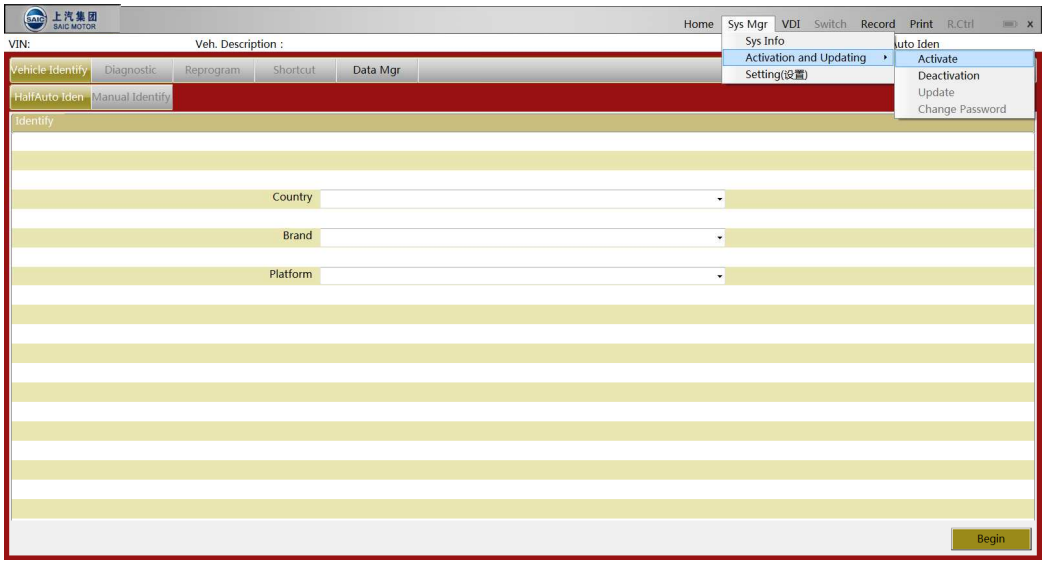


Figure 3.1.1

1 System Information

While loading VDS, the version of VDS is displayed at the lower right corner of the interface, see Figure 3.1.2. According to order, VDS version, vehicle data version, ELC version, Dataset version is displayed in sequence. The service personnel can also check the VDS version and PC hardware information through "System manager -> System information" on the interface, please refer to Figure 3.1.3.

Figure 3.1.2

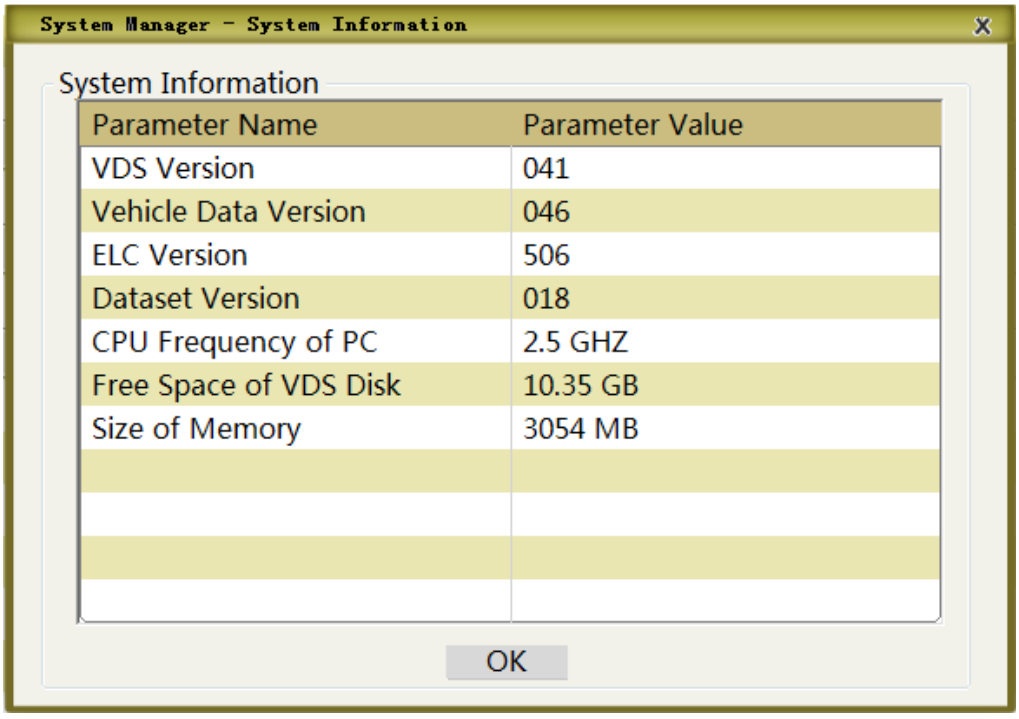


Figure 3.1.3

2 Activation

Tips

1. After VDS is installed, it can be used only after activation;
2. After VDS is upgraded, it must be activated;
3. The activation period of VDS is 14 days, please re-activate it after the license has expired;
4. When the activation period of VDS is not over, If it is reactivated, the activation period count shall be started anew;
5. The same computer cannot be activated with different accounts;
6. After VDS has been activated, the user name and the computer are bound. If the user needs to use the VDS on another computer, firstly it is required to deactivate the VDS activated on the previous computer, then reactivate the VDS on the computer to be used. For the deactivation steps, please refer to "Deactivation" section.

VDS diagnostic software can be used normally only after activated with a licensed account on a regular basis. While starting the VDS diagnostic software, the relevant information interface of activation will pop up. Please operate according to the tips. The service personnel can open the activation window through "Sys Mgr-> Activation and Upgrading -> Activate". VDS can be activated automatically or manually.

Automatic activation: User inputs the licensed user name and password, VDS connects with network automatically to activate.

Manual activation: login the website manually to activate.

1) Automatic Activation

Tips

Automatic activation of VDS requires the Intenet access, and the network connection should be normal.

Steps of Auto Activation:

Step 1: Open the activation interface by clicking "Sys Mgr-> Activation and Upgrading -> Activate" on the main interface, see Figure 3.1.4.

Figure 3.1.4

Step 2: Input "ASC Name", " Account" , select "Automatic" activation and then click "OK".

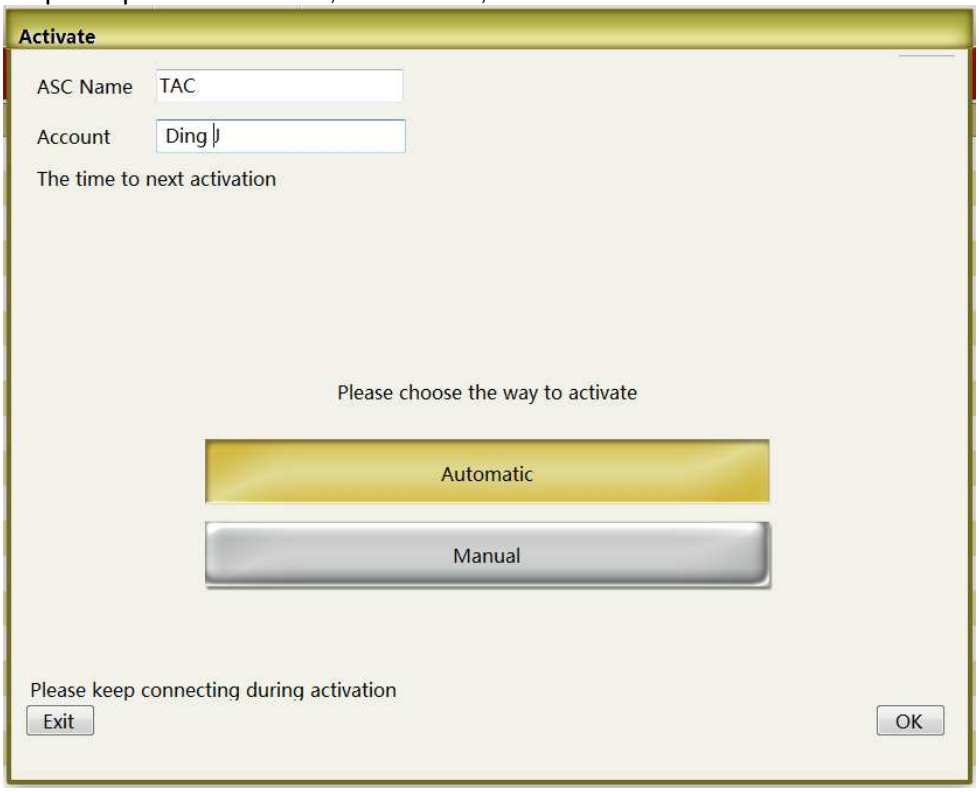


Figure 3.1.5

Step 3: The input information, such as "ASC Name", " Account" and "The time to next activation", is displayed on the interface. Please input the "User Name" and "Password" provided by TAC then click "OK".

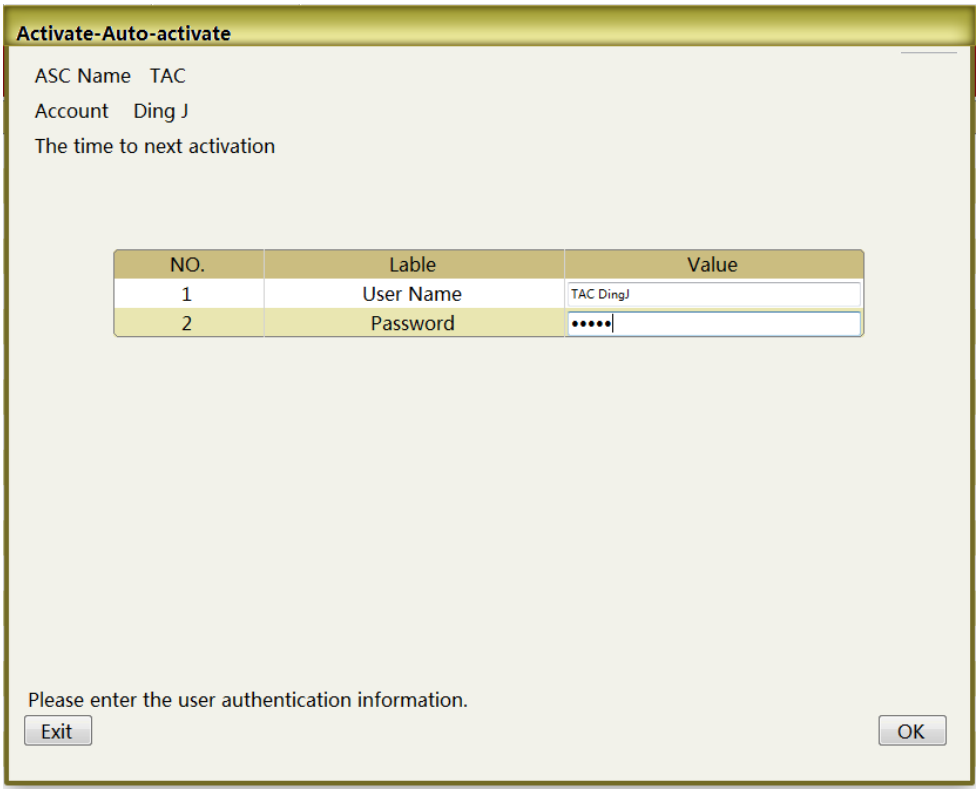


Figure 3.1.6

Step 4: Activate VDS through network, please wait.

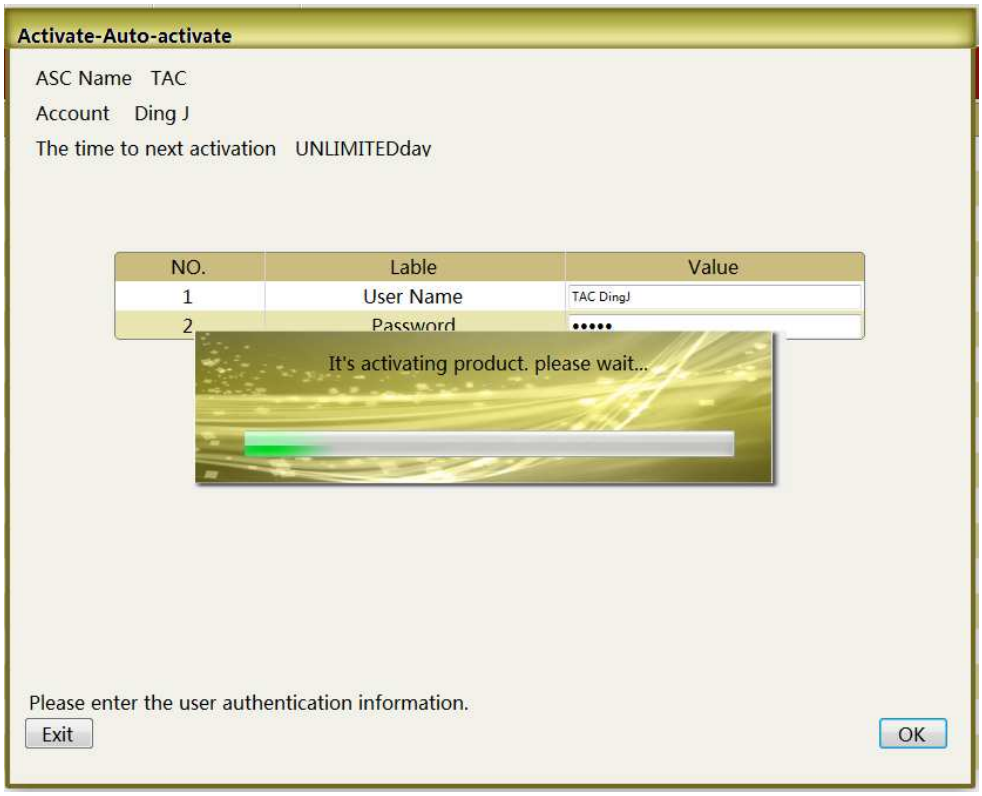


Figure 3.1.7

Step 5: Prompt that VDS activation is successful.

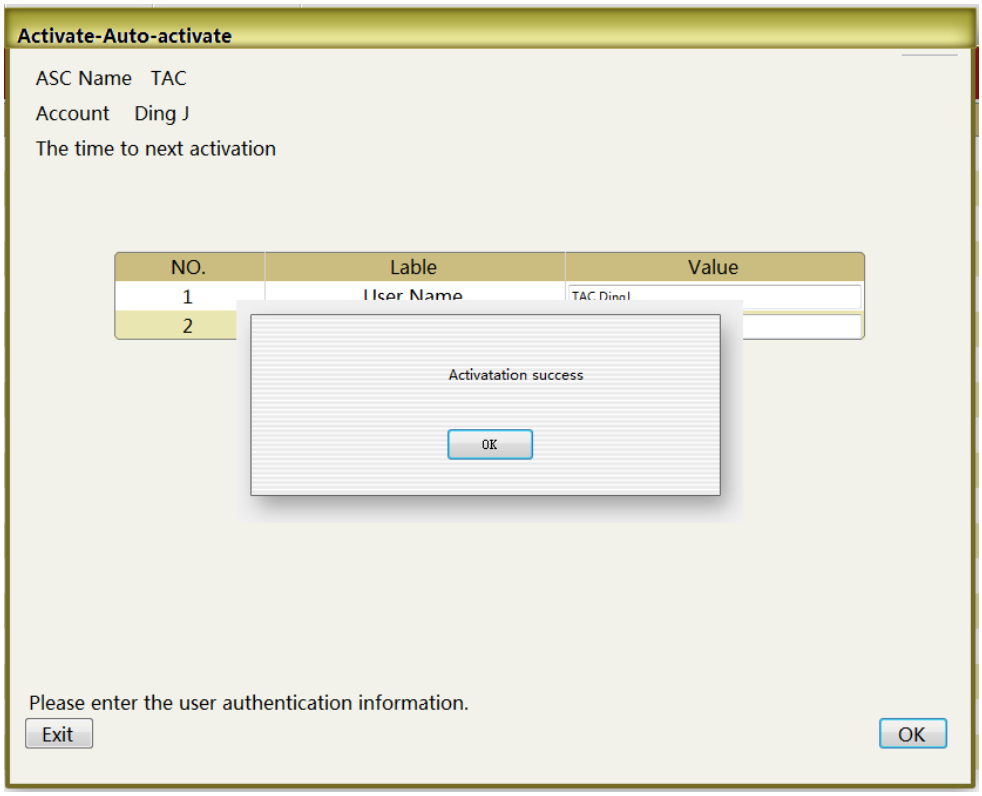


Figure 3.1.8

2) Manual Activation

Steps of Manual Activation:

Step 1: Open the activation interface by clicking "Sys Mgr -> Activation and Upgrading -> Activate" on the main interface, see Figure 3.1.9。

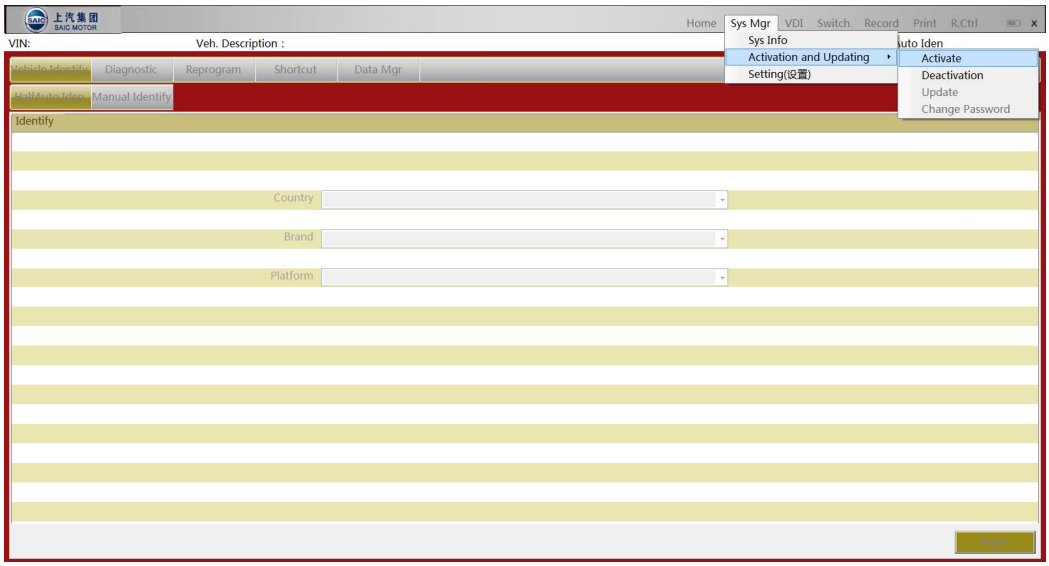


Figure 3.1.9

Step 2: Input "ASC Name", " Account" , select "Manual" activation and then click "OK".

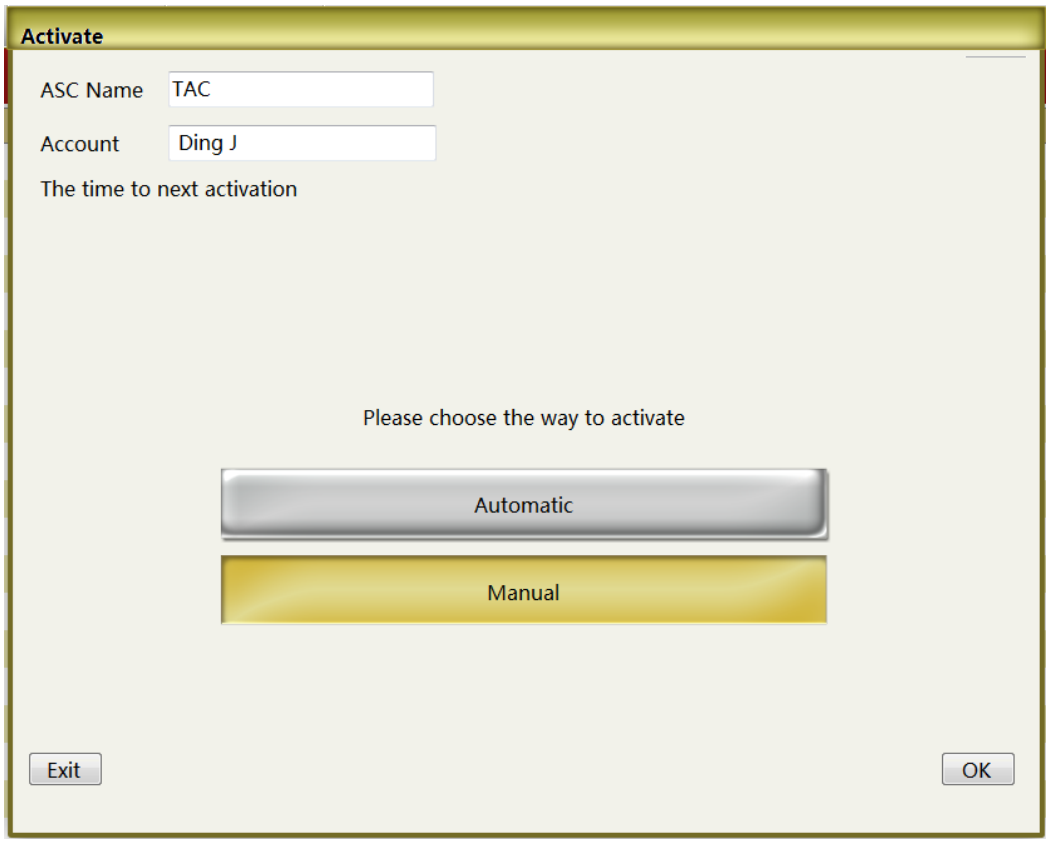


Figure 3.1.10

Step 3: The input information such as "ASC Name", "Account " and "The time to next activation" is displayed on the interface. Please input the "User Name" and "Password" provided by TAC then click "OK".

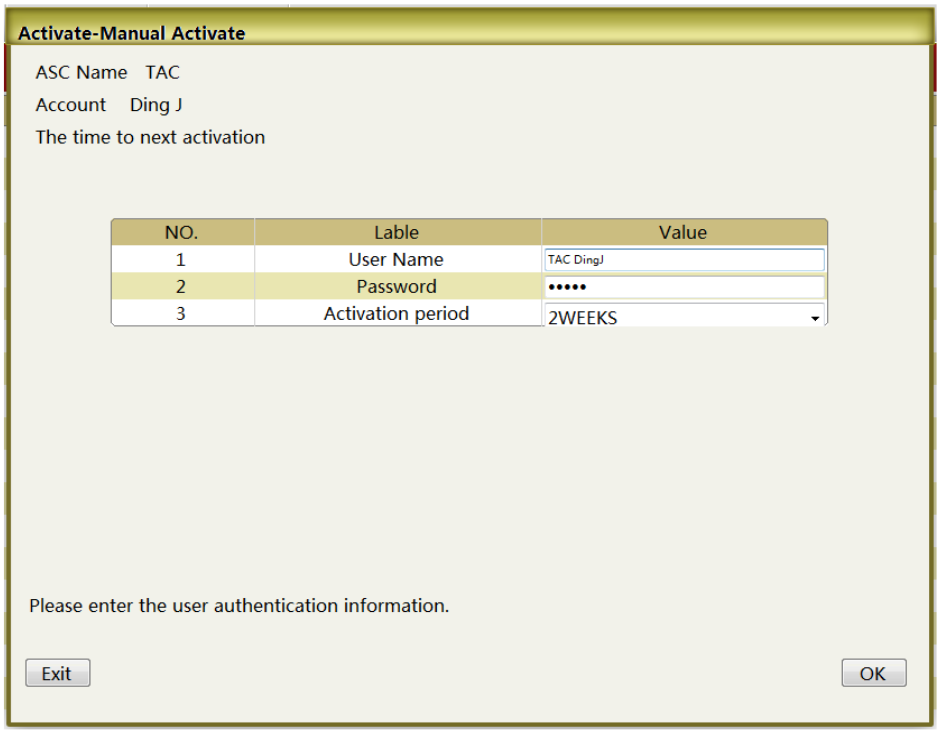


Figure 3.1.11

Step 4: Obtain the activation code by accessing the website" https://licensing.actia.com.cn/saic/" or contacting TAC. While contacting TAC, please provide the information of the interface as well as user name and password.

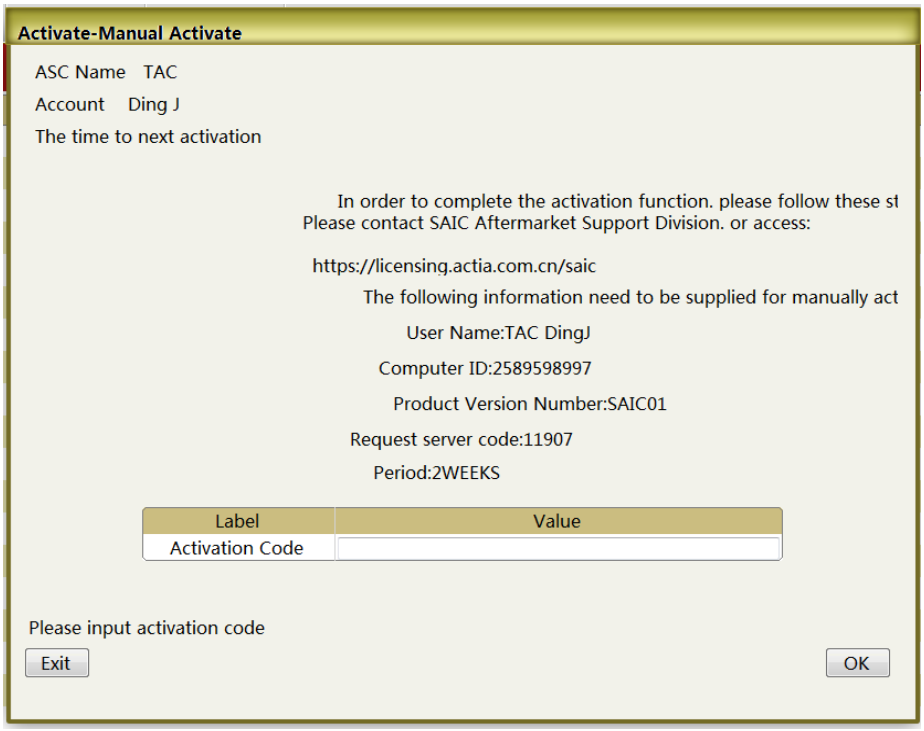


Figure 3.1.12

Step 5: Login the website: https://licensing.actia.com.cn/saic/, click the text in the red box.

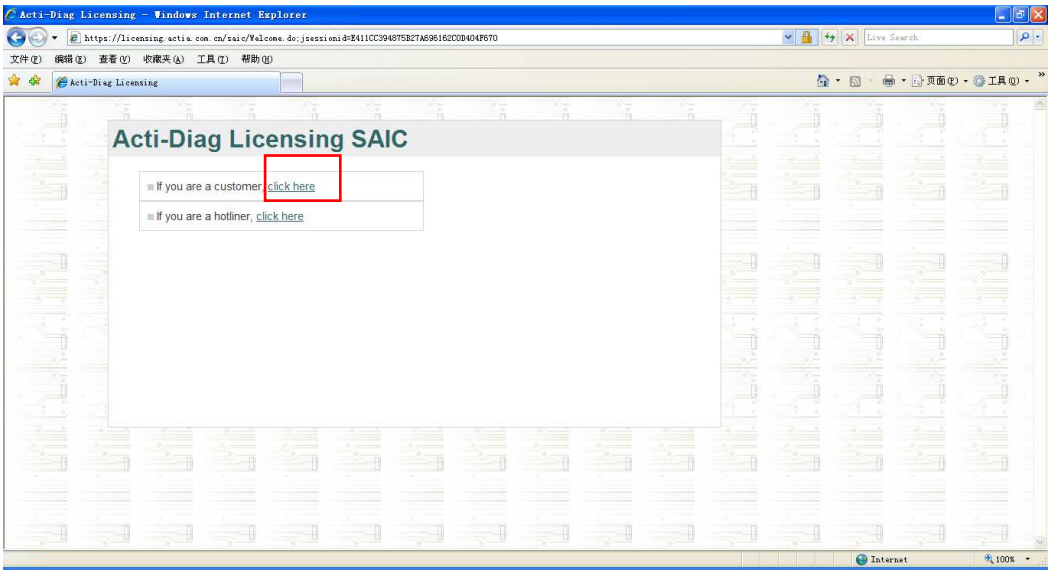


Figure 3.1.13

Step 6: Input the "Customer code" and "Password", then click "Validate".

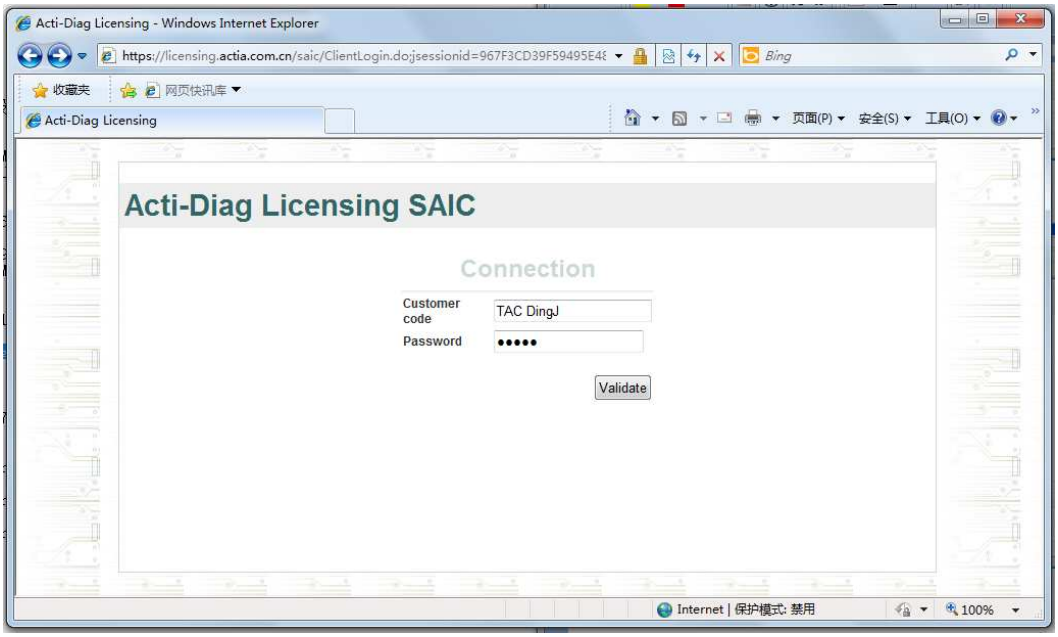


Figure 3.1.14

Step 7: If the account has not been used to activate the VDS, the interface shown in Figure 3.1.15 shall appear, please click the button in the red box.

If the account has already been used to activate the VDS, the interface shown in Figure 1.3.17 shall appear, select the "Activate" button of the Computer number (the computer number shown in Figure 3.1.16) which needs to be activated.

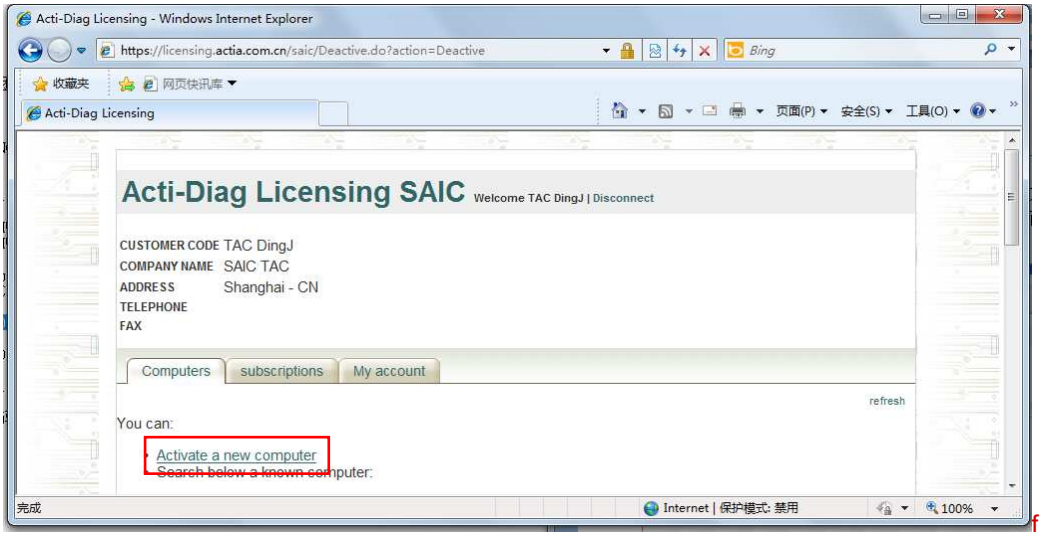


Figure 3.1.15

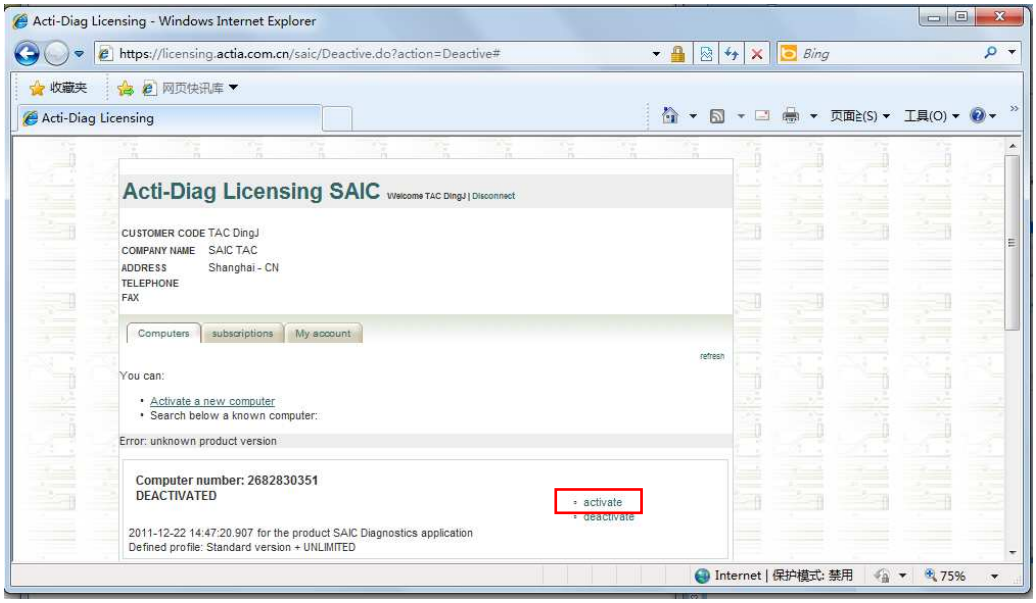


Figure 3.1.16

Step 8: Once the interface shown in Figure 3.1.17 or Figure 3.1.18 appears, input the information obtained from VDS, click "Validate" button.

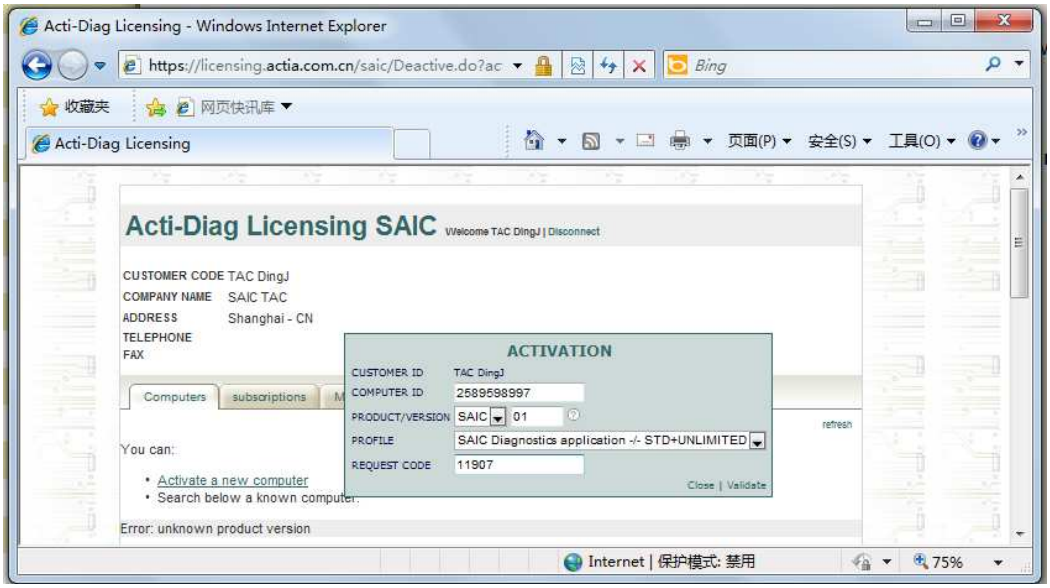


Figure 3.1.17

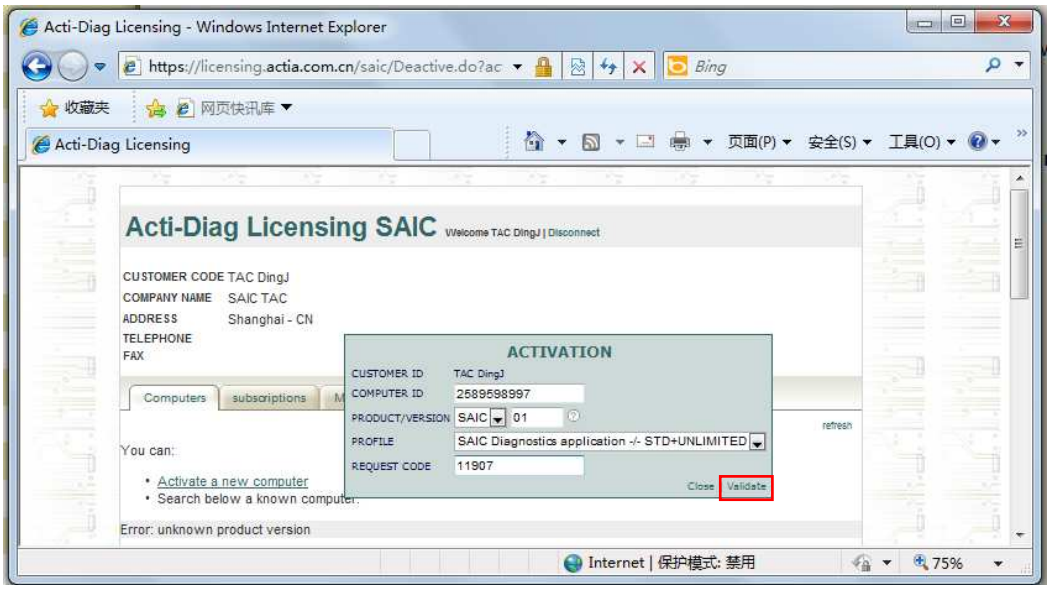


Figure 3.1.18

Step 9: The activation code is generated (in the red box). The "-" in the code is not a valid character, it should be ignored during the entry.

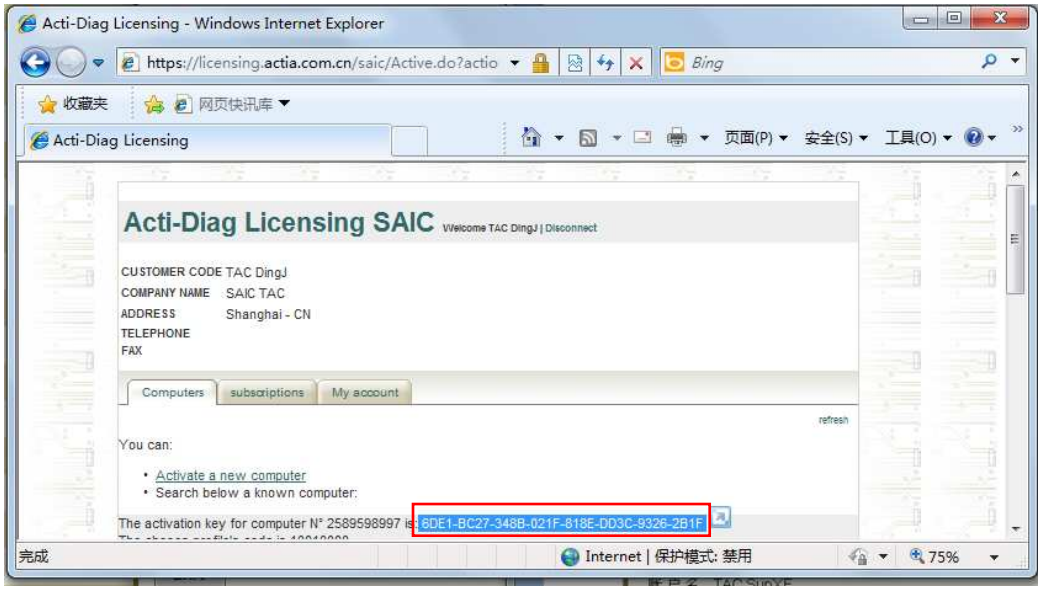


Figure 3.1.19

Step 10: Input the activation code obtained from the website or responded by TAC into the input box, click "OK".

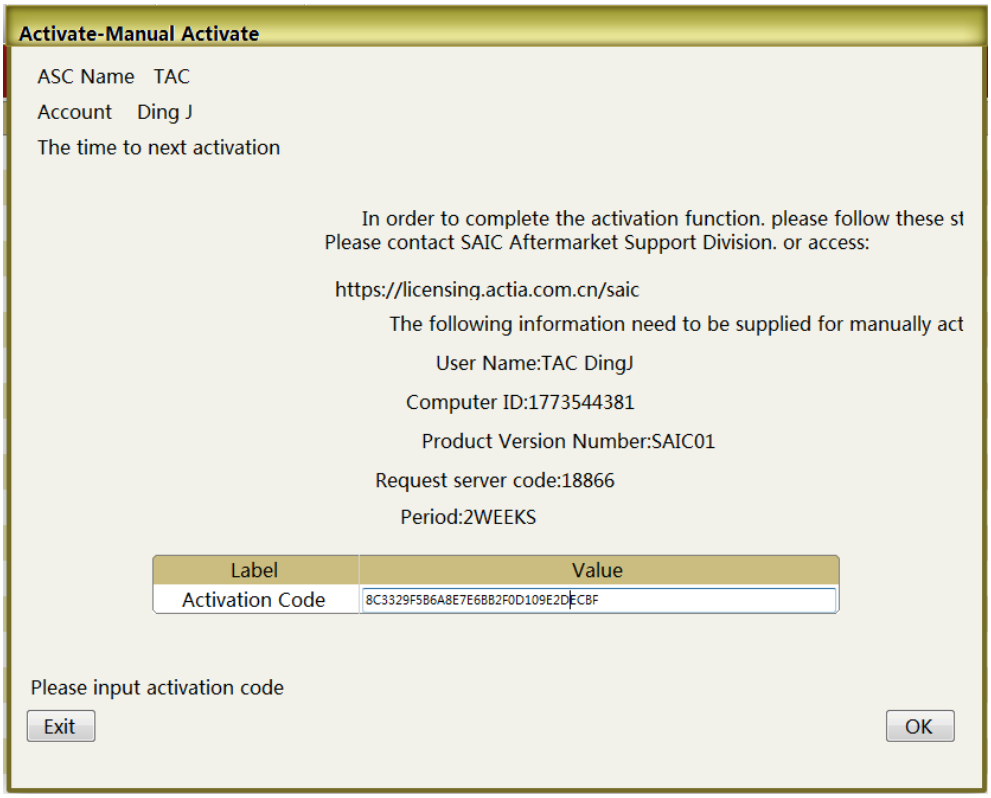


Figure 3.1.20

Step 11: The prompt of activation success appears.

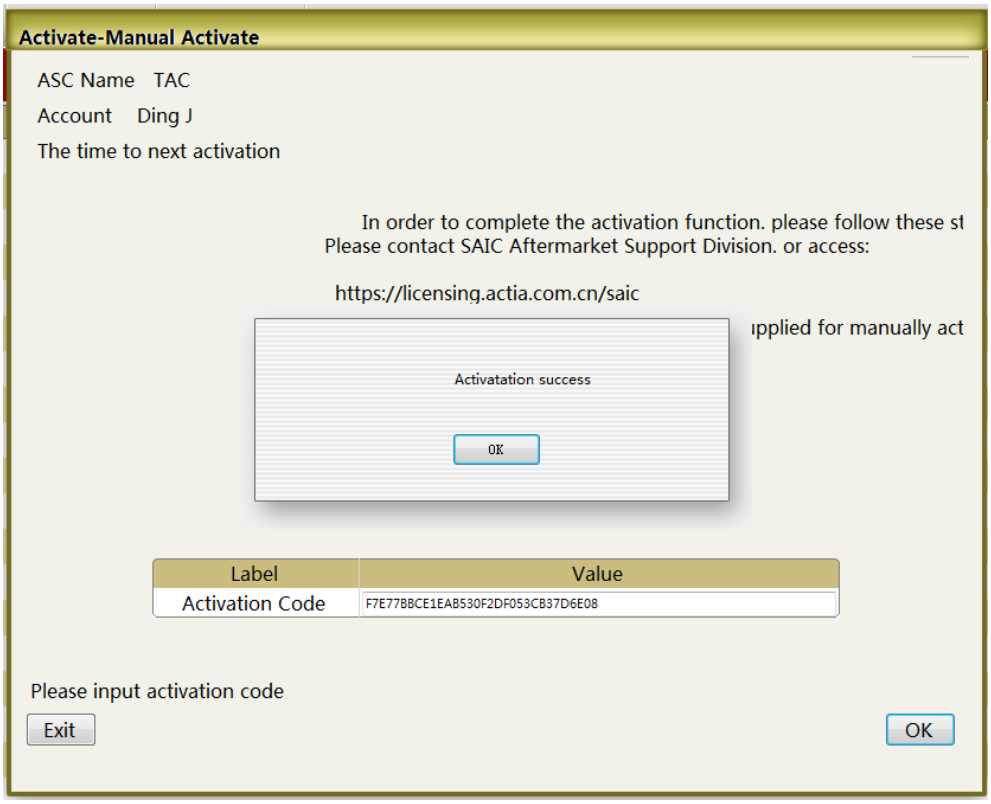


Figure 3.1.21

3 Deactivation

Tips

1. After the VDS has been activated, the user name and the computer are bound. If the user wants to use the VDS on another computer, firstly it is required to deactivate the VDS activated on the previous computer, then reactivate the VDS on the computer to be used. For the deactivation steps, please refer to "Deactivation" section.
2. After the license has expired, the user can use the account to activate another computer directly.
3. If the computer cannot be deactivated automatically, please contact TAC.

The deactivation interface can be opened through "Sys Mgr-> Activation and Upgrading -> Deactivation" on the main interface. VDS can only be deactivated automatically.

Automatic deactivation: VDS connects with the deactivation website automatically to complete the deactivation.

Steps of Automatic Deactivation:

Tips

Automatic deactivation of VDS requires the Intelnet access, and the network connection should be normal.

Step 1: The deactivation interface can be opened through "Sys Mgr-> Activation and Upgrading -> Deactivation" on the main interface, please refer to Figure 3.1.22.

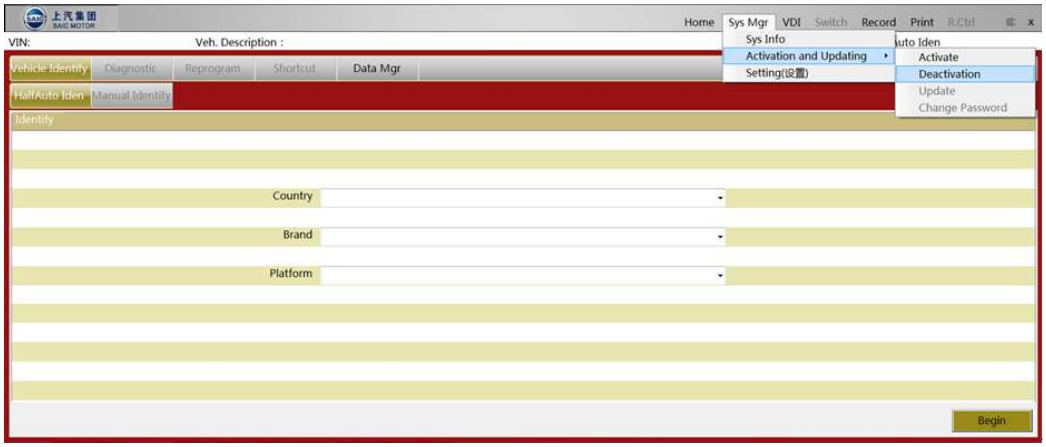


Figure 3.1.22

Step 2: The deactivation interface shows the information such as "ASC", "Account", "Activation" etc. Select "Automatic" as the way to deactivate, and click" OK".

Figure 3.1.23

Step 3: You are prompted that VDS Deactivation success, click "OK" to finish.

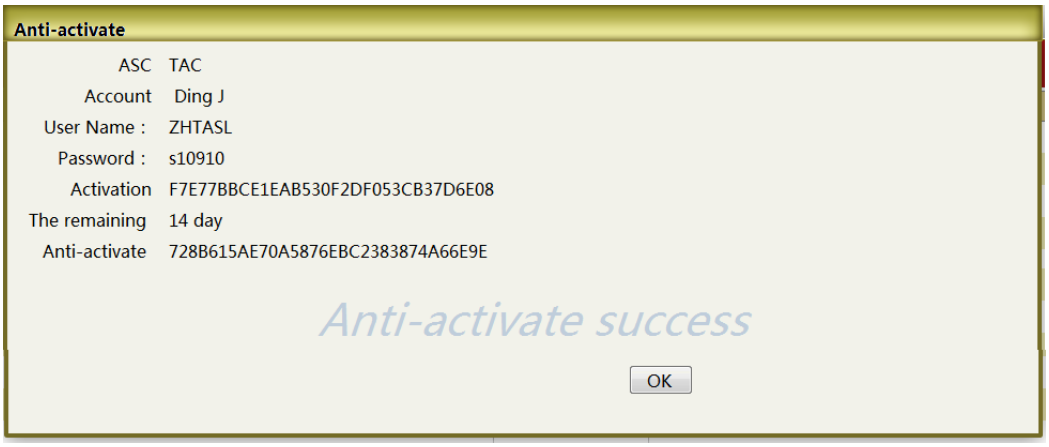


Figure 3.1.24

4 On-line Upgrade

(This function is not supported temporarily)

Password Modification

(This function is not supported temporarily)

6 Language Setting

VDS diagnostic software currently supports 2 languages: Chinese and English. During the first time to run VDS, the system will display in the language selected during the installation. After starting VDS, the language can be set through "Setting" function.

Language Setting Steps:

Step 1: Open the language setting interface through "Sys Mgr -> Setting" on the main interface.

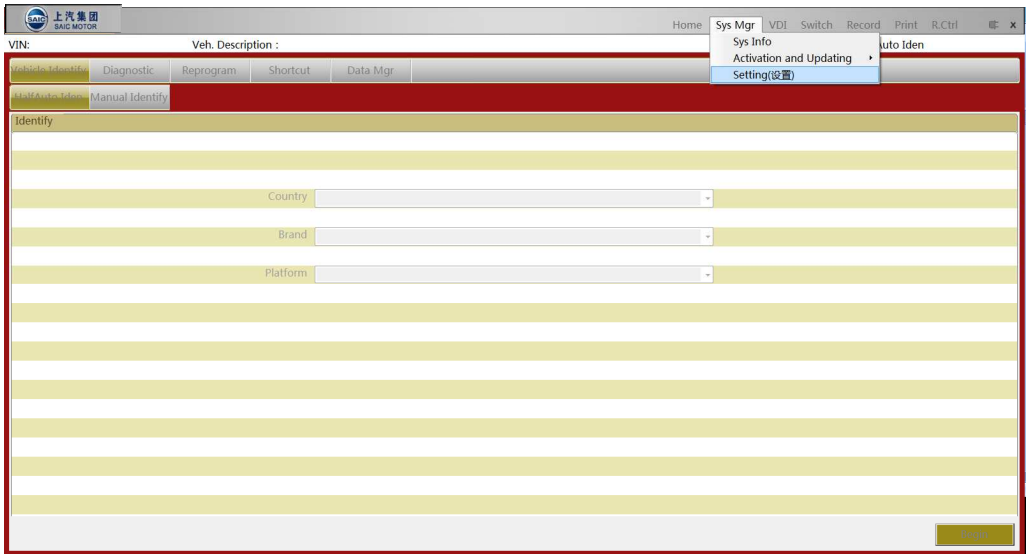


Figure 3.1.25

Step 2: Select the desired language in the "Setting" interface and click "OK".

Figure 3.1.26

Step3: Suggest language setting success, as shown in Figure 3.1.27, click "OK", then VDS will restart automatically. After restarting, VDS will display in the selected language; while the selected language is the current display language, it shall suggest that the current language is the selected language, as shown in Figure 3.1.28, then click "OK" to finish.

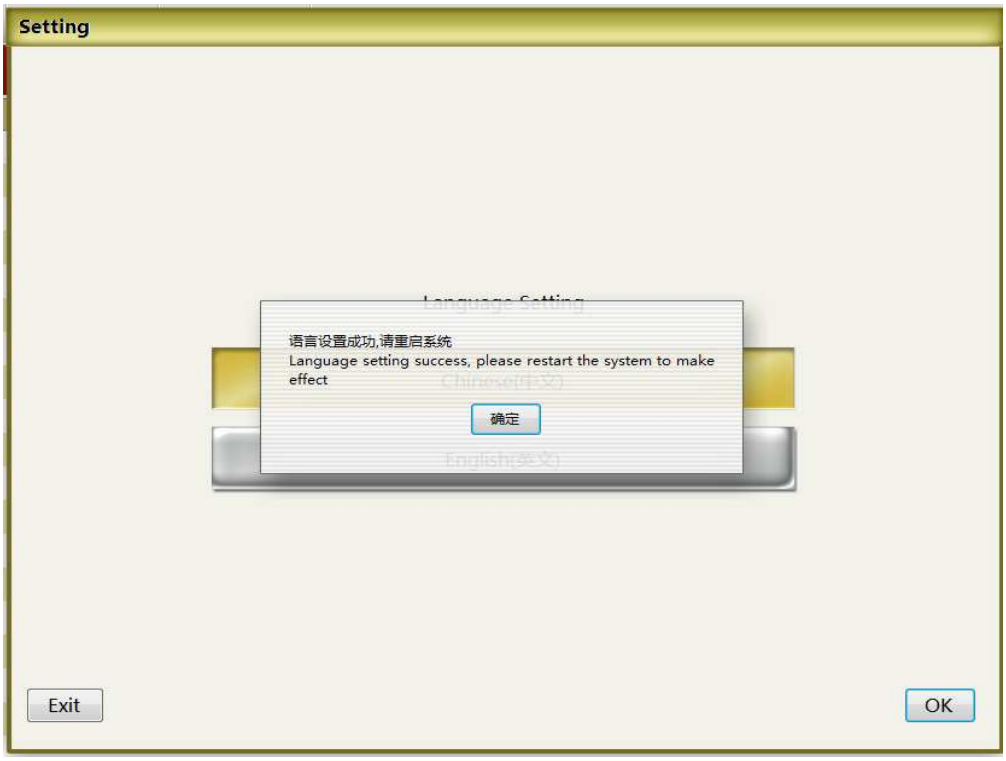


Figure 3.1.27

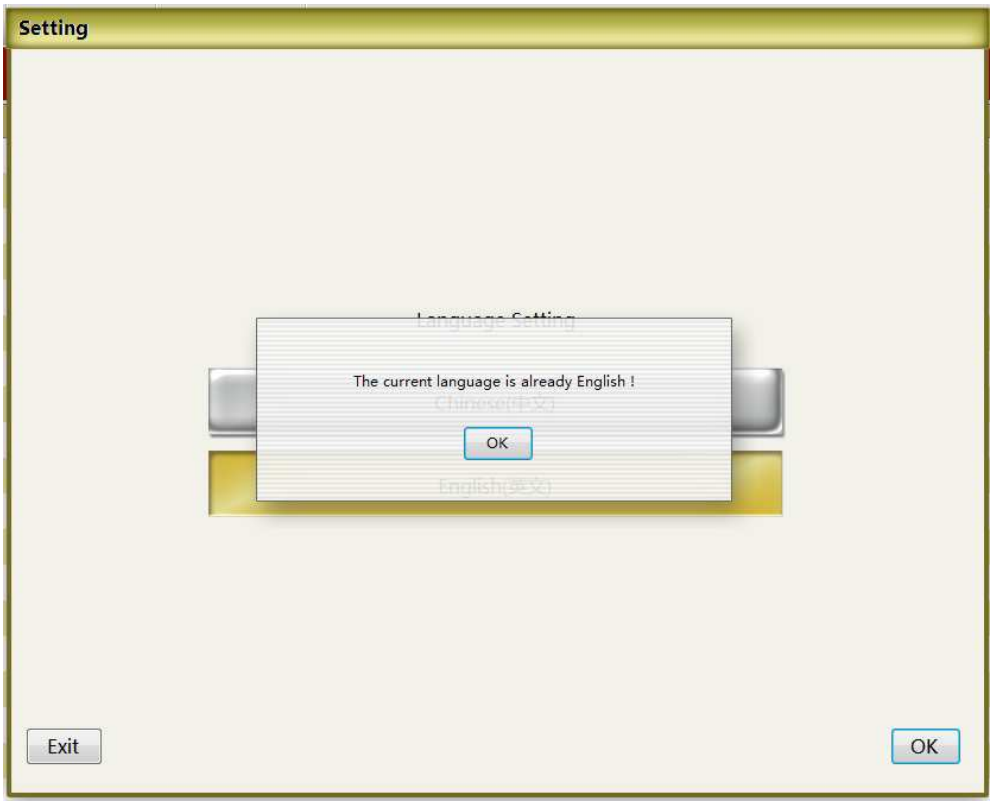


Figure 3.1.28

II. Vehicle Identification

Tips

1. All functions of VDS software can be used normally only after VDS has been installed and activated ;
2. All other vehicle diagnosis and service functions can be used only after the vehicle is identified successfully ;
3. Usually, the normal vehicle can be identified successfully through "HalfAuto Iden".

VDS shall enter the main interface as shown in Figure 3.2.1 by running VDS, clicking "Home" button or disconnect VDI. After entering the main interface, conduct vehicle identification from "HalfAuto Iden". The completion of vehicle identification is the prerequisite of the operation of other vehicle diagnosis and service functions.

"Vehicle identify" can be finished by "HalfAuto Iden" and "Manual Identify", " HalfAuto Iden" is the identification method by default, "Manual identify" can only be used after the "HalfAuto Iden" is failed.

HalfAuto Identification: After selecting " County", "Brand" and" Platform" information manually, VDS shall read VIN and FK from the key module of vehicle (key module definition of different model may varies, normally are BCM, IPK and EMS) and compare the read-out value among key modules. If the values are fully matched (except all new modules) , VDS shall judge the model and configuration as per the read-out VIN and FK, and thereby call the diagnosis data of the corresponding model and open the vehicle diagnostic function to finish diagnosis; if the values are not fully matched, VDS shall prompt the error cause by a pop-up dialog box, and the HalfAuto Iden fails. The discrepancy between manually selected information and the real vehicle or the abnormal status of key module of vehicle may lead to the failure of automatic identificaiton, the error cause shall be revised before the delivery of the vehicle.

Manual Identification: Input the "VIN", " Country", "Brand" , "Model", " Engine", "Transmission", VDS shall call out the diagnosis data of the corresponding model as per the manually selected model, and open the diagnostic function.

Note: During the identification, please select the correct model as per the actual situation, otherwise it may lead to error or even destroy the controller!

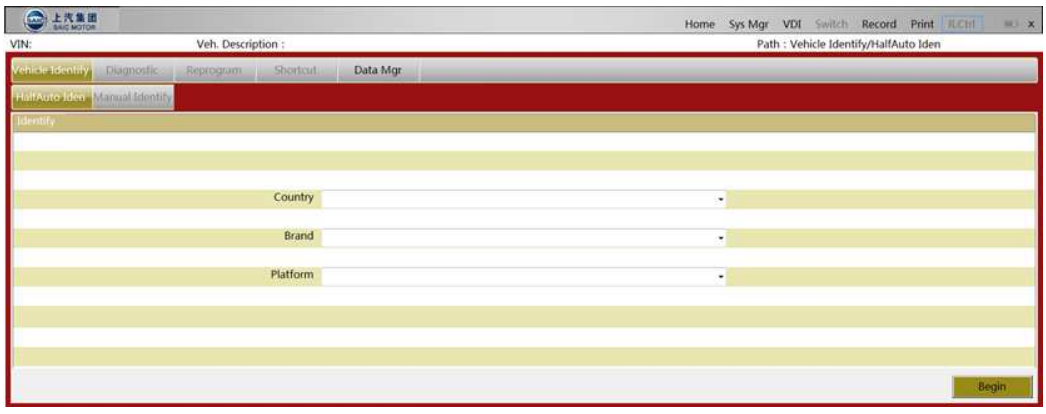


Figure 3.2.1

1 HalfAuto Identification

Tips

1. "HalfAuto Identify" can only succeed once the VIN information is fully matched with FK information (except the new module) in the key module.
2. While selecting the vehicle information, please ensure the information is correct so as to finish the vehicle identification.

The Vehicle type selected as follows:

Vehicle type	Country	Brand	Platform
MG350	China	Rowe	AP1
MG750 new model	China	Rowe	BP1
MG3	China	MG	ZP1
MG5	China	MG	AP1

"HalfAuto Identify" is the vehicle identification way by default. After activation, the default interface of VDS is the interface of "Vehicle identify -> HalfAuto Iden", as shown in Figure 3.2.2.

During the " HalfAuto Iden", VDS shall read the VIN and configuration information of vehicle from the key module of the vehicle (key module definition of different model may varies, normally are BCM, IPK and EMS).

Steps of " HalfAuto Iden" :

Step 1: Connect the vehicle and the computer with VDS installed by using the VDI hardware.

Step 2: Switch on the power supply of the vehicle to running gear (Position 2), double click the shortcut icon on the desktop to open VDS.

Step 3: Select the "Country", "Brand" and "Platform" information corresponding to the vehicle in "HalfAuto Iden" interface, then click "Begin".

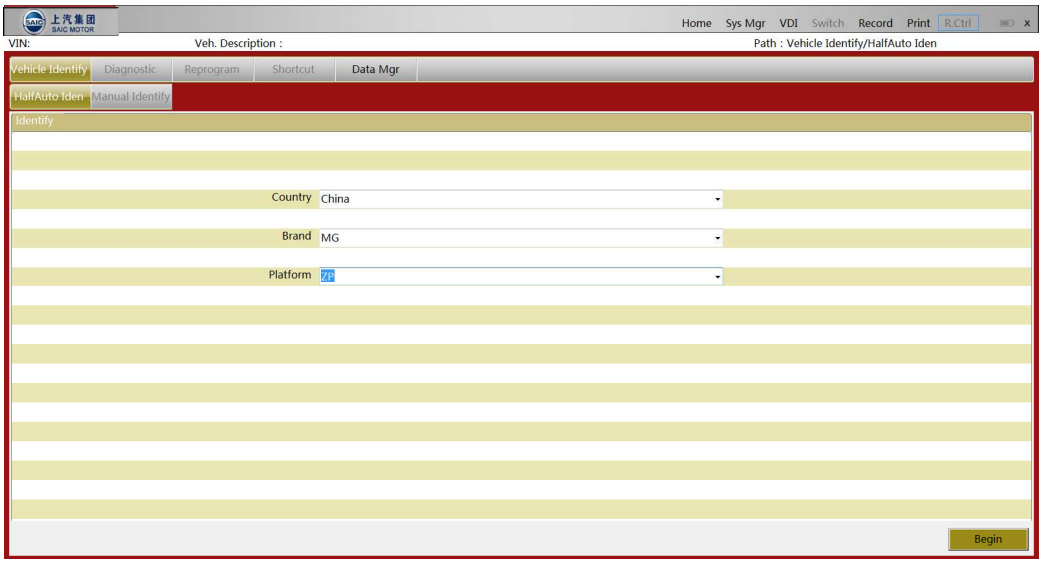


Figure 3.2.2

Step 4: Read VIN and configuration information of the vehicle from the key module;.

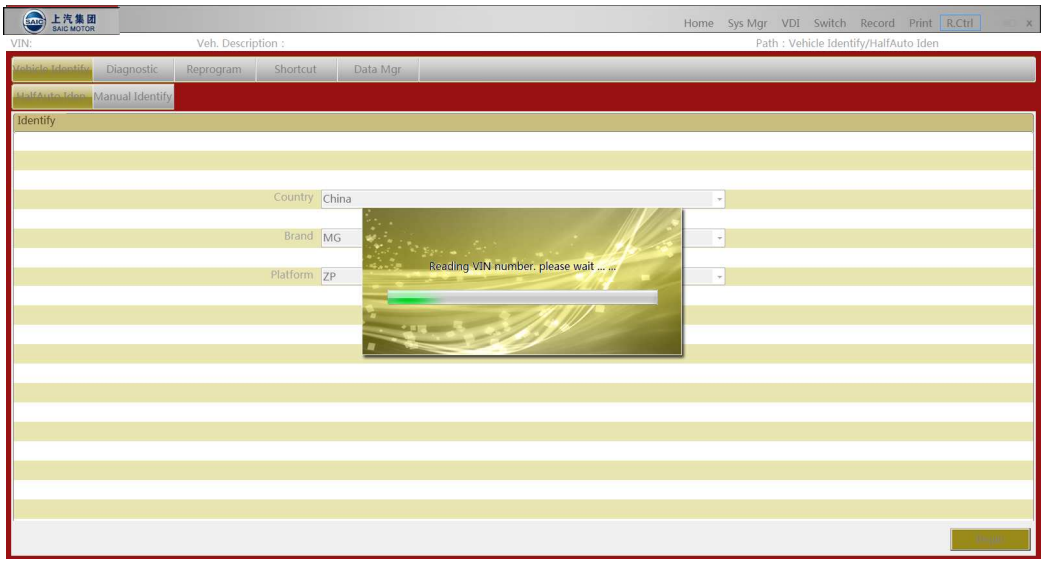


Figure 3.2.3

Step 5: Pop up the dialog box to prompt the vehicle identification result and the key module information of the vehicle, click "OK".

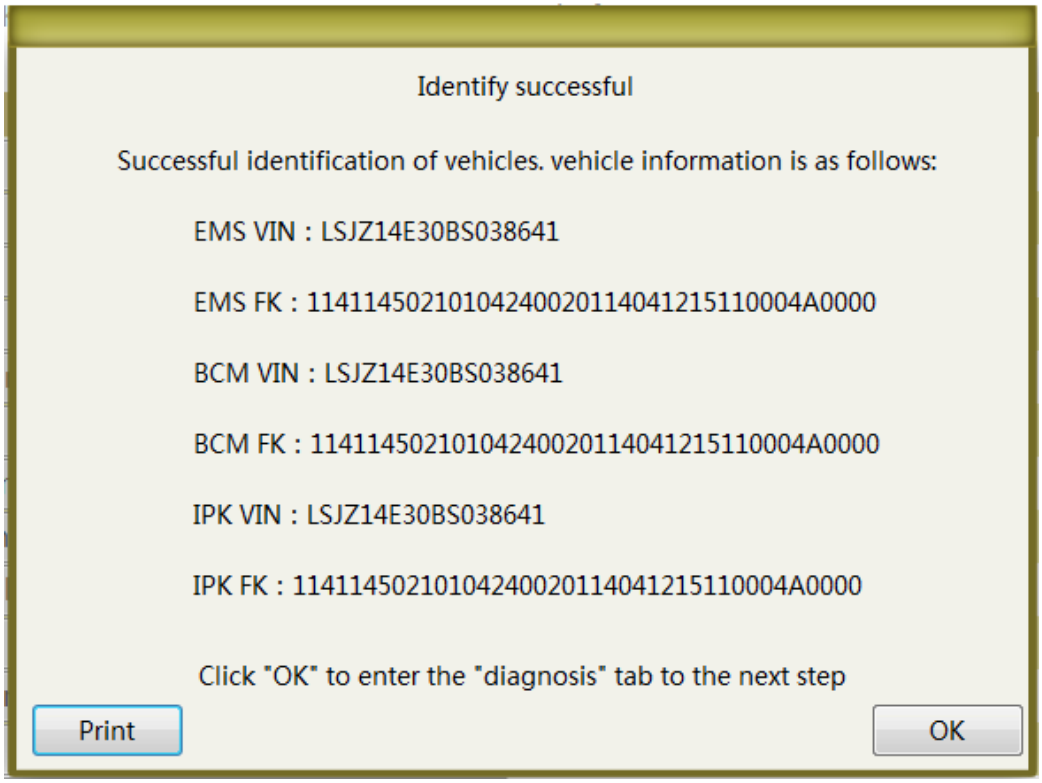


Figure 3.2.4

Step 6: Display the vehicle configuration information. If the "Diagnostic" tab lights up, the diagnostic function is available; click "Read" to repeat the HalfAuto Identification.

Figure 3.2.5

2 Manual Identification

Tips

1. "Manual identification" can only be used after " HalfAuto Iden" fails.
2. During "Manual identify", the selected information must be accurate, then the accuracy of the vehicle diagnosis and service can be ensured.

The Vehicle type selected as follows:

Vehicle type	Country	Brand	Vehicle Model
MG350	China	Rowe	350(AP11)
MG750 new model	China	Rowe	750(BP12)
MG3	China	MG	MG3 Zero(ZP11)
MG5	China	MG	MG5(AP12)

Once "HalfAuto Iden" fails, the "Manual identify" button lights up, the vehicle diagnosis can be conducted by manual identification.

Steps of Manual Identification:

Step 1: Pop up the interface showing "Identification failure", click "OK", as shown in Figure 3.2.6.

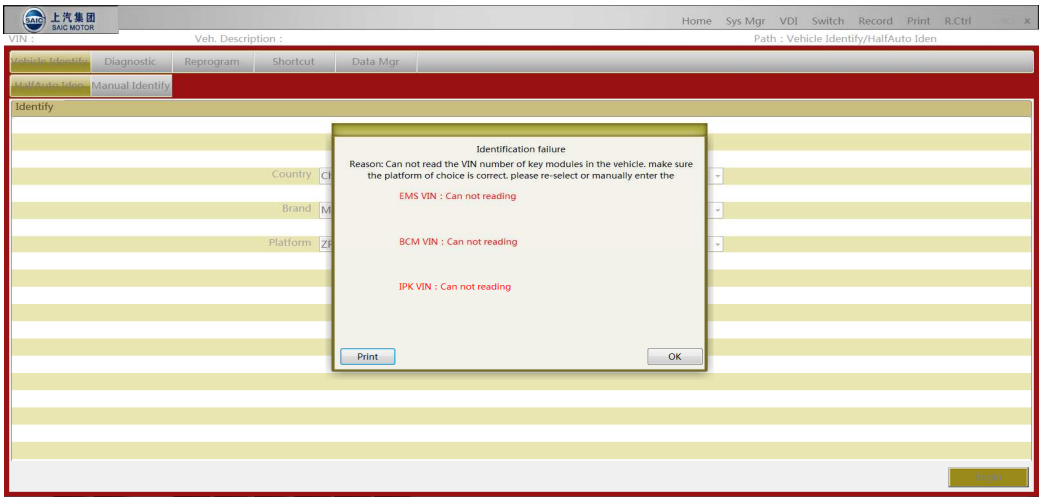


Figure 3.2.6

Step 2: "Manual identify" tag lights up, the manual identification function is available.

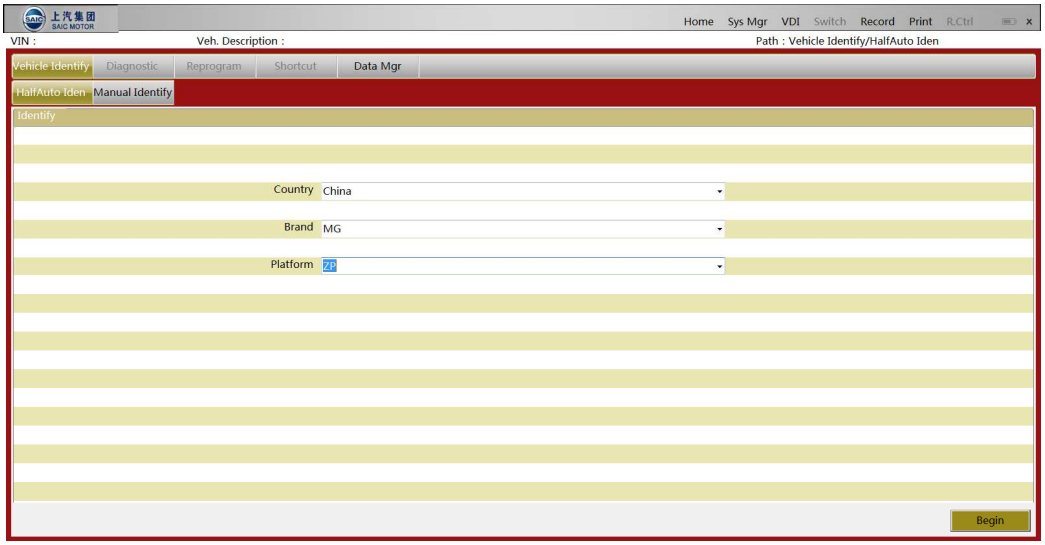


Figure 3.2.7

Step 3: Select the actual information of the model to be serviced, click "Begin".

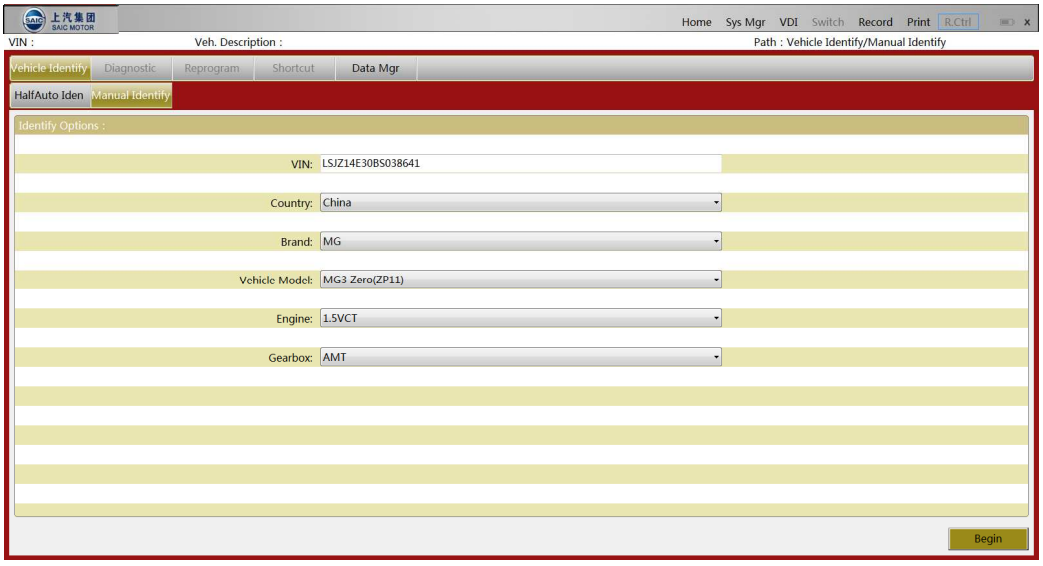


Figure 3.2.8

Step 4: Prompt "Manually identify successful", click "OK";

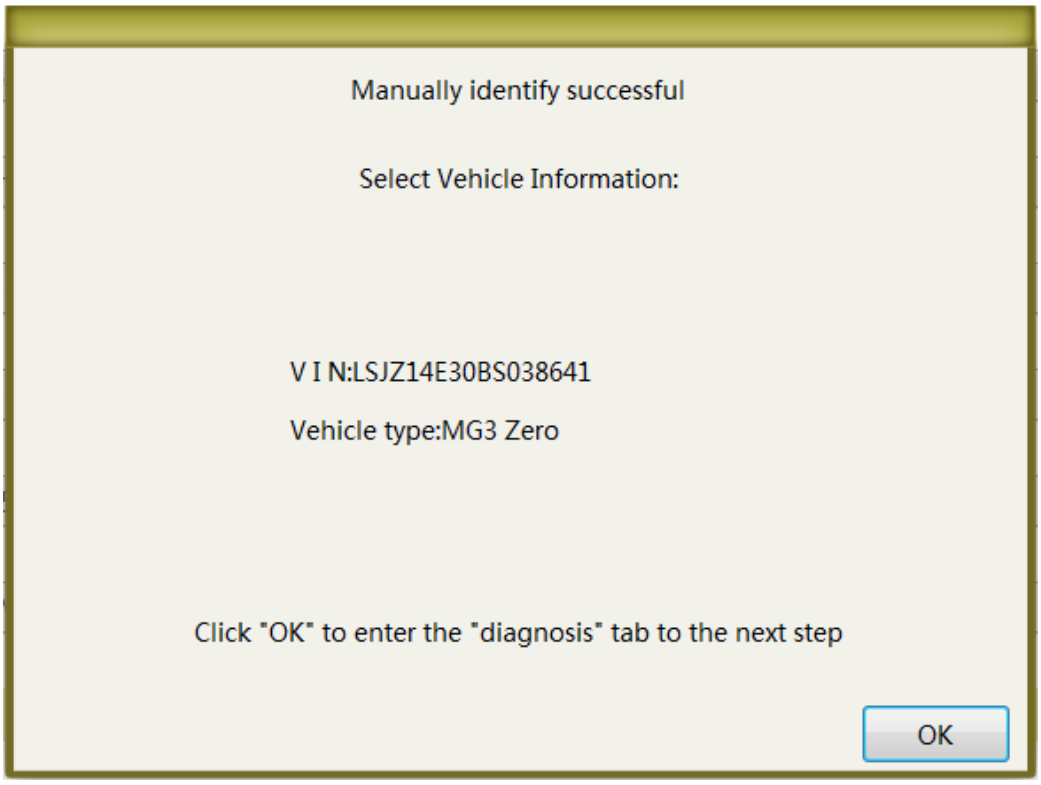


Figure 3.2.9

Step 5: "Diagnostic" tab lights up, diagnostic function is turned on, click "Re-select" to restart "Manual identify".

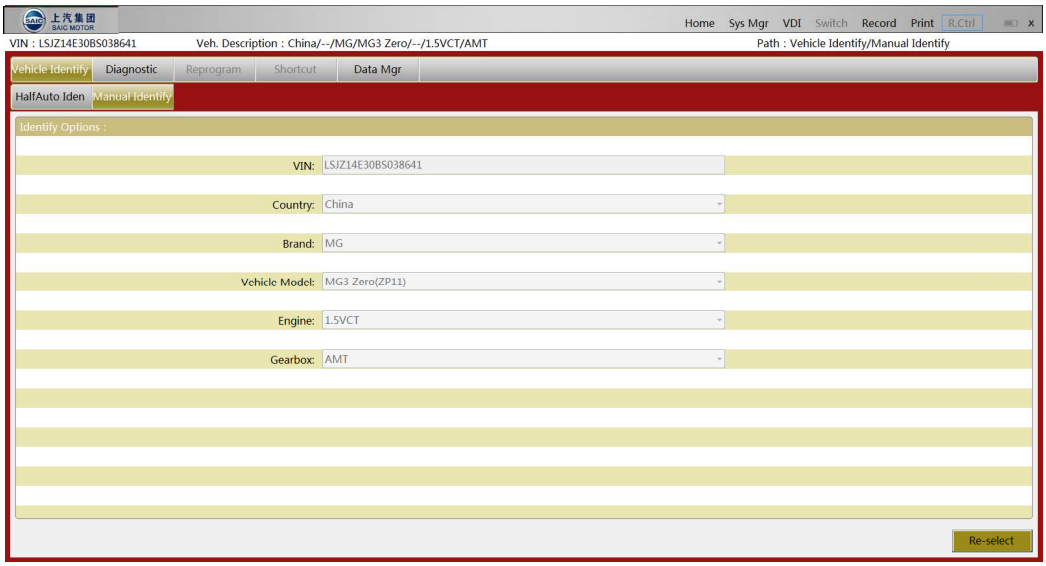


Figure 3.2.10

III. Diagnostic

Tips

1. After the Vehicle is successfully identified, the "Diagnostic" tab will be automatically activated.
2. After the full vehicle scan is finished, "Reprogram" and "Shortcut" tab will be automatically activated.
3. The diagnostic function of controller can be used only after the full vehicle scan is finished and the controller is selected.

After the vehicle is identified successfully, "Diagnostic" button lights up, click "Diagnostic" to enter the diagnostic tab. Functions including full vehicle scan, DTC, real-time display, IOC and ECU information in the "Diagnostic" tab are used to diagnose the relevant function and condition of the vehicle controller.

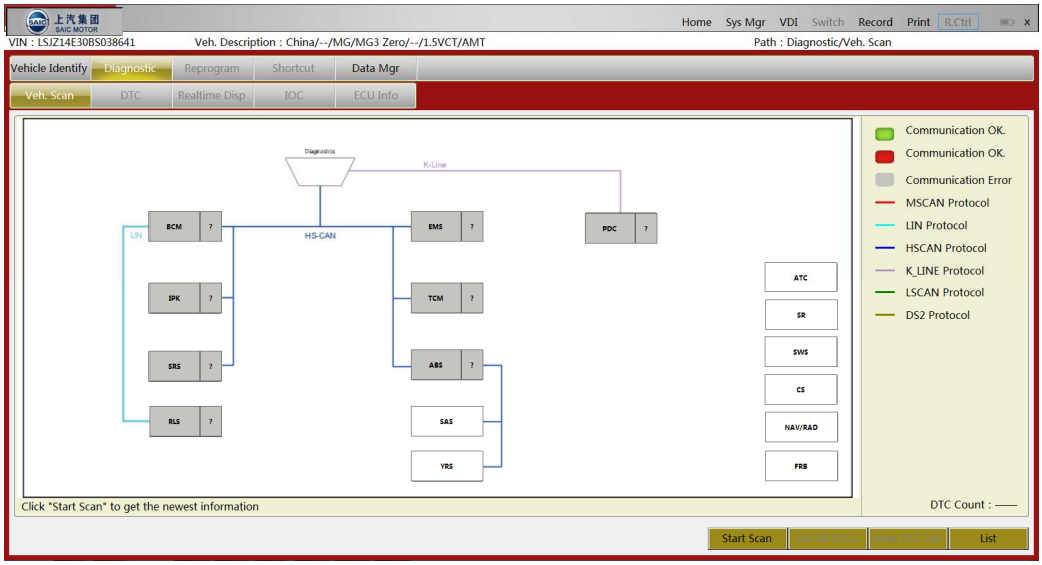


Figure 3.3.1

1 Full Vehicle Scan

Tips

1. After full vehicle scan, “Reprogram” and “Shortcut” functions are turned on automatically.
2. All diagnostic functions can be used only after the full vehicle scan is finished and the controller is selected.

Enter the "Diagnostic" tab, the interface is "Veh. Scan" by default. The functions of "Veh. Scan": scan the status of all vehicle controllers, DTC information, delete all DTCs, view DTC information etc. After full vehicle scan, select the icon of the controller needed to be diagnosed, "DTC", " Real-time Disp", "IOC", "ECU Info" buttons light up, the selected controller then can be diagnosed.

1) List of Vehicle Controller

The list of vehicle controller is displayed in the form of "Network structure diagram" or "Form", and can be switched over with "Form (or tree diagram)" button. "Network structure diagram" is the default interface.

A. "Network Structure Diagram":

In the structure diagram, the left side of the controller icon is the name of the controller, while the "?" at the rear end means DTC count. The left bottom shows the prompted note, and the bottom right shows the total count of DTC. Connecting lines of different communication protocols (inc. data line not for detection) are revealed with different colors. The area on the right side of the network structure diagram represents the icon color of each module and connecting lines respectively. The lower right corner shows "Begin" button, "Del all DTCs" button, "View DTC list" button and "List" button, as shown in Figure 1.3.40.

By default, the icon showing the name of controller and "?" with gray bottom border means that the controller needs to be diagnosed, while the icon only showing the name of controller with white bottom border means that the controller does not require diagnosis.

The controllers in the network structure diagram are only indicated in the form of English alphabet abbreviation. For the description of controller name in detail, if required, please refer to "ECU List" in the Section of detailed function introduction of each model.

a) Prior to "Full Vehicle Scan"

Before "Veh. Scan", only "Start Scan" and "List" are selectable buttons, all others are in gray and disabled buttons. Reveal "——" at the place showing "DTC Count" prior to the scan. All other buttons can only become optional after the completion of the scan.

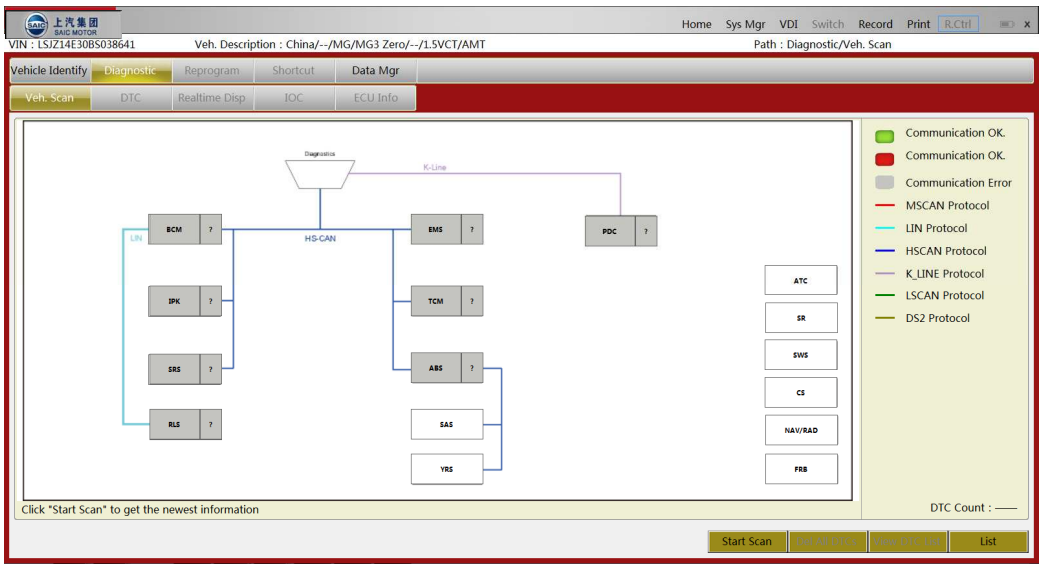


Figure 3.3.2

b) During " Full Vehicle Scan"

During the scan, all buttons are disabled. In the network structure diagram, the icon in corresponding color shall be revealed as per the scan result of the controller, the icon of the module being scanned is revealed in highlight. For example: for the controller in communication but without DTC, its icon shall be green with "0"; for the controller without communication or with abnormal hardware number,

its icon shall be gray with a "X"; for the controller in communication and with DTC, its icon shall be read and with DTC count. "DTC Count" shall be indicated as "——".

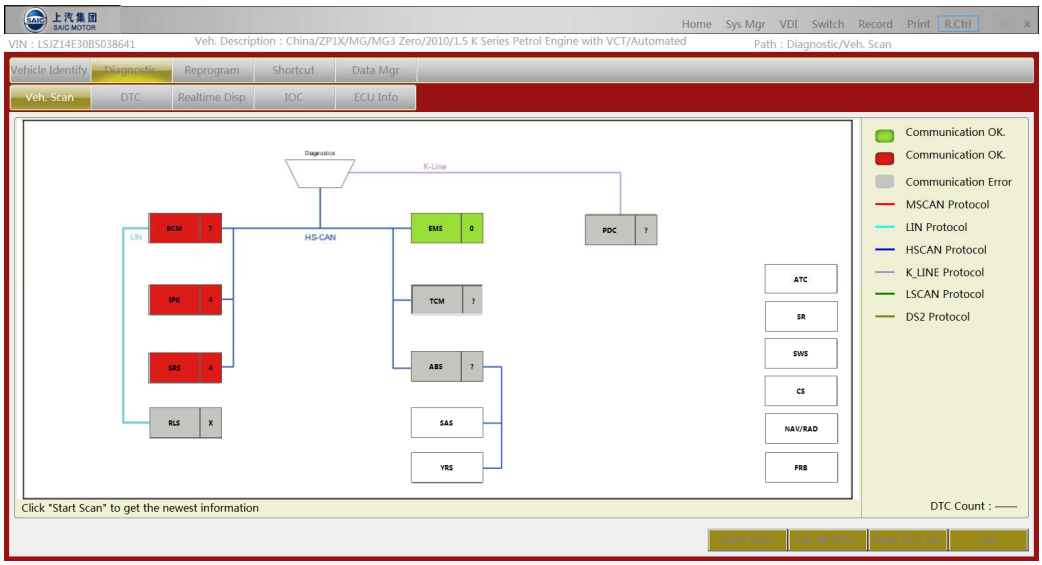


Figure 3.3.3

c) After “Full Vehicle Scan”

After full vehicle scan, “Reprogram” and “Shortcut” tabs are available, “Del all DTCs” button, “View DTC list” button light up, the total DTC number of all controllers is displayed at the lower right corner .

For the controller with red or green icon, the corresponding diagnostic function of the controller is available after the specific icon is selected.

For the controller with gray icon: in case of the controller diagnosis communication error, while selecting the corresponding icon, the interface prompts "Communication Error, Disabled";in case of the controller hardware number error, while selecting the corresponding icon, the dialog box for selecting hardware number and hardware of selectable type pop up, the diagnostic functions of module is avtivated.

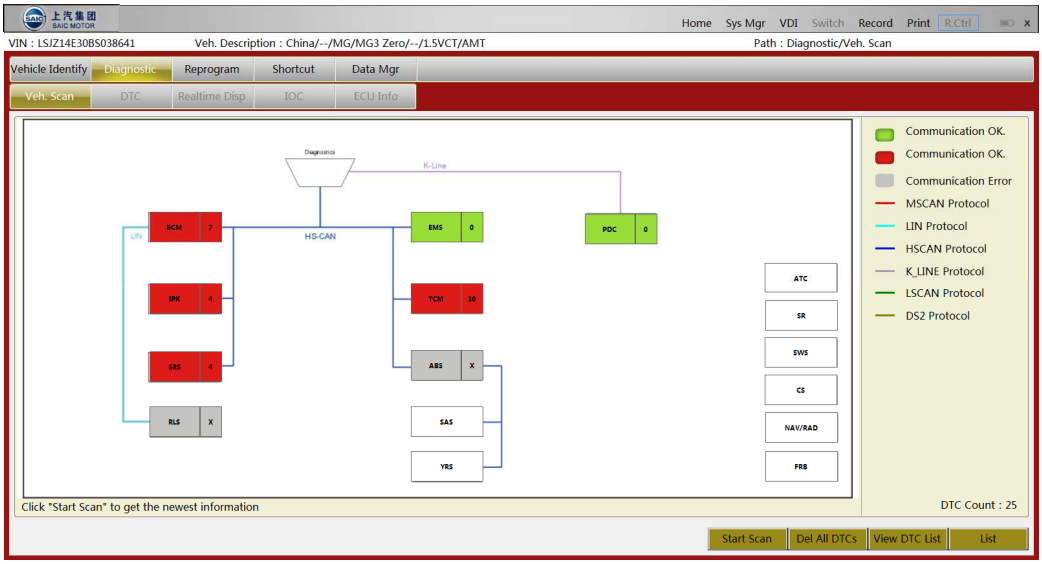


Figure 3.3.4

B. "Form":

Except the controller list is displayed in "Form", the other displayed information, button and control logic in the interface is in the same form of "Network structure diagram".

The list shows the abbreviations of controller name, full name of controller, communication state (Communication OK, Communication Error), DTC count (the actual DTC count showing while Communication OK, X while Communication Error), protocol used by controller etc.

While in the form of "Form", only the controllers need to be diagnosed are revealed.

a) Prior to "Full Vehicle Scan"

Prior to the full vehicle scan, the DTC count column is indicated with "X", the Protocol column shows the diagnosis communication protocol related to the module, Status bar shows the "Communication Error" and the column of controller name shows the controller name.

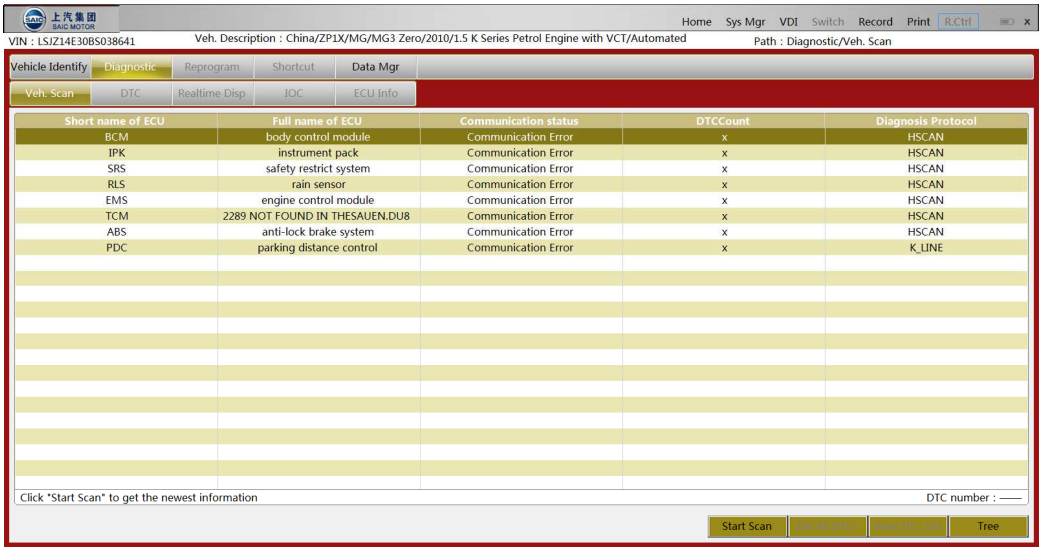


Figure 3.3.5

b) During "Full Vehicle Scan"

During the scanning process, the module being scanned is displayed in highlight.

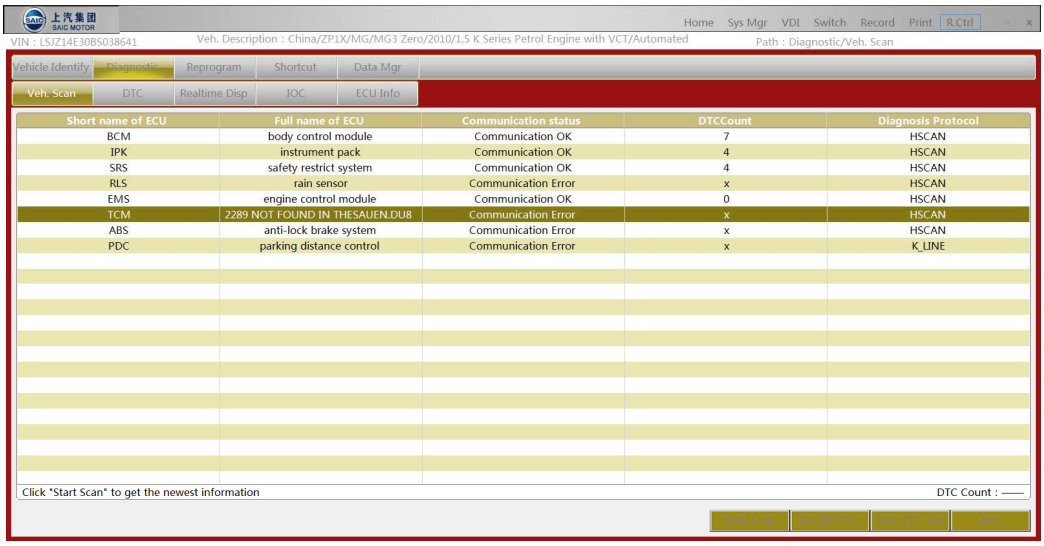


Figure 3.3.6

c) After "Full Vehicle Scan"

After full vehicle scan, “Reprogram” and “Shortcut” tabs are available, “Del all DTCs” button, “View DTC list” button light up, the DTC count of all controllers is displayed at the lower right corner.

For controller with "Communication OK", after the specific controller column is selected, the corresponding diagnostic functions of the controller are available.

For controller with "Communication Error", after the specific controller column is selected, the interface prompts "Communication Error, Disabled".

For controller with "Communication OK, but Hardware Number don't match": while selecting the specific controller column, the prompt box for selecting hardware number and hardware of optional type pop up, the diagnostic functions of module is activated.

The selected controller column is displayed in highlight.

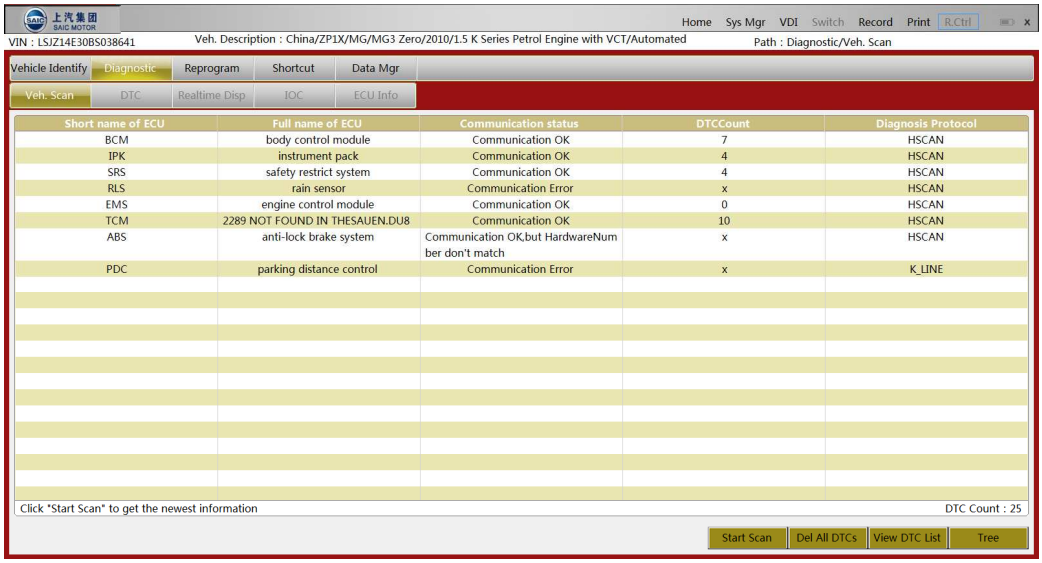


Figure 3.3.7

2) Delete All DTCs

After full vehicle scan, “Del all DTCs” button lights up. Function of “Del all DTCs”: delete the DTC of all controllers, automatically start full vehicle scan again and display the latest status of the controller. While deleting DTC, the icon in network structure diagram corresponding with the controller being deleting shall be revealed in gray.

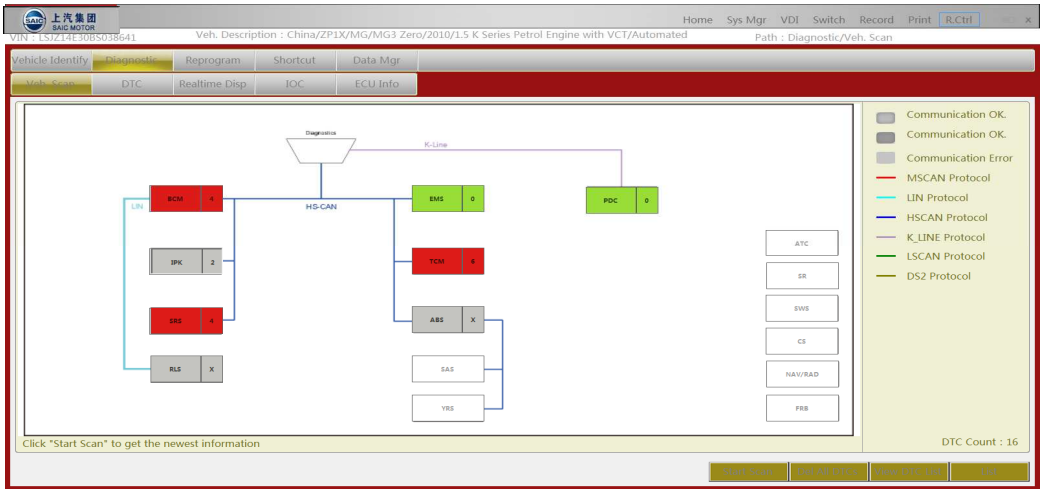


Figure 3.3.8

3) View DTC List

After completer car scan, “View DTC list” button lights up. All DTC information can be viewed through “View DTC list” function.

"Vehicle whole DTC List" interface is displayed in the form of prompt box, see Figure 3.3.9. "Vehicle whole DTC List" will display all controllers with DTC and the current DTC in the controller, and list the type, definition and status of each DTC, whether lighting up the fault lamp, whether having the corresponding freeze frame and diagnosis guidance etc.

Print: Print the vehicle whole DTC list to PDF file.

OK: Close the vehicle whole DTC list window.

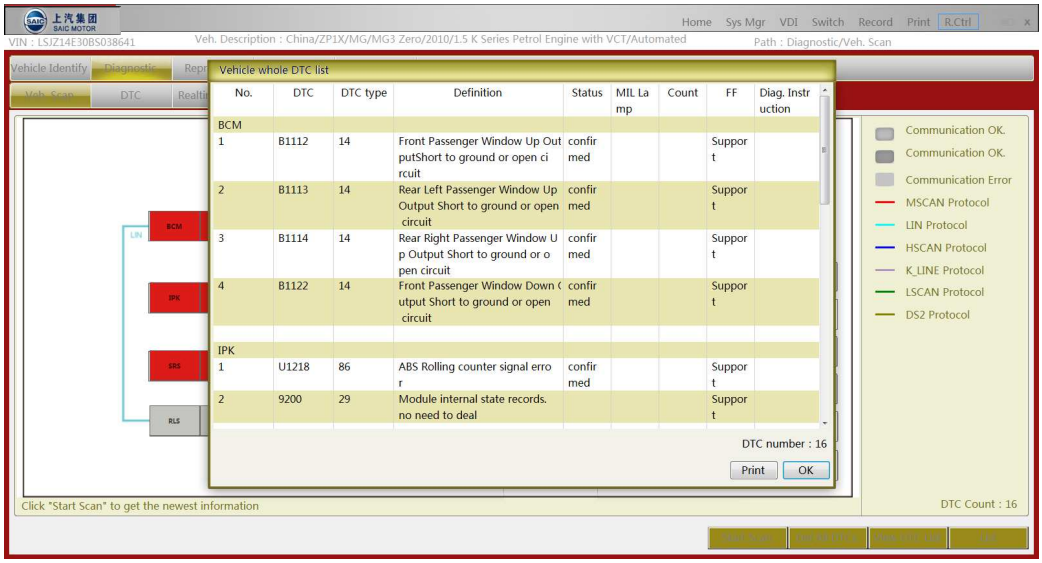


Figure 3.3.9

DTC

Tips

After full vehicle scan, “DTC” can only be used after a controller is selected.

After full vehicle scan, select the icon of the controller needed to be diagnosed, "DTC" button lights up. The checked controller icon is displayed in gray and with bump effect.

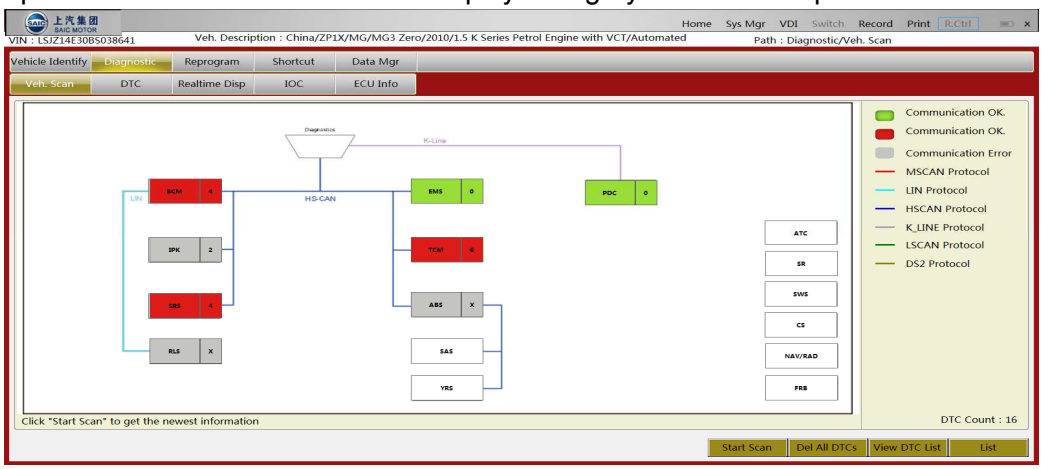


Figure 3.3.10

Click "DTC" button, enter the interface showing DTC information. The "IPK-DTC" button at the top left corner refers to the current module being diagnosed and its diagnostic function, the left bottom corner displays the prompted notes, while the DTC count is displayed at lower right corner.

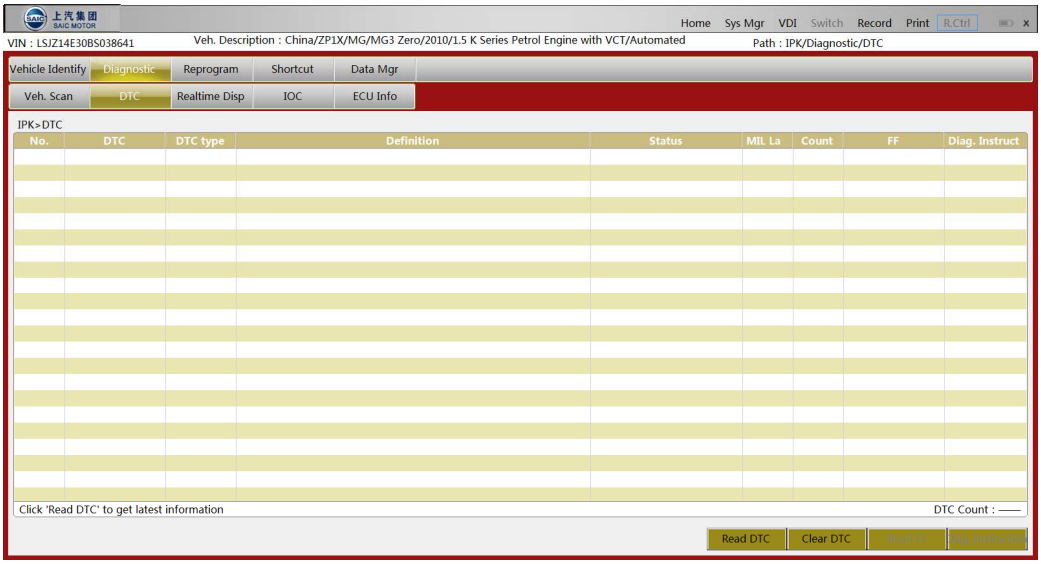


Figure 3.3.11

Functions of "DTC": read DTC of the individual controller, clear DTC, read the freeze frame data of DTC, diagnosis guidance of DTC. The corresponding functions can be achieved by clicking "Read DTC", "Clear DTC", "Read FF", "Diag. Instruct" at the lower right corner.

1) Read DTC

Click "Read DTC" to read the DTC information of the selected controller, and display the result in the interface. The displayed DTC information include: No., DTC code, DTC definition, DTC status, if the malfunction lamp is illuminated, Count, if have the corresponding freeze frame (if yes, display the corresponding icon), if have the corresponding Diag. Instruct (if yes, display the corresponding icon).

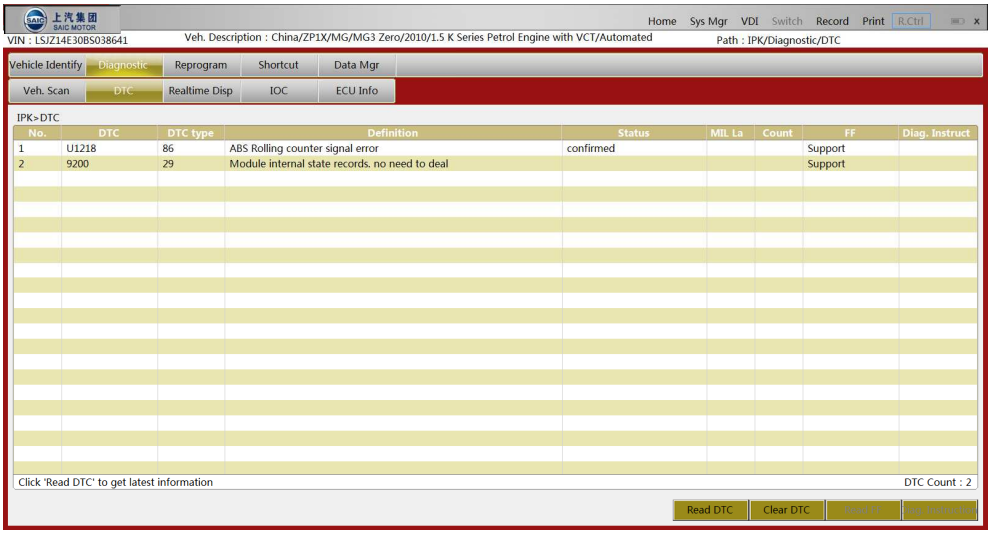


Figure 3.3.12

2) Clear DTC

Click "Clear DTC" button to clear the DTC information of the controller being selected. After clearing the DTC, VDS will automatically read DTC of the controller being selected again, and display the results in the interface.

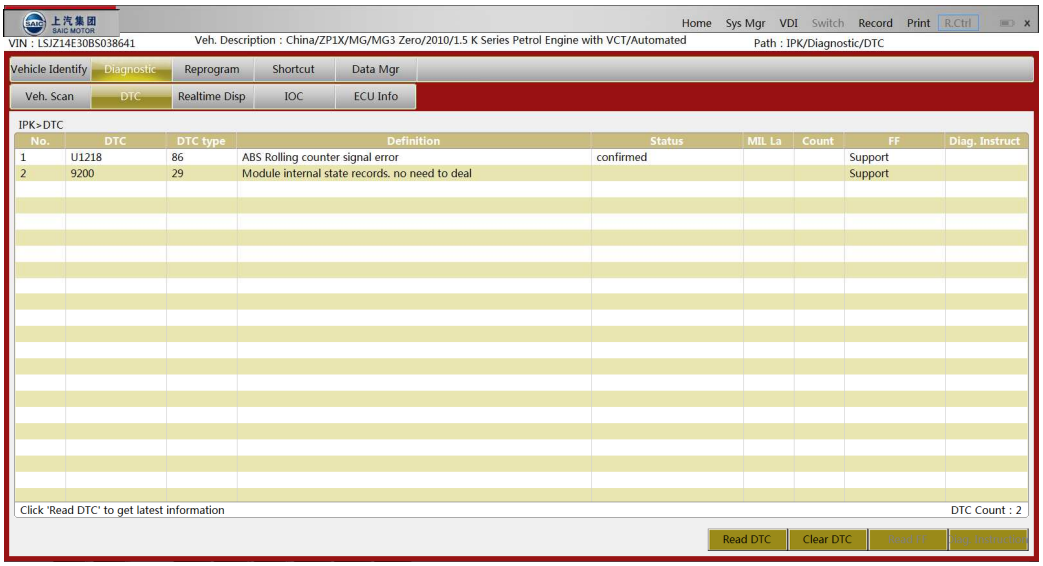


Figure 3.3.13

3) Read Freeze Frame

If DTC supports freeze frame data, "Support" will be indicated in the "FF" column. After the DTC supporting freeze frame data is selected, "Read FF" button lights up.

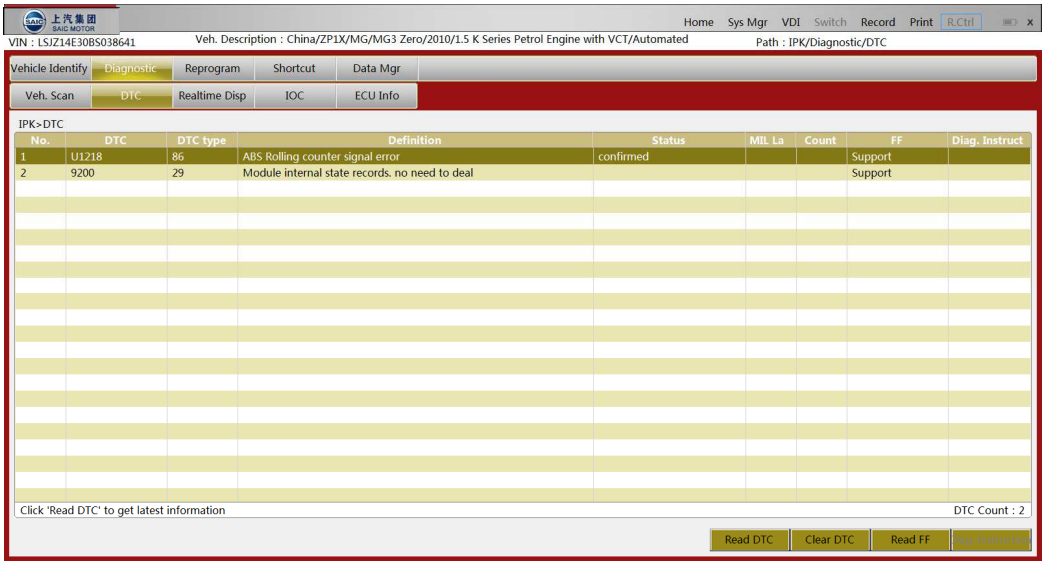


Figure 3.3.14

Click “Read FF” button to read the FF info of selected DTC, and related data shall be displayed in prompt box.

Print: Print the vehicle whole DTC list to PDF file.

OK: Close the vehicle whole DTC list window.

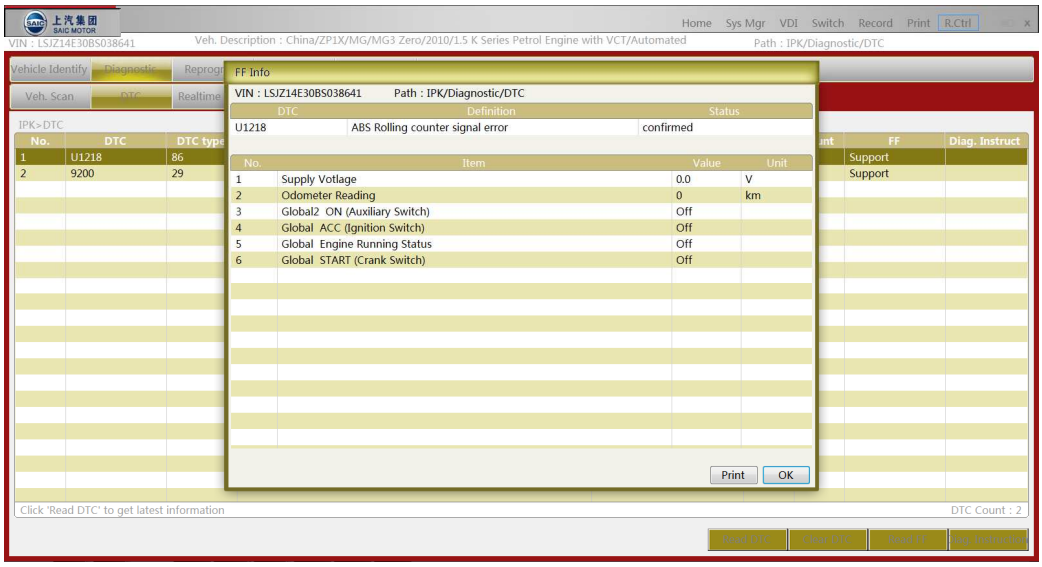


Figure 3.3.15

4) Diagnostic Instruction

(This function is not supported temporarily)

3 Realtime Display

Tips

"Realtime Disp" function can be used only after the full vehicle scan is completed and controller is selected.

After full vehicle scan, select the icon of the controller needed to be diagnosed, "Realtime Disp" button lights up. Click "Realtime Disp" button to enter into the real-time display interface.

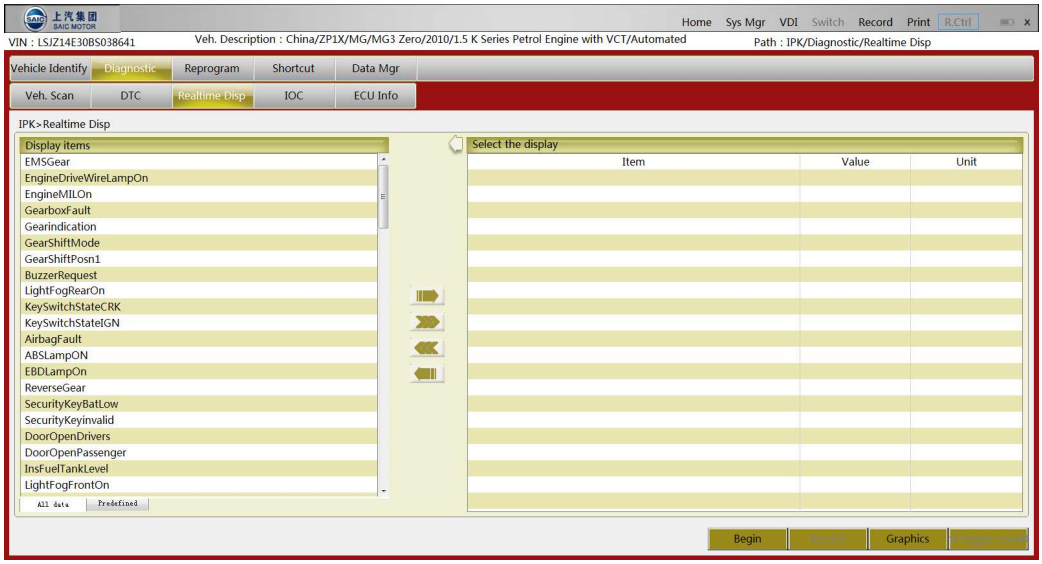


Figure 3.3.16

Functions of Realtime Disp: Read the real-time status of the selected controller parameter, record real-time data and display type of the switching list and graphics. These functions can be achieved by clicking the "Begin\End", "Record/Stop", "Graphics/Form" at lower right corner of the interface.

In the interface of "Realtime Disp"(see Figure 3.1.16), the "IPK > Realtime Disp" at top left corner refers to the current module being diagnosed and diagnostic function. "Display Items" on the left side: click "All Data", then "Display Items" reveals all real-time data list of the controller selected; The "Predefine" function is not supported temporarily. "Select the display" on the right side displays the parameters needs real-time display.

Functions of Buttons on "Realtime Disp" Interface:

: Add the parameters selected from the left list to "Select the display" on the right;

: Add all parameters in the left list to "Select the display" on the right;

: Return all parameters in the left list to the left list;

: Return the parameters selected by the right list to the left list;

: Hide the left list, display the right list in two columns;

: Display the left list, return the right list to single column;

Begin: Read the real-time data value of the parameter in the right list, "Begin" button changes to "End" after clicking;

End: Finish reading the real-time data, "End" button changes to "Begin" after clicking;

Record: Start the function of recording real-time data, "Record" button changes to "End" after clicking;

Stop: Stop recording the real-time data, "Stop" button changes to "Record" after recorded files being saved;

Graphics: Transfer the data list to Graphics, "Graphics" button changes to "List" after clicking;

Form: Transfer the data list to List, "List" button changes to "Graphics" after clicking;

: This function is not supported temporarily.

1) Read Realtime Data

Tips

1. While reading data, parameter list of "Select the display" cannot be further revised.
2. After reading the real-time data, parameter list of "Select the display" can be revised.

Operation Steps of Read Function:

Step 1: Click or function to add the parameters to be read from left list to "Select the display" on the right;

Step 2: Click Record button to read the real-time data, data info of the selected parameter is displayed in the list;

Step 3: Click End button to stop reading real-time data.

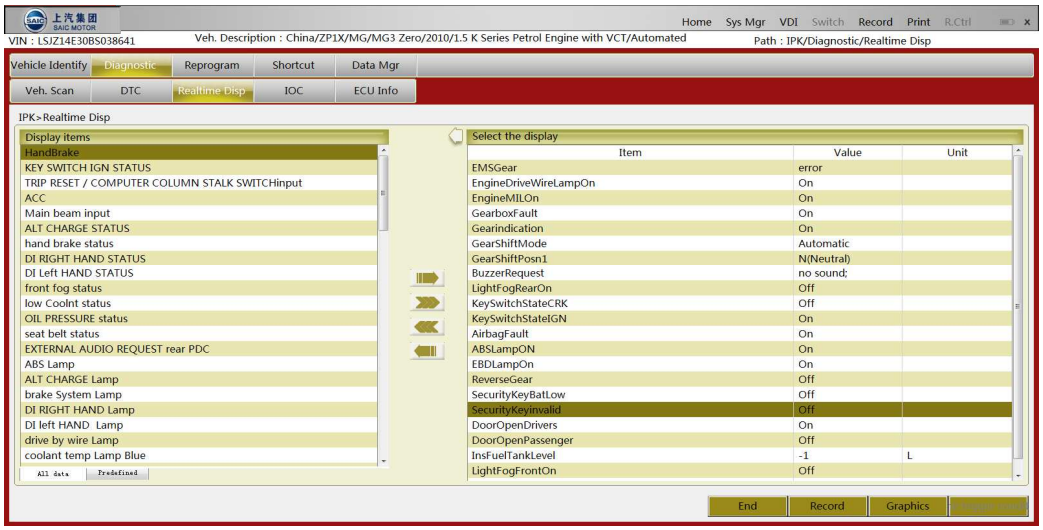


Figure 3.3.17

2) Display Type of Realtime Data

The interface of real-time display reveals the parameter info in single column by default. The real-time data of parameter can be displayed by Form and Graphics; While the real-time data displayed by Form, the Form can be revealed in single column and two columns.

Switch the display type of parameter between Graphics and Form through Graphics and Form button. For Form display, see Figure 3.3.18, for Graphics display, see Figure 3.3.19.

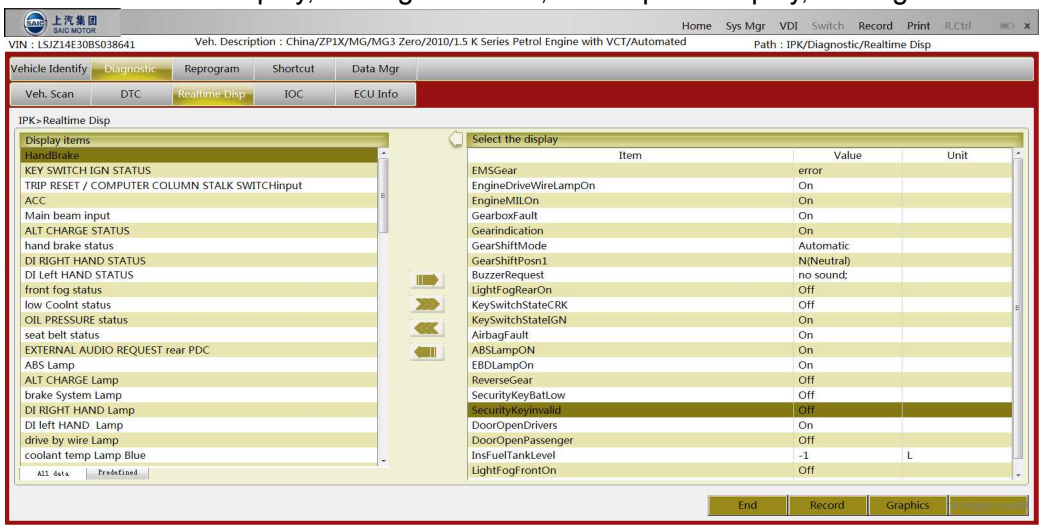


Figure 3.3.18

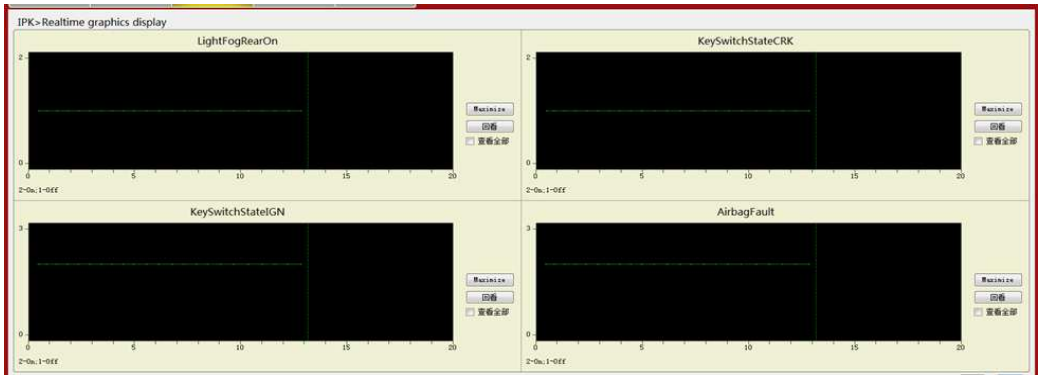


Figure 3.3.19

A. Form Display:

Switch the display between single column and two columns in the Form type through  and  .For the single column display, please see Figure 3.3.20, for two columns display, please see Figure 3.3.21.

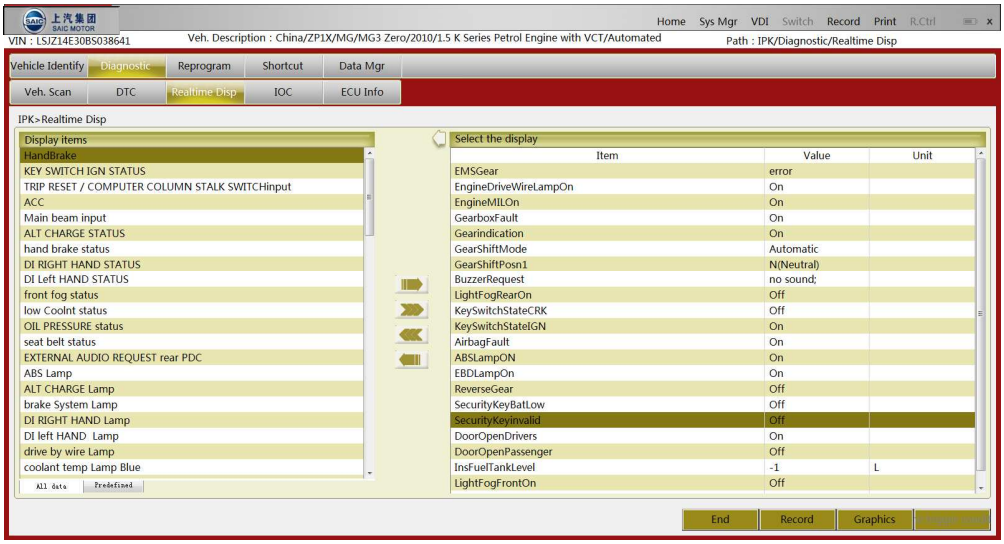


Figure 3.3.20

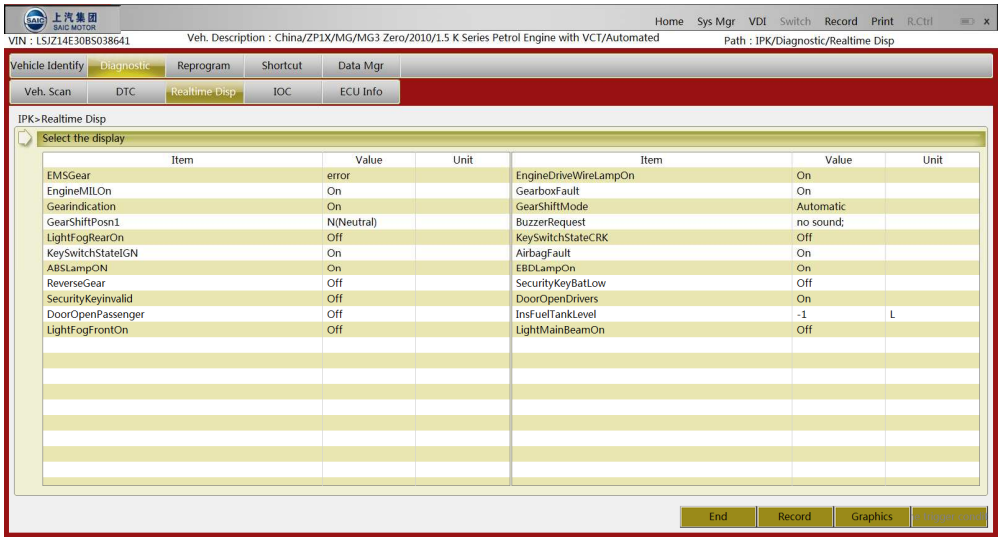


Figure 3.3.21

B. Graphics Display:

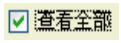
Tips

Back and Check All functions cannot be switched with each other. One function can be used only after the other one is closed.

While Graphics display is used, one page can display 4 parameters by default. And any position on the curve that the mouse placed will display the data of that position. Functions of Maximize, Back and Check All at the right of each Graphics: Maximize / Minximize: the Graphics window Figure shows that the number of parameter is switched among 1-4, and the other parameters can be checked by turning pages with the << and >> button at the lower right corner, see Figure 1.3.61; In the form of Maximize and Minimize display, Back and Check All functions are available.

回看 : After clicking, "Back" button become red, the cursor is indicated as the forward and backward

arrow, drag the mouse forward or backward to check the history data; click "Back" button again, it will become black and the Back function is closed, then the parameter curve shall be displayed in normal way.



: Click the box before the "Check All" button, if there is a " √ " in it (see Figure 3.3.24), it displays the complete history data of this parameter during this real-time display; click the box before "Check All" again to stop checking, at the meantime the " √ " in the box is removed.

Figure 3.3.22

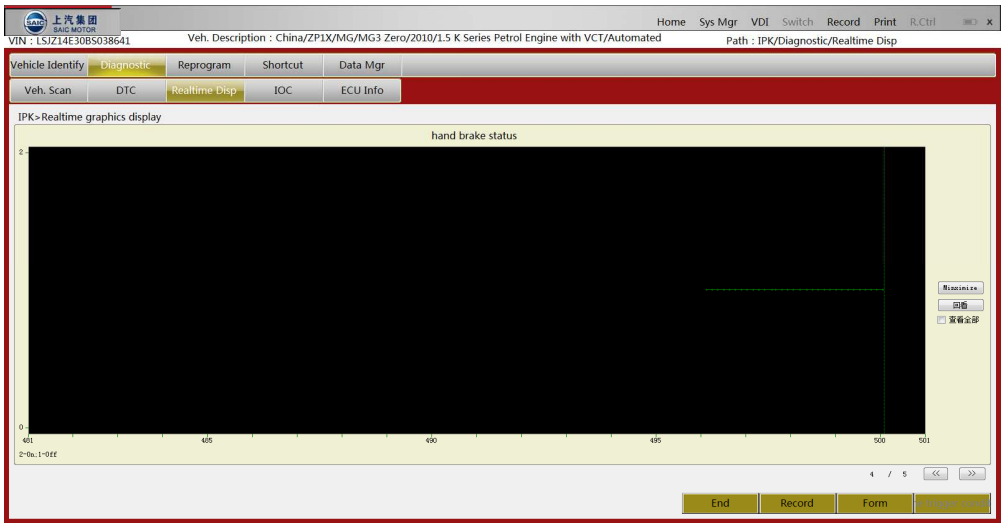


Figure 3.3.23

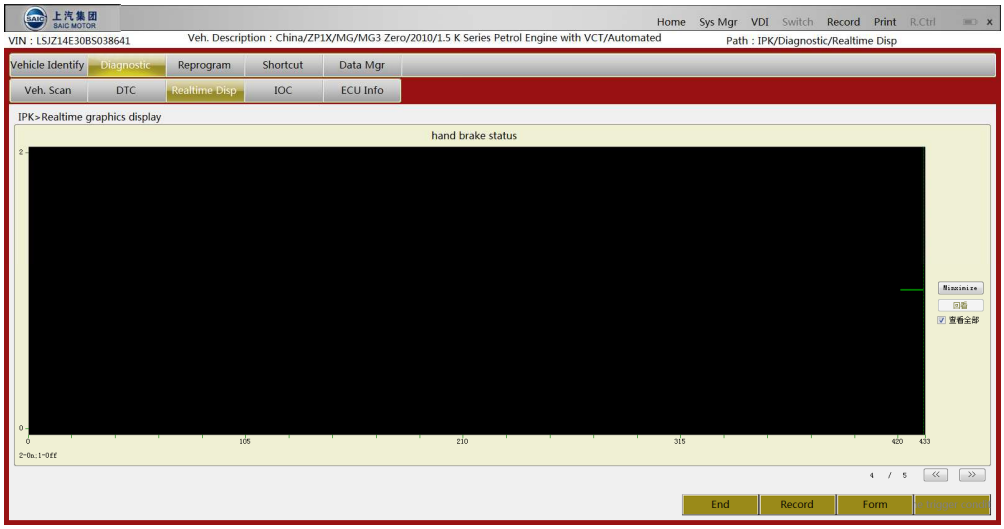


Figure 3.3.24

3) Record of Realtime Data

Tips

1. The record function can only be used while reading real-time data.
2. Save path of the recorded file: C:\Recorder, the recorded files can be replayed or deleted through " Data Mgr > Realtime Disp".

Operation Steps of Record function:

Step 1: While reading the real-time data, Record button lights up;

Step 2: Click Record button to record the real-time data, “Record” button changes to “End”;

Step 3: Click Stop button to pop up dialog box, as shown in Figure 3.3.25, input the remarks of the recorded data, click “OK” to save the recorded file to the path by default;

Step 4: Display the interface of VDS real-time display, “End” button changes to “Record”.

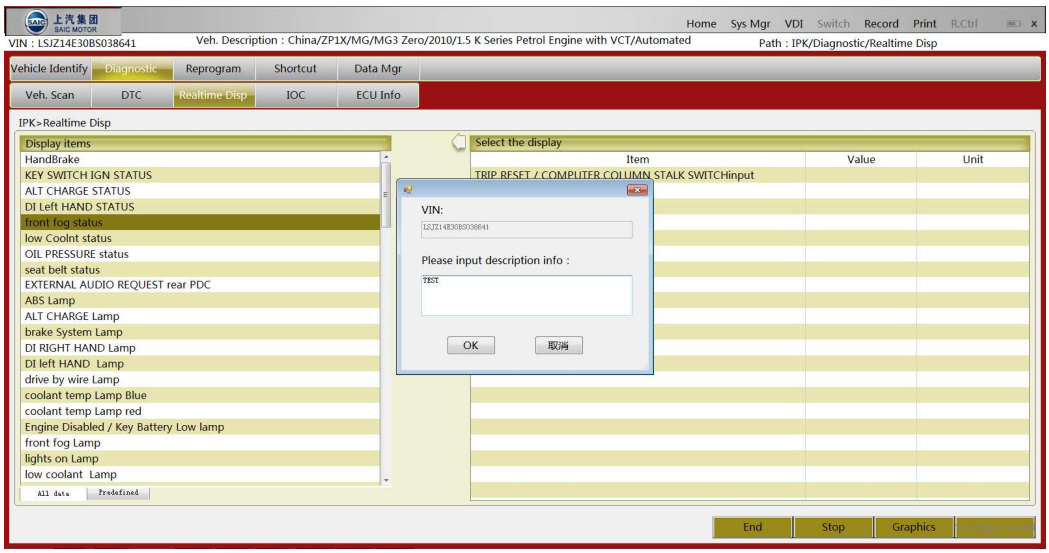


Figure 3.3.25

Step 5: Input the description information of recorded data, click “OK” to save the recorded file or click “Cancel” to cancel. After “OK” or “Cancel”, return to the interface of real-time display.

4 IOC

Tips

1. After full vehicle scan, “IOC” can be used only after a controller is selected.
2. While performing IOC, the notes must be followed.
3. After stopping the IOC function test on the current actuator, the other actuator can be selected to conduct IOC test.

After full vehicle scan, select the icon of the controller needed to be diagnosed, “IOC” lights up. Click “IOC” button to enter the IOC interface.

Functions of IOC: test the actuator function of the selected controller.

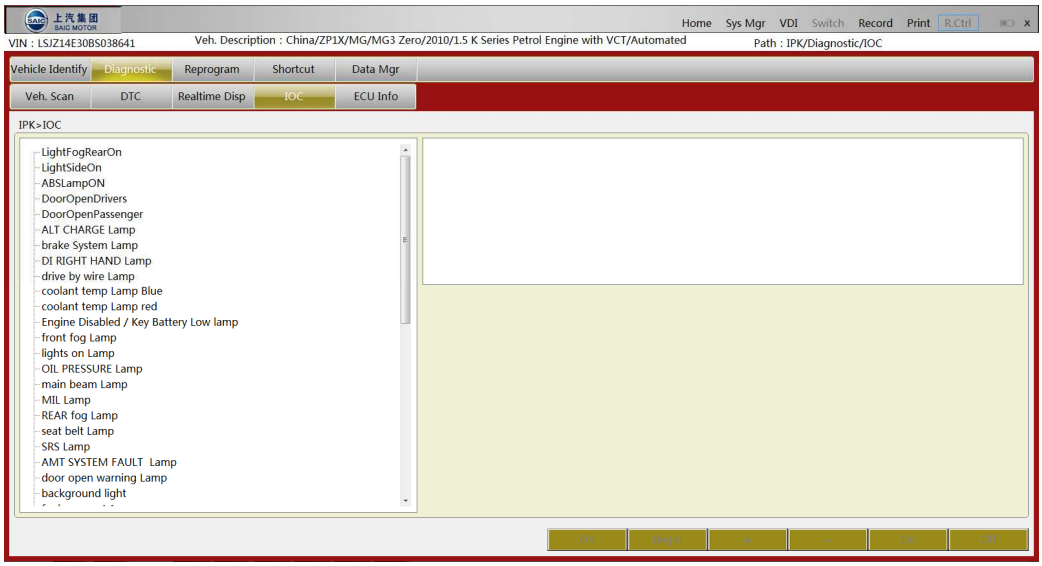


Figure 3.3.26

In the “IOC” interface (see Figure 3.3.26), “IPK> IOC” in the top left corner represents the current diagnosis module and diagnostic function. The left parameter list is the list of actuators selected to conduct function test. The right column displays the actuator to be tested, the required conditions for tests and buttons of operations can be conducted on selected actuator.

1) Operations of IOC

Operation Steps of IOC functions:

Step 1: Select the actuator items to be tested from the left list, the first button “OK” lights up;

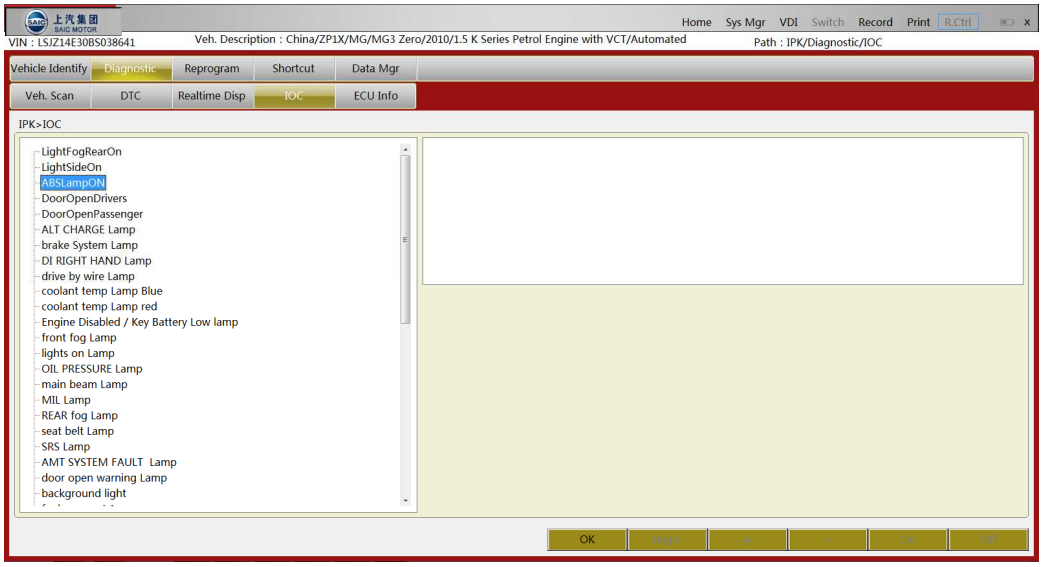


Figure 3.3.27

Step 2: Click OK button, add the selected actuator item to the control area on the right, the second button “Begin” lights up; meanwhile display the condition description of all actuator IOC function, icon which can be set with target value and the parameter list related with actuator in the control area on the right.

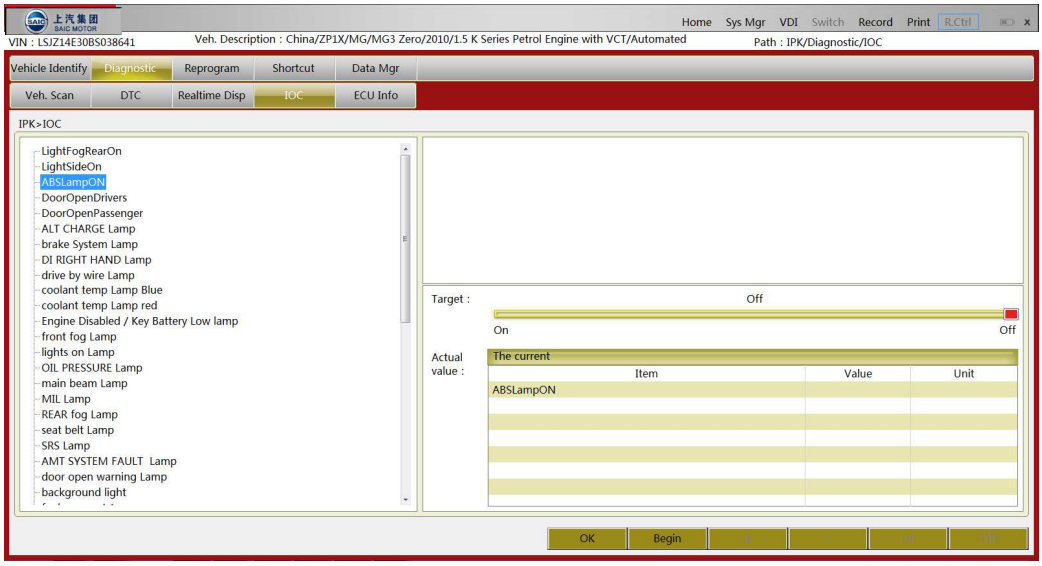


Figure 3.3.28

Step 3: Click Begin button, “Begin” button changes to “End”, while the “OK” button cannot be selected. The corresponding control button will light up according to the type of selected actuator. Test the actuator by clicking corresponding buttons (+ or - ; On or Off) , the target value of control and actual value of related parameter will display in the corresponding position of the control area on the right.

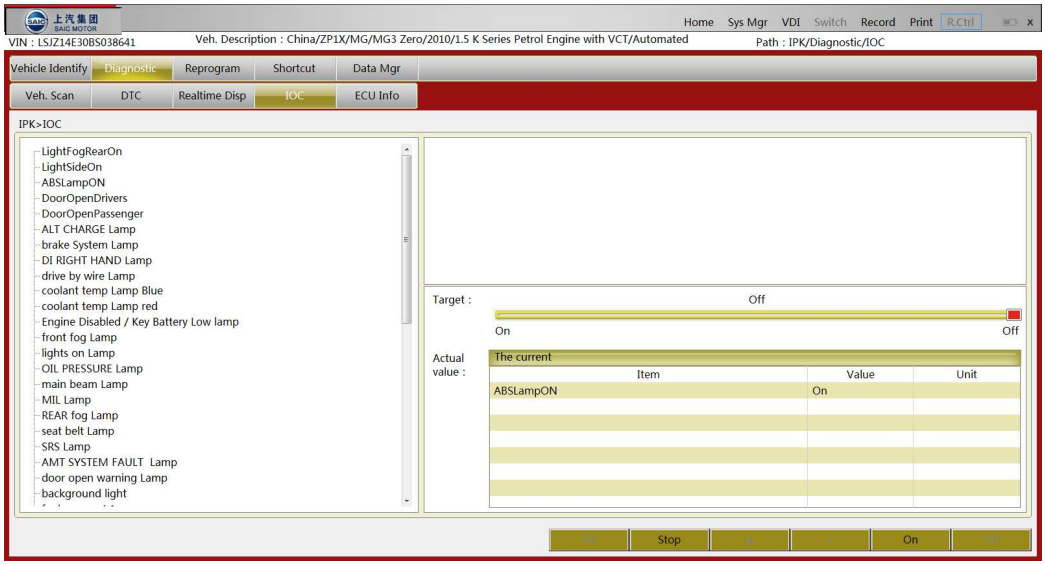


Figure 3.3.29

Step 4: Click Stop button to stop the IOC function on selected actuator. ”End” button changes to “Begin”, “OK” button lights up.

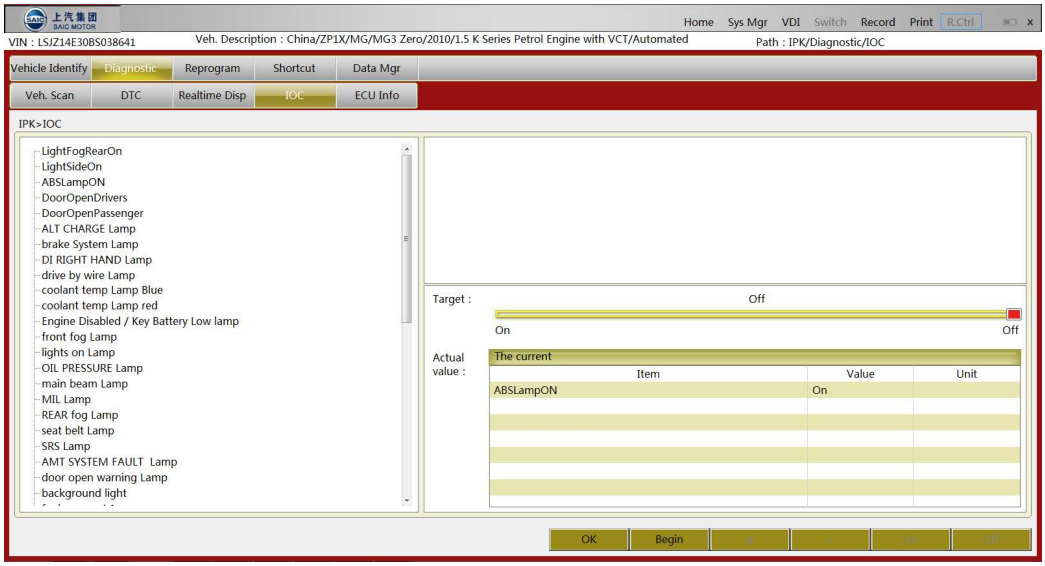


Figure 3.3.30

Step 5: Select the other actuators needed to be tested in the left list, start the test on these actuators according to above steps.

2) Types of IOC

According to the function and test method of actuator, the control of IOC can be divided into three categories:

A. Switching Value Test

Actuator has two status : "On" and "Off", the function test of actuator can be started through On and Off button in VDS.

On: Actuator starts working.

Off: Actuator stops working.

B. Stepped Size Test

While actuator is acting, it is indicated as a continuous variable. In VDS, the function test on the actuator shall be started through button + and −.

+: Increase the duty cycle of actuator.

−: Decease the duty cycle of actuator.

C. Self-detection Volume Test

The function test of actuator shall be completed by diagnostic software and ECU automatically, begin the function test of actuator via the Begin button in VDS and display the test result.

Begin: Begin the function test on actuator.

5 ECU Information

Tips

After full vehicle scan, “ECU Info” can be used only after a controller is selected.

After full vehicle scan, select the icon of controller needs to be diagnosed, “ECU info” button lights up. Click “ECU Info” button to enter the reading interface of ECU info. Functions of ECU info: read the relevant information of the selected controller.

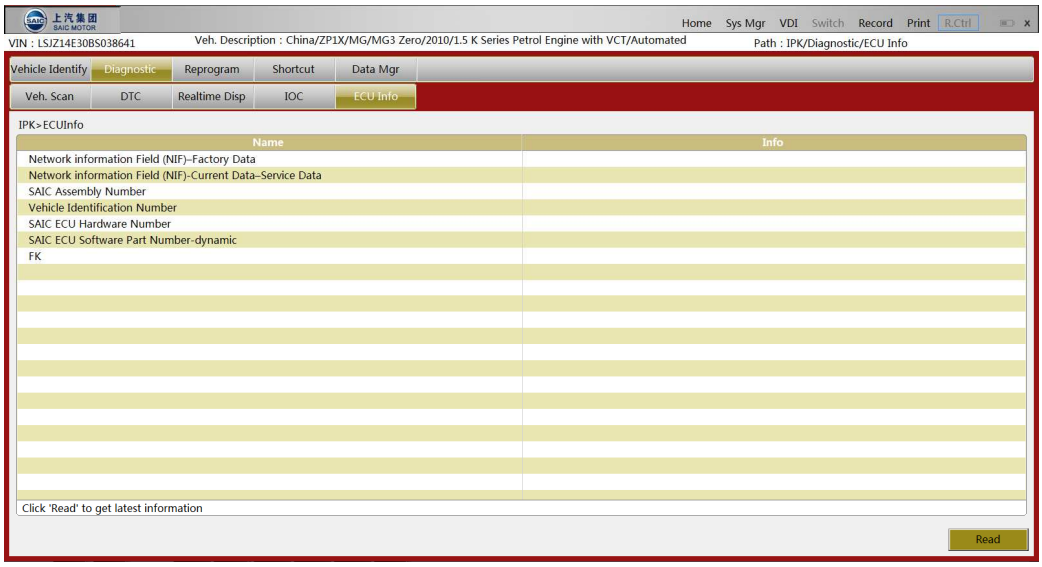


Figure 3.3.31

In the “ECU Info” interface (see Figure 3.3.31), “IPK> Realtime Disp” in the top left corner represents the current diagnosis module and diagnostic function. The “Name” column in the interface refers to the parameter list of selected controller ECU info, “Info” column lists the data value corresponding to ECU info parameter of selected controller.

Operation Steps of ECU Info Functions:

Step 1: Click Read button to read the ECU Info of the selected controller;

Step 2: The read-out ECU info displays in the corresponding position.

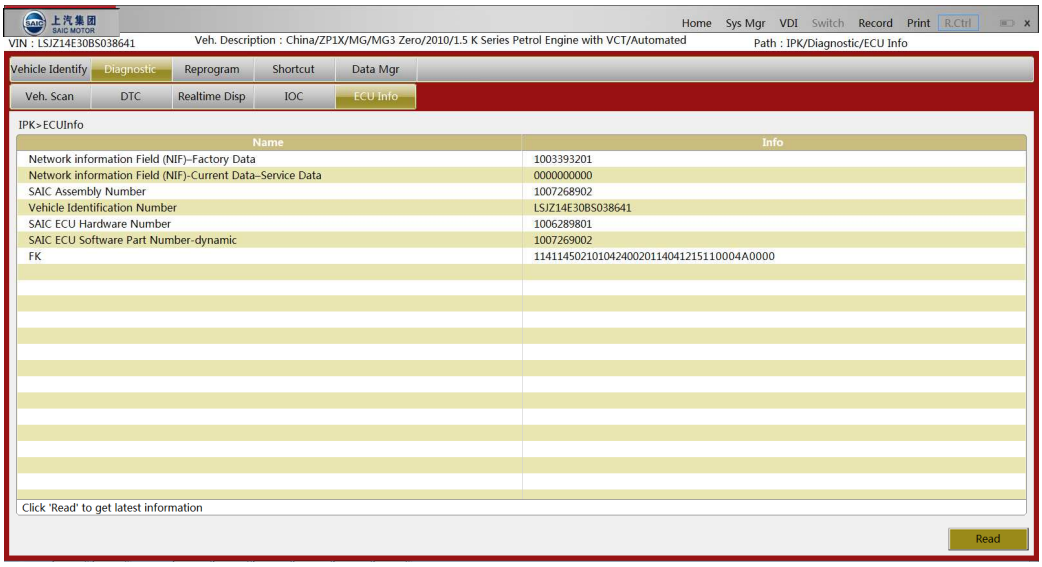


Figure 3.3.32

Tips

After full vehicle scan, “Reprogram” function is activated automatically.

After vehicle identification, “Diagnostic” button lights up, click this button to enter the diagnostic function tab. After finishing the full vehicle scan in the "Diagnostic" tab, “Reprogram” button lights up. Click “Reprogram” button to enter “Reprogram” tab.

“Reprogram” tab includes such functions as configuration, personalization, refresh ECU, replace ECU, R.C. Match. Based on different diagnosis model, the function items of “Reprogram” are also different. The functions which are not supported by diagnosis model shall be indicated in gray, and the buttons are disabled (see the function button of "Personalization" and "R.C. Match" in Figure 3.4.1).

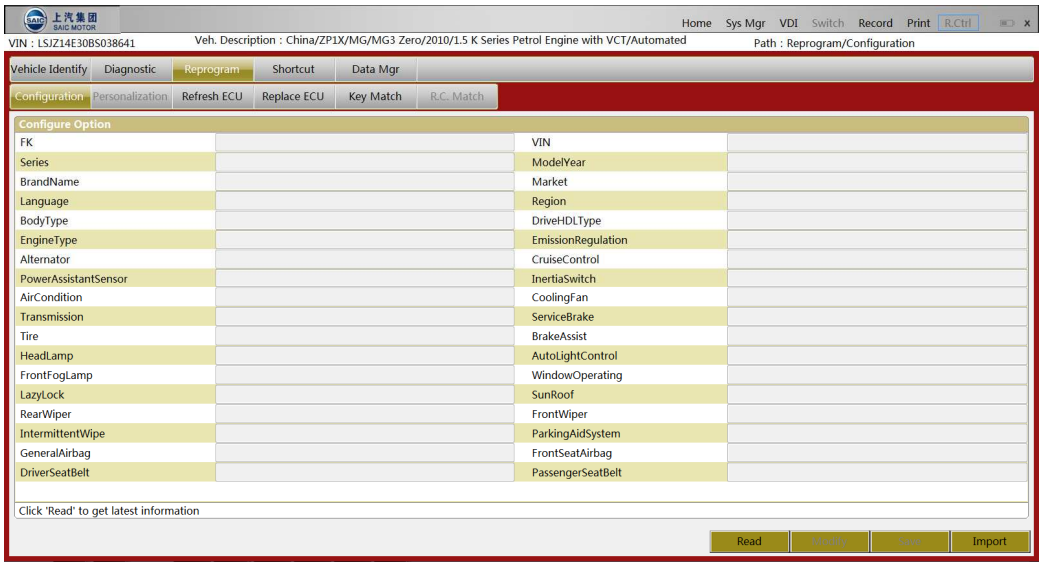


Figure 3.4.1

Configuration

Tips

1. Vehicle configuration can be changed only after it is authorized by SAIC TAC;
2. The displayed VIN and configuration information are read from the key module (normally are EMS, BCU and IPK) of the vehicle.
3. Enter the “Configuration” interface, only “Read” and “Import” functions are available. The vehicle configuration can be modified and saved only after the vehicle configuration information is read out or configuration authorization files are imported.

After entering "Reprogram" tab, the function interface is "Configuration" interface by default, and displays the configuration options of the diagnosed model. Functions of "Configuration" are: Read, Display, Modify the vehicle configuration. Above functions can be achieved by "Read", "Modify", "Save" and "Import" button.

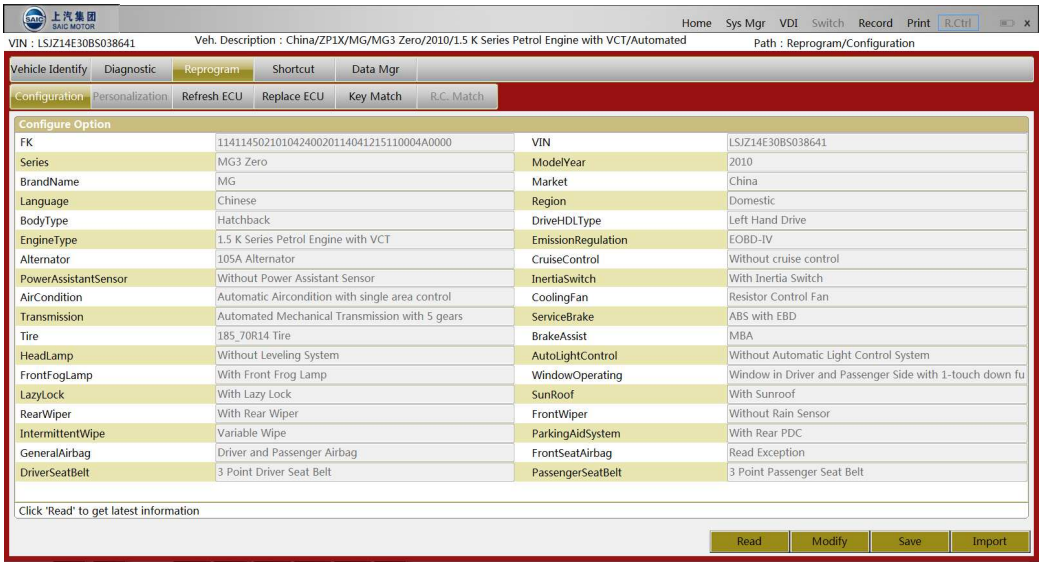


Figure 3.4.2

1) Read Configuration

Tips

After reading and displaying the configuration, "Modify" and "Save" buttons light up.

"Read" function: read and display the configuration information of vehicle.

While reading configuration, the conditions for judging successful reading: VIN (except those cannot be read and XXXXX, XXXXX refers to the module did not write into VIN) in key modules are all matched and FK (except those cannot be read and XXXXX, XXXXX refers to the module did not write into FK) are mostly matched in key modules, the mostly matched FK shall be deemed as the basis for analysis.

Procedures of Reading Configuration:

Step 1: Click “Read” to read the configuration information of the current diagnosis vehicle.

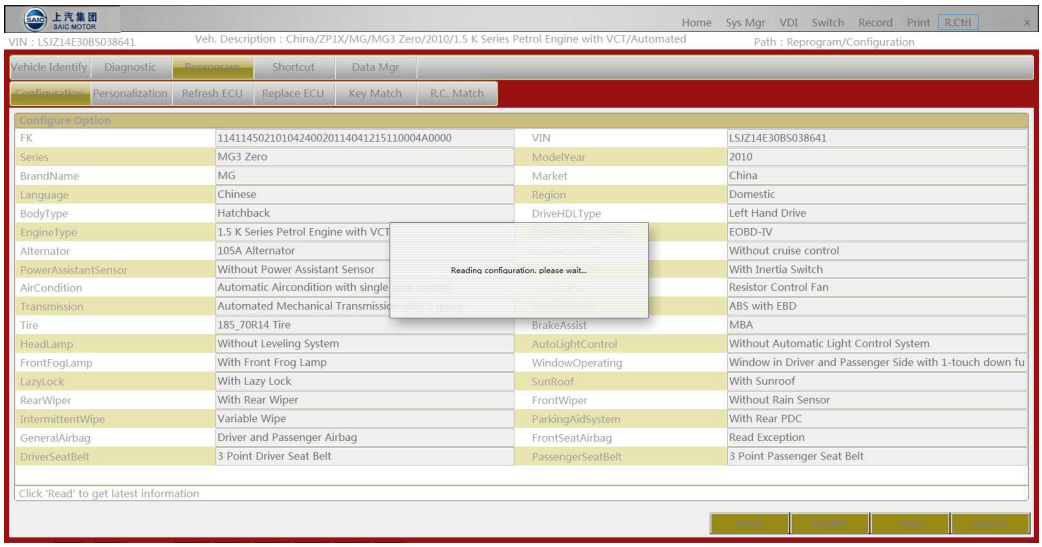


Figure 3.4.3

Step 2: The prompt box displays the result of reading configuration, unmatched VIN and FK are indicated in red.

Print: Print the result of reading configuration.

OK: Close the prompt box to the next step.

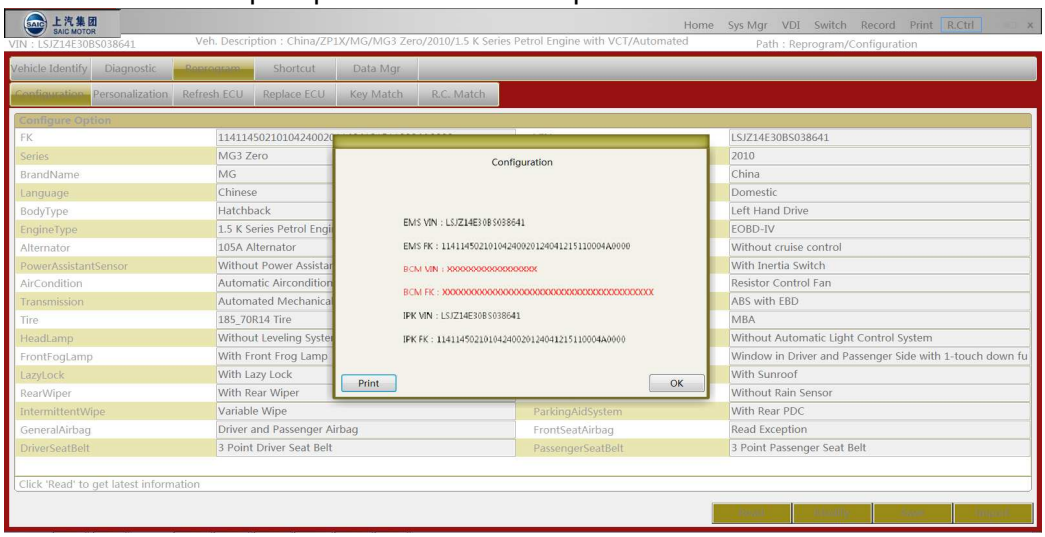


Figure 3.4.4

Step 3: For the successfully read-out configuration, the configuration information of vehicle will display in the interface, "Modify" and "Save" buttons light up. For the configuration fails to read, the cause of failure shall be prompted, after clicking "OK", the configuration interface will not display the configuration information.

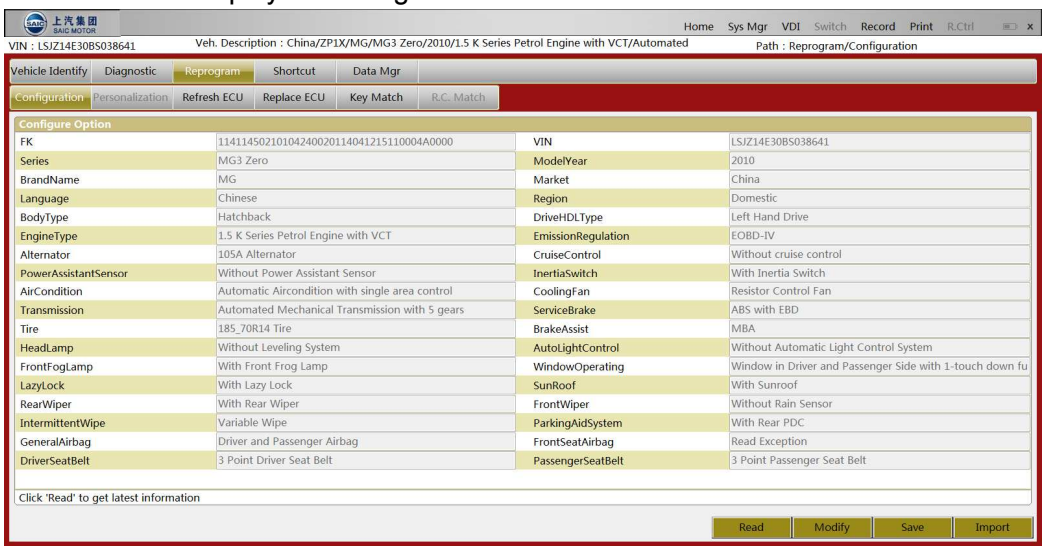


Figure 3.4.5

2) Modify Configuration

Tips

1. The vehicle configuration can be modified only after it is authorized by SAIC TAC.
2. Please upload the generated application file of modifying configuration to SAIC TAC via ServiceNow.

"Modify" function: Generate the application file of modifying configuration.

After successfully reading configuration, "Modify" button lights up, then modifying configuration is allowed. The vehicle configuration can be modified only after it is authorized by SAIC TAC, the procedure is the same as that of the generation of application file of modifying configuration.

Procedures of Modifying configuration:

Step 1: Click "Modify" to pop up the interface of modifying configuration.

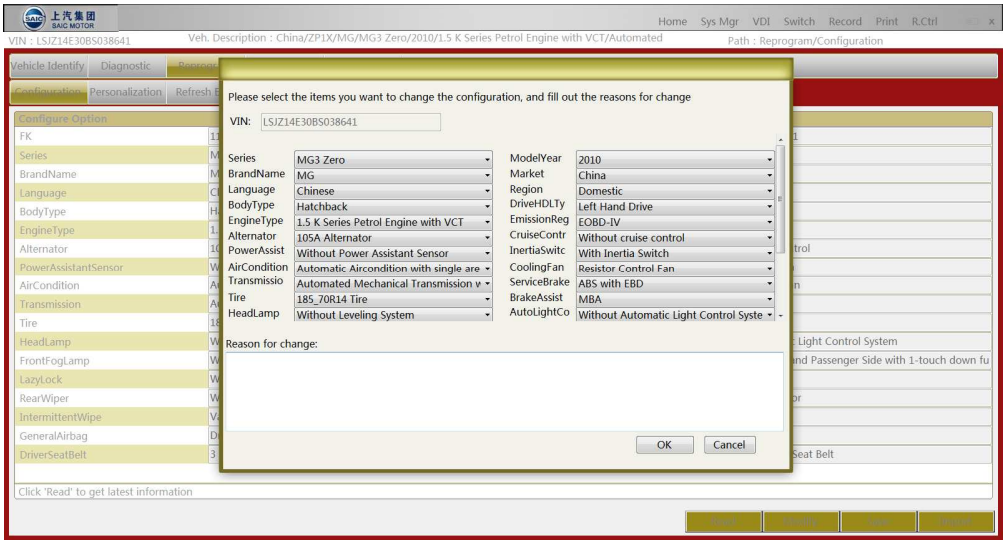


Figure 3.4.6

Step 2: Select the configuration item to be modified via drop down box (OK to make no modification), and mark the reasons for modifying (cannot be blank), then click "OK".

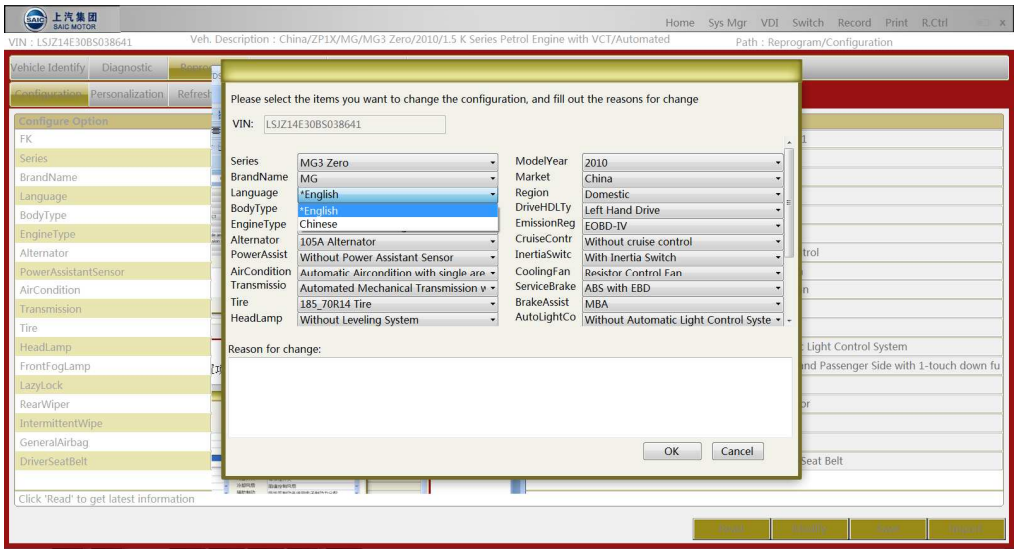


Figure 3.4.7

Step 3: Pop up the interface for saving application file of modifying configuration, supplement the file name info (cannot be blank); click " Browser" to select the save path.

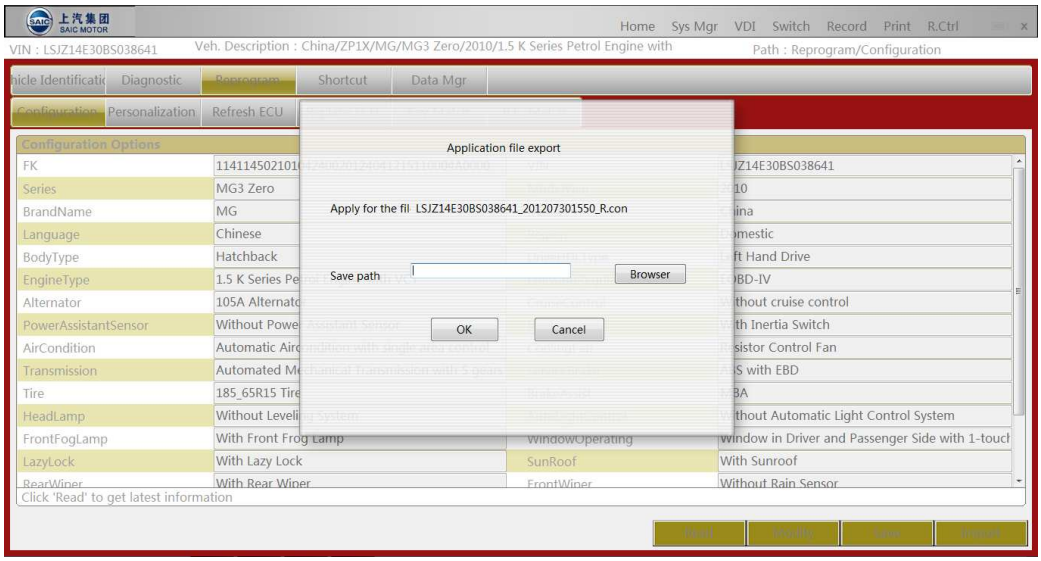


Figure 3.4.8

Step 4: Select the save path, and click "OK".

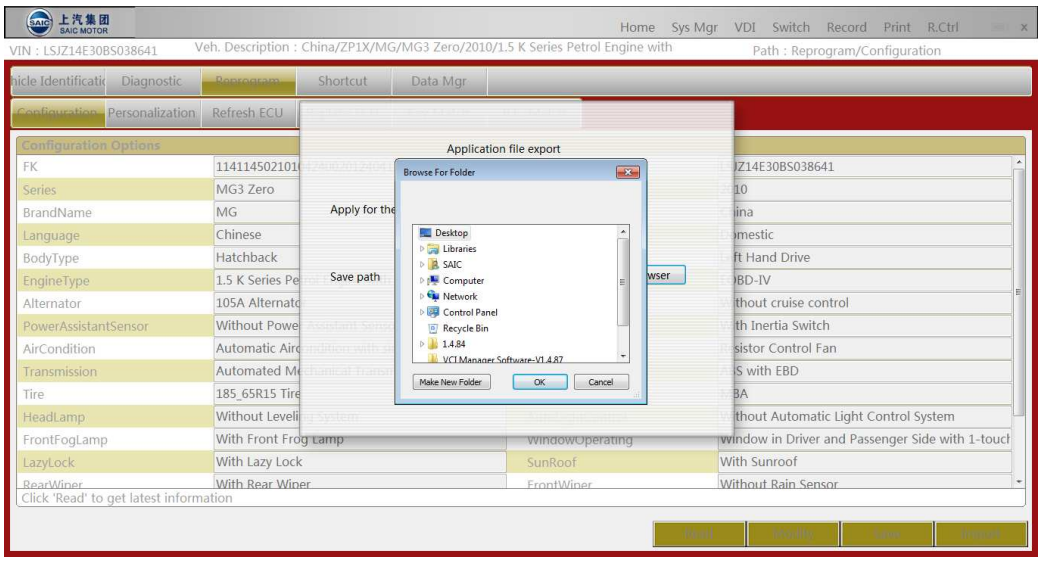


Figure 3.4.9

Step 5: Confirm the application file name and save path, then click "OK" to save the application file.

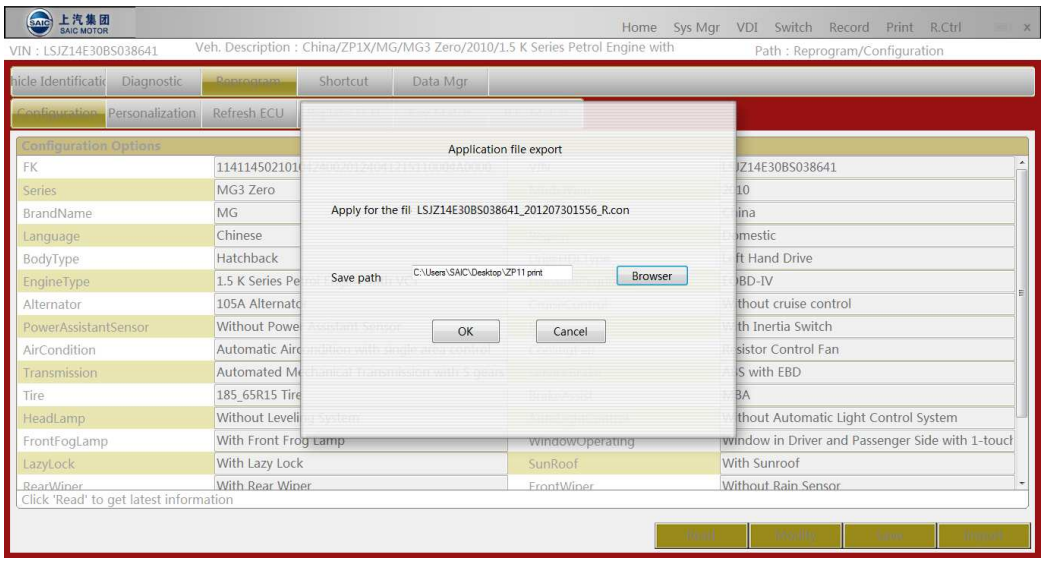


Figure 3.4.10

3) Import Configuration

Tips

1. The service center uploads the generated application file of modifying configuration to SAIC TAC via ServiceNow.
2. TAC responses the authorization file for modifying configuration via ServiceNow.
3. While importing the authorization file, VDS will check the file format and VIN, please do not revise the name of authorization file.
4. After importing, the interface shows the target configuration information for modifying, please click "Save" to finish the modifying configuration.

"Import" function: Import the authorization file for modifying configuration provided by TAC into VDS and display the target configuration information.

After obtaining the authorization file for modifying configuration via ServiceNow, the service center can import the authorization file into VDS by the function of VDS importing configuration.

Procedures of Importing Configuration

Step 1: Click “Import” button to pop up the interface of import authorization file, then click "Browser" button to open the interface of path option.

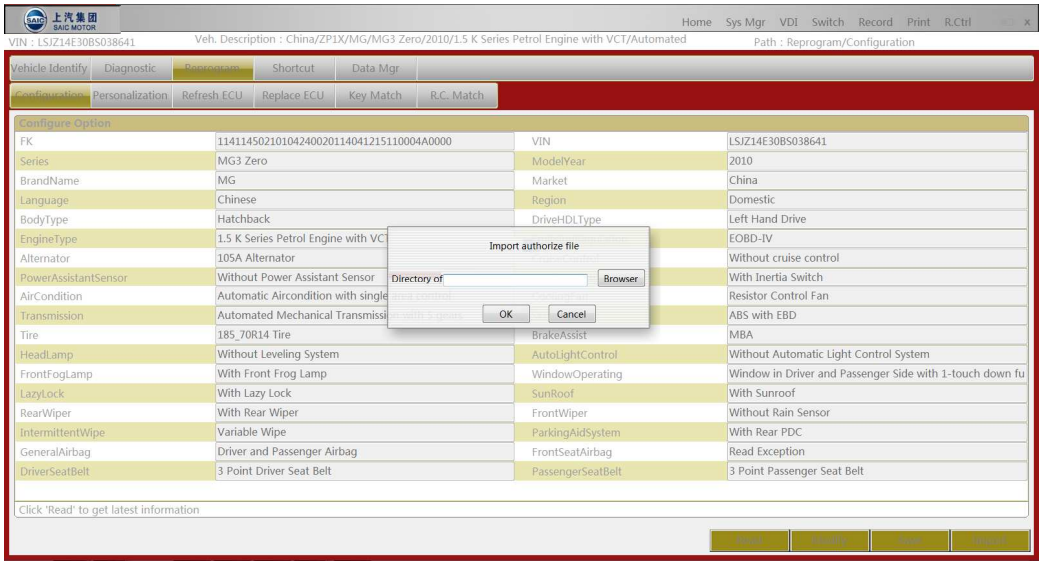


Figure 3.4.11

Step 2: After selecting the authorization file for modifying configuration, click "Open".

Figure 3.4.12

Step 3: Confirm if the selected files are correct, click “OK”.

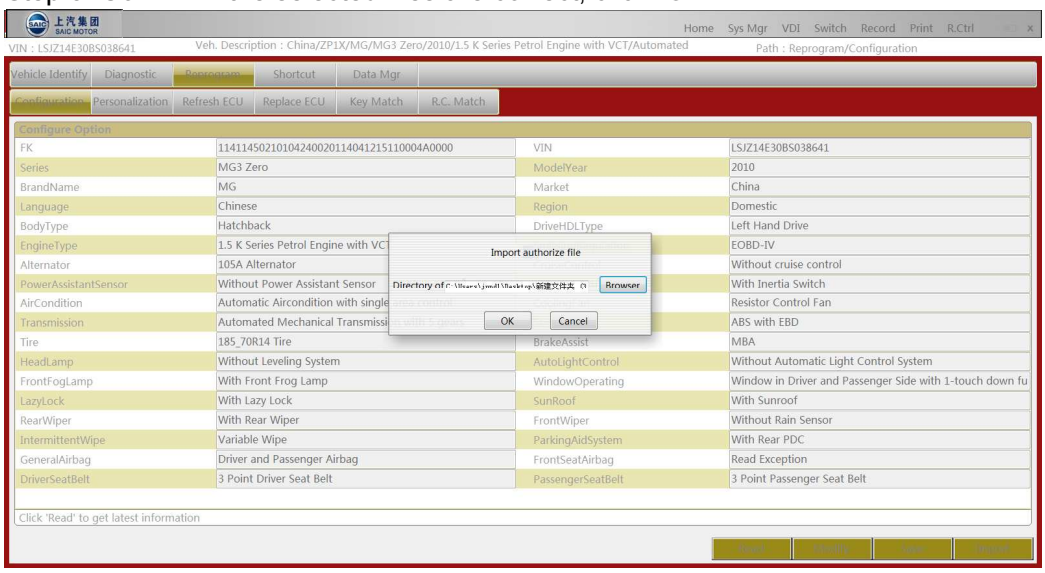


Figure 3.4.13

Step 4: Import the authorization file into VDS and display the configuration information authorized by TAC in "Configuration" interface. Please confirm if the configuration information is the target configuration for modifying.

Figure 3.4.14

4) Save Configuration

Tips

1. "Save" function can be used only after finishing "Read" function or "Import" function.
2. Prior to "Save" function, please confirm if the configuration info displayed in the configuration interface is correct or not.
3. While saving configuration error, please print configuration result with "Print" function and feedback to TAC for analysis.

"Save" function: Store the configuration information displayed in the configuration interface into all controllers of the vehicle, and write into configuration info related with module.

Saving configuration is divided into 2 categories:

A. Saving the configuration info directly after reading, unify FK characteristic code of all controllers.

B. Saving the authorization file for modifying configuration after importing, modify FK characteristic code of all controllers to target FK characteristic code.

If configuration info displayed on the configuration interface is incorrect, please save the configuration after obtaining the authorization file through authorization of modifying configuration and importing them. After saving configuration finishes, the configuration information shall be read and displayed automatically again, please check if the configuration information is correct or not.

Procedures for Saving Configuration:

Step 1: Click "Save", then a prompt box is popped up for confirming to continue, click "OK".

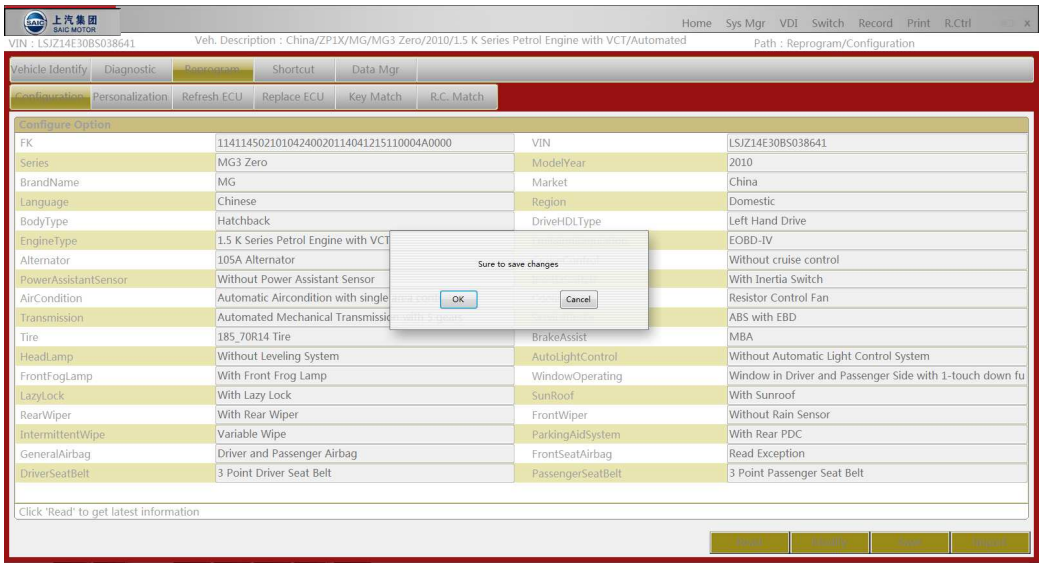


Figure 3.4.15

Step 2: Saving configuration, please wait.

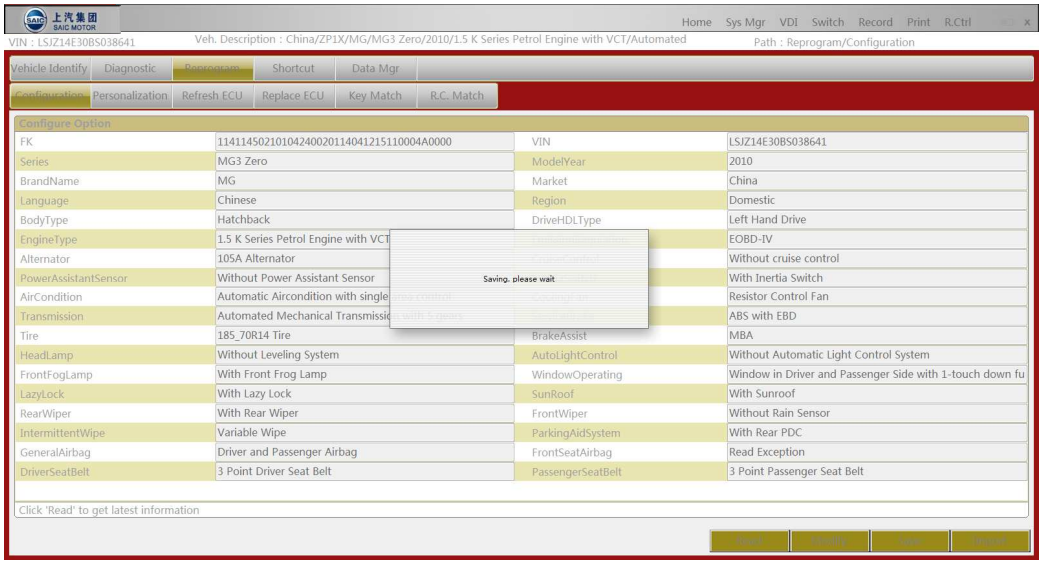


Figure 3.4.16

Step 3: After saving configuration, a prompt box with configuration result pops up. Please confirm if saving configuration of all controllers are passed, configuration success means saving configuration of all modules are passed.

打印 : Print configuration report. (See "Printing Procedure of Configuration Report").

确定 : Close the prompt box to continue.

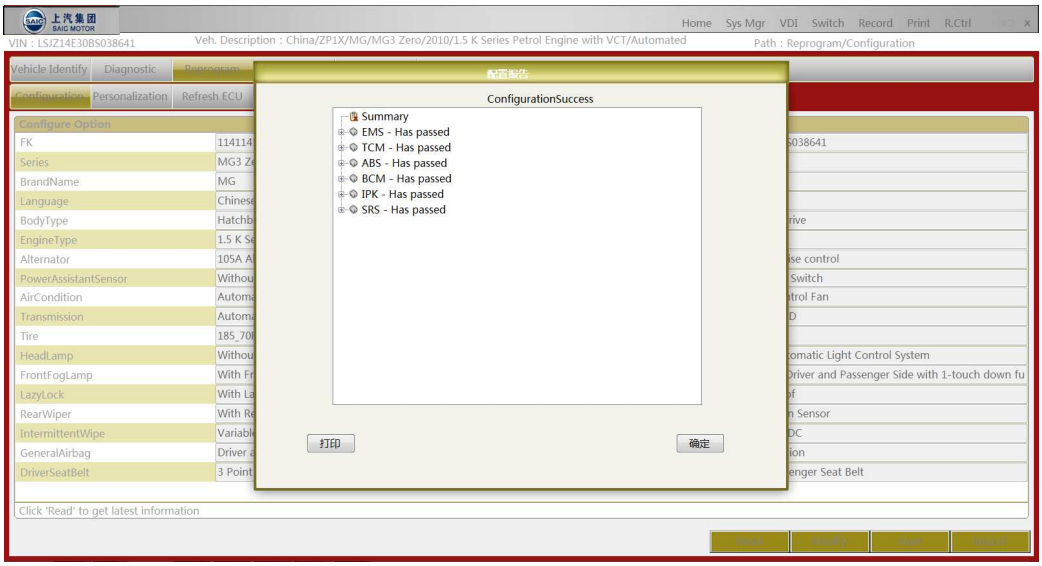


Figure 3.4.17

Step 4: Please do the fire cycle as per the notes.

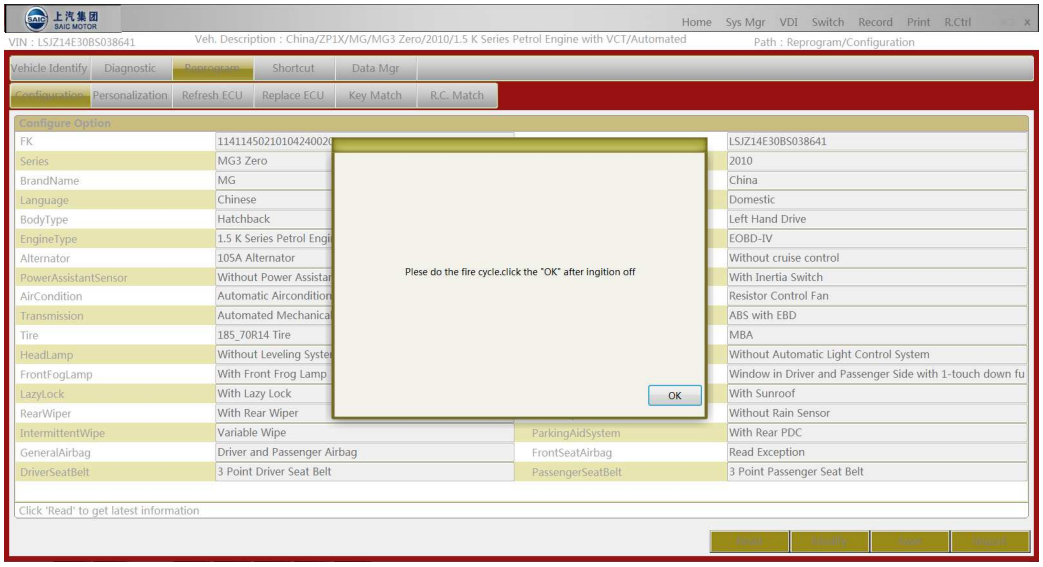


Figure 3.4.18

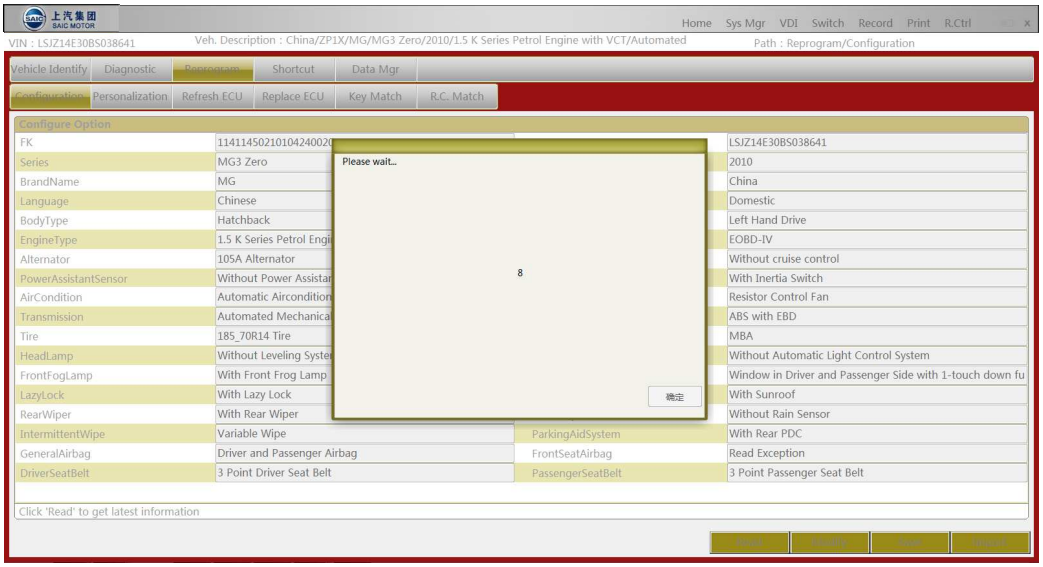


Figure 3.4.19

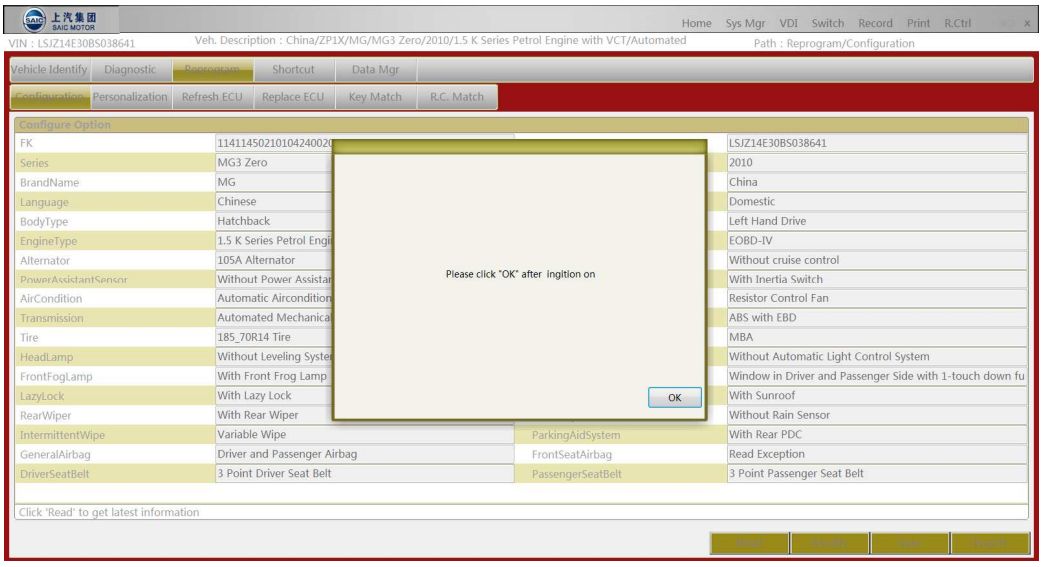


Figure 3.4.20

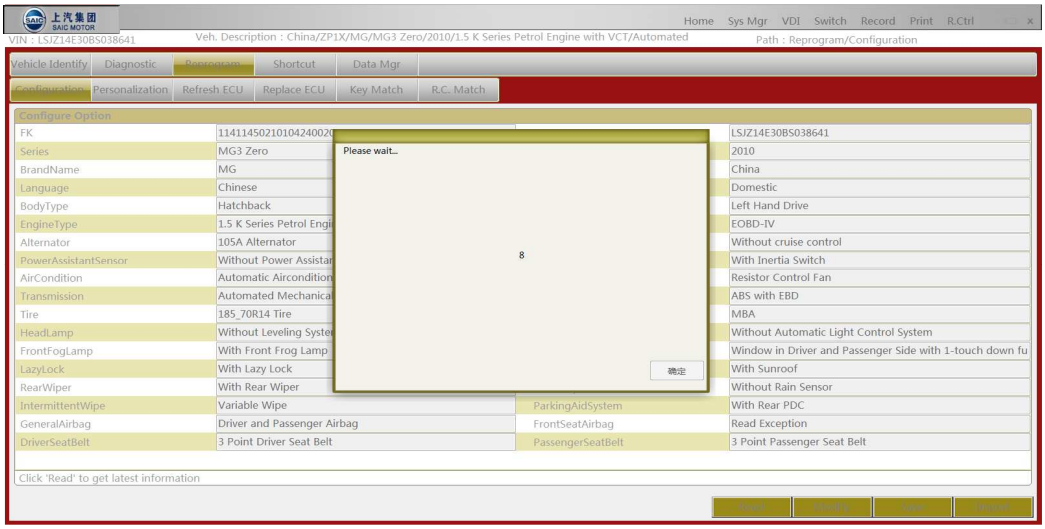


Figure 3.4.21

Step 5: After the fire cycle finishes, the vehicle configuration information will be read automatically again.

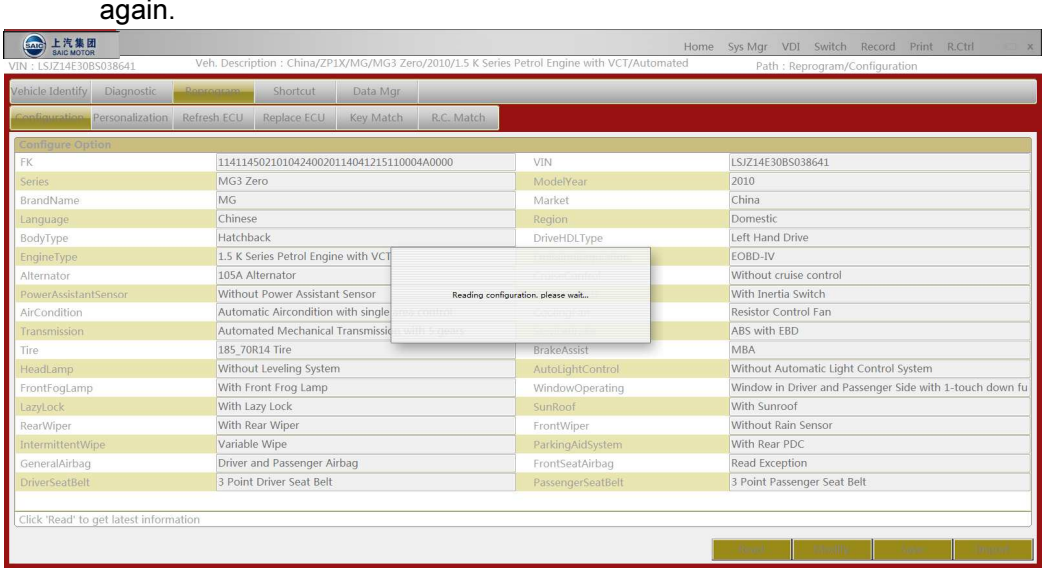


Figure 3.4.22

Step 6: Suggest the result of reading configuration, click "OK" to the next.

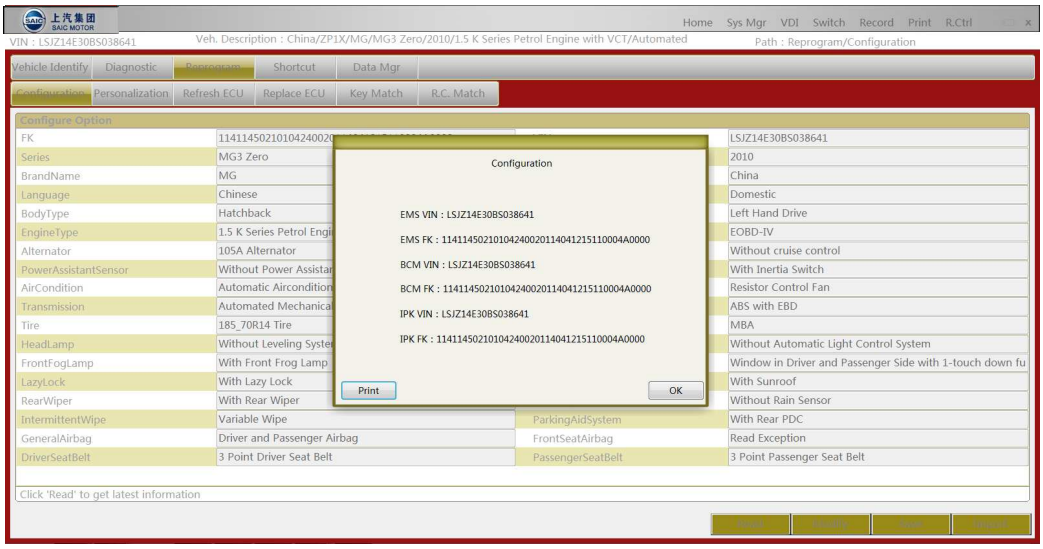


Figure 3.4.23

Step 7: Display the new configuration information, please confirm the vehicle configuration information is correct or not. It is allowed to read and modify configuration again.

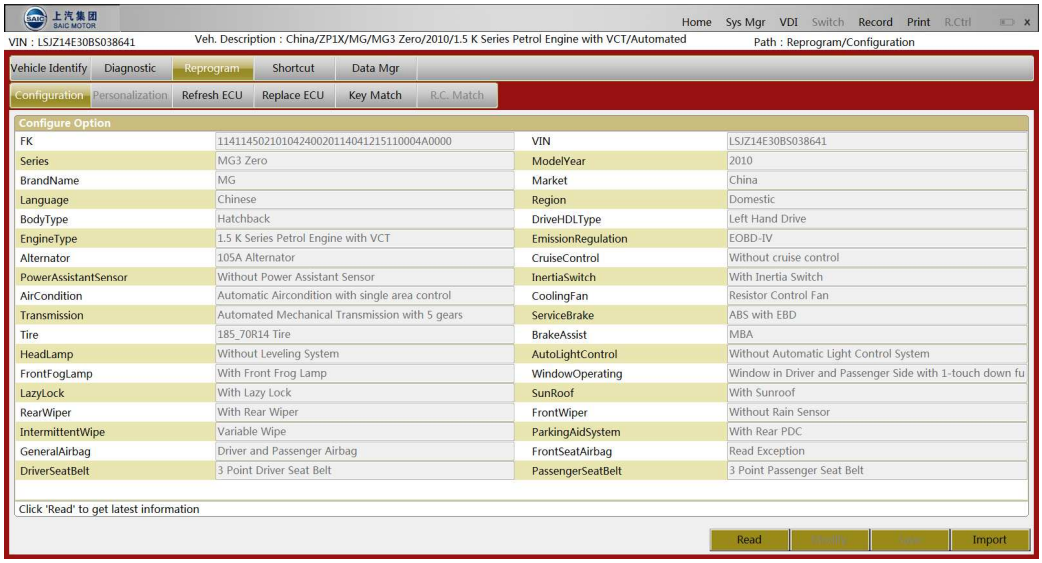


Figure 3.4.24

Printing Procedure of Configuration Report:

Take printing the configuration report to PDF file as example to explain the procedure, e.g. If print PDF file, a software "PDF Printer" should be installed on the computer.

Step 1: Click "print" in the configuration report interface.

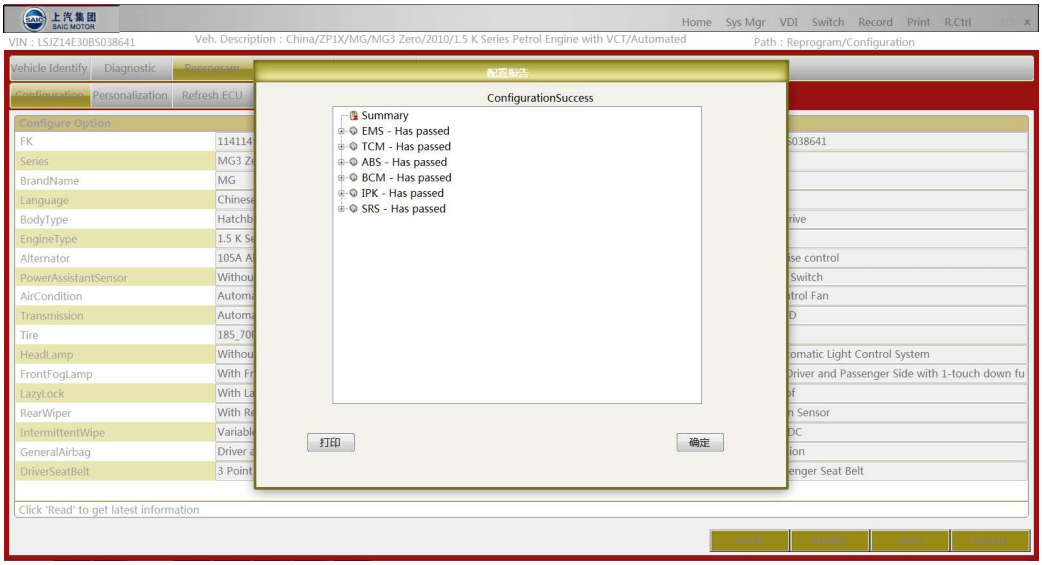


Figure 3.4.25

Step 2: The configuration report automatically unfolds, after unfolding, the print setup interface reveals.

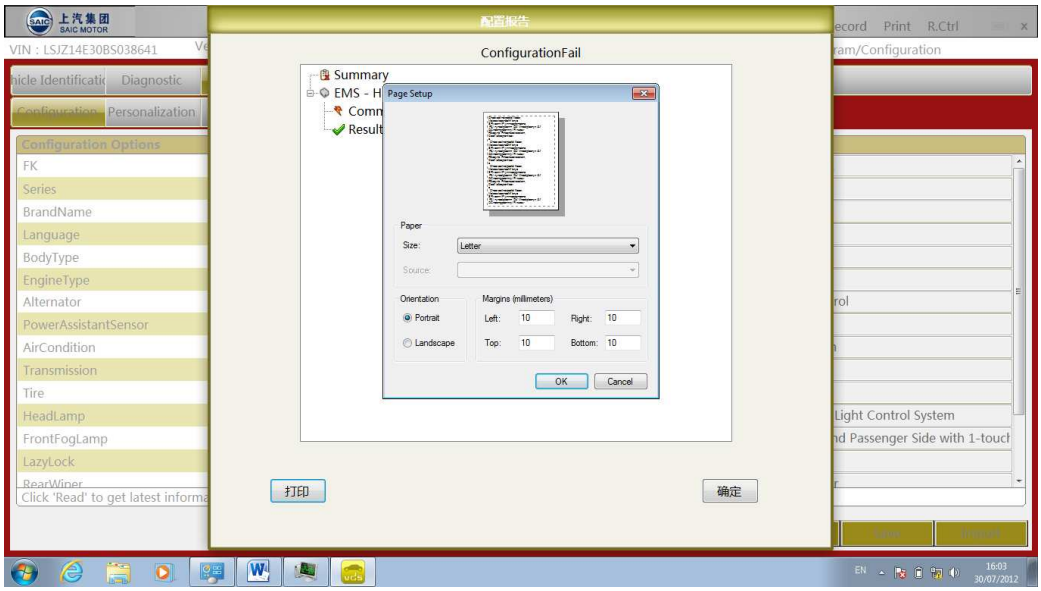


Figure 3.4.26

Step 3: Modify the print file format, file name and save path, the file format of module is PDF, file name is docment.pdf, save path is desktop.

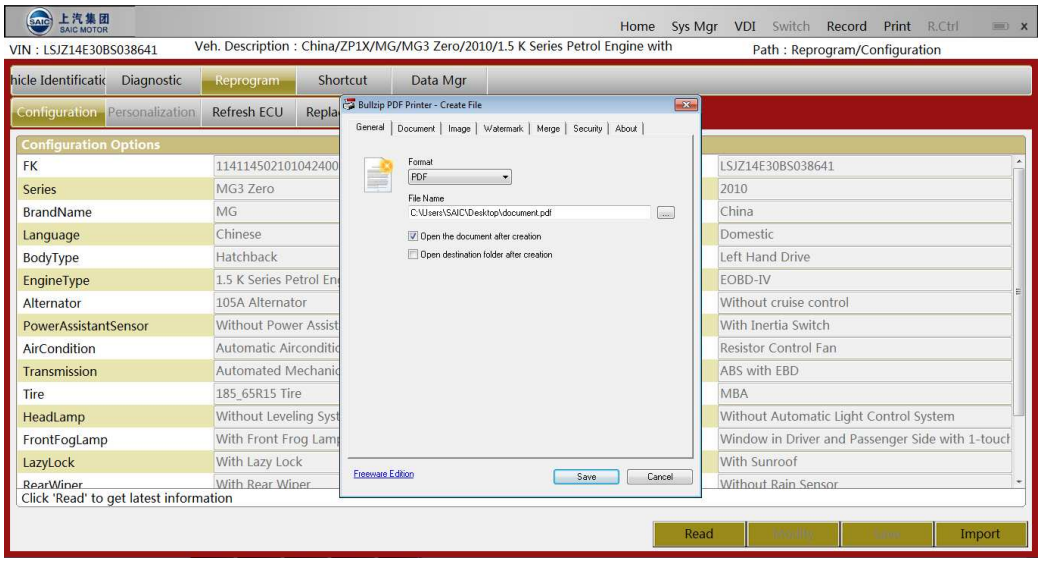


Figure 3.4.27

Step 4: If the saved file already exists, you will be prompted that if you are sure to overwrite the existing file or not. Select yes and go next.

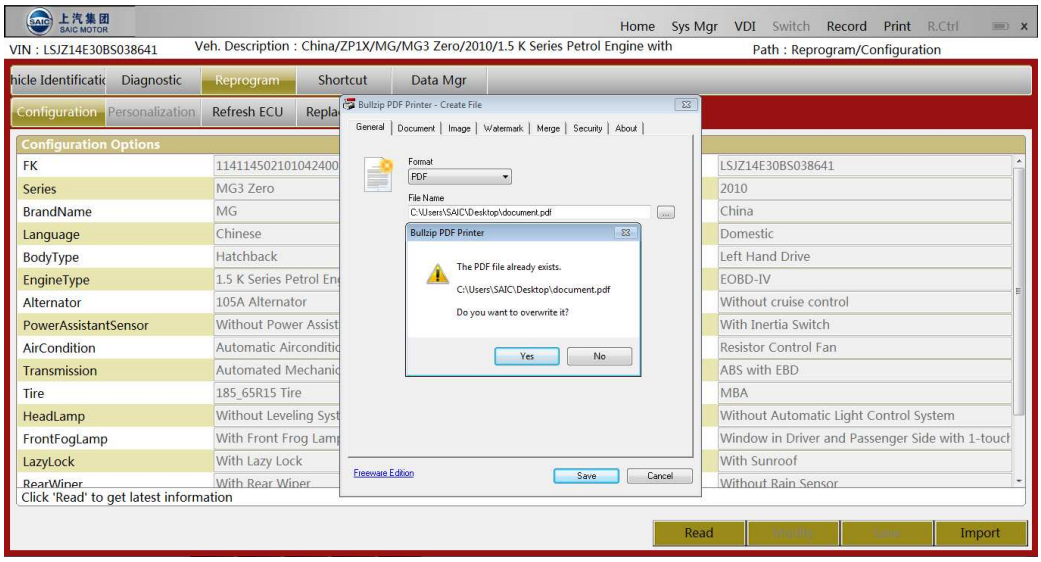


Figure 3.4.28

Step 5: After printing, the file will automatically open.

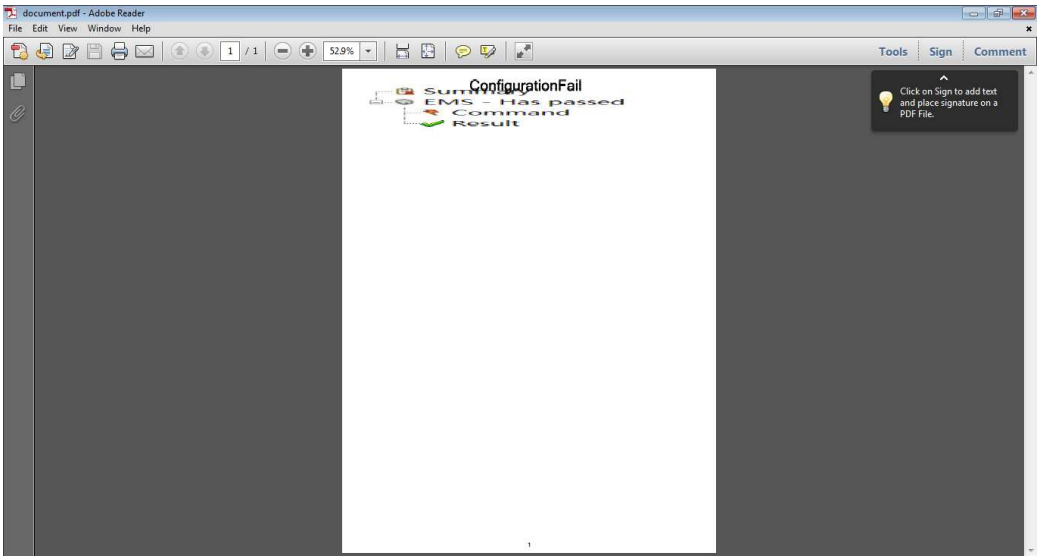


Figure 3.4.29

Step 6: The unfolded configuration information will be displayed in VDS, click "OK" to continue the procedure.

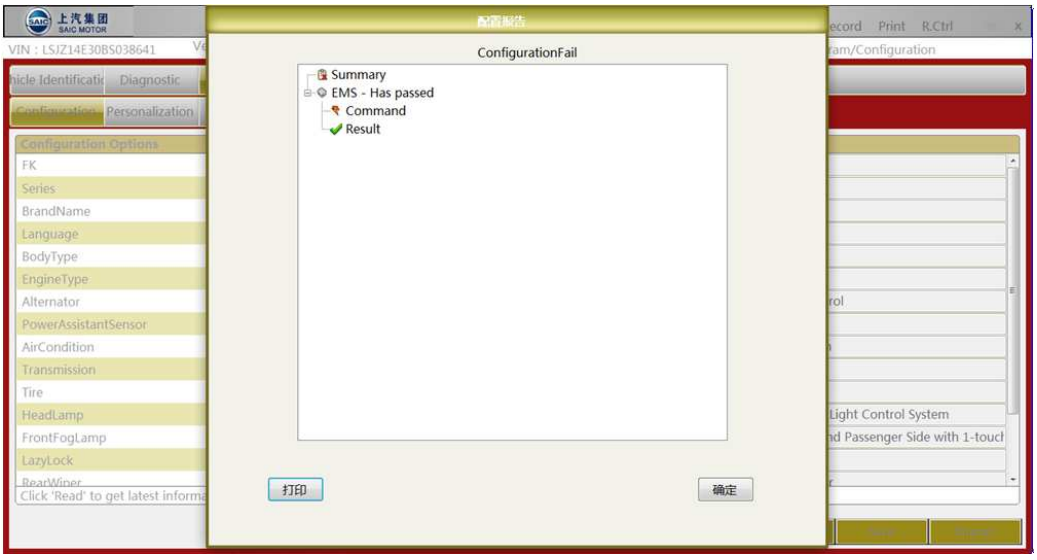


Figure 3.4.30

Personalization

This function is not supported temporarily.

3 Refresh ECU

Tips

1. Please make sure VDS is the latest version.
2. VIN and FK in the procedure are read and matched from three key modules of the vehicle. Only when VIN and FK of three key modules fully match, the modules can be calibrated. If unmatched, please modify and save the configuration first, or replace the module.

Function of "Refresh ECU": Calibrate the software of ECU to the latest status.

After entering into "Reprogram" tab, the function configuration is "Configuration" interface by default, click "Refresh ECU" to enter the function interface. The default interface of "Refresh ECU" displays the controller list which can be calibrated on diagnosed vehicle.

This Section will set forth the function of refresh ECU by taking TCM standardization procedure as an example.

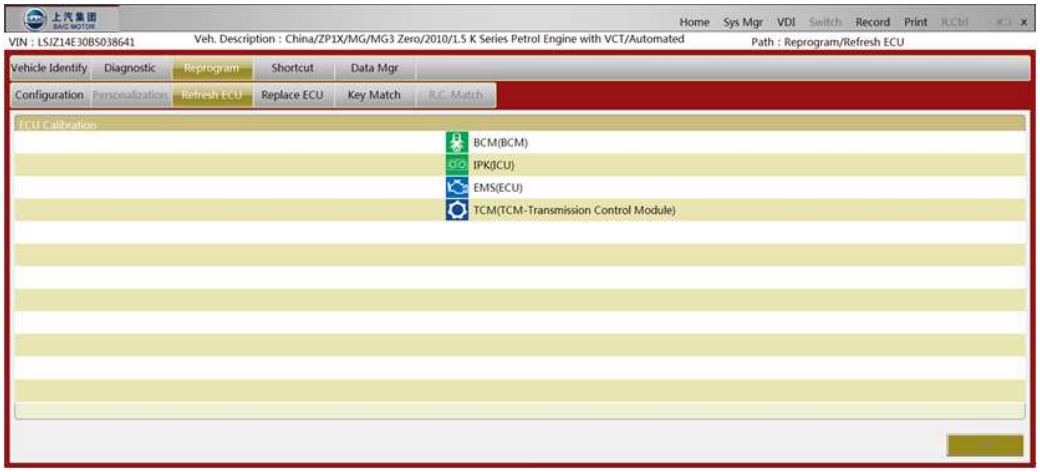


Figure 3.4.31

Procedures of Refresh ECU:

Step 1: Select the controllers to be calibrated in the list, "OK" button lights up;

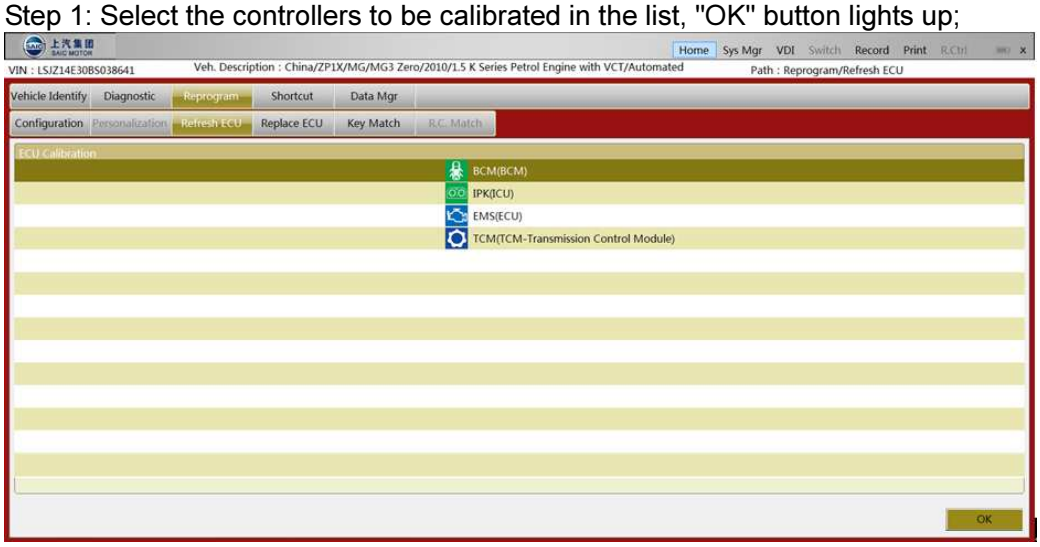


Figure 3.4.32

Step 2: Click "OK" to enter into the refresh ECU procedures of selected controller. The interface includes "Standardization search", "Standardization start", "Authorization", "Import Authorization" and "Exit" buttons:

Standardization search: VDS auto searches standardization files and displays.

Standardization start: Write the searched standardization files into ECU.

Authorization: Generate the request file authorized by refresh ECU.

Import Authorization: Import the authorization file of refresh ECU provided by TAC, search for the standardization file and display according to file information.

Exit: Exit the refresh ECU procedure.

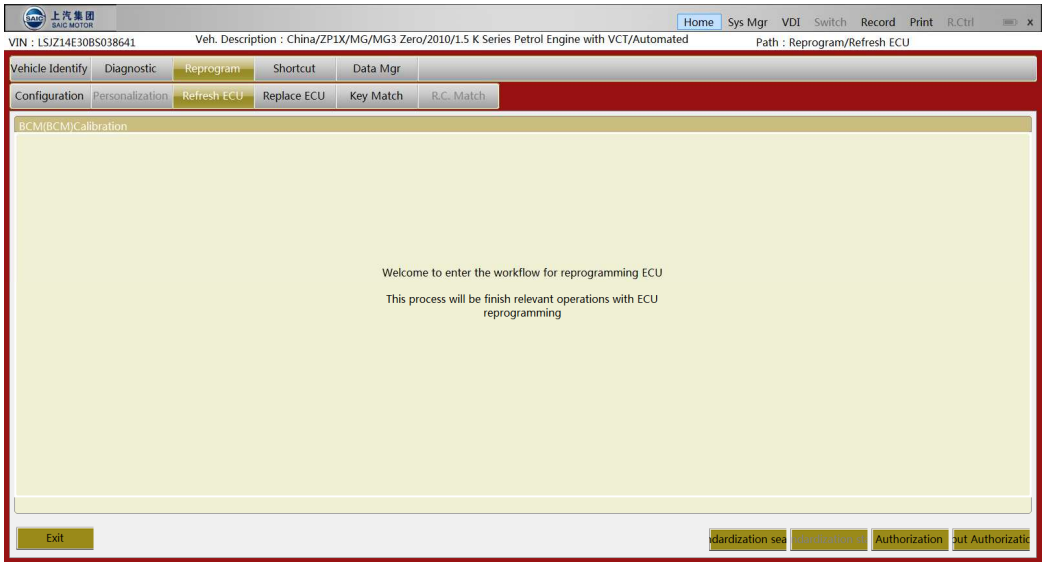


Figure 3.4.33

Step 3: Click "Standardization search" or "Import authorization" buttons (searching method of standardization file: Standardization search and authorization, as described in the following sections), search and display information of standardization file. After finding the information, "Standardization start" button lights up.

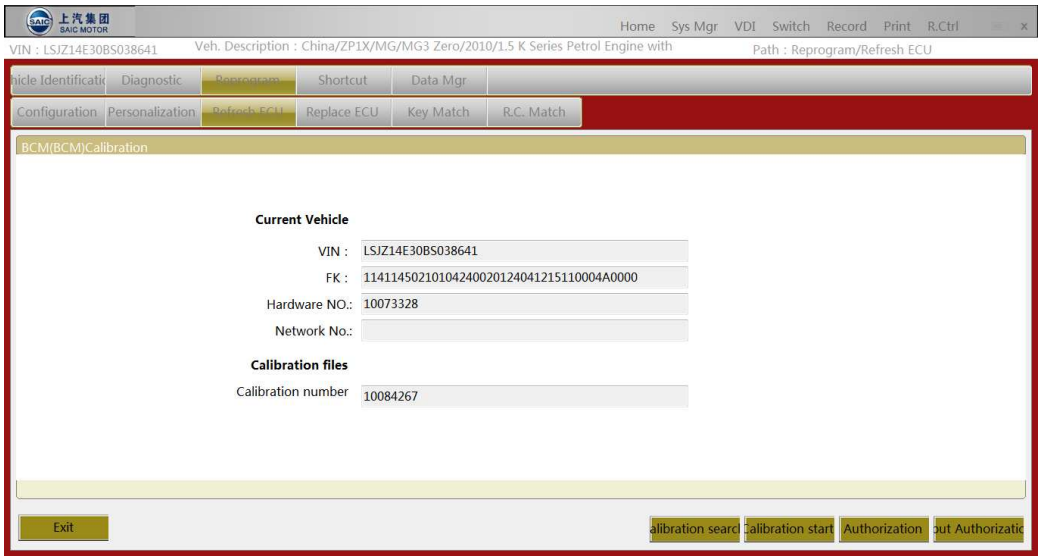


Figure 3.4.34

Step 4: Click "Standardization start" to enter into the module standardization procedure. You will prompted with the notices of standardization process.

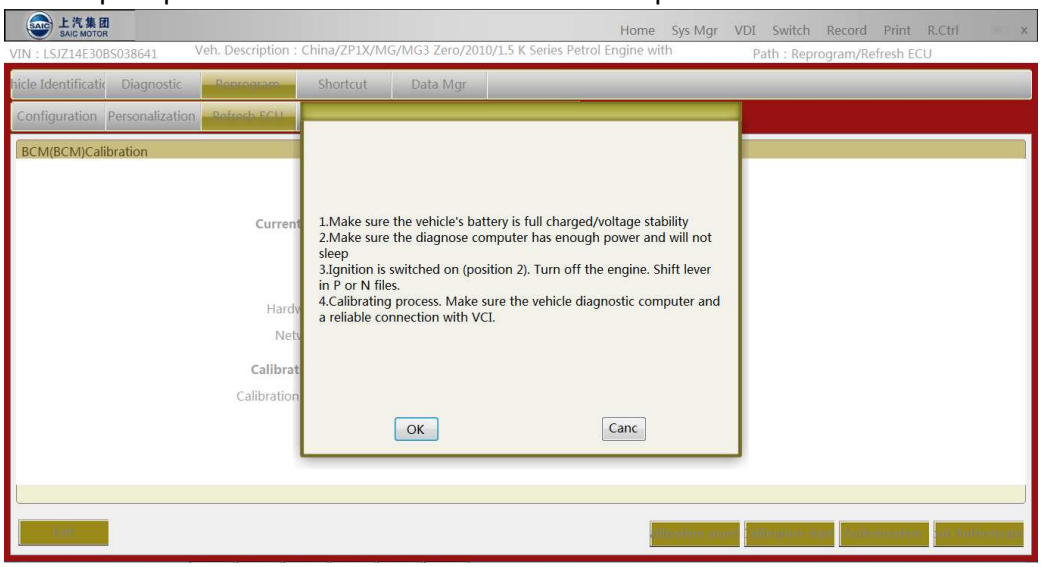


Figure 3.4.35

Step 5: Refreshing the controller, it may take several minutes.

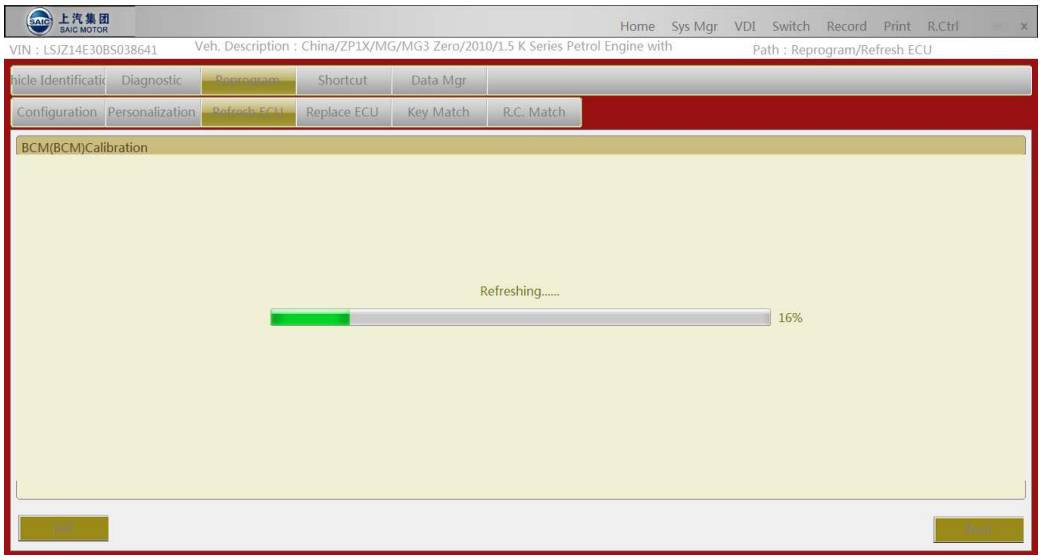


Figure 3.4.36

Step 6: Refreshing has completed, operate according to the notes.

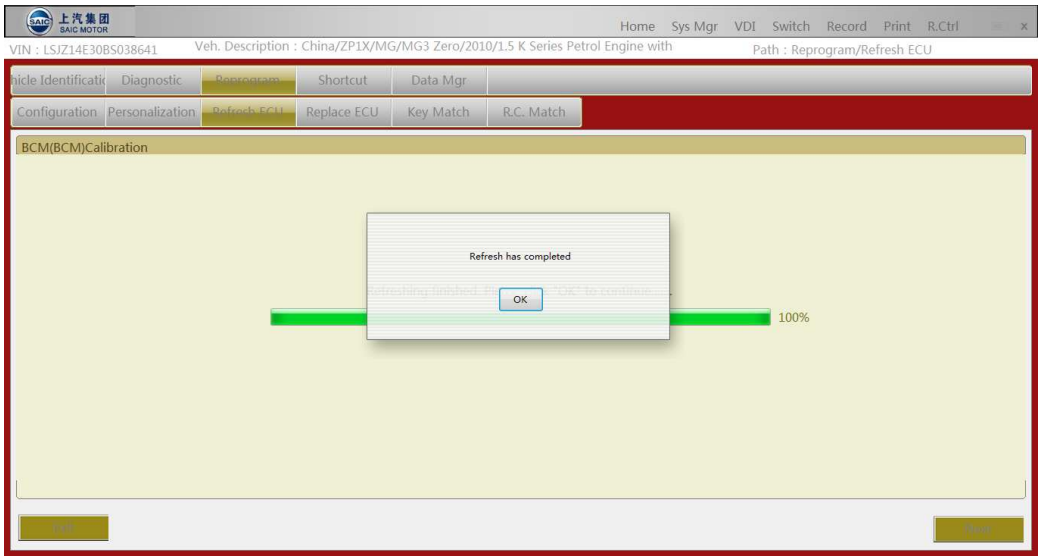


Figure 3.4.37

Step 7: Prompt box of completing the refreshing, click "Finished" to go back to the main interface of "Refresh ECU".

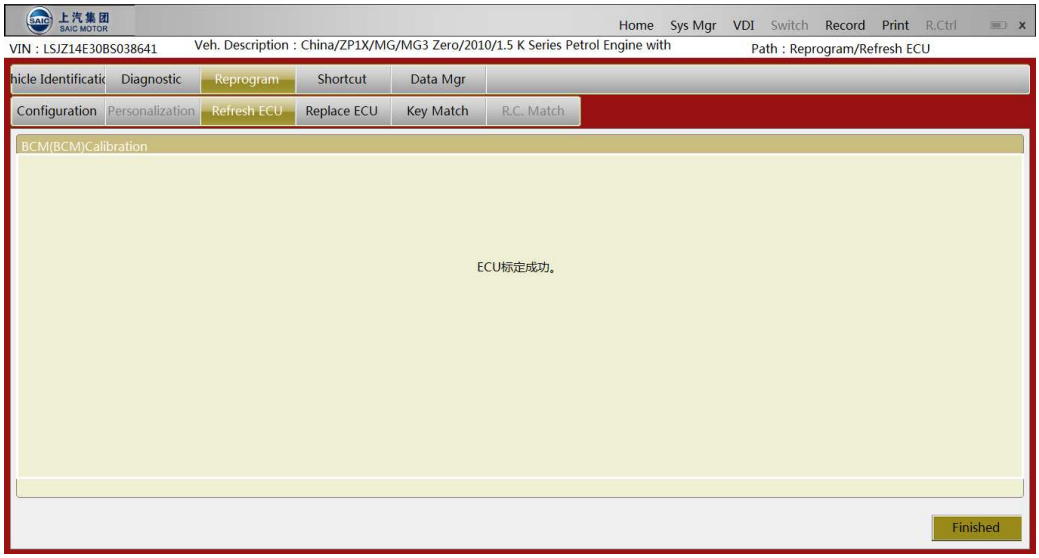


Figure 3.4.38

1) Standardization Search

Tips

Please confirm if the searched standardization file are correct according to the notice released by TAC.

Functions of Standardization search: Diagnostic software automatically searches ECU standardization files and displays related information.

While the normal diagnosis and maintenance of the vehicle, maintenance personnel searches ECU standardization file by the way of “Standardization search”.

Operation Procedure of Standardization search:

Step 1: Select the module to be refreshed, enter into the procedures of refresh ECU, then click “Standardization search”.

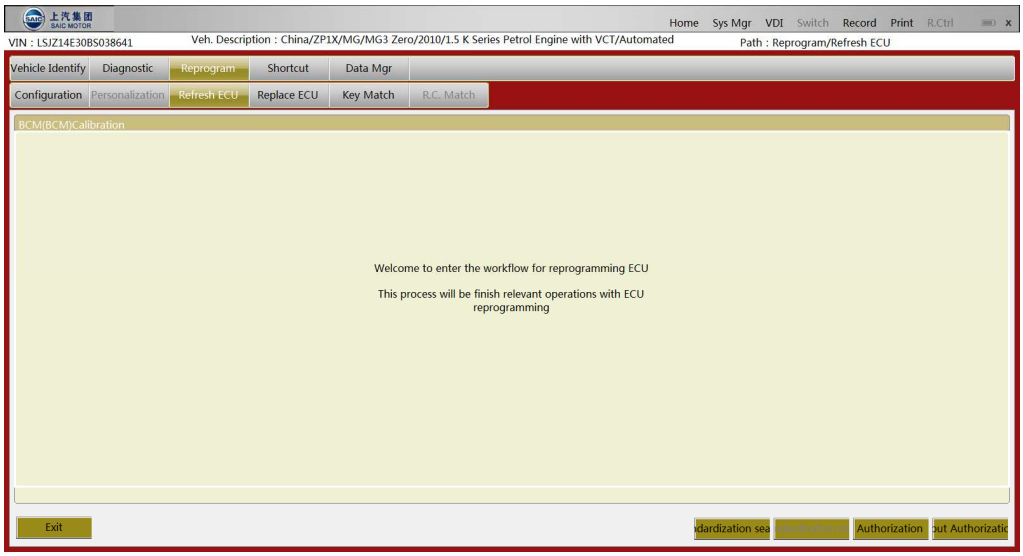


Figure 3.4.39

Step 2: Read related information for selecting standardization file from the vehicle: VIN, FK, module number and network.

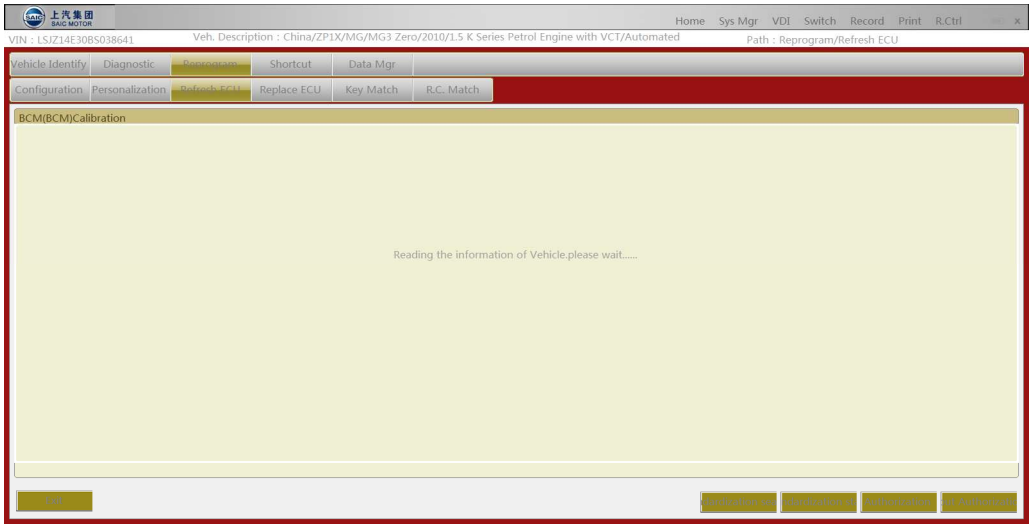


Figure 3.4.40

Step 3: Display the read-out module information and searched standardization file information, "Standardization start" button lights up; Searched standardization file information is displayed in the form of "Calibration number/Software number", please confirm if the searched file are correct according to the notice released by TAC.

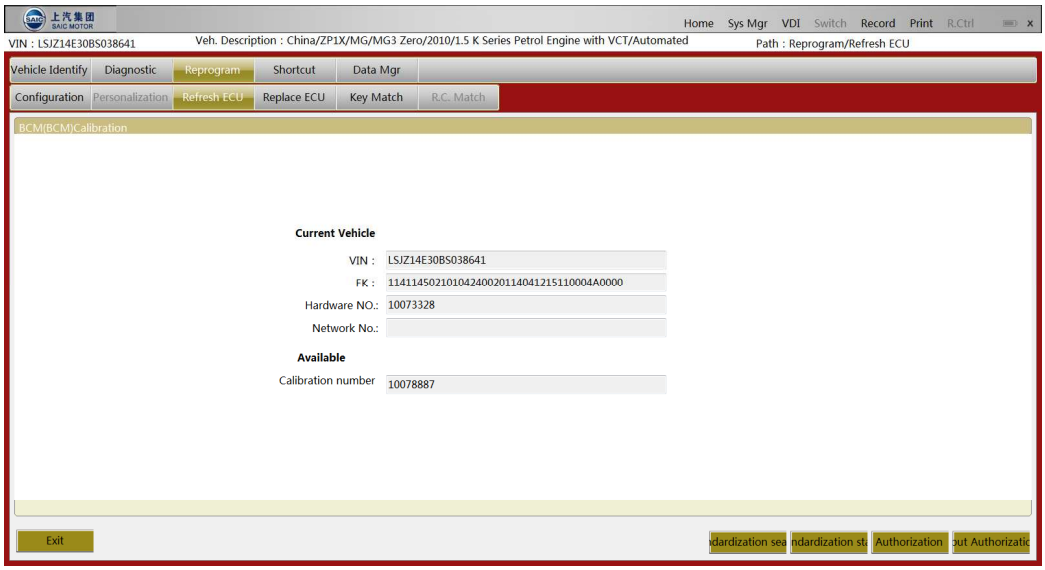


Figure 3.4.41

2) Standardization Authorization

Tips

1. Only when TAC requires that service personnel should make special standardization, the standardization file can be searched through standardization authorization.
2. Please upload the generated standardization application file to SAIC TAC via ServiceNow.
3. After obtaining the standardization authorization file, the authorization can be finished after the authorization file being imported through "Import Authorization" function.

Function of Standardization Authorization: Generate standardization application file, and then provide to TAC for standardization authorization.

Operation Procedure of Standardization Authorization:

Step 1: Select the module to be refreshed, enter into the procedure of refresh ECU, then click "Authorization".

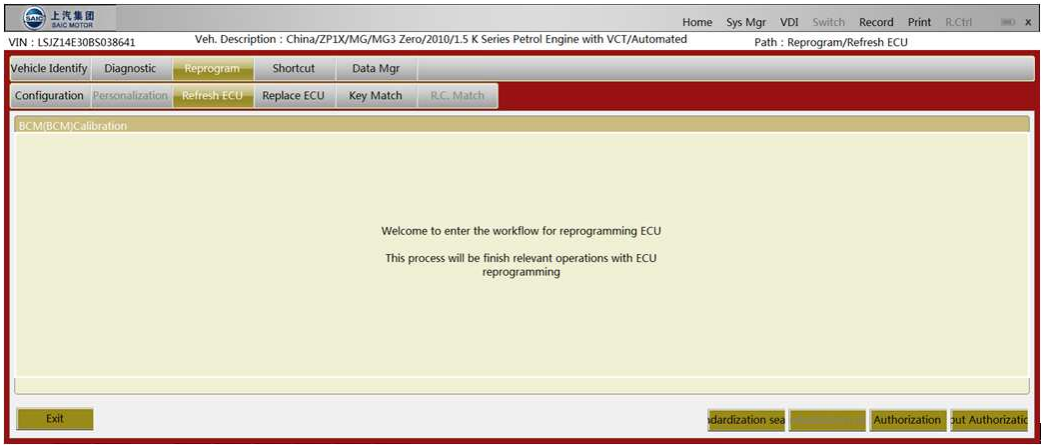


Figure 3.4.42

Step 2: Read the related information for authorization from the vehicle: VIN, FK, module hardware number, network number, software number, calibration number etc.

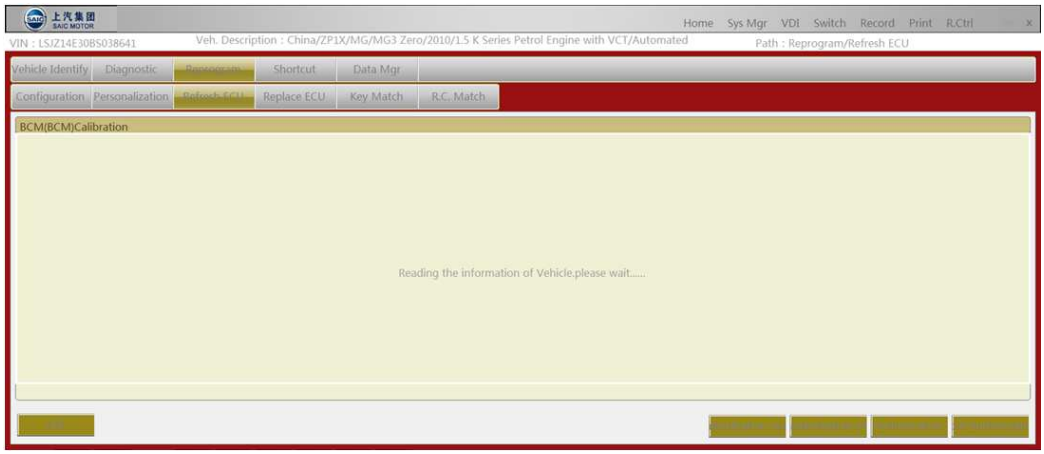


Figure 3.4.43

Step 3: Display the read-out module information, complete the reasons for applying for authorization in remark column, then click “OK”.

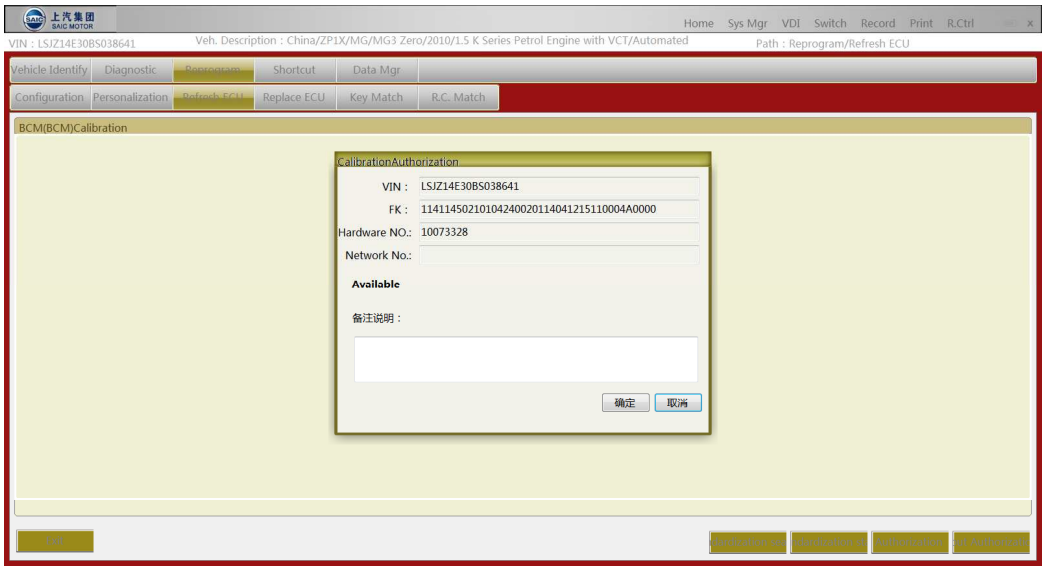


Figure 3.4.44

Step 4: Select the save path of file, input the file name, then click “Save” to generate standardization application file, VDS returns to the main interface of refresh ECU, please upload the standardization application file to ServiceNow;

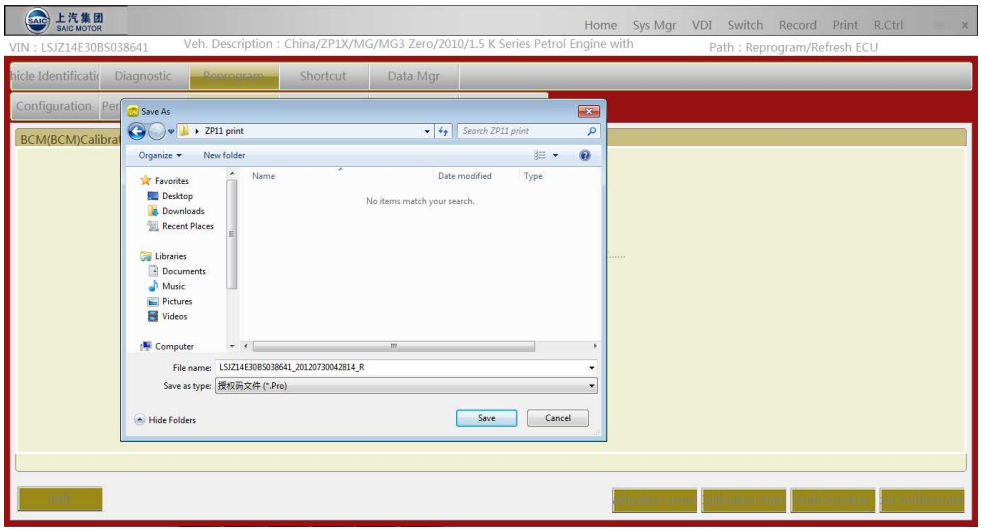


Figure 3.4.45

3) Import Authorization

Tips

1. Prior to “Import Authorization” function, it must apply authorization through “Authorization” function.
2. Upload the standardization authorization file responded by TAC from ServiceNow.
3. There is VIN information in authorization file, please check it once uses the standardization application file, and the file name cannot be revised.

Function of Import Authorization: Import the standardization authorization file provided by TAC, search the standardization files related with ECU and display the related information.

Operation Procedure of Standardization Authorization:

Step 1: Select the module for applying the authorization standardization, enter into the refresh ECU procedure, then click "Import Authorization".

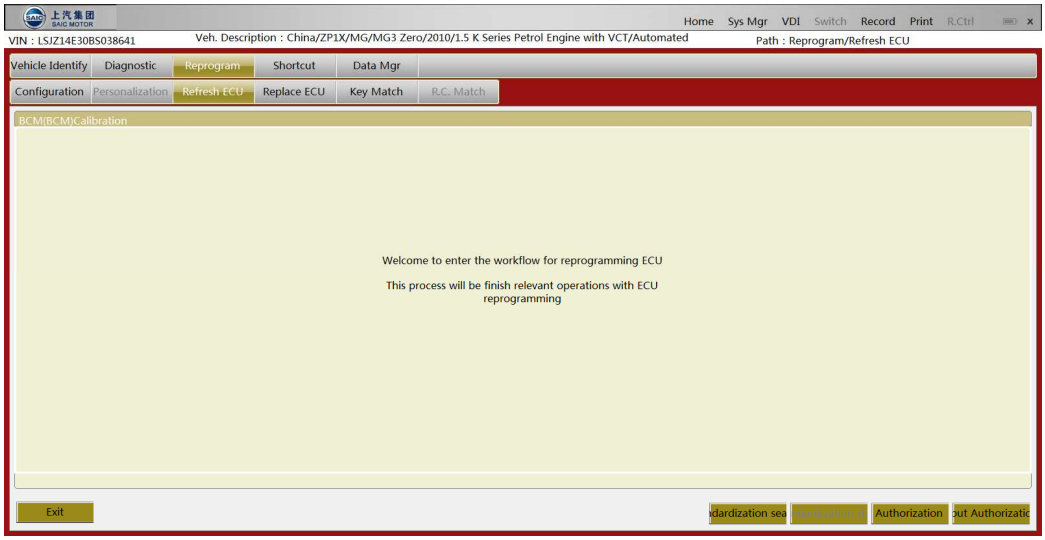


Figure 3.4.46

Step 2: Select the standardization authorization file to be imported, click “Open” and import authorization file into VDS.

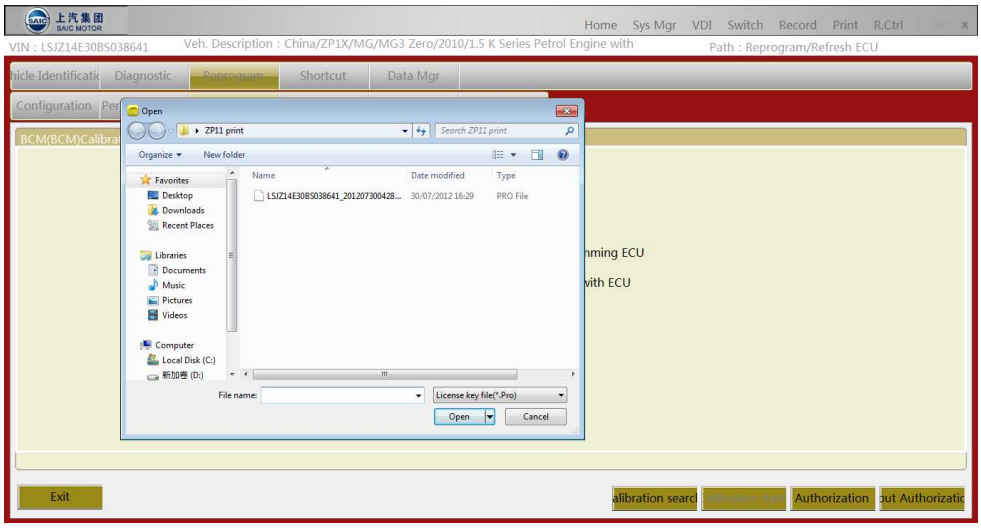


Figure 3.4.47

Step 3: Read the related information of the vehicle, and review it with the information in authorization file. After passing the review, it will search standardization file in VDS according to the information of standardization authorization file, and display the read-out module information and searched standardization information, "Standardization start" lights up. Searched standardization file information is displayed in the form of "Calibration number / Software number", please confirm if the searched file is correct according to the documents released by TAC such as notice.

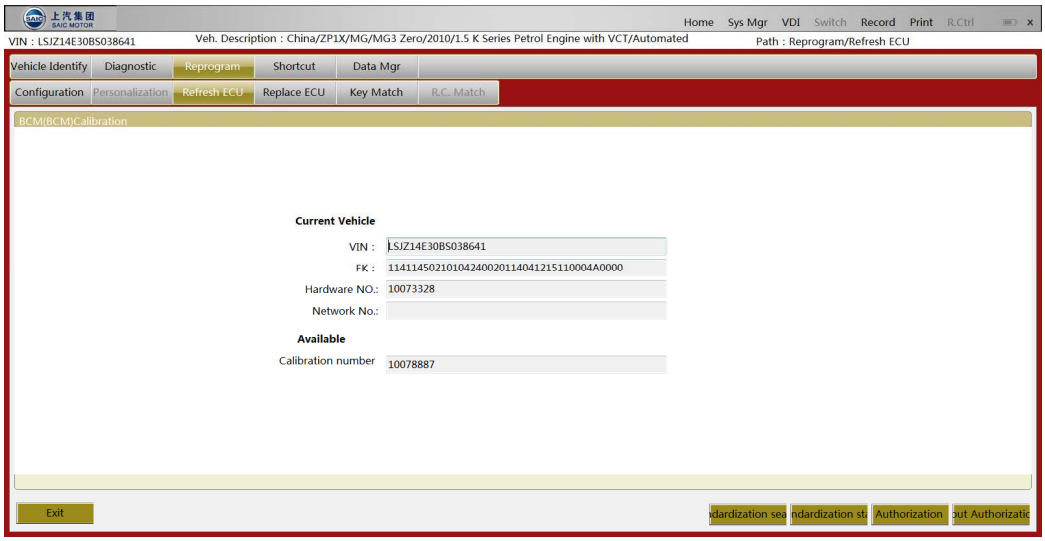


Figure 3.4.48

4 Replace ECU

Tips

1. Prior to “Replace ECU”, install the new controller to the vehicle.
2. During the replacement, the configuration writing or anti-theft match shall be conducted only to the current updated module.
3. Due to the different "Replace ECU" procedures of each controller, for detailed operation instruction, please read the language notes on each interface of different controller "Replace ECU".
4. In the procedure, VIN and FK are read from three key modules. Only when VIN and FK are fully matched (except the new parts or modules which cannot be distinguished), the update operations can proceed; if they are not fully matched, it will be prompted read configuration error, then replace the module unmatched with VIN or modify and save the configuration.

Functions of "Replace ECU": Conduct necessary configuration writing to the brand new ECU and the anti-theft match to modules.

After entering into "Reprogram" tab, the function interface is "Configuration" interface by default, click "Replace ECU" to enter into the function interface. The interface of "Replace ECU" displays the list of controllers on the diagnosed vehicle which needs "Replace ECU" operation while replacing new parts. Select the corresponding ECU name, then enter into the operation procedures of "Replace ECU".

Taking the procedure of ZP11 model IPK (instrument pack) as an example, this section will introduce the operation of replace ECU.

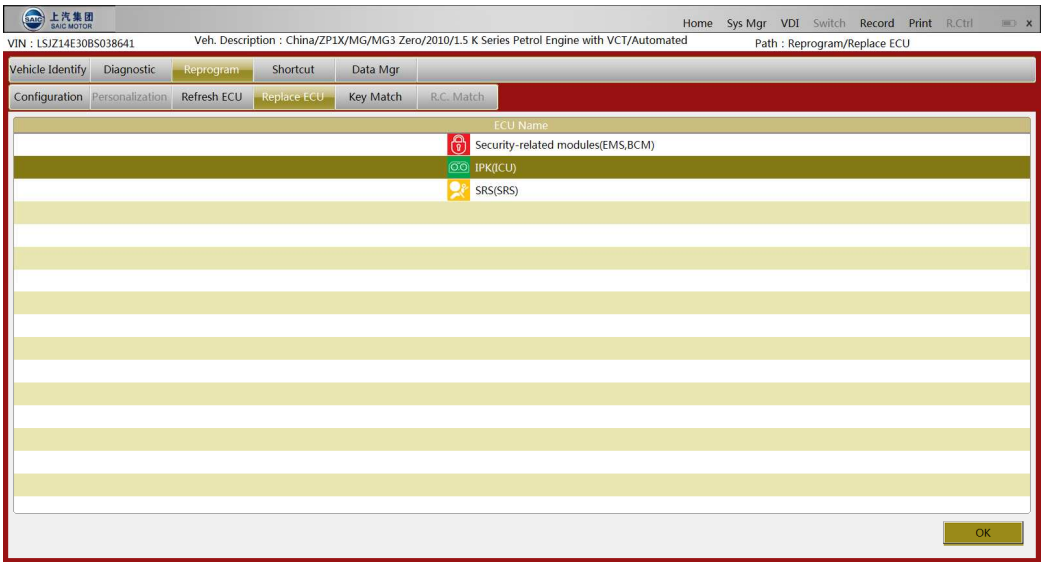


Figure 3.4.49

Procedures of Replace ECU:

Step 1: Select the controller needs to be updated, “OK” button lights up, click “OK” to start replacement.

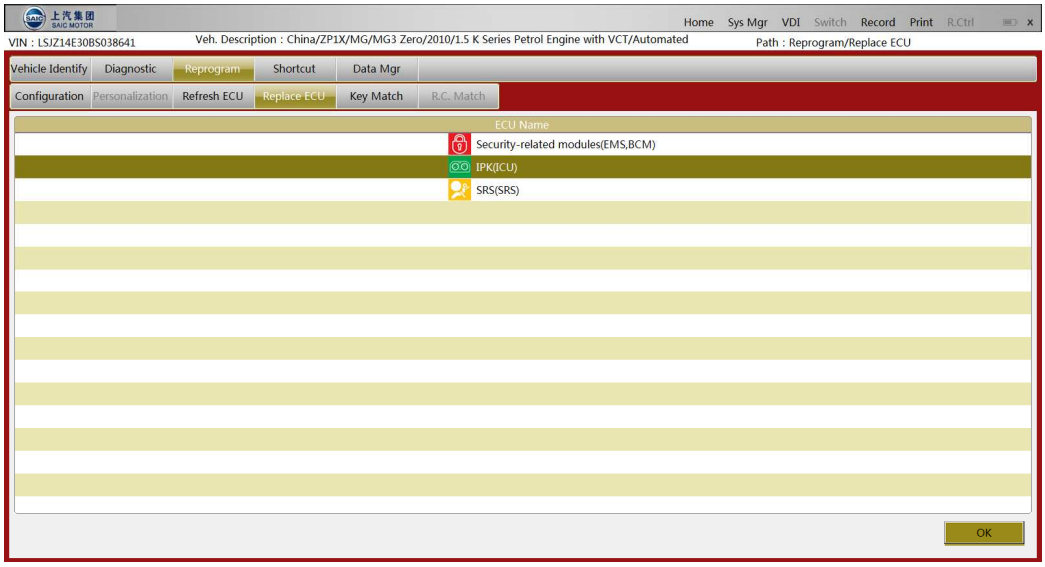


Figure 3.4.50

Step 2: The interface will prompt the conditions and notices during replacing ECU, please confirm if the vehicle meets the conditions, then click “Next”.

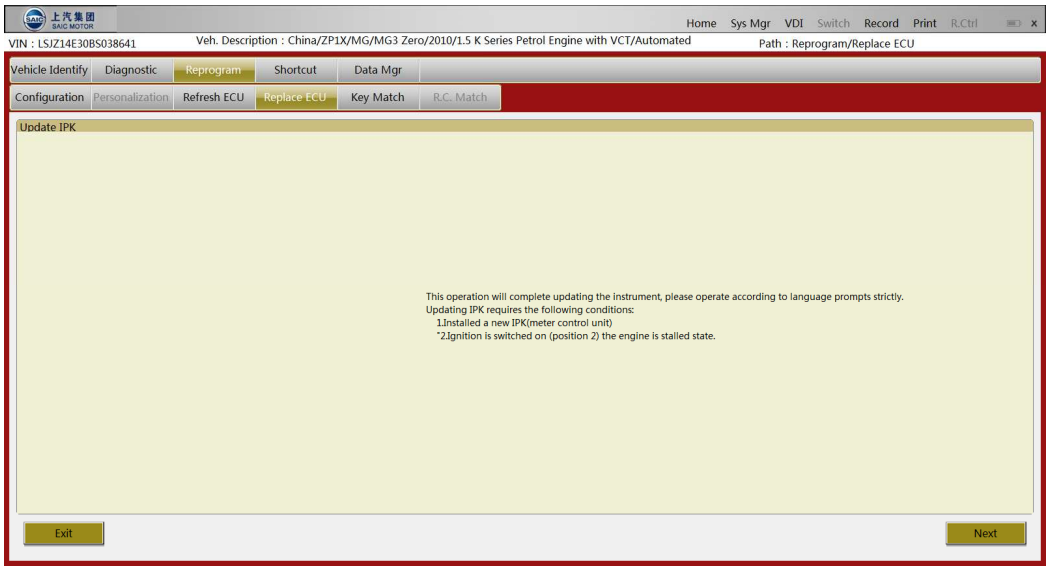


Figure 3.4.51

Step 3: Distinguish the controller needed to be updated.

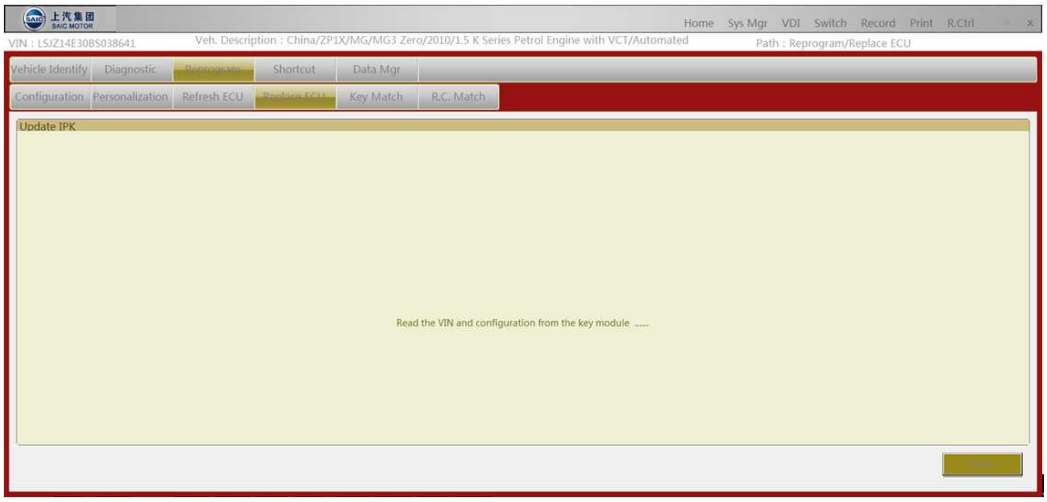


Figure 3.4.52

Step 4: You are prompted to click “OK” to continue after the ignition is off.

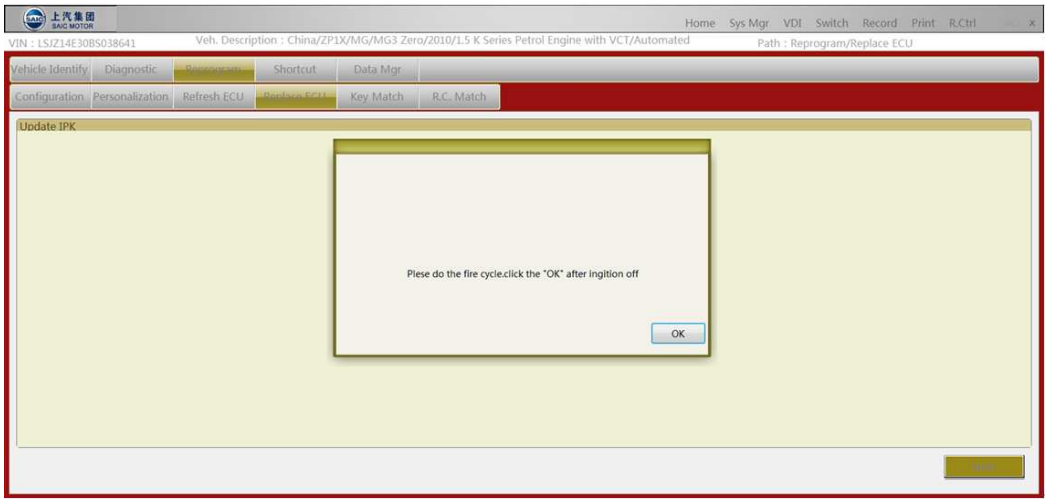


Figure 3.4.53

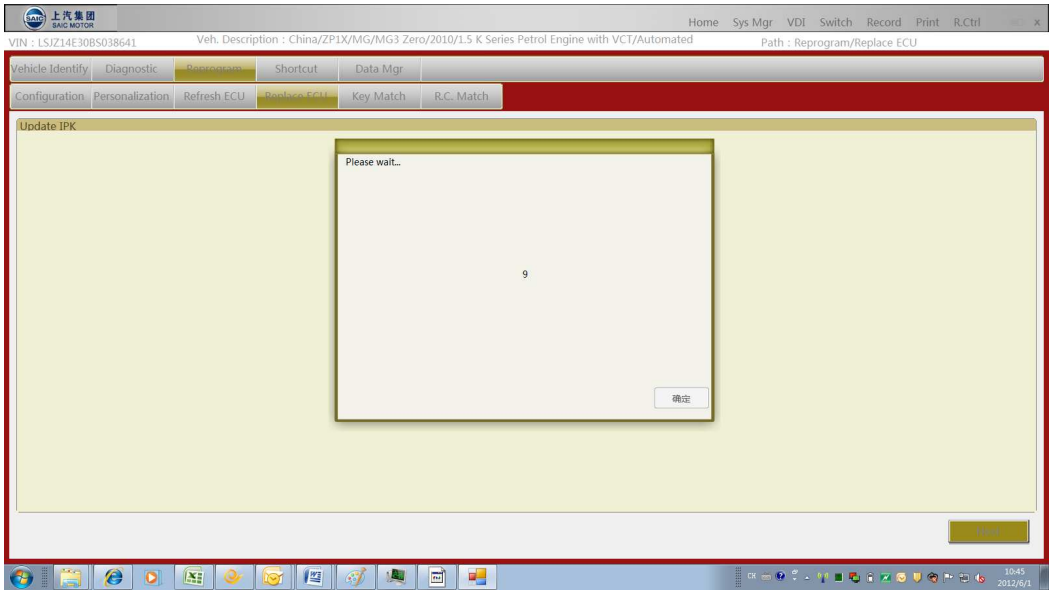


Figure 3.4.54

Step 5: You are prompted to click “OK” to continue after the ignition is on.

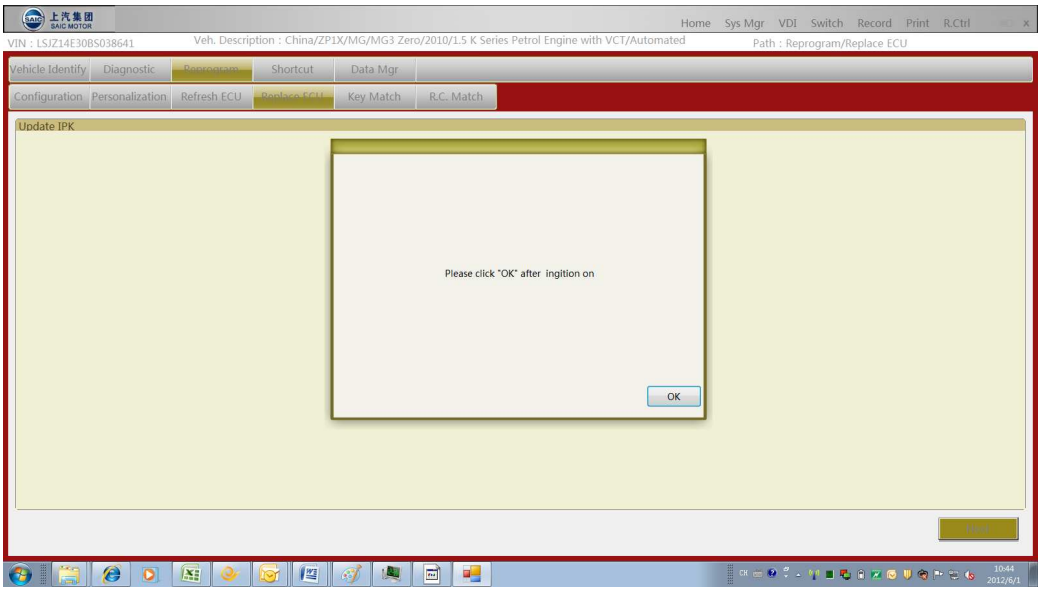


Figure 3.4.55

Step 6: Prompt the operation is successful, click “Finished” to end.

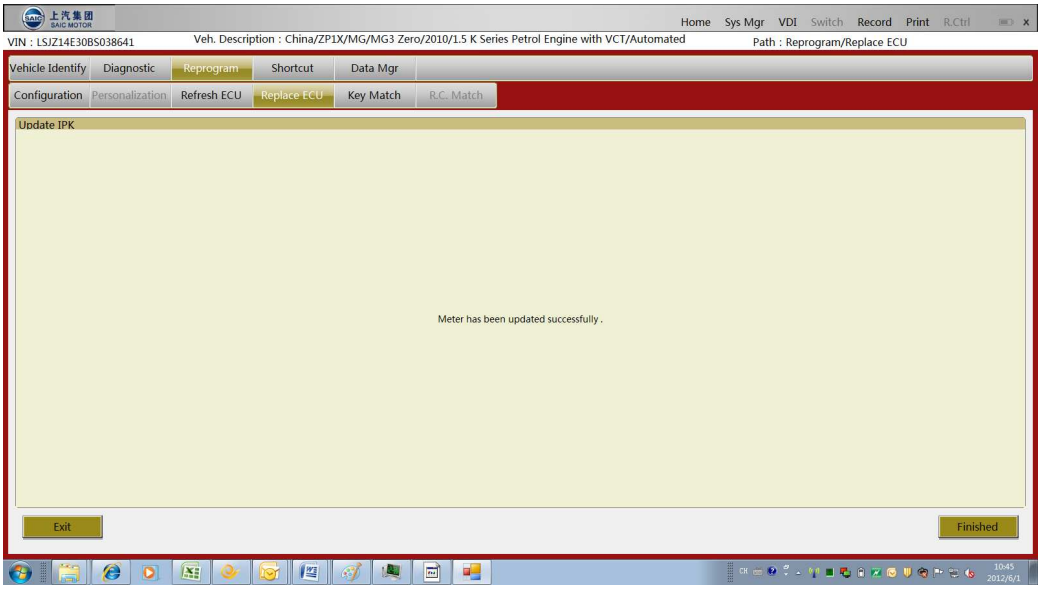


Figure 3.4.56

5 Key Match

Function of "Key Match": Read key information, disable key, activate key, add key.

After entering into "Key Match" tab, the function interface is "Configuration" interface by default, click "Key Match" to enter into the function interface. The main interface of "Key Match" displays the matched key list and "Read", "Disable", "Activate" and "Add" buttons, all those are used to achieve the function of "Key Match".

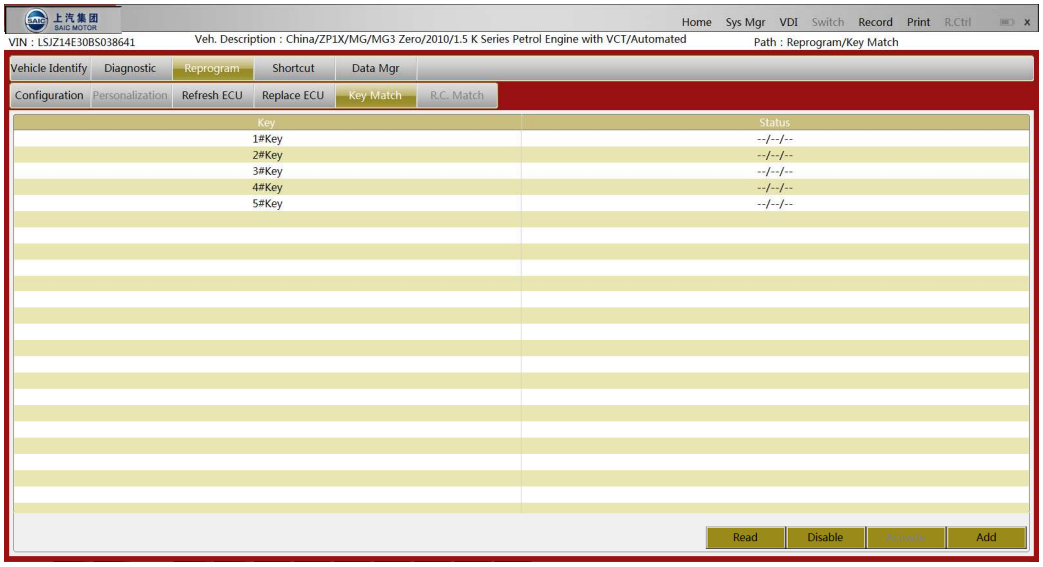


Figure 3.4.57

1) Read the Key Information

Read function: Read the key information of the diagnosed model.

Description of Key "Status":

Has been configured: this key number has already added keys.

Current: the current distinguished key number.

Activated: the key is activated and can be used.

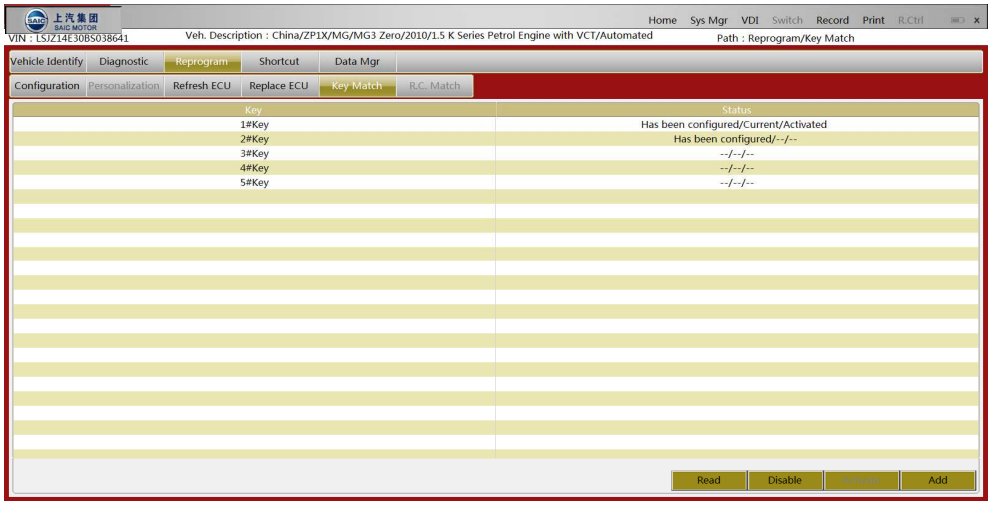


Figure 3.4.58

2) Disable Key

Tips

1. Keys have not been added in the list will be disabled.
2. The disabled keys can be reused via “Add” function.
3. After disable key success, please read key information again and confirm the keys are disabled.

Disabled function: Disable the unnecessary or lost keys.

Operation Procedures of Disable Key:

Step 1: Click “Disable” button to enter into disable key procedure.

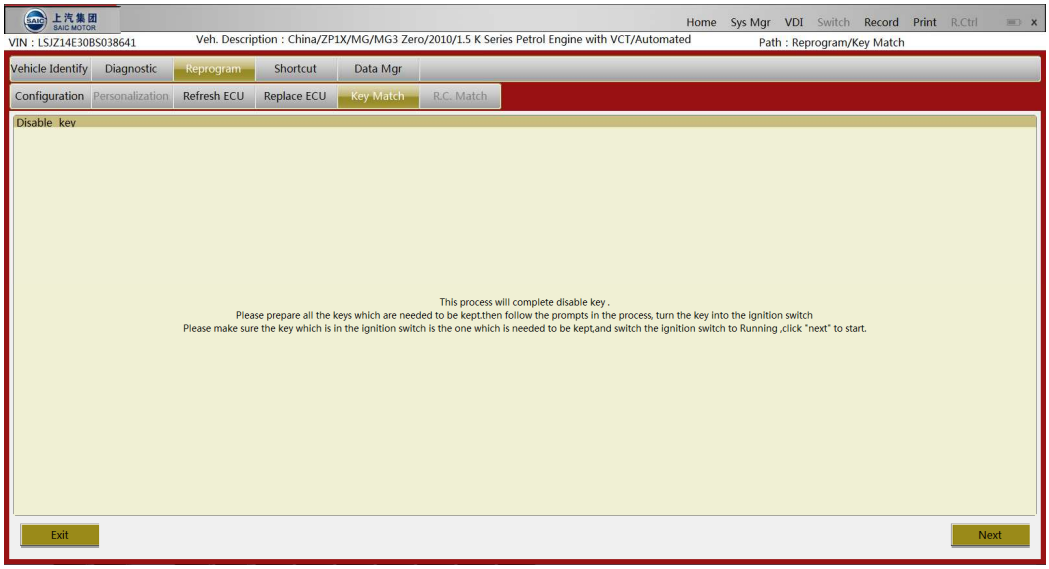


Figure 3.4.59

Step 2: Add the key in the ignition switch to the key list.

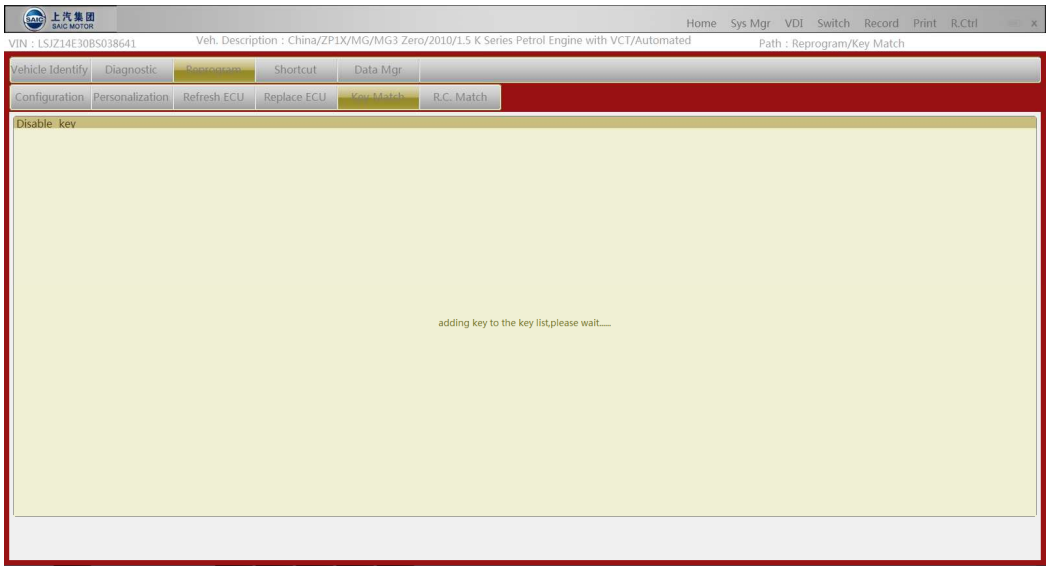


Figure 3.4.60

Step 3: If there are still other keys needs to be reserved, insert the key to be reserved into the ignition switch and turn to run gear (position 2) and then click "Yes"; repeat the operation in proper order till there is no key needs to be reserved, then click "No".

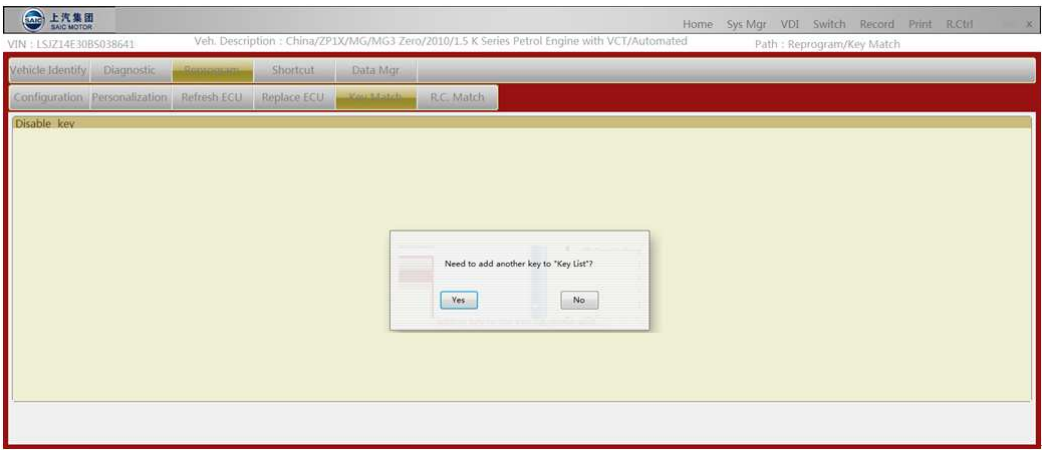


Figure 3.4.61

Step 4: Start the ignition cycle after selecting “No”.

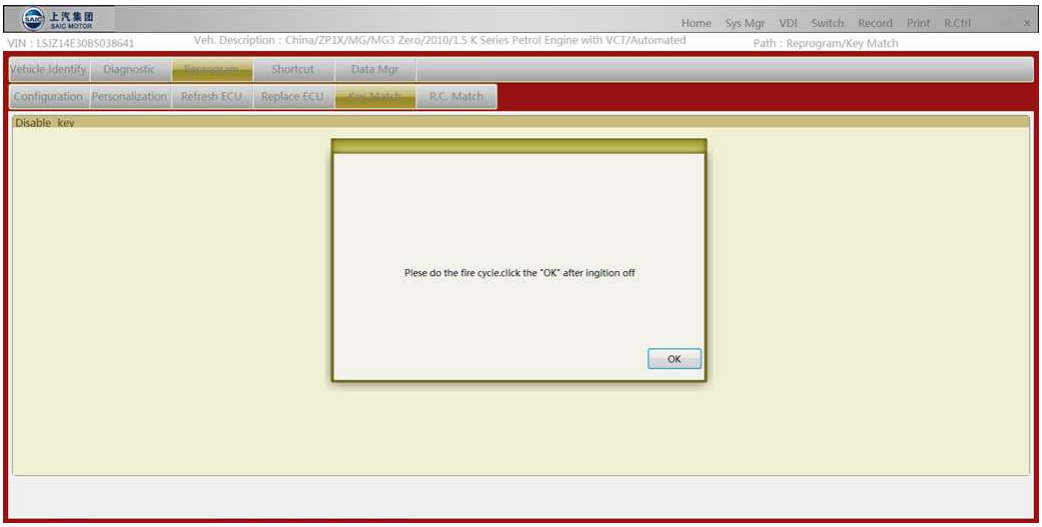


Figure 3.4.62

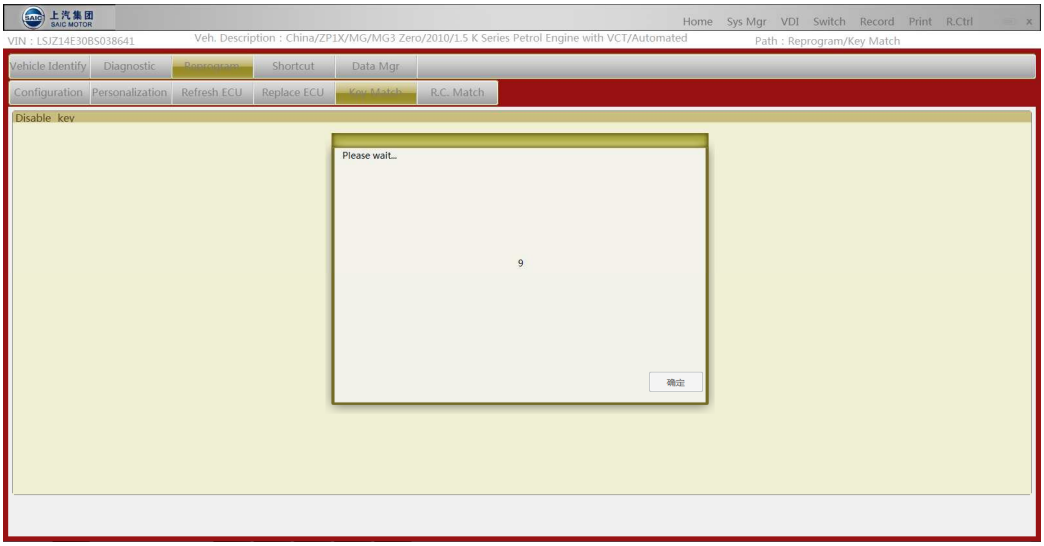


Figure 3.4.63

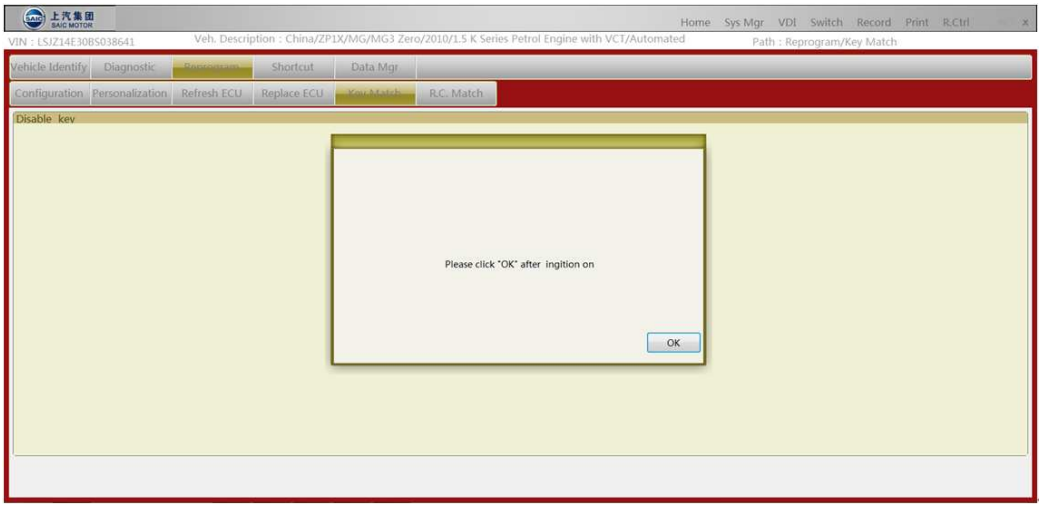


Figure 3.4.64

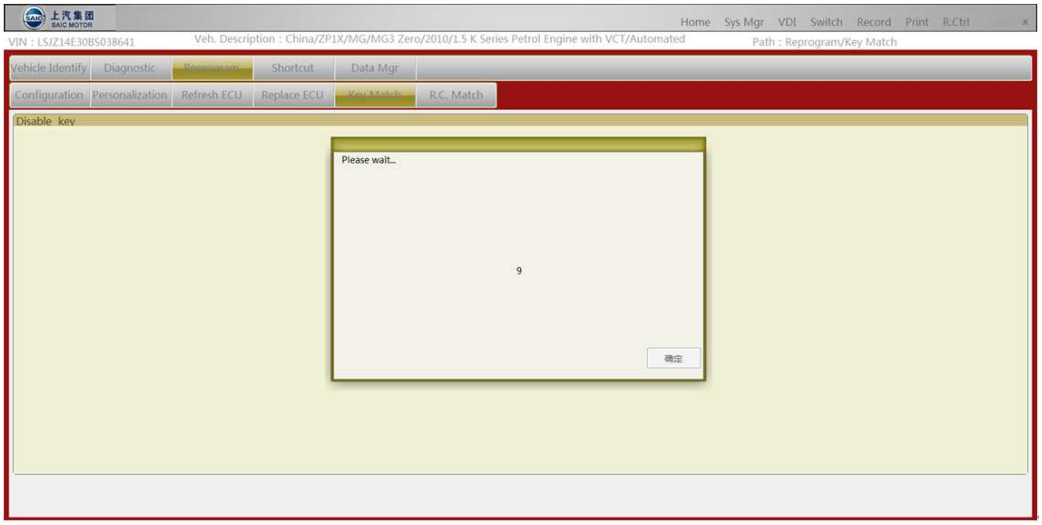


Figure 3.4.65

Step 5: Disable key succeed;

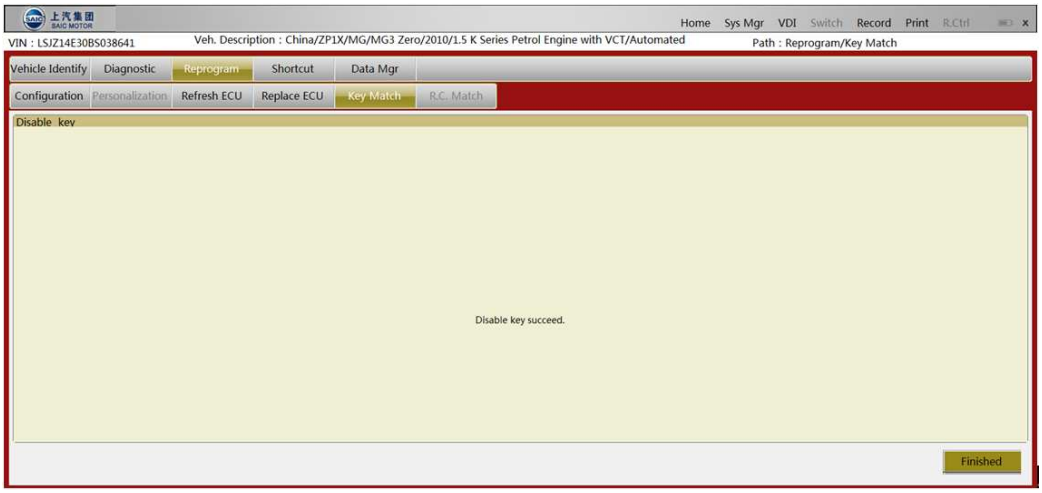


Figure 3.4.66

Step 6: Read the key information and confirm if the key to be disabled is disabled.

3) Activate Key

This function is not supported temporarily.

4) Add Key

Tips

1. After add key success, please read key information again and confirm the key is already added.
2. VIN in the procedure is read from three key modules, only when all VIN are coincided, the match shall be successful to continue adding key procedure.

Function of add key: Add new keys or activate the previously disabled key.

Operation Procedure of Add key:

Step 1: Click “Add” to enter into add key procedure.

Step 2: It prompts the conditions and notices of add key, insert the keys to be added into the ignition switch then click "Next".

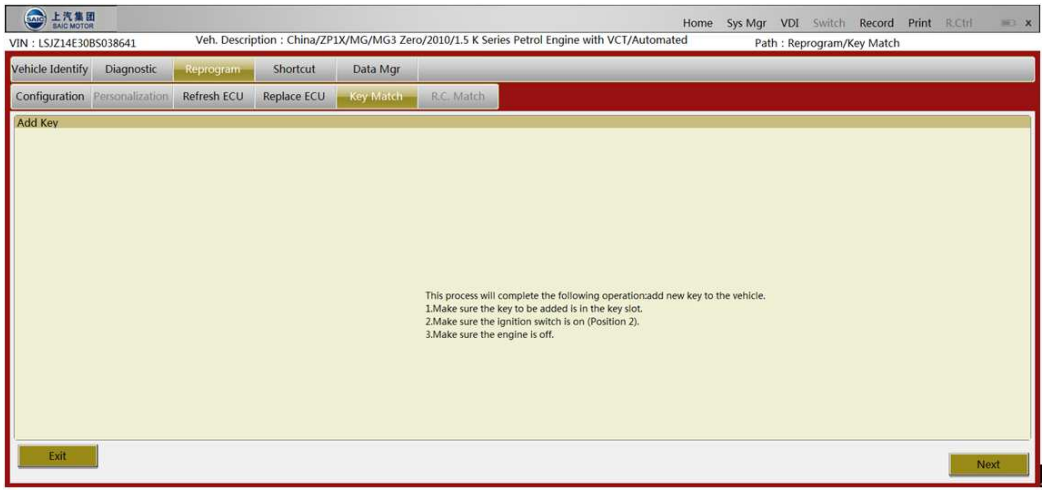


Figure 3.4.67

Step 3: Read vehicle VIN and generate authorization code; please upload the generated application code via ServiceNow. Here saving application code by using "Save Application Code" is allowed. After saving, other operations can be conducted with VDS. Then call the previously saved application code by using "Callout Application Code" after obtaining authorization code from ServiceNow to continue the add key procedures.

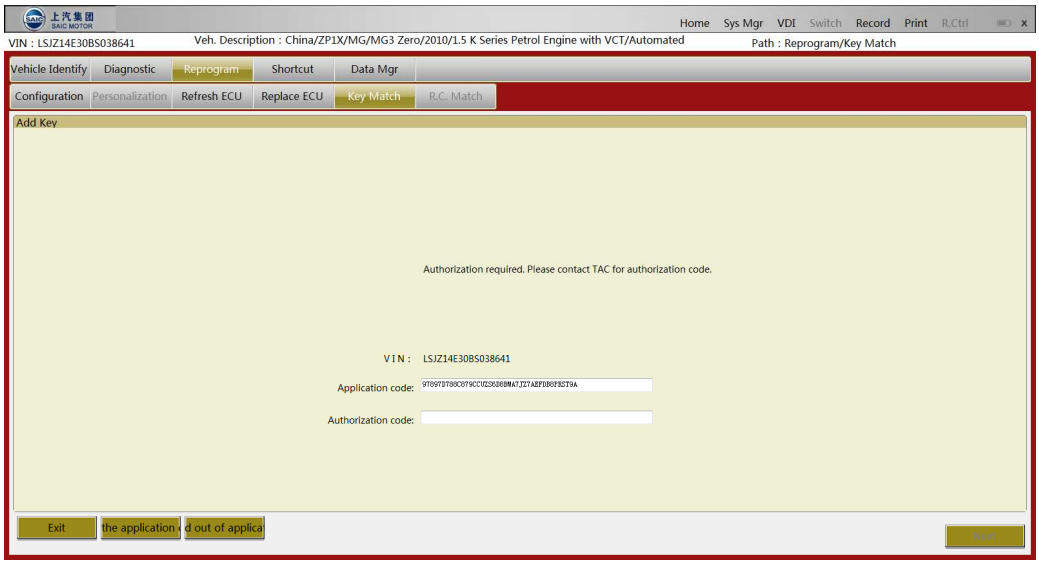


Figure 3.4.68

Step 4: After obtaining authorization code from ServiceNow, input in the authorization code bar, then check the accuracy of authorization code after clicking "Next".

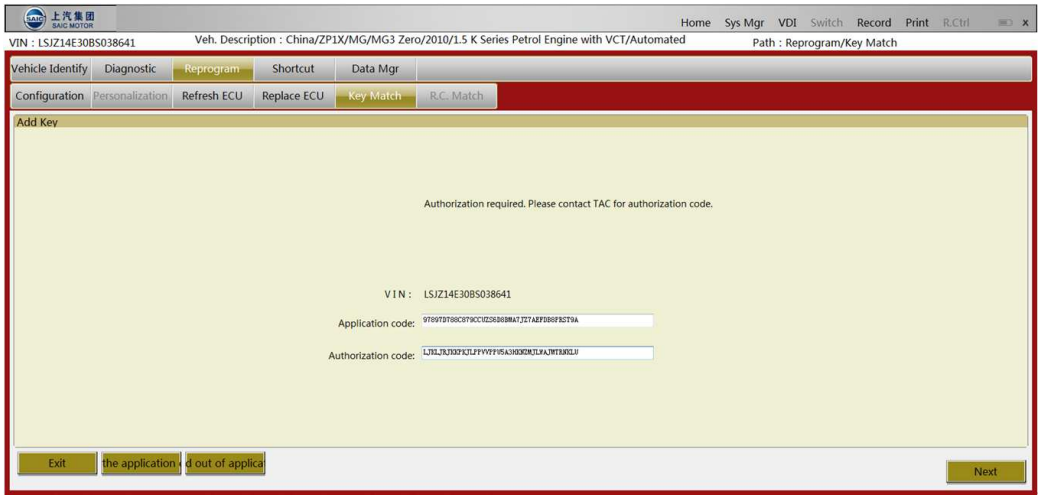


Figure 3.4.69

Step 5: Attempt to add key to the vehicle after authorization code is successfully verified;

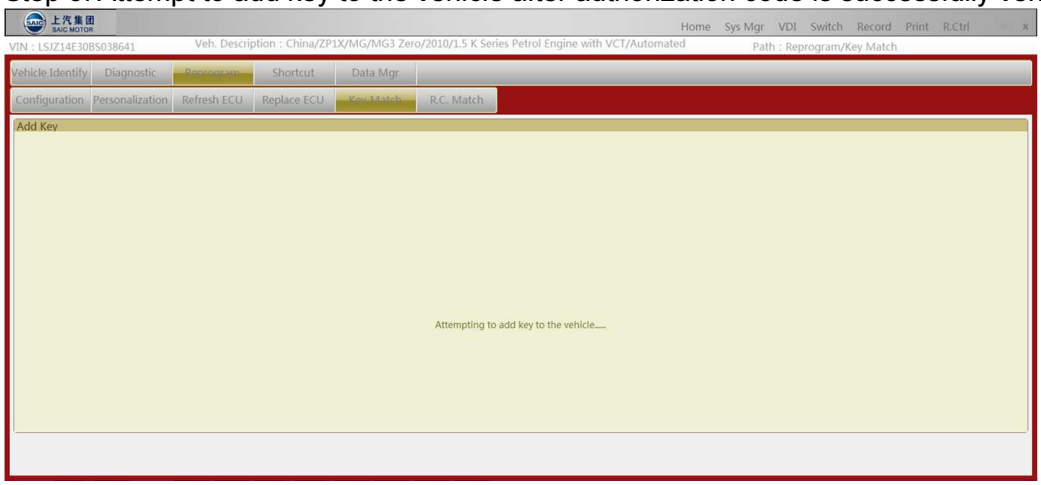


Figure 3.4.70

Step 6: Add key succeeds;

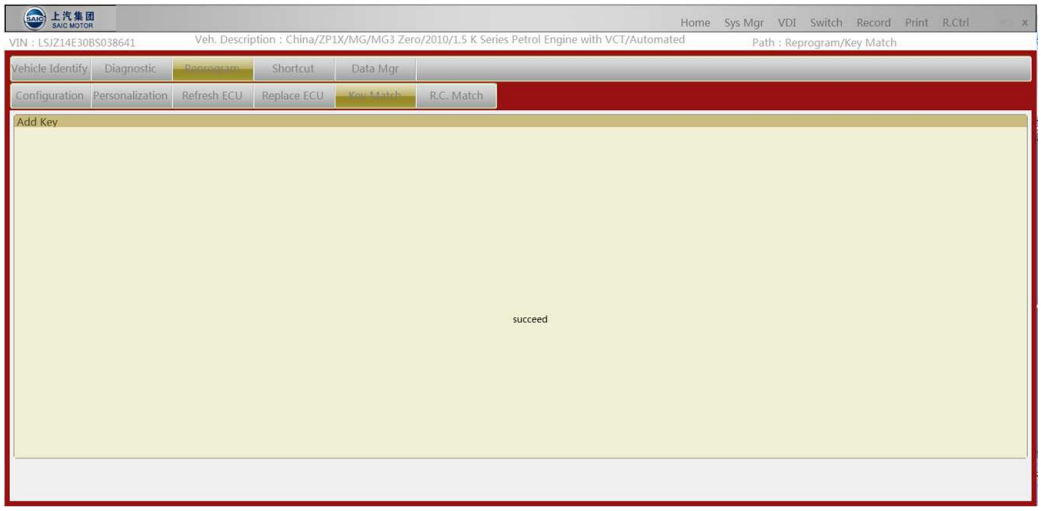


Figure 3.4.71

Step 7: Use the newly added key to start the vehicle, check if they are added successfully or not.

Tips

After full vehicle scan, the “Shortcut” function will open automatically.

After the vehicle identification succeeds, "Diagnostic" lights up, then click this button to enter into diagnostic function tab. "Shortcut" lights up after full vehicle scan in "Diagnostic" tab. Click "Shortcut" to enter into "Shortcut" tab.

The "Shortcut" tab includes PDI, Maintenance, Study Adjust and Other functions. Click corres ponding button to operate the function.

PDI: Items of PDI check on new vehicle by service center.

Maintenance: After maintenance, reset the parameter information related to maintenance.

Study /Adjust: During maintenance, reset the rated parameter of corresponding controller.

Other: Test items during special maintenance or detection of the vehicle.

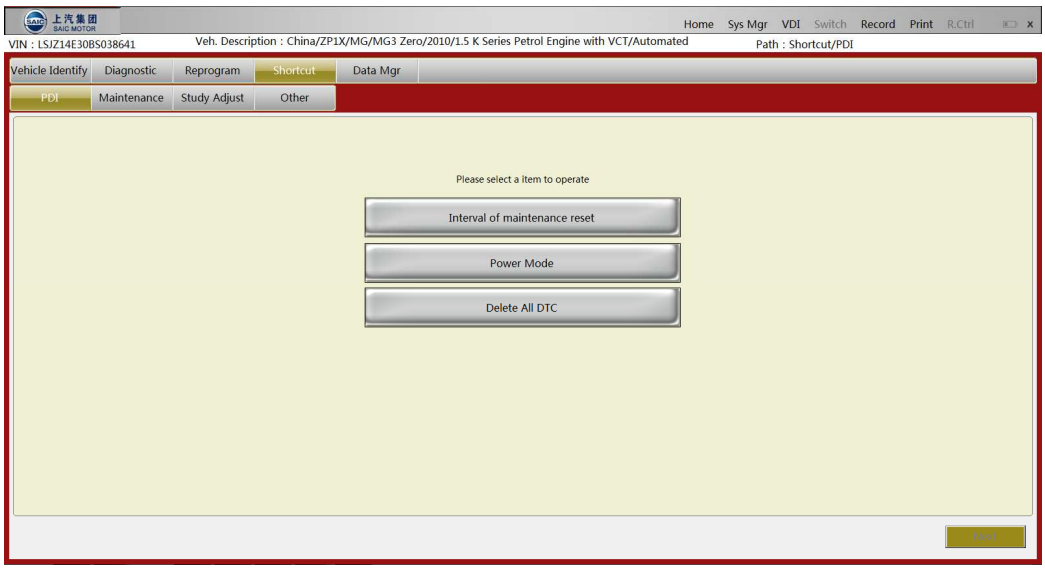


Figure 3.5.1

Items in each function of "Shortcut" are different according to different diagnosis model. Operation procedures of Shortcut function of each model shall be introduced in detail in the following sections. Take ZP11 model as an example:

"Shortcut" tab includes PDI, Maintenance, Study Adjust and Other function. Click corresponding button to operate the function.

1 PDI

Items of new vehicle PDI check for ZP11 model: Interval of maintenance reset, power mode and delete all DTC.

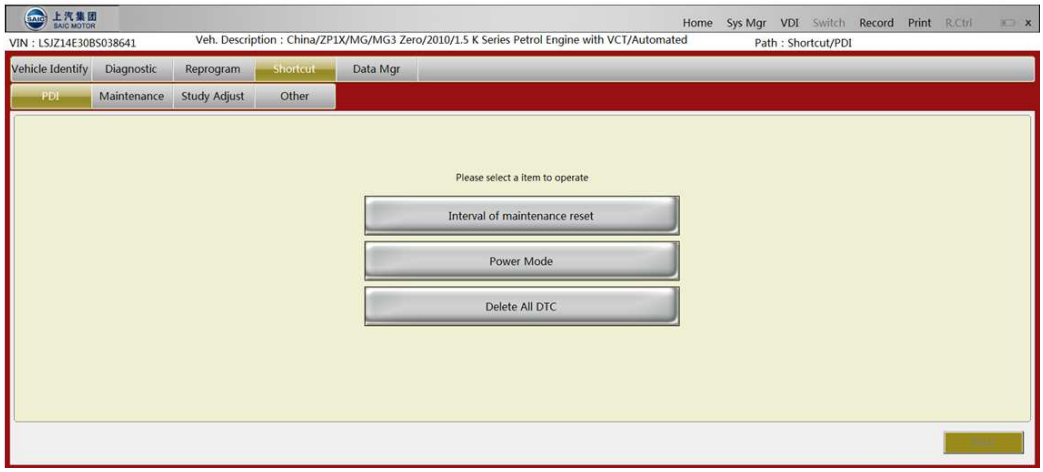


Figure 3.5.2

1) Interval of Maintenance Reset

Step 1: Select "Interval of Maintenance Reset", "Next" button lights up then click "Next".

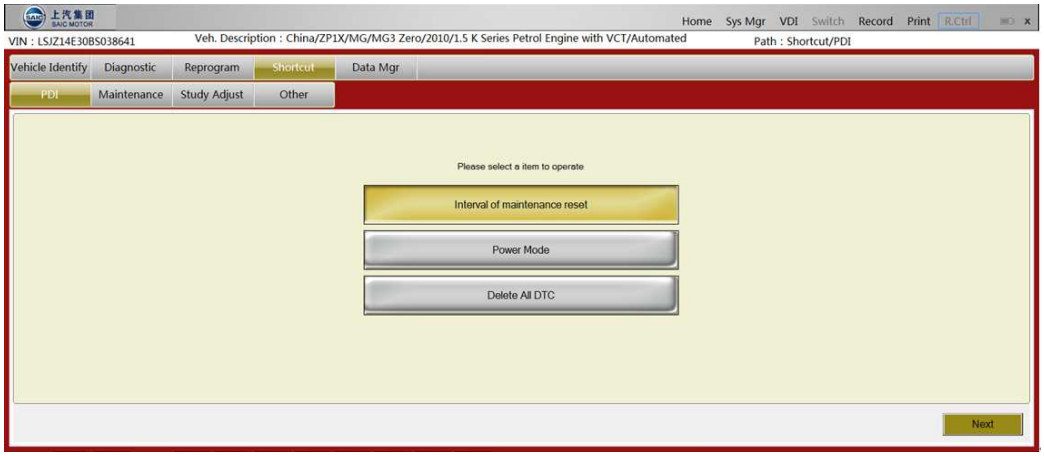


Figure 3.5.3

Step 2: Please confirm the following conditions are all met, then click "Next" to continue.

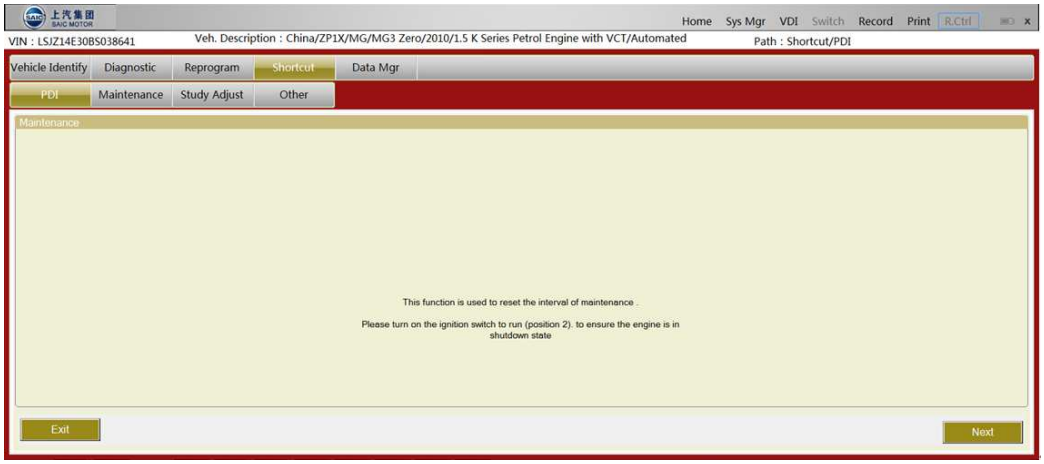


Figure 3.5.4

Step 3: Prompt if you want to continue, click "Cancel" to exit, or click "OK" to continue.

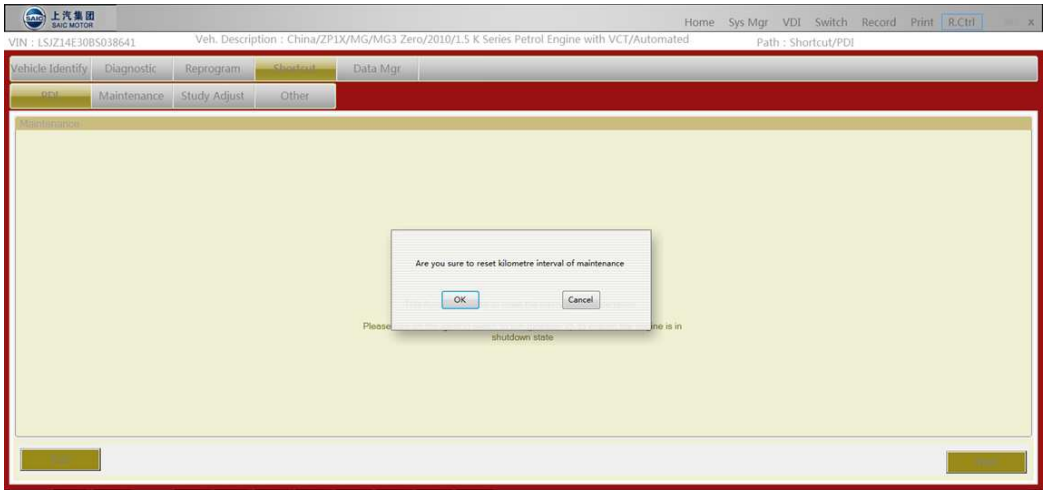


Figure 3.5.5

Step 4: Ongoing maintenance interval reset, please wait.

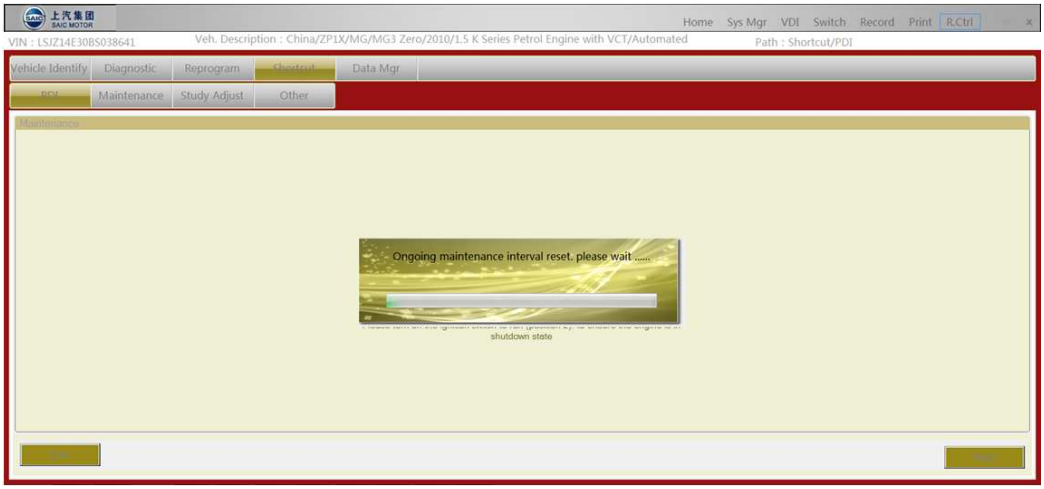


Figure 3.5.6

Step 5: It prompts service interval reset successful, click "Finished" to return to PDI interface.

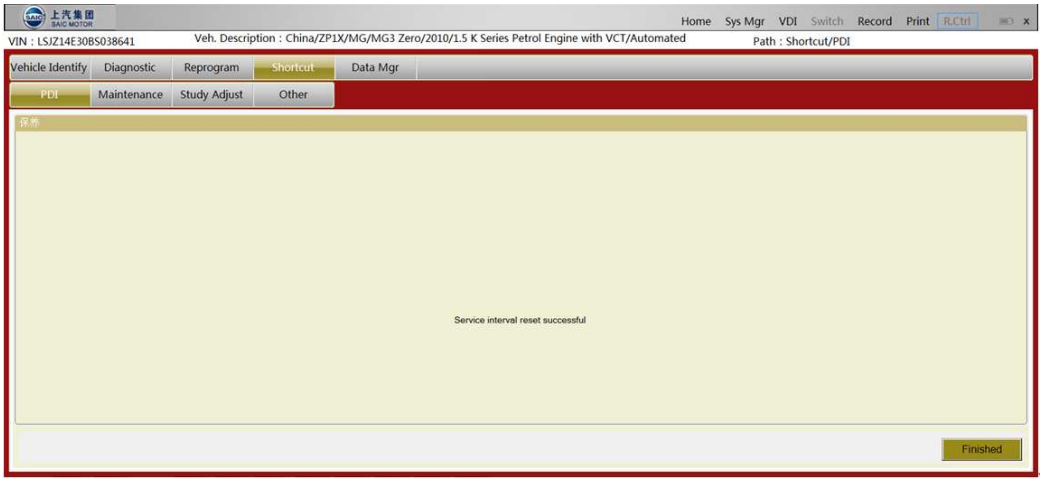


Figure 3.5.7

2) Power Mode

Step 1: Select "Power Mode" and click "Next".

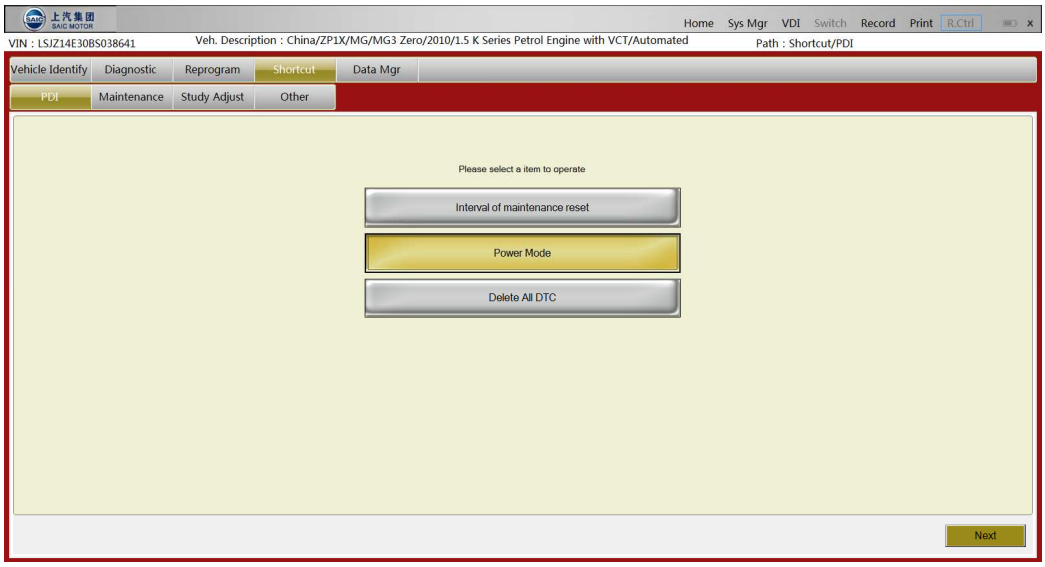


Figure 3.5.8

Step 2: The interface will display the current power mode and changeable power mode, select the mode to be changed, then click "Save".

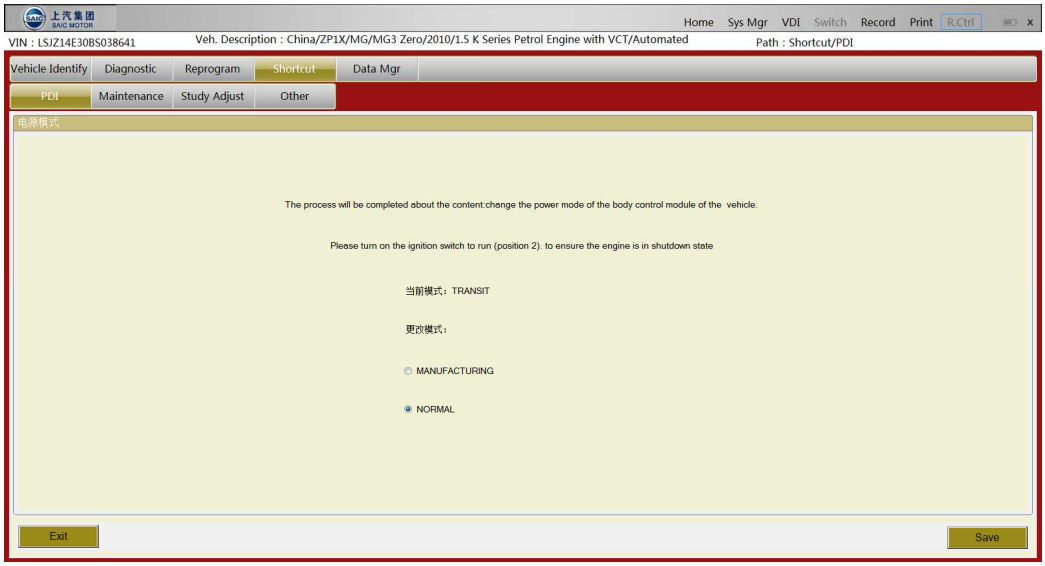


Figure 3.5.9

Step 3: Confirm if you want to change the power mode, select "Cancel" to exit, or select "OK" to continue.

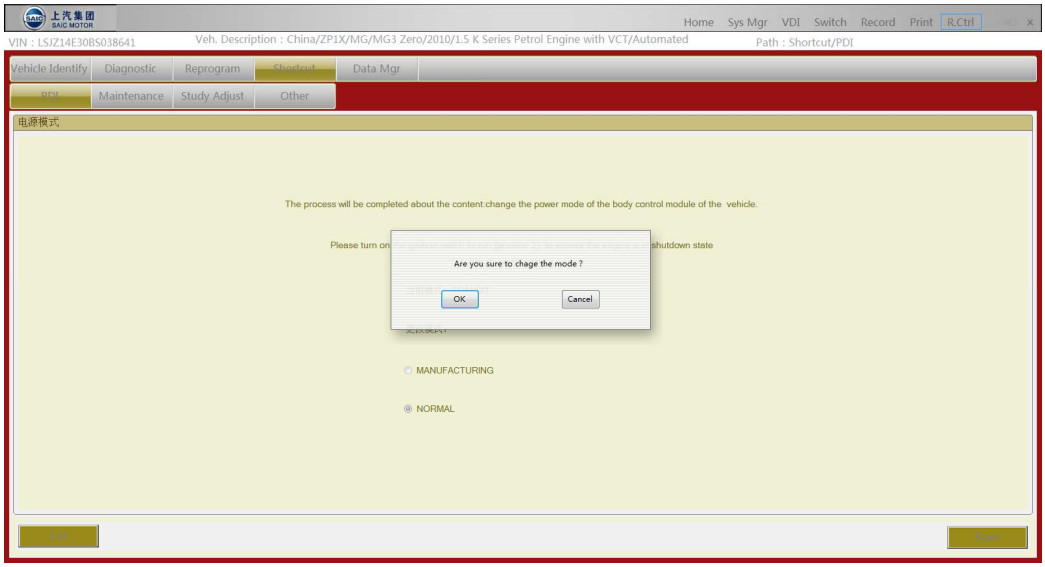


Figure 3.5.10

Step 4: Change power supply module successfully and display the current power mode, then click "Finished" to end the procedure.

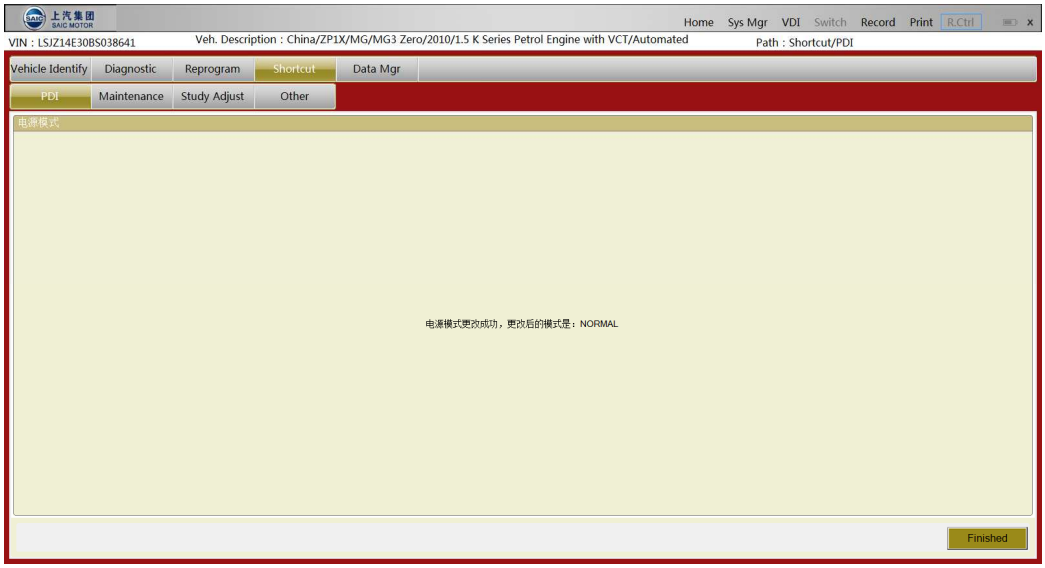


Figure 3.5.11

3) Delete All DTC

Step 1: Select "Delete All DTC", click "Next".

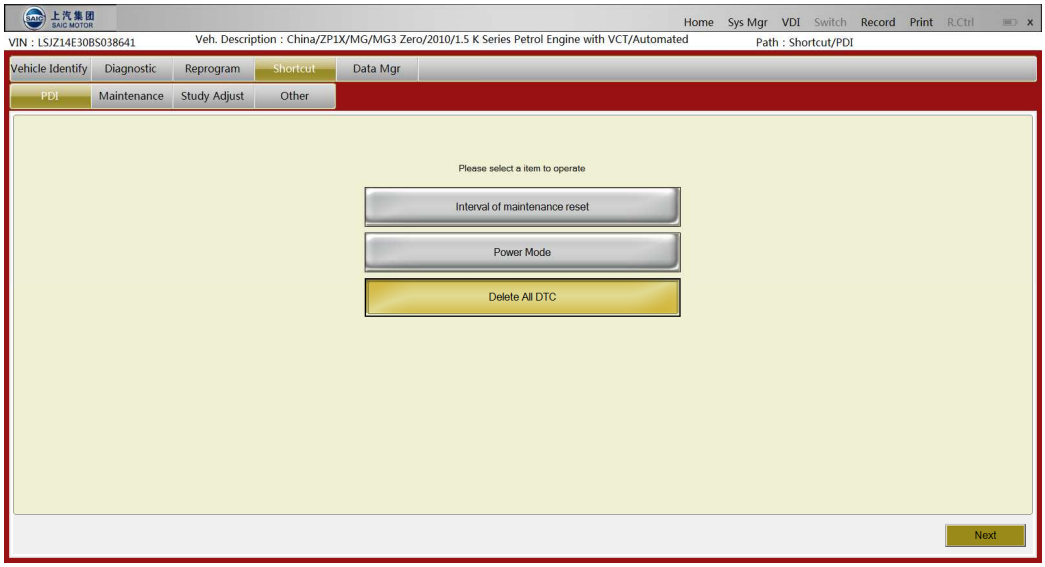


Figure 3.5.12

Step 2: Please confirm the following conditions are met, click "Next" to continue".

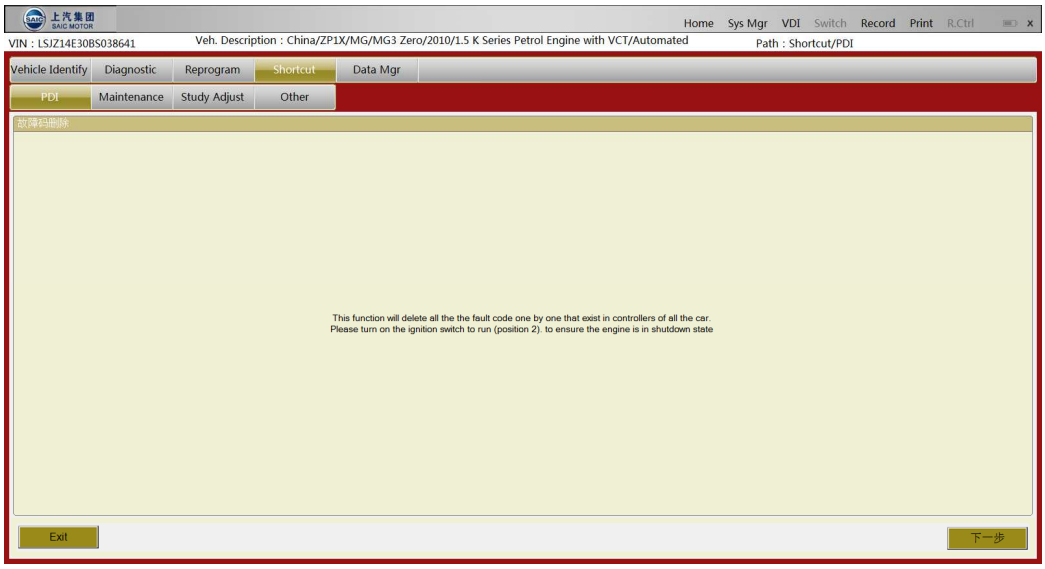


Figure 3.5.13

Step 3: Confirm if you want to delete all DTC, select "Cancel" to exit, or click "OK" to continue.

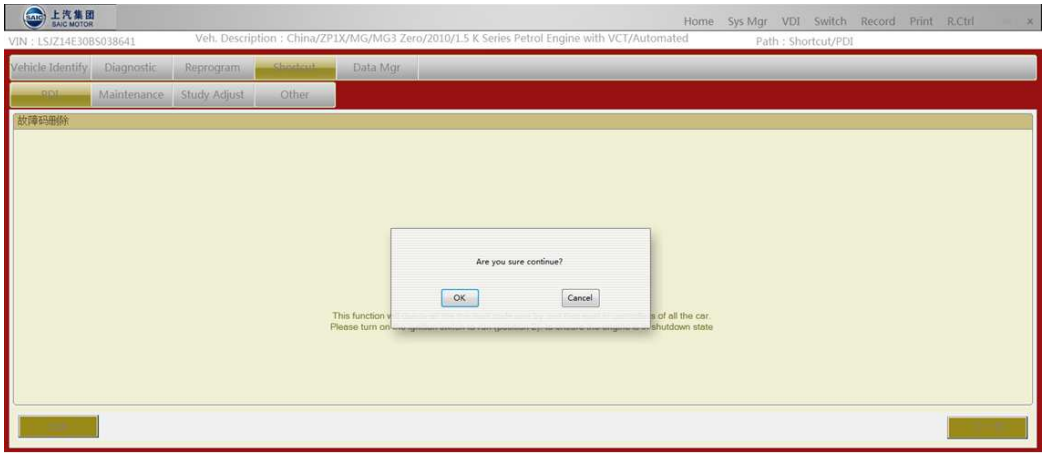


Figure 3.5.14

Step 4: Deleting DTC, please wait.

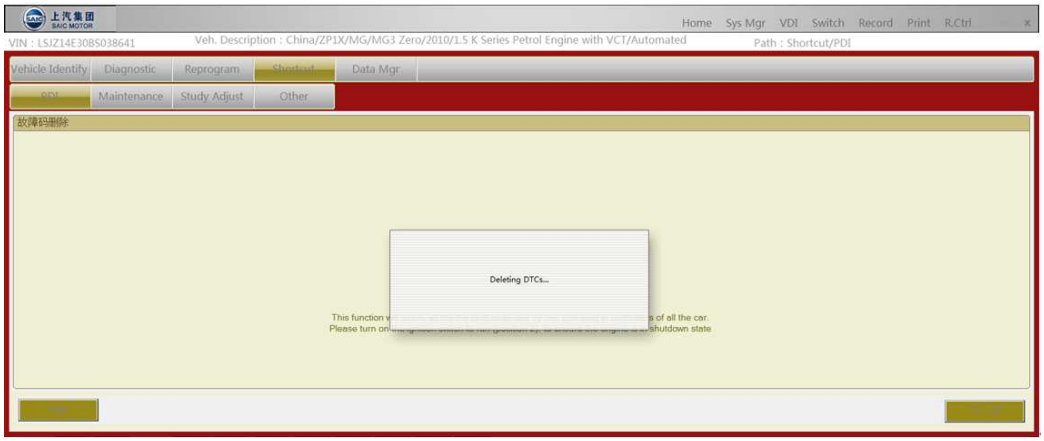


Figure 3.5.15

Step 5: DTC deletion finished, read DTC information in the module again and display, select "Print" to print the vehicle whole DTC list, select "OK" to end the DTC deletion procedure.

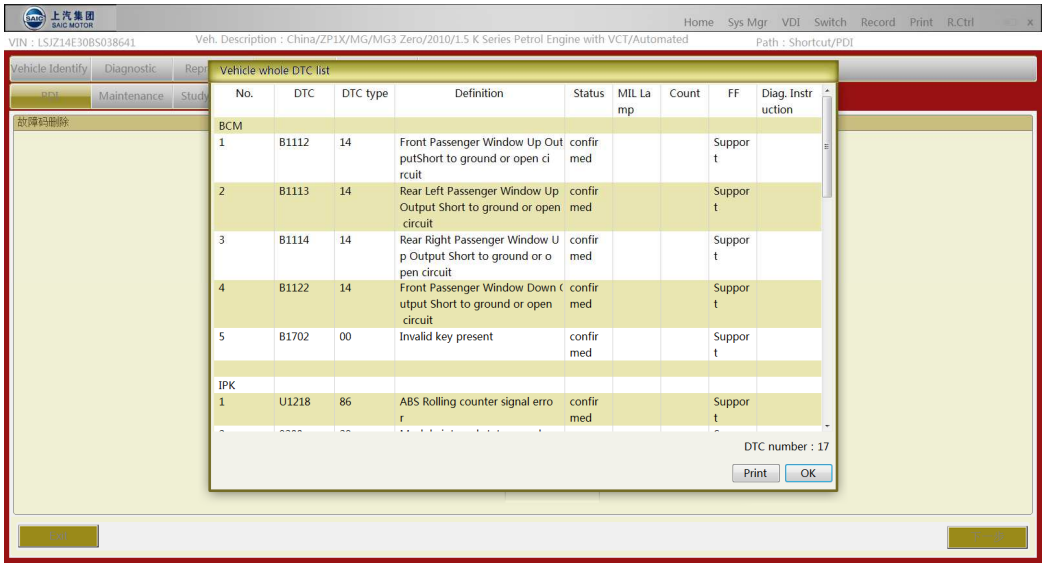


Figure 3.5.16

2 Maintenance

Item of maintenance check for MG3 model: reset the maintenance interval.

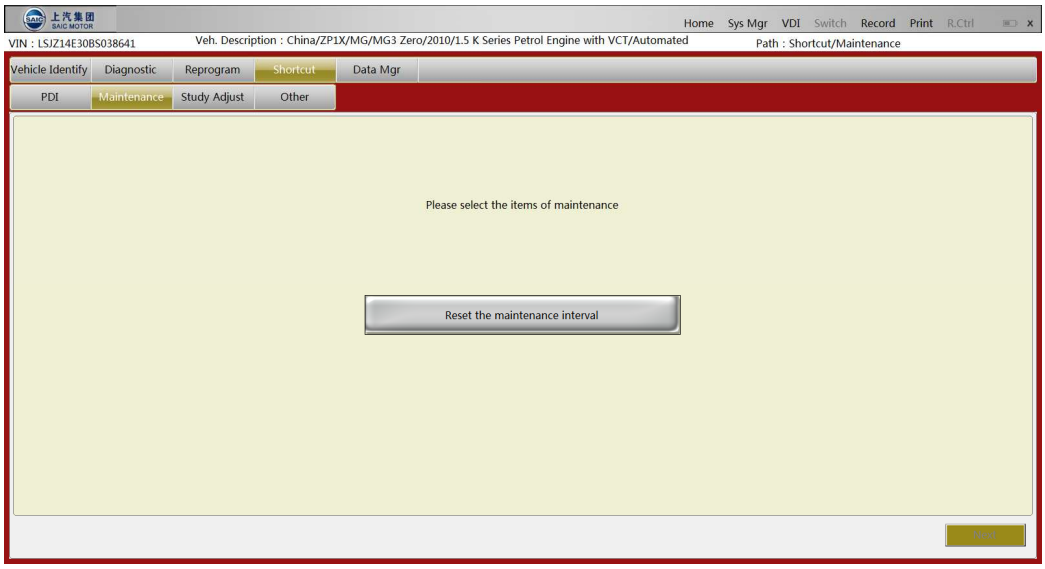


Figure 3.5.17

1) Reset the Maintenance Interval

Step 1: Select "Reset the maintenance interval", click "Next".

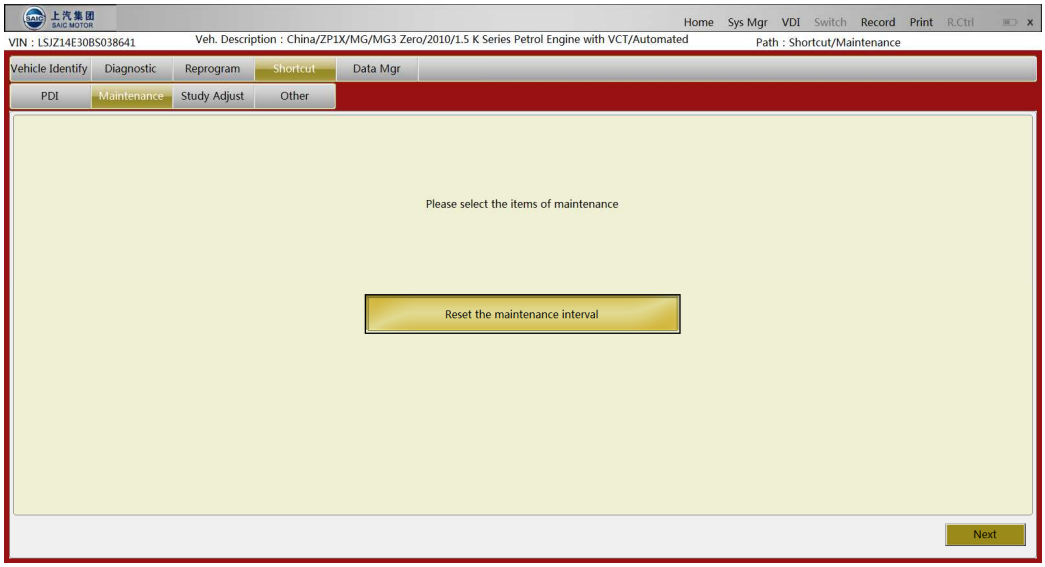


Figure 3.5.18

Step 2: Confirm the following conditions are met, click "Next".

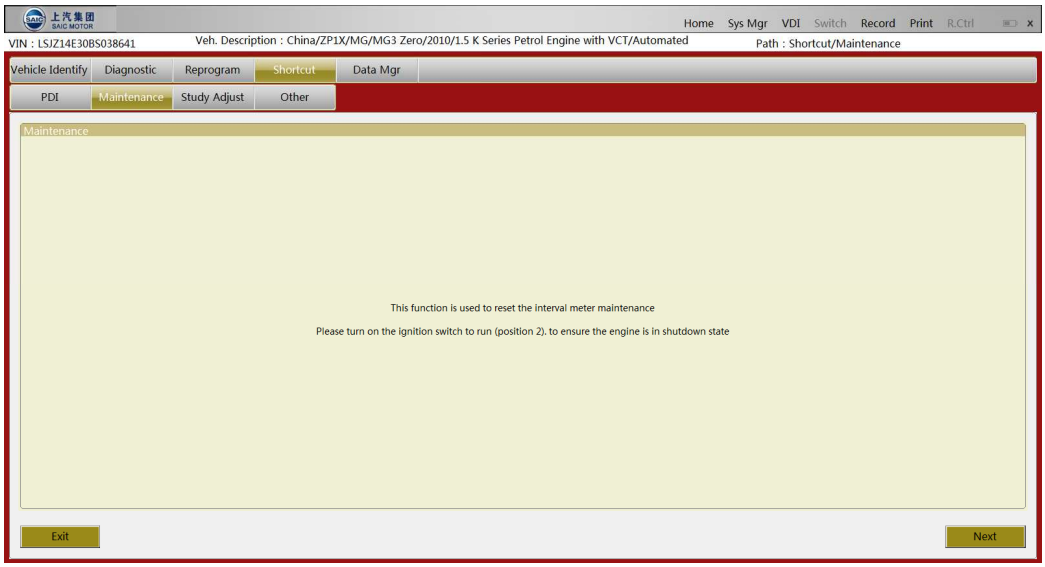


Figure 3.5.19

Step 3: Prompt if you want to continue, click "Cancel" to exit, or click "OK" to continue.

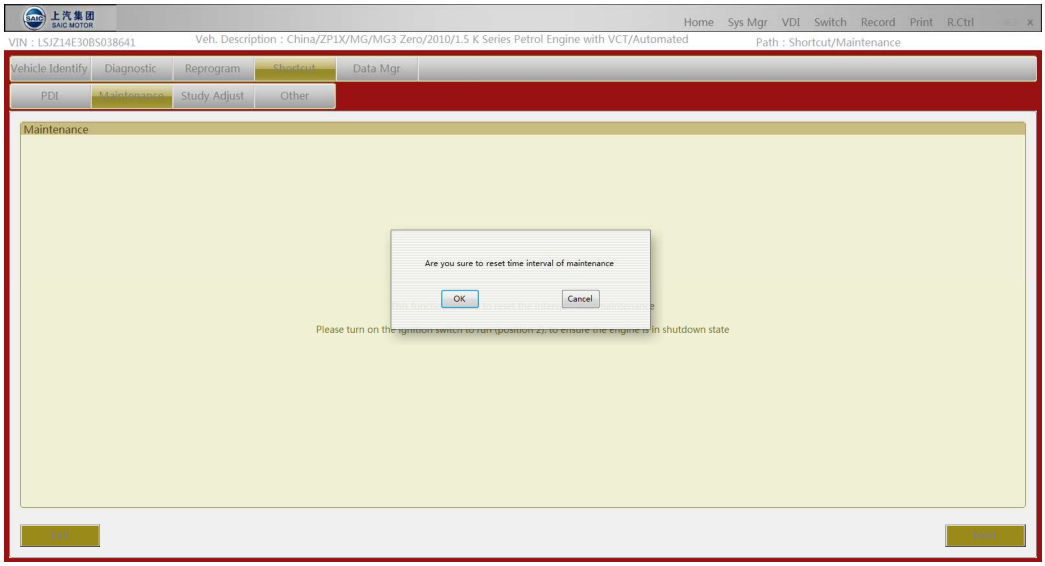


Figure 3.5.20

Step 4: Ongoing maintenance interval reset, please wait.

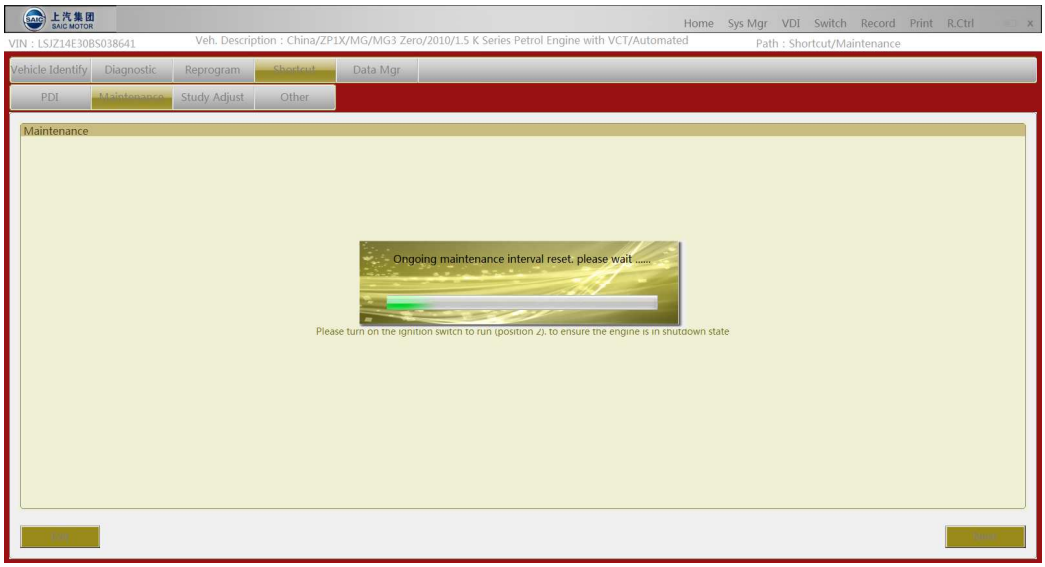


Figure 3.5.21

Step 5: Maintenance interval reset succeeds, click "Finished" to end the procedure.

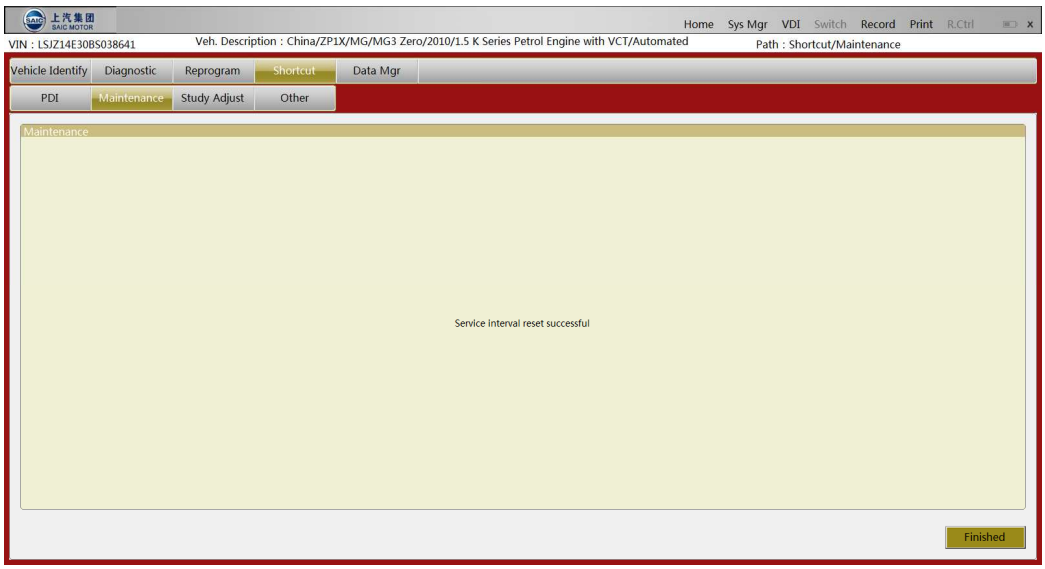


Figure 3.5.22

3 Study Adjust

Items of study adjust t for ZP11 model: EMS Reset the value of learning, EMS Idle Bias, TC M-Transmission Control Module Reset the value of learning.

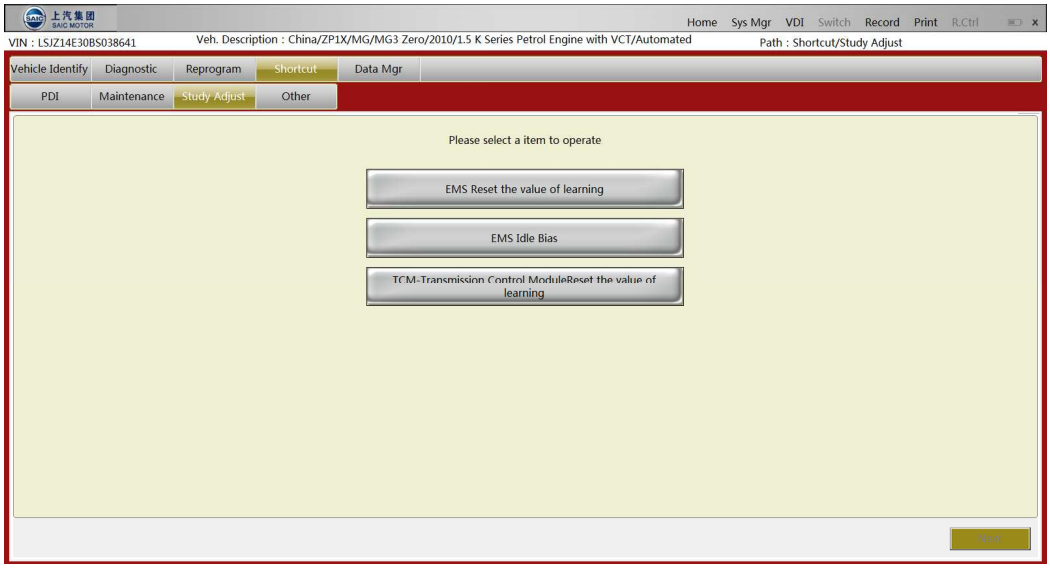


Figure 3.5.23

1) EMS Reset the Value of Learning

Step 1: Select "EMS Reset the Value of Learning", click "Next".

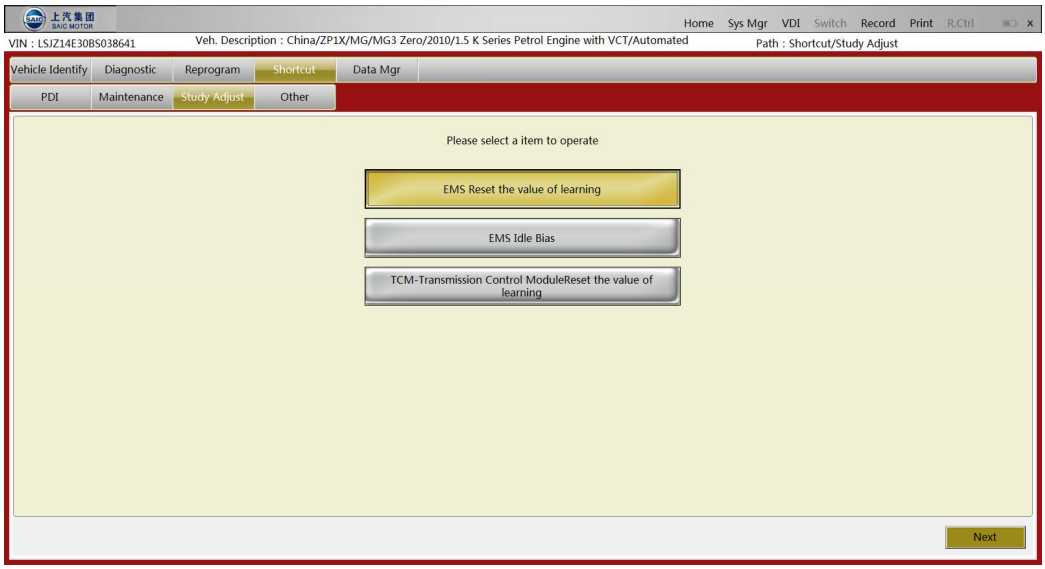


Figure 3.5.24

Step 2: Confirm the following conditions are met and understand the items of reset learning, then click "Next".

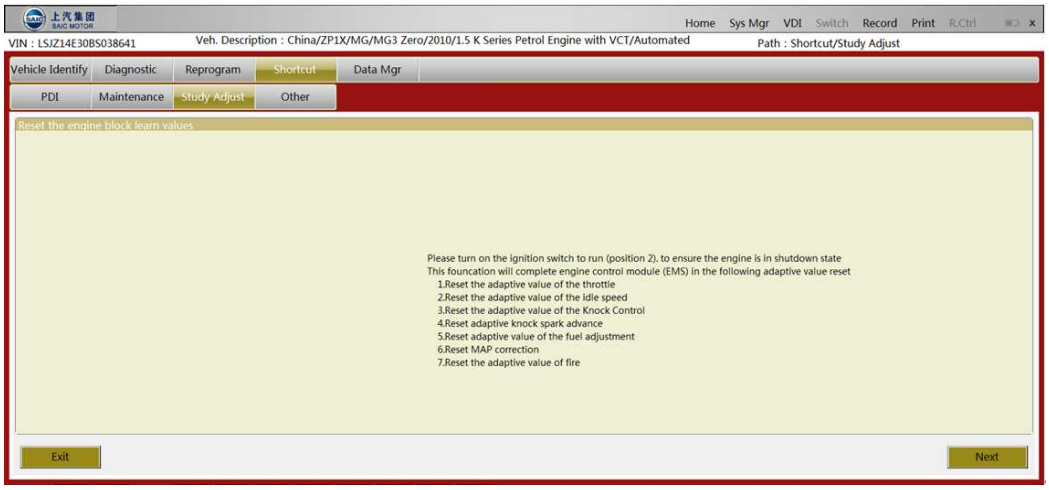


Figure 3.5.25

Step 3: Confirm if you want to reset self-adaption learning value of EMS, select "Cancel" to exit, or select "OK" to continue.

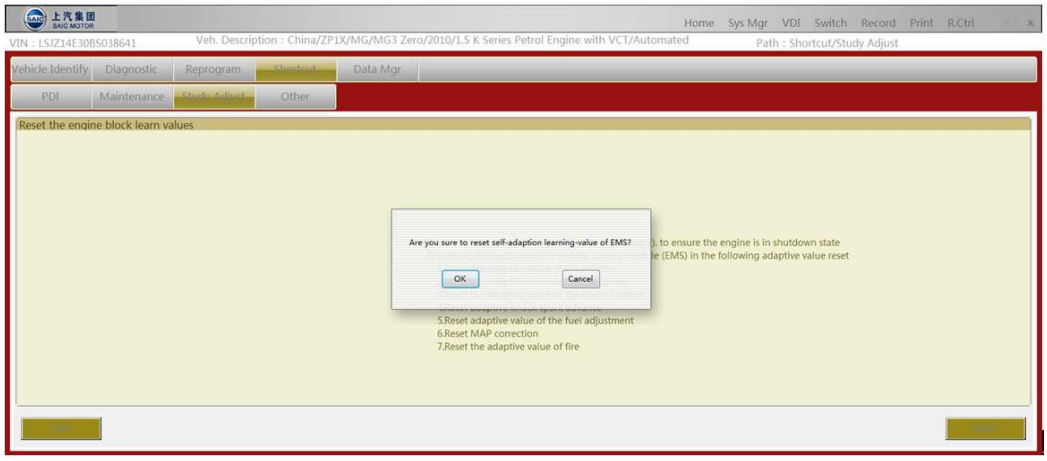


Figure 3.5.26

Step 4: The operation of EMS reset value of learning successful, click "Finished" to end the procedure.

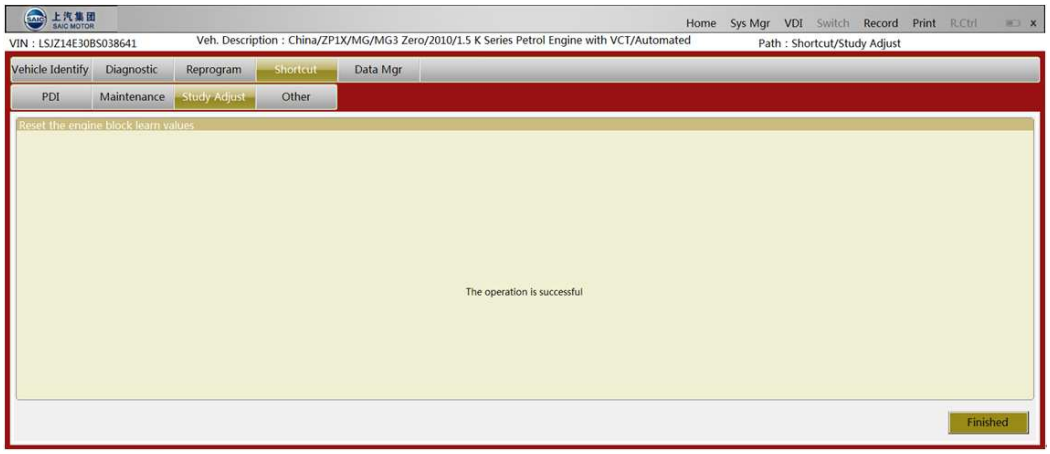


Figure 3.5.27

2) EMS Idle Bias

Step 1: Select "EMS Idle Bias", click "Next".

Figure 3.5.28

Step 2: Please confirm the following conditions are met, click "Next".

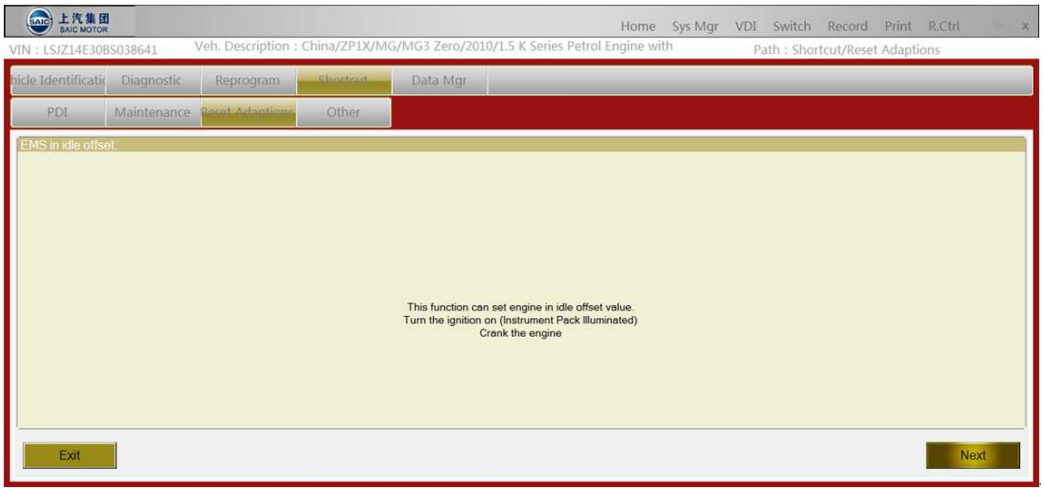


Figure 3.5.29

Step 3: Input target idle value according to the given target idle value range; click "Save".

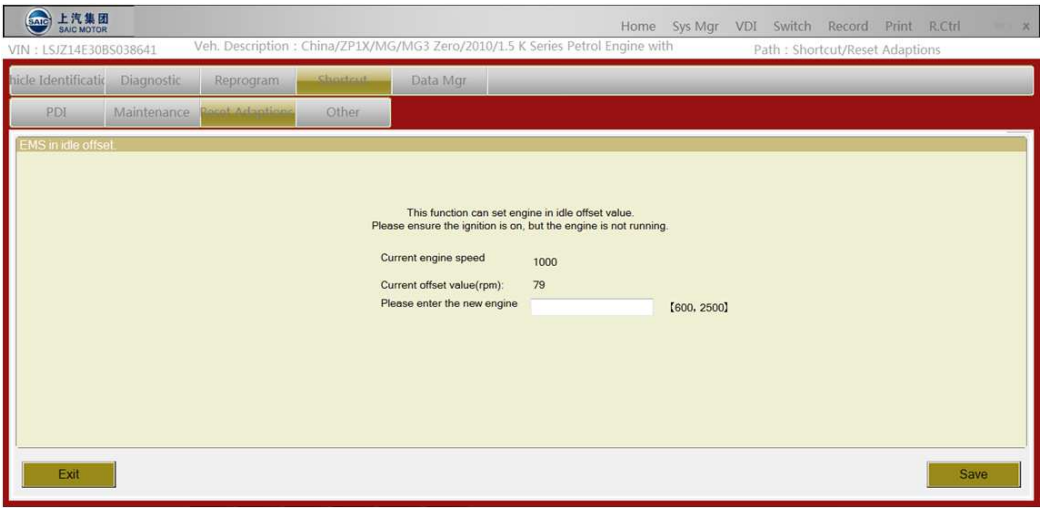


Figure 3.5.30

Step 4: Confirm if you want to continue the idle adjustment, click "OK" to continue, or click "Cancel" to end the function. The idle speed after adjustment is kept for 5 seconds and then return to the idle value before adjustment.

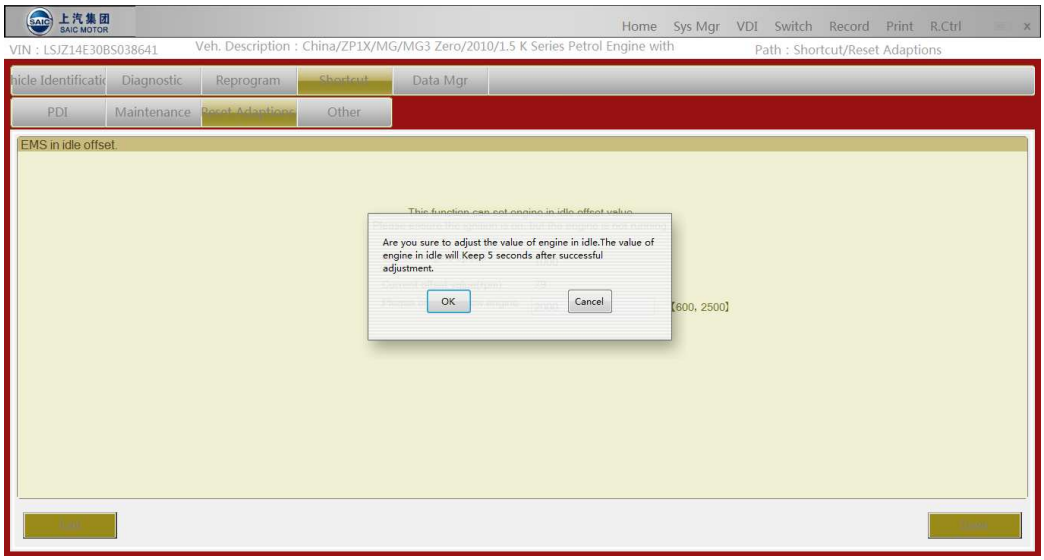


Figure 3.5.31

Step 5: Prompt "The operation successful", click "Finished" to return to the main function interface of "Study Adjust".

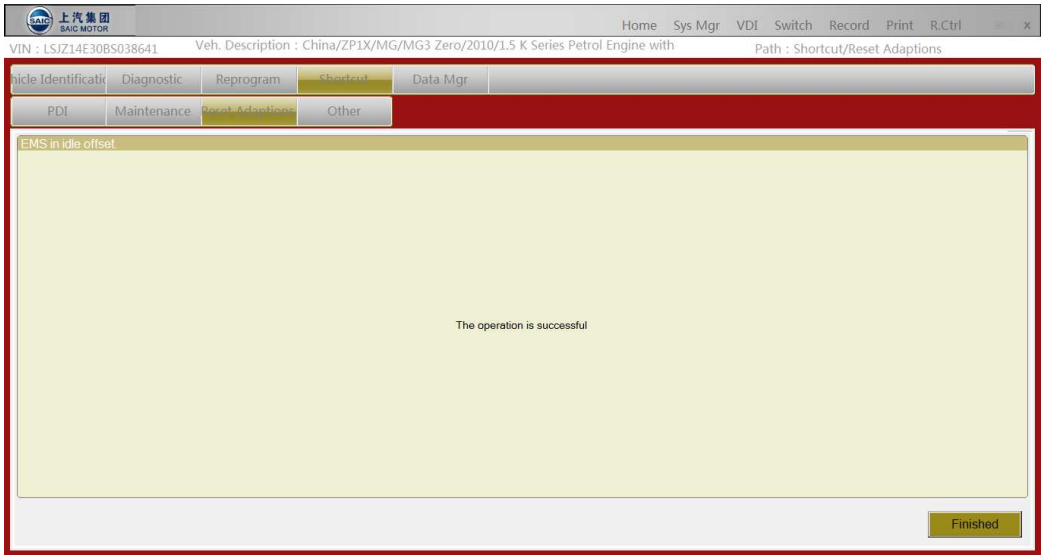


Figure 3.5.32

3) TCM-transmission Control Module Reset the Value of Learning

Step 1: Select "TCM-transmission Control Module Reset the value of learning", click "Next".

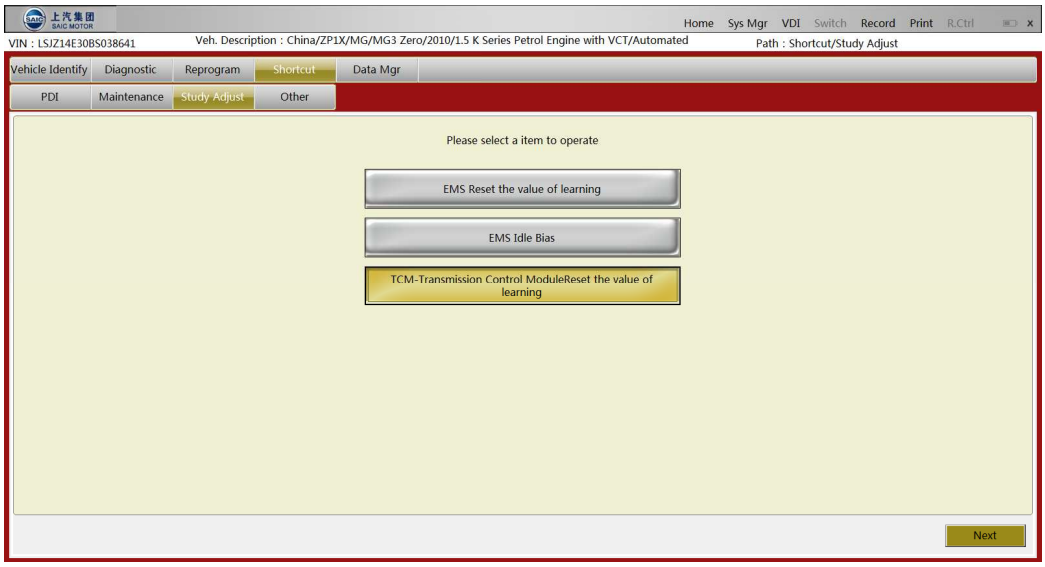


Figure 3.5.33

Step 2: Please select the item of reset learning value to be done according to the operations required in the maintenance of transmission in service manual, click "Next".

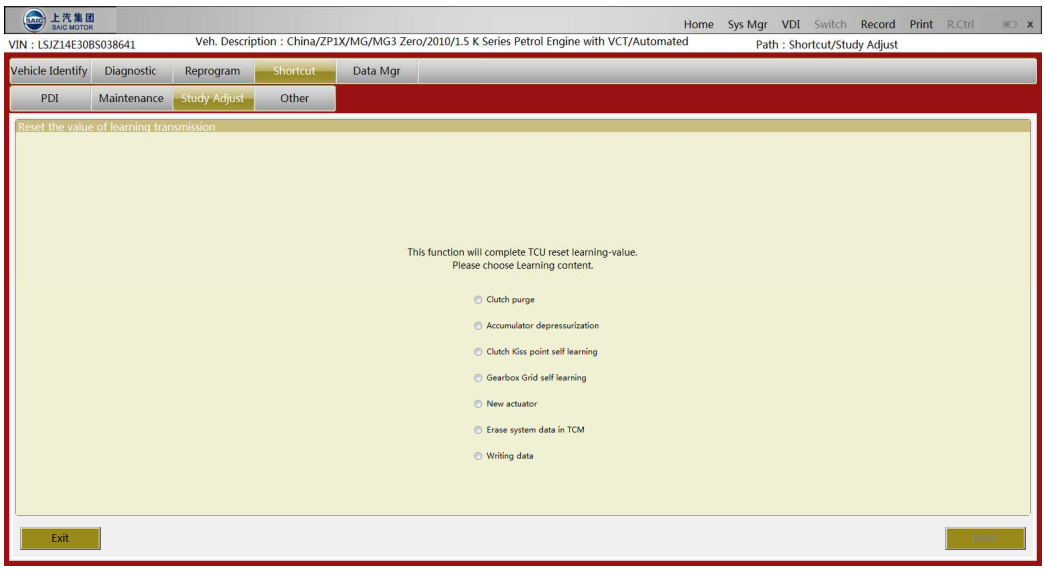


Figure 3.5.34

A. Clutch Purge

Step 3: Select "Clutch purge", "Next" button lights up, then click "Next" to continue.

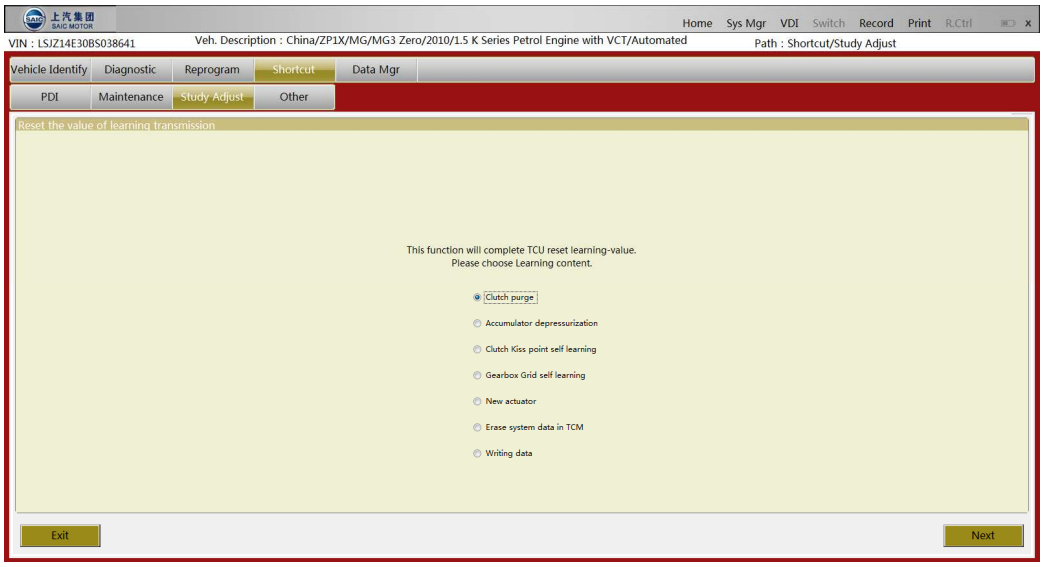


Figure 3.5.35

Step 4: Please operate as per the notes till below conditions are met then click "Next" to continue.

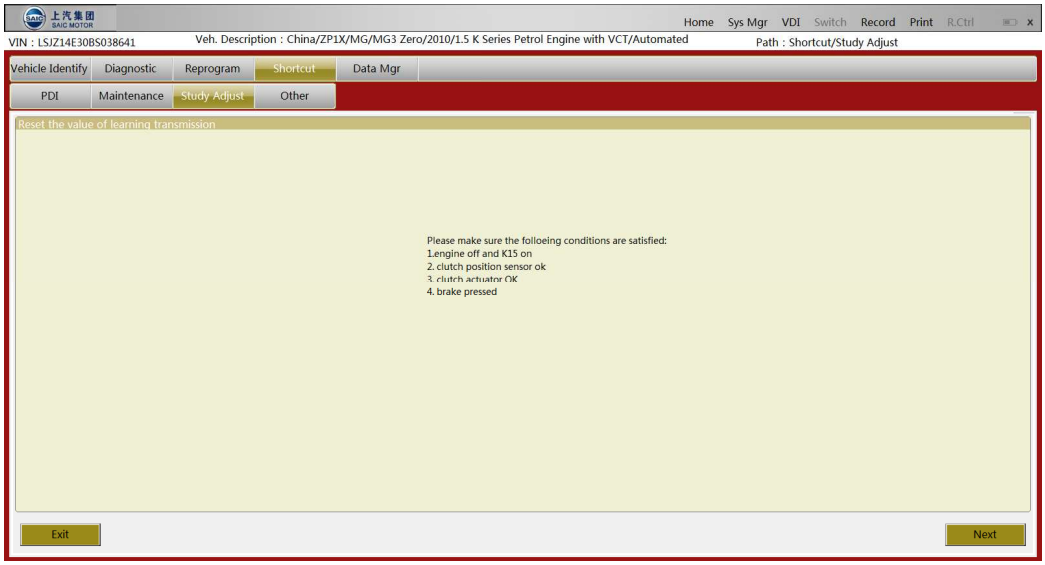


Figure 3.5.36

Step 5: Please press the brake as per the note, then click "Next".

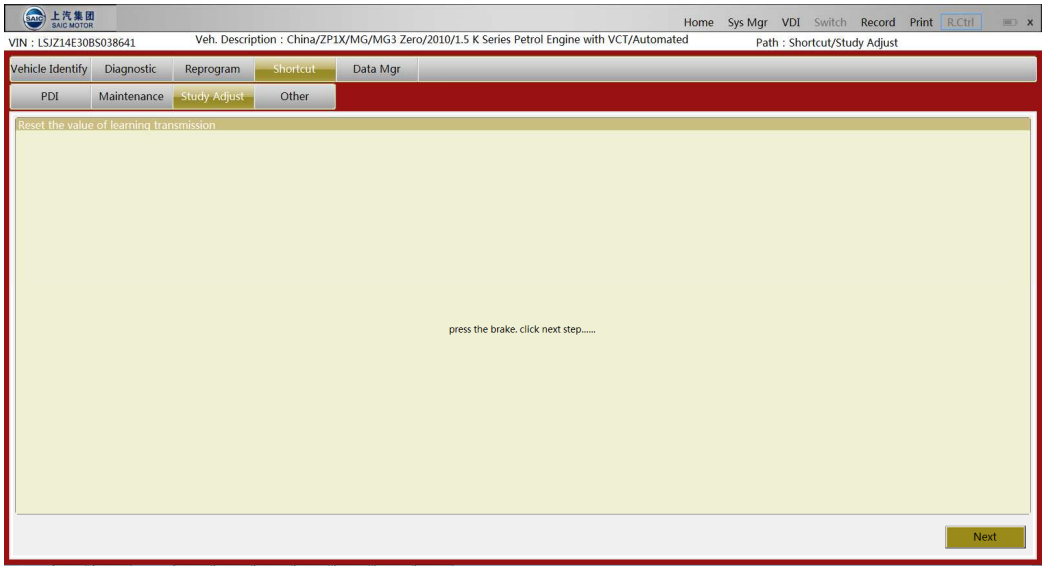


Figure 3.5.37

Step 6: Operation successful, start the ignition cycle, then return to the main function interface of "Study Adjust" after fire cycle.

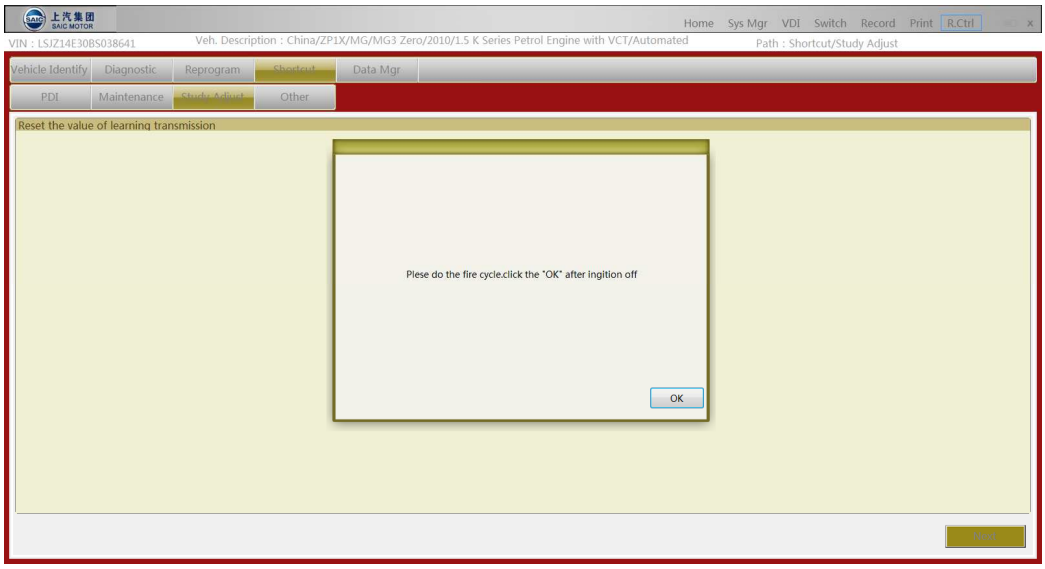


Figure 3.5.38

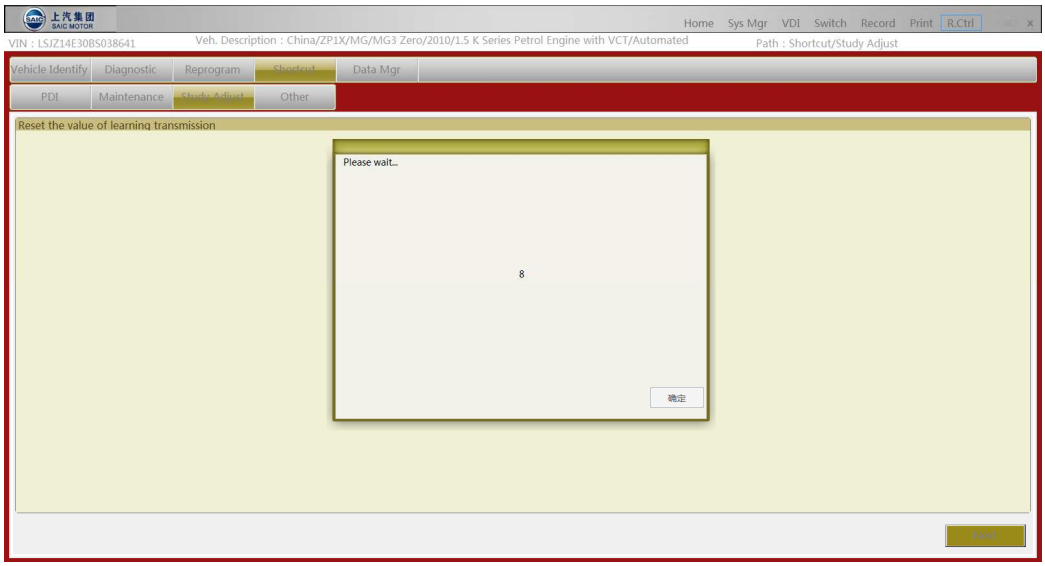


Figure 3.5.39

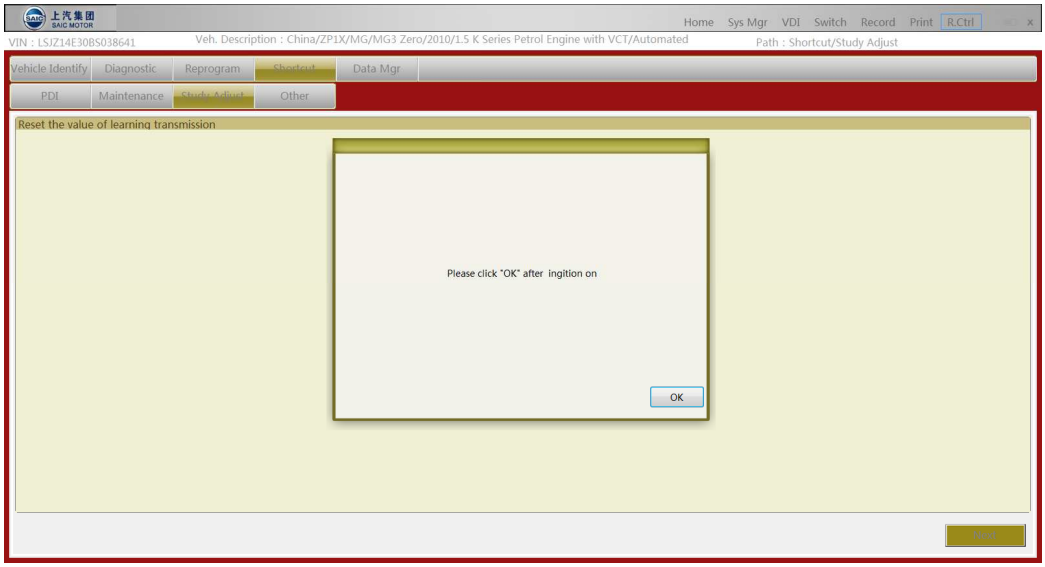


Figure 3.5.40

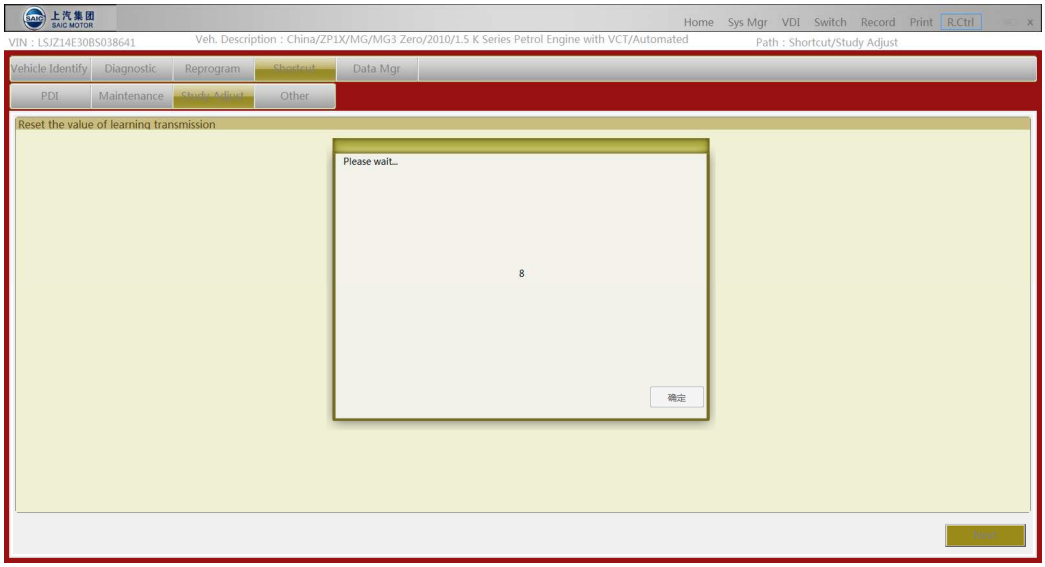


Figure 3.5.41

B. Accumulator Depressurization

Step 3: Select "Accumulator Depressurization", click "Next" to continue.

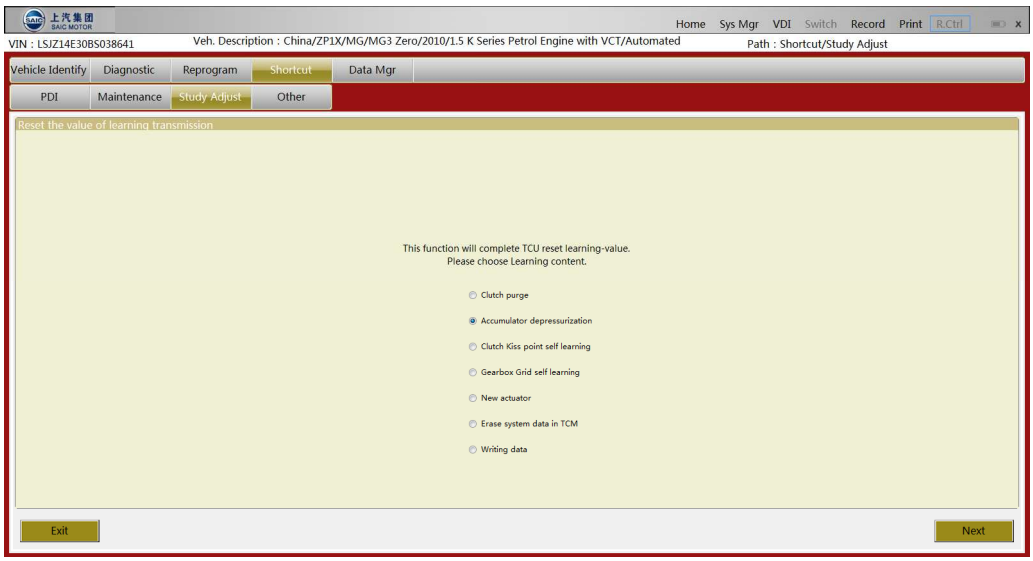


Figure 3.5.42

Step 4: Please confirm the following conditions are met, click "Next" to continue.

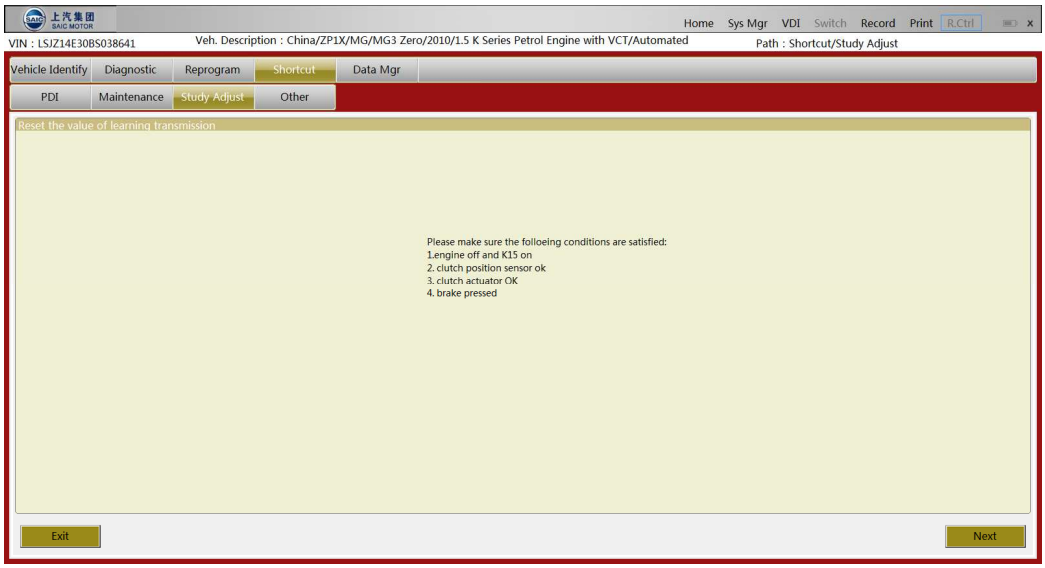


Figure 3.5.43

Step 5: Please press the brake then click "Next" to continue.

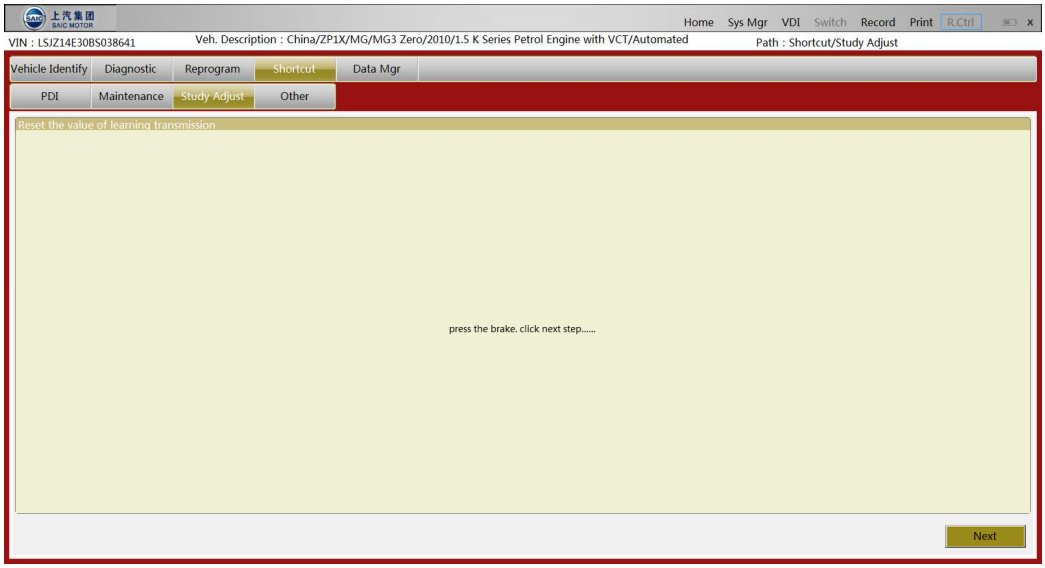


Figure 3.5.44

Step 6: Prompt "Success", click "Next" to continue.

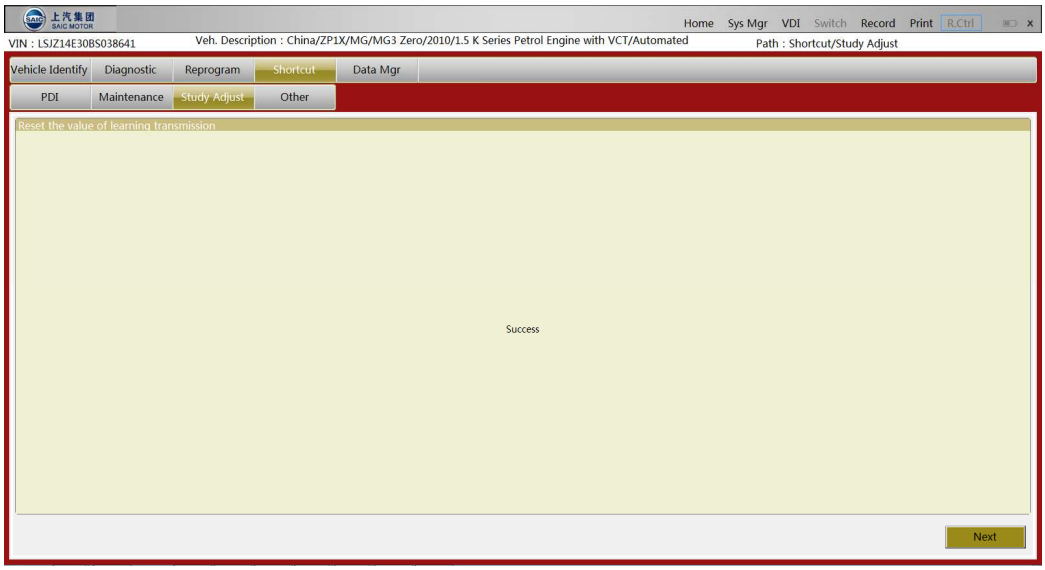


Figure 3.5.45

Step 7: Please do the ignition cycle then return to the main function interface of "Study Adjust".

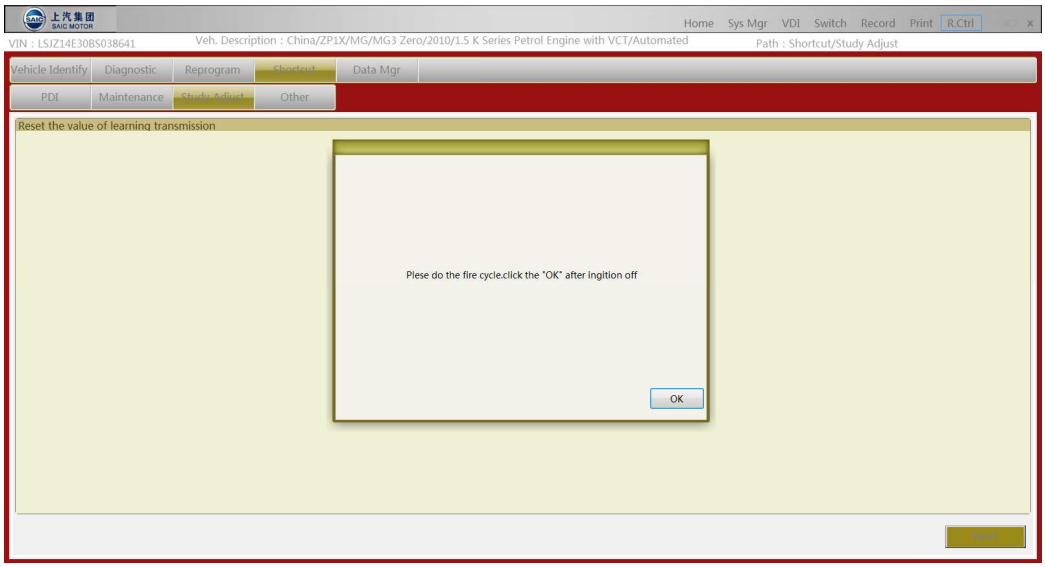


Figure 3.5.46

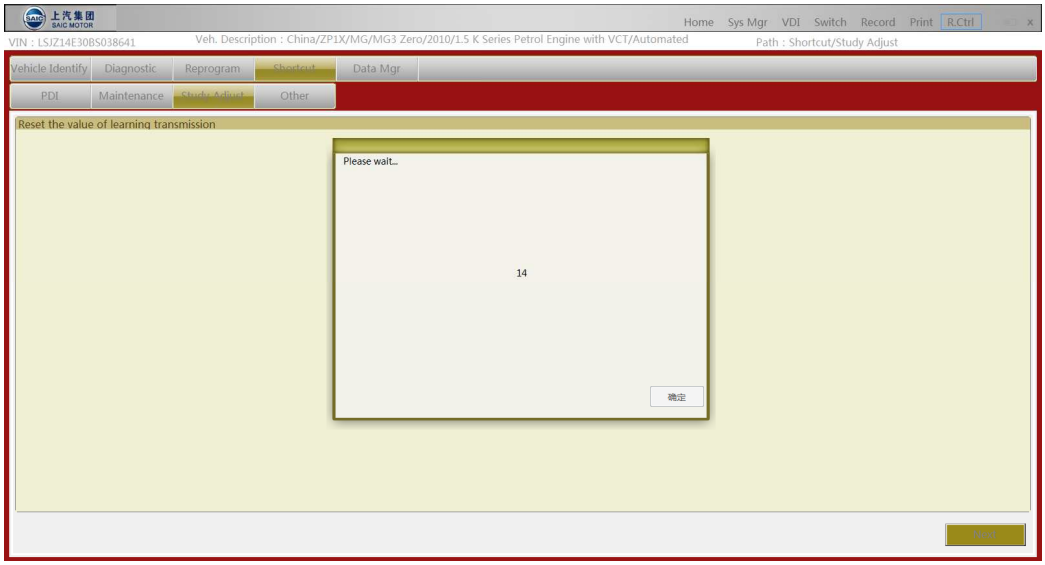


Figure 3.5.47

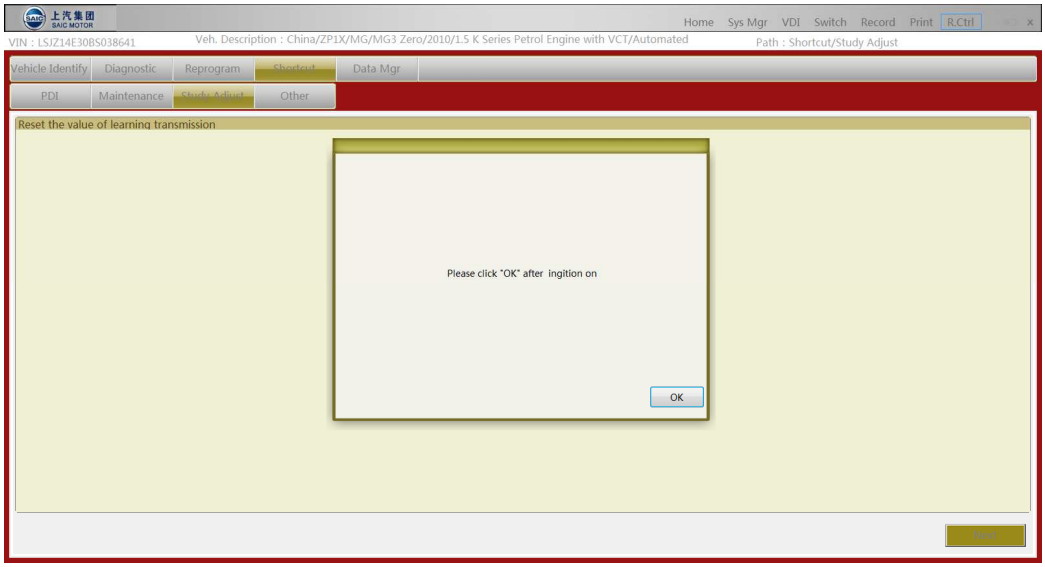


Figure 3.5.48

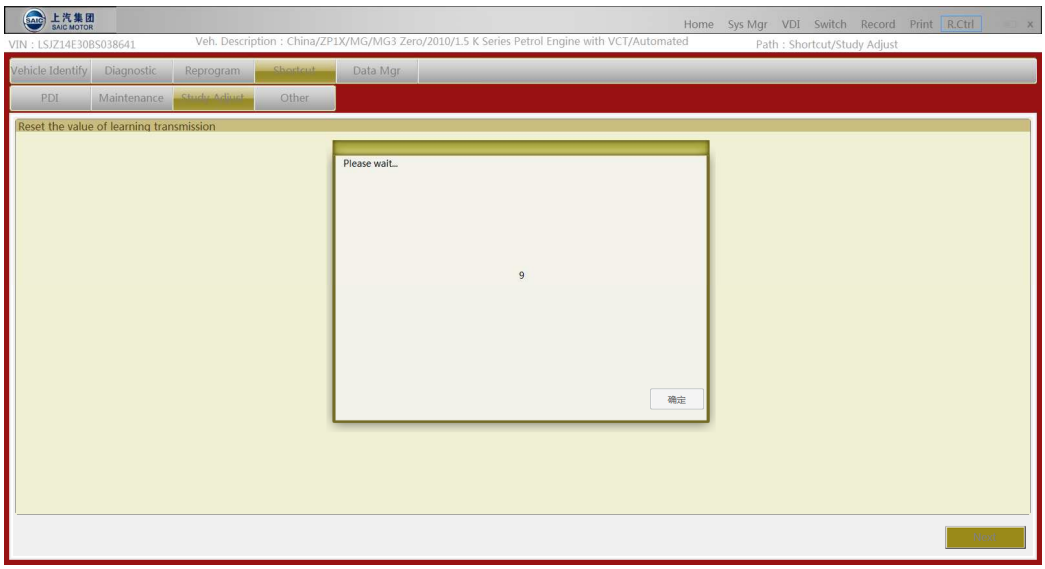


Figure 3.5.49

C. Clutch Kiss Point Self Learning

Step 3: Select "Clutch kiss point self learning", click "Next" to continue.

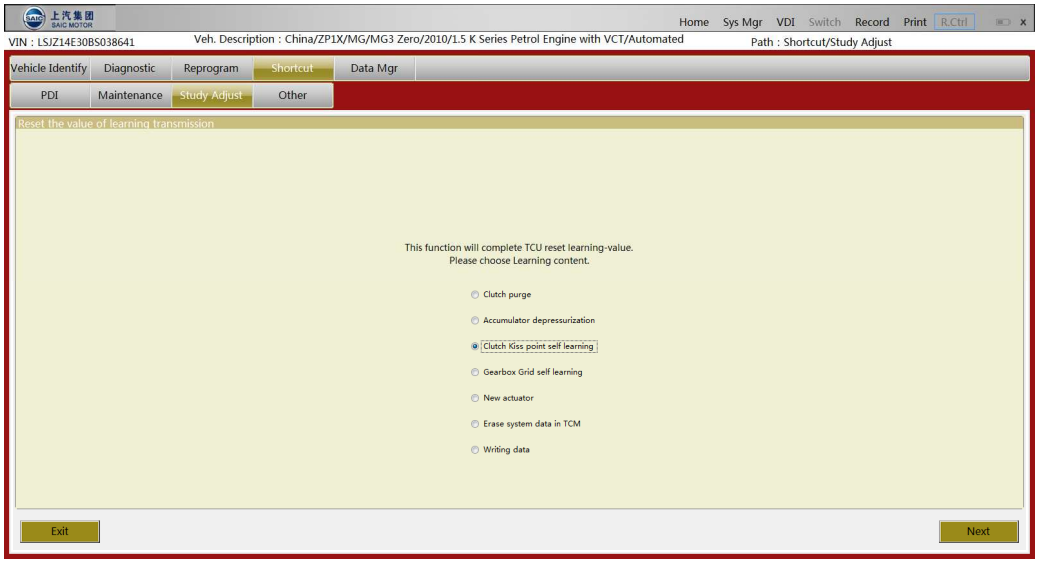


Figure 3.5.50

Step 4: Please confirm the following conditions are met, click "Next" to continue.

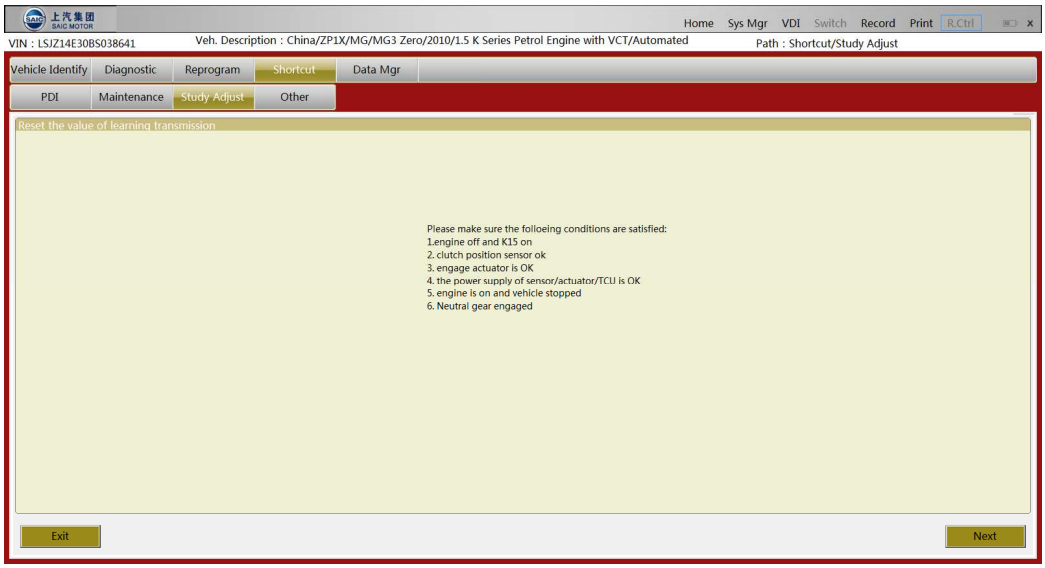


Figure 3.5.51

Step 5: Please press the brake, then click "Next" to continue.

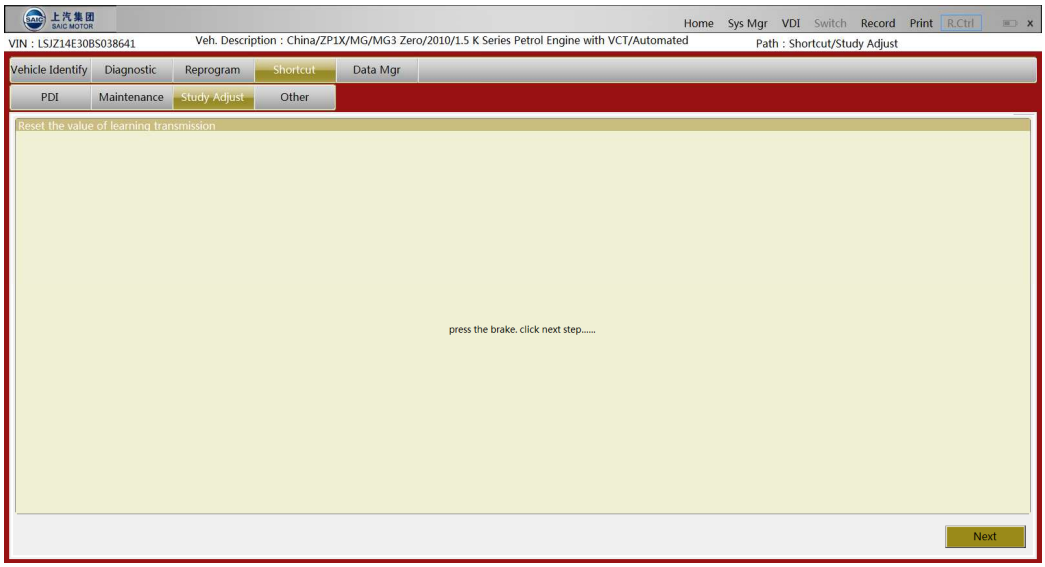


Figure 3.5.52

Step 6: Prompt "Success", click "Finished" to end the procedure then return to the main function interface of "Study Adjust".

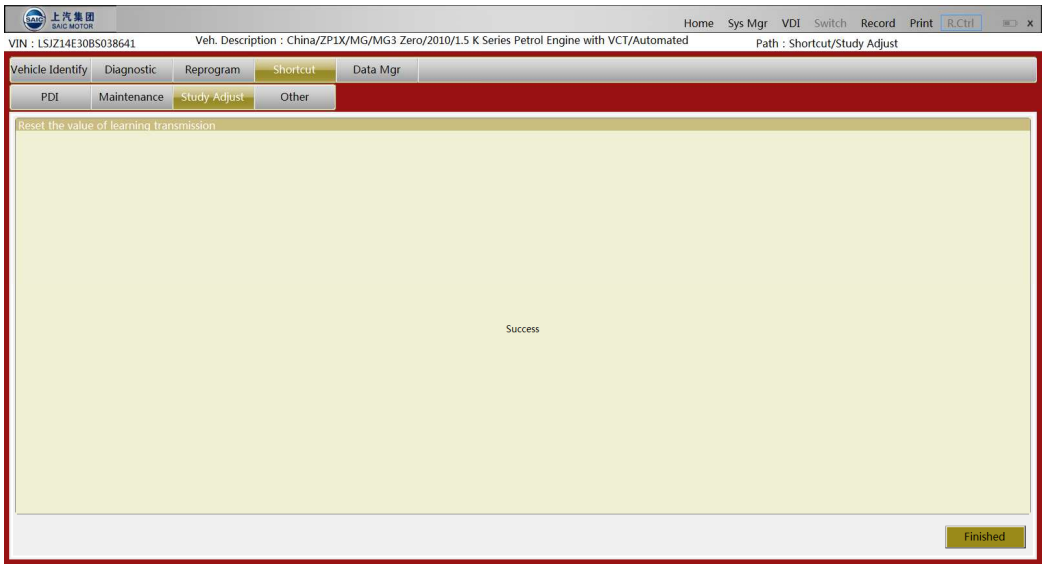


Figure 3.5.53

D. Gearbox Grid Self Learning

Step 3: Select " Gearbox Grid self learning", click "Next" to continue.

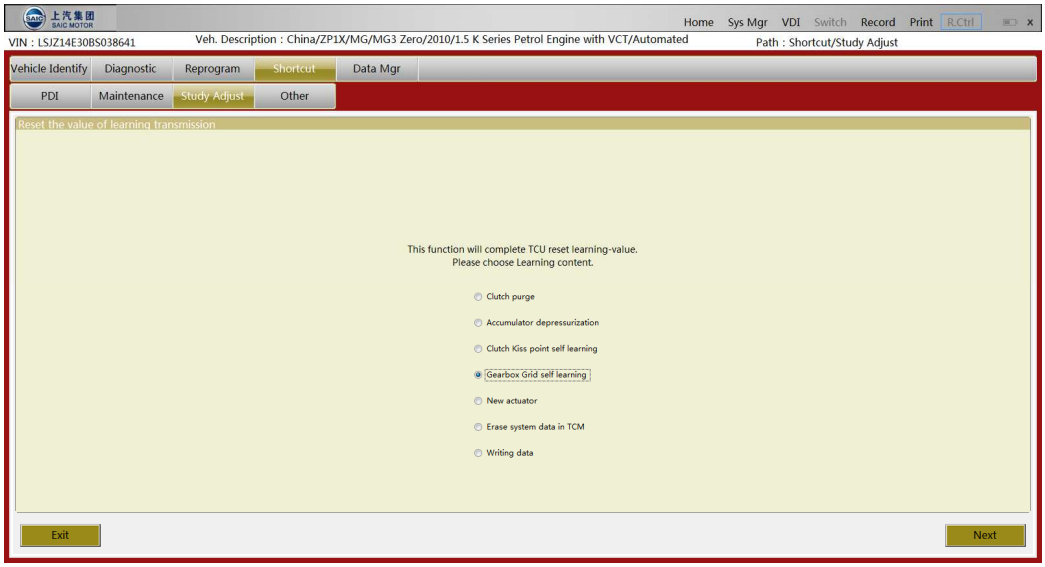


Figure 3.5.54

Step 4: Please confirm the following conditions are met, click "Next" to continue.

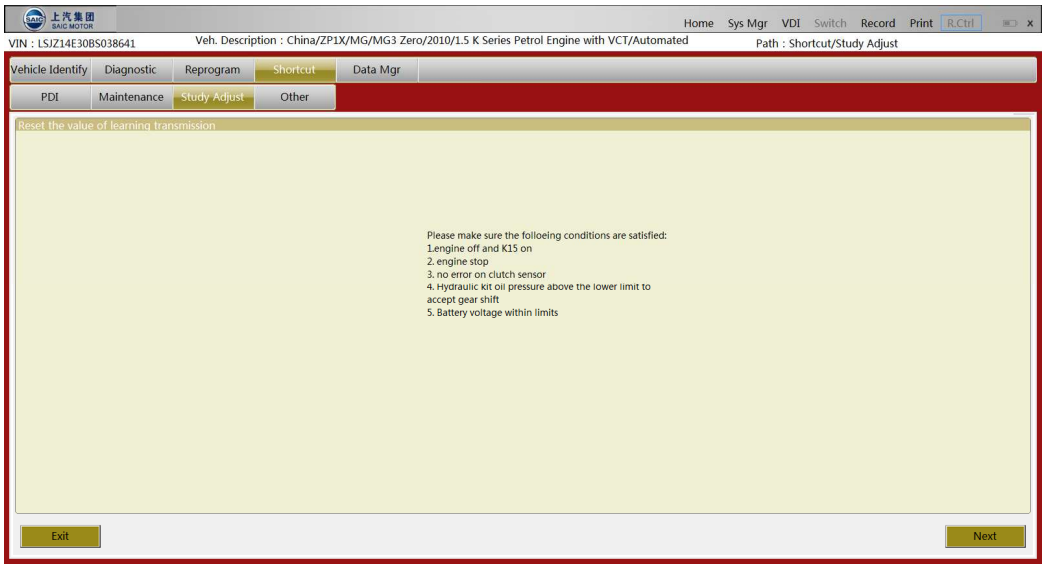


Figure 3.5.55

Step 5: Please press the brake, then click "Next" to continue.

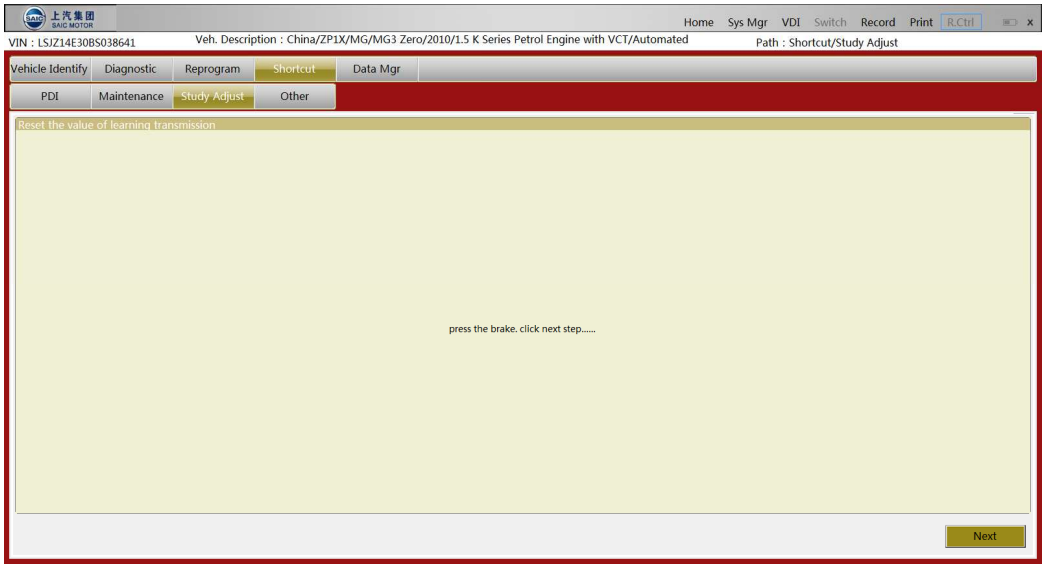
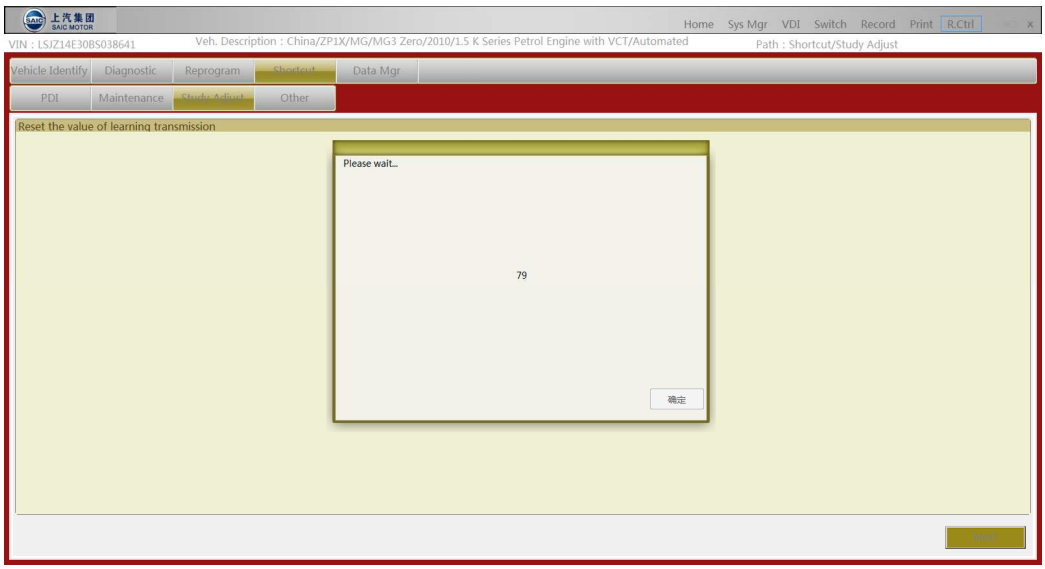


Figure 3.5.56

Step 6: Please wait according to the requirement.



Step 7: Please do the ignition cycle, and return to the main function interface of "Study Adjust" after that.

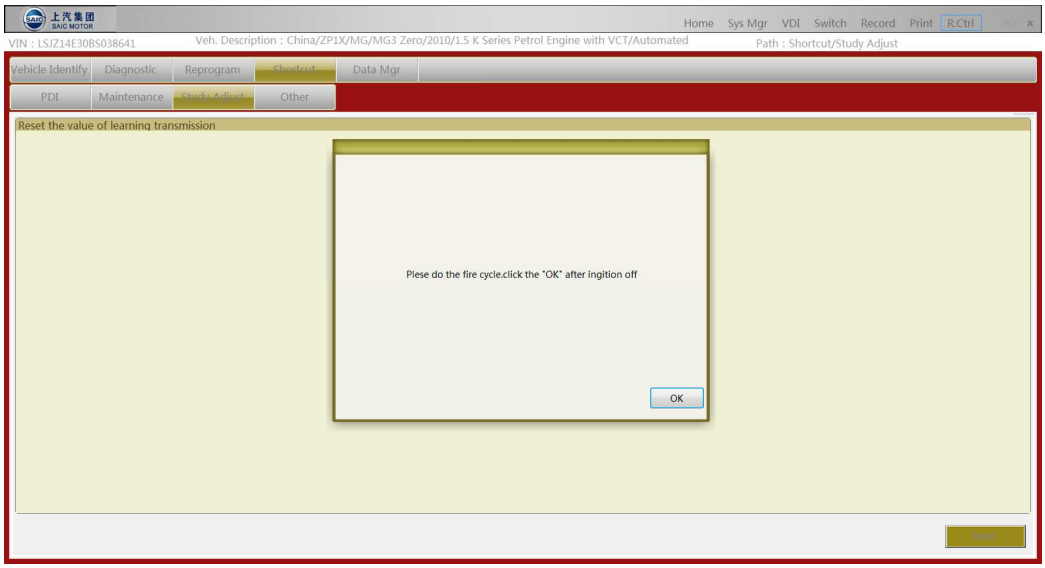


Figure 3.5.57

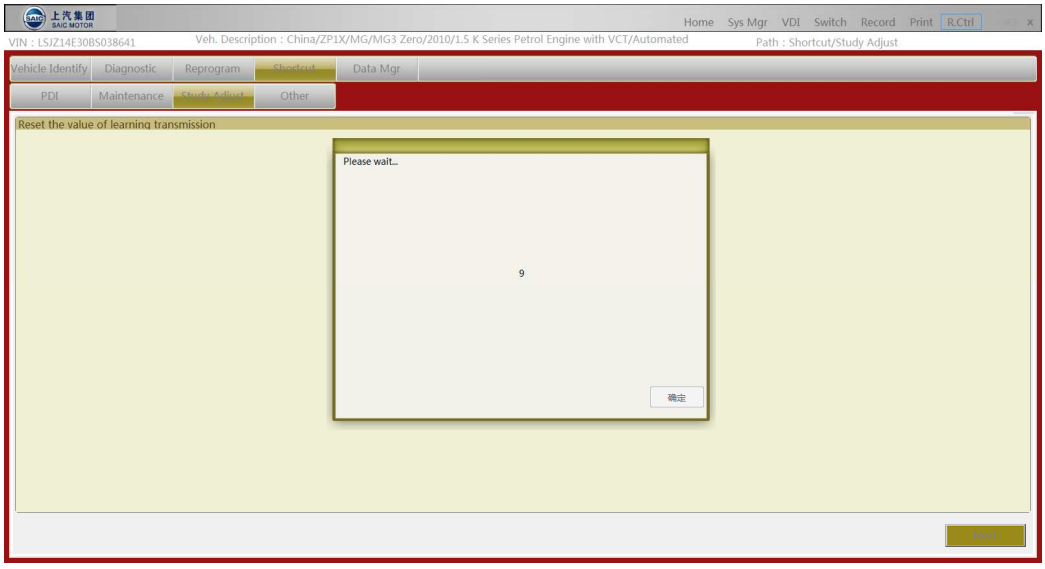


Figure 3.5.58

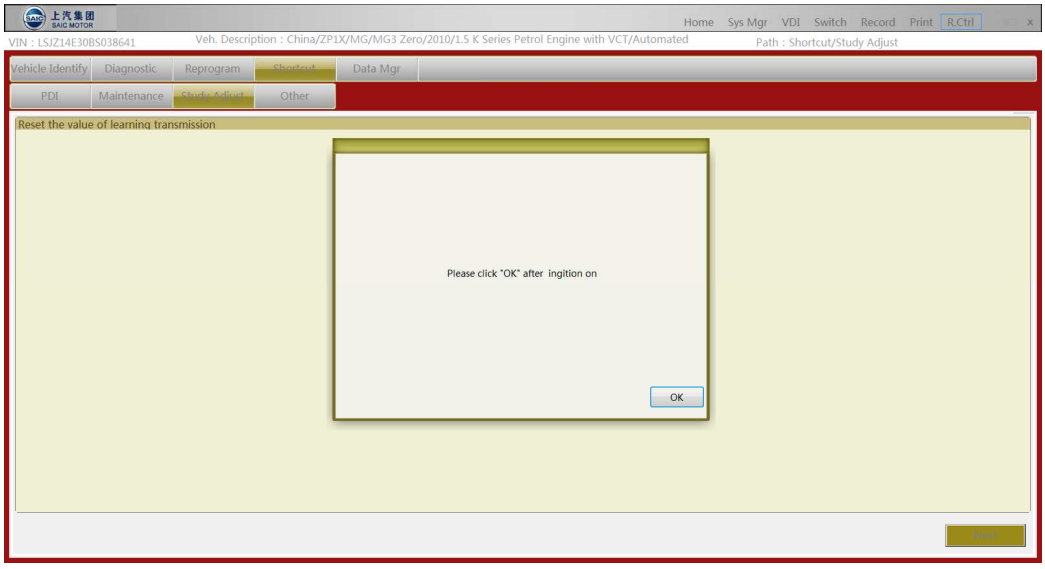


Figure 3.5.59

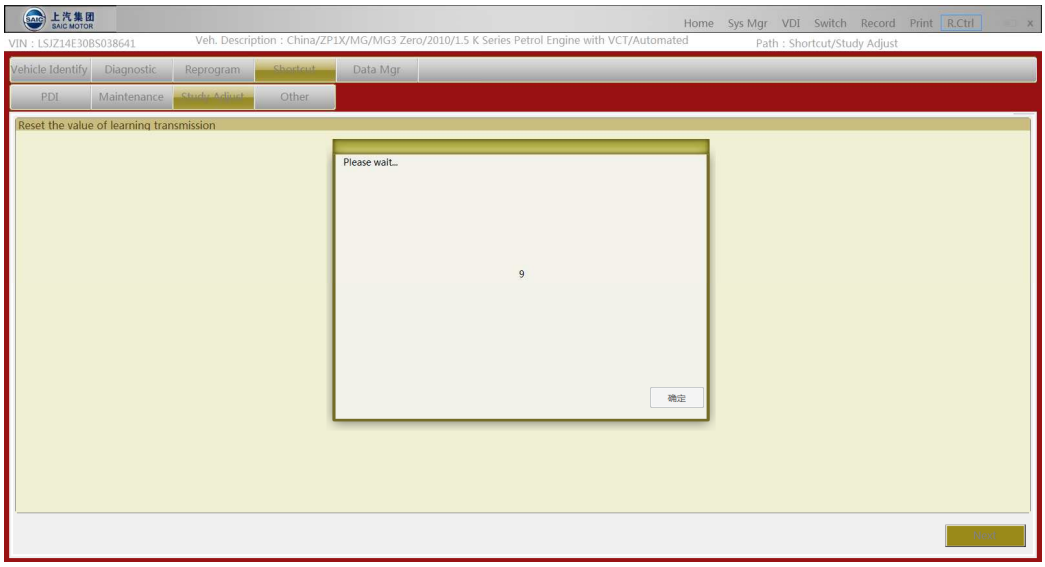


Figure 3.5.60

Step 8: Prompt success, click "Finished" to end the procedure, then the system return to the main function interface of "Study Adjust".

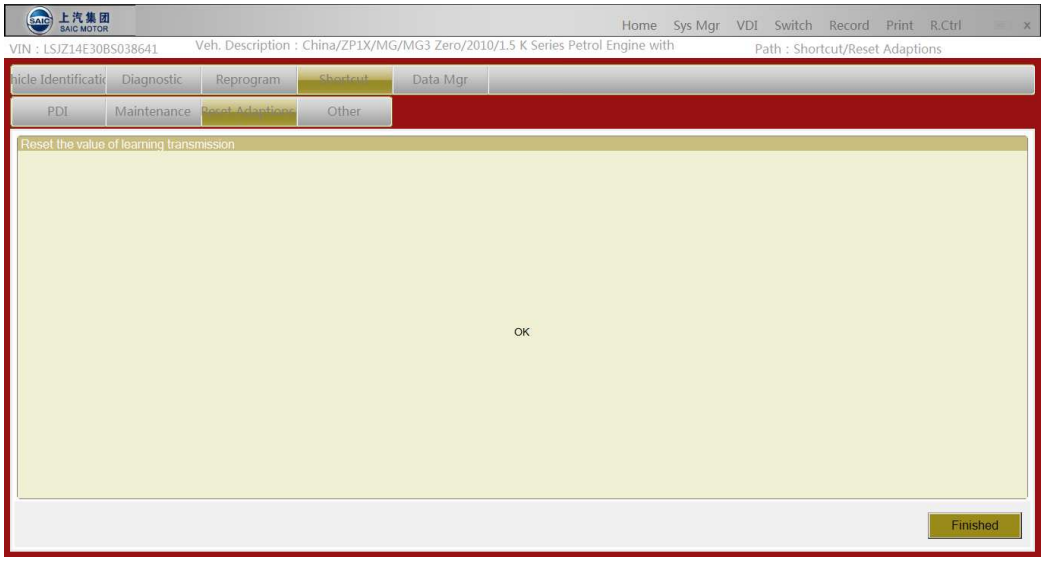


Figure 3.5.61

E. New Actuator

Step 3: Select "New actuator", click "Next" to continue.

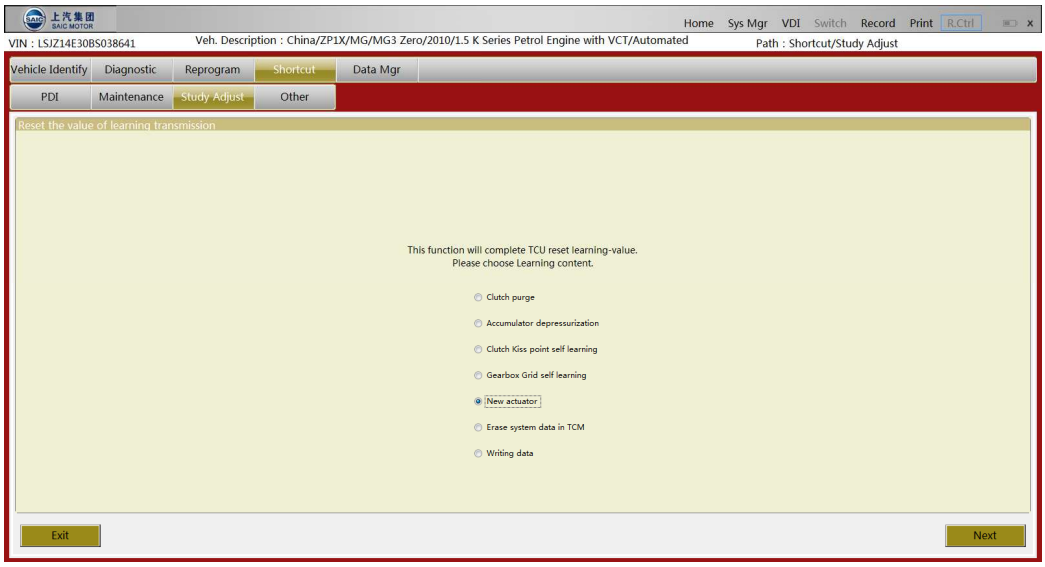


Figure 3.5.62

Step 4: Please confirm the following conditions are met, then click "Next" to continue.

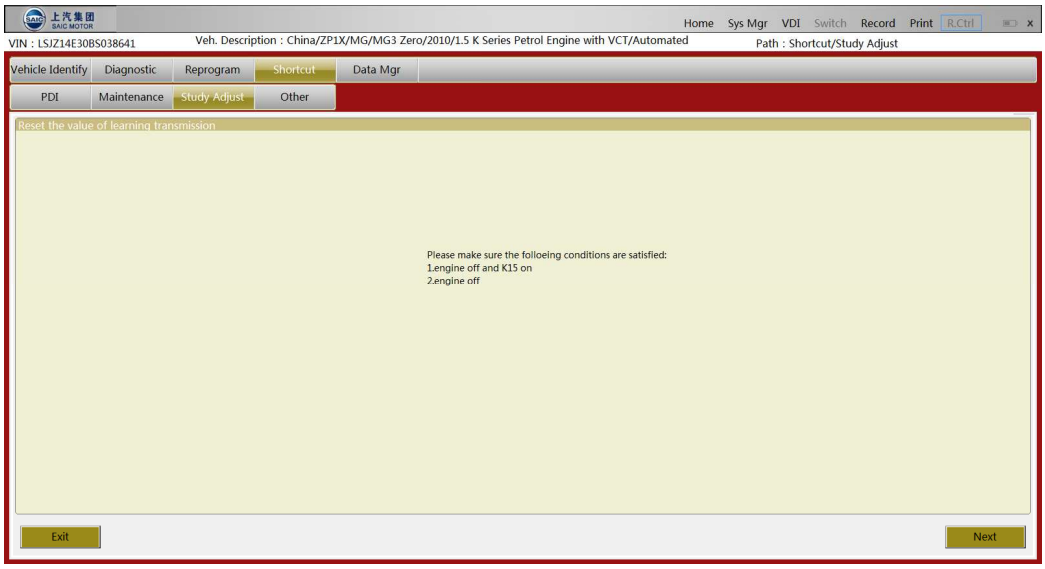


Figure 3.5.63

Step 5: Please press the brake then click "Next" to continue.

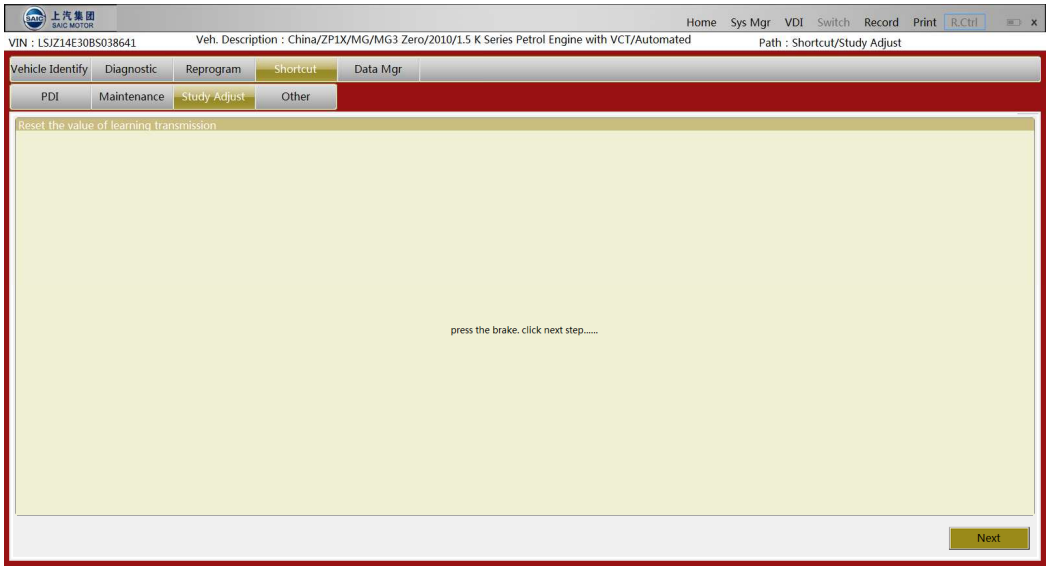


Figure 3.5.64

Step 6: Prompt "New actuator is activated", click "Finished" to end the procedure, the system returns to the main function interface of "Study Adjust".

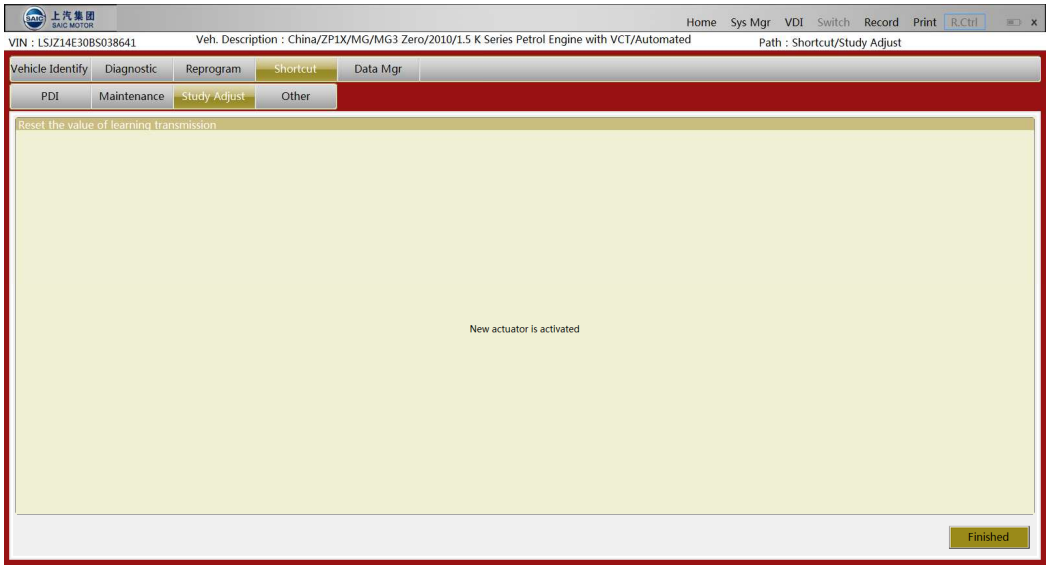


Figure 3.5.65

F. Erase System Data in TCM

Step 3: Select "Erase system data in TCM", click "Next" to continue.

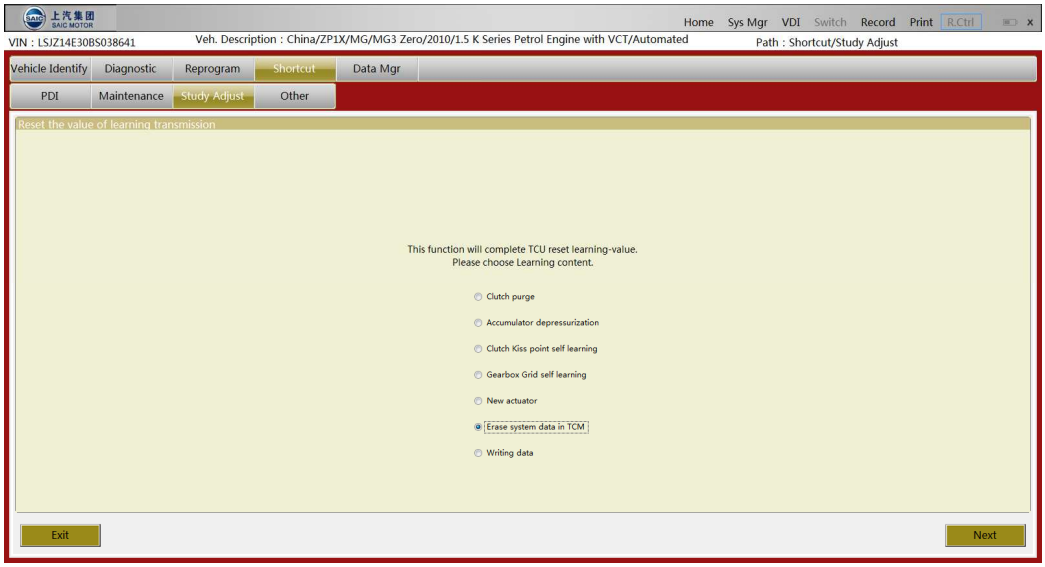


Figure 3.5.66

Step 4: Once replacing the following parts, the data related with TCM will be erased.

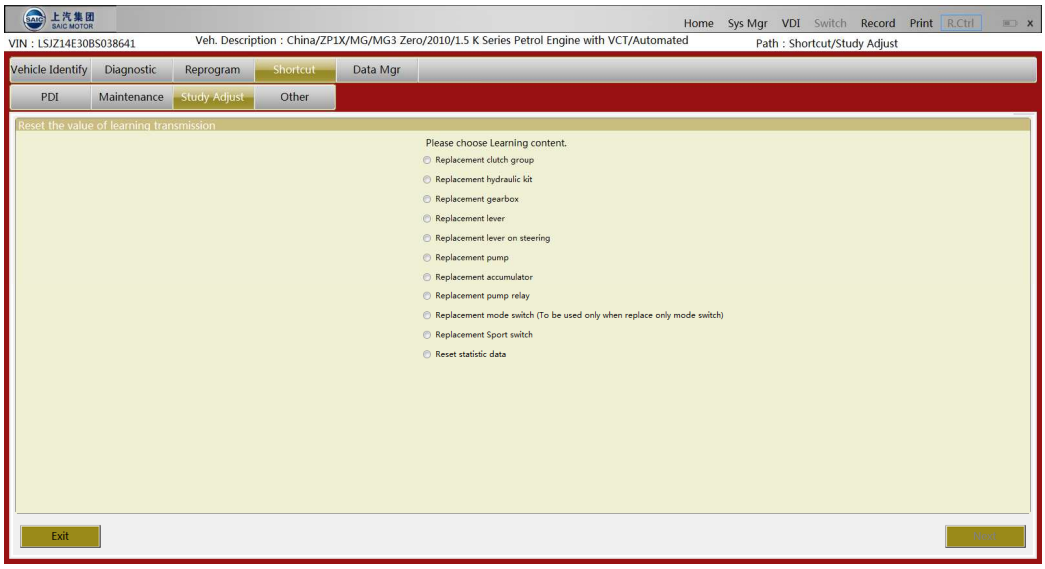


Figure 3.5.67

Step 5: Select the replaced part, "Next" button lights up, click "Next" to continue; while replacing different parts, the operation of VDS is the same, but data erased in TCM is not. Here introduces the operation procedure of erasing the data in TCM (take replacement clutch group as example).

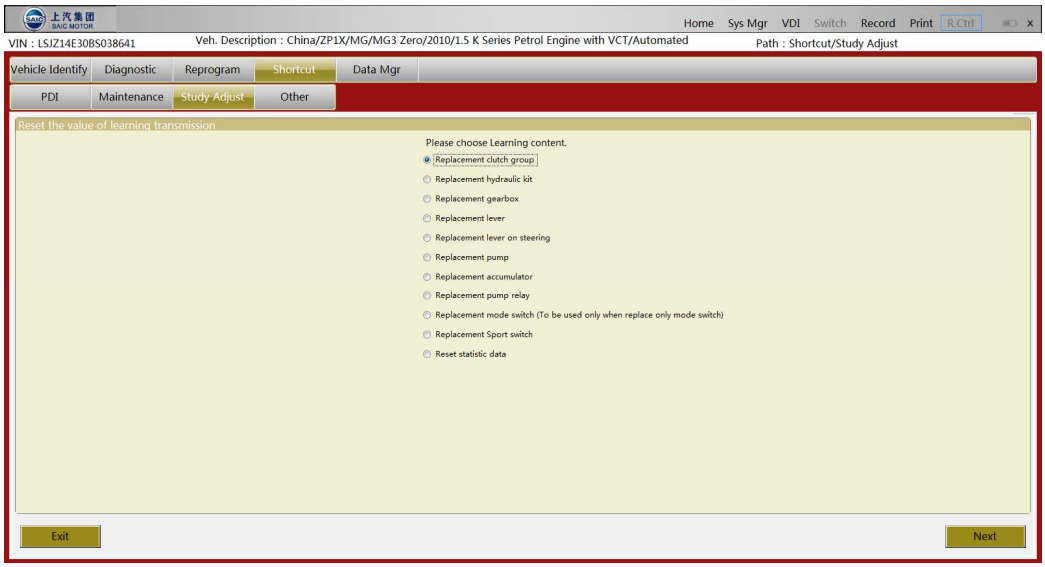


Figure 3.5.68

Step 6: Erase the related data in TCM. This step is completed in a very short time and may not be displayed in the interface.

Step 7: Do the ignition cycle after successfully erasing the related data in TCM.

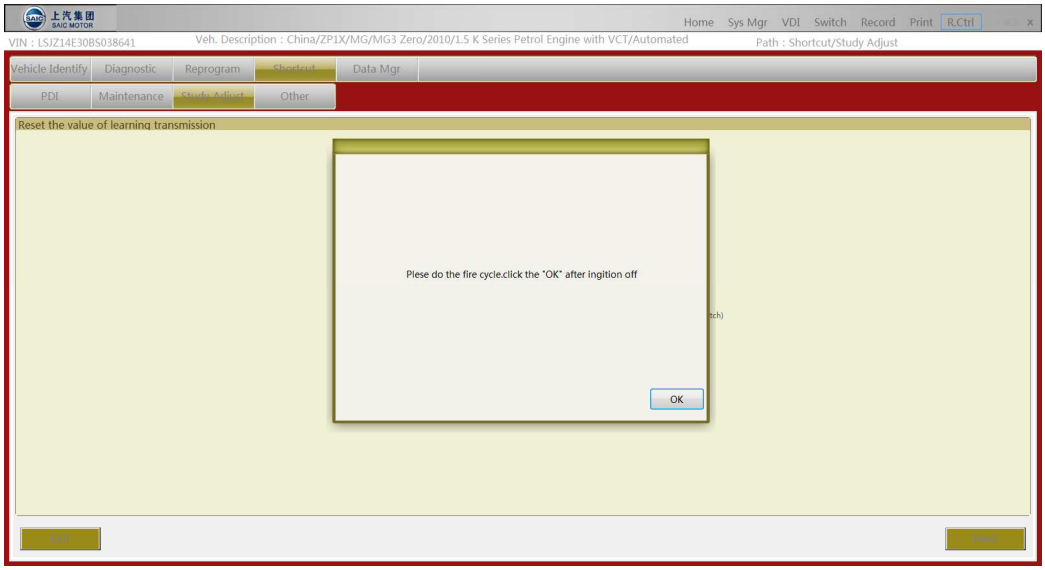


Figure 3.5.69

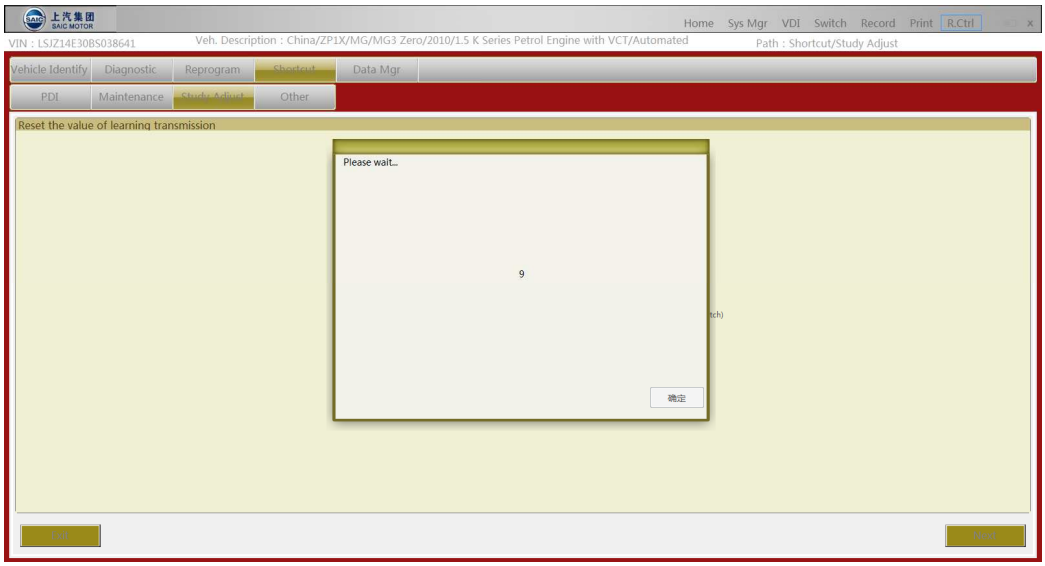


Figure 3.5.70

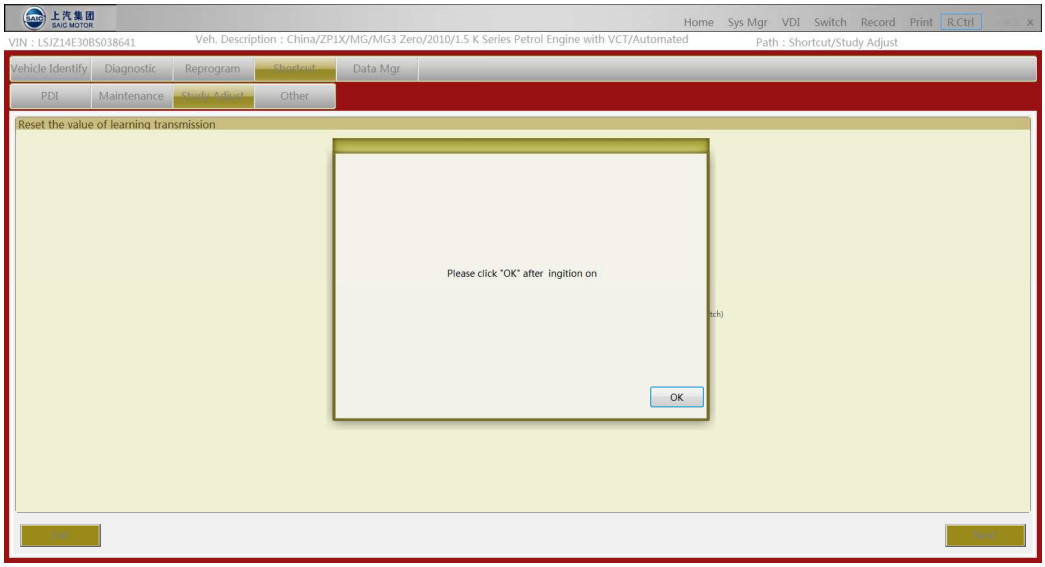


Figure 3.5.71

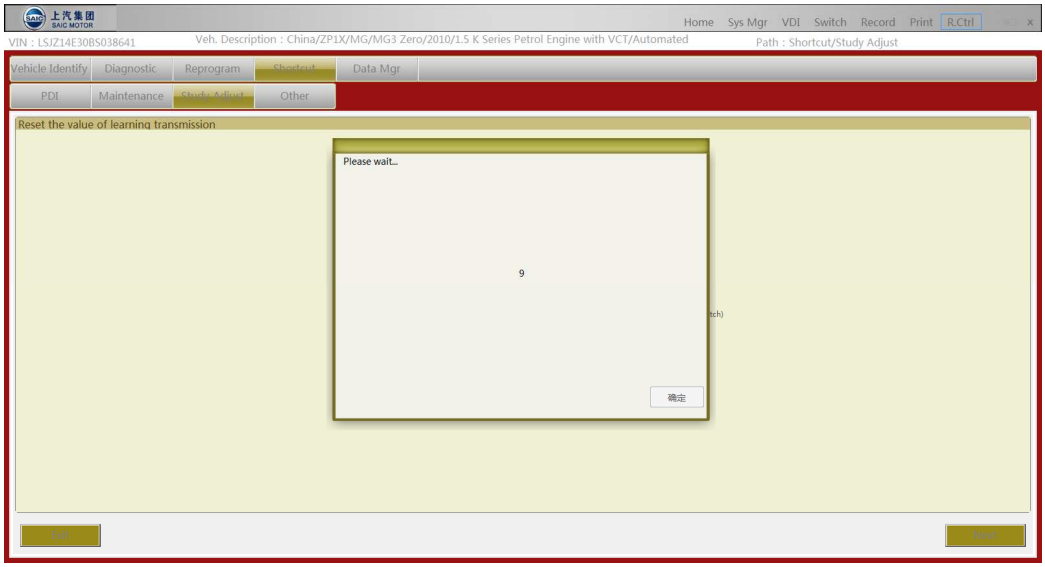


Figure 3.5.72

Step 8: It is prompted that the related data of selected parts in TCM are successfully erased, click "Finished" to return to the main interface of "Study Adjust"; if other replaced parts also needs the operation of "Erasing system data in TCM" or other self learning of TCM, please conduct "TCM-transmission Control Module Reset value of learning" again.

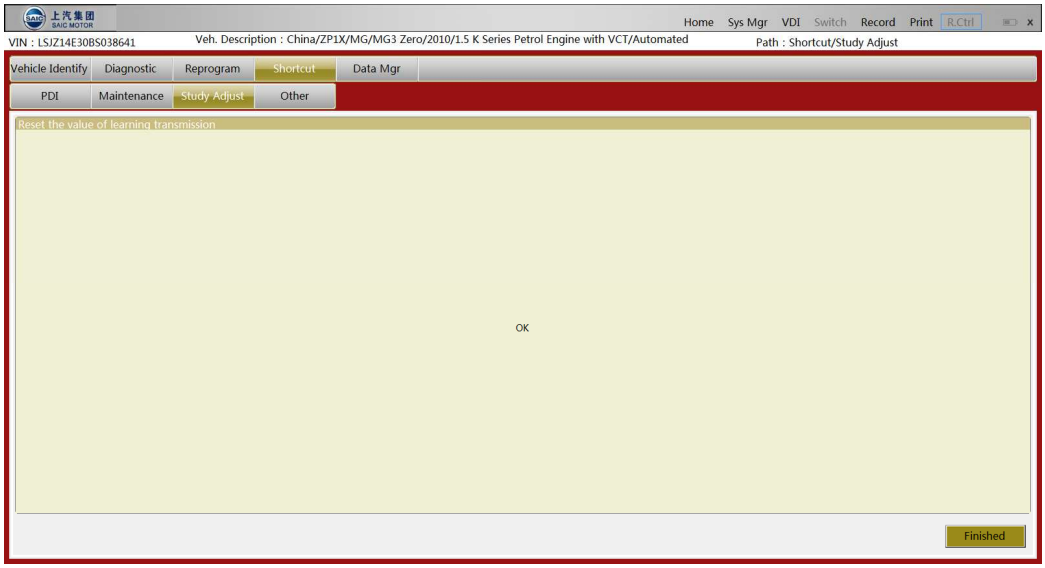


Figure 3.5.73

G. Writing Data

Step 3: Select "Writing data", click "Next" to continue.

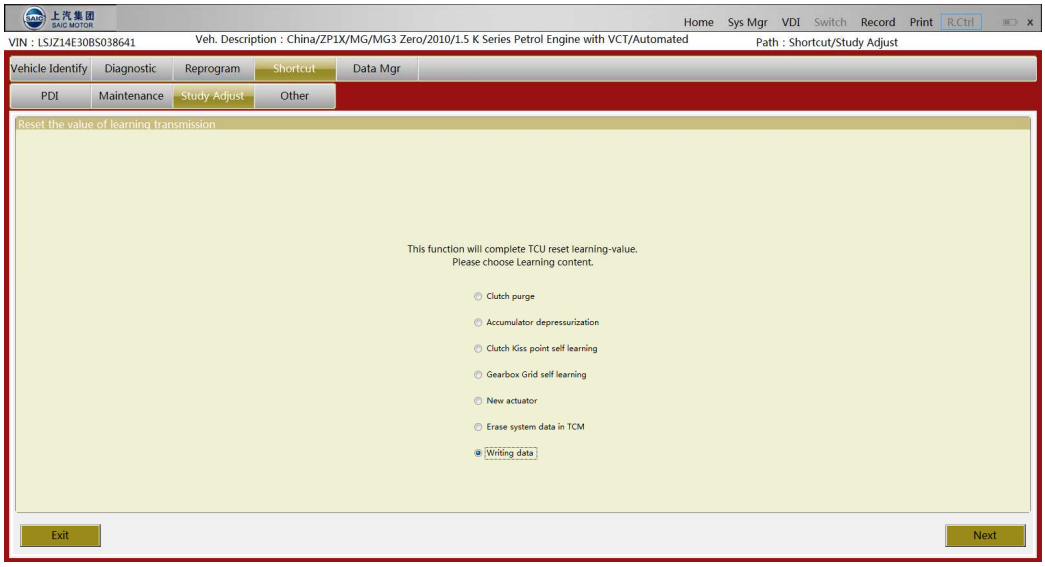


Figure 3.5.74

Step 4: Please confirm the following conditions are met then click "Next" to continue.

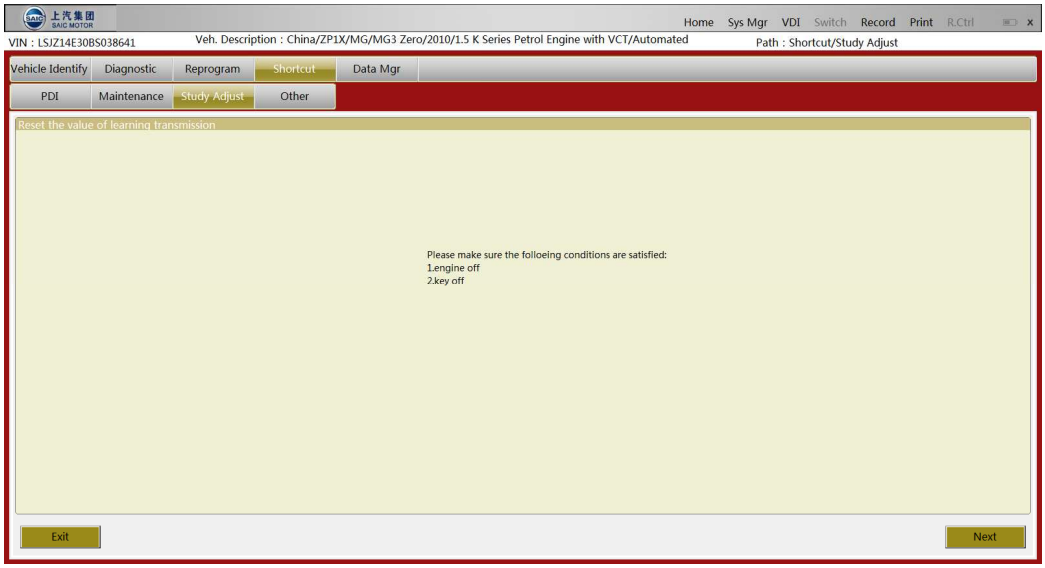


Figure 3.5.75

Step 5: Please press the brake, then click "Next" to continue.

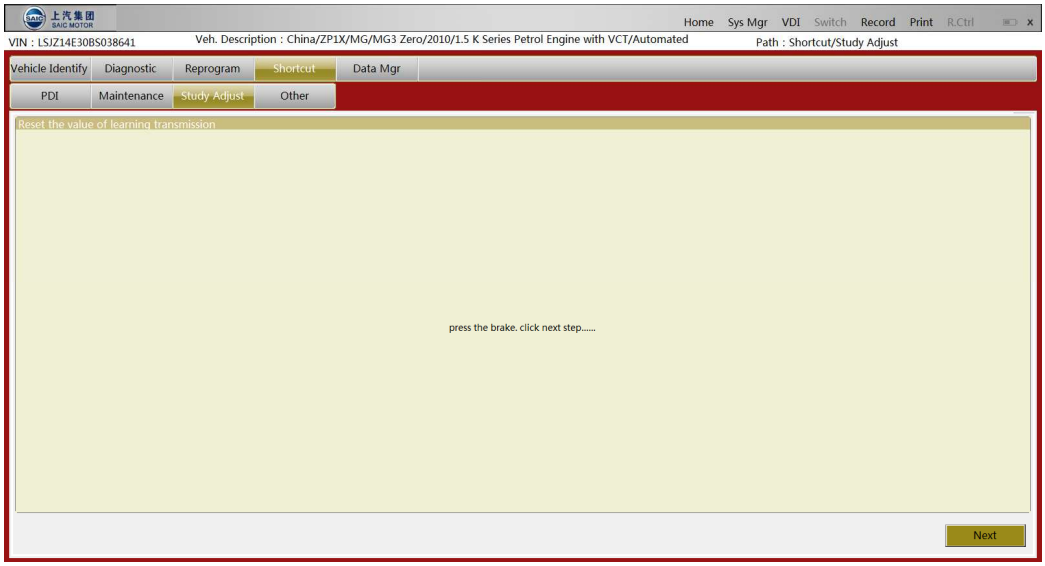


Figure 3.5.76

Step 6: Please finish the ignition cycle as per the notes.

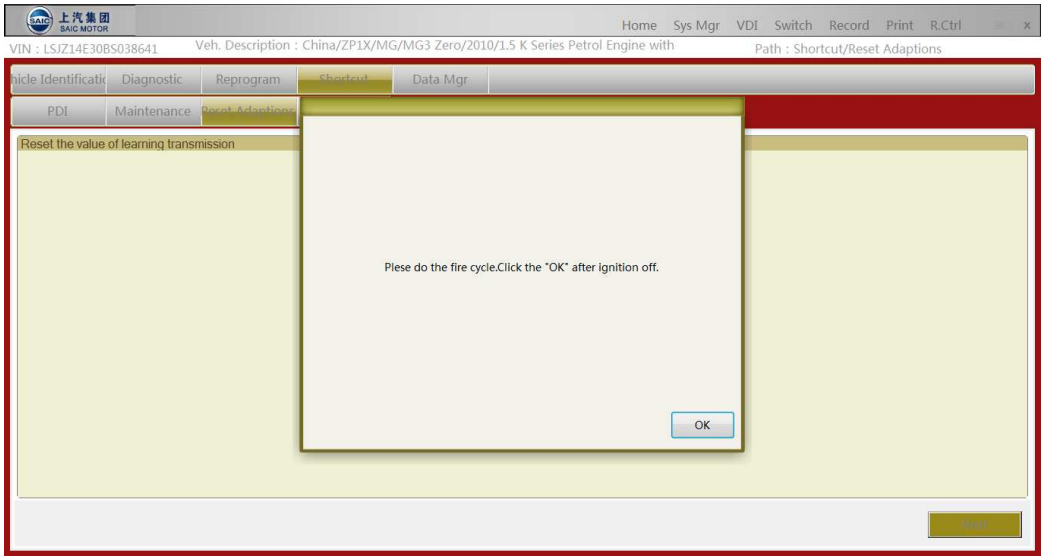


Figure 3.5.77

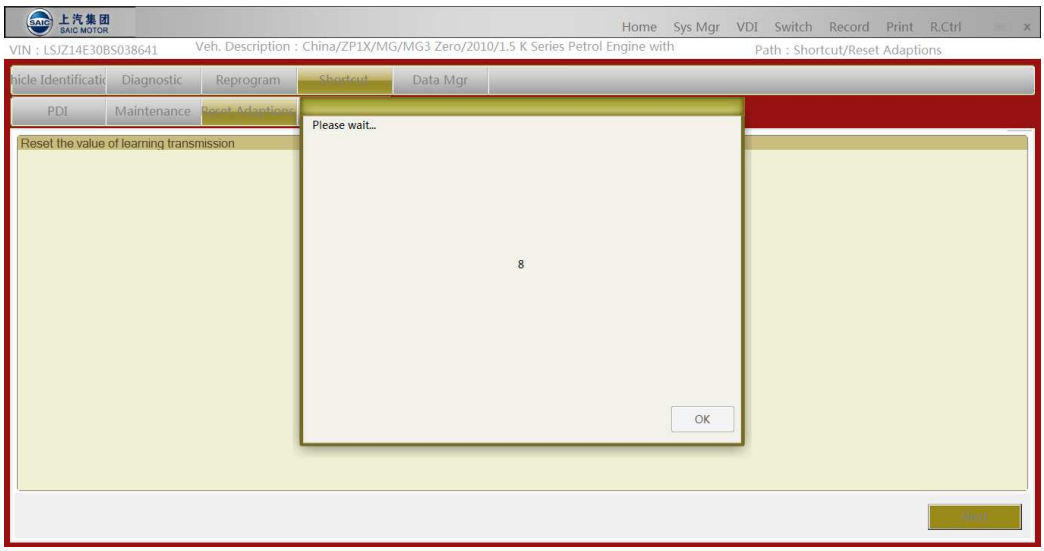


Figure 3.5.78

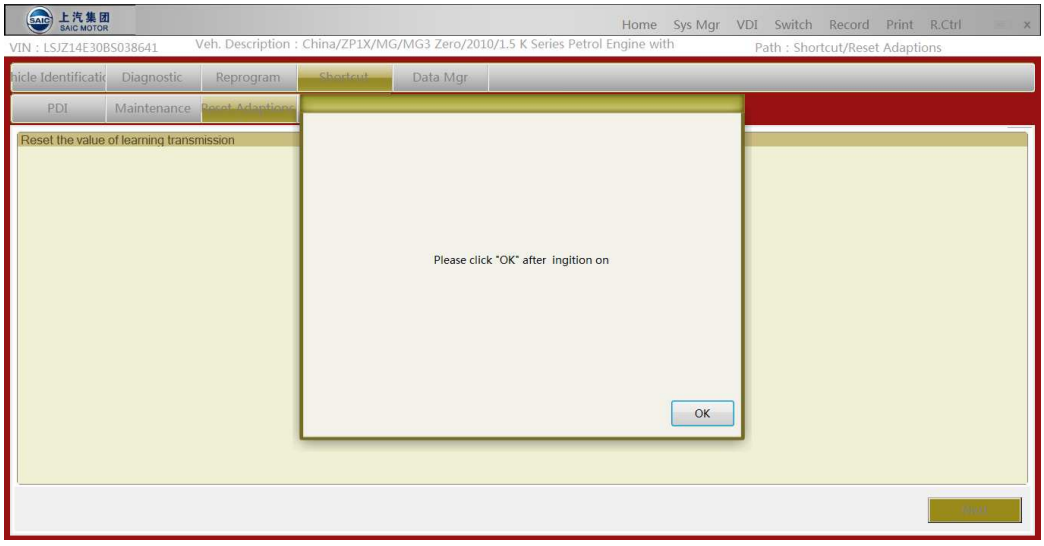


Figure 3.5.79

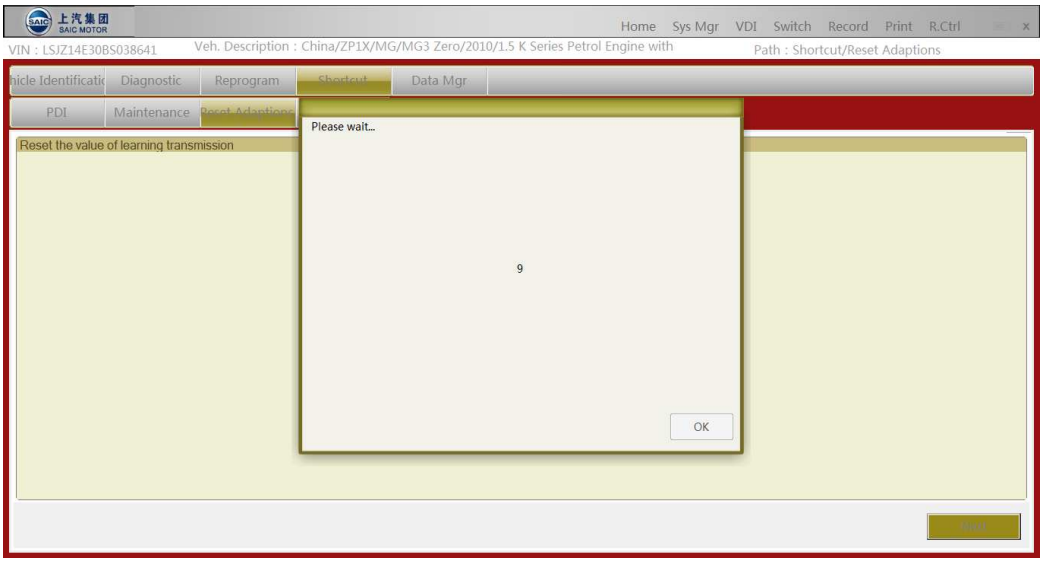


Figure 3.5.80

Step7: Prompt "Success", click "Finished" to end the procedure, the system returns to the main function interface of "Study Adjust".

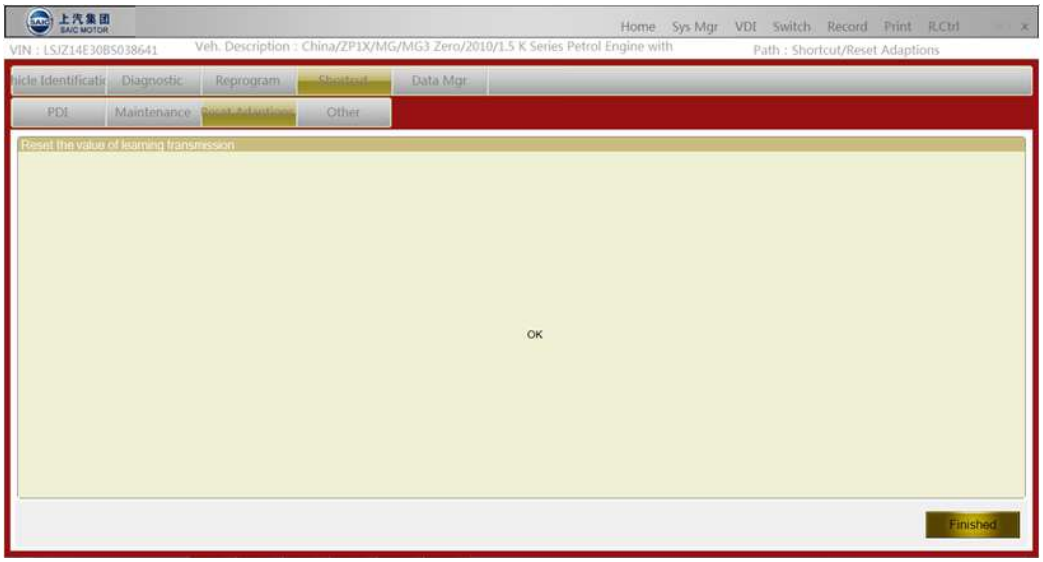


Figure 3.5.81

4 Other

Other items required by maintenance operation for MG3 model: ABS/DSC maintain exhaust, IPK SelfCheck.

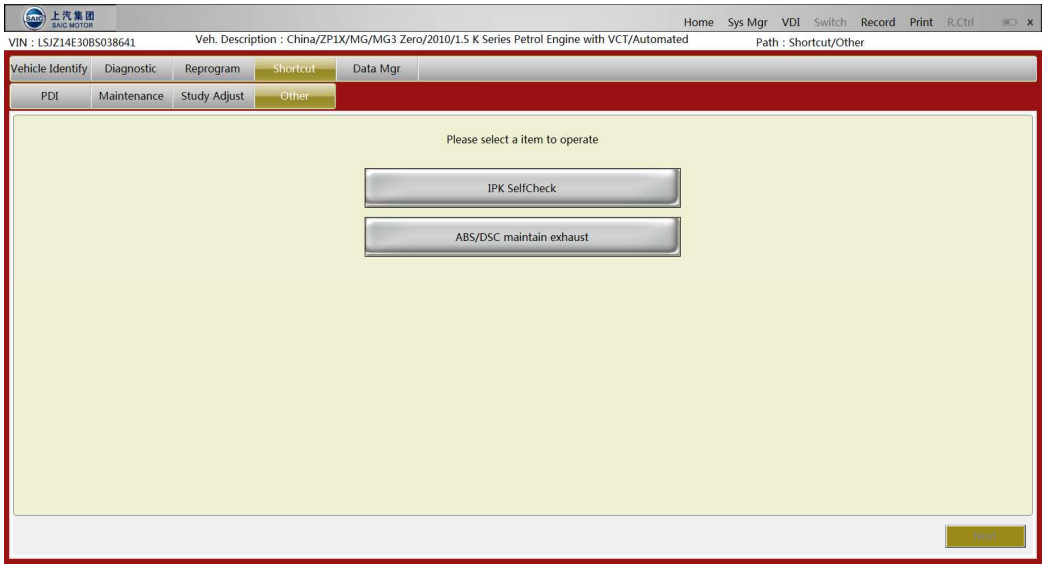


Figure 3.5.82

1) IPK SelfCheck

Step 1: Select "IPK SelfCheck", click "Next" to continue.

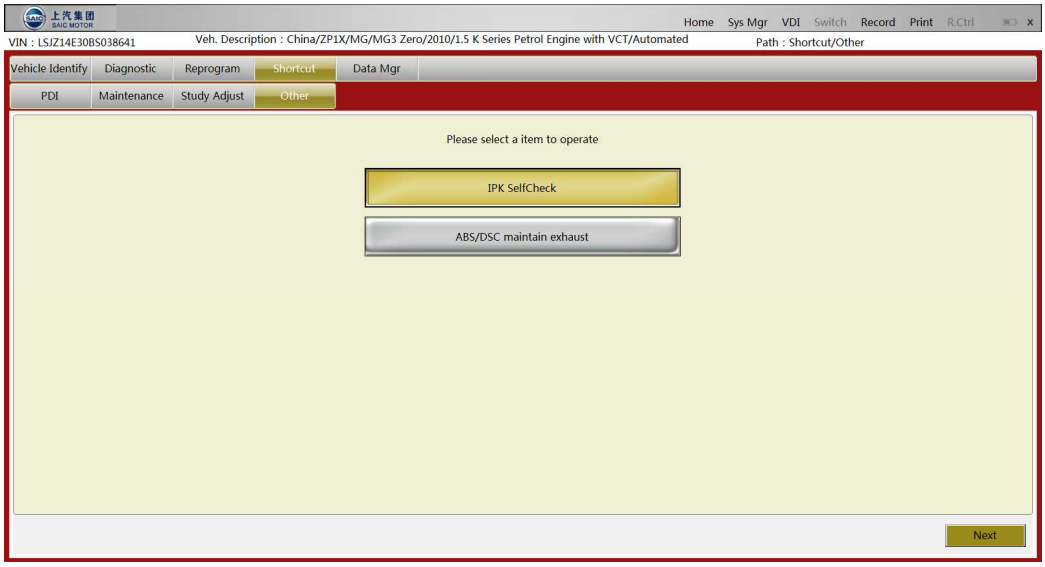


Figure 3.5.83

Step 2: It is allowed to select the items needs to be self checked, once selecting "All", all items listed below which are displayed on the instrument shall be self checked then click "Next" after the selection.

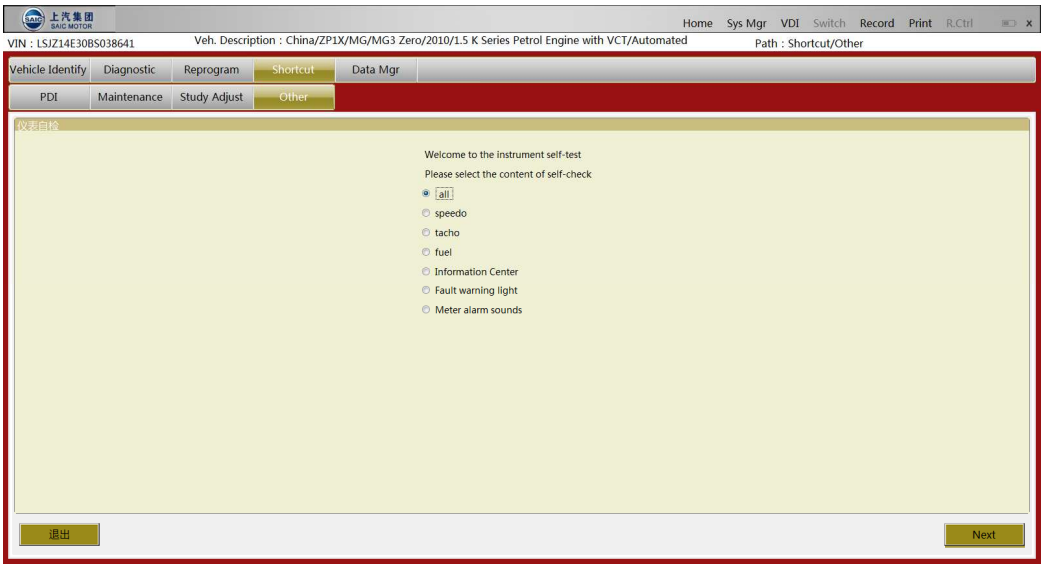


Figure 3.5.84

Step 3: IPK self check is successful, click "Finished" to exit the procedure.

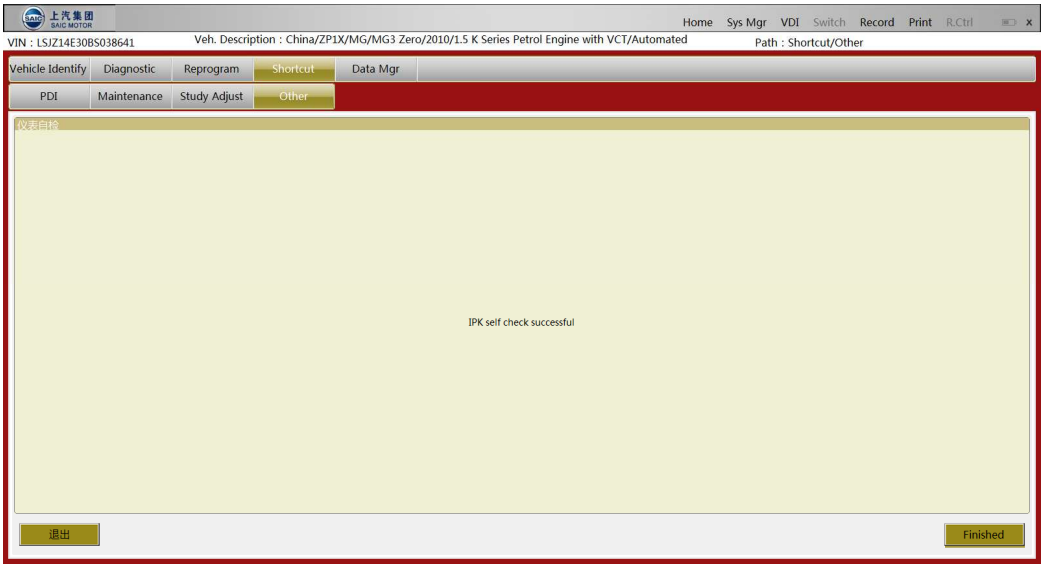


Figure 3.5.85

2) ABS/DSC Maintain Exhaust

Step 1: Select "ABS/DSC maintain exhaust", click "Next".

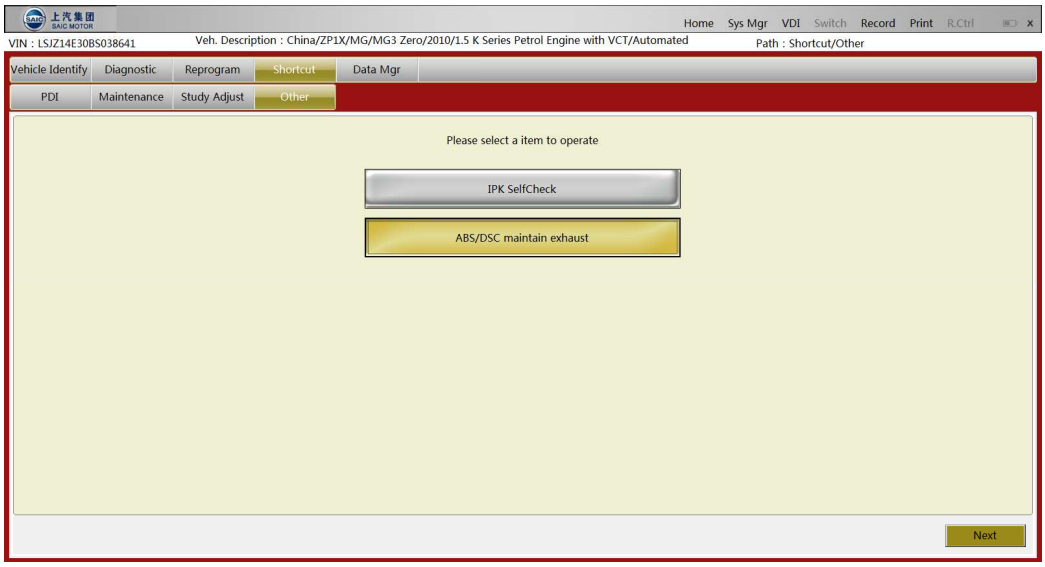


Figure 3.5.86

Step 2: Please carefully read the notes, then click "Next".

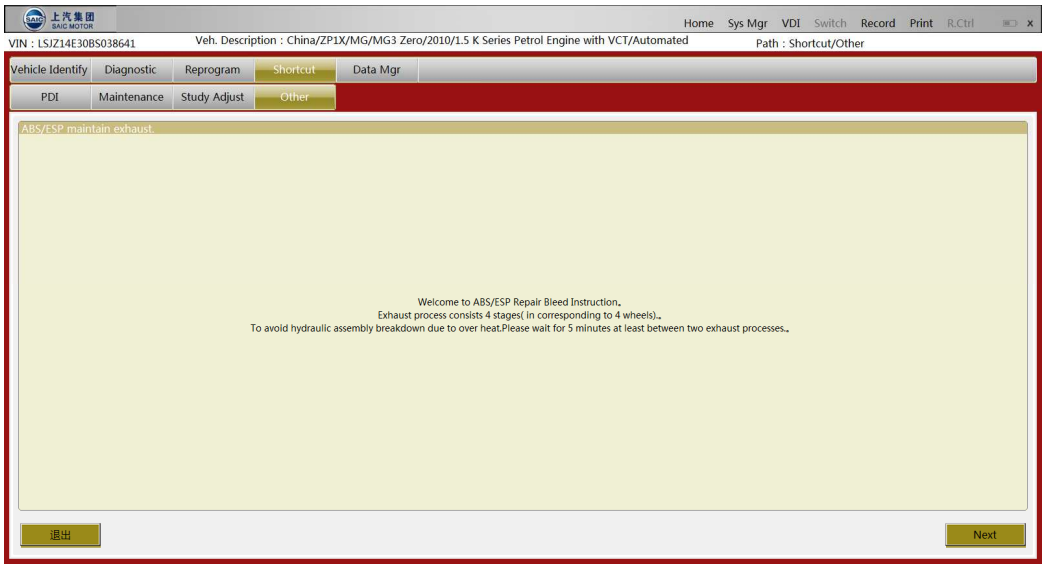


Figure 3.5.87

Step 3: Operate as per the notes, then click "Next".

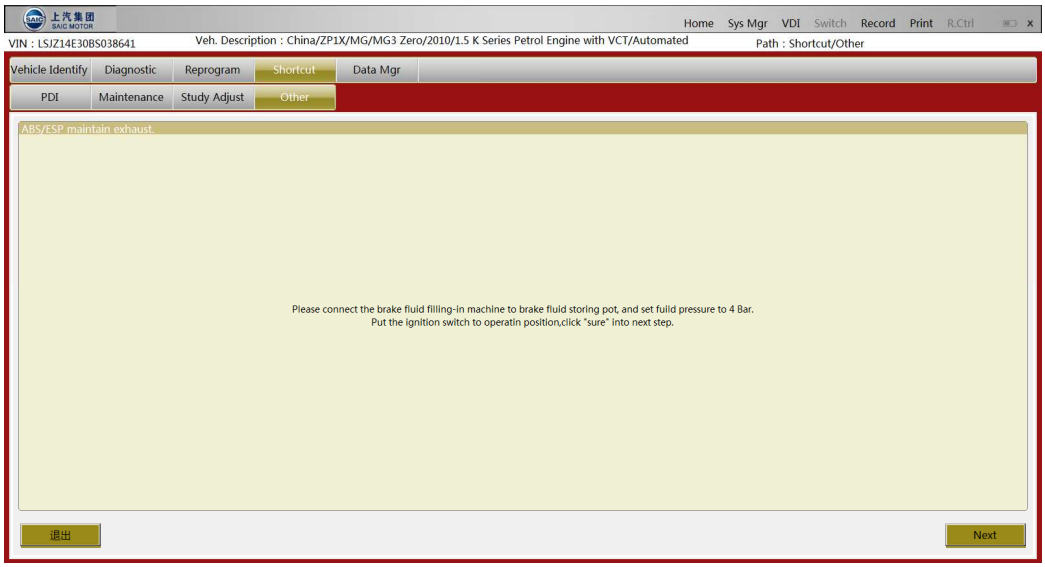


Figure 3.5.88

Step 4: The following note may appear in individual case, please click "OK" after the selection.

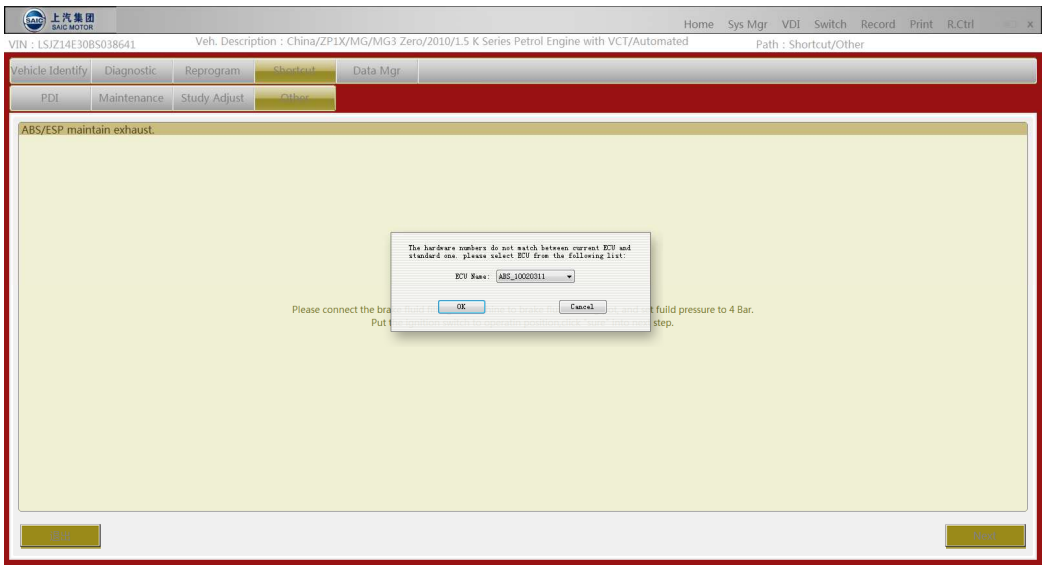


Figure 3.5.89

Step 5: Operate as per the notes, then click "Next".

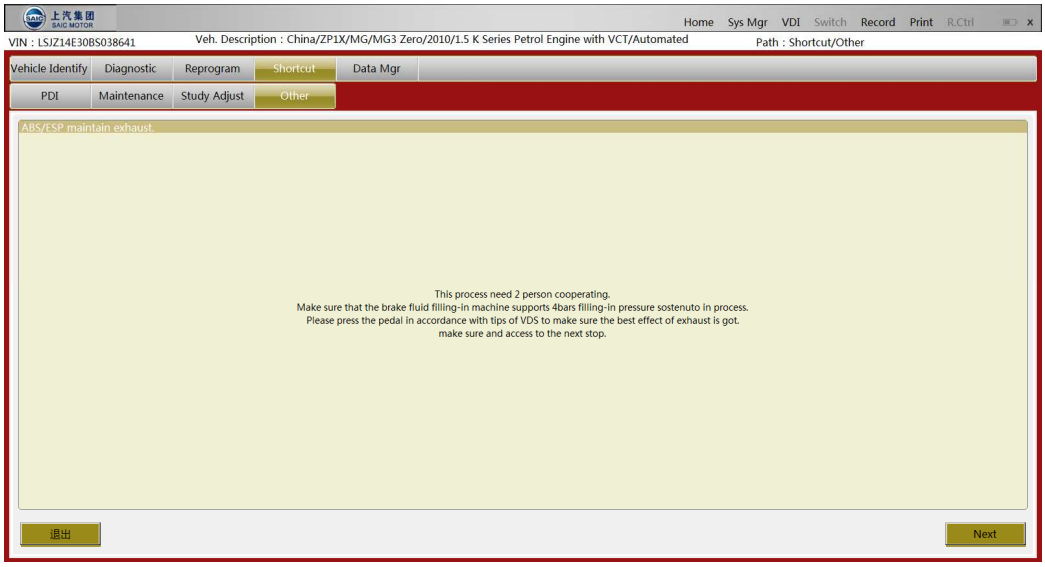


Figure 3.5.90

Step 6: Start the exhaust procedure of the left front wheel, please operate as per the notes, then click "Next" to continue.

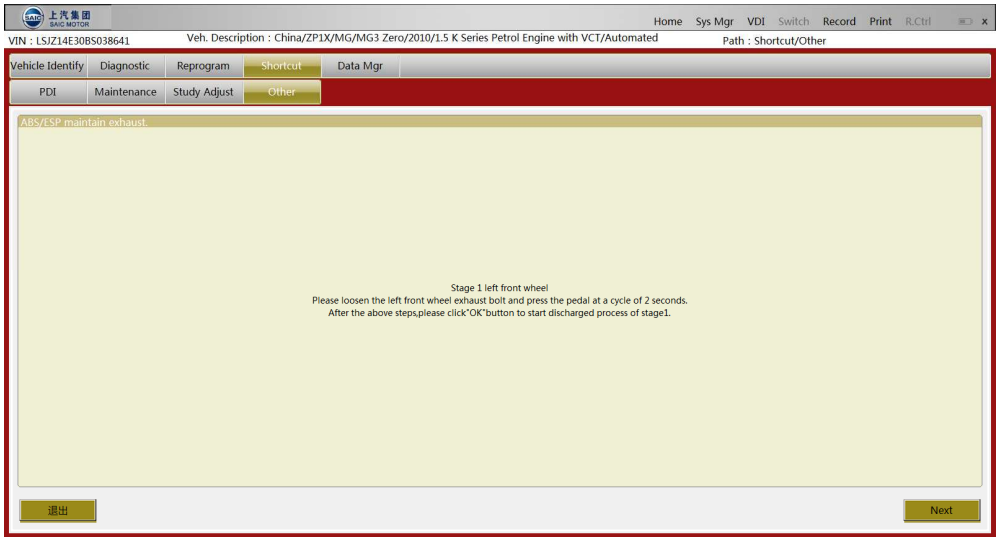


Figure 3.5.91

Step 7: Count down, please wait.

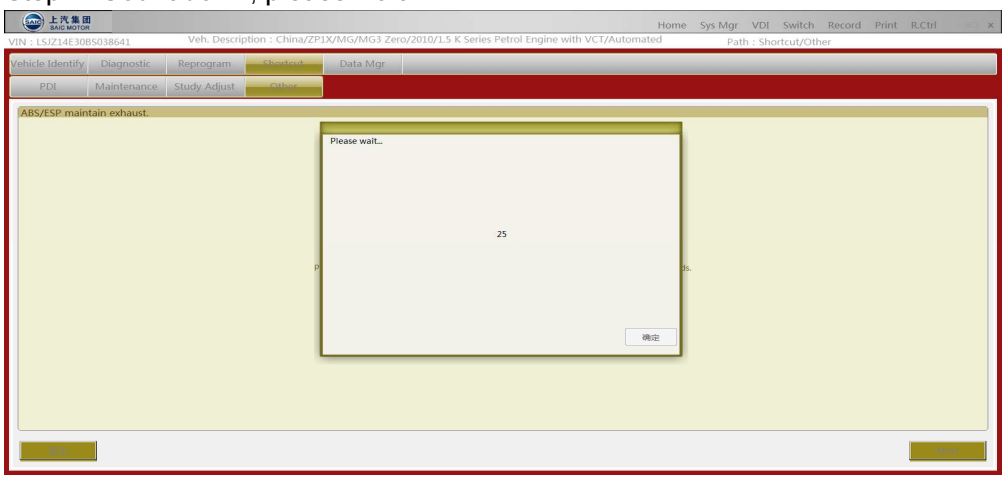


Figure 3.5.92

Step 8: Please operate as per the note, then click "Next" to continue.

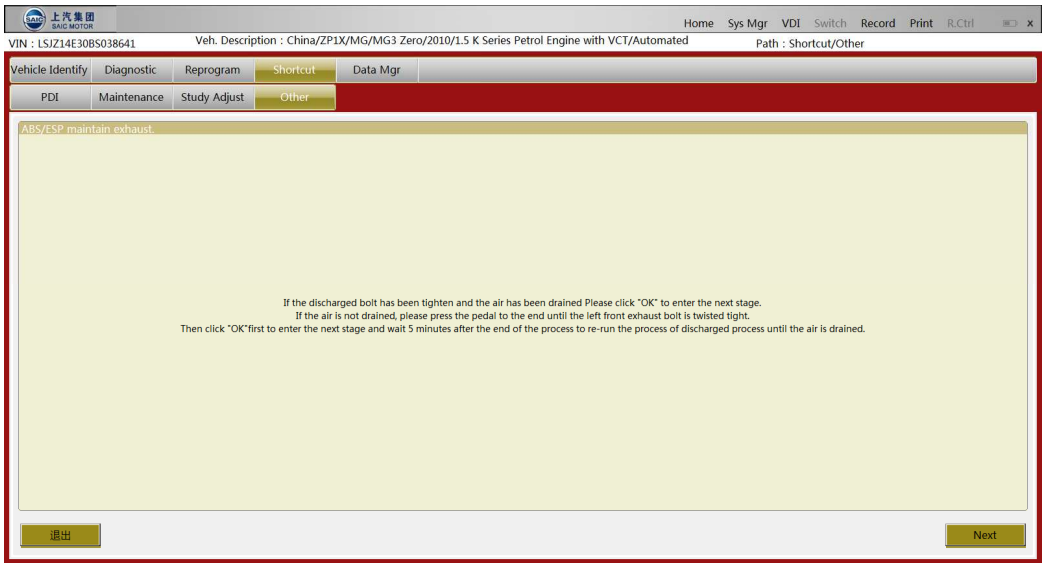


Figure 3.5.93

Step 9: Start the exhaust procedure of right front wheel, please operate as per the note, then click "Next" to continue.

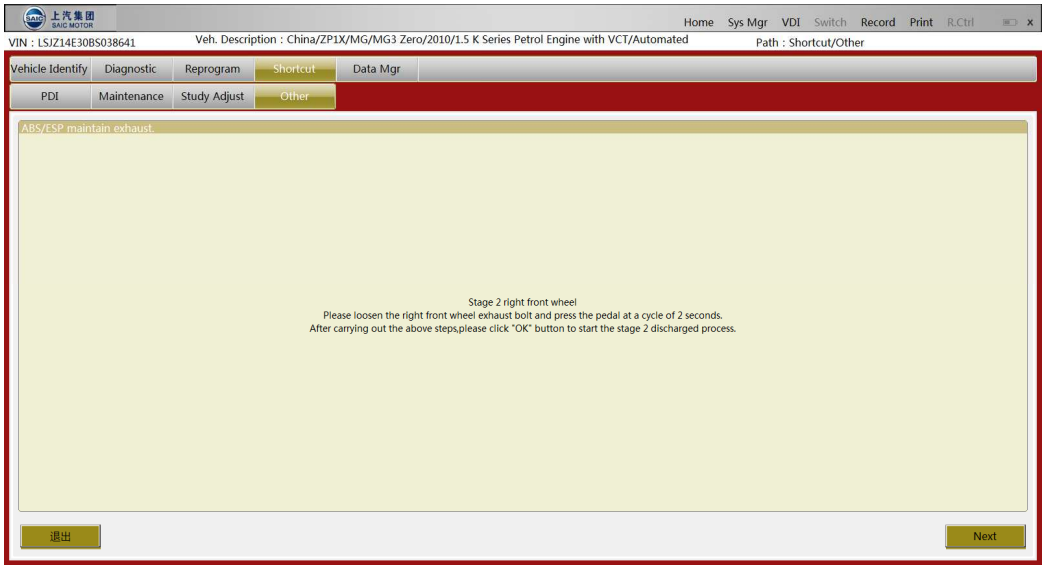


Figure 3.5.94

Step 10: Count down, please wait.

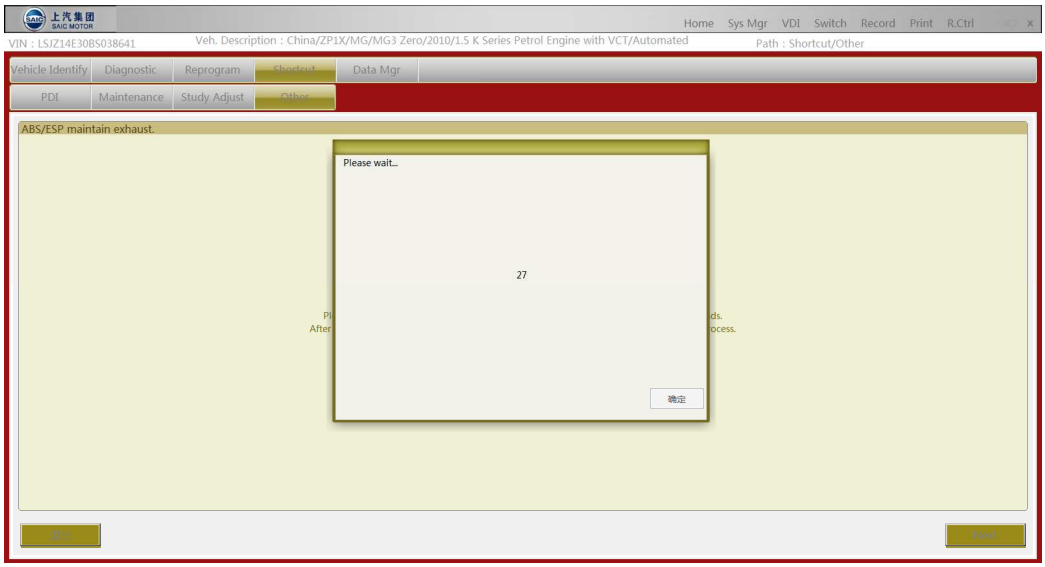


Figure 3.5.95

Step 11: Operate as per the note then click "Next" to continue.

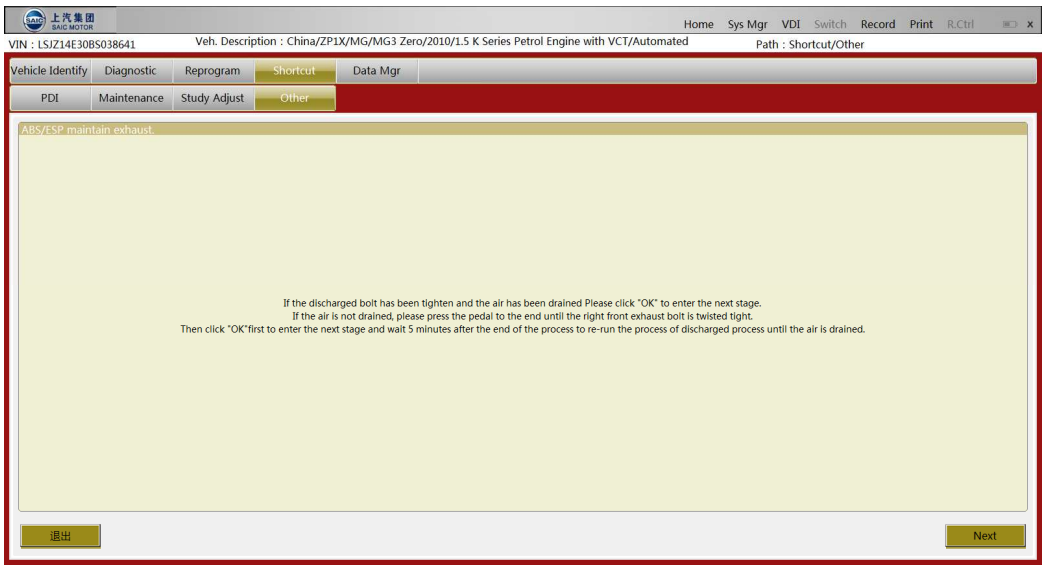


Figure 3.5.96

Step 12: Start the operation procedure of the right rear wheel, please operate as per the note, then click "Next" to continue.

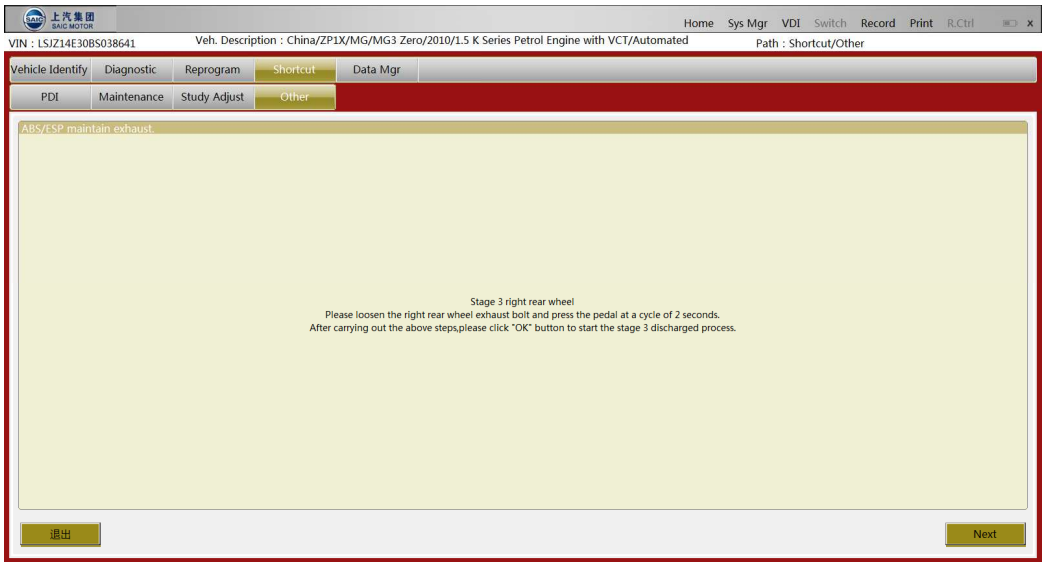


Figure 3.5.97

Step 13: Count down, please wait.

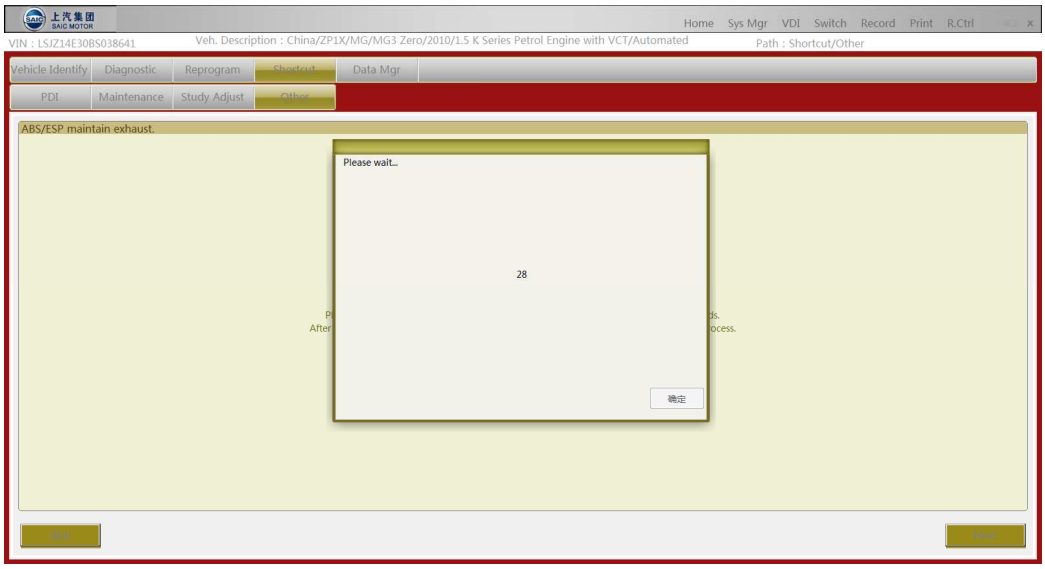


Figure 3.5.98

Step 14: Please operate as per the note, then click "Next" to continue.

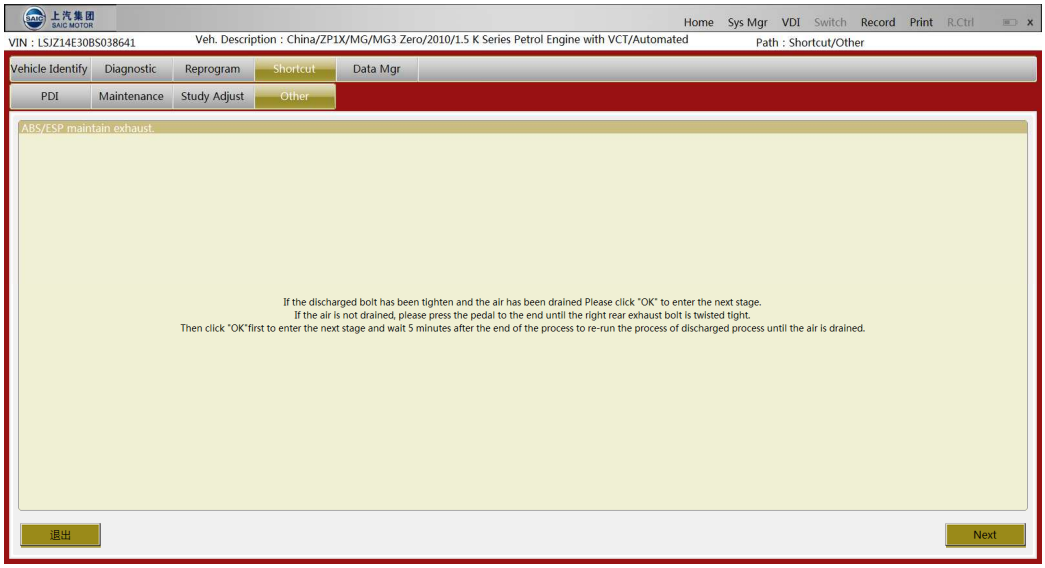


Figure 3.5.99

Step 15: Start the exhaust procedure of the left rear wheel, please operate as per the note, then click "Next" to continue.

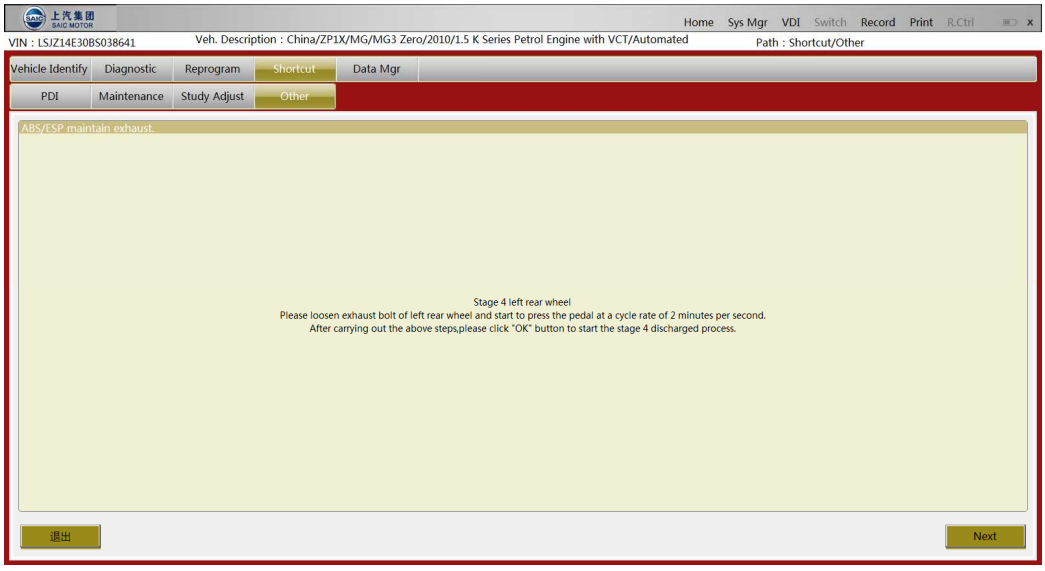


Figure 3.5.100

Step 16: Count down, please wait.

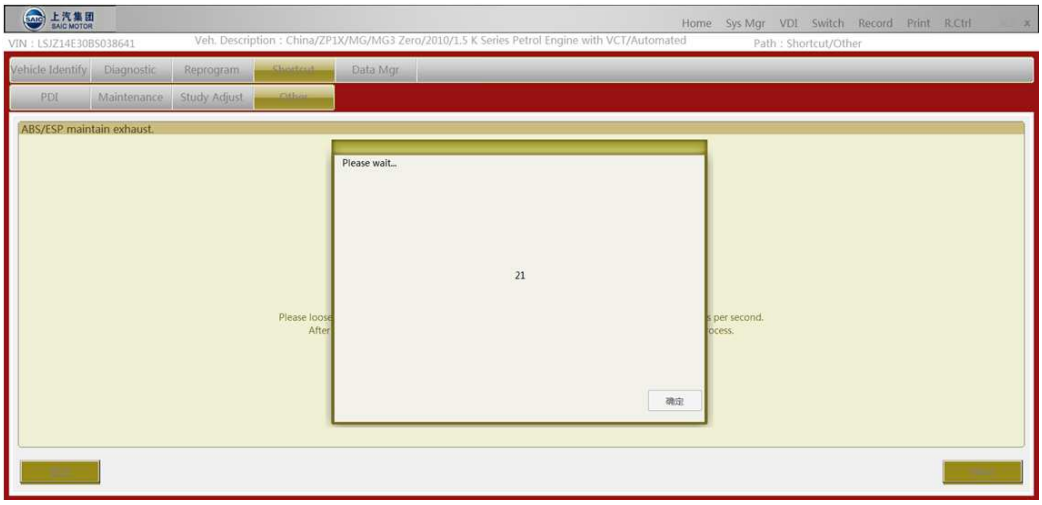


Figure 3.5.101

Step 17: Please operate as per the note, then click "Next" to continue.

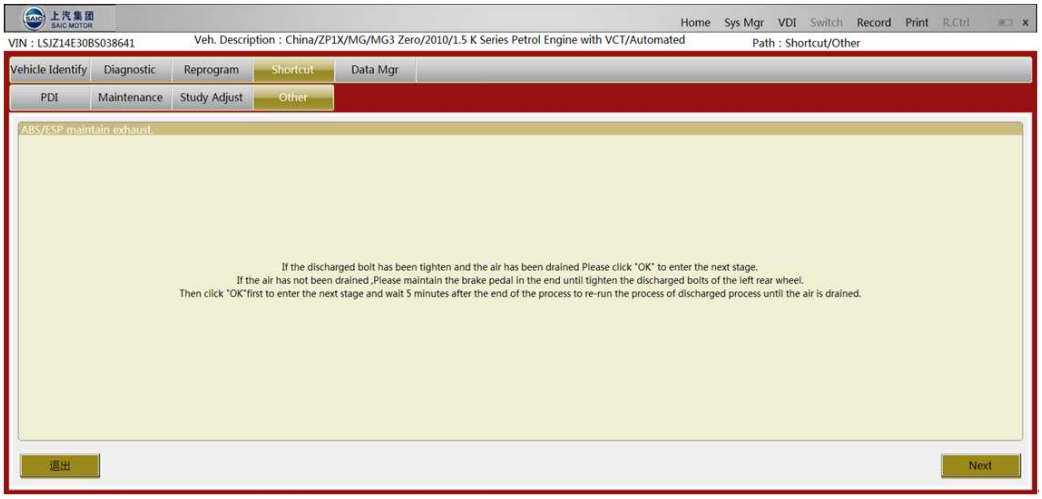


Figure 3.5.102

Step 18: It is prompted that the discharged process is completed successfully, please operate as per the note, click "OK" to end the procedure, and the system will return to the main interface of "Other".

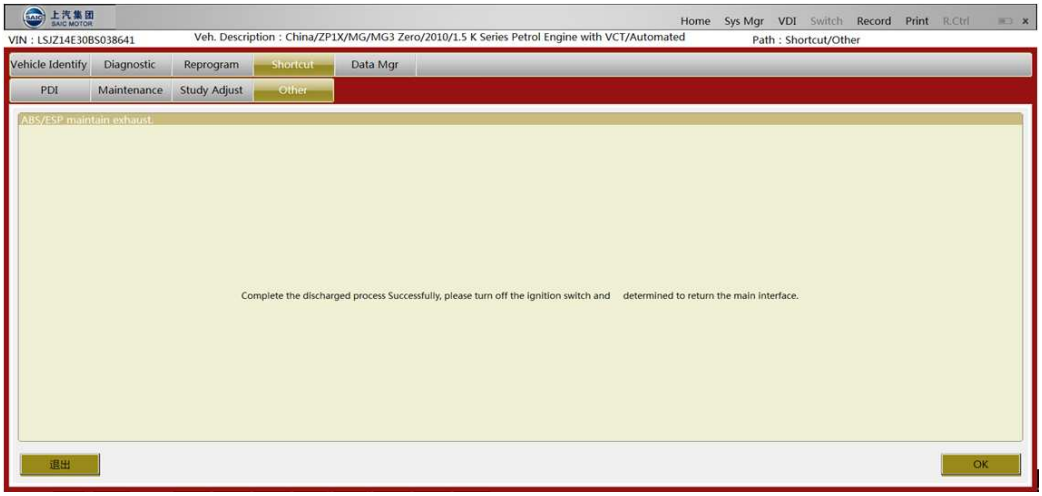


Figure 3.5.103

VI. Data Management

Tips

"Data Mgr" function is available after opening VDS.

Open the VDS program, "Vehicle Identify" and "Data Mgr" buttons are available. Click "Data Mgr" to enter into "Data Mgr" tab.

"Data Mgr" tab includes the real-time data playback, animation playback and LOGFILE output functions:

Realtime data playback: playback the data info recorded in the real-time display.

Animation playback: playback the recorded file of "Record" function in VDS main interface.

LOGFILE output: export VDS log file.

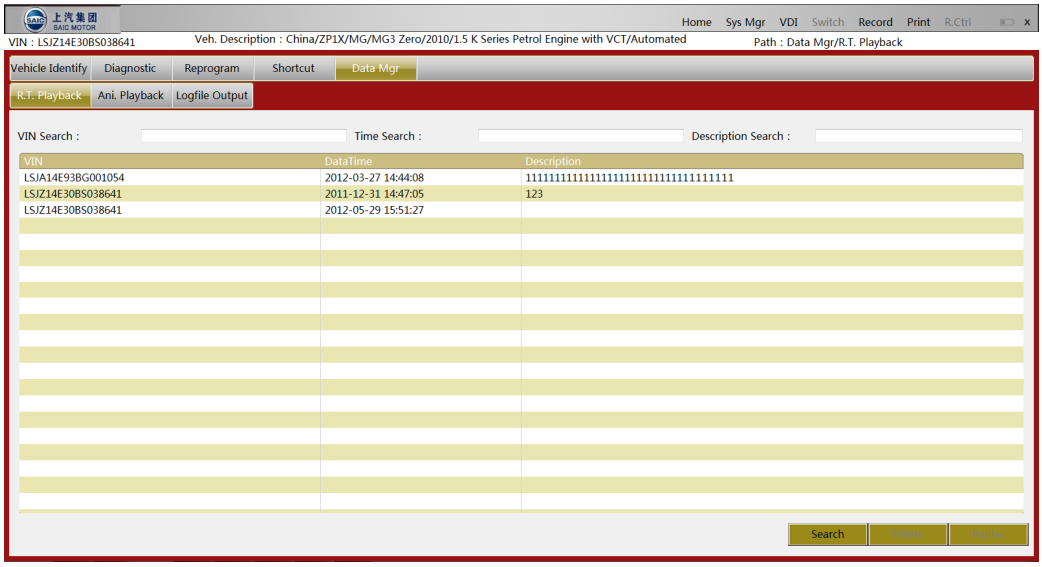


Figure 3.6.1

1 Realtime Data Playback

Tips

1. Realtime data record file can only be played by the playback function of VDS" Data Mgr -> R.T. Playback".
2. The record file in one computer can be saved to the same path of another computer for data playback.
3. If there are too many record files, then the waiting time in the display playback list will be very long, please make copies or delete files on a regular basis.

Entering in "Data Mgr" tab, the interface is "R.T. Playback" by default. The interface displays all recorded real-time data file and searches, deletes and playbacks the files through "Search", "Delete" and "Playback" buttons.

The record file of real-time data will be saved in "C:\Recorder" with the format *.vcsf. VDS can auto display the record file in this path in the file list of real-time data playback. Maintenance personnel can make copies of files or delete them on a regular basis. If required to check the previous record file, just copy the backup files to this path and then start playback with VDS.

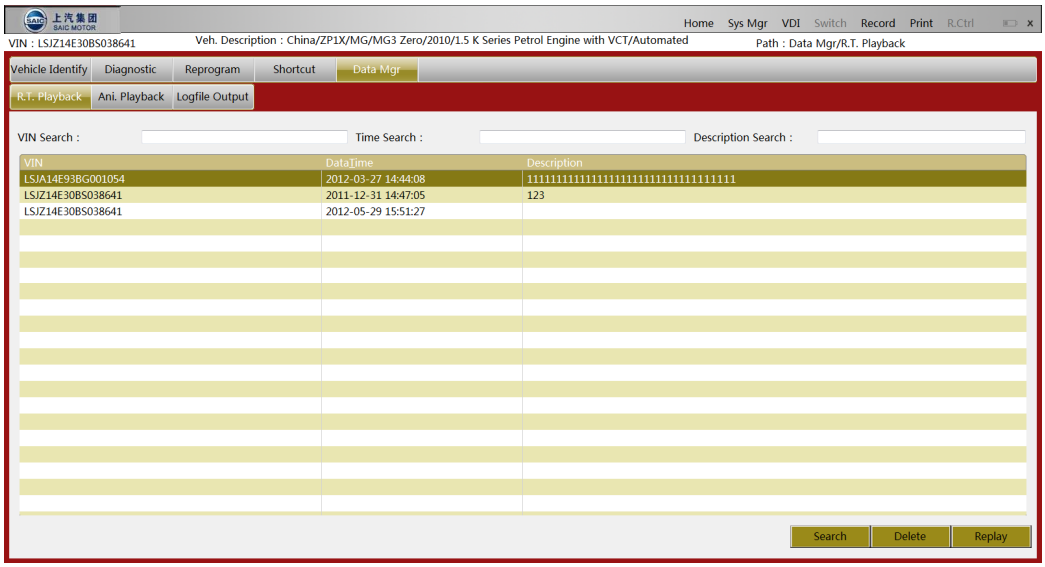


Figure 3.6.2

1) Search

Search function: Search the satisfactory files in the list according to specific conditions.

Search conditions: VIN, time and description.

Operation Procedure of Search Function:

Step 1: Complete the conditions for search in "VIN Search", "Time Search" and "Description Search" boxes. In case that there is no condition, the corresponding box can be blank.

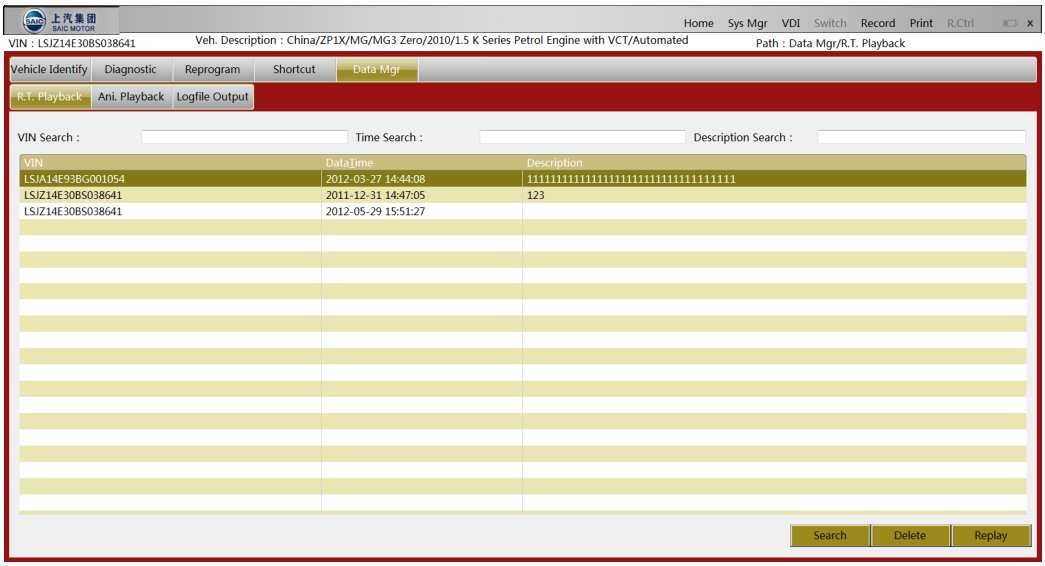


Figure 3.6.3

Step 2: While inputting the condition, VDS will automatically search the items that meet the condition and display the result.

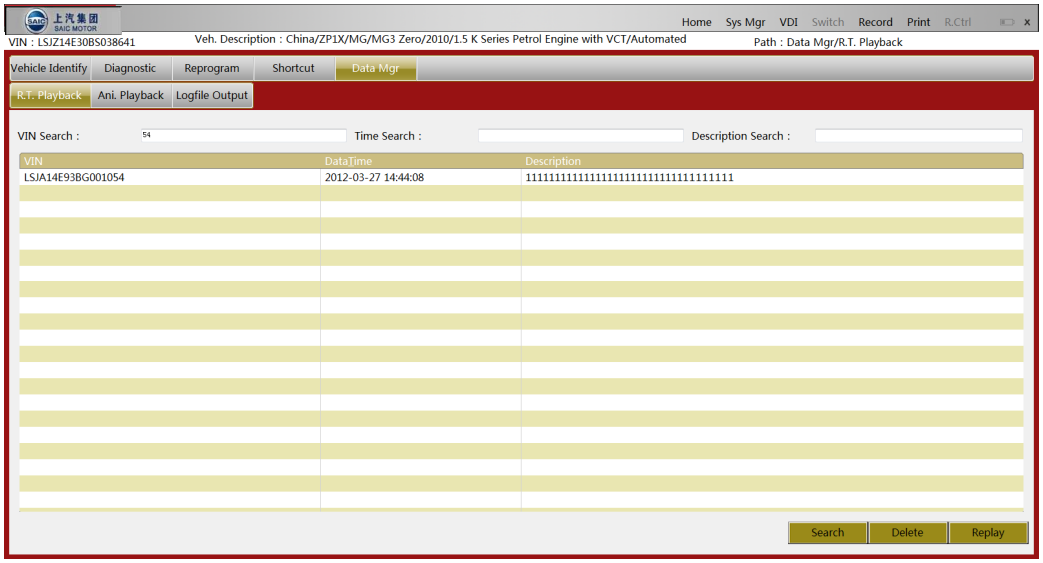


Figure 3.6.4

2) Delete

Delete function: Delete the selected files from list and save path.

Operation Procedure of Delete Function:

Step 1: Select the files to be deleted in the list, "Delete" button lights up.

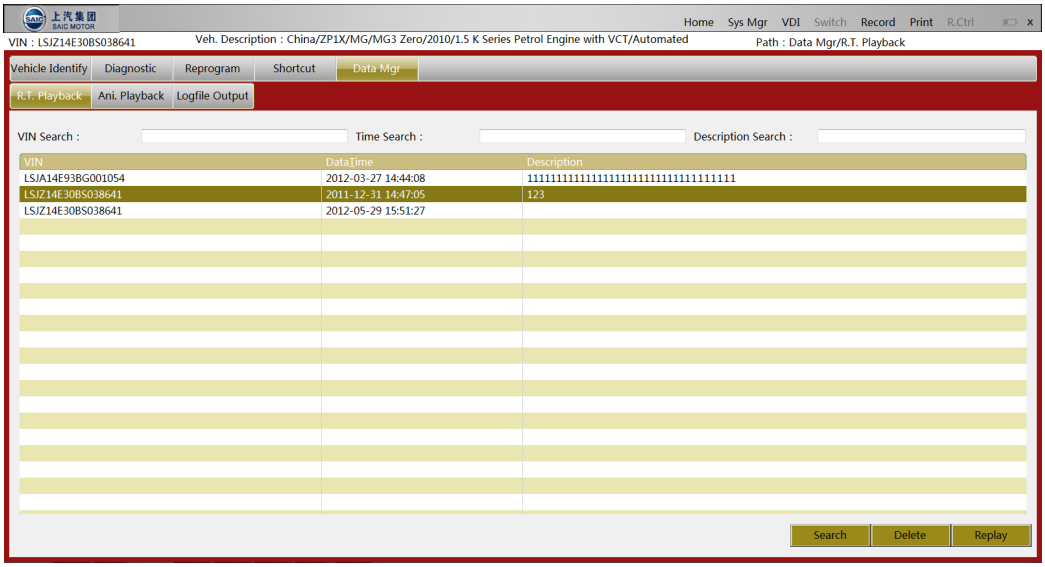


Figure 3.6.5

Step 2: Click "Delete" to delete the selected files from list and save path.

Step 3: After deleting the files, the list will automatically refresh and display.

3) Replay

Replay function: Play the selected real-time record file for analysis of history data.

Operation Procedure of Replay Function:

Step 1: Select the files to be played in the list, "Replay" button lights up.

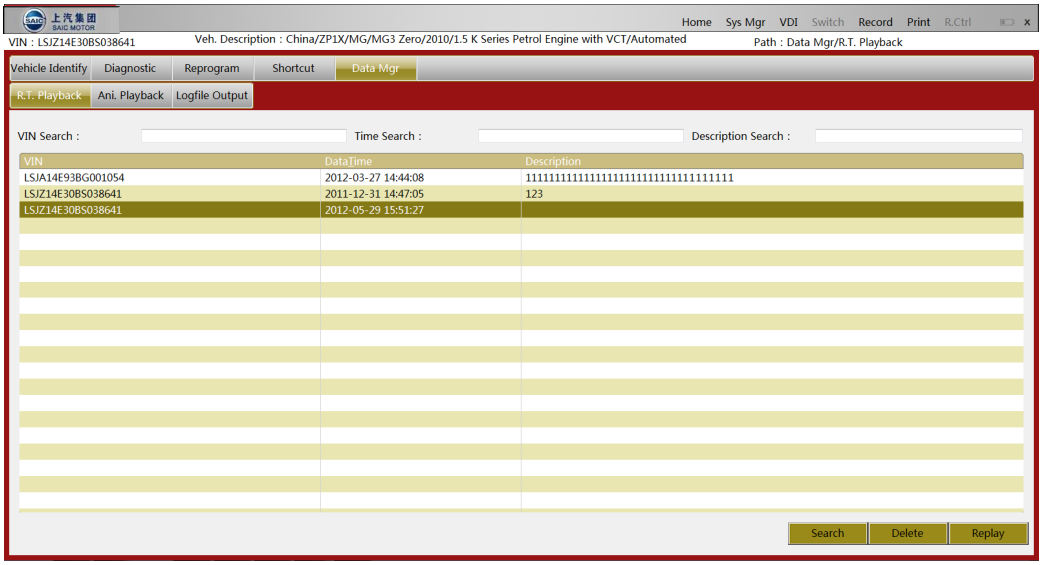


Figure 3.6.6

Step 2: Click "Replay" to start playing the selected file. Display the recorded real-time display parameter list. When there are too many parameters, they will be displayed in pages, and will show the total pages and the current page, you can turn pages with forward and backward buttons.

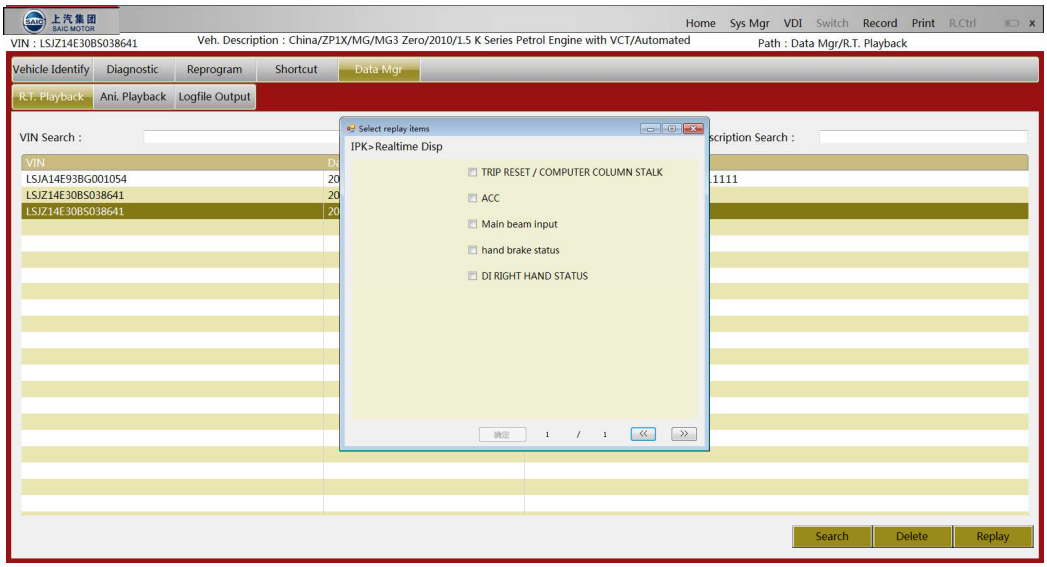


Figure 3.6.7

Step 3: Select the parameters to be replayed, then click "OK".

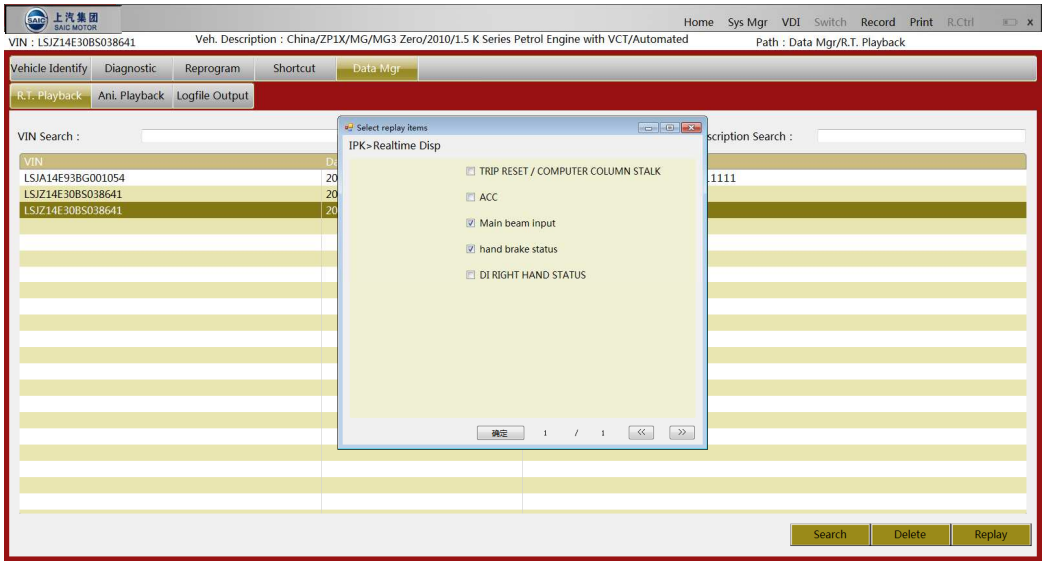


Figure 3.6.8

Step 4: Start playing the real-time data information of the selected parameters in the record file. During playback, each page can only achieve 4 parameters, the pages can be turned with the page turning button. The display graphic can be switched with “Maximum/Minimum” buttons.

Minimum:

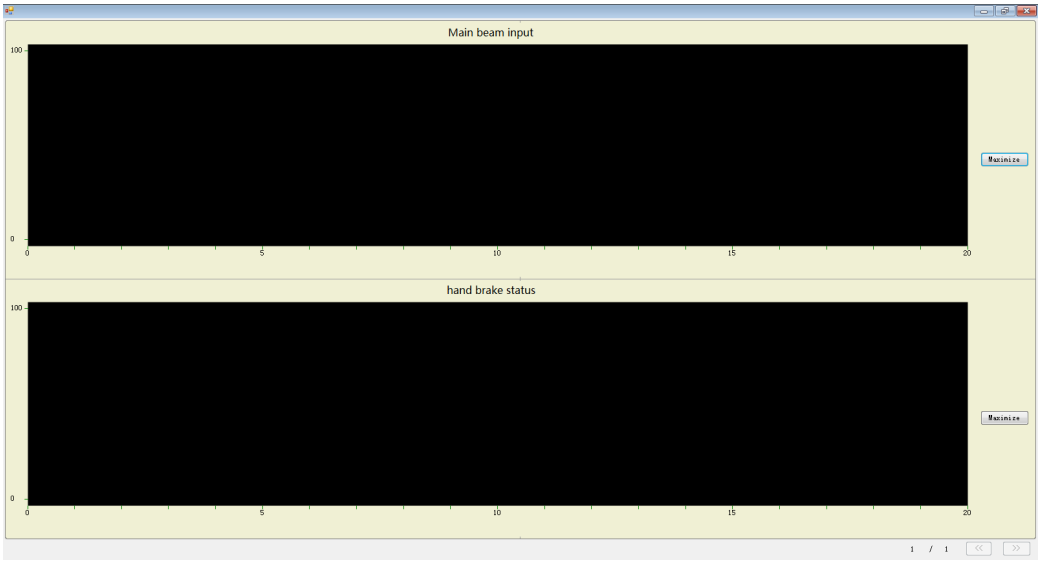


Figure 3.6.9

Maximum:

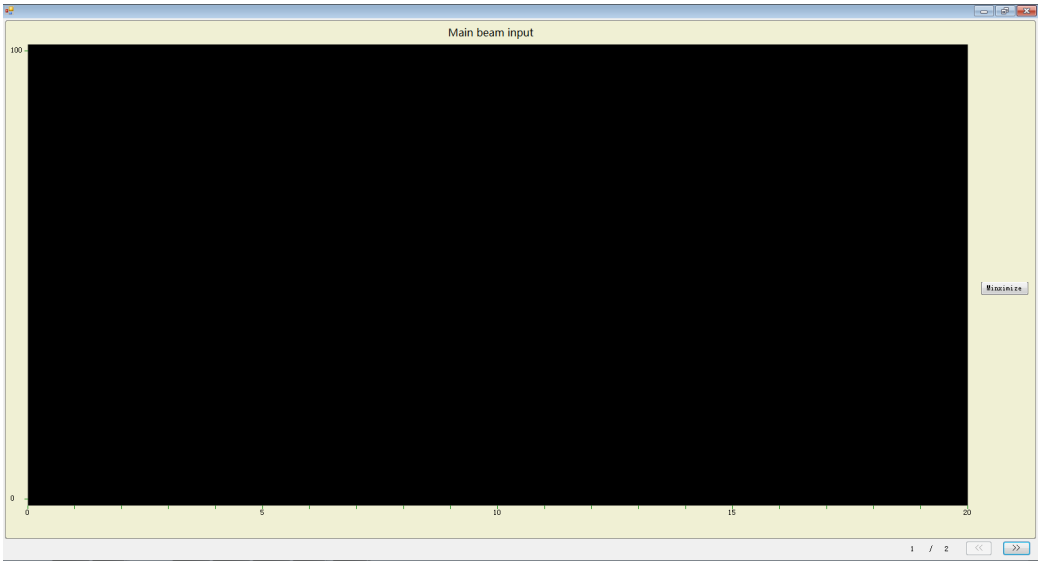


Figure 3.6.10

Step 5: Click of the window to stop the data playback of selected parameter. Then return to the window for selecting parameter to select the parameter for playback again or click of the window to end the playback function of data.

2 Animation Playback

Tips

1. Real-time data record file can only be played by the playback function of VDS" Data Mgr -> Ani. Playback".
2. The record file in one computer can be saved to the same path of another computer for data playback.
3. If there are too many record files, then the waiting time in the display playback list will be very long, please make copies or delete files on a regular basis.

Entering in "Data Mgr" tab, the interface is "R.T. Playback" by default. Click "Ani. Playback" to enter into the animation playback tab. The interface displays all record files and you can search, delete and playback the files through "Search", "Delete" and "Playback" buttons.

The VDS record file will be saved in "C:\Recorder\Video" with the format *.xml. VDS can automatically display the record file in this path in the file list of animation playback. Maintenance personnel can make copies of files or delete them on a regular basis. If it is required to check the previous record file, just copy the backup file to this path and then start playback with VDS.

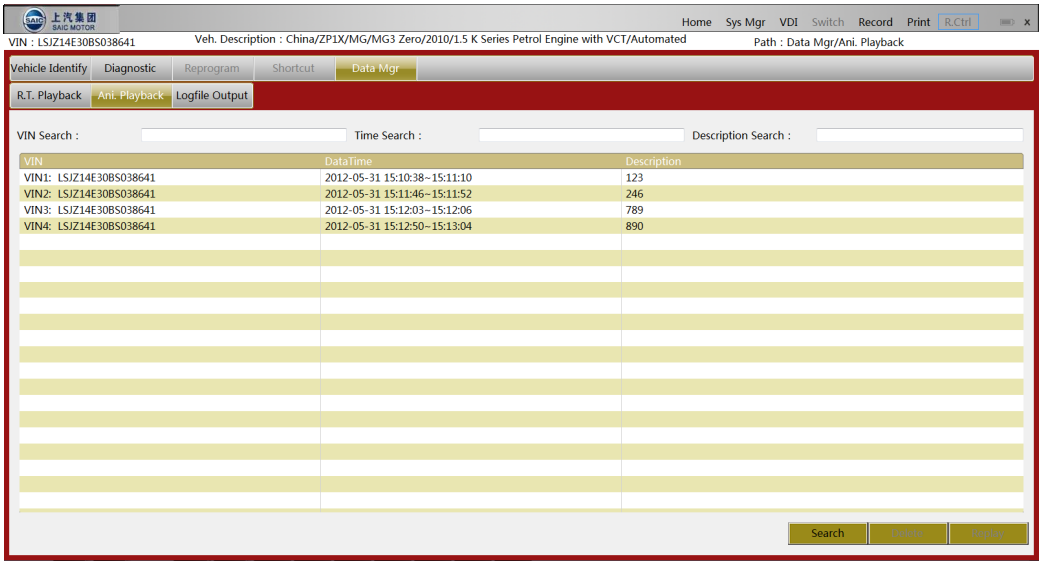


Figure 3.6.11

1) Search

Search function: Search the files that meet the conditions in the list according to specific conditions.

Search conditions: VIN, time and description.

Operation Procedure of Search Function:

Step 1: Complete the conditions for search in "VIN Search", "Time Search" and "Description Search" boxes. In case that there is no condition, the corresponding box can be blank.

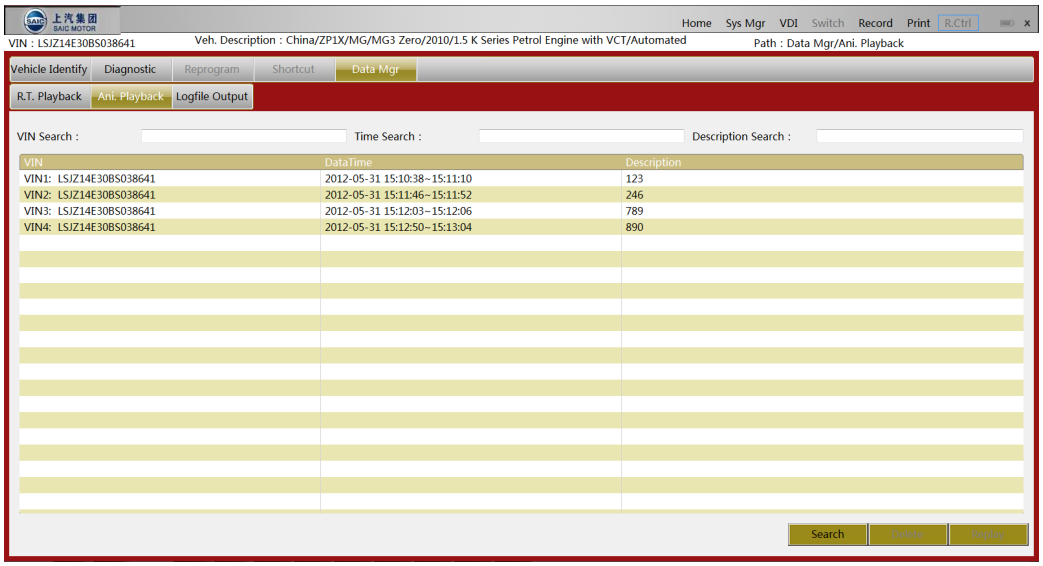


Figure 3.6.12

Step 2: While inputting the condition, VDS will automatically search the items that meet the condition and display the result.

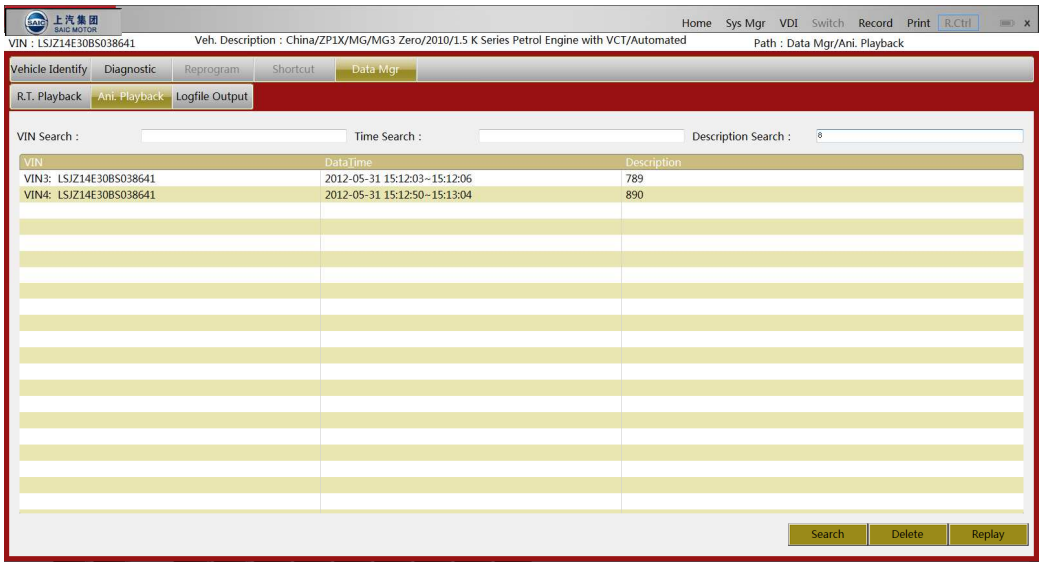


Figure 3.6.13

2) Delete

Delete function: Delete the selected files from list and save path.

Operation Procedure of Delete Function:

Step 1: Select the files to be deleted in the list, "Delete" button lights up.

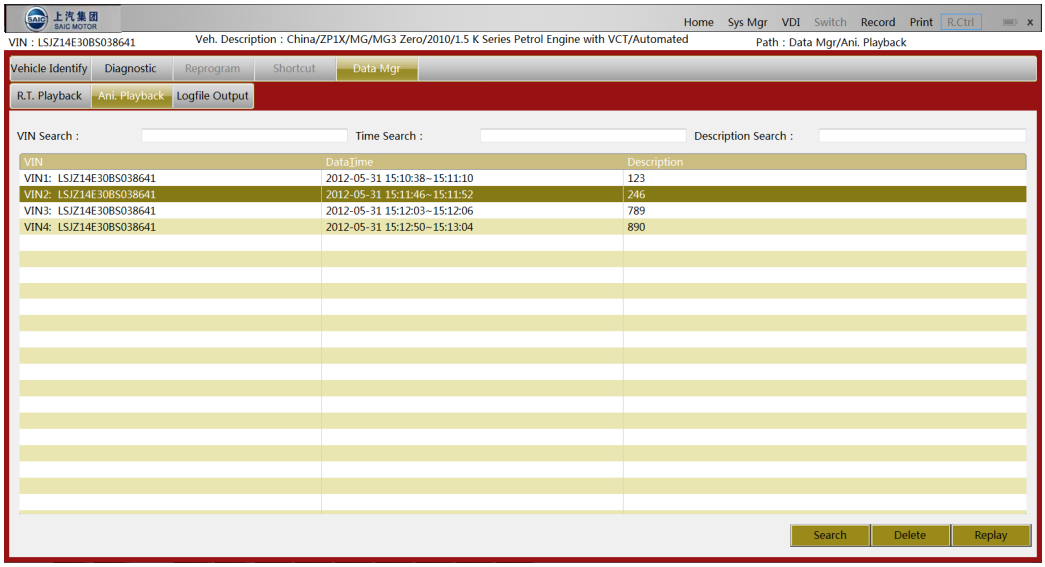


Figure 3.6.14

Step 2: Click "Delete" to delete the selected files from list and save path.

Step 3: After deleting the files, the list will automatically refresh and display.

3) Replay

Replay function: Play the selected real-time data record file.

Operation Procedure of Replay Function:

Step 1: Select the files to be played in the list, "Replay" button lights up.

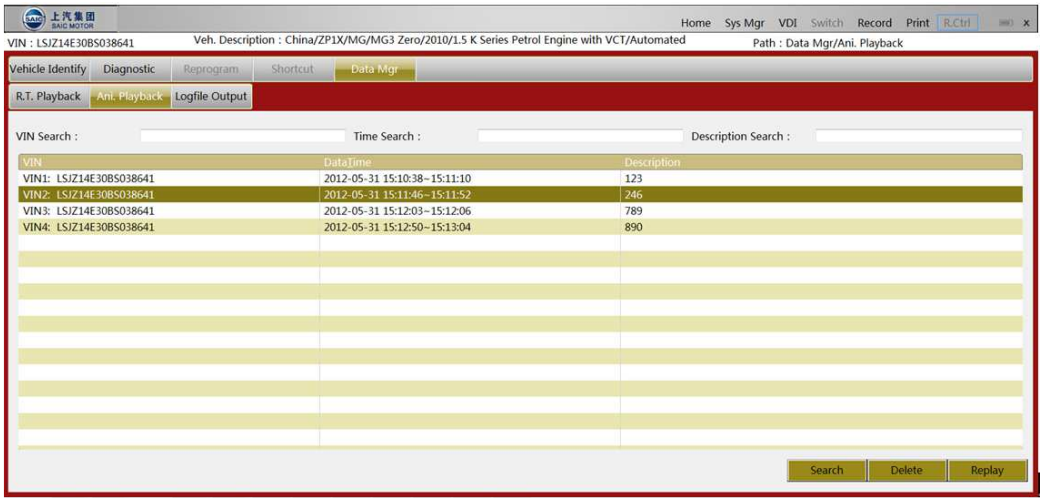


Figure 3.6.15

Step 2: Click “Replay” to start playing the selected file.

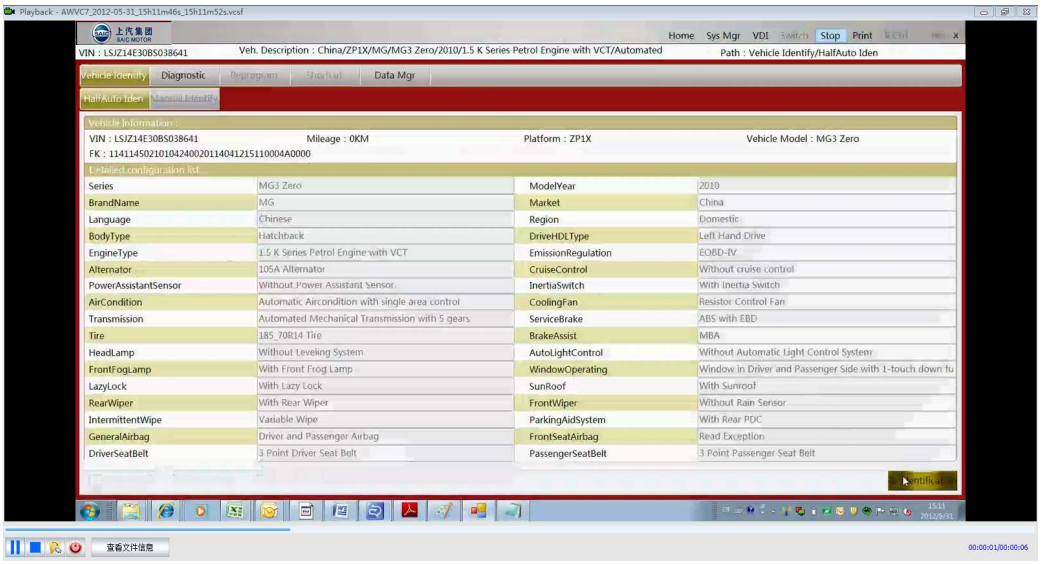


Figure 3.6.16

Step 3: The buttons at the lower left corner of the interface are: Pause/ Start, Stop, Select file, Exit, Check file information.

Pause/ Start: Pause or start file playback. After the pause, start playback from the position of pause.

Stop: Stop the playback function. After the stop, the file will be played again once restarting.

Select file: Select other files for playback.

Exit: Exit the function of animation playback.

Check file information: Check the information of the file being replayed.

Figure 3.6.17

Step 3: After playing, click button to replay or click of the window to close playback function.

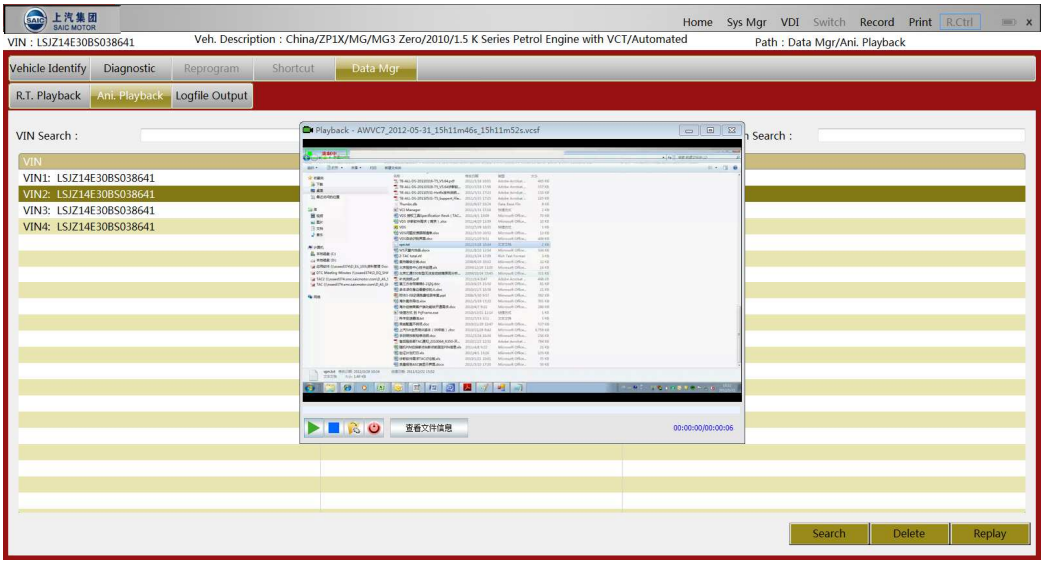


Figure 3.6.18

3 LOGFILE Output

Entering in "Data Mgr" tab, the interface is "R,T, Playback" by default. Click “LOGFILE Output” to enter into “LOGFILE Output” interface. The interface displays all log files of VDS and you can search and export the files through "Search", “Output” buttons.

LOGFILE is automatically generated during the operation of VDS, with the format. VDS can automatically display the record file in this path in the list of log file.

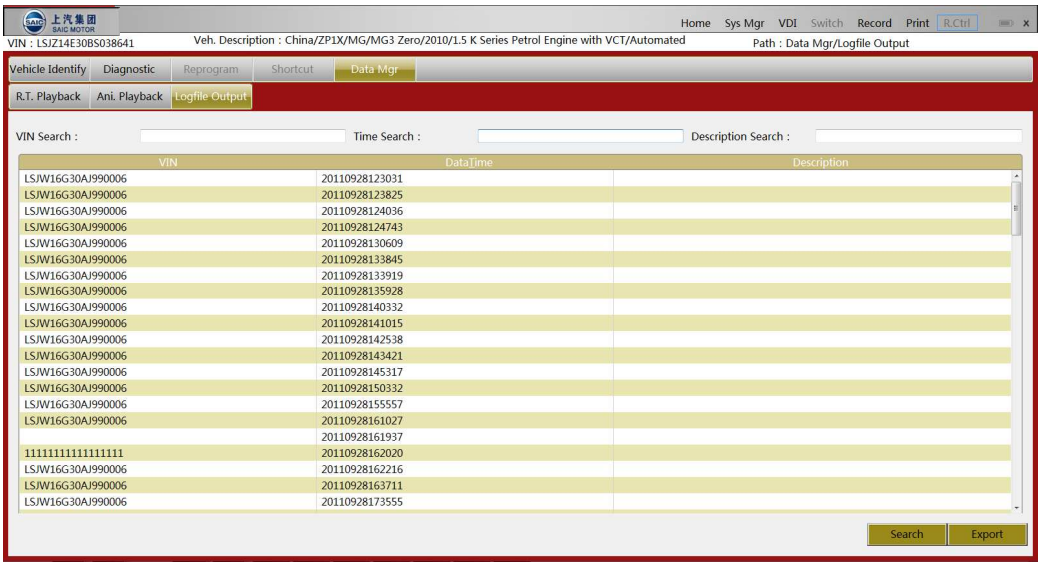


Figure 3.6.19

1) Search

Search function: Search the files that meet the conditions in the list according to specific conditions.

Search conditions: VIN, time and description.

Operation Procedure of Search Function:

Step 1: Complete the conditions for search in "VIN Search", "Time Search" and "Description Search" boxes. In case that there is no condition, the corresponding box can be blank.

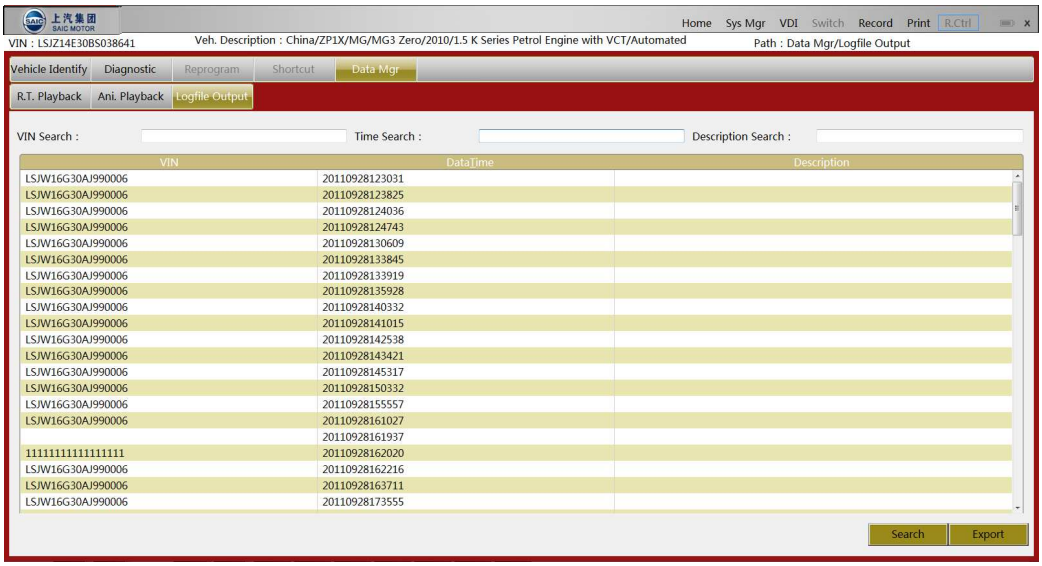


Figure 3.6.20

Step 2: While inputting the condition, VDS will automatically search the items that meet the conditions and display the result.

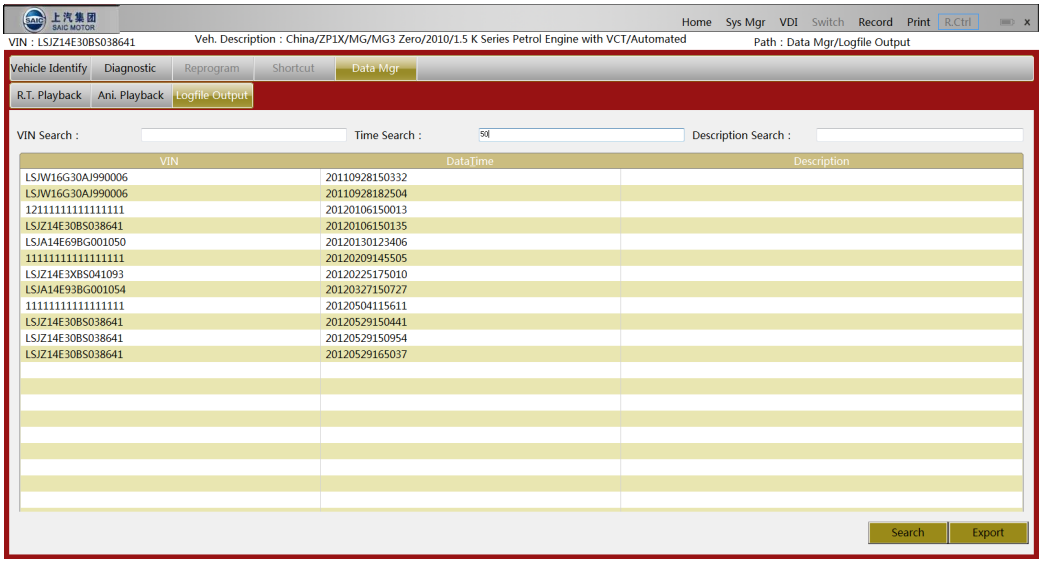


Figure 3.6.21

2) LOGFILE Output

Tips

1. Please do not delete LOGFILE files.
2. Output files are encrypted.

Output function: Export the log file recorded in the system by VDS as the file with xml format.

Operation Procedure of Output Function:

Step 1: Select the log files to be exported.

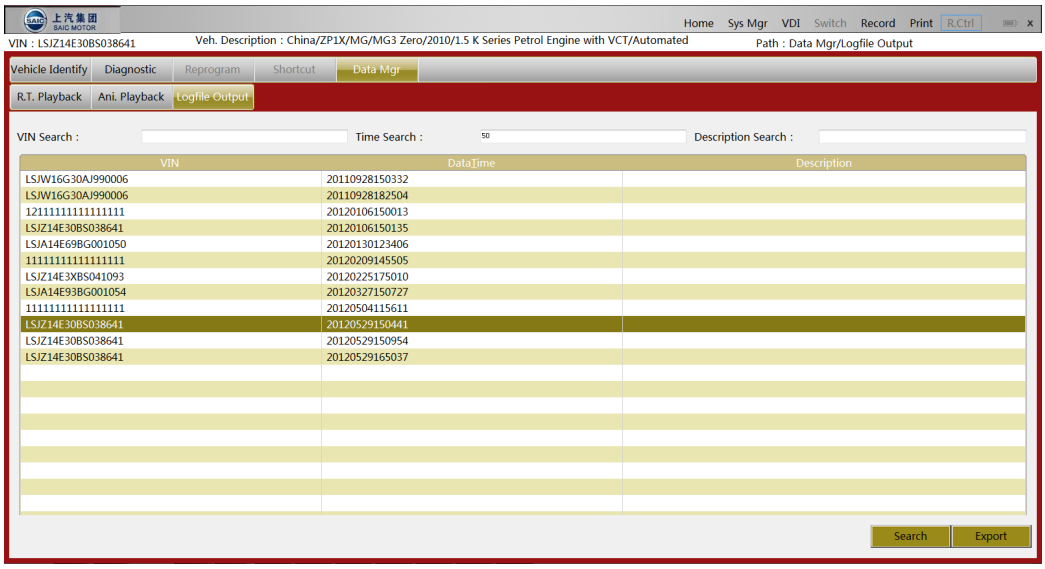


Figure 3.6.22

Step 2: Click “Output” button to pop up the dialog box for selecting save path, select the save path and confirm the file name, the click “OK” to save the file to the specified path.

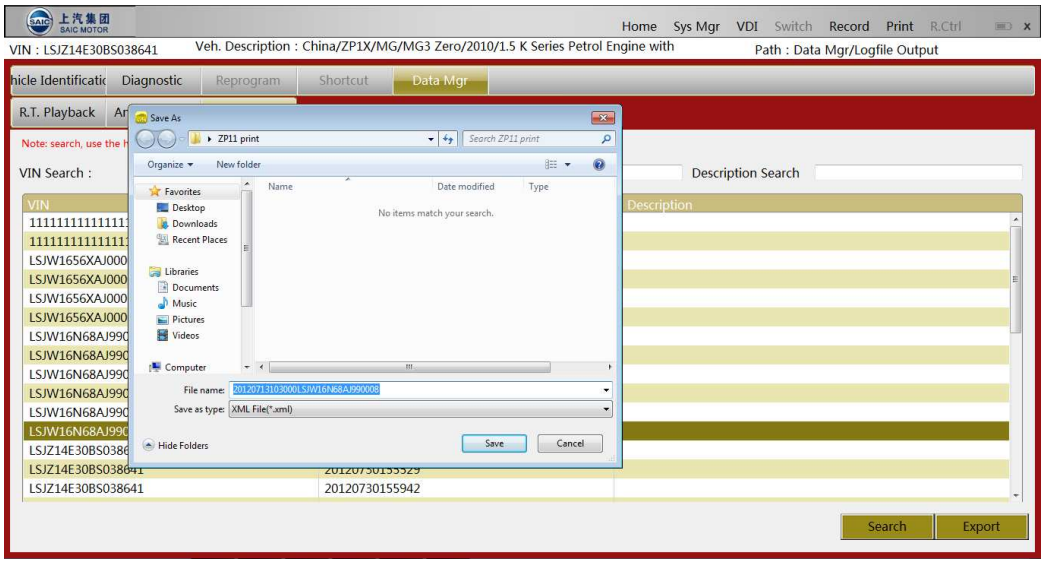


Figure 3.6.23

VII. Common Problems

1 Open VDS in Win 7 (32bit) System

While opening VDS in Win 7 system, the following steps shall be followed, otherwise the abnormal function may be occurred.

Step 1: Select the VDS shortcut icon, then click the right mouse button.

Step 2: Click “Run as administrator”.

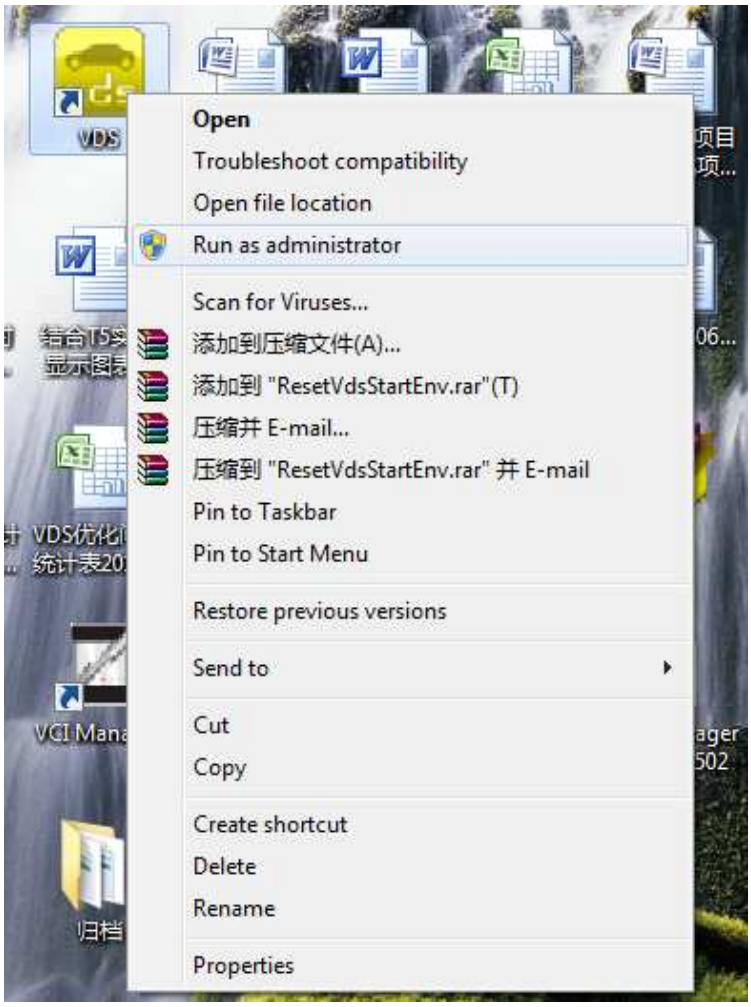


Figure 3.71

2 Connect VDI

While connecting one VDI with VDS, you must disconnect VDI manager from VDI (disconnected status, see Figure 2.3.1), otherwise VDS cannot be connected with the VDI.

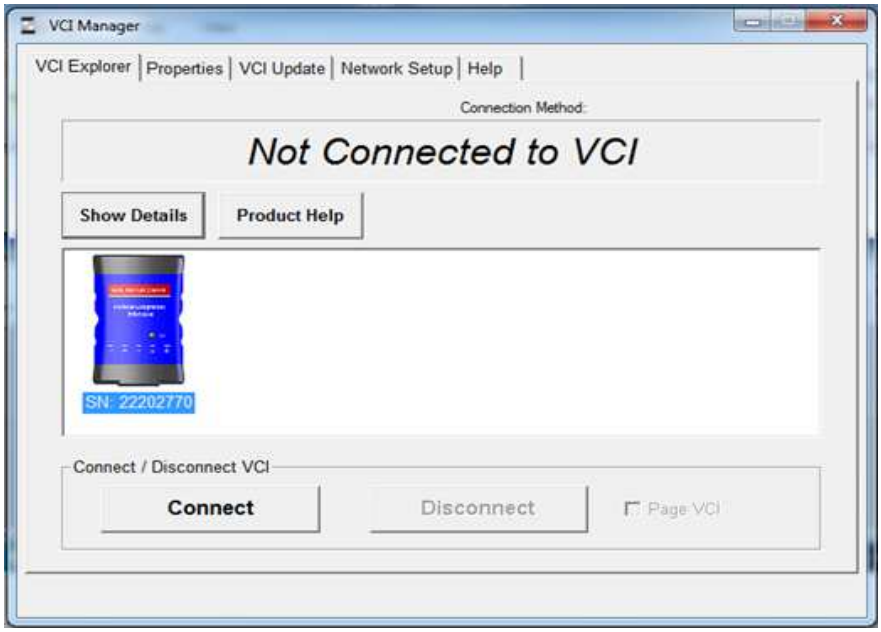


Figure 3.7.2

3 Identification numbers do not match the hardware

When a vehicle controller hardware and VDS storage information does not comply, VDS to complete the whole car after scanning tip " hardware mismatch tip " (Figure 3.7.3). In this controller, the diagnostic function will be limited, is unable to complete the " renew", " configuration ", " calibration " and " shortcut " function. To realize the diagnosis function (for example: read the DTC), according to the following steps.

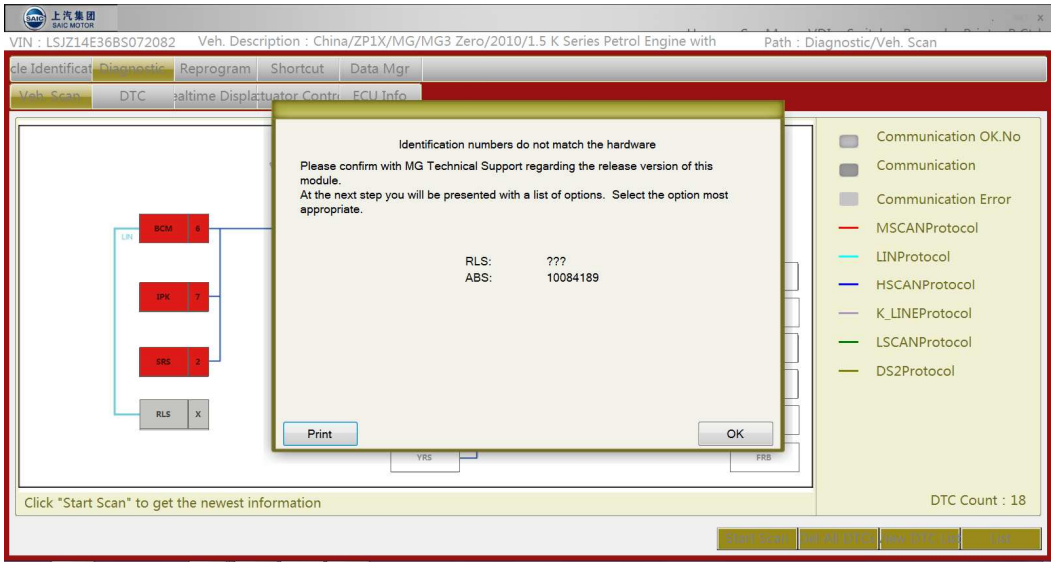


Figure 3.7.3

Step 1: At the completion of the whole car after scanning, selection of hardware does not match the corresponding controller. For example: ABS.

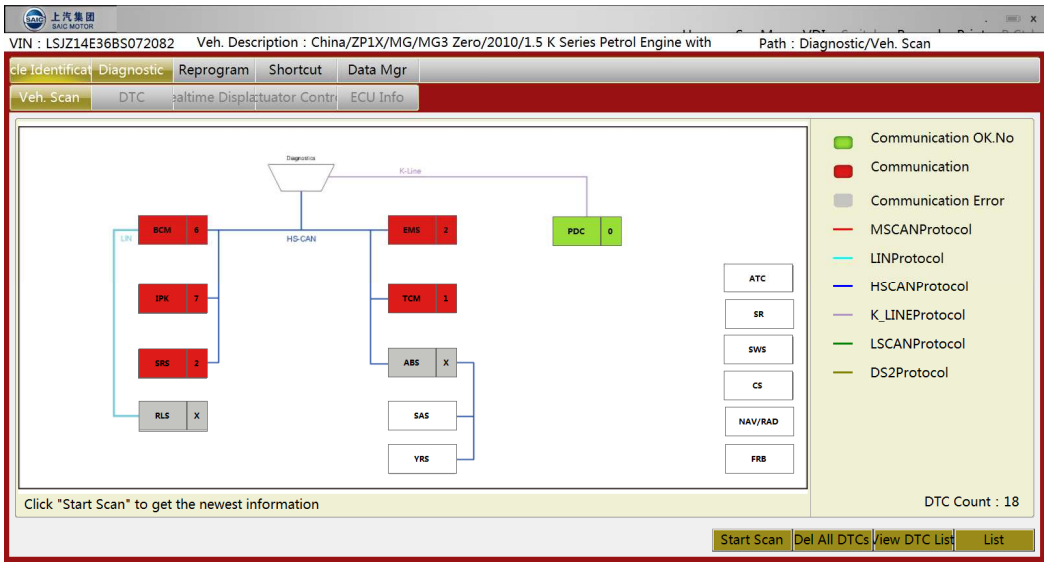


Figure 3.7.4

Step 2: In the " Optional " column of the drop down menu in the arbitrary choice of a hardware, then click "ok ".

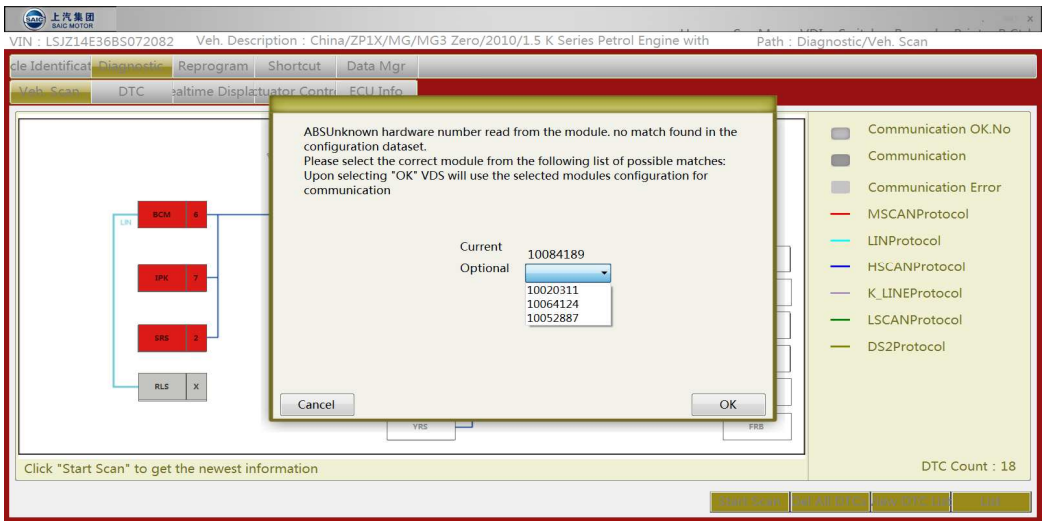


Figure 3.7.5

Step 3: Selecting the corresponding function operation, for example: select DTC to read or clear the DTCs.

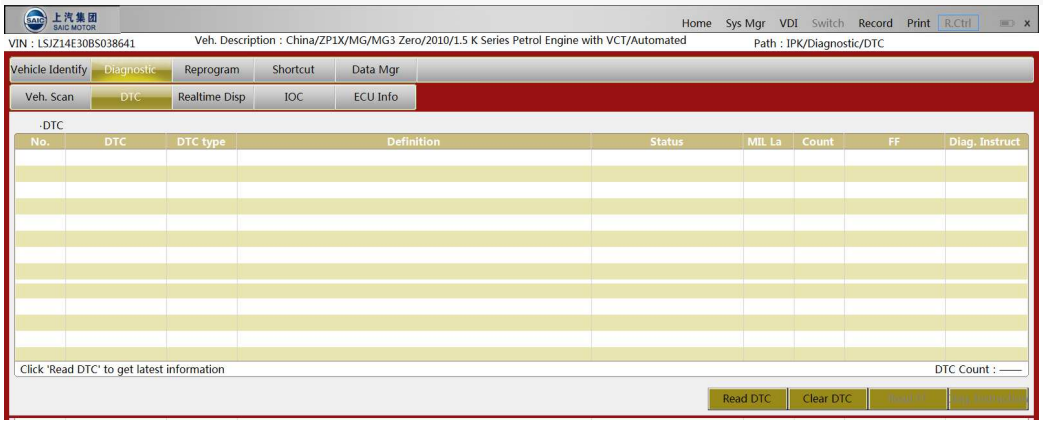


Figure 3.7.6