Trouble Diagnosis-Related Tool Operating Instructions

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Introduction

This Operating Instructions describes how to use the trouble diagnosis-related tools.

- EMPSIII ····· Trouble Diagnostic Tool for Industrial Engine
- EMPS ····· Flash Tool
- Tech2 ····· Trouble Diagnostic Tool

Function of each trouble diagnosis-related tool is as in the chart below.

	EMPS Ⅲ Engine Module Programming System	EMPS Engine Module Programming System	Tech2
Data display	❍ KW communication CAN communication		❍ KW communication
ECM Reflash	❍	❍	
Change Injector QR Code	❍	❍	❍
Actuator test	❍		❍

Use this manual sufficiently to perform service work properly and quickly.

Isuzu Motors Limited
Powertrain Business Dept.

EMPS Ⅲ
(Engine Module Programming System)
Operating Instructions

EMPS Ⅲ
Engine Module Programming System

Trouble Diagnostic Tools for Industrial Engine

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Trouble Diagnostic Tools (EMPSIII) for Industrial Engine

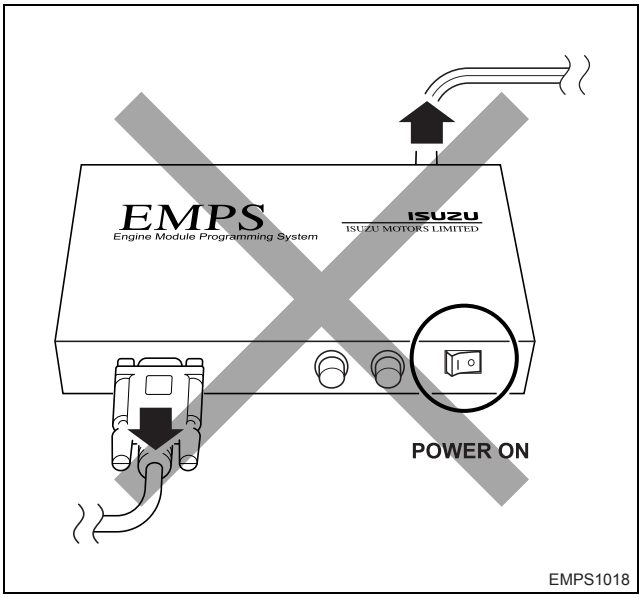
Introduction

Only the person with approval of the machine manufacturer or engine manufacturer can reflash ECM using EMPSIII.

Cautions

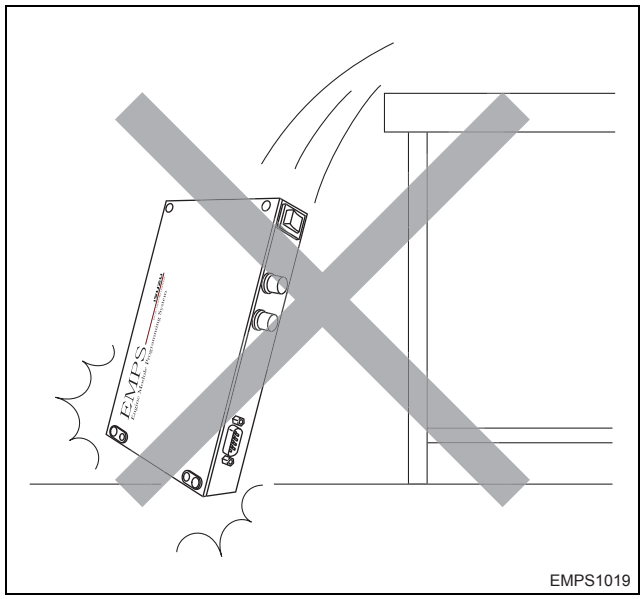
For your safety, read the following cautions.

1. Always turn the POWER switch of EMPSIII selector to OFF before connecting/disconnecting the cables. Before turning on the POWER switch of EMPSIII selector, make sure that the cables are connected securely.

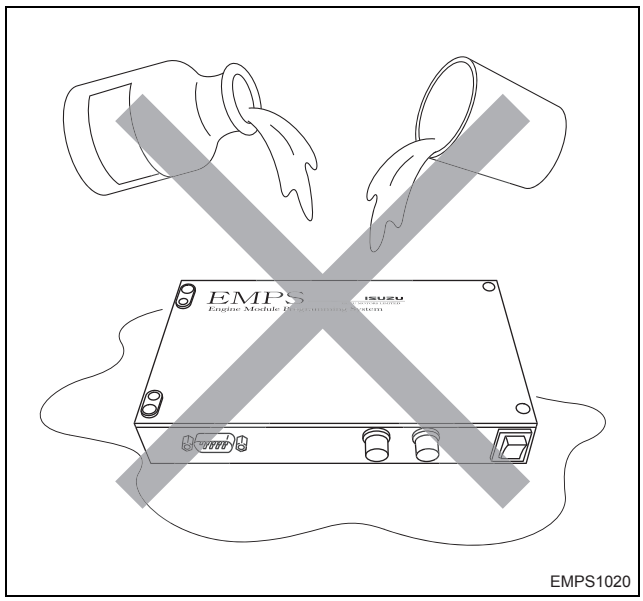


EMPS1018

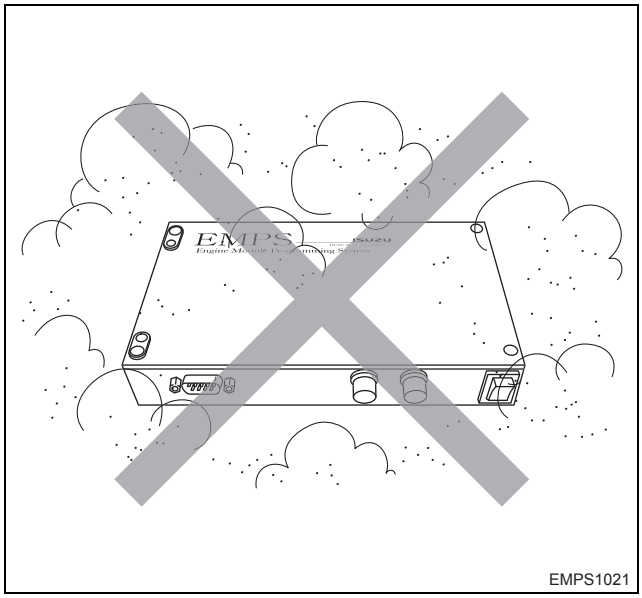
2. Do not disassemble the EMPSIII selector.
3. ECM can be reflashed up to around 100 times. (The number of times varies depending on the conditions of use.)
4. If the POWER lamp does not come on when turning the POWER switch ON with the power source connected, check the fuse.
5. Do not have an impact on it by dropping. It causes internal faults even no damage on appearance.


EMPS1019

6. Avoid using and storing it in a place that it may contact water or chemicals. When cleaning, use cloth with mild detergent, not highly-volatile solvent such as thinner, and wipe out using dry cloth.

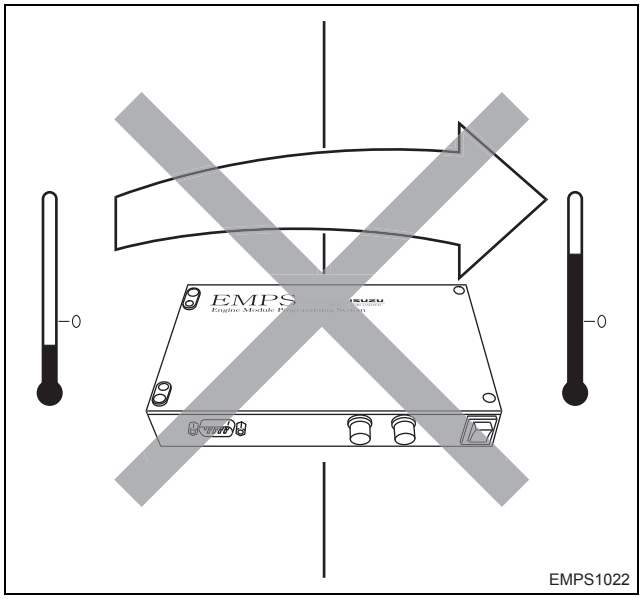

EMPS1020

7. Avoid using and storing it in dusty area. Store it to avoid dust on the connector etc. when you don't use.



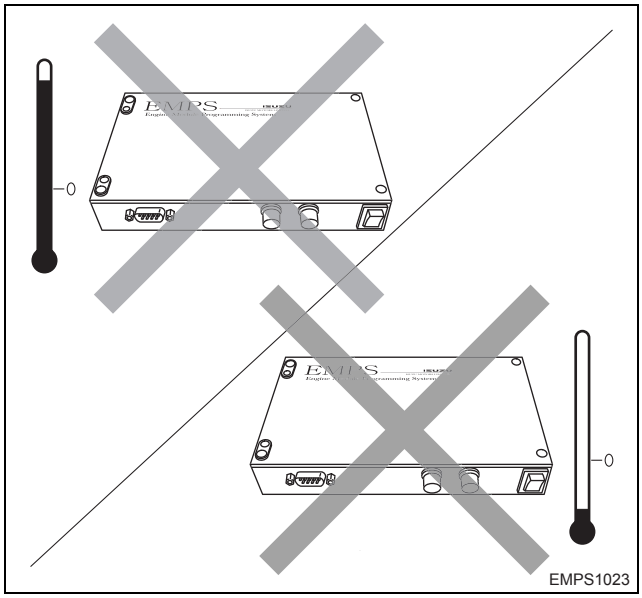
EMPS1021

8. Avoid using and storing it in a place with rapid changes of temperature. If bringing it from cold outside into warm indoor suddenly, dew condensation may occur resulting in malfunction or trouble.



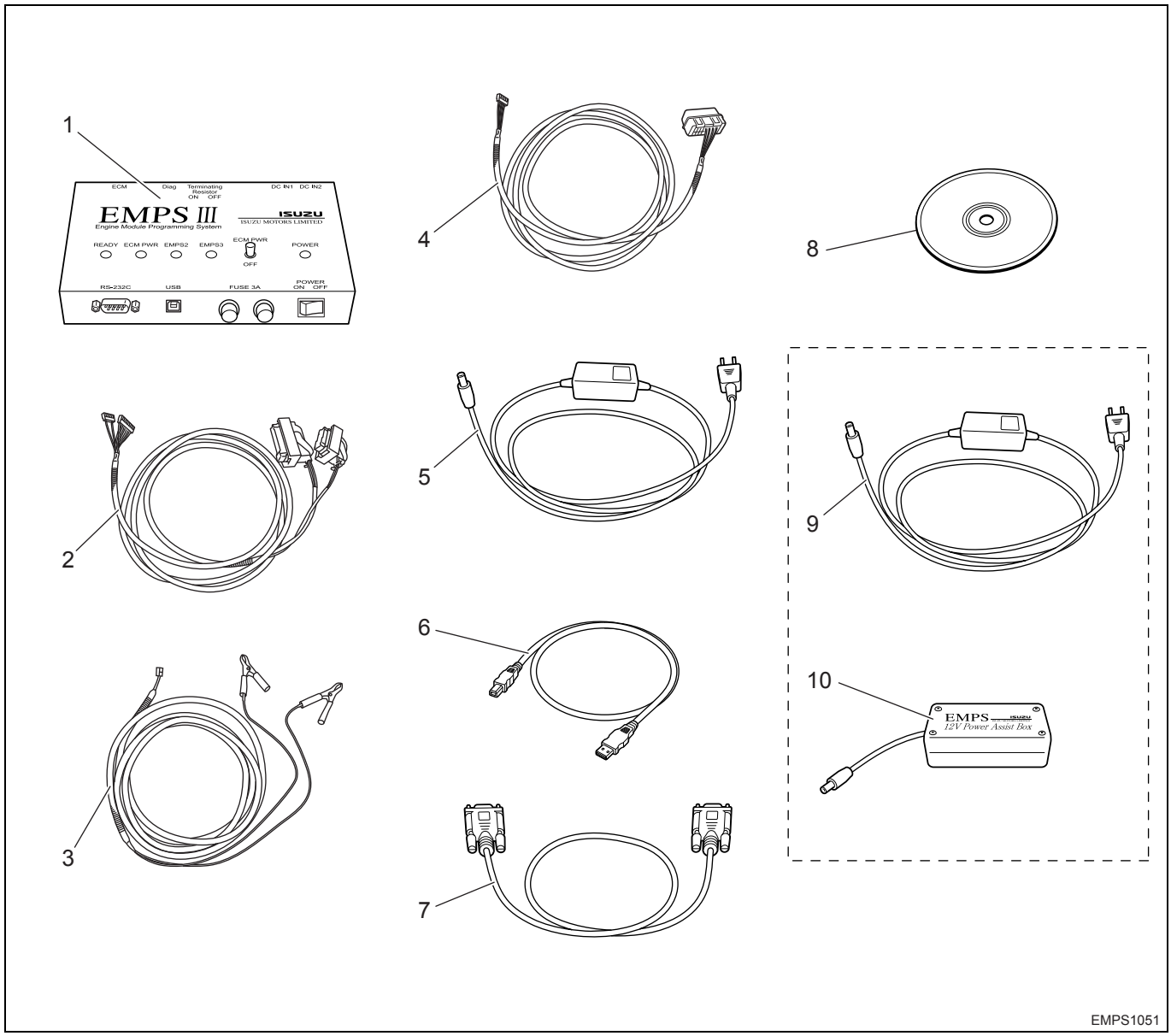
EMPS1022

9. Avoid using and storing it in a place with extreme high or low temperature. Especially in summer, do not leave it in the machine exposed to direct sunlight.



EMPS1023

EMPSIII Component Parts



Name

1. Selector (Hardware)
2. ECM cable
3. Battery cable
4. Datalink cable
5. 24V AC adapter
6. USB cable
7. RS-232C cable
8. EMPS CD-ROM
9. 12V AC adapter*
10. 12V Power Assist Box*

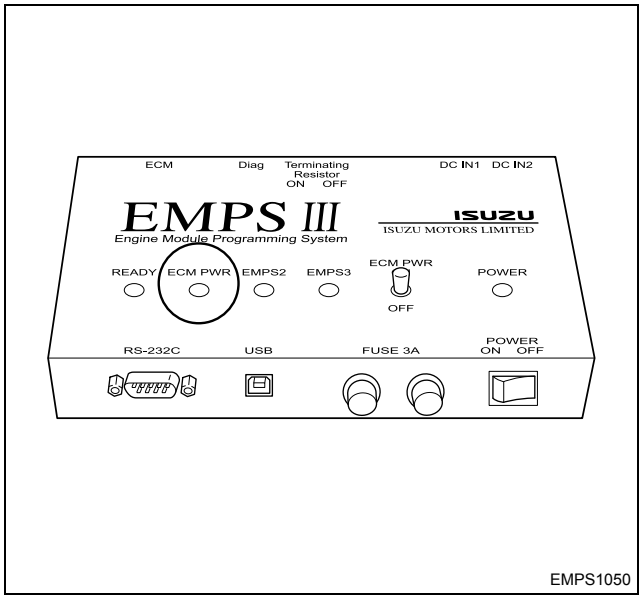
* Optional item that is used when reflashing 12V ECM using the AC adapter.

Before the EMPSIII (software) Setup

Caution:
The ID (user name) and Password attached which are used to setup run EMPS, refer to the “Please Read This First” on the separate sheet. (The ID and Password are attached to the bottom of the sheet.)
After EMPS setup is done, keep the paper for future reference.

Before starting EMPSIII

EMPS performs data communication. Exit all other communication software before starting the EMPS.
In addition, deactivate software and features that automatically communication regularly, such as Windows Update. These may interfere with EMPS data communication.
Before starting operation, make sure that the ECM PWR lamp is turned off.
If the lamp stays on, reconnect each cable and restart the personal computer, then operate EMPS again. If the error occurs again, EMPS might be faulty. Contact the administrator.



Precautions on EMPSIII Setup Procedure

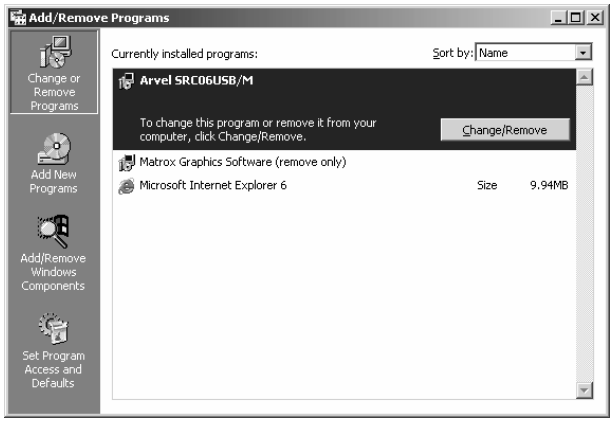
Carry out the setup procedure following the instructions.
Failure to complete setup properly, it might result in a faulty performance of the EMPS program.

Carry out the following procedure with the "EMPSIII setup CD" inserted in the CD-ROM drive.

1. Start the EMPSIII software setup. Refer to "Please Read This First" on the separate sheet.
2. If a USB-Serial Converter driver, manufactured by Arvel Corp, is installed on your computer, uninstall it to prevent interfering with the EMPSIII USB driver. (Refer to step 1.)
3. Carry out an EMPSIII hardware recognition. (Refer to step 2.)

Step 1 [Uninstalling an Arvel USB driver]

1. On the Windows [Start] menu, select [Settings], then select [Control Panel]. [Control Panel] window will appear. You can display the [Control Panel] window also from the [My computer] icon on your Windows desktop.
2. Click the [Add/Remove Programs] icon.
3. Select the Arvel USB driver and click the [Change/Remove] button.
4. Carry out the uninstall procedure following the instructions on the screen.

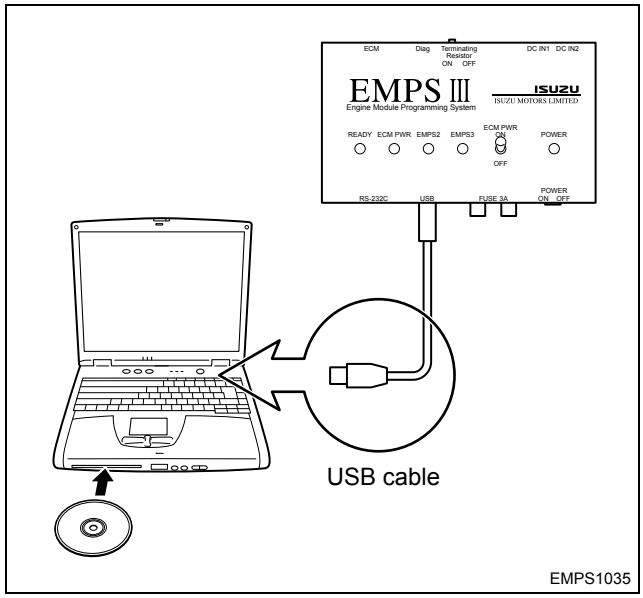


EMPS1034

Step 2 [Installing a USB driver for EMPS]

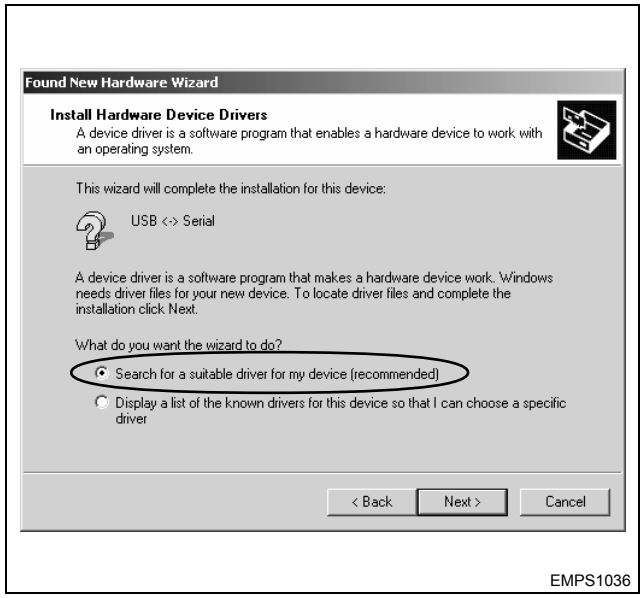
*** Carry out the following procedure with the "EMPSIII setup CD" inserted in the CD-ROM drive.**

1. Connect your computer to EMPSIII as the figure shown below, and turn on the EMPSIII power switch.
2. Automatic installation wizard of the USB driver for EMPS will start.



EMPS1035

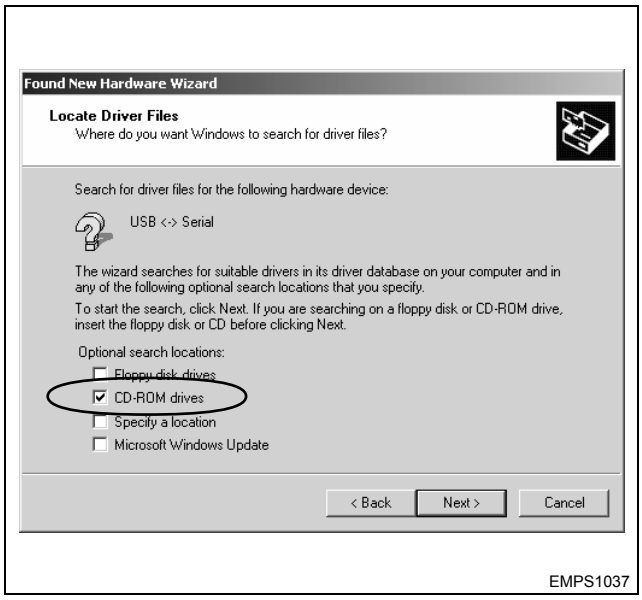
3. Select [Search for a suitable driver for my device (recommended)] and click the [Next] button.



EMPS1036

4. Tick [CD-ROM drives] and click the [Next] button.

5. This will finish installing the driver and the setup is complete.



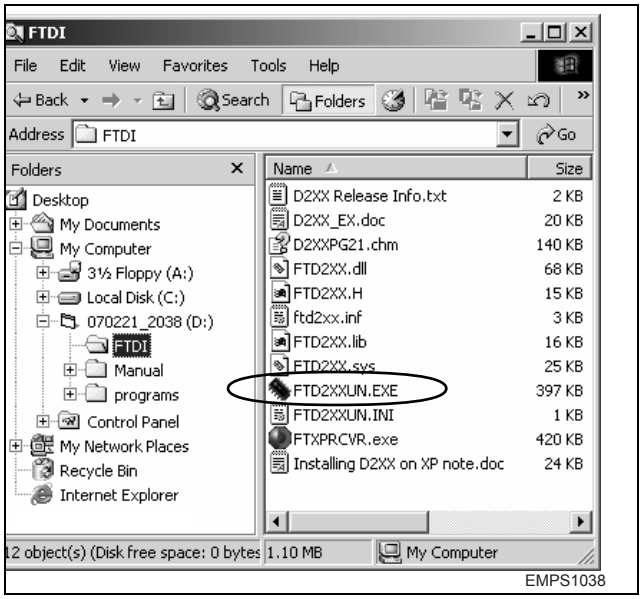
EMPS1037

In case of an unsuccessful installation of a USB driver for EMPS (Step 2)

Note:
Perform the same procedure in case an error code 0214, 0257, etc. appears during the EMPS program is running.

USB driver installation might be failed. Follow the below mentioned procedure to uninstall the USB driver, and retry to install the USB driver for EMPS.

1. Insert the “EMPS III setup CD” into the CD-ROM drive.
2. Start the explorer on your Windows system, and select the CD-drive, then open the FTDI folder.
3. Double-click the “FTD2XXUN.EXE” file.

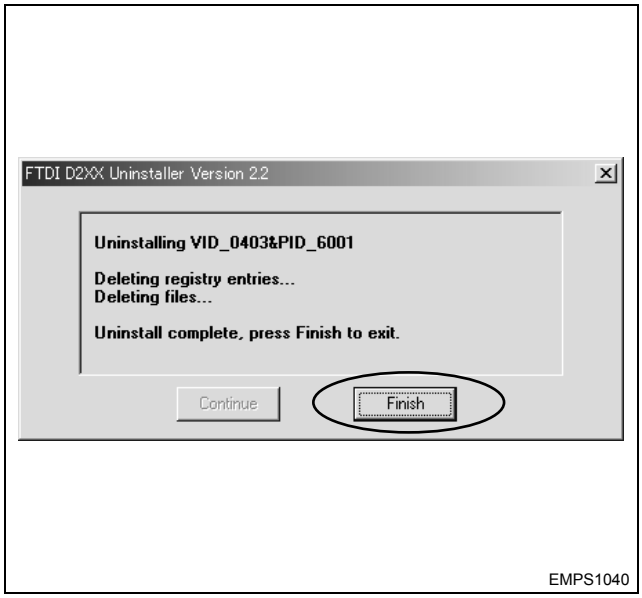


EMPS1038

4. The screen shown below appears, then click the “Continue” button.

EMPS1039

5. The screen shown below appears, then click the “Finish” button. This completes uninstalling the USB driver.
6. Retry the procedure on step 2.



EMPS1040

Note:
If your PC has no RS-232C port, you can use a USB to RS-232C converter (optional) to connect.
However, error may occur during reflashing with some converters.
The converter shown below was verified for operation.

Except Windows 7

Maker	Product name	Model	JAN code	57.6 k	38.4 k	19.4 k
Buffalo	USB Serial Converter Cable	BHC-US01/GP	4981254134788	×	❍	×
Dynex	USB PDA/Serial Adapter Cable	DX-UBDB9	—	×	❍	*❍
Elecom	USB to Serial Cable	UC-SGT	4953103133716	×	❍	❍
Loas	USB RS-232C Converter Cable	ZUR-101	4967101189217	×	❍	❍
Sanwa supply	USB RS-232C Converter	USB-CVRS9	4969887652039	×	❍	*❍
Radio Shack	USB to Serial Cable	26-183	—	×	❍	×
Dynex (purchased as Best Buy)	USB PDA/Serial Adapter	DX-UBDB9	—	×	❍	×
Akizuki Denshi Tsusho	USB Serial Converter Cable	M-00720	—	×	❍	×

* Error may occur depending on the model of personal computer during reflashing (* in the list above).

- Communication at the transmission speed of 38.4k is recommended.
- You cannot use a USB-Serial Converter driver manufactured by Arvel Corp. because of interfering with the EMPSIII USB driver.
  Uninstall the driver referring to the “Precautions on EMPSIII Setup Procedure”.

Corresponding to Windows 7 (Download the driver from the manufacturer’s site.)

Maker	Product name	Model	JAN code	57.6 k	38.4 k	19.4 k
Elecom	USB to Serial Cable	UC-SGT	4953103133716	×	❍	×
Sanwa supply	USB RS-232C Converter	USB-CVRS9	4969887652039	×	❍	×
Akizuki Denshi Tsusho	USB Serial Converter Cable	M-00720	—	×	❍	×
CablesToGo	USB to Serial Adapter	26886	—	×	❍	×

ECM (hardware) compatibility

- ECM (hardware) that can be reflashed has no compatibility.
  Use the ECM that corresponds to the engine type and voltage specification.

	Voltage Specifications		Remarks
	12 V specifications	24 V specifications	
Eng Model	4HK1	4HK1	
	6HK1	6HK1	
	—	6WG1 6UZ1	ECM (hardware) for 6WG1 and 6UZ1 is the same.
	4JJ1	4JJ1	

- Using EMPSIII can reflash the ECM of industrial common rail engine only.
- Using EMPSIII cannot reflash the ECM of industrial engine (RED – 4 type injection system) that meets Phase 2 Emission Standards.

ECM Variation

	ECM for Shipping	Service ECM	Blank ECM
Calibration data	Set	Set	N/A
QR code	Set	N/A	N/A
Q trim	Set	N/A	N/A

System Requirements for EMPSIII Software (Recommended)

System Component	Specifications
PC	PC/AT compatible machine
CPU	Pentium III 800 MHz or more
OS*	Windows 2000 SP4, Windows XP SP1, SP2, SP3, Windows Vista, Windows 7
Memory	256MB or more
HDD	20GB or more
Video card	1024 × 768 dots or more, 256-color or more
Serial interface	One or more RS-232C ports (USB conversion connector etc. is also available)
External drive	CD-ROM drive

*32 bit only

Available Display Language for EMPSIII Software

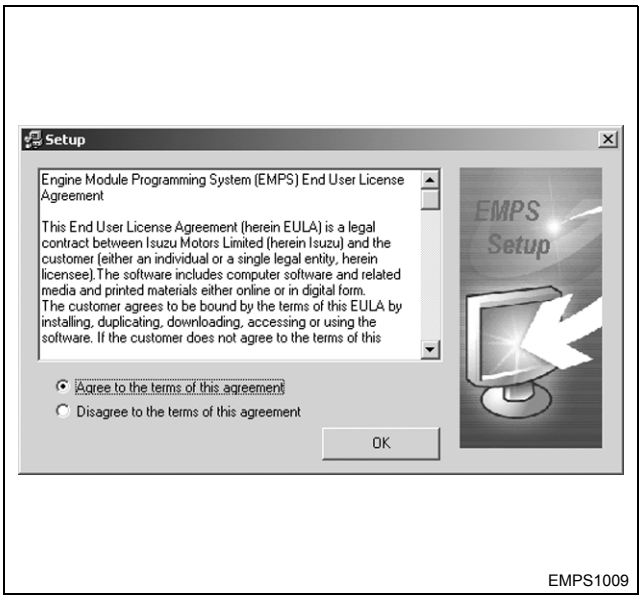
EMPSIII software selects appropriate language for display automatically according to OS language installed in PC. Available language is as follows.

OS language	Software display language	Manual
Japanese	Japanese	Japanese
English	English	English
French	French	English
German	German	English
Italy	Italy	English
Spanish	Spanish	English
Portuguese	Portuguese	English
Chinese	Chinese	Chinese
Other language	English	English

EMPSIII (software) Setup Procedure

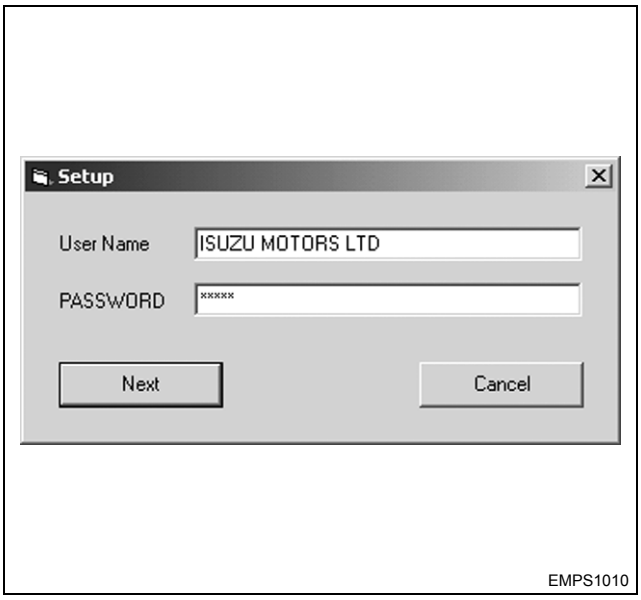
1. Insert the “EMPSIII setup CD” into the CD-ROM drive.
   This automatically starts up the setup program, and the following message appears.

   Quit other application if it is running. Click the [OK] button.
   To cancel installation, click the [Cancel] button.

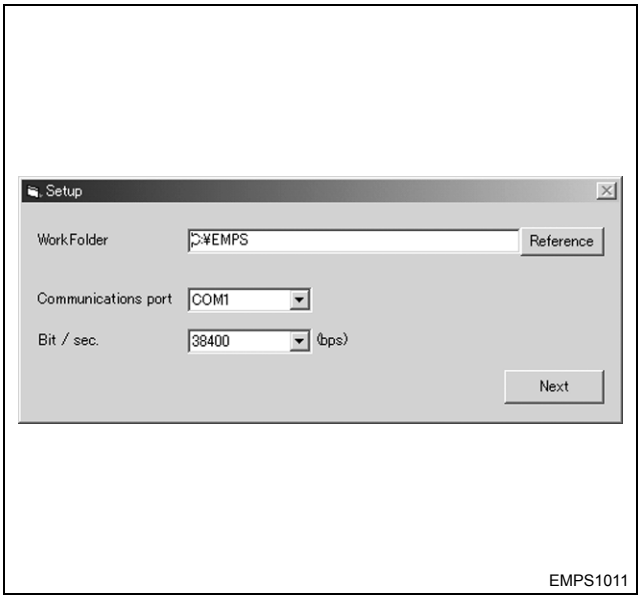


   Read the license agreement. If you agree to the terms, click [Agree to the terms of this agreement] and click the [OK] button.
   If you do not agree, select [Disagree to the terms of this agreement] and select the [OK] button to end the setup.

2. Enter the user name and password, and then click the [Next] button.



3. Configure operating environment.
   Configure the work folder that system uses, the initial value of the COM port, and the initial value of the data transmission rate, and click the [Next] button.
   COM port and data transmission rate can be changed later. If you are not sure about this setting, do not change the value and click the [Next] button.



4. Install the troubleshooting manual.
   All manuals are installed in the default setting. (Recommended)

Note:

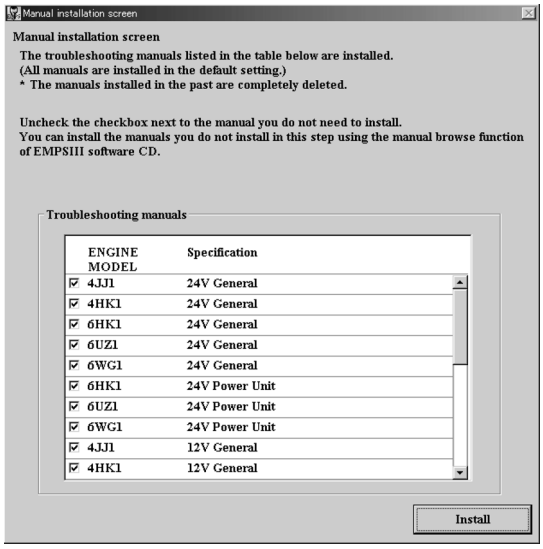
- The manuals installed in the past are completely deleted.

  Uncheck the checkbox next to the manual you do not need to install in the list of the troubleshooting manuals.

Note:

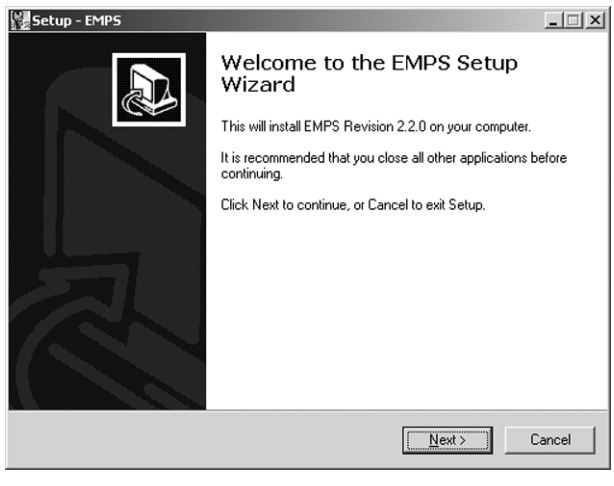
- You can install the manuals you do not install in this step using the manual browse function of EMPSIII software CD.
  (Refer to "5. HTML Manual Display" in the Diagnosis Mode Operation Procedure for details.)

  Click the [Install] button.



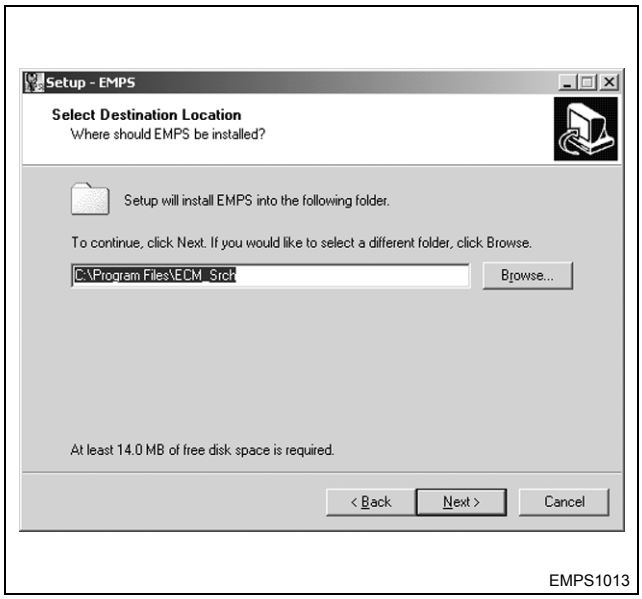
EMPS1052

5. The setup screen appears.
   Click the [Next] button.



EMPS1012

6. In the following display, confirm the installation destination and click the [Next] button.
   To change the installation destination, click the [Browse] button and select the folder you want to install.



EMPS1013

7. This starts the setup.
   To cancel the setup halfway, click the [Cancel] button.
8. Setup completion
   The setup is completed, and the following display appears. Select [Yes, I want to restart my computer now], and then click the [Finish] button.

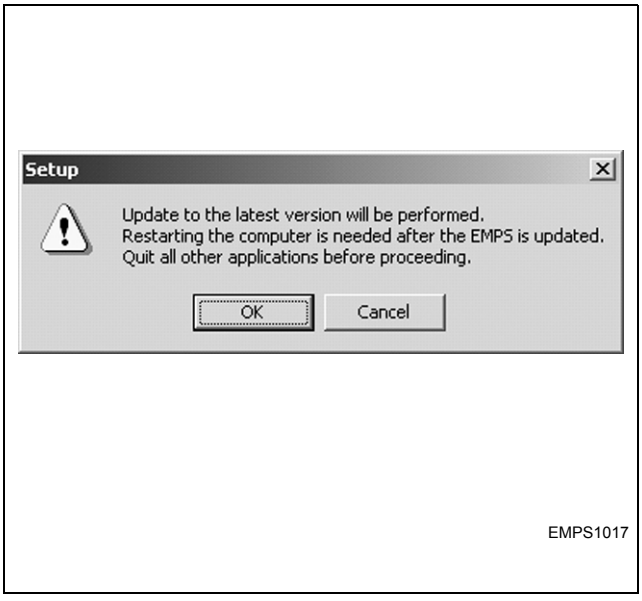
Note:
You can also select [No, I want to restart my computer later], but unexpected error may occur if you reflash with the EMPS before restart. Be sure to restart the computer before starting the EMPS.

EMPS1015

System version upgrade

If the system has been upgraded, the update program will start automatically after the CD is inserted.
The following message will appear. Quit the EMPS if it is running, and click the [OK] button.
Clicking the [Cancel] button cancels the update process. Update must be performed before reflash or other operations with EMPS.

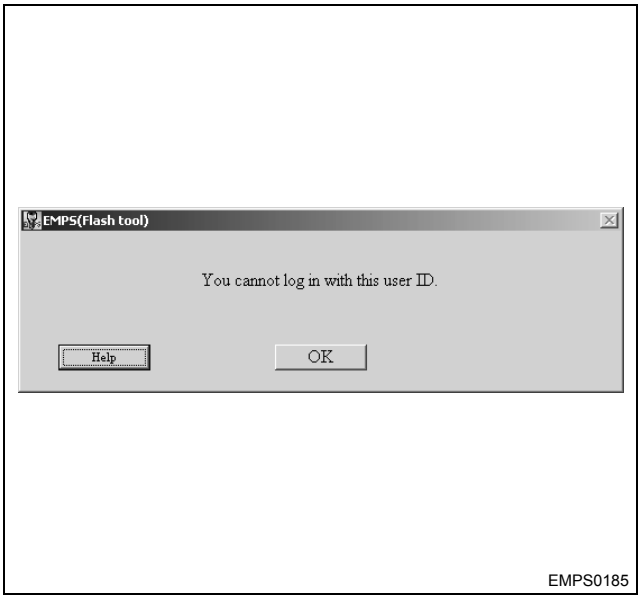
EMPS1016



EMPS1017

User ID whose contract has expired

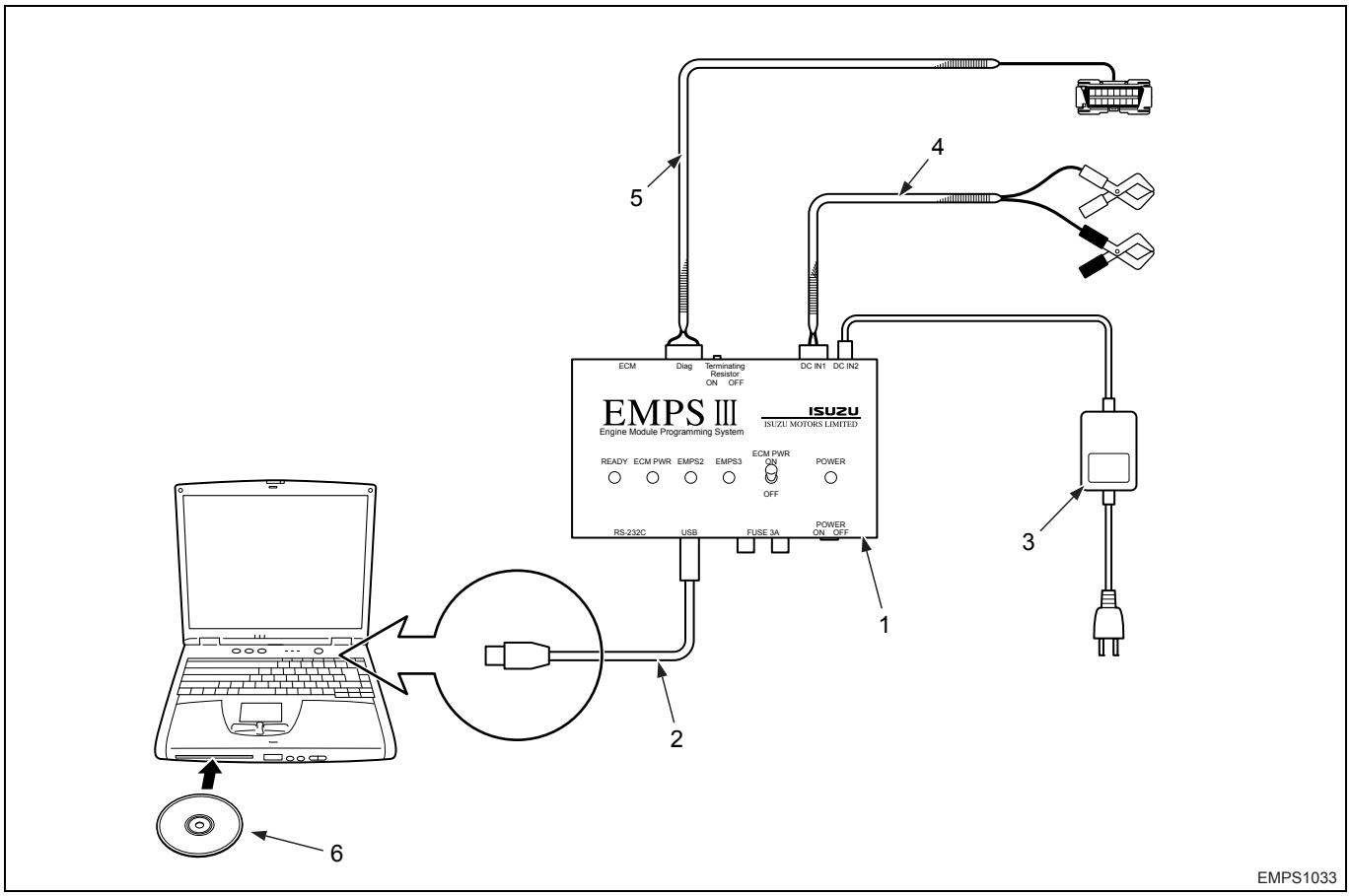
The following message will appear while installation if the contract of entered user ID has expired.
Click the [OK] button to exit the installation.



EMPS0185

Diagnosis Mode Operation Procedure

1. Connection



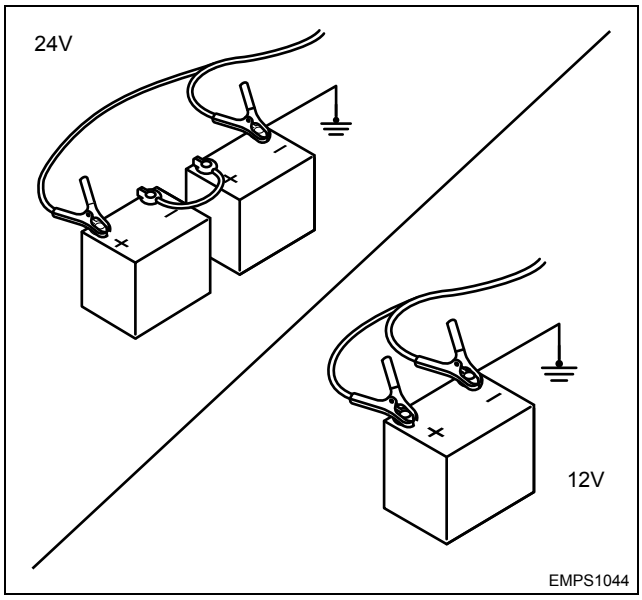
Name

1. Selector
2. USB cable
3. AC adapter
4. Battery cable
5. Datalink cable
6. EMPS CD-ROM

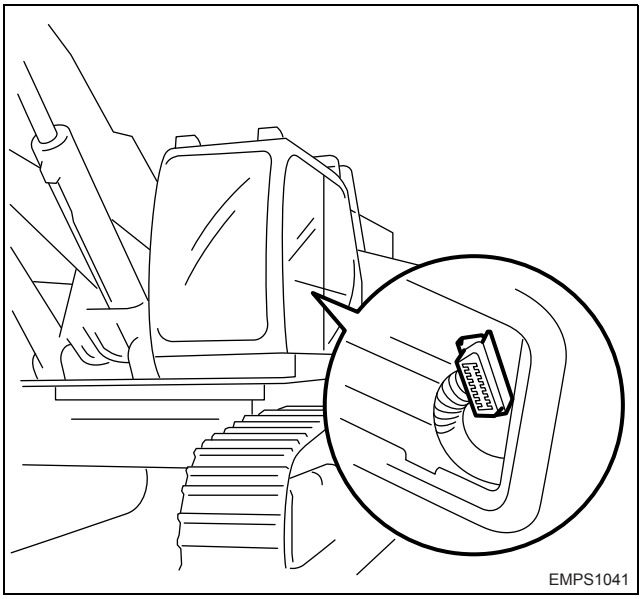
Caution:

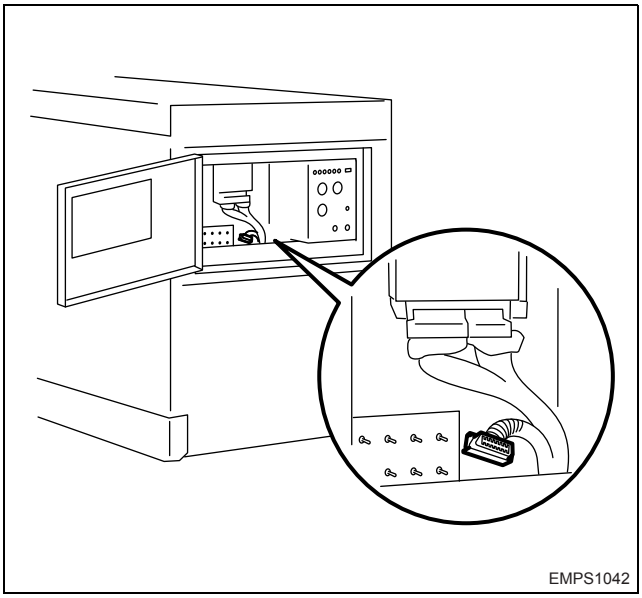
- **Do not use an AC adapter at the same time when drawing power from a battery.**
- **Prepare the AC adapter that matches the rating (12V/24V) of the ECM when drawing power with an AC adapter.**
- **Do not use a battery at the same time when drawing power from an AC adapter.**
- **Make sure that the POWER switch of EMPS selector is turned to OFF before connecting/ disconnecting the ECM cable. Damage to EMPS or ECM selector will result.**
- **Before starting operation, make sure that the ECM PWR lamp is turned off.**
  If the lamp stays on, reconnect each cable and restart the personal computer, then operate EMPS again. If the error occurs again, EMPS might be faulty. Contact the administrator.

Battery connection destination



Connection of the Data Link Connector

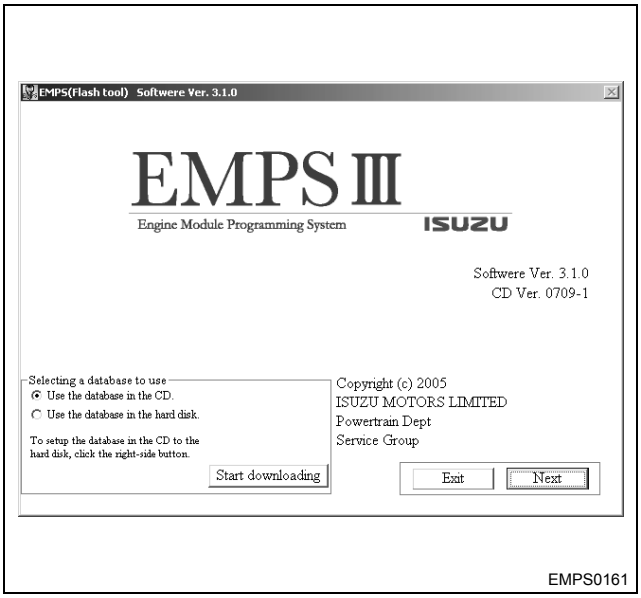

EMPS1041


EMPS1042

Caution:
Connecting method varies depending on each machine. Refer to the machine's manual. The following description is for the machine with DLC (Data Link Connector).

2. Startup

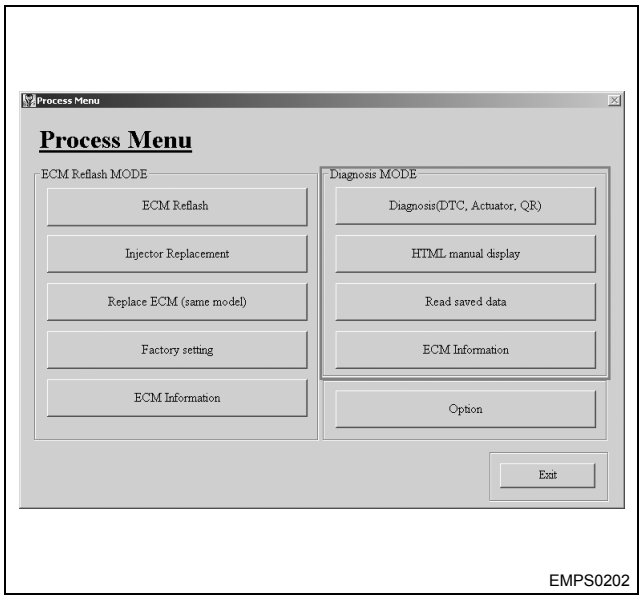
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



EMPS0161

“Process Menu” screen will be displayed by clicking the [Next] button.

3. Process Menu



Diagnosis (DTC, Actuator, QR)
Acquires Snapshot data and performs Actuator test using CAN or KW communication.

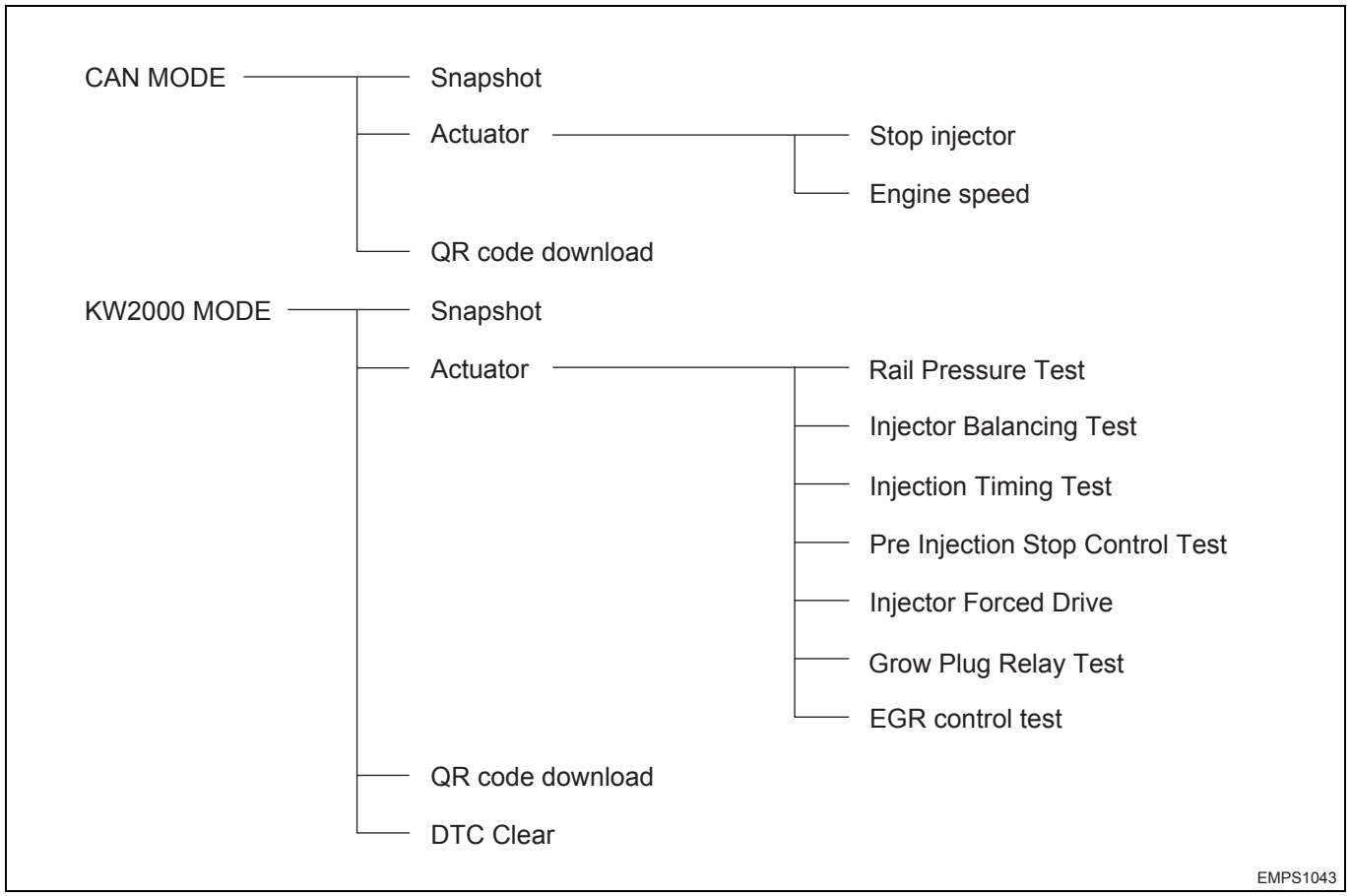
HTML manual display
Displays HTML manual.

Read saved data
Reads and re-displays the saved Snapshot data.

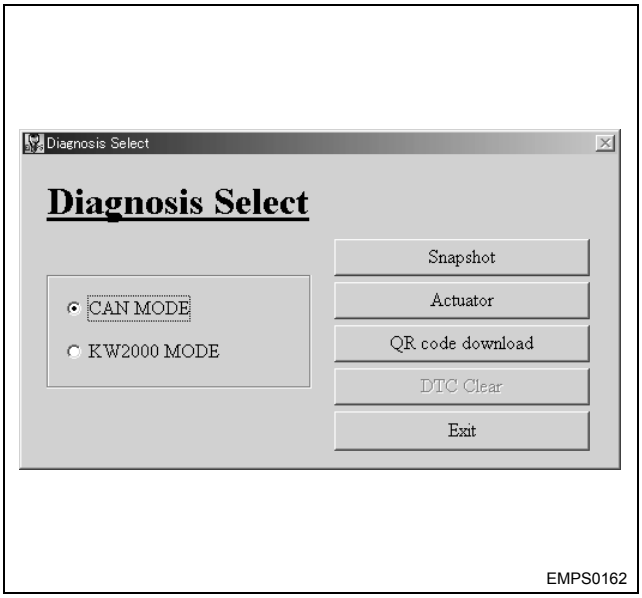
ECM Information
Displays ECM information connected currently.

4. Trouble Diagnosis

4.1 Diagnosis(DTC,Actuator,QR)



Select [Diagnosis(DTC, Actuator, QR)] from the “Process Menu” screen. Confirm connections, log in and operate the switch by following the screen, then “Diagnosis Select” screen will be displayed.

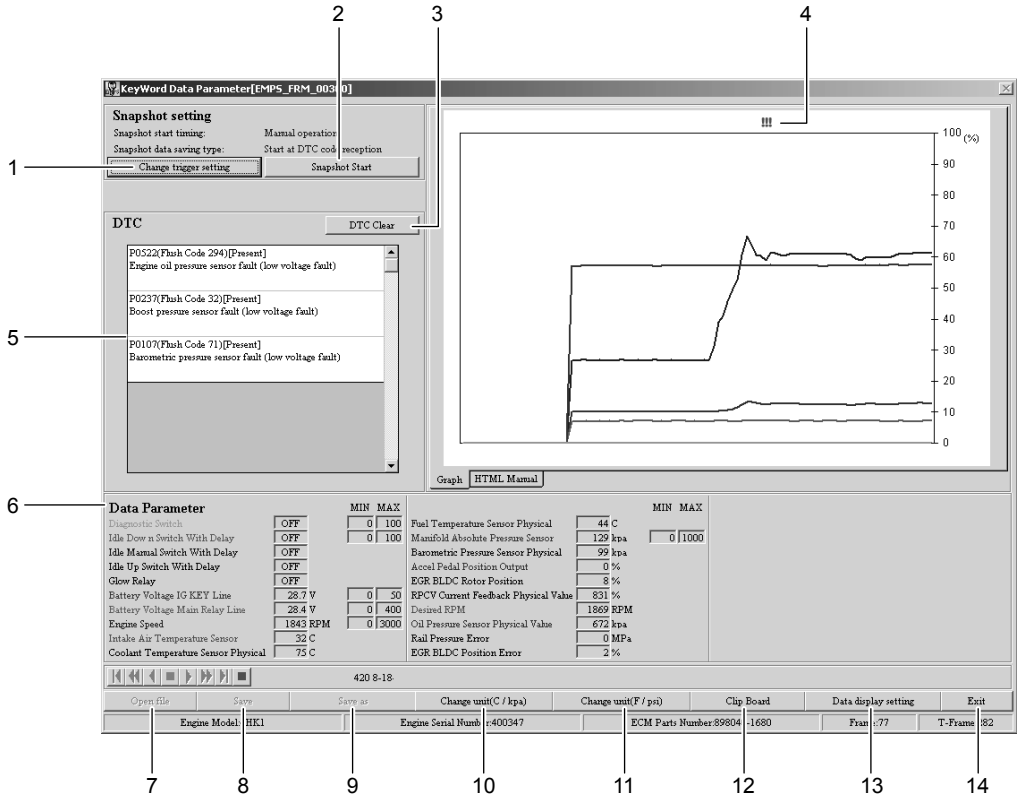


Select a communication method with the selector from [CAN MODE] or [KW2000 MODE] and click functions (buttons) for diagnosis.

If the machine does not support the CAN mode, communication error will occur.

4.1.1 Snapshot

Displays the data acquired with the communication mode (CAN/KW2000) that is selected on the “Diagnosis Select” screen.



EMPS0163

Name

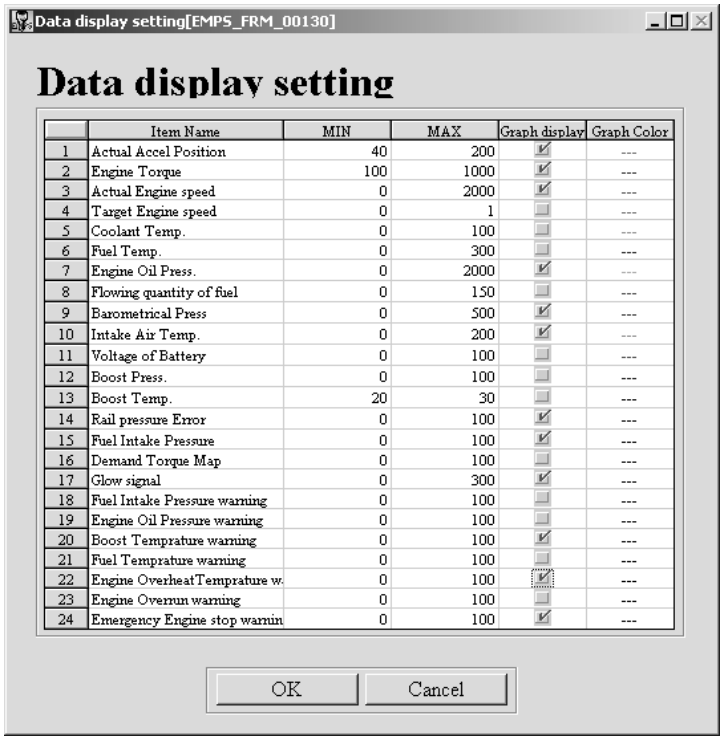
1. Change trigger setting
2. Snapshot Start
3. DTC Clear
4. DTC occurred
5. DTC
6. Data Parameter
7. Open file
8. Save
9. Save as
10. Change unit(C/kpa)
11. Change unit(F/psi)
12. Clip Board
13. Data display setting
14. Exit

Selection Item Descriptions

Items	Settings/Operation Performed
Change trigger setting	Sets the Snapshot start timing. • Trigger type – **Manual operation:** Saves data when [Snapshot Start] button is clicked. – **Any DTC code:** Data is saved in case any trouble code is issued. – **Specified DTC code:** Data is saved in case the specified trouble code is issued. • Trigger Point – **Start at DTC code reception:** Starts to save data at DTC code reception and stores data for about 10 minutes. – **Before and after 5 minutes of DTC code reception:** Stores data before and after 5 minutes at DTC code reception. This selection allows to compare data that existed before the occurrence of a trouble, those present at the time of occurrence of the trouble, and those after the trouble, among themselves.
Snapshot Start	Clicks the button at the beginning and end of Snapshot.
DTC Clear	Clear the list of displayed DTC.

Items	Settings/Operation Performed
DTC occurred	When DTC occurred, “!!!” marks is displayed.
DTC	Displays the list of occurred DTC. Double-click DTC code to change the graphed area to a manual display, which shows a table of trouble diagnostic steps corresponding to DTC. In case “Present” is displayed next to flash code, it represents DTC on present trouble. When nothing is displayed next to flash code, it represents DTC on history trouble.
Data Parameter	Displays the acquired Data Parameter.
Open file	Opens the previously saved Snapshot data.
Save	Saves the currently displayed Snapshot data to a file.
Save as	Saves currently displayed Snapshot data as a different file name.
Change unit(C/kpa)	Changes parameter unit (F/psi) displayed on the Data Parameter area into (C/kpa).
Change unit(F/ psi)	Changes parameter unit (C/ kpi) displayed on Data Parameter area into (F/ psi).
Clip Board	Saves currently displayed graphed image to clip board. Saved images can be pasted onto other applications.
Data display setting	Sets graphed display for each Data Parameter.
Exit	Closes Snapshot screen.

Data display setting
CAN mode



	Item Name	MIN	MAX	Graph display	Graph Color
1	Actual Accel Position	40	200	☑	---
2	Engine Torque	100	1000	☑	---
3	Actual Engine speed	0	2000	☑	---
4	Target Engine speed	0	1	☐	---
5	Coolant Temp.	0	100	☐	---
6	Fuel Temp.	0	300	☐	---
7	Engine Oil Press.	0	2000	☑	---
8	Flowing quantity of fuel	0	150	☐	---
9	Barometrical Press	0	500	☑	---
10	Intake Air Temp.	0	200	☑	---
11	Voltage of Battery	0	100	☐	---
12	Boost Press.	0	100	☐	---
13	Boost Temp.	20	30	☐	---
14	Rail pressure Error	0	100	☑	---
15	Fuel Intake Pressure	0	100	☑	---
16	Demand Torque Map	0	100	☐	---
17	Glow signal	0	300	☑	---
18	Fuel Intake Pressure warning	0	100	☐	---
19	Engine Oil Pressure warning	0	100	☐	---
20	Boost Temprature warning	0	100	☑	---
21	Fuel Temprature warning	0	100	☐	---
22	Engine OverheatTemprature w	0	100	☑	---
23	Engine Overrun warning	0	100	☐	---
24	Emergency Engine stop warnin	0	100	☑	---

EMPS0175

Selection Item Descriptions

Items	Settings/Operation Performed
Item Name	Data names that are required from ECM.
MIN	Enter the minimum value in graph display.
MAX	Enter the maximum value in graph display.
Graph display	Sets if display in graph or not. (If a tick mark is entered, it refers that graph display is ON)
Graph color	Sets the border color on the graph. (Clicking inside the cell displays the color setting screen.)

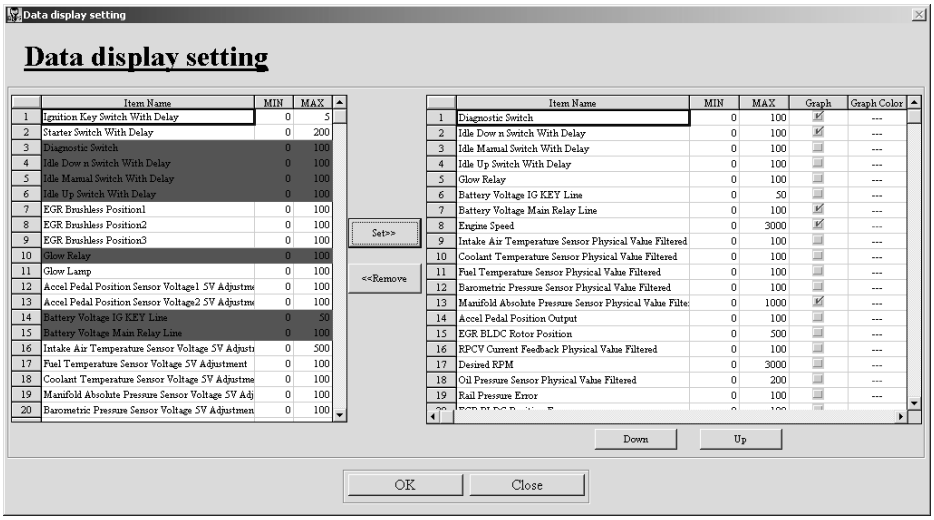
KW2000 mode

Max. 30 items can be displayed on the screen in KW 2000 mode. (20 items are always displayed + max. 10 desired items can be selected)

Desired items can be set on the screen shown below.

All the items that are acquired in KW 2000 mode are listed on the left side of the screen and the items that are displayed in the Data display screen are listed on the right side.

Items in the red background that are listed on the left side of the screen are the ones that are always displayed.

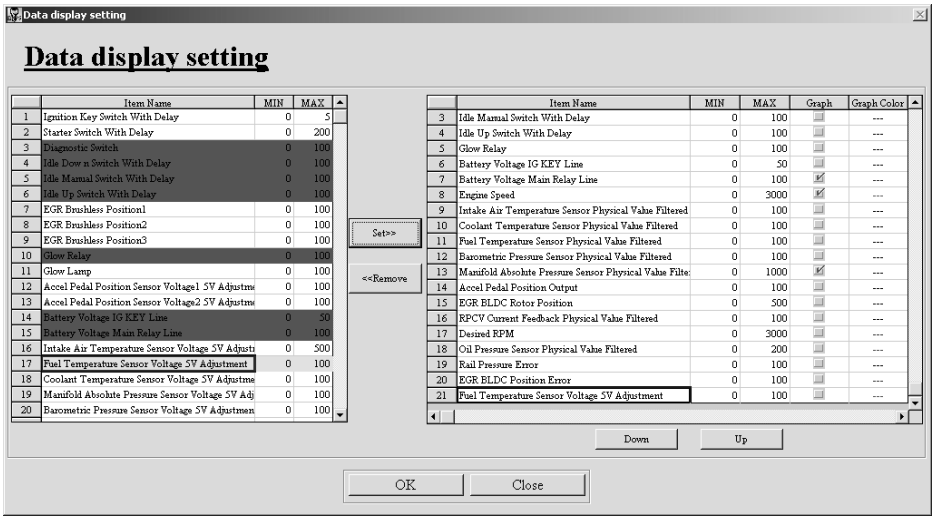


EMPS0176

Selection Item Descriptions

Items	Settings/Operation Performed
Item Name	Item Name: Data names that are required from ECM.
MIN	Enter the minimum value in graph display.
MAX	Enter the maximum value in graph display.
Graph display	Sets if display in graph or not. (If a tick mark is entered, it refers that graph display is ON)
Graph color	Sets the border color on the graph. (Clicking inside the cell displays the color setting screen.)

Select the items in the white background using a mouse, and then click the [Set] button to change the background to yellow and move to the list on the right side of the screen.

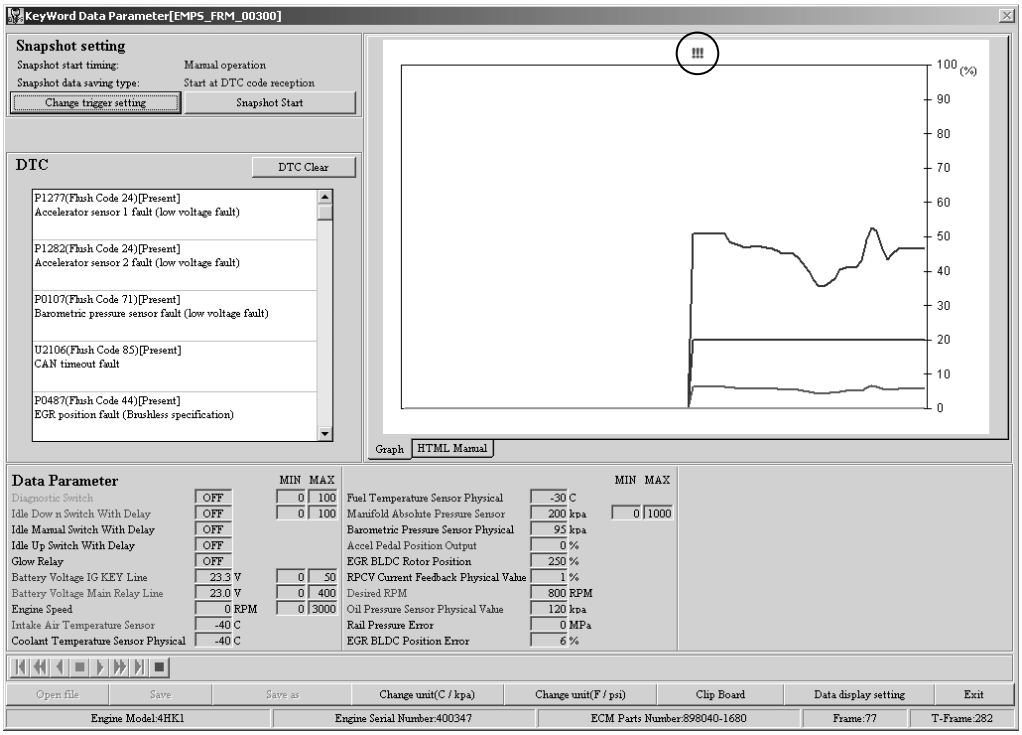


EMPS0177

Select the items to cancel the selection from the list on the right side of the screen and click the [Remove] button.

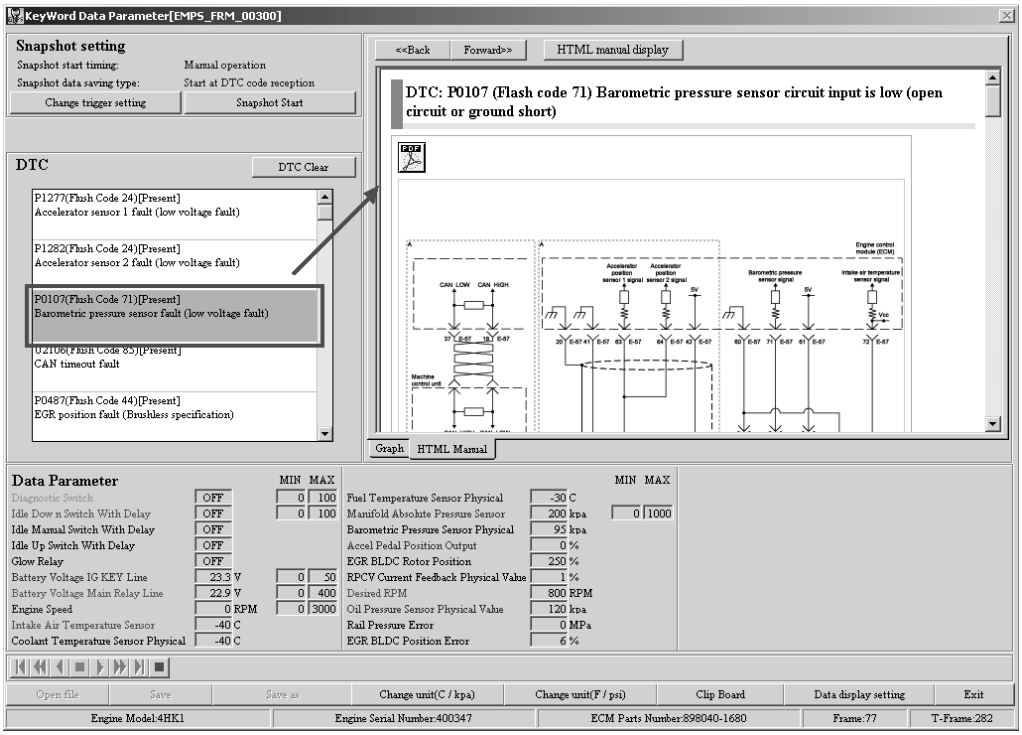
Select the items to change the sort order from the list on the right side of the screen and click the [Down] or [Up] button to change.

A sign will be displayed on the screen at DTC occurrence.



EMPS0164

Double-click on the DTC error list to display a corresponding HTML manual.



EMPS0165

About the Data reference value

Refer to the troubleshooting manual for the reference data value of each machine.

EMPSIII data reference value

800 rpm

Data display item	Units	Reference value at 800 rpm (it varies depending on conditions of the machine.)
System Voltage	V	28.5 □ 28.6
Main Relay Voltage	V	27.7 □ 28.3
Target Engine Speed	RPM	800
Engine Speed	RPM	794 □ 810
Engine Torque		
Accelerator Sensor 1	V	0
Accelerator Sensor 2	V	0
Accelerator Pedal Position	%	0
Vehicle Speed	km/h	0
Target Common Rail Pressure	MPa	31 □ 35
Common R...	V	1.4 □ 1.6
C...		

EMPS1026

4.1.2 Actuator

When CAN MODE is selected

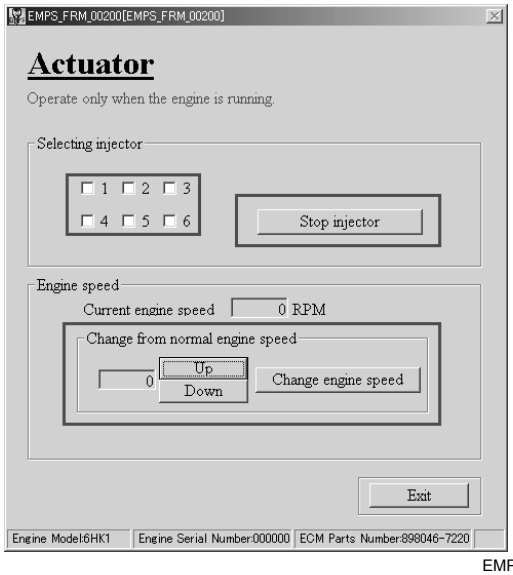
Displays the Injector Balancing Test screen.

Usage: Checks if injection is normal.Stops each injector of every corresponding cylinder when the engine is running and evaluates with the changes of vibration and abnormal engine sound.

Operation: Put a mark in the check box of an injection number to be stopped and click the [Stop injector] button.

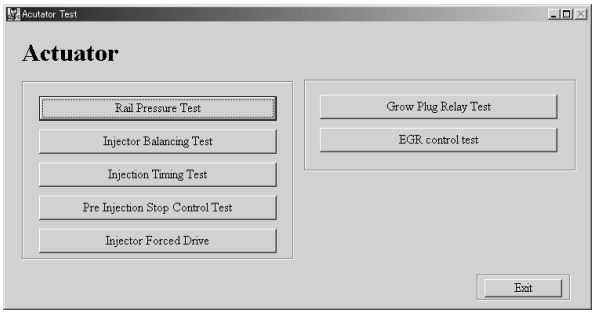
Set the desired value for engine speed using the [Up] and [Down] buttons and click the [Change engine speed] button to change the engine speed.

The maximum number of injectors that can be selected is half of the number of cylinders of engines that are connected.



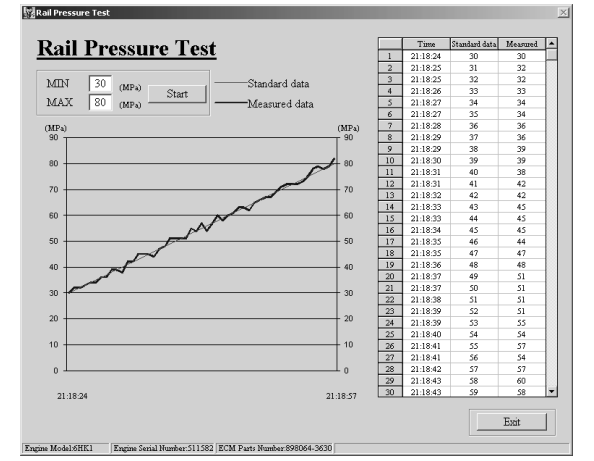
EMPS0166

When KW2000 MODE is selected
Displays the Actuator Test menu screen.



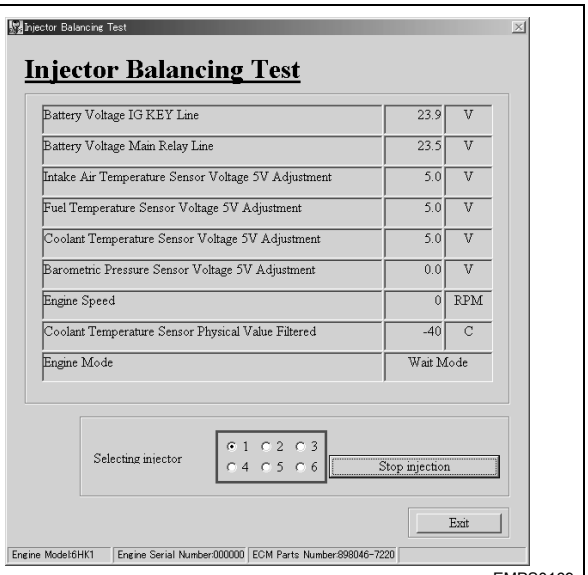
EMPS0167

1. Rail Pressure Test
   Usage: Checks for the occurrence of large amount of delay against the request value for rail pressure when the engine is running.
   Operation: Enter the MAX and MIN rail pressure value and click the [Start] button.
   Data time, standard data (30 to 80) and corresponding data when standard data is sent will be listed on the right side of the screen.



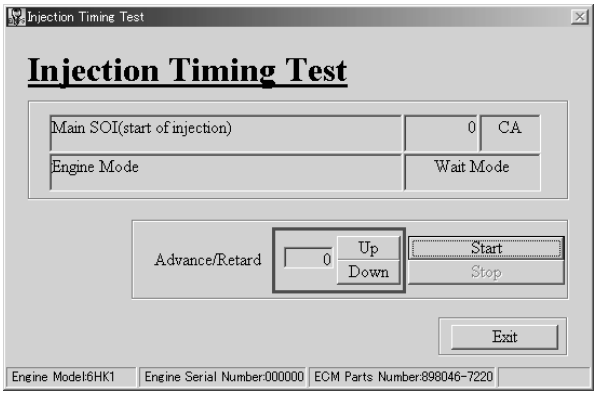
EMPS0168

2. Injector Balancing Test
   Usage: Checks if injection is normal (clogging test). Stops each injector of every corresponding cylinder when the engine is running. (Injector is normal when the engine vibration, engine sound and exhaust sound change while engine stops.)
   Operation: Select the injection number to be stopped and click the [Stop injection] button.



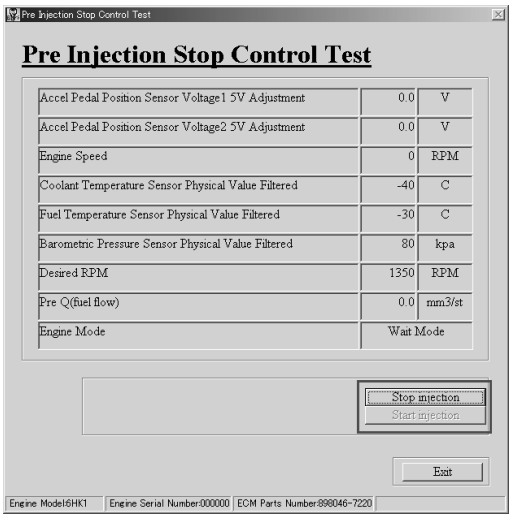
EMPS0169

3. Injection Timing Test
   Usage: Changes the expected injection timing that is effected by the injection timing and checks the changes when white smoke or rough-idling has found.
   Operation: Click the [Up] or [Down] button to change Advance or Retard value, and then click the [Start] button.



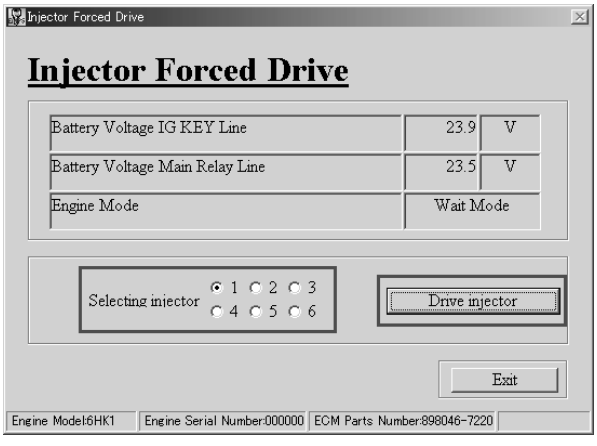
EMPS0170

4. Pre Injection Stop Control Test
   Usage: Stops Pre Injection when vibration or abnormal sound has found on the machine and checks the changes of the vibration and abnormal sound. **(Pre injection functions is working normally if the vibration and abnormal sound stop.)**
   Operation: [Stop injection] button stops injections for 10 seconds or until clicking the [Start injection] button.



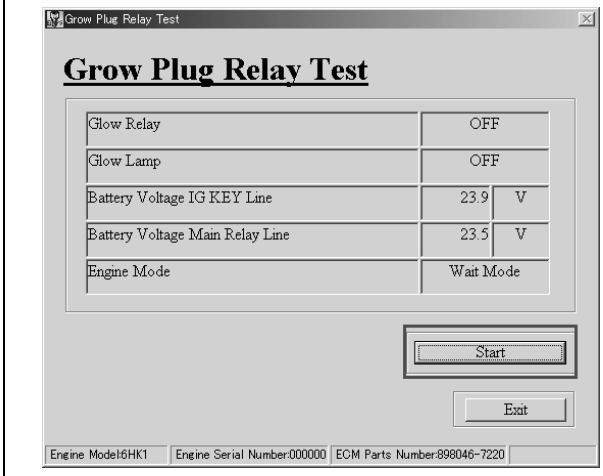
EMPS0171

5. Injector Forced Drive Test
   Usage: Simply inspects the injector electrical system. Operate the injector solenoid when the engine stops, and check the operating sound (electric conduction sound) of solenoid attached to top of the injector to make sure it is not abnormal. (It is normal when operating sound is heard).
   Operation: Select the injector number and click the [Drive injector] button.



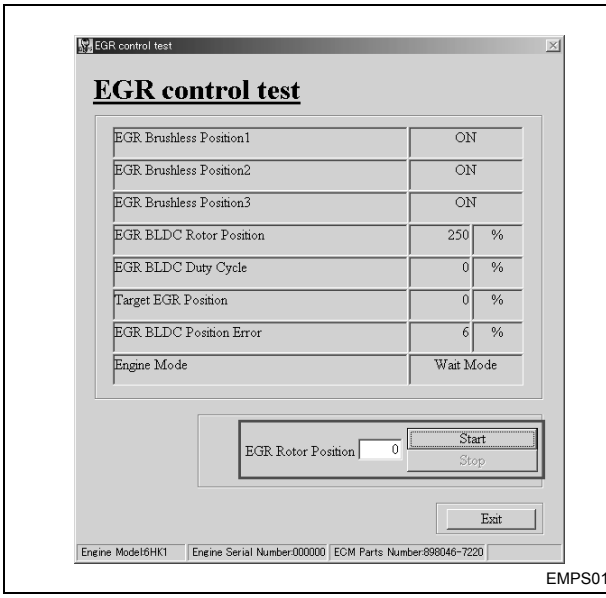
EMPS0172

6. Glow Plug Relay Test
   Usage: Simply inspects the glow plug relay electrical system. Operate the glow relay when the engine stops and check the operating sound (electric conduction sound) to make sure it is not abnormal. (It is normal when operating sound is heard).
   Operation: Click the [Start] button to perform Plug Relay Test.



EMPS0173

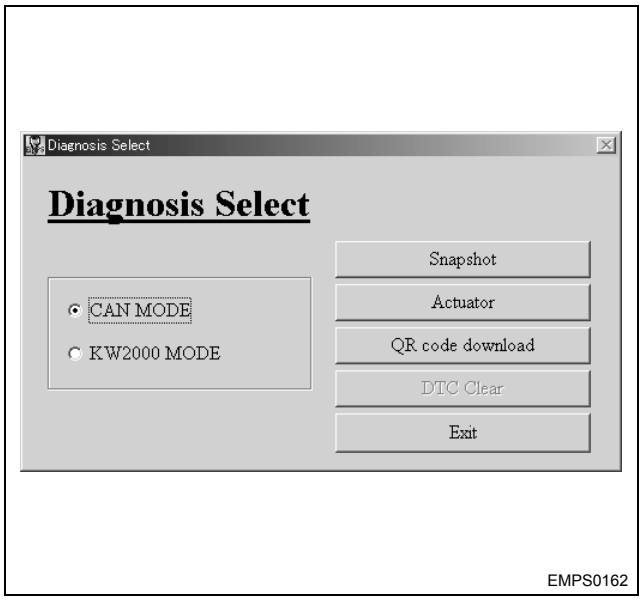
7. EGR control test
   Usage: Checks if the EGR control is operating as the request command when the engine stops. (It is normal when operating sound of EGR rotor is heard).
   Operation: Click the [Start] button to start EGR control test. A desired value for EGR Rotor Position can be set between 0 and 100% while operating.



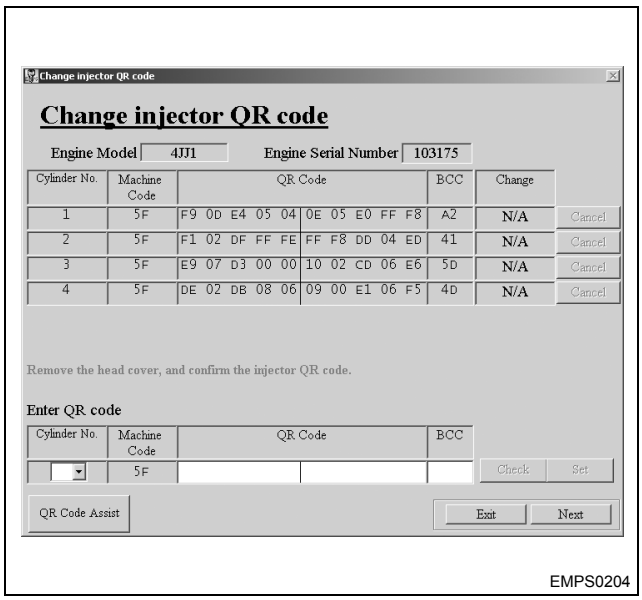
EMPS0174

4.2 QR Code Download

You can set QR cord using CAN mode or KW2000 mode.
Click [Diagnosis (DTC, Actuator, QR)] on the “Process Menu” screen. Confirm connections, log in and operate the switch by following the screen, then “Diagnosis Select” screen will be displayed.



Select a communication method with the selector from [CAN MODE] or [KW2000 MODE] and click [QR code download] button to advance to “Change injector QR code” screen.



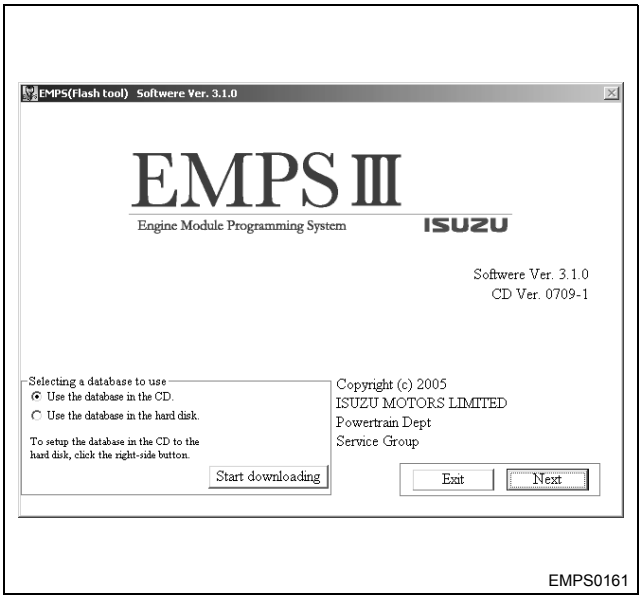
Refer to “3.5.2 Change Injector QR Code Screen” in “Reflash Mode Operation Procedure” for detail of the procedures.

5. HTML Manual Display

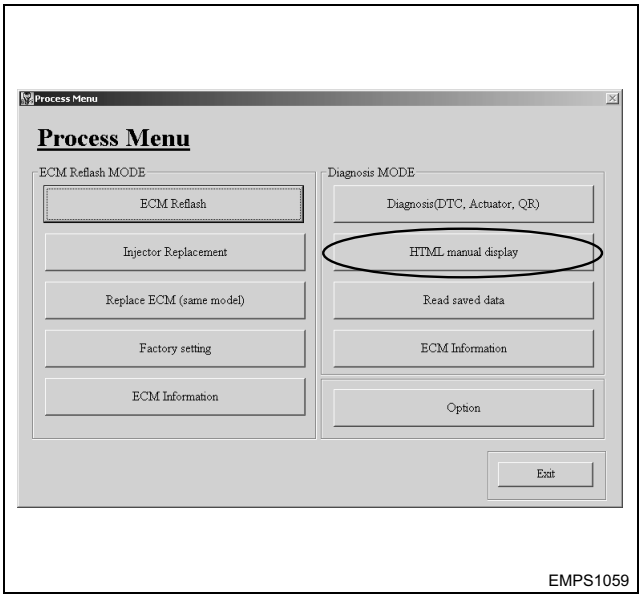
You can browse the troubleshooting manuals and the EMPS manuals with HTML format without connecting the DLC (Data Link Connector) using this function.

5.1 Startup

Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



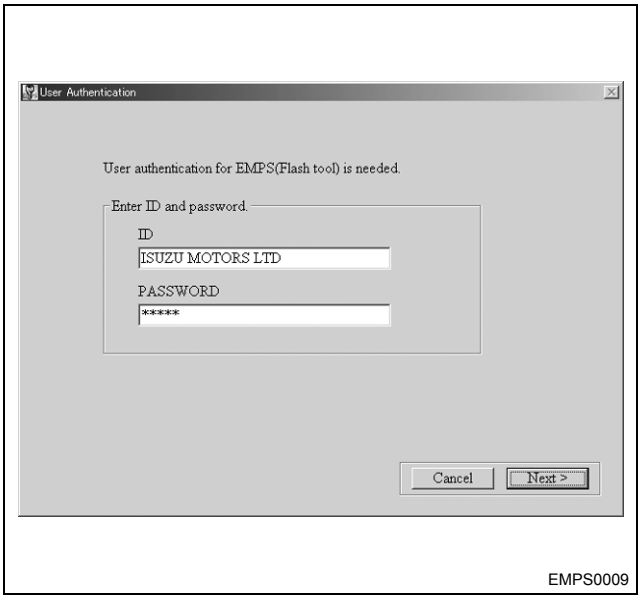
Clicking the [Next] button displays the “Process Menu” screen shown below.



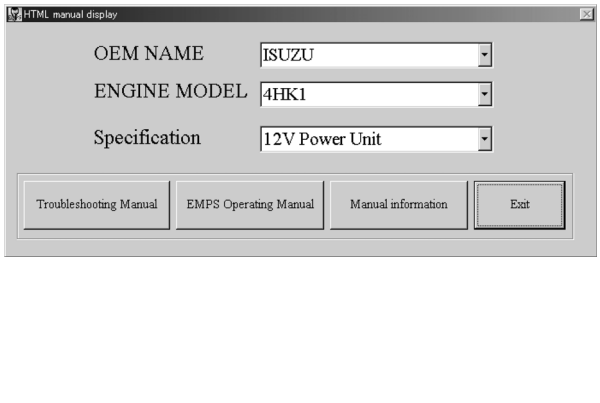
Click the [HTML manual display] button to advance to “User Authentication” screen.

5.2 User Authentication Screen

After entering information in the [ID] and [PASSWORD] fields, click the [Next] button to advance to “HTML manual display” screen.



5.3. HTML Manual Display Screen



EMPS1058

5.3.1 Troubleshooting Manual Display

Select “OEM NAME”, “ENGINE MODEL” and “Specification”, and click the “Troubleshooting Manual” button.

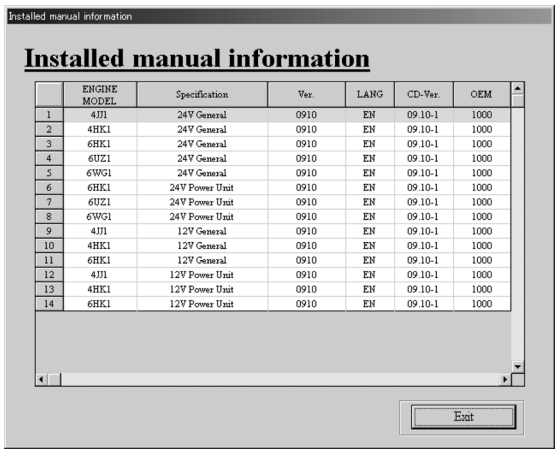
Note:
When you want to browse the manual that is not installed in the setup procedure, insert the CD and follow the troubleshooting manual display procedure. Doing so installs the manual.

5.3.2 EMPS Manual Display

Click the [EMPS Operating Manual] button.

5.3.3 Manual Information Display

When you browse the installed troubleshooting manual information, click the “Manual information” button.



	ENGINE MODEL	Specification	Ver.	LANG	CD-Ver.	OEM
1	4JJ1	24V General	0910	EN	09.10-1	1000
2	4HK1	24V General	0910	EN	09.10-1	1000
3	6HK1	24V General	0910	EN	09.10-1	1000
4	6UZ1	24V General	0910	EN	09.10-1	1000
5	6WG1	24V General	0910	EN	09.10-1	1000
6	6HK1	24V Power Unit	0910	EN	09.10-1	1000
7	6UZ1	24V Power Unit	0910	EN	09.10-1	1000
8	6WG1	24V Power Unit	0910	EN	09.10-1	1000
9	4JJ1	12V General	0910	EN	09.10-1	1000
10	4HK1	12V General	0910	EN	09.10-1	1000
11	6HK1	12V General	0910	EN	09.10-1	1000
12	4JJ1	12V Power Unit	0910	EN	09.10-1	1000
13	4HK1	12V Power Unit	0910	EN	09.10-1	1000
14	6HK1	12V Power Unit	0910	EN	09.10-1	1000

EMPS1054

Reflash Mode Operation Procedure

1. Preparation

This section describes preparation for starting the EMPSIII program.

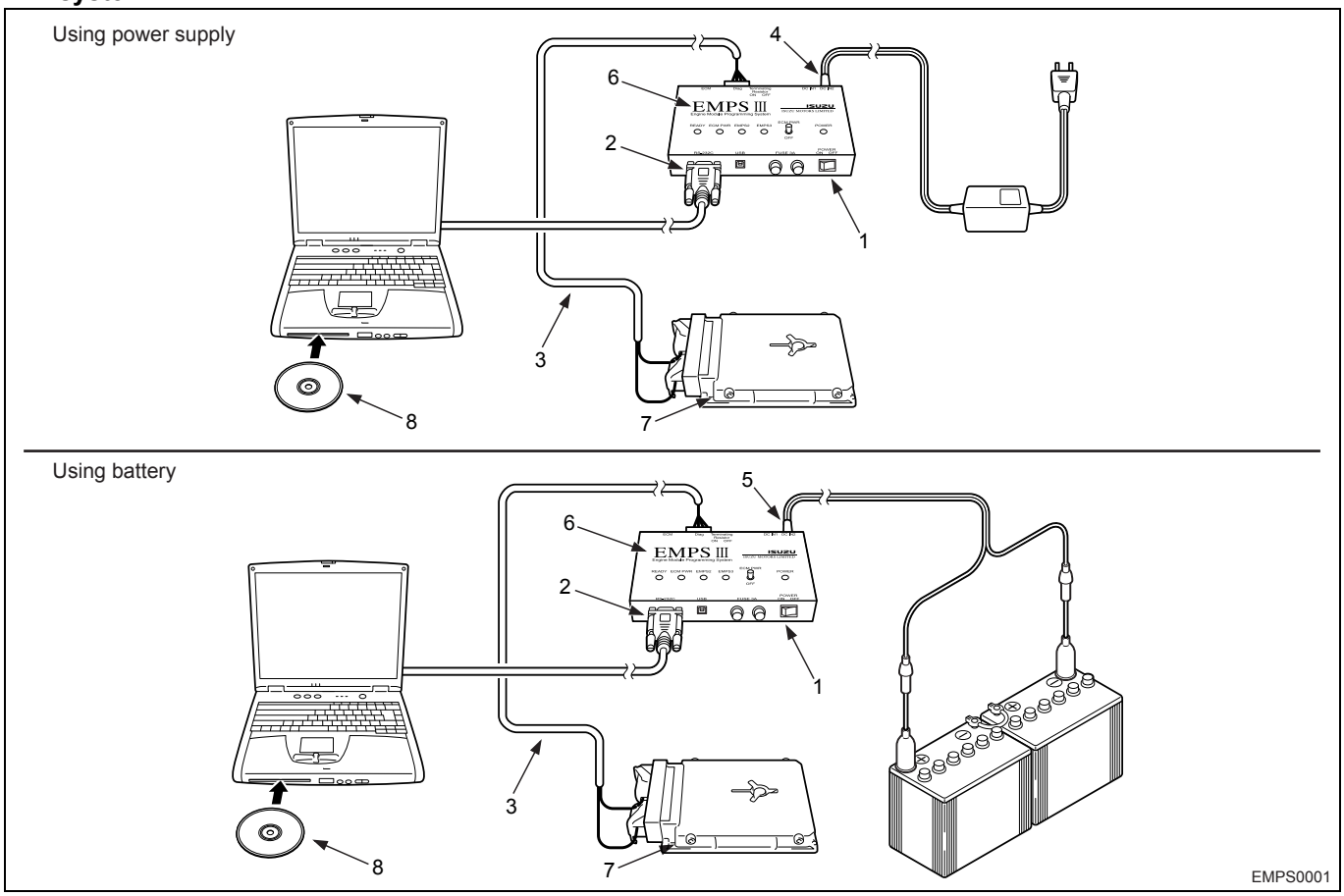
1.1 Preparation

1. Printed label with update parts number is necessary to proceed reflashing in all countries except the US. Proceed next steps to get updated parts number. Contact pt_service@notes.isuzu.co.jp in order to obtain the updated parts number label. If engine is certified in the US, it is not necessary to replace the label. Proceed all steps.
2. After reflashing, you need to attach the new Parts Number label on the ECM.
3. Check the serial number of the selector, and have your user ID and password ready.
4. Check the engine serial number.
5. To perform compulsory reflash, obtain the specific password from the machine manufacturer or the engine manufacturer.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

1.2 EMPSIII Selector Connection

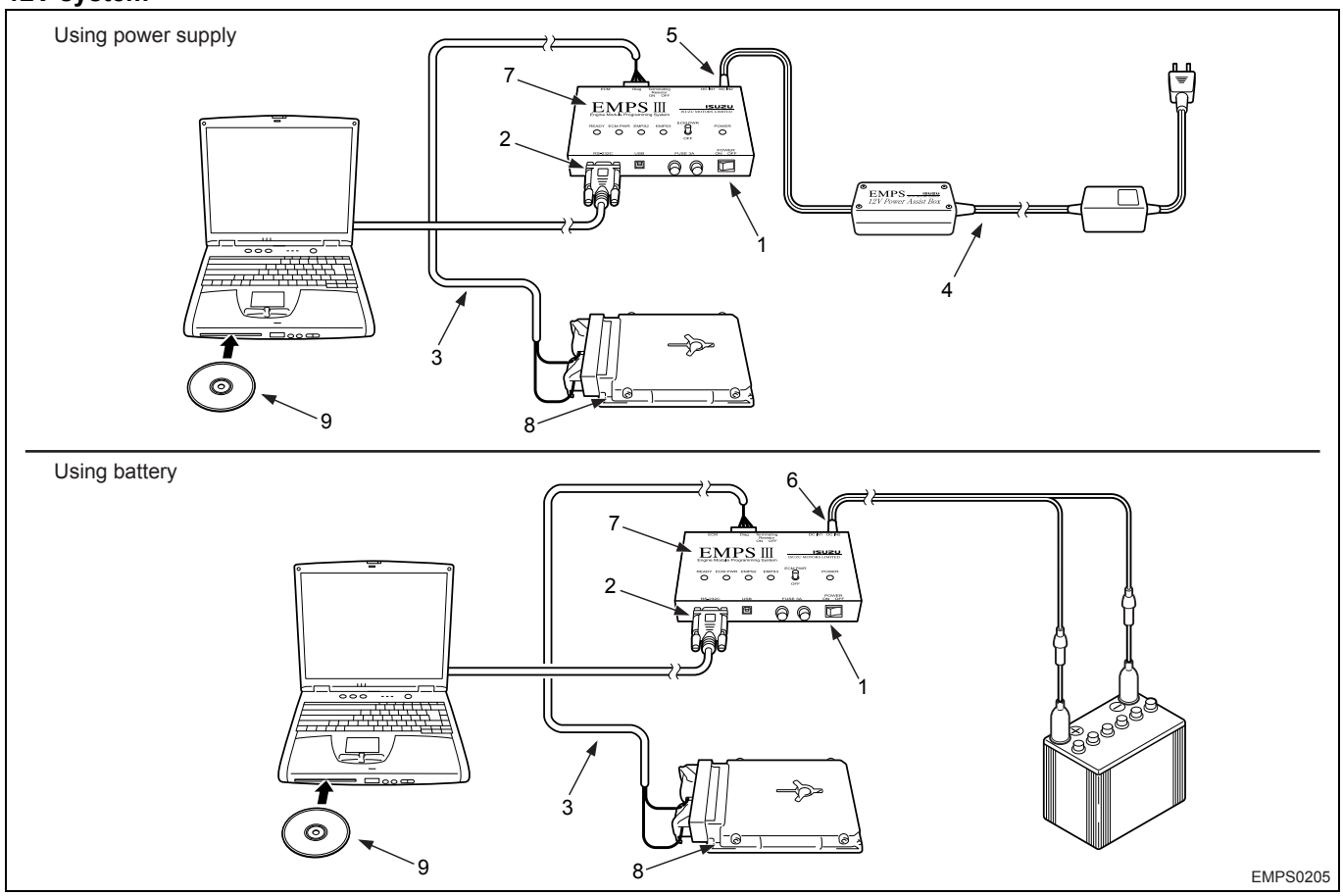
24V system



Name

1. POWER SW
2. RS-232C cable
3. ECM cable
4. 24V AC adapter cable
5. Battery cable
6. Selector
7. ECM
8. Data CD

12V system



Name

1. POWER SW
2. RS-232C cable
3. ECM cable
4. 12V AC adapter cable
5. 12V Power Assist Box cable
6. Battery cable
7. Selector
8. ECM
9. Data CD

Connection Procedure

1. Turn the POWER SW to OFF.
2. Connect the RS-232C cable.
3. Connect the ECM cable.

Note:
Do not roll up the cable cord.

4. Connect the AC adapter or battery cable. Connect the 12V Power Assist Box when using the power supply for 12V system.
5. Insert the Data CD into the PC.

Removal Procedure

1. Turn the POWER SW to OFF.
2. Remove the AC adapter or battery cable. Remove the 12V Power Assist Box when using the power supply for 12V system.
3. Remove the ECM cable.
4. Remove the RS-232C cable.
5. Eject the Data CD from the PC.

Caution:

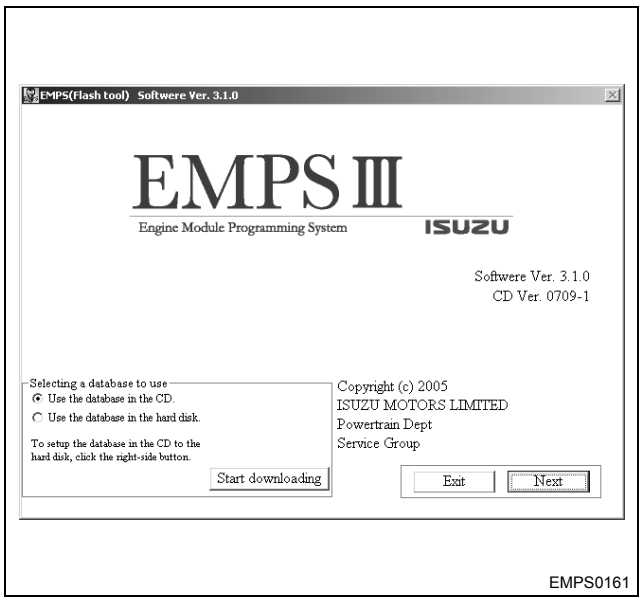
- **Do not use an AC adapter at the same time when drawing power from a battery.**
- **Prepare the AC adapter that matches the rating (12V/24V) of the ECM when drawing power with an AC adapter.**
- **Do not use a battery at the same time when drawing power from an AC adapter.**
- **Do not roll up the ECM cable. Data communication error will result.**
- **Make sure that the POWER switch of EMPS selector is turned to OFF before connecting/ disconnecting the ECM cable. Damage to EMPS or ECM selector will result.**
- **Before starting operation, make sure that the ECM PWR lamp is turned off.**
  If the lamp stays on, reconnect each cable and restart the personal computer, then operate EMPS again. If the error occurs again, EMPS might be faulty. Contact the administrator.

2. ECM Reflash

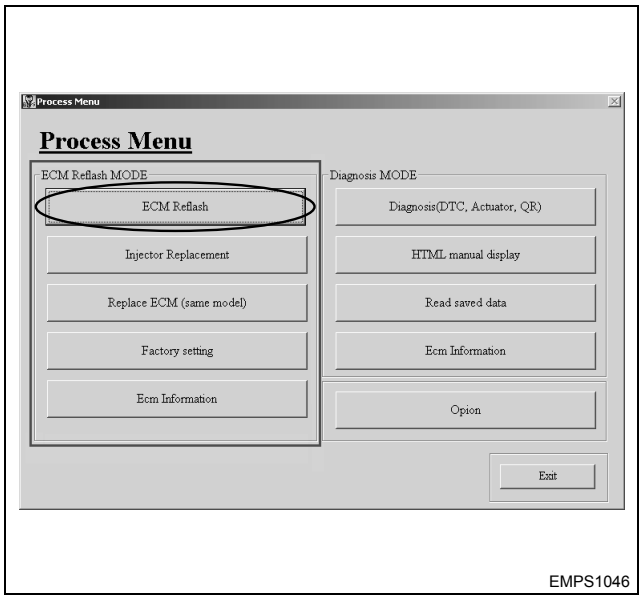
This section describes the process procedure for normal reflash.

2.1 Startup

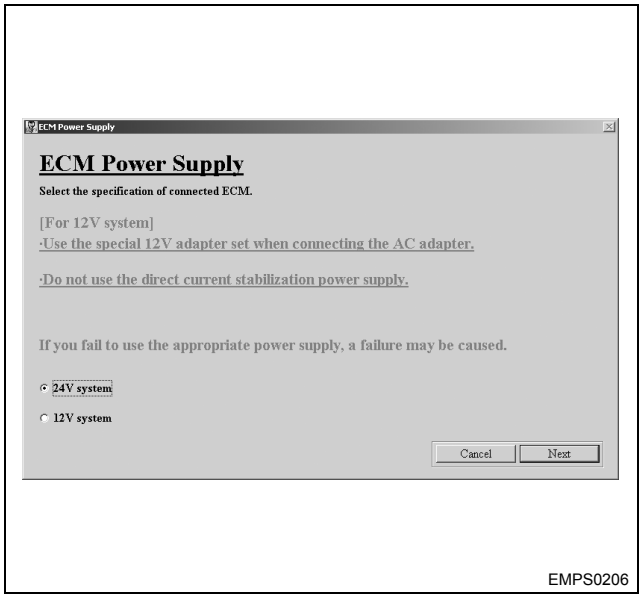
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



Clicking the [Next] button displays the “Process Menu” screen shown below.



Click the [ECM Reflash] button to advance to “ECM Power Supply” screen.



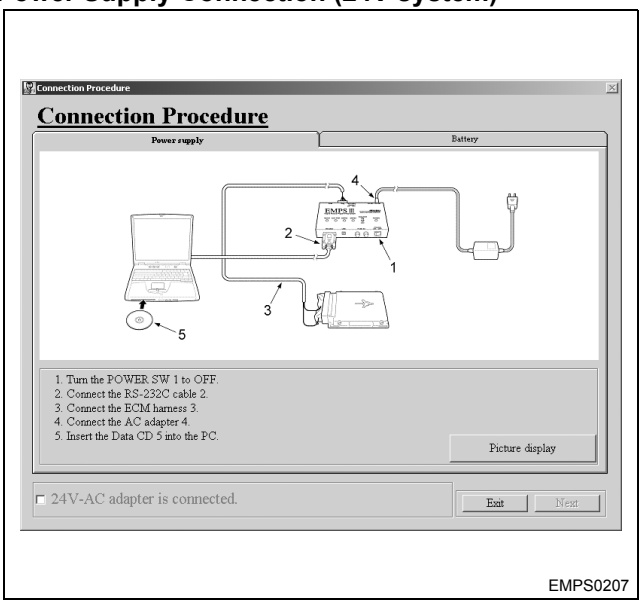
Select “24V system” or “12V system” according to the voltage specification of ECM.

Caution:
Do not use the direct current stabilization power supply in case of 12V system. Doing so may cause failure.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

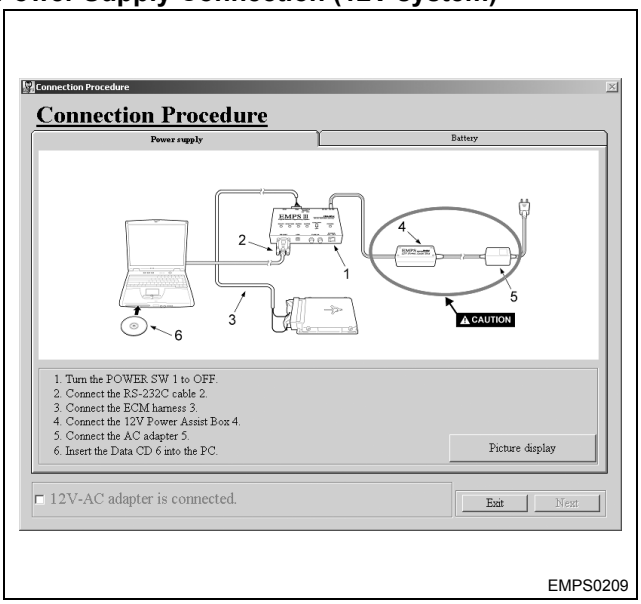
Click the [Next] button to advance to “Connection Procedure” screen.

Power Supply Connection (24V system)



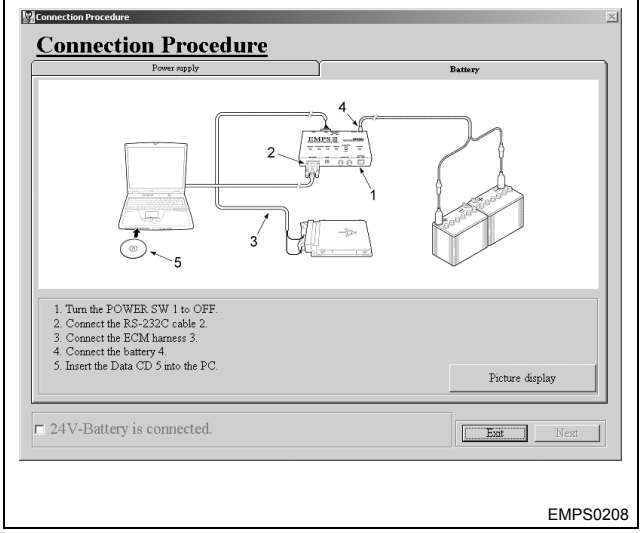
EMPS0207

Power Supply Connection (12V system)



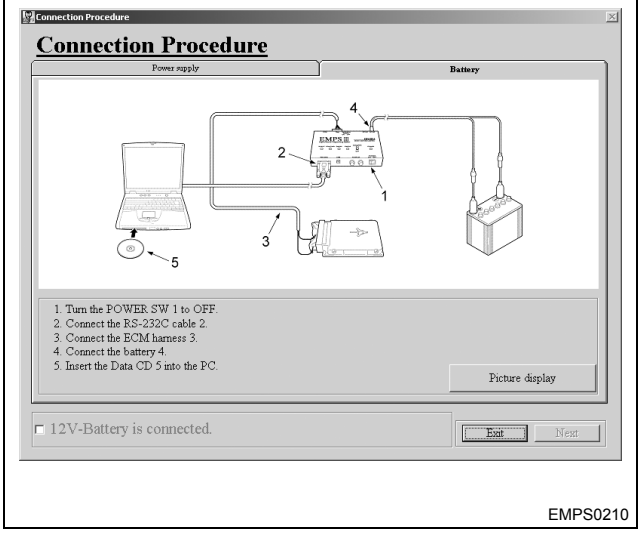
EMPS0209

Battery Connection (24V system)



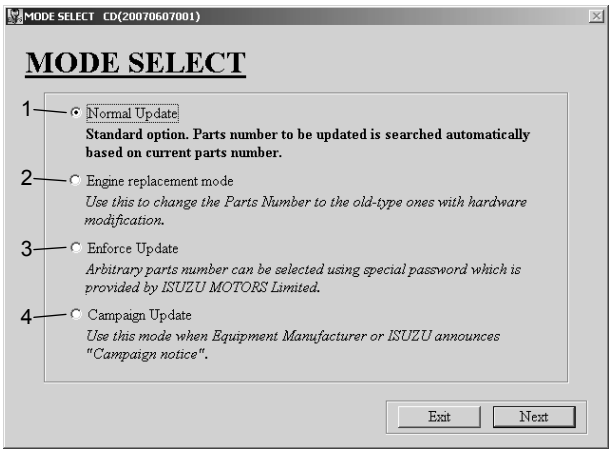
EMPS0208

Battery Connection (12V system)



EMPS0210

Connect the PC, selector, and ECM according to the procedure.
After connection, click the [Next] button to proceed to the “MODE SELECT” screen.



EMPS1027

Name

1. Normal Update
2. Engine replacement mode
3. Enforce Update
4. Campaign Update

Normal Update
Compatible parts number with reflashed parts number is searched automatically and updated.

Engine replacement mode
Use this to return to the old ECM part number with hardware modification such as addition of machine wiring due to change of on-board engine.

Enforce Update
An arbitrary parts number is designated and updated.
Select this when reflashing was failed, or when reflashing the parts number with no compatibility.
Specific password is necessary.

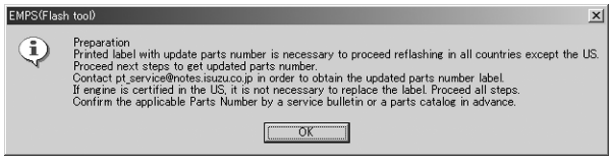
Campaign Update
This is performed at the campaign designated by manufacturer. After reflashing, send the campaign log file created to the administrator.

Select [Normal Update], [Engine replacement mode], [Enforce Update] or [Campaign Update], and then click the [Next] button.

One of the following operations is performed when the [Next] button is clicked.

Selected Option	Settings/Operation Performed
Normal Update	Advances to “2.2.1 User Authentication Screen” – “For [Normal Update], [Engine replacement mode] or [Campaign Update].”
Engine replacement mode	Advances to “2.2.1 User Authentication Screen” – “For [Normal Update], [Engine replacement mode] or [Campaign Update].”
Enforce Update	Advances to “2.2.1 User Authentication Screen” – “For [Enforce Update].”
Campaign Update	Advances to “2.2.1 User Authentication Screen” – “For [Normal Update], [Engine replacement mode] or [Campaign Update].”

Clicking the [Next] button displays the message shown below.



EMPS0008

Check the content, and click the [OK] button to advance to next.

2.2 User Authentication Screen

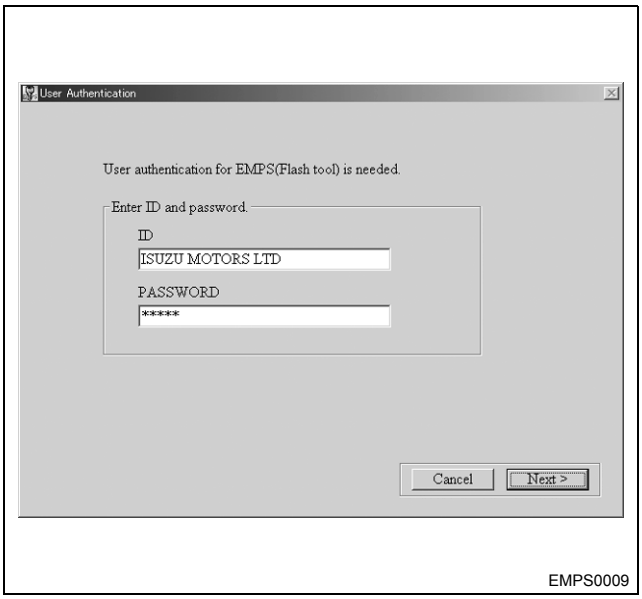
This screen is used for EMPS user authentication.

2.2.1 User Authentication Screen

For [Normal Update], [Engine replacement mode] or [Campaign Update]

After entering information in the [ID] and [PASSWORD] fields, click the [Next] button to advance to "2.2.2 OEM Manufacturer Selection Screen."

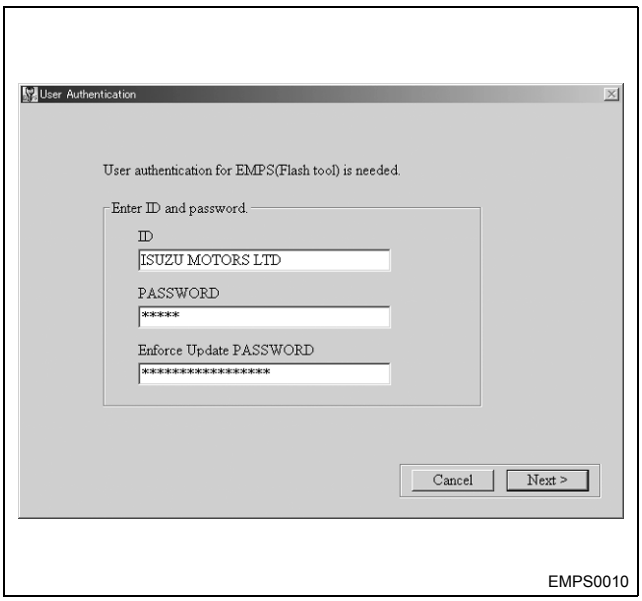
To cancel user authentication at any point, click the [Cancel] button.



For [Enforce Update]

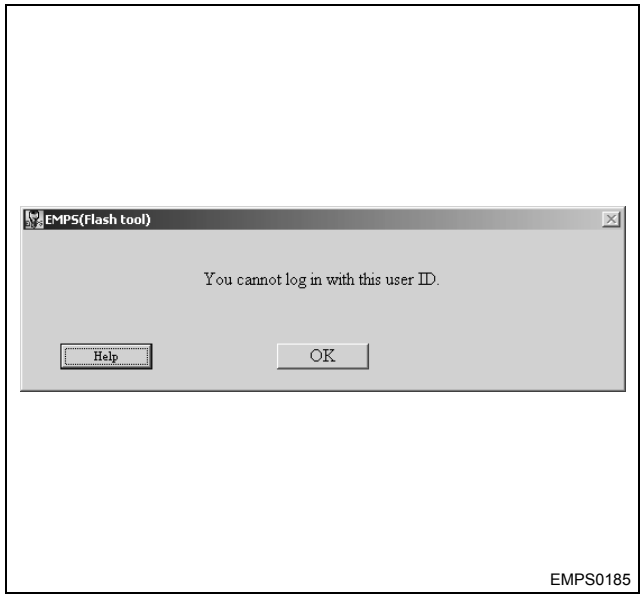
After entering information in the ID, PASSWORD, and Enforce Update PASSWORD (Password for compulsory reflash) boxes, click [Next] to advanced to "2.2.2 OEM Manufacturer Selection Screen."

To cancel user authentication at any point, click the [Cancel] button.



Note:

The following message will appear if the contract of the entered user ID has expired.



Click the [OK] button to return to "MODE SELECT" screen.

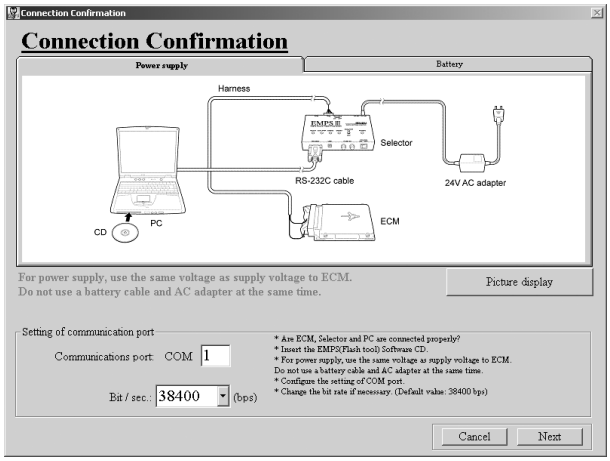
2.2.2 OEM Manufacturer Selection Screen

After selecting the OEM manufacturer, click the [OK] button to advance to "2.3 Connection Confirmation Screen."

2.3 Connection Confirmation Screen

This screen shows the connection status of the computer, selector, ECM, and power supply/battery.

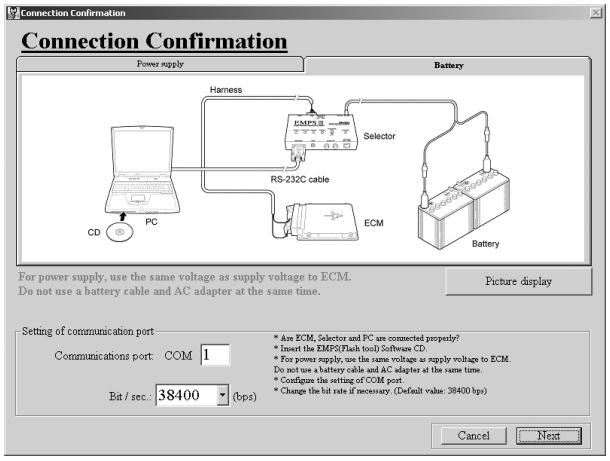
Power Supply Connection



*This screen is for 24V system.

EMPS0211

Battery Connection



*This screen is for 24V system.

EMPS0212

After selecting the COM port (Communication port) and transmission bit rate (Bit/sec), click [Next] to advance to "2.4 Switch Confirmation Screen."

Selection Item Descriptions

Item	Description
COM port	Select the RS-232C port to which the selector is connected.
Transmission bit rate	Select the data transmission bit rate.
Cancel button	Displays a confirmation message for exiting the tool.
Next button	Performs a check and then displays "2.4 Switch Confirmation Screen."

One of the error messages will appear if an error is discovered by the check that is performed when the [Next] button is clicked. Refer to "8. Error Code List."

2.3.1 PC Setting

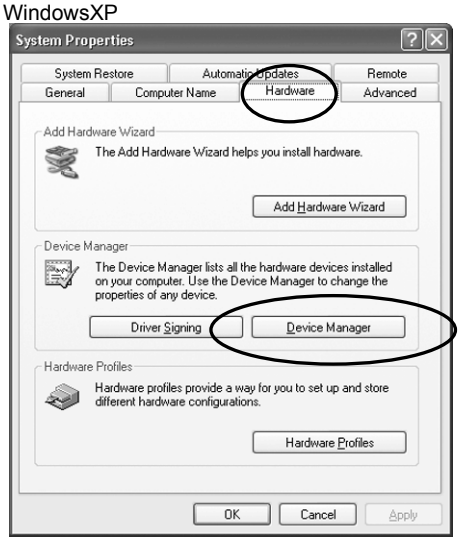
Normally select COM1 if RS-232C is used for connection.

In the case of a PC that is not equipped with an RS-232C port, connect using a commercially available USB conversion cable. For details about port settings, refer to the user documentation that comes with the USB conversion cable.

To check standard COM port settings

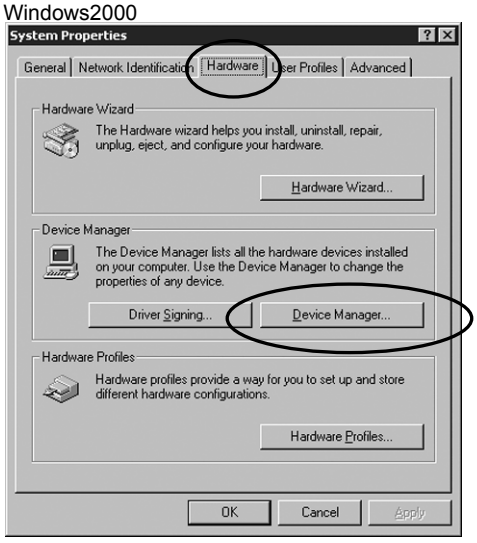
1. On the Windows [Start] menu, select [Control Panel].
2. On [Control Panel], open [System].
3. When system properties appear, select [Hardware].

WindowsXP



EMPS0014

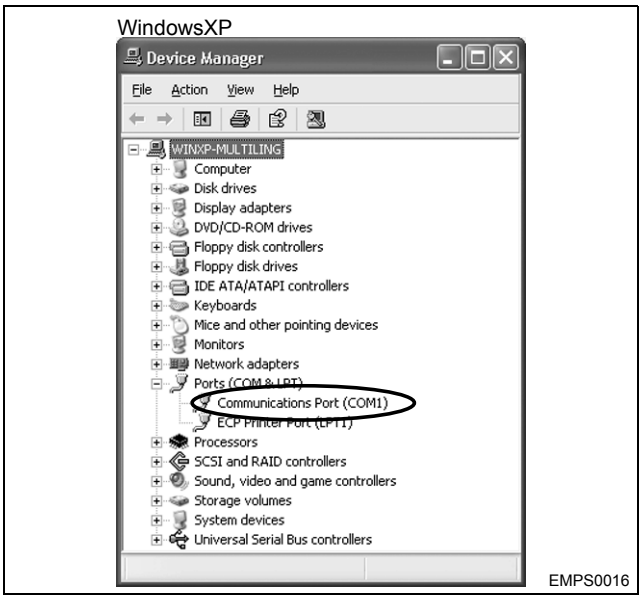
Windows2000

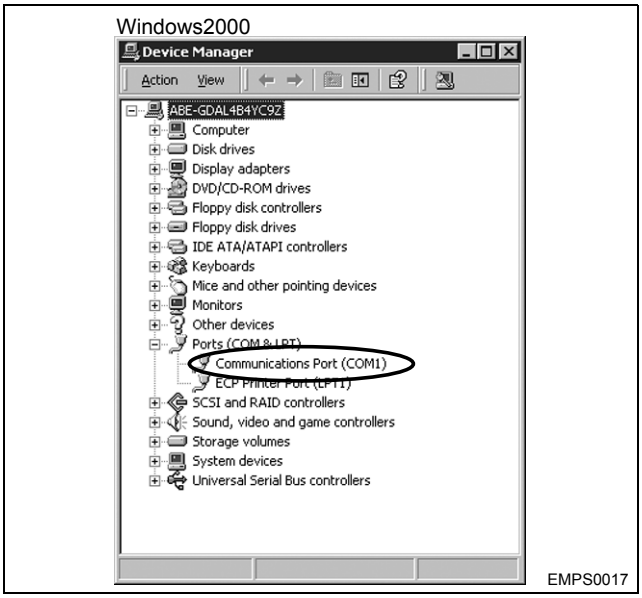


EMPS0015

4. Select [Device Manager] to open it.

5. On [Device Manager], select [Ports (COM & LPT)].

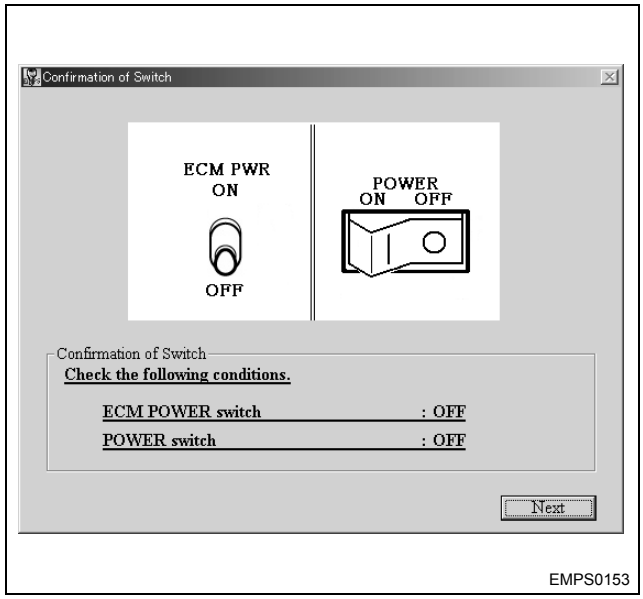




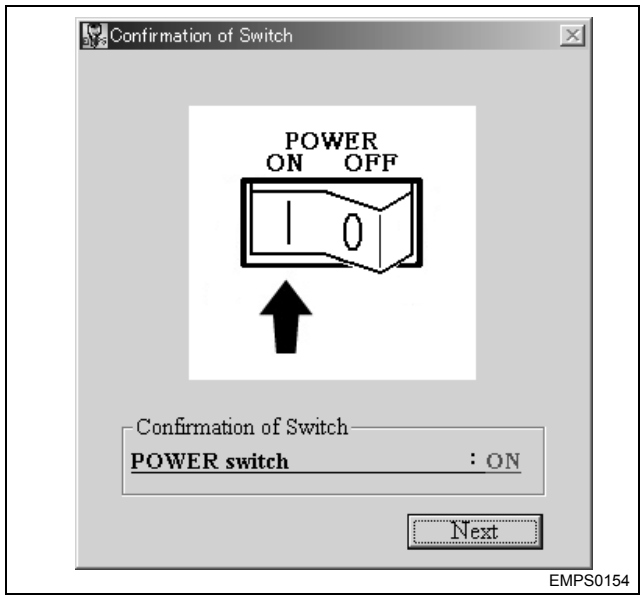
6. In the displayed items for communication ports, confirm the COM port to which the EMPS is connected.

2.4 Switch Confirmation Screen

After checking to make sure that the initial settings of the switches are as shown on the screen, click the [Next] button.



Turn on the power switch, and then click the [Next] button.

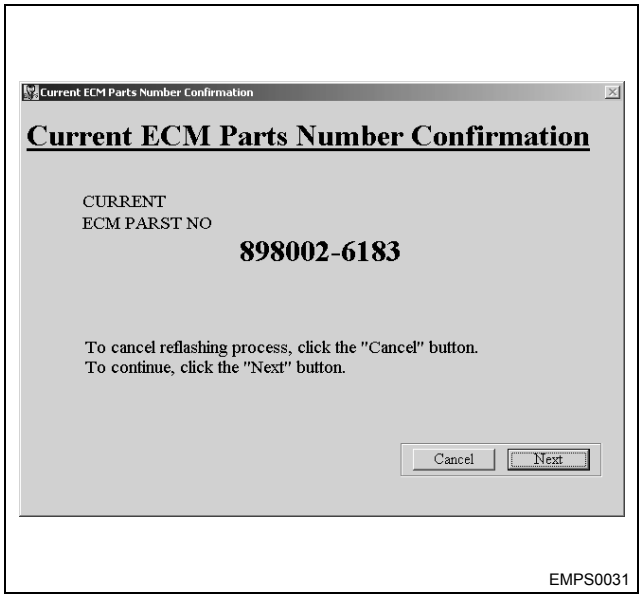


This starts selector confirmation.
Advance to “2.5 Current ECM Parts Number Confirmation Screen” in accordance with displayed instructions.

Note:
For [Engine replacement mode]
→ This advances to “2.19 Engine Replacement (Downward Compatible).”
For [Enforce Update]
→ This advances to “2.20 Compulsory Reflash.”

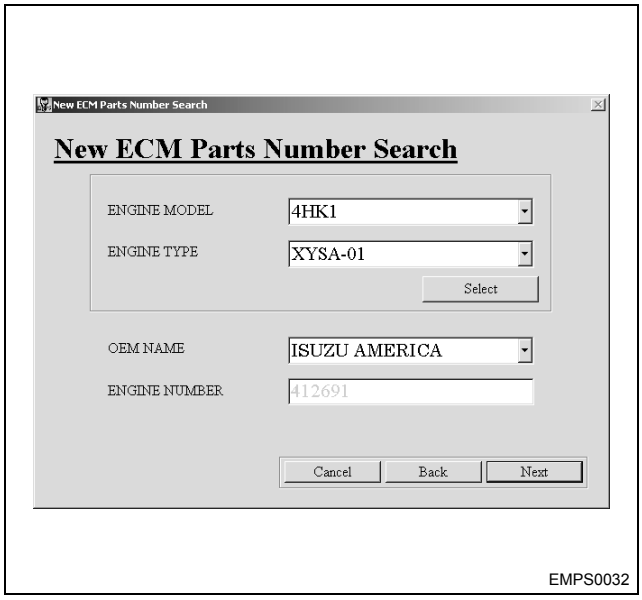
2.5 Current ECM Parts Number Confirmation Screen

This screen displays the current ECM parts number.
Clicking the [Next] button advances to “2.6 New ECM Parts Number Search Screen.”
To cancel former ECM parts number confirmation, click the [Cancel] button.



2.6 New ECM Parts Number Search Screen

This screen is used to select the search conditions for Parts Number.
Choose the option from [ENGINE MODEL] and [ENGINE TYPE], and then click the [Select] button.
Next, choose option from the [OEM NAME], and click the [Next] button.
To return to “2.5 Current ECM Parts Number Confirmation Screen,” click the [Back] button.



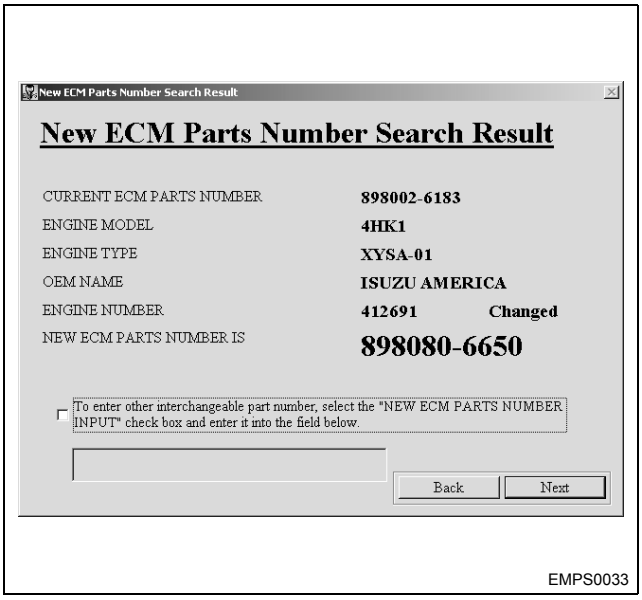
Selection Item Descriptions

Item	Settings/Operation Performed
ENGINE MODEL	Select the engine model that corresponds to the current ECM parts number.
ENGINE TYPE	Select the engine type that corresponds to the current ECM parts number.
Select button	Extracts the applicable OEM names for the applicable ENGINE MODEL and ENGINE TYPE, and provides them for selection in the [OEM NAME] box.
OEM NAME	Select the [OEM NAME] from among those that correspond to the selected ENGINE MODEL and ENGINE TYPE.
ENGINE NUMBER	Engine Serial Number uploaded at startup is displayed. You cannot enter in this field except the process that includes Engine S/N change.
Back button	Returns to “2.5 Current ECM Parts Number Confirmation Screen.”
Next button	Performs a check and then advances to “2.7 New ECM Parts Number Search Result Confirmation Screen.”

A message will appear if an error is discovered by the check that is performed when the [Next] button is clicked.

2.7 New ECM Parts Number Search Result Confirmation Screen

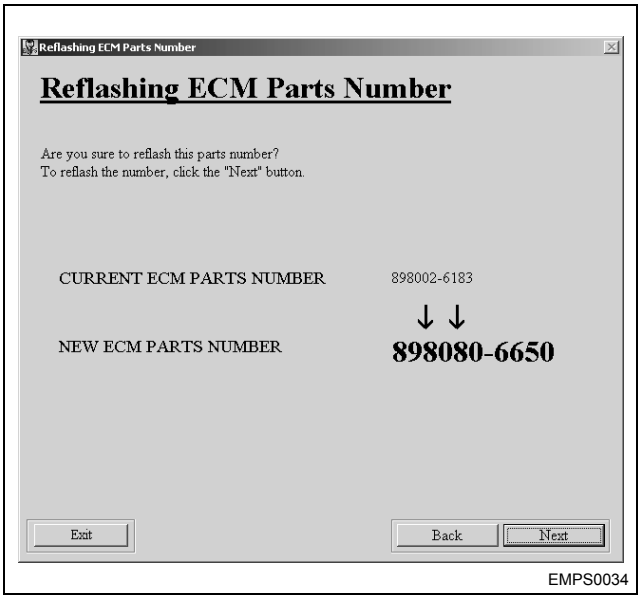
This screen displays the search results.
After checking the contents, click the [Next] button to advance to “2.8 Reflashing ECM Parts Number Confirmation Screen.”
If the search results do not show the parts number you want, select the NEW ECM PARTS NUMBER INPUT check box, and then input the correct parts number. (Be sure you input a compatible parts number.)
To return to “2.6 New ECM Parts Number Search Screen,” click the [Back] button.



Note:
In case of reflash with hardware modification to upward compatible, it advances to “2.18 Reflash with Hardware Modification.”

2.8 Reflashing ECM Parts Number Confirmation Screen

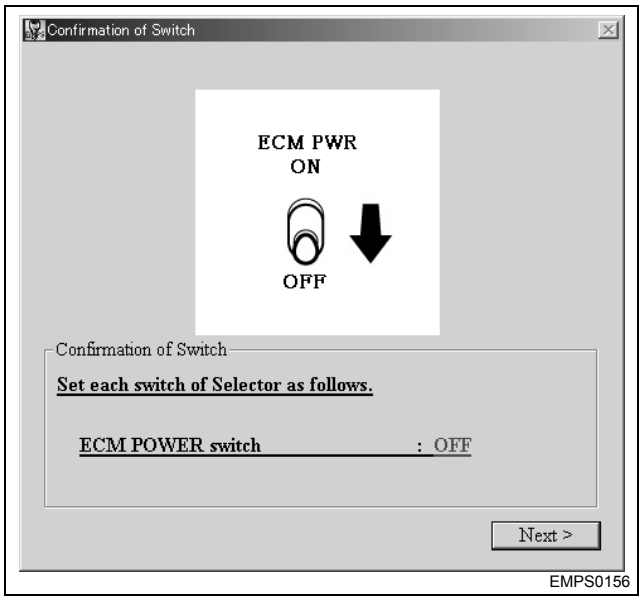
This screen displays the reflashing ECM parts number.
After checking the contents, click the [Next] button to perform a CD check and advance to “2.9 Switch Confirmation Screen.”
To return to “2.6 New ECM Parts Number Search Screen,” click the [Back] button.



The message will appear during the CD check if a CD is not inserted or if the version does not match.
Click the [OK] button to exit the program.

2.9 Switch Confirmation Screen

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

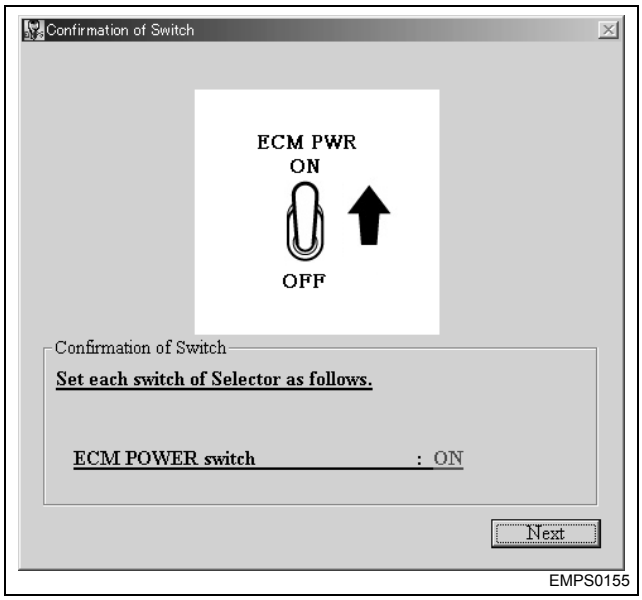
After configuring the switch settings, click the [Next] button.
This will advance to “2.10 READY LED Confirmation Screen.”

2.10 READY LED Confirmation Screen

The selector LED confirmation screen is shown below.
After confirming that the LED is lit, click the [Yes] button to advance to “2.11 Switch Confirmation Screen.”
If confirmation is not possible, click the [No] button to return to “2.8 Reflashing ECM Parts Number Confirmation Screen.”

2.11 Switch Confirmation Screen

The switch confirmation screen is shown below.



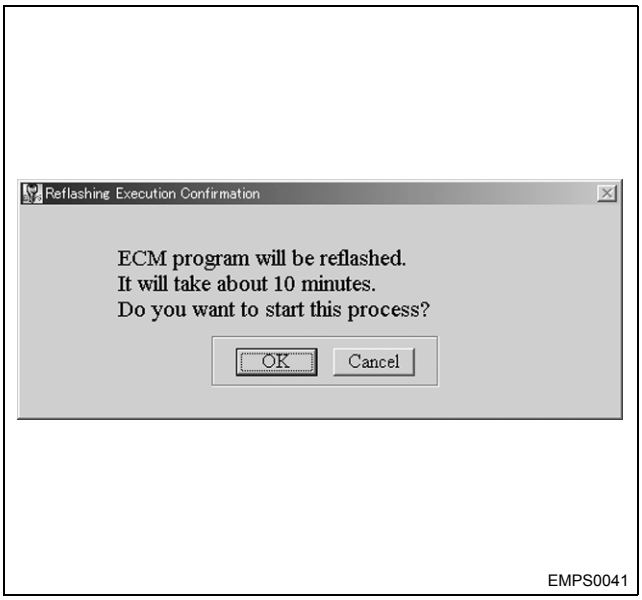
Configure the switch settings as shown below.

ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This will advance to “2.12 Reflashing Execution Confirmation Screen.”

2.12 Reflashing Execution Confirmation Screen

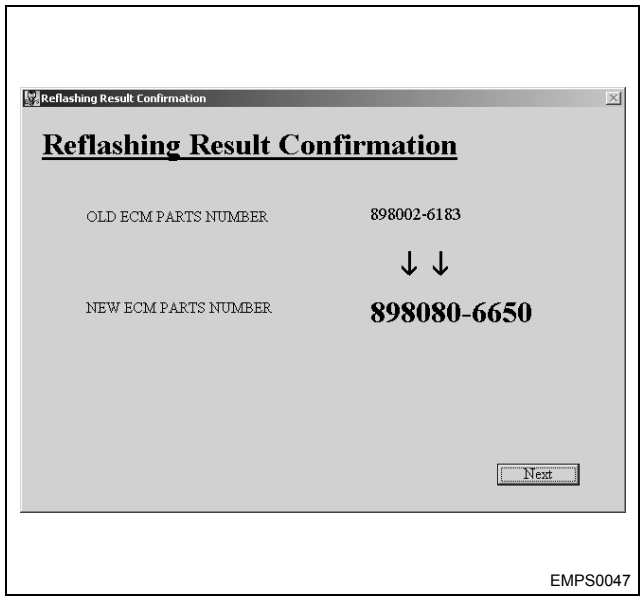
This screen displays a confirmation message for reflashing.
Click the [OK] button to start reflashing. After reflashing is complete, it advances to “2.13 Reflashing Result Confirmation Screen.”
If you need to make changes, click the [Cancel] button to return to “2.5 Current ECM Parts Number Confirmation Screen.”



Note:
One of the messages will appear if an error occurs during reflashing.
(Refer to “8. Error Code List.”)
Click the [Yes] button to return to “2.12 Reflashing Execution Confirmation Screen.”

2.13 Reflashing Result Confirmation Screen

This screen displays the parts number reflash result.



Clicking the [Next] button displays the message.
Check the content and click the [OK] button. This will advance to “2.14 Final Result Confirmation Screen” screen.

Note:
This will advance to “2.20.9 Engine Serial Number Confirmation (when Engine S/N is entered)” screen if Engine Number is not set or depending on the ECM condition after reflashing.

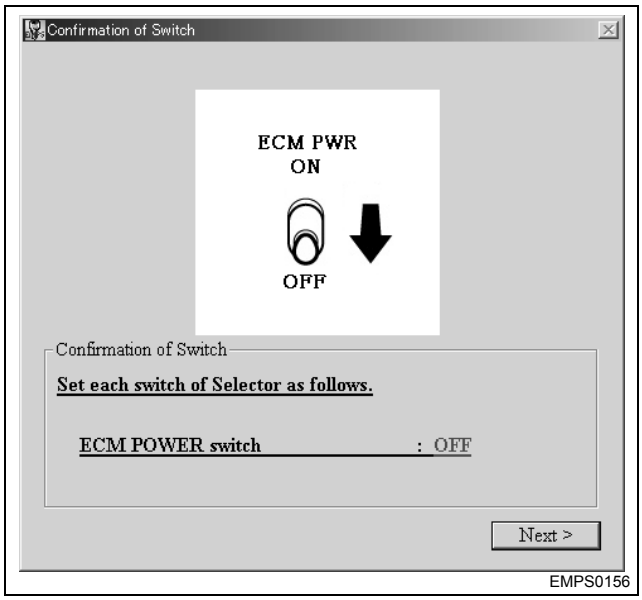
2.14 Final Result Confirmation Screen

This screen displays the result of reflashing.

Clicking the [OK] button advances to “2.15 Switch Confirmation Screen.”

2.15 Switch Confirmation Screen

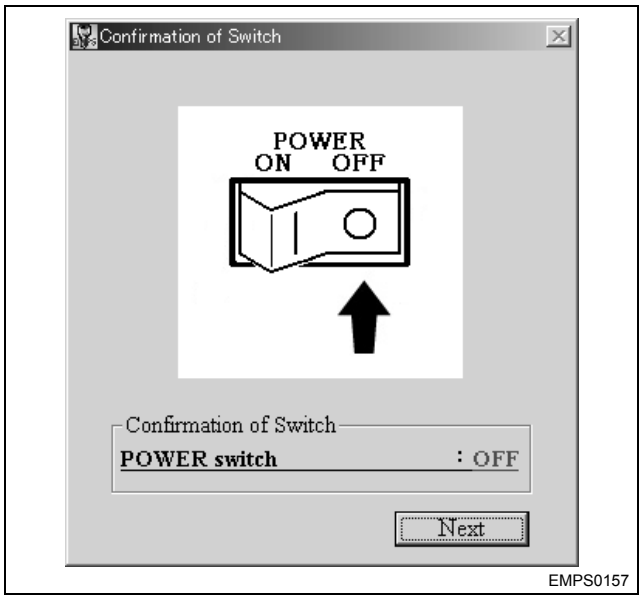
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation, display the message.



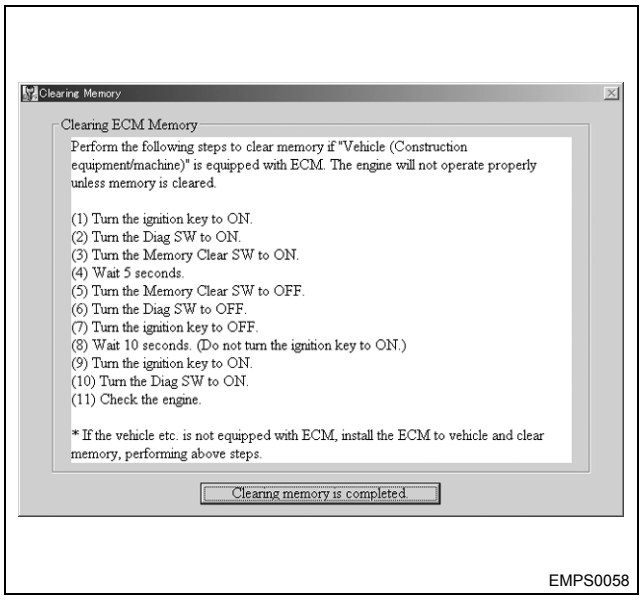
After configuring the power switch setting, click the [Next] button to advance to “2.16 Cable Removal Procedure Screen.”

2.16 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This will advance to “2.17 Memory Clear.”

2.17 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



After memory clear is complete, click the [Clearing memory is completed.] button to return to “Process Menu” screen.

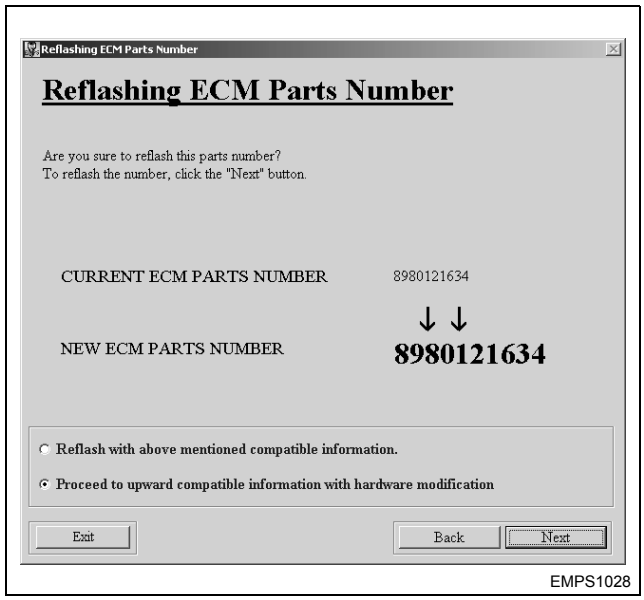
2.18 Reflash with Hardware Modification

2.18.1 MODE SELECT Screen

Select [Normal Update] in the “MODE SELECT” screen of “2.1 Startup.”
Perform the procedures to step 2.7, then proceed to “2.18.2 Reflashing ECM Parts Number Confirmation Screen.”

2.18.2 Reflashing ECM Parts Number Confirmation Screen

Select [Proceed to upward compatible information with hardware modification] to proceed to “2.18.3 Upward Compatible Information with Hardware Modification Screen.”



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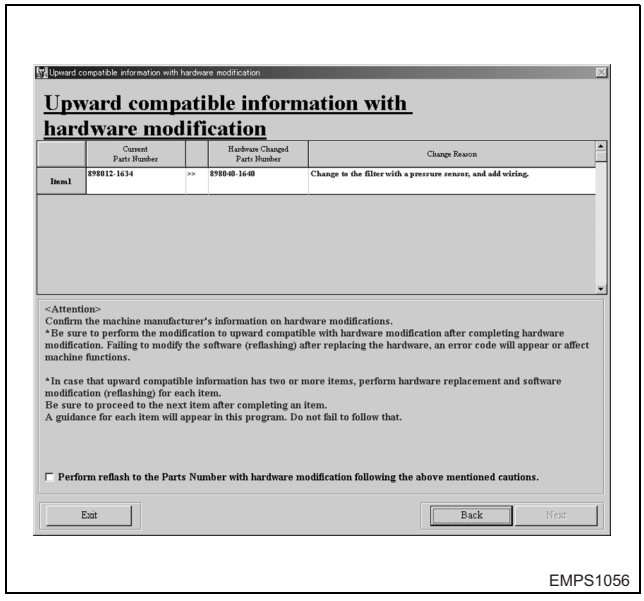
2.18.3 Upward Compatible Information with Hardware Modification Screen

Confirm the upward compatible information with hardware modification, make sure to perform hardware modification before performing reflashing.



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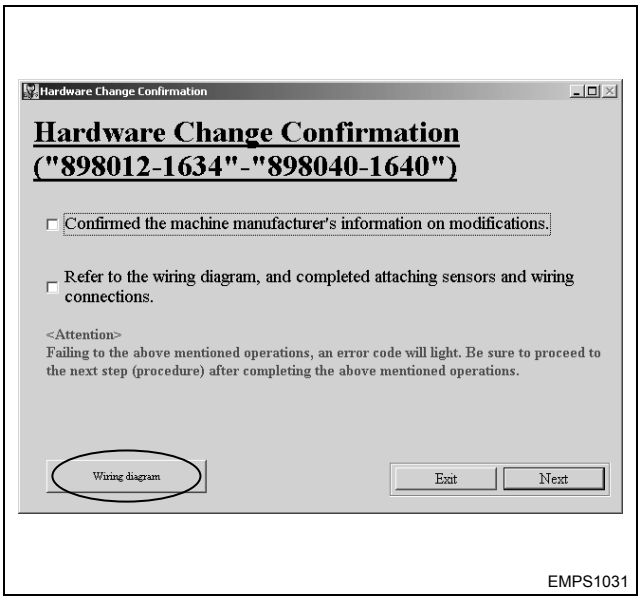
Check [Perform reflash to the Parts Number with hardware modification following the above mentioned cautions.], and then click the [Next] button to advance to “2.18.4 Hardware Change Confirmation Screen.”

2.18.4 Hardware Change Confirmation Screen

Confirm the information on modifications and wiring diagram released from the machine manufacturer, then complete the connection before proceeding to reflash.



EMPS1031

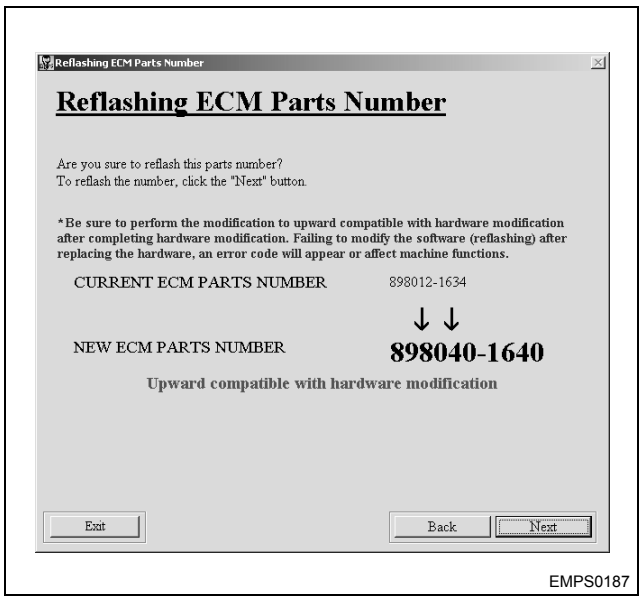
Clicking the [Wiring diagram] displays the screen about hardware change.
Perform confirmation of message content, then click check box to proceed to the next process.

Note:

- Failing to perform hardware modification, an error code will light. Be sure to proceed to the next step after completing hardware modification.
- The caption of the check box or the attention message changes depending on the hardware modification method.
- The [Wiring diagram] button is displayed when any wiring diagrams is to be referred.

2.18.5 Reflashing ECM Parts Number Confirmation Screen

Confirm the Parts Number, and click the [Next] button.



The reflashing starts. After reflashing, perform the procedures from 2.13 to 2.17.

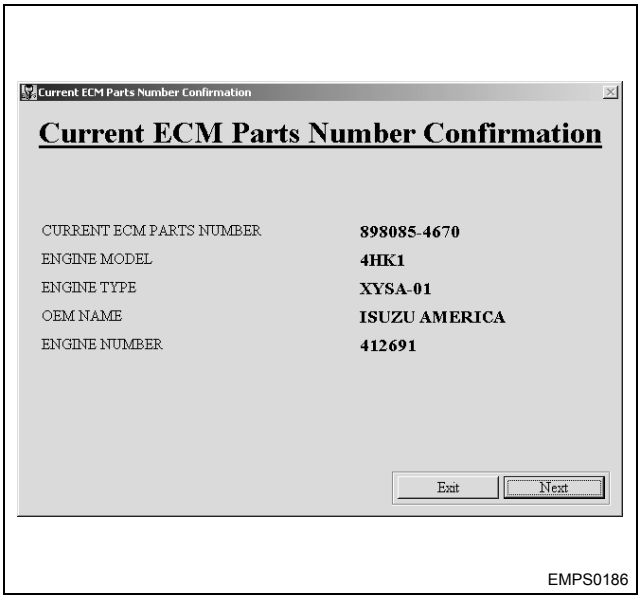
2.19 Engine Replacement (Downward Compatible)

2.19.1 MODE SELECT Screen

Select [Engine replacement mode] in the “MODE SELECT” screen of “2.1 Startup.”
Perform the procedures to step 2.4, then proceed to “2.19.2 Current ECM Parts Number Confirmation Screen.”

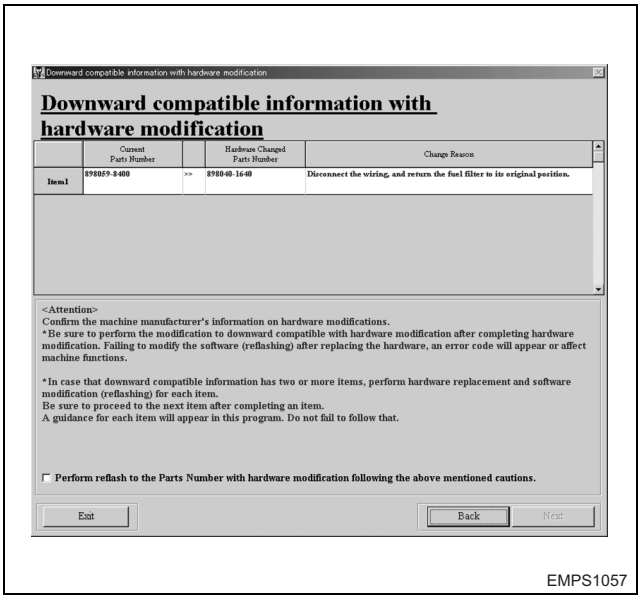
2.19.2 Current ECM Parts Number Confirmation Screen

After confirming the Parts Number, click the [Next] button to advance to “2.19.3 Downward Compatible Information with Hardware Modification Screen.”



2.19.3 Downward Compatible Information with Hardware Modification Screen

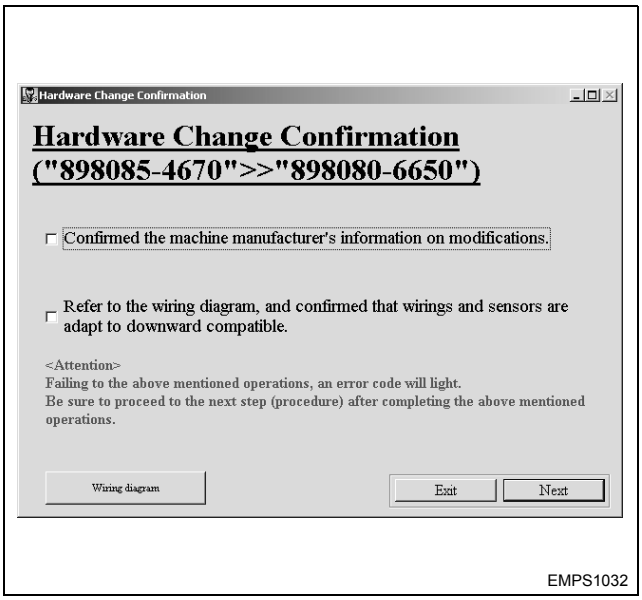
Confirm the upward compatible information with hardware modification, make sure to perform hardware modification before performing reflashing.



Check [Perform reflash to the Parts Number with hardware modification following the above mentioned cautions.], and then click the [Next] button to advance to “2.19.4 Hardware Change Confirmation Screen.”

2.19.4 Hardware Change Confirmation Screen

Confirm the information on modifications and wiring diagram released from the machine manufacturer, then complete the connection before proceeding to reflash.



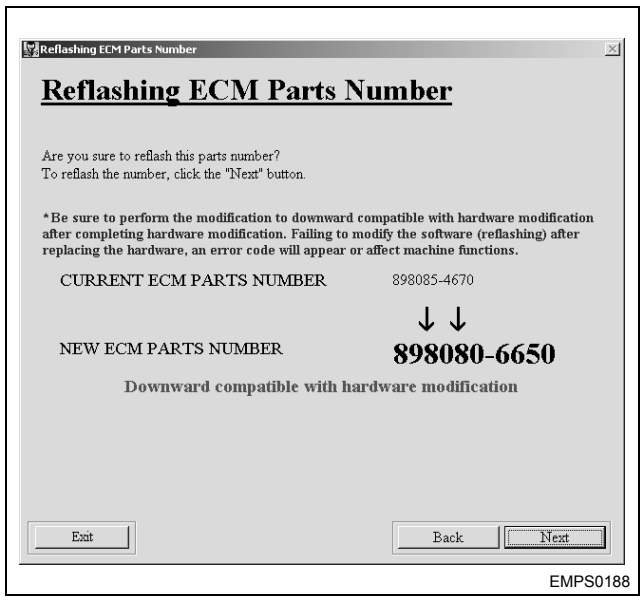
Check the check box, and then click the [Next] button to advance to “2.19.5 Reflashing ECM Parts Number Confirmation Screen.”

Note:

- Failing to perform hardware modification, an error code will light. Be sure to proceed to the next step after completing hardware modification.
- The caption of the check box or the attention message changes depending on the hardware modification method.
- The [Wiring diagram] button is displayed when any wiring diagrams is to be referred.

2.19.5 Reflashing ECM Parts Number Confirmation Screen

Confirm the Parts Number, and click the [Next] button.



The reflashing starts. After reflashing, perform the procedures from 2.13 to 2.17.

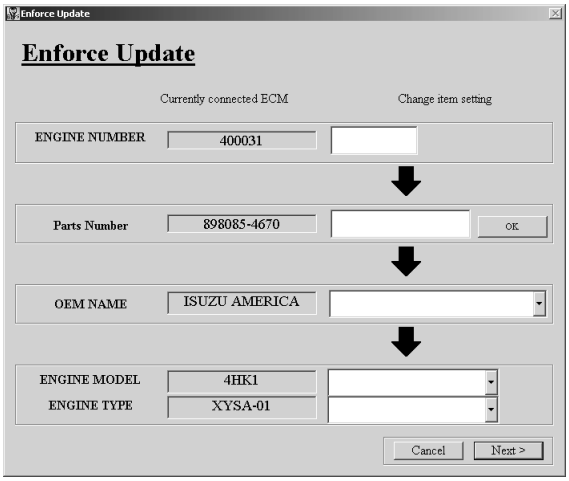
2.20 Compulsory Reflash

2.20.1 MODE SELECT Screen

Select [Enforce Update] in the “MODE SELECT” screen of “2.1 Startup.”
Perform the procedures to step 2.4, then proceed to “2.20.2 Compulsory Reflash Screen.”

2.20.2 Compulsory Reflash Screen

The current ECM information is displayed. Enter the conditions for compulsory reflash referring to the screen.
Enter the [Engine Serial Number] and the [Parts Number], and click the [OK] button.
Next, choose option from the [OEM NAME], and click the [Next] button.
To cancel former ECM parts number confirmation, click the [Cancel] button.



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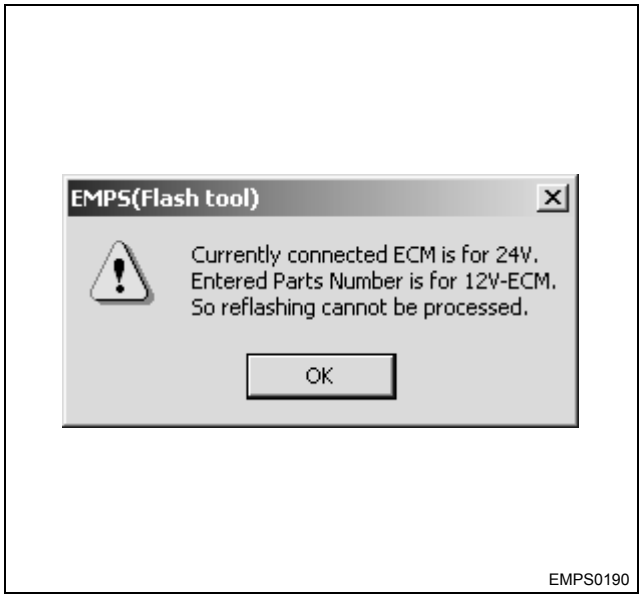
Selection Item Descriptions

Item	Settings/Operation Performed
ENGINE NUMBER	Enter the Engine Serial Number you want to reflash compulsorily.
Parts Number	Enter the Parts Number you want to reflash compulsorily.
OK button	Extracts the applicable OEM names for the entered Parts Number, and provides them for selection in the [OEM NAME] box.
OEM NAME	Select the OEM NAME that corresponds to the entered Parts Number.
ENGINE MODEL	Select the engine model that corresponds to the entered Parts Number.
ENGINE TYPE	Select the engine type that corresponds to the entered Parts Number.
Next button	Performs a check and then advances to “2.20.3 Reflashing ECM Parts Number Confirmation Screen.”
Cancel button	Returns to Process Menu after the switch is turned off.

A message will appear if an error is discovered by the check that is performed when the [Next] button is clicked.

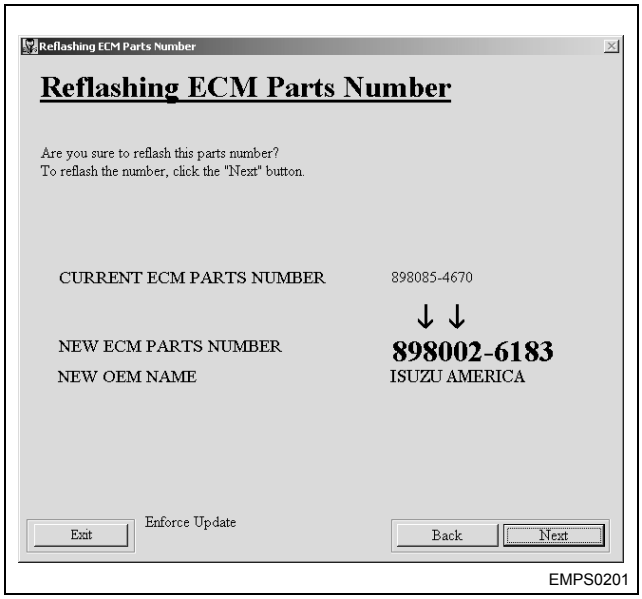


EMPS0190

Note:
Warning message will appear if you perform compulsory reflash on 12 V-ECM with the Parts Number for 24 V-ECM or the reverse case.

2.20.3 Reflashing ECM Parts Number Confirmation Screen

This screen displays the reflashing ECM parts number. After checking the contents, click the [Next] button to perform a CD check and advance to “2.20.4 Switch Confirmation Screen.”
To return to “2.20.2 Compulsory Reflash Screen,” click the [Back] button.

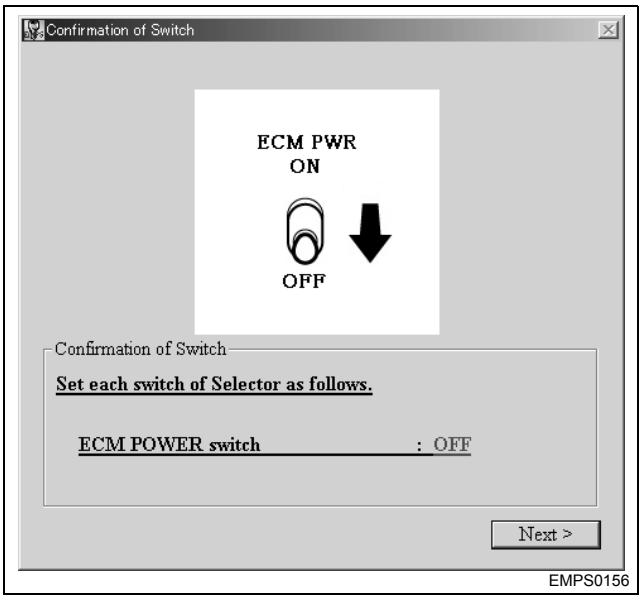


EMPS0201

The message will appear during the CD check if a CD is not inserted or if the version does not match.
Click the [OK] button to exit the program.

2.20.4 Switch Confirmation Screen

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

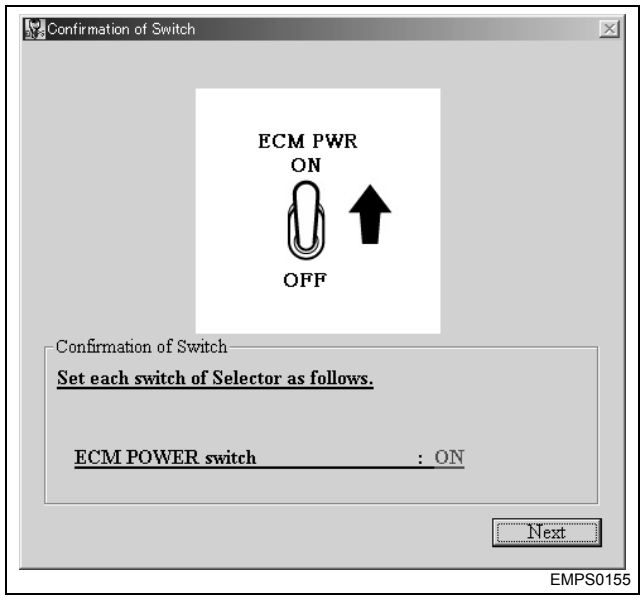
After configuring the switch settings, click the [Next] button.
This will advance to “2.20.5 READY LED Confirmation Screen.”

2.20.5 READY LED Confirmation Screen

The selector LED confirmation screen is shown below.
After confirming that the LED is lit, click the [Yes] button to advance to “2.20.6 Switch Confirmation Screen.”
If confirmation is not possible, click the [No] button to return to “2.20.3 Reflashing ECM Parts Number Confirmation Screen.”

2.20.6 Switch Confirmation Screen

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: ON

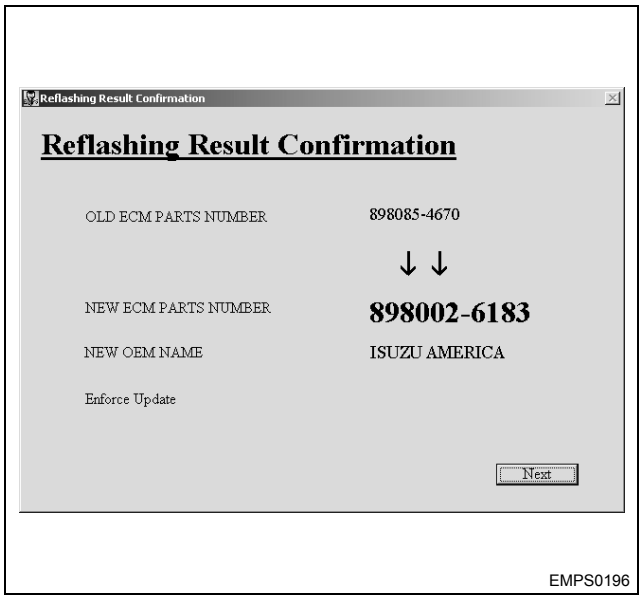
After configuring the switch settings, click the [Next] button.
This will advance to “2.20.7 Reflashing Execution Confirmation Screen.”

2.20.7 Reflashing Execution Confirmation Screen

This screen displays a confirmation message for reflashing.
Click the [OK] button to start reflashing. After reflashing is complete, it advances to “2.20.8 Reflashing Result Confirmation Screen.”
If you need to make changes, click the [Cancel] button to return to “2.20.2 Compulsory Reflash Screen.”

2.20.8 Reflashing Result Confirmation Screen

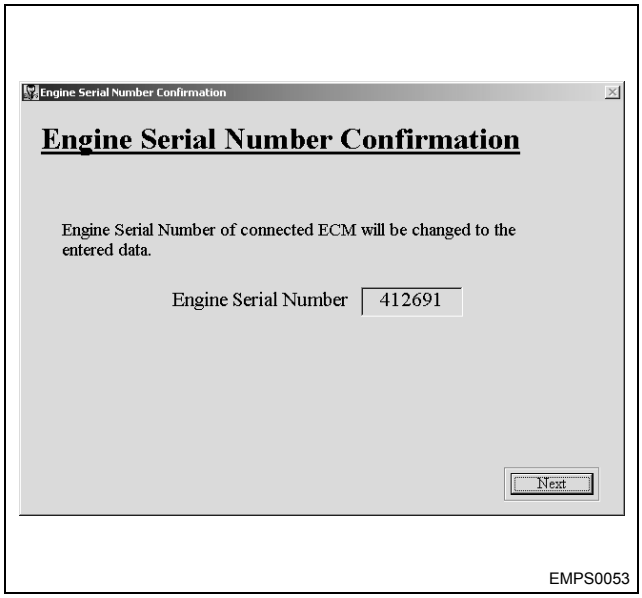
This screen displays the parts number reflash result.



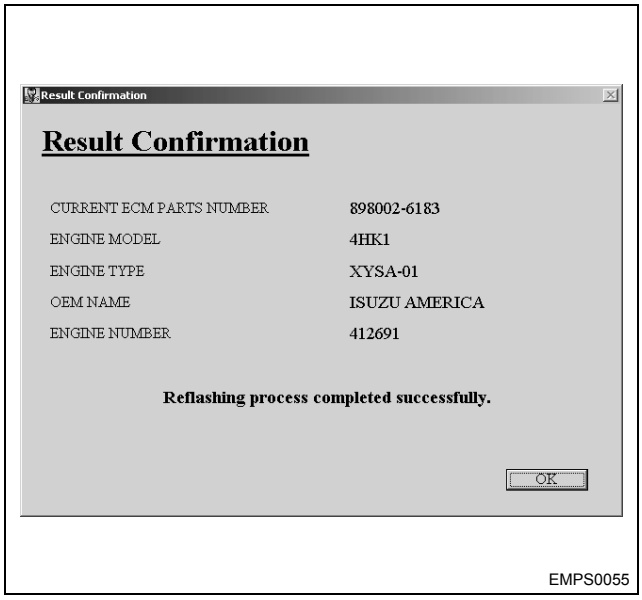
Clicking the [Next] button displays the message.
Check the content and click the [OK] button. This will advance to “2.20.9 Engine Serial Number Confirmation (when Engine S/N is entered).”

2.20.9 Engine Serial Number Confirmation (when Engine S/N is entered)

If the Engine Serial Number is required for downloading, “Engine Serial Number Confirmation” screen will appear.

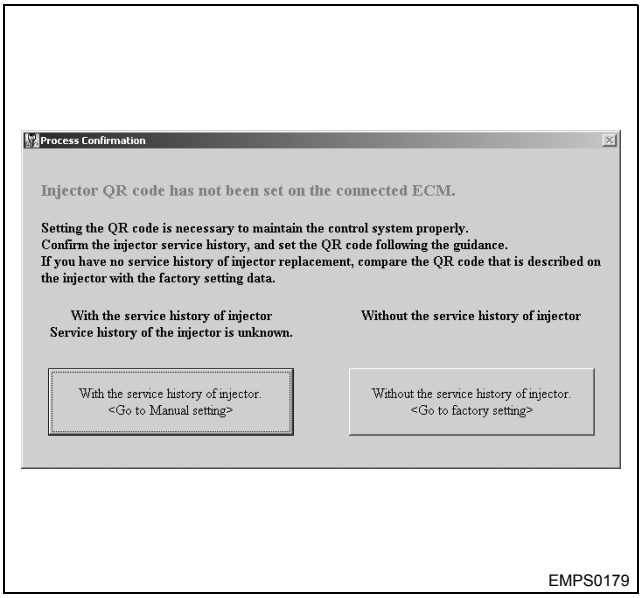


After confirming the displayed content, click the [Next] button to start downloading Engine Serial Number.
After download, the “Result Confirmation Screen” appears.



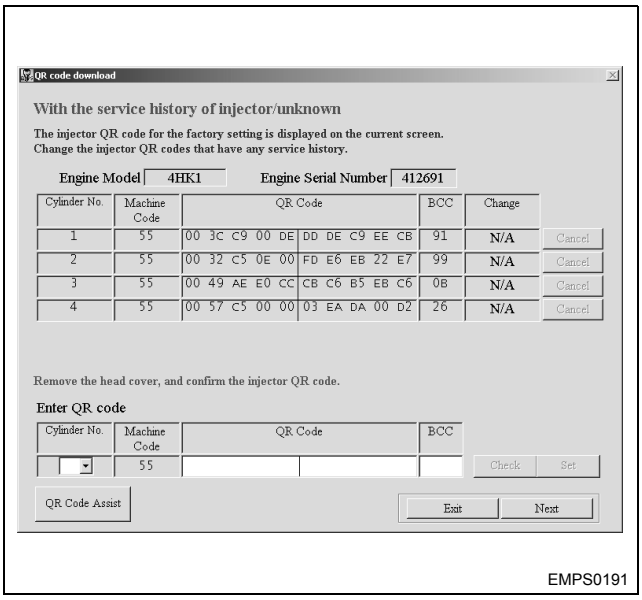
Confirm the displayed content and click the [OK] button.
This will advance to “2.15 Switch Confirmation Screen.”

If injector QR code has not been set on connected ECM, the following Process Confirmation Screen will appear.

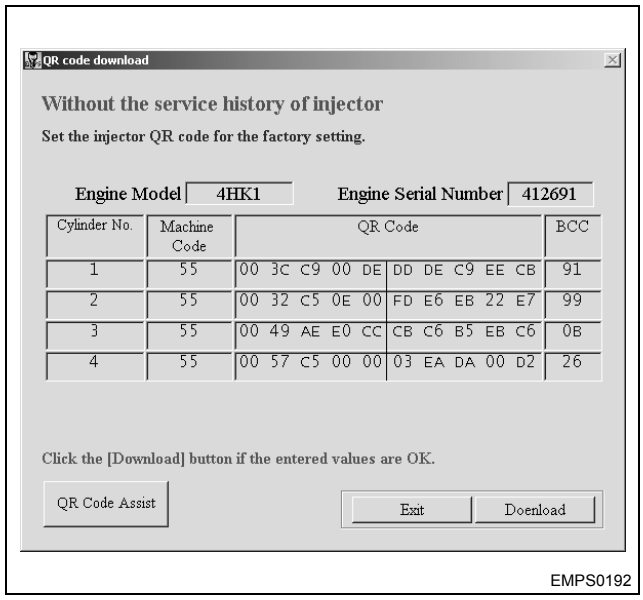


Confirm the message and carry out the procedure following the instructions on the screen.

When clicking [With the service history of injector/ unknown] button



When clicking [Without the service history of injector] button



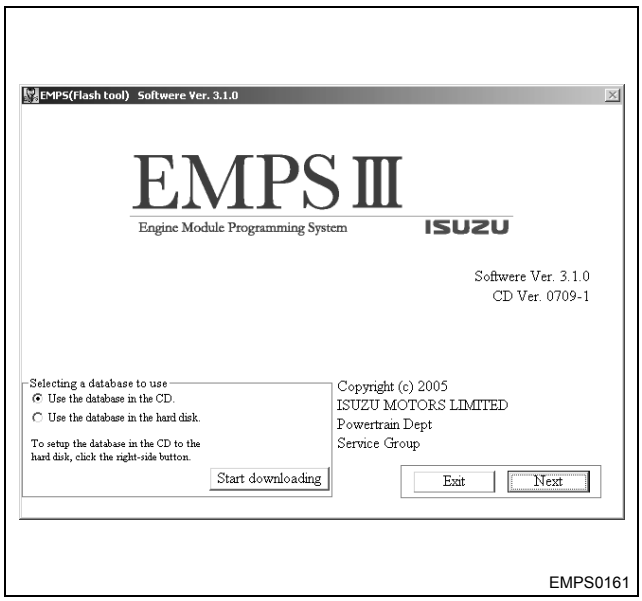
Refer to “3. Injector Replacement” for detail of the next procedures.

3. Injector Replacement

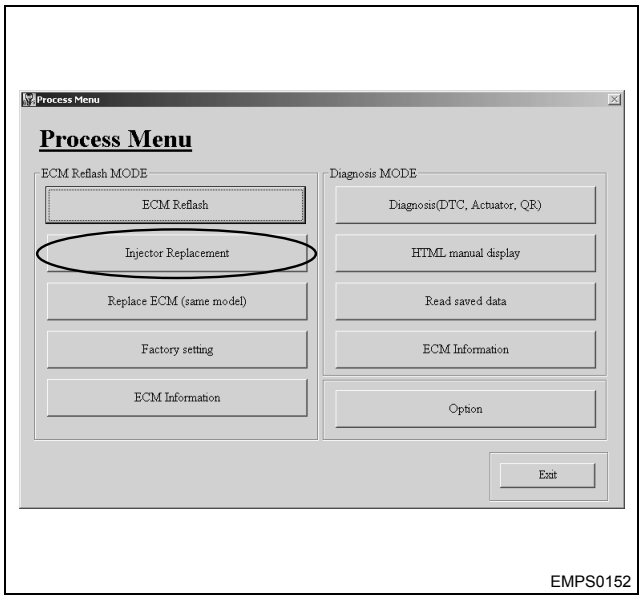
This section describes the procedure to change the QR code during injector replacement.

3.1 Startup

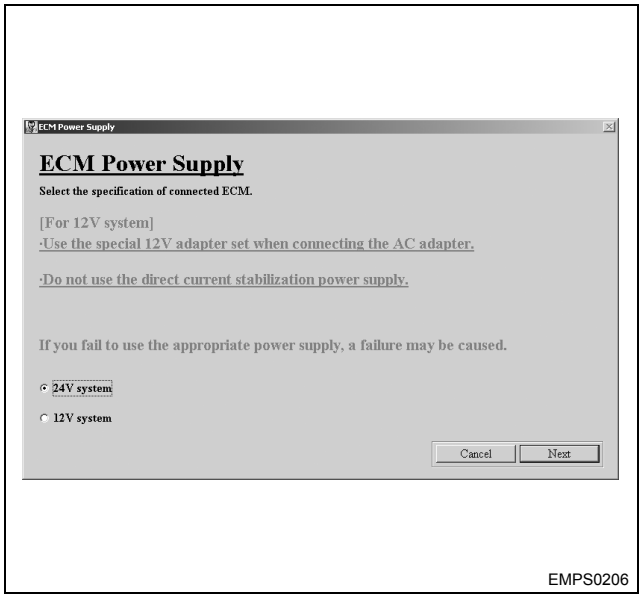
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



Clicking the [Next] button displays the “Process Menu” screen shown below.



Click the [Injector Replacement] button to advance to the “ECM Power Supply” screen.



Select “24V system” or “12V system” according to the voltage specification of ECM.

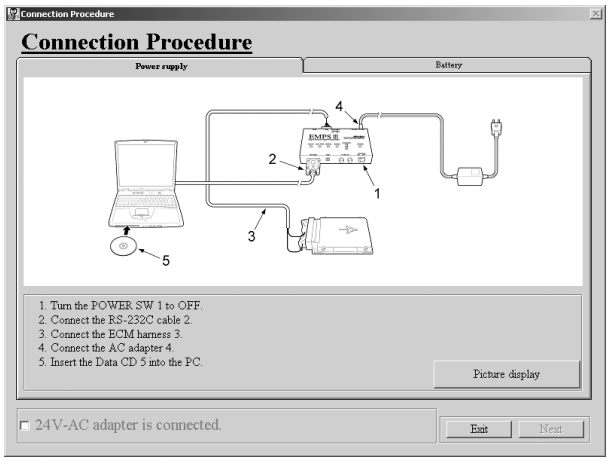
Caution:
Do not use the direct current stabilization power supply in case of 12V system. Doing so may cause failure.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

Click the [Next] button to advance to “Connection Procedure” screen.

Note:
The following screens are for 24V system. Refer to “2.1 Startup” for 12V system.

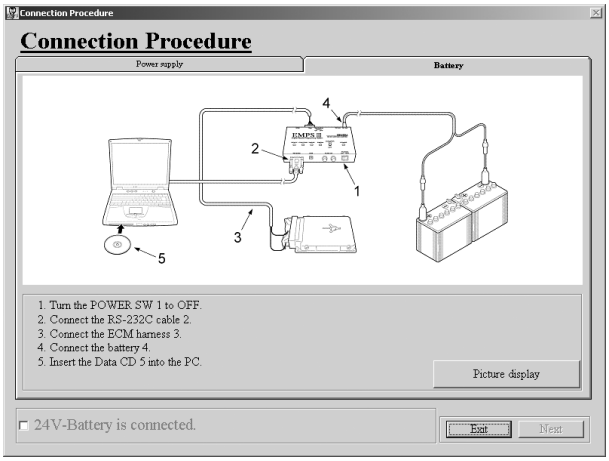
Power Supply Connection (24V system)



*This screen is for 24V system.

EMPS0213

Battery Connection (24V system)



*This screen is for 24V system.

EMPS0214

Connect the PC, selector, and ECM according to the procedure.
After connection, clicking the [Next] button advances to the next “3.2 User Authentication Screen.”

3.2 User Authentication Screen

This screen is used for EMPS user authentication.
Refer to “2.2 User Authentication Screen.”

3.3 Connection Confirmation Screen

This screen shows the connection status of the computer, selector, ECM, and power supply/battery.
Refer to “2.3 Connection Confirmation Screen.”

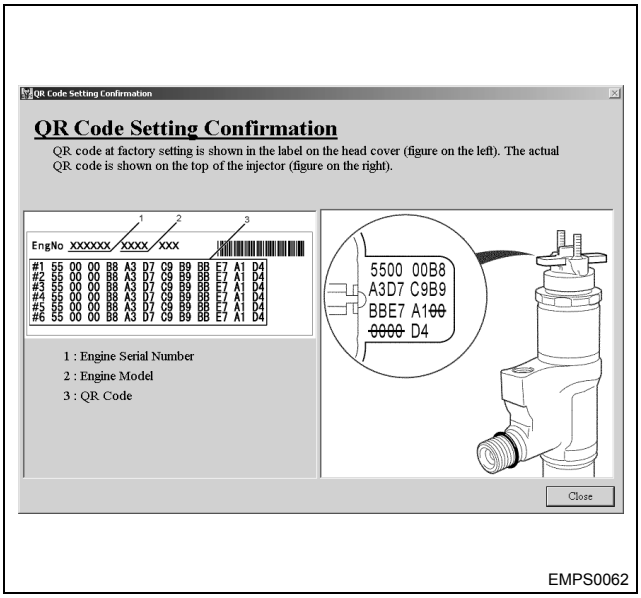
3.4 Switch Confirmation Screen

Refer to “2.4 Switch Confirmation Screen” to advance to “3.5 Change Injector QR Code.”

3.5 Change Injector QR Code

3.5.1 Process Confirmation Screen

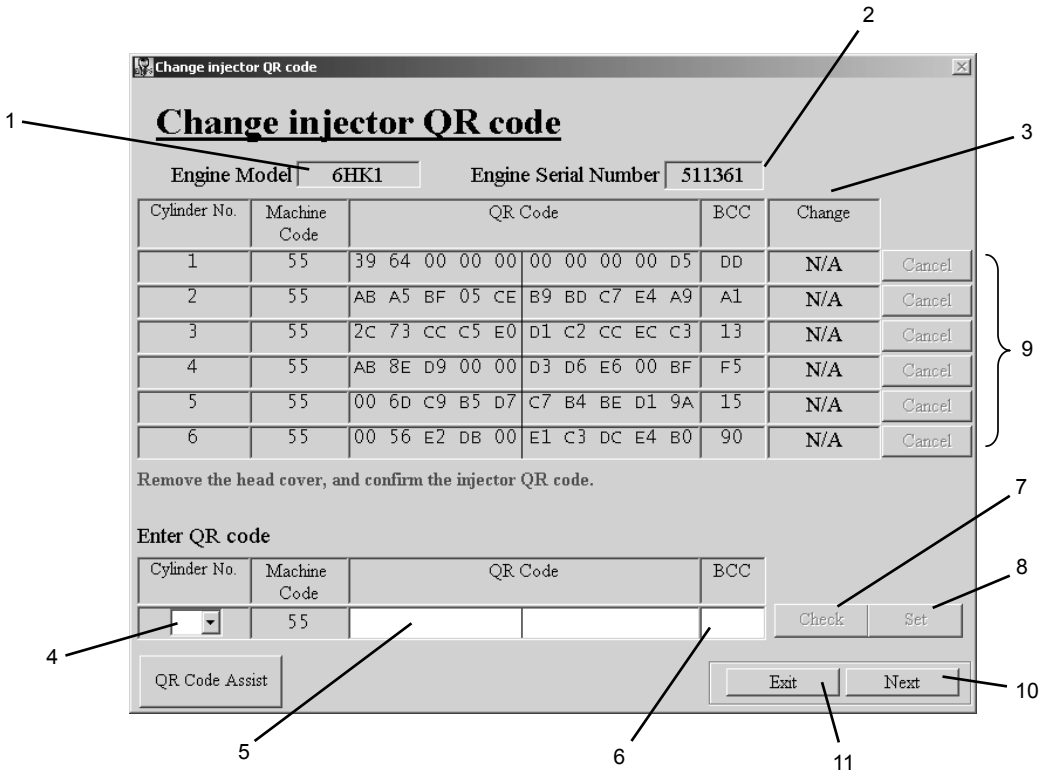
After the upload, the location where you can find the QR code to be entered appears, and then “Change injector QR code” screen appears.



EMPS0062

Clicking the [Close] button displays the next “Change injector QR code” screen.

3.5.2 Change Injector QR Code Screen



EMPS0063

Name

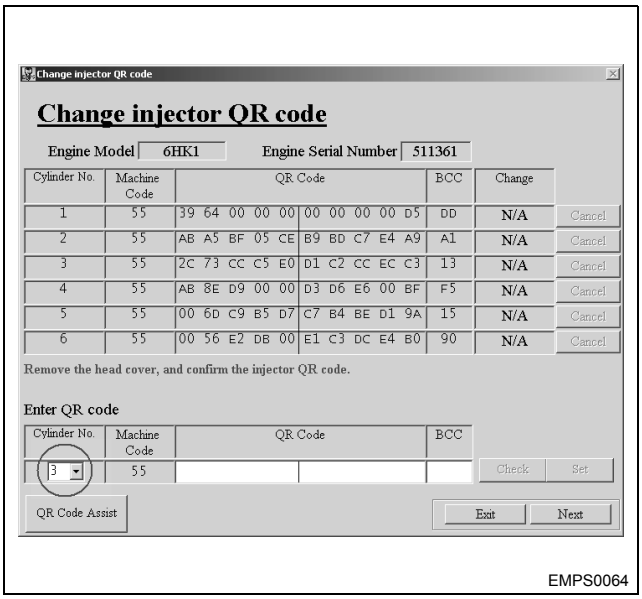
1. Engine Model field
2. Engine Serial Number field
3. QR data field
4. Cylinder No. selection field
5. QR Code entry field
6. BCC entry field
7. Check button
8. Set button
9. Cancel button
10. Next button
11. Exit button

Selection Item Descriptions

Items	Settings/Operation Performed
Engine Model field	Displays Engine Model uploaded from ECM.
Engine Serial Number field	Displays Engine Serial Number uploaded from ECM.
QR data field	Displays QR data uploaded from ECM.
Cylinder No. selection field	Select or enter the number of cylinder that its QR code is changed.
QR Code entry field	Enter the QR code.
BCC entry field	Enter the BCC.
Check button	Performs error check for entered data. If error occurs, entered QR code and BCC will turn red. If no error occurs, the [Set] button will be active.
Set button	Sets the entered data to reflect it on the QR data fields on the top of the screen. ('Complete' will be displayed in blue in the Check columns of QR data fields for the corresponding cylinder No.)
Cancel button	Discards the set QR codes in the QR data fields to return to the initial state.
Next button	Advances to the next process (registration of entered data).
Exit button	Quits EMPS program.

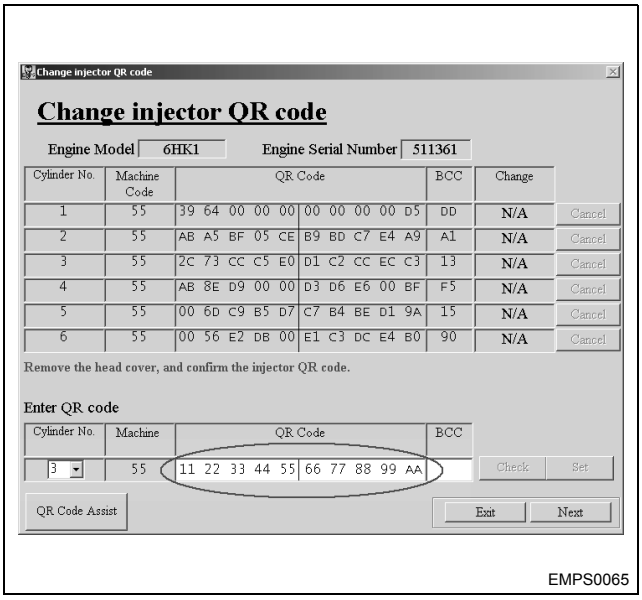
3.5.3 Procedure to Enter QR Code

1. Select or enter Cylinder No.



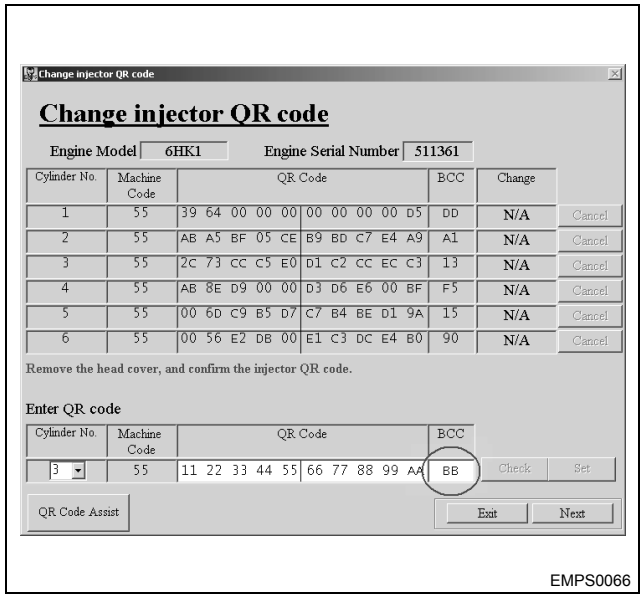
EMPS0064

2. Enter the injector QR code.



EMPS0065

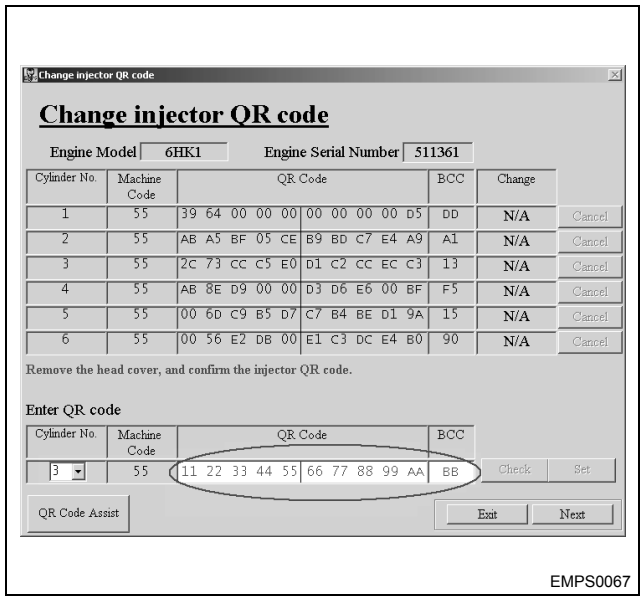
3. Enter the BCC.
   After entering, [Check] button will become active.



EMPS0066

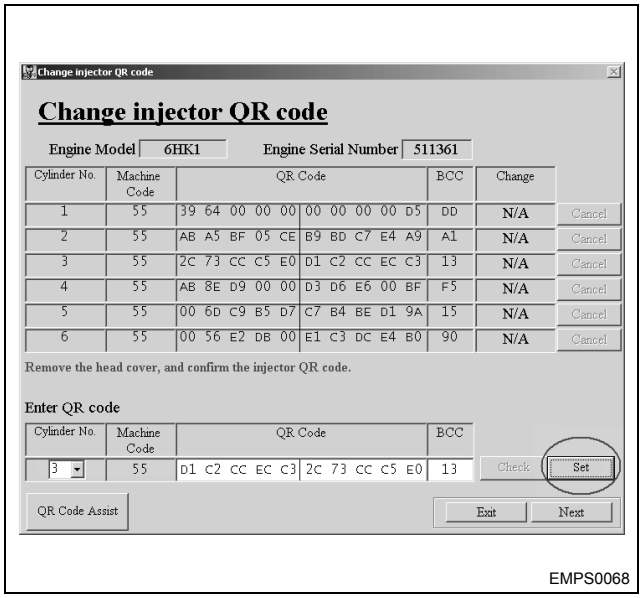
4. Click the [Check] button.
   Error check for entered data will be performed.

Note:
If error for entered data occurred.
The letters in QR code and BCC fields will turn red.
Enter them again.



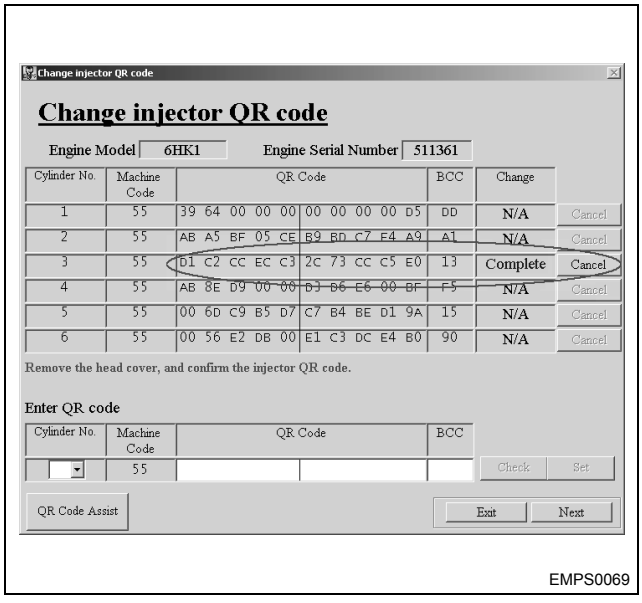
EMPS0067

Note:
If no error for entered data occurred.
[Set] button will become active.



EMPS0068

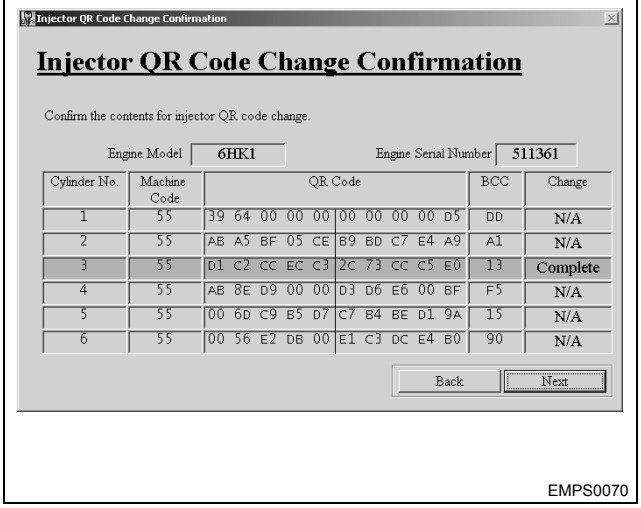
5. Click the [Set] button.
   Entered data is reflected in the field on the top of the screen, then the “Change” field shows “Complete.”
   [Cancel] button will also become active.
   To return the status prior to change, click the [Cancel] button.



EMPS0069

To continue to enter other data, repeat the procedure from step 1.
To complete, click the [Next] button.

6. Confirm download.
   Clicking the [Next] button displays “Injector QR Code Change Confirmation” screen.
   The background color of changed cylinder has turned light blue.

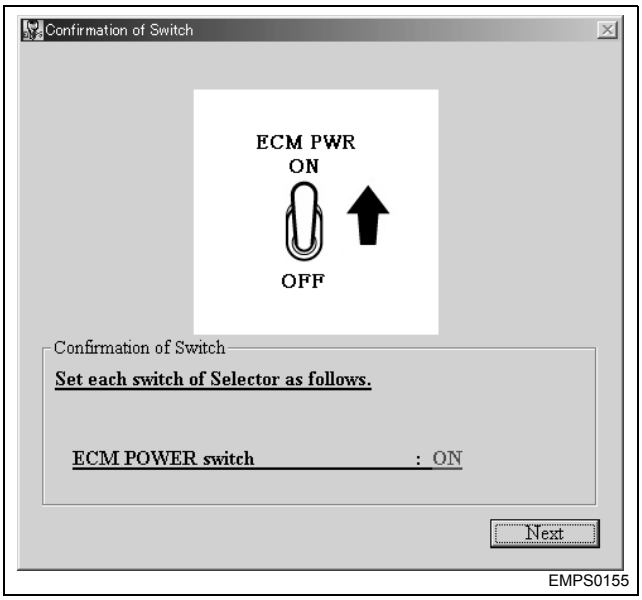


EMPS0070

To correct the setting, click the [Back] button to return to “Change Injector QR Code” screen.
If the setting is OK, click the [Next] button to register it into the ECM.
The confirmation message will appear.
Clicking the [Yes] button displays the “3.6 Injector QR Code Download” screen.

3.6 Injector QR Code Download

The switch confirmation screen is shown below.



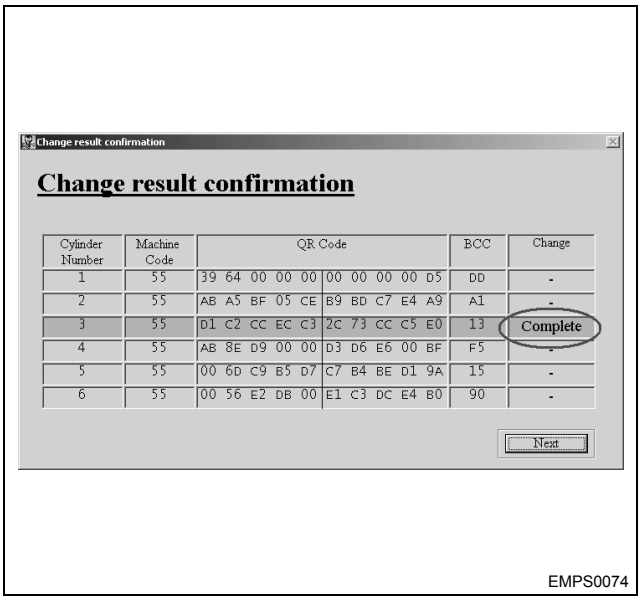
Check the switch status.

ECM POWER switch: ON

After configuring the switch setting, click the [Next] button to start to download the entered QR code.

3.7 Change Result Confirmation Screen

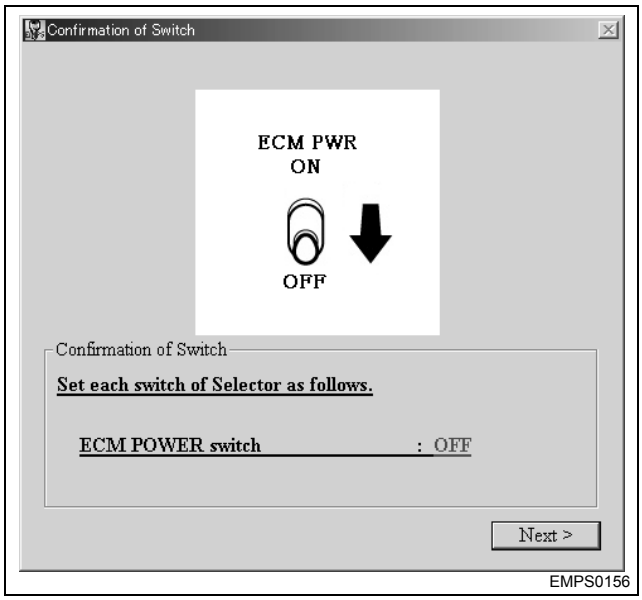
This screen displays downloaded QR code for confirmation.



"Complete" is displayed on the cylinder that change content has been reflected.
After checking the screen, click the [Next] button to advance to "3.8 Switch Confirmation Screen."

3.8 Switch Confirmation Screen

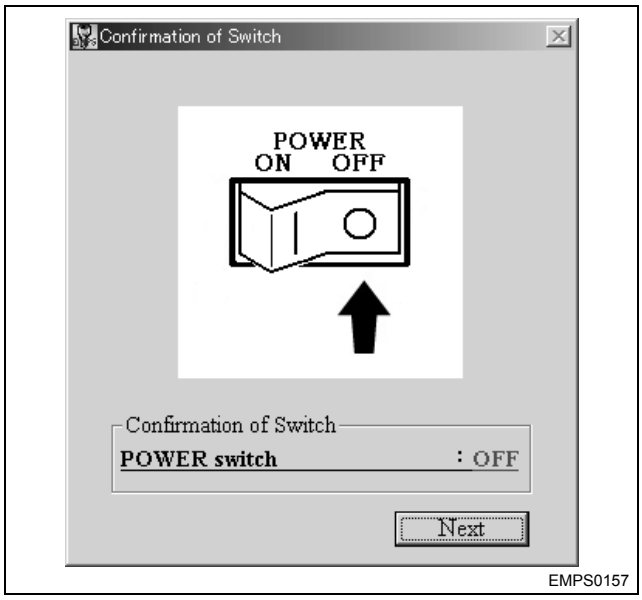
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation, display the message.



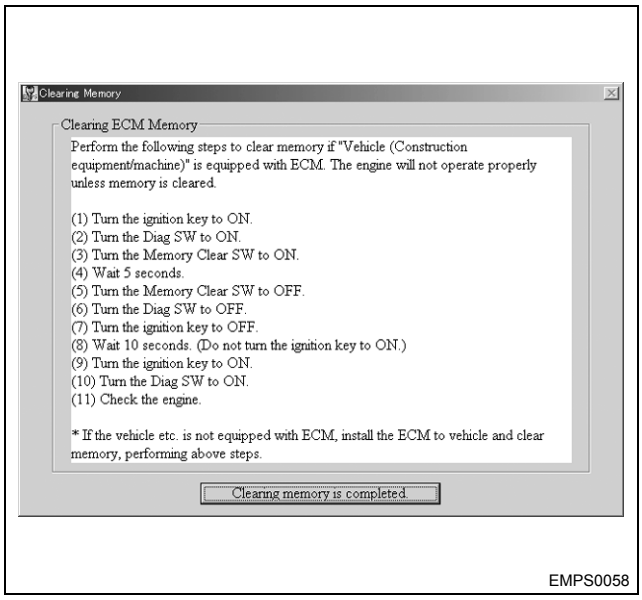
After configuring the power switch setting, click the [Next] button to advance to “3.9 Cable Removal Procedure Screen.”

3.9 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This advances to “3.10 Memory Clear.”

3.10 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



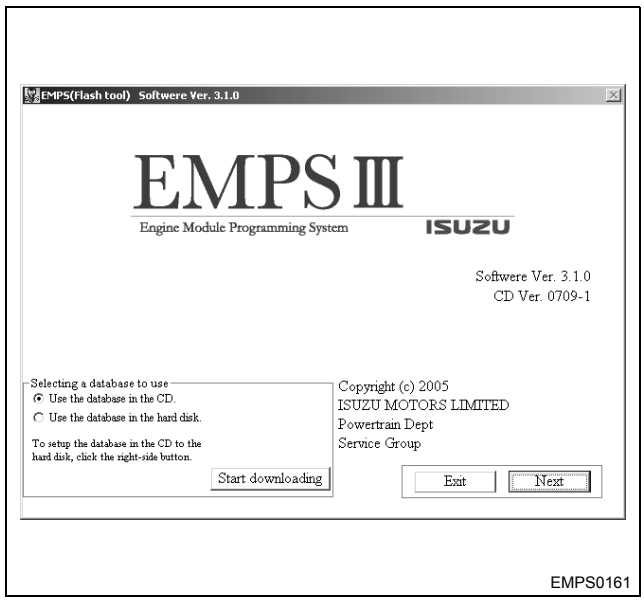
After memory clear is complete, click the [Clearing memory is completed.] button to return to “Process Menu” screen.

4. Replace ECM (Same Model)

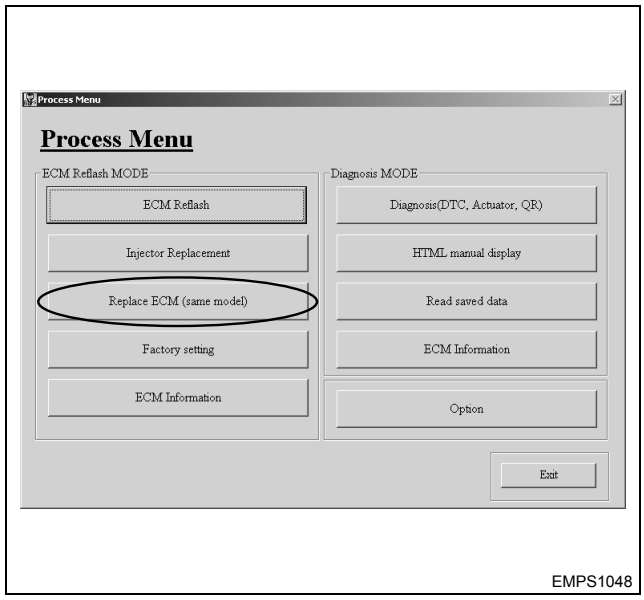
This section describes the procedure to replace the ECM (or to make a copy) on the same model.

4.1 Startup

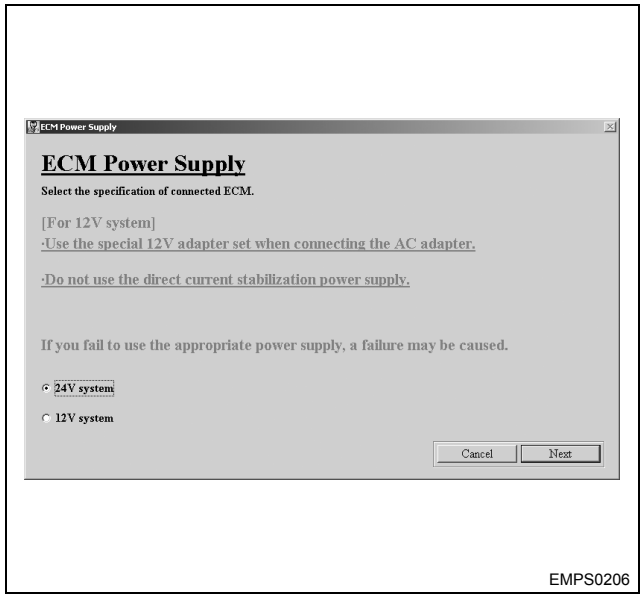
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



Clicking the [Next] button displays “Process Menu” screen shown below.



Click the [Replace ECM (Same Model)] button to advance to the next “ECM Power Supply” screen.



Select “24V system” or “12V system” according to the voltage specification of ECM.

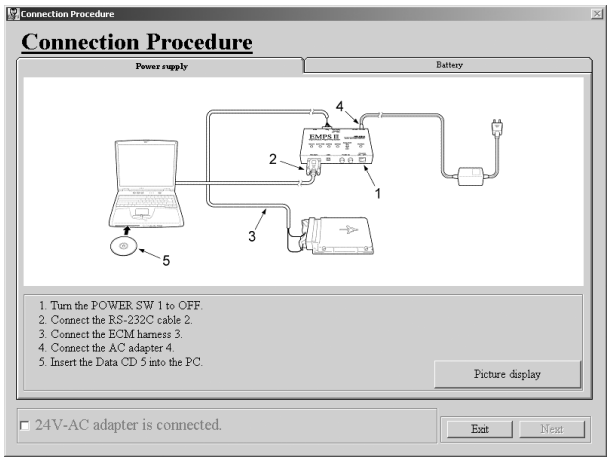
Caution:
Do not use the direct current stabilization power supply in case of 12V system. Doing so may cause failure.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

Click the [Next] button to advance to “Connection Procedure” screen.

Note:
The following screens are for 24V system. Refer to “2.1 Startup” for 12V system.

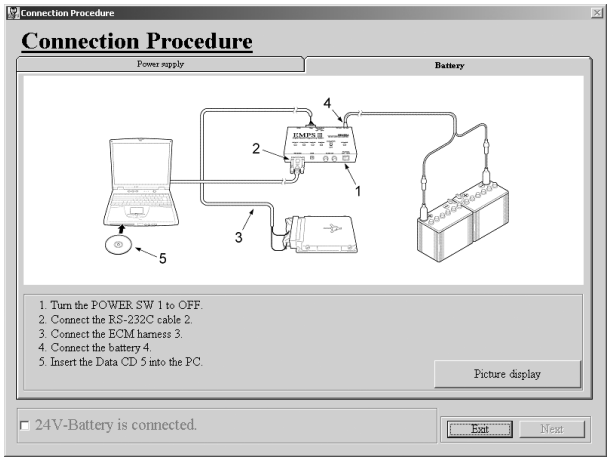
Power Supply Connection (24V system)



*This screen is for 24V system.

EMPS0213

Battery Connection (24V system)



*This screen is for 24V system.

EMPS0214

Connect the PC, selector, and ECM according to the procedure.
Click the [Next] button to advance to “4.2 User Authentication Screen.”

4.2 User Authentication Screen

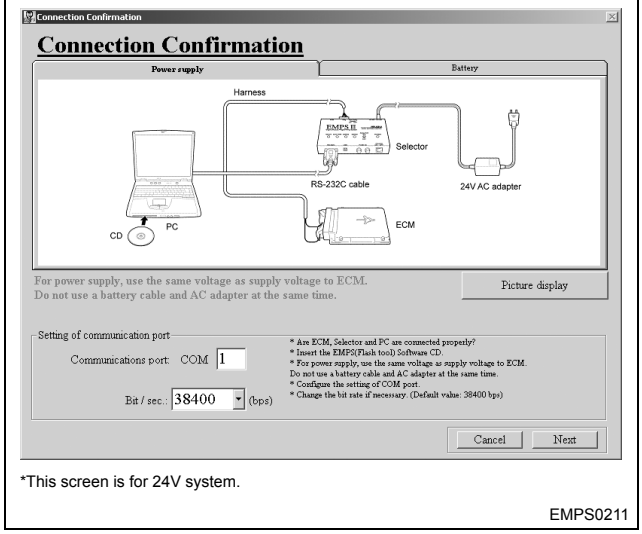
This screen is used for EMPS user authentication.
Refer to “2.2 User Authentication Screen.”

4.3 Connection Confirmation Screen

4.3.1 At the First Connection

This screen shows the connection status of the computer, selector, ECM, and power supply/battery.

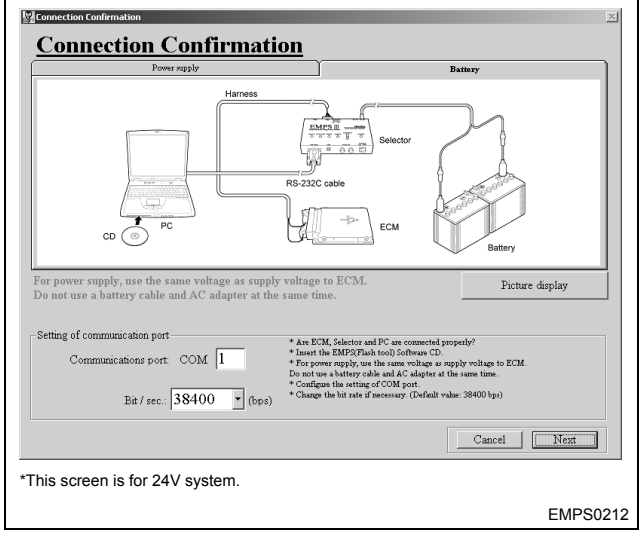
Power Supply Connection



*This screen is for 24V system.

EMPS0211

Battery Connection



*This screen is for 24V system.

EMPS0212

After selecting the COM port (Communication port) and transmission bit rate (Bit/sec.), click [Next] to advance to “4.4 Switch Confirmation Screen.”

Selection Item Descriptions

Items	Description
COM port	Select the RS-232C port to which the selector is connected.
Transmission bit rate	Select the data transmission bit rate.
Cancel button	Displays a confirmation message for exiting the tool.
Next button	Performs a check and then displays “4.4 Switch Confirmation Screen.”

One of the error messages will appear if an error is discovered by the check that is performed when the [Next] button is clicked. Refer to “8. Error Code List.”

4.3.2 At the Reconnection After ECM Replacement

If you repeat upload or download (when reconnecting after ECM replacement), you will start with this screen. But you cannot change COM port and bit rate (bps).

4.3.3 PC Setting

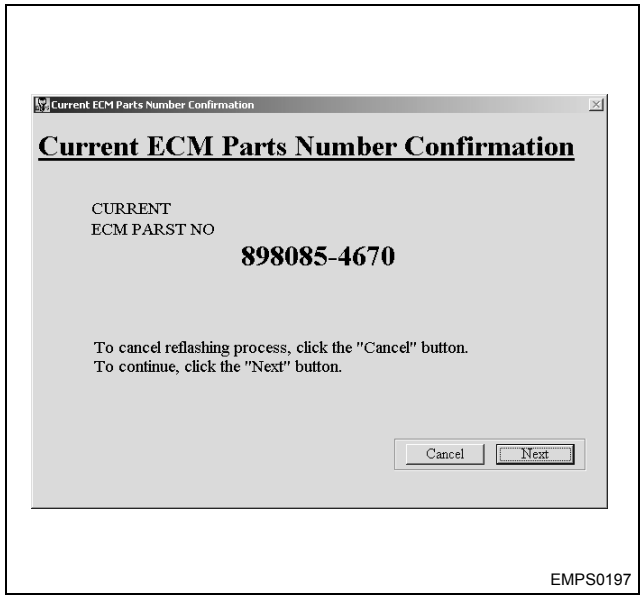
Normally select COM1 if RS-232C is used for connection.
In the case of a PC that is not equipped with an RS-232C port, connect using a commercially available USB conversion cable. For details about port settings, refer to the user documentation that comes with the USB conversion cable.
To check standard COM port settings, refer to “2.3.1 PC Setting.”

4.4 Switch Confirmation Screen

Refer to “2.4 Switch Confirmation Screen” to advance to “4.5 Current ECM Parts Number Confirmation Screen.”

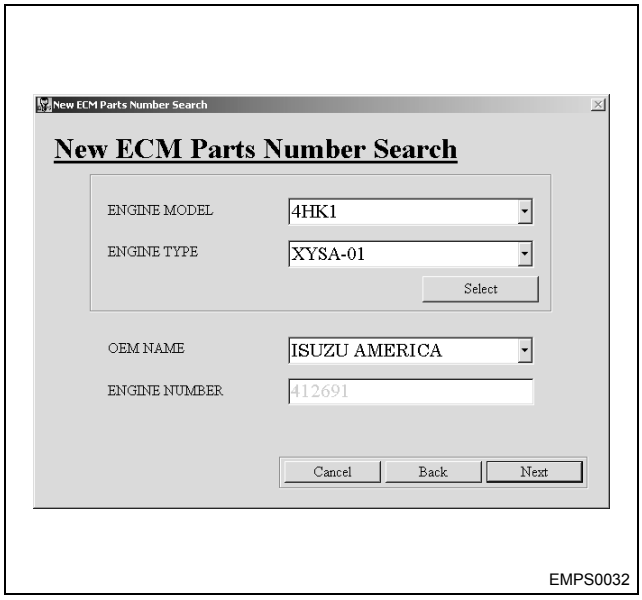
4.5 Current ECM Parts Number Confirmation Screen

This screen displays the current ECM parts number.
Clicking the [Next] button advances to “4.6 New ECM Parts Number Search Screen.”
To cancel former ECM parts number confirmation, click the [Cancel] button.



4.6 New ECM Parts Number Search Screen

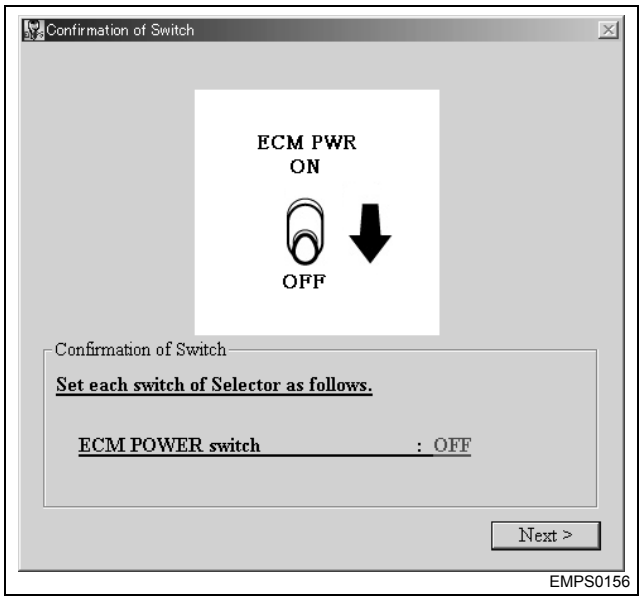
This screen is used to select the search conditions for Parts Number.
Choose the option from [ENGINE MODEL] and [ENGINE TYPE], and then click the [Select] button.
Next, choose option from the [OEM NAME], and click the [Next] button.
To return to “4.5 Current ECM Parts Number Confirmation Screen,” click the [Back] button.



A message will appear if an error is discovered by the check that is performed when the [Next] button is clicked.

4.7 Switch Confirmation Screen

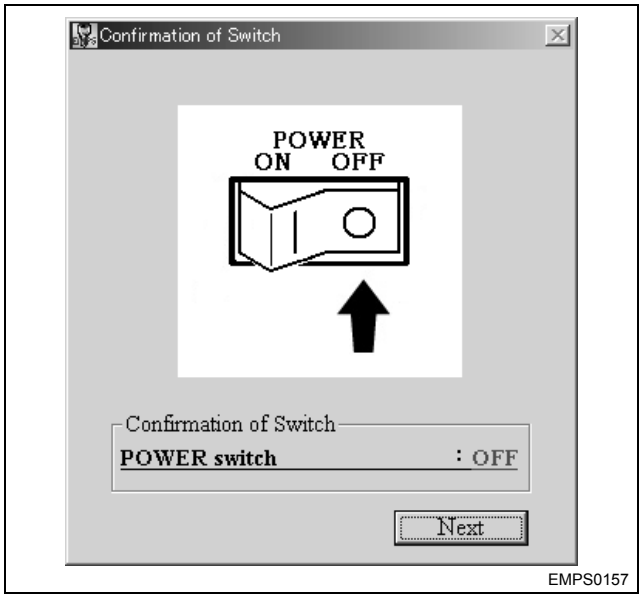
The switch confirmation screen is shown below.



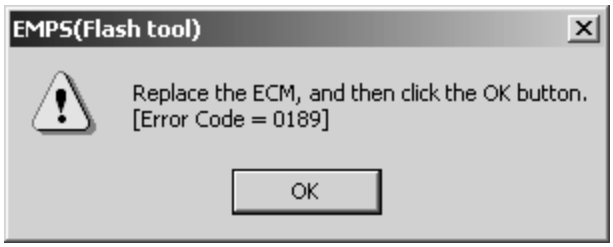
Configure the switch settings as shown below.

ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.



After configuring the power switch setting, click the [Next] button.



EMPS1047

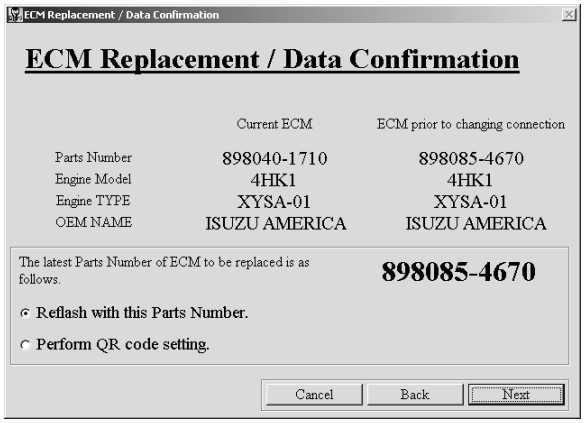
Disconnect the currently connected ECM and connect the new ECM (copy destination), then click [OK].
"4.8 Connection Confirmation (After Connecting ECM) and Reflash Mode Selection" will appear.

4.8 Connection Confirmation (After Connecting ECM) and Reflash Mode Selection

Refer to "2. ECM Reflash" to advance to "4.9 ECM Replacement / Data Confirmation." in accordance with displayed instructions.

4.9 ECM Replacement / Data Confirmation

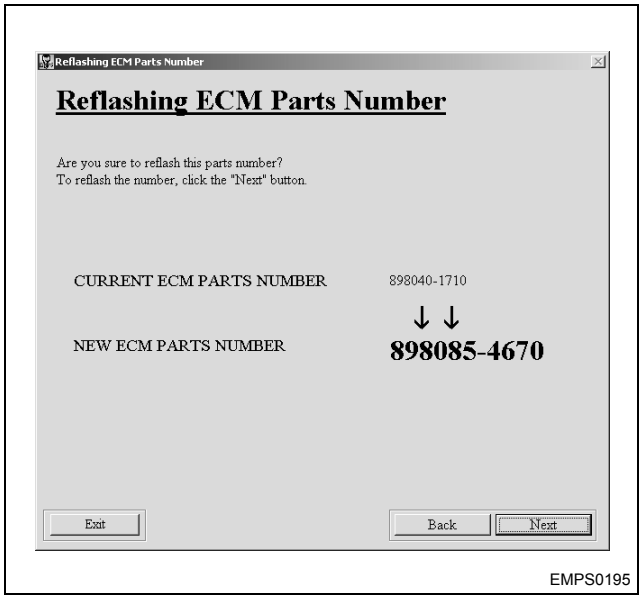
Data obtained from ECM prior to changing connection and from ECM currently connected are compared.
If data other than Parts Number is different, click the [Back] button to return to "New ECM Parts Number Search Screen" and change the selection, or click the [Cancel] button to quit the EMPS program and start from the beginning again.
If the displayed contents are OK, click the [Next] button to advance to "4.10 Reflashing ECM Parts Number Confirmation Screen."



EMPS0081

4.10 Reflashing ECM Parts Number Confirmation Screen

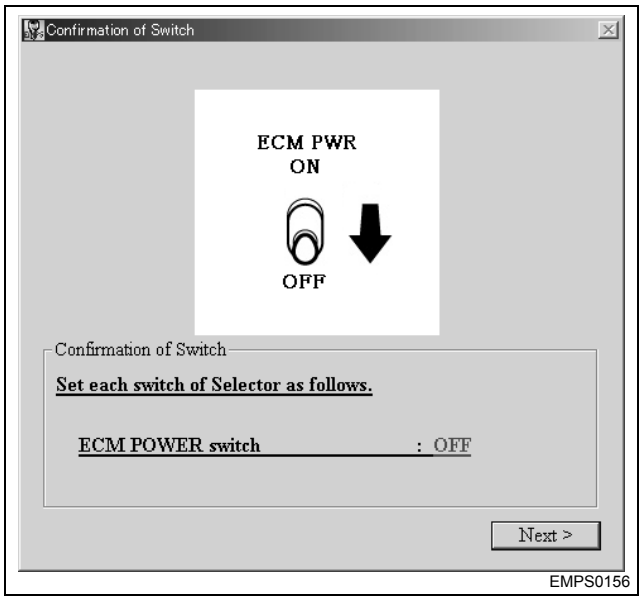
This screen displays the reflashing ECM parts number. After checking the contents, click the [Next] button to perform a CD check and advance to “4.11 Switch Confirmation Screen.”
To return to “New ECM Parts Number Search Screen,” click the [Back] button.



The message will appear during the CD check if a CD is not inserted or if the version does not match.
Click the [OK] button to exit the program.

4.11 Switch Confirmation Screen

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

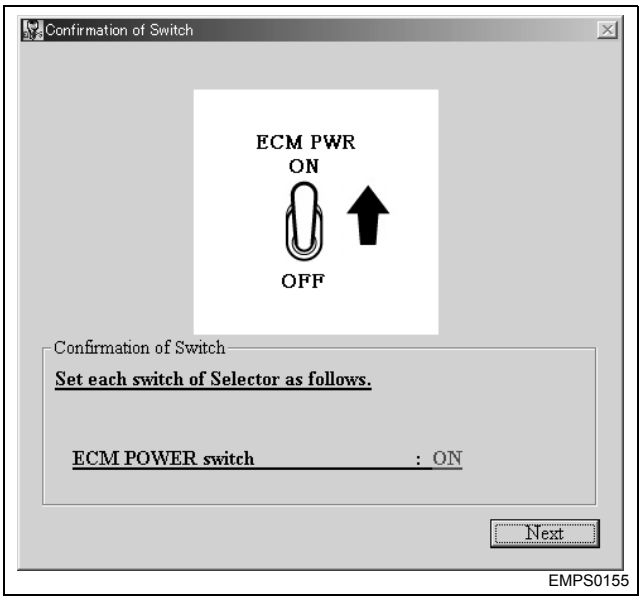
After configuring the switch settings, click the [Next] button. This will advance to “4.12 READY LED Confirmation Screen.”

4.12 READY LED Confirmation Screen

The selector LED confirmation screen is shown below.
After confirming that the LED is lit, click the [Yes] button to advance to “4.13 Switch Confirmation Screen.”
If confirmation is not possible, click the [No] button to return to “4.9 ECM Replacement / Data Confirmation.”

4.13 Switch Confirmation Screen

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This starts reflashing.
This advances to “4.14 Reflashing Execution Confirmation Screen.”

4.14 Reflashing Execution Confirmation Screen

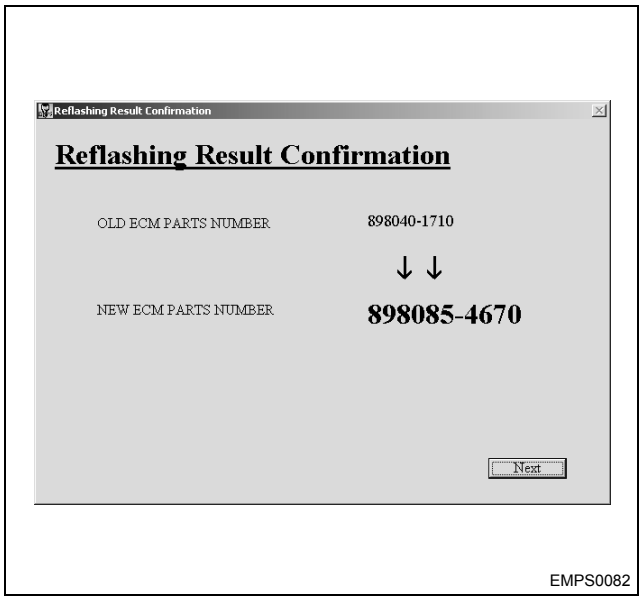
This screen displays a confirmation message for reflashing.
Click the [OK] button to start reflashing. After reflashing is complete, advance to “4.15 Reflashing Result Confirmation Screen.”
If you need to make changes, click the [Cancel] button to return to “Current ECM Parts Number Confirmation Screen.”

Note:
One of the messages will appear if an error occurs during reflashing. (Refer to “8. Error Code List.”)

Click the [Yes] button to return to “4.14 Reflashing Execution Confirmation Screen.”

4.15 Reflashing Result Confirmation Screen

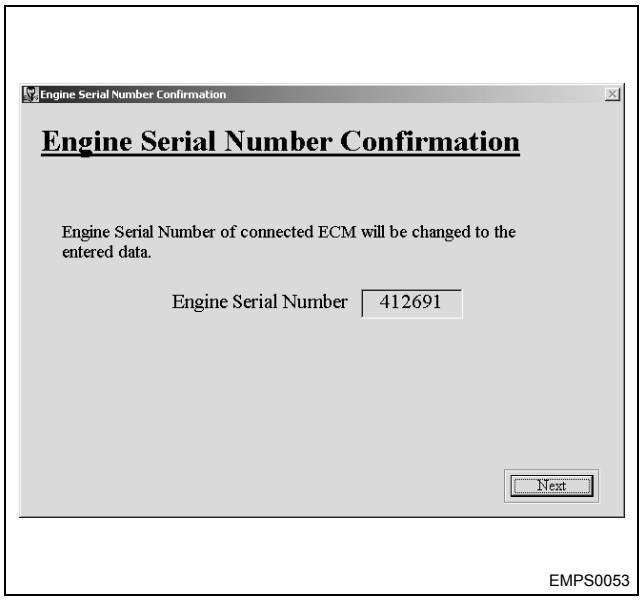
This screen displays the parts number reflash result.



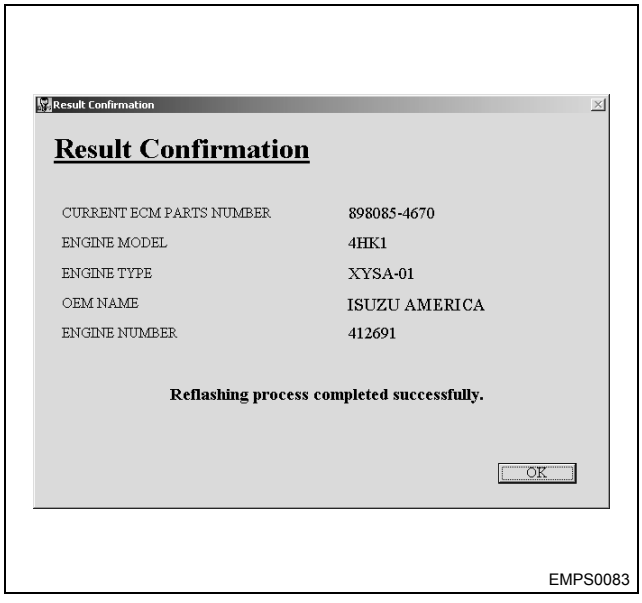
Clicking the [Next] button displays the message.
Check the content and click the [OK] button.
This advances to “4.16 Engine Serial Number Confirm” screen.

4.16 Engine Serial Number Confirm

Engine Serial Number of ECM prior to changing connection will be displayed.



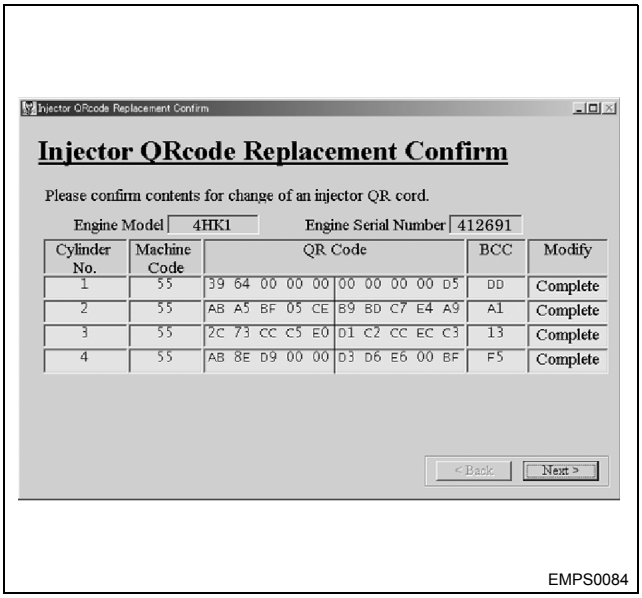
After confirming the displayed content, click the [Next] button to start downloading Engine Serial Number.
After download, the “Result Confirmation Screen” appears.



Confirm the displayed content and click the [OK] button to advance to “4.17 Injector QR Code Change Confirmation Screen.”

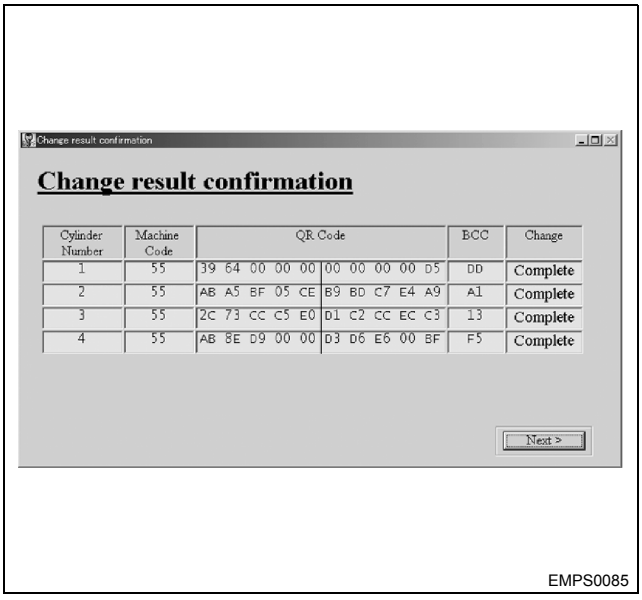
4.17 Injector QR Code Change Confirmation Screen

QR code uploaded from ECM prior to changing connection will be displayed.



EMPS0084

Clicking the [Next] button starts to download the injector QR code.
After download, the confirmation screen appears.

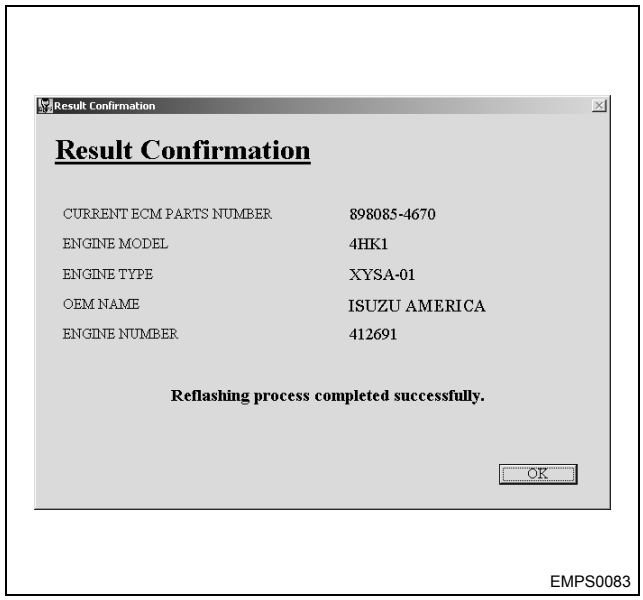


EMPS0085

Click the [Next] button to advance to “4.18 Result Confirmation Screen.”

4.18 Result Confirmation Screen

This screen displays the result of reflashing.

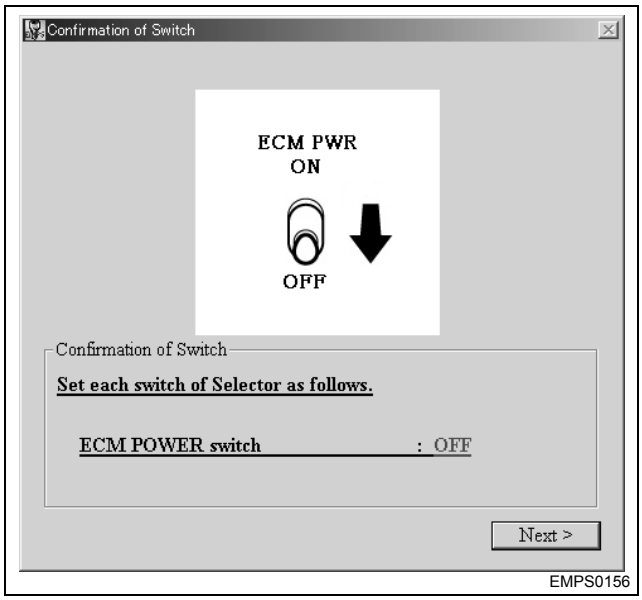


EMPS0083

Clicking the [OK] button advances to “4.19 Switch Confirmation Screen.”

4.19 Switch Confirmation Screen

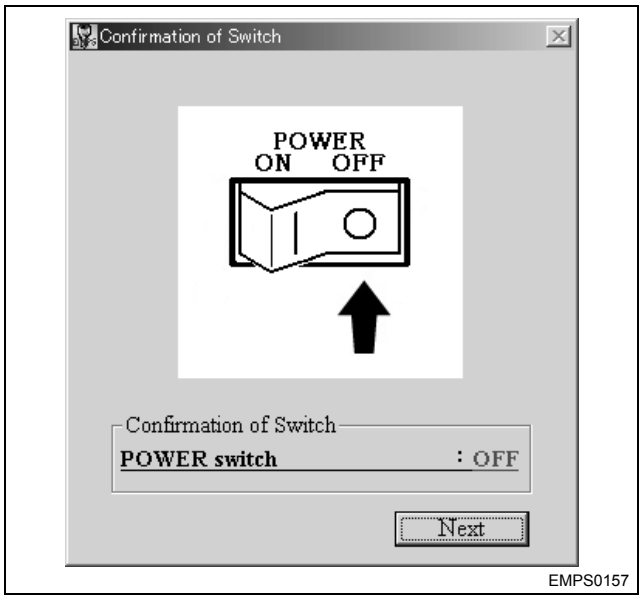
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation, display the message.



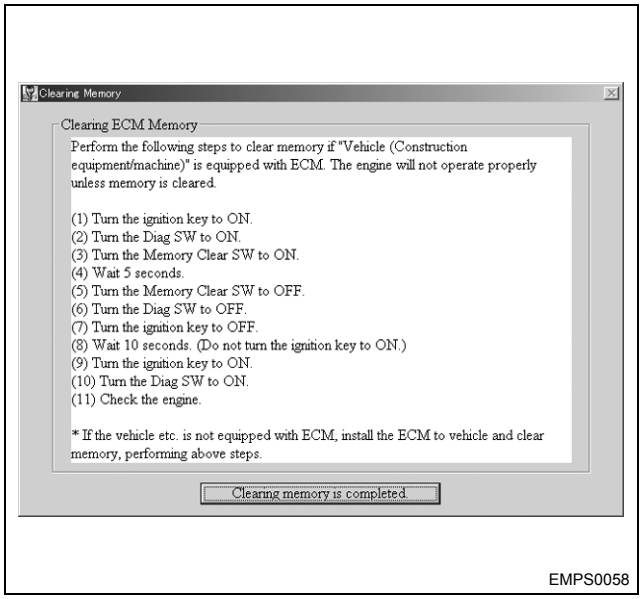
After configuring the power switch setting, click the [Next] button to advance to “4.20 Cable Removal Procedure Screen.”

4.20 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.

4.21 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



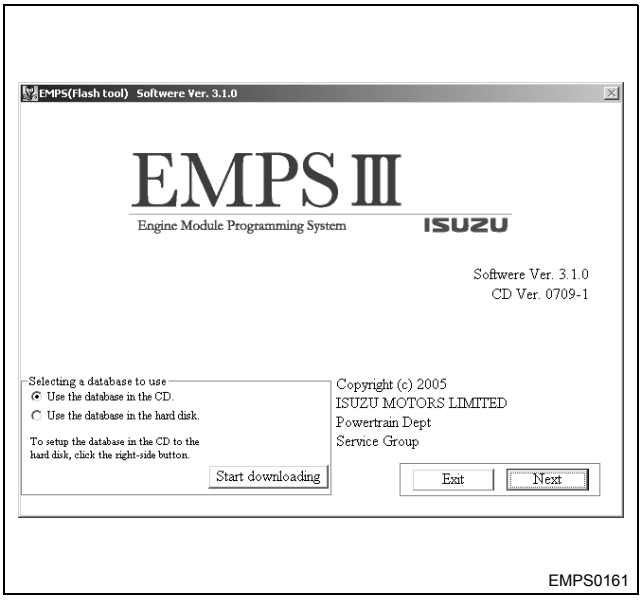
After memory clear is complete, click the [Clearing memory is completed.] button to return to “Process Menu” screen.

5. Factory Setting

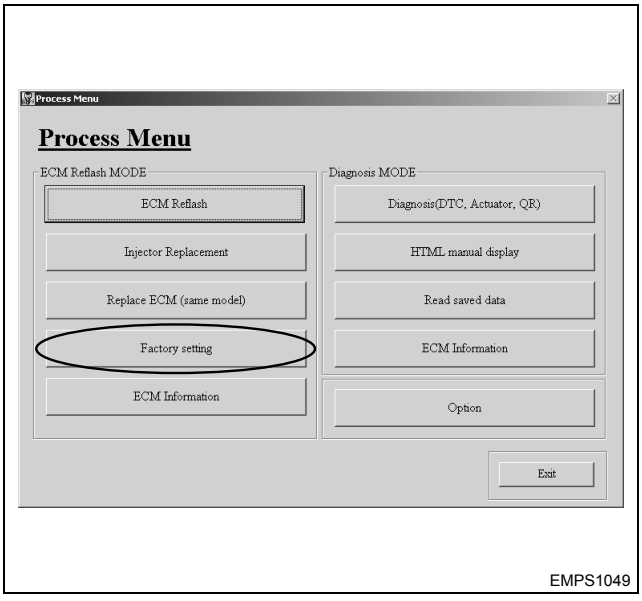
This section describes the procedure to set the injector QR code of connected ECM back to the factory setting data according to Engine Serial Number.

5.1 Startup

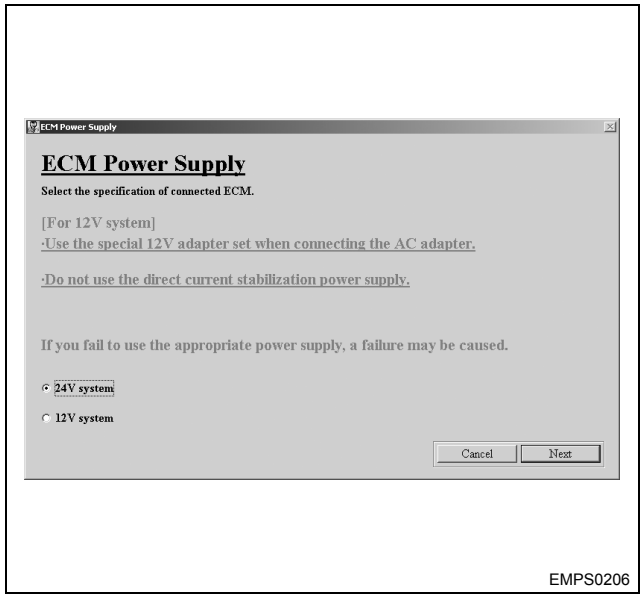
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



Clicking the [Next] button displays the “Process Menu” screen shown below.



Click the [Factory setting] button to advance to the next “ECM Power Supply” screen.



Select “24V system” or “12V system” according to the voltage specification of ECM.

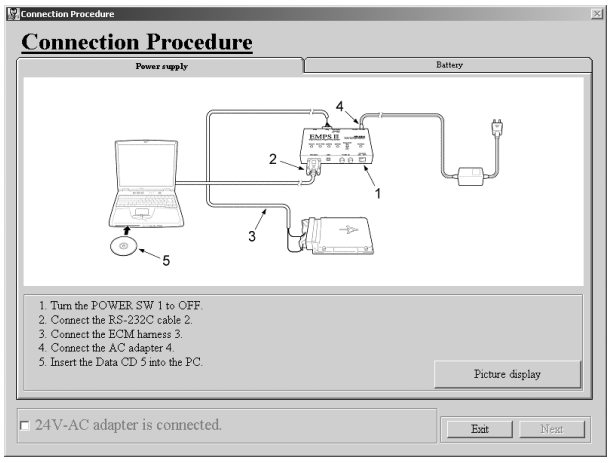
Caution:
Do not use the direct current stabilization power supply in case of 12V system. Doing so may cause failure.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

Click the [Next] button to advance to “Connection Procedure” screen.

Note:
The following screens are for 24V system. Refer to “2.1 Startup” for 12V system.

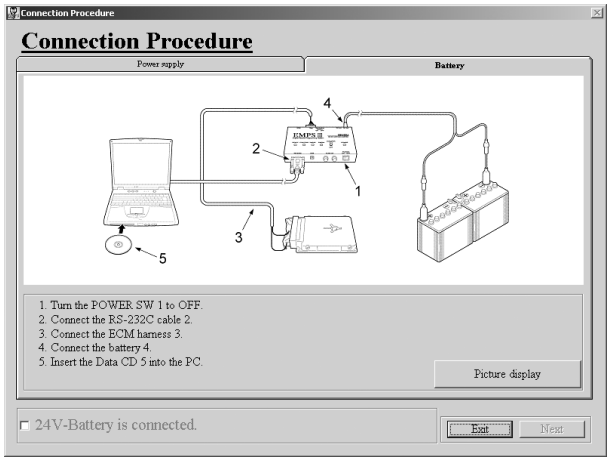
Power Supply Connection (24V system)



*This screen is for 24V system.

EMPS0213

Battery Connection (24V system)



*This screen is for 24V system.

EMPS0214

Connect the PC, selector, and ECM according to the procedure.
After connection, clicking the [Next] button advances to "5.2 User Authentication Screen."

5.2 User Authentication Screen

This screen is used for EMPS user authentication.
Refer to "2.2 User Authentication Screen."

5.3 Connection Confirmation Screen

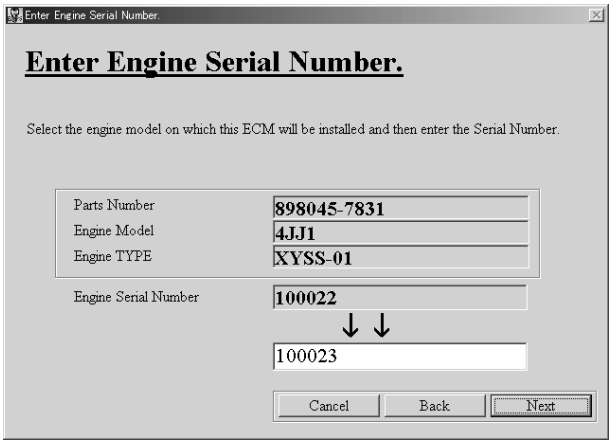
This screen shows the connection status of the computer, selector, ECM, and power supply/battery.
Refer to "2.3 Connection Confirmation Screen."

5.4 Switch Confirmation Screen

Refer to "2.4 Switch Confirmation Screen" to advance to "5.5 Enter Engine Serial Number."

5.5 Enter Engine Serial Number

Enter the serial number of the engine on which connected ECM is installed, click the [Next] button.

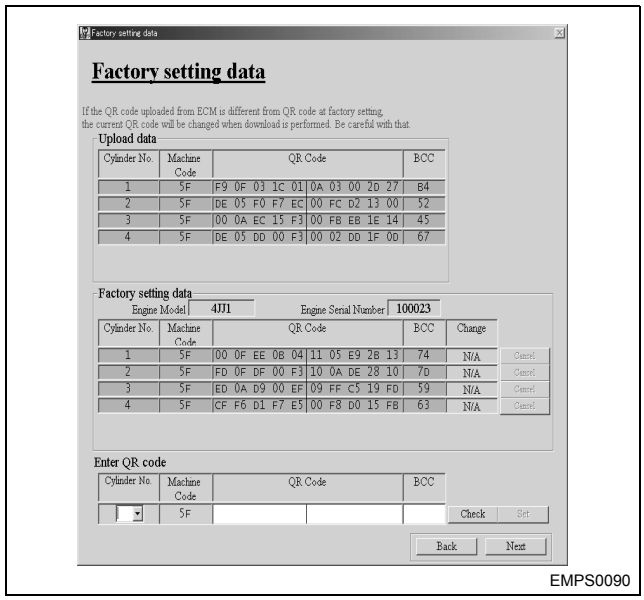


EMPS0089

Note:
Confirmation of engine type and serial number must be performed properly.

5.6 Factory Setting Data Screen

QR code uploaded from ECM and factory setting data are compared.

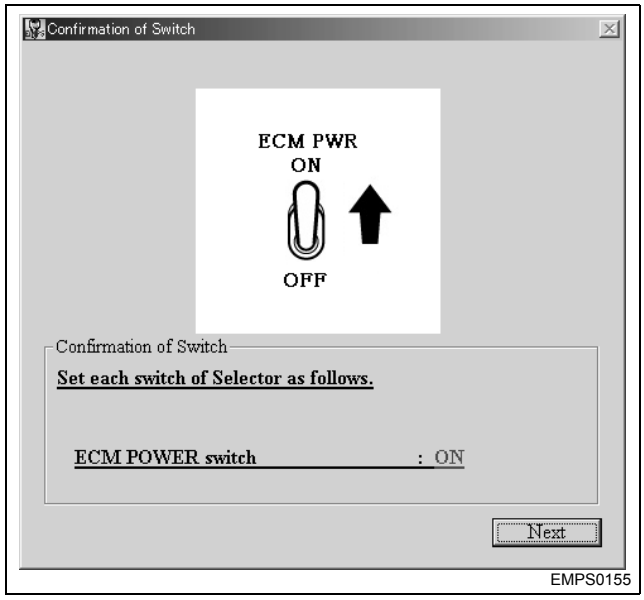


EMPS0090

Refer to “3.5.3 Procedure to Enter QR Code” to change injector QR code.
Clicking the [Next] button displays the confirmation message.
Clicking the [Yes] button displays “5.7 Injector QR Code Download.”

5.7 Injector QR Code Download

The switch confirmation screen is shown below.



EMPS0155

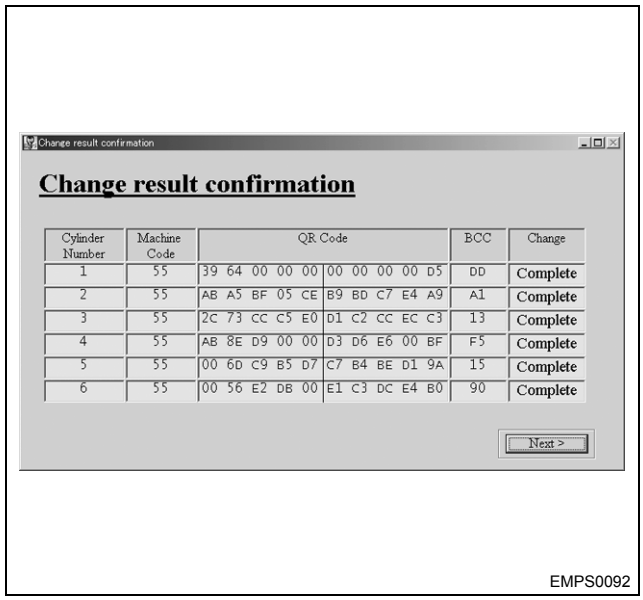
Configure the switch settings as shown below.

ECM POWER switch: ON

After configuring the switch settings, click the [Next] button and starts to download the factory setting data of injector QR code to ECM.

5.8 Download Result Confirmation

This screen displays the result of download.

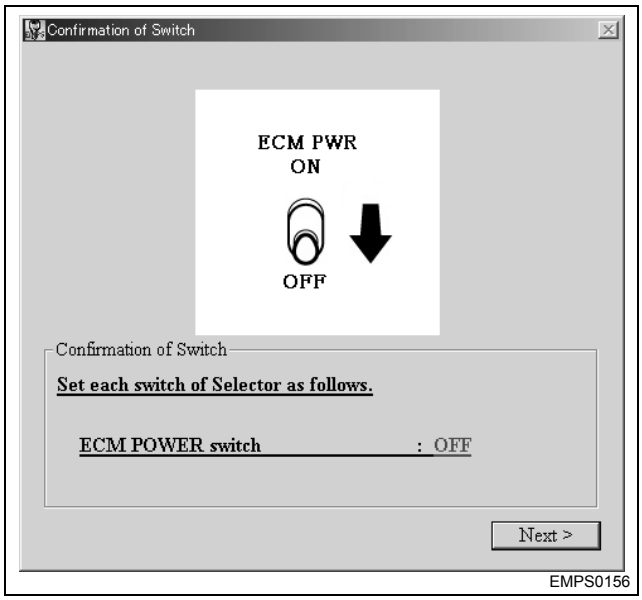


EMPS0092

Click the [Next] button.

5.9 Switch Confirmation Screen

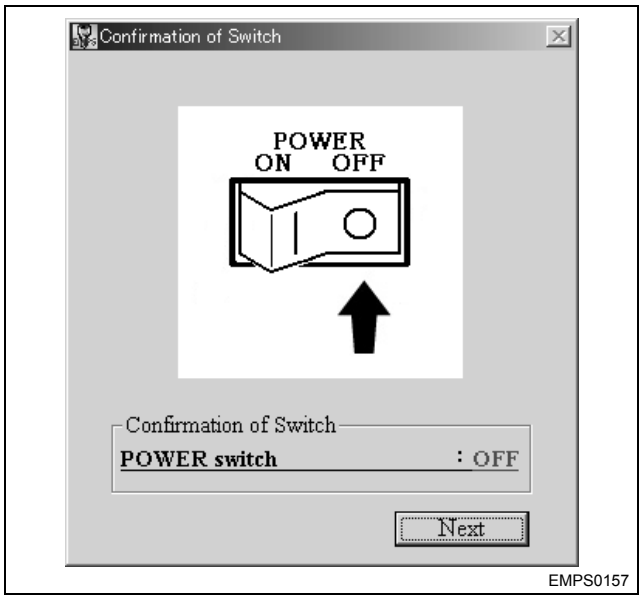
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation.



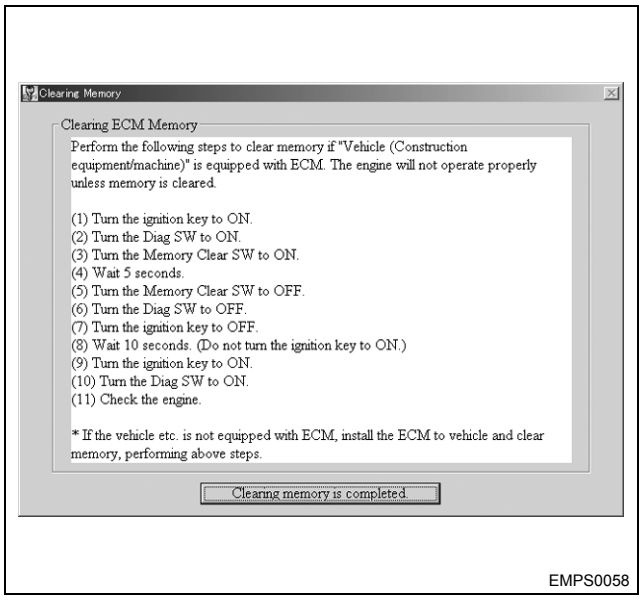
After configuring the power switch setting, click the [Next] button to advance to “5.10 Cable Removal Procedure Screen.”

5.10 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This advances to “5.11 Memory Clear.”

5.11 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



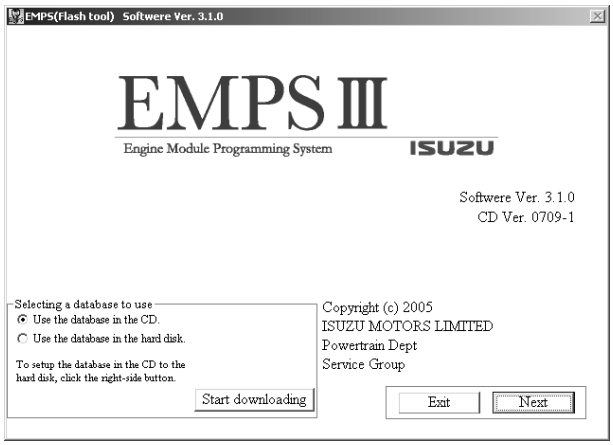
After memory clear is complete, click the [Clearing memory is completed.] button to return to “Process Menu” screen.

6. ECM Information

This section describes the procedure to display the connected currently ECM information.

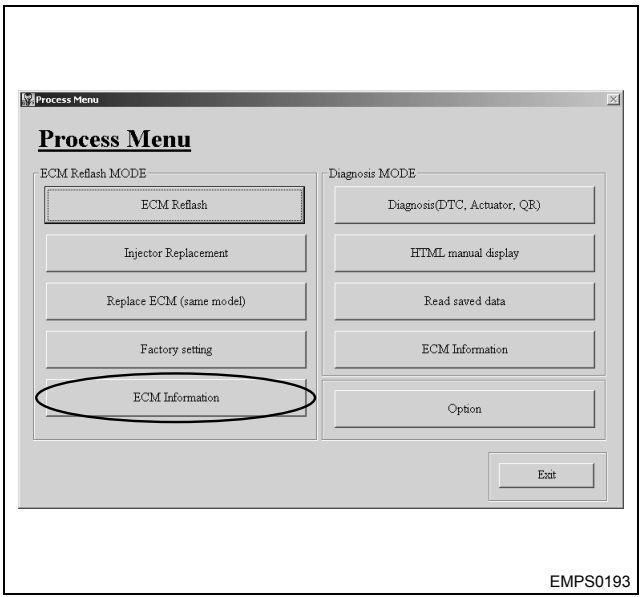
6.1 Startup

Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



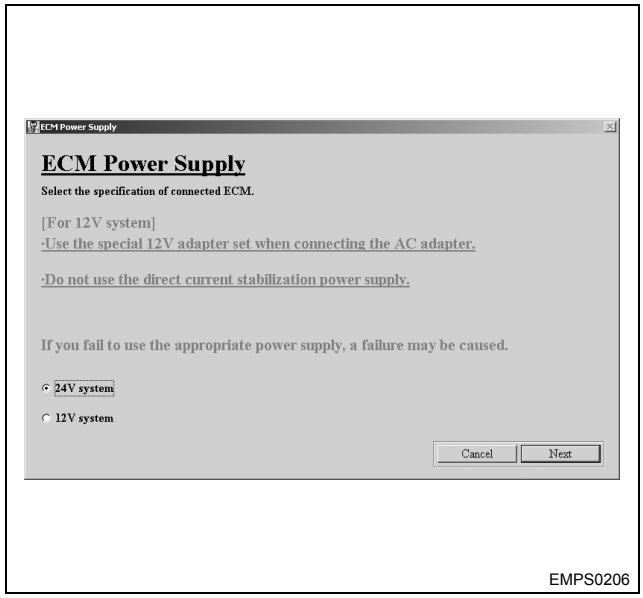
EMPS0161

Clicking the [Next] button displays the “Process Menu” screen shown below.



EMPS0193

Click the [ECM Information] button to advance to “ECM Power Supply” screen.



EMPS0206

Select “24V system” or “12V system” according to the voltage specification of ECM.

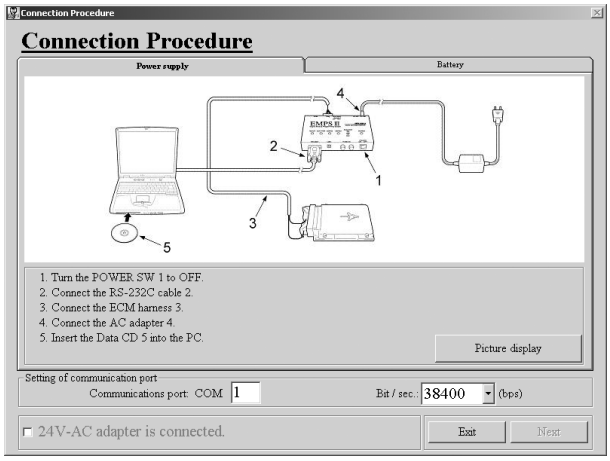
Caution:
Do not use the direct current stabilization power supply in case of 12V system. Doing so may cause failure.

Note:
Optional 12V AC adapter and 12V Power Assist Box are required when reflashing 12V ECM using the AC adapter.

Click the [Next] button to advance to “Connection Procedure” screen.

Note:
The following screens are for 24V system. Refer to “2.1 Startup” for 12V system.

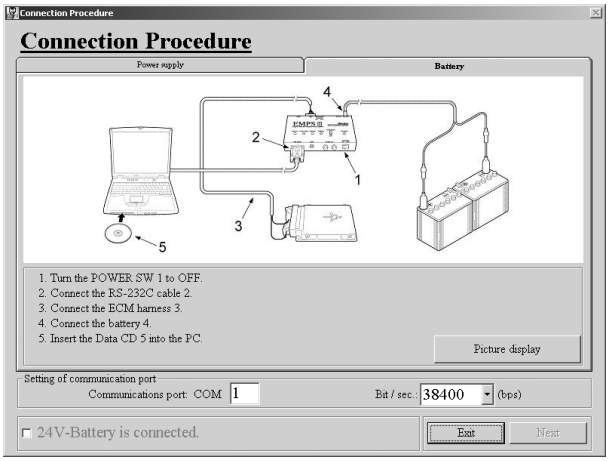
Power Supply Connection (24V system)



*This screen is for 24V system.

EMPS0220

Battery Connection (24V system)



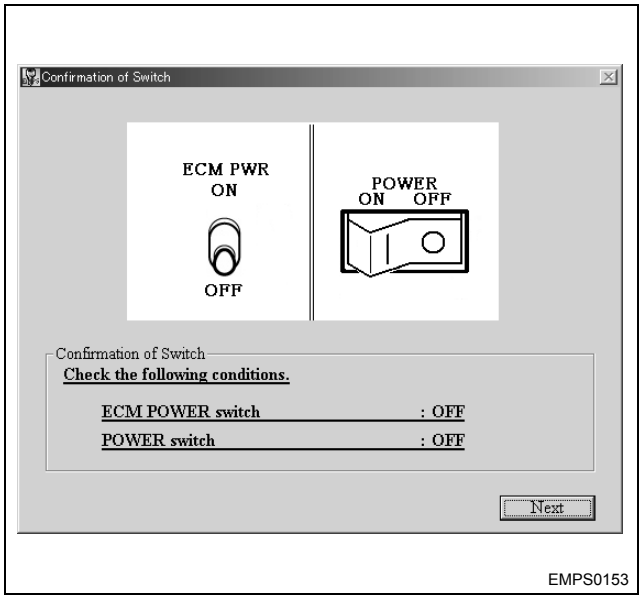
*This screen is for 24V system.

EMPS0221

Connect the PC, selector, and ECM according to the procedure.
After connection, click the [OK] button to advance to "6.2 Switch Confirmation Screen."

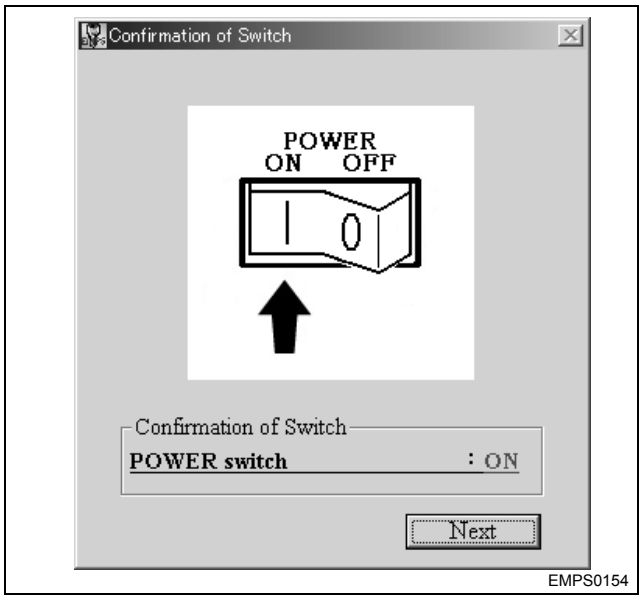
6.2 Switch Confirmation Screen

After checking to make sure that the initial settings of the switches are as shown on the screen, click the [Next] button.



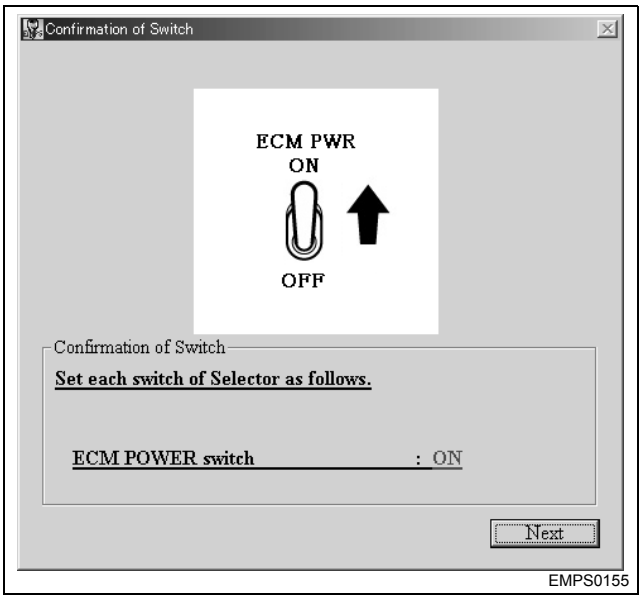
EMPS0153

Turn on the power switch, and then click the [Next] button.



EMPS0154

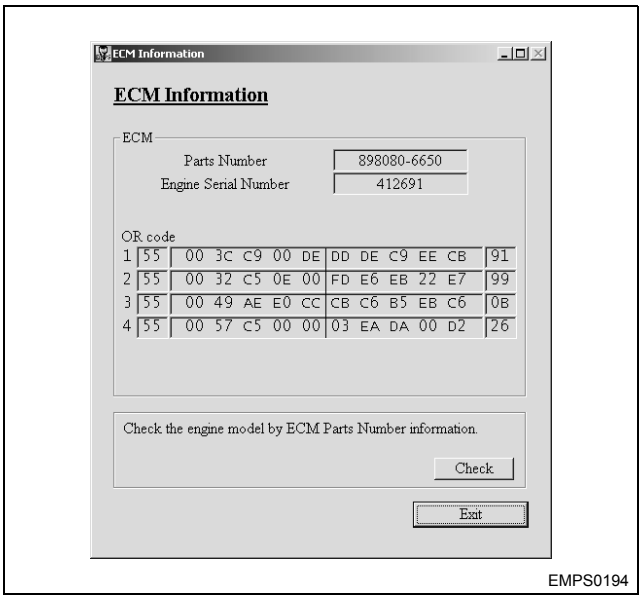
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

ECM POWER switch: ON

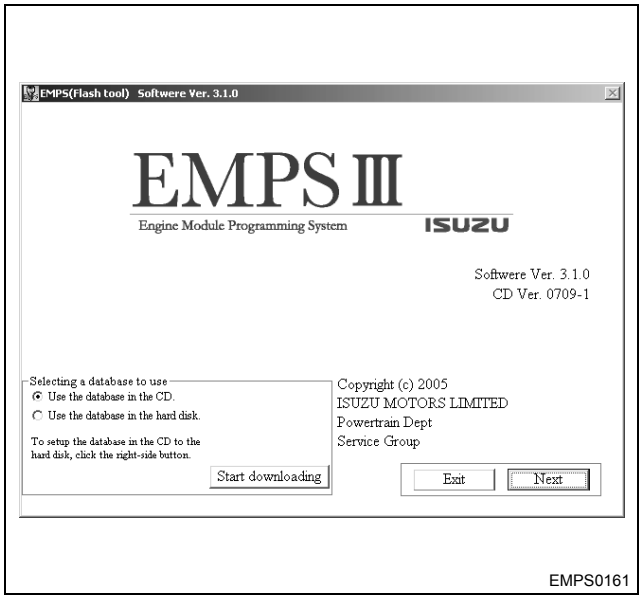
After configuring the switch settings, click the [Next] button.
ECM Information screen will appear.



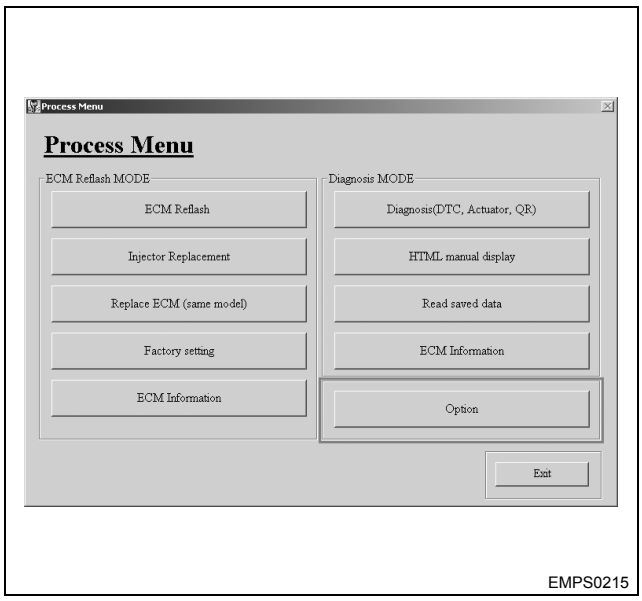
7. Option

7.1 Startup

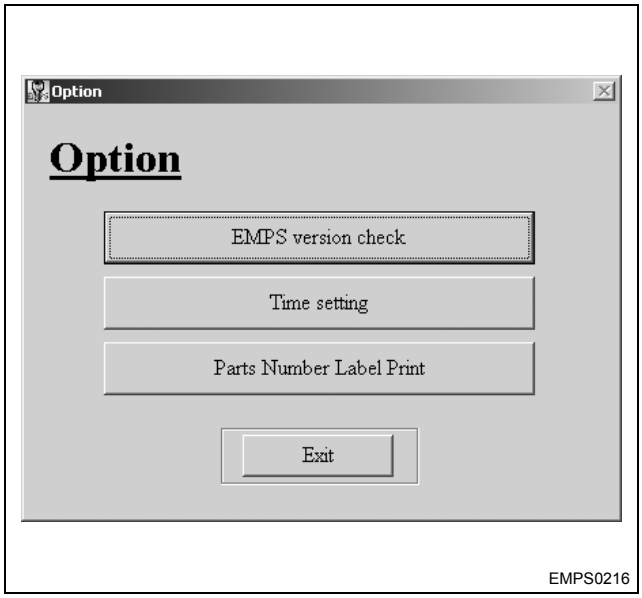
Double-click the “EMPS3” icon on your Windows desktop to display the “Initial Startup” screen.



Clicking the [Next] button displays the “Process Menu” screen shown below.



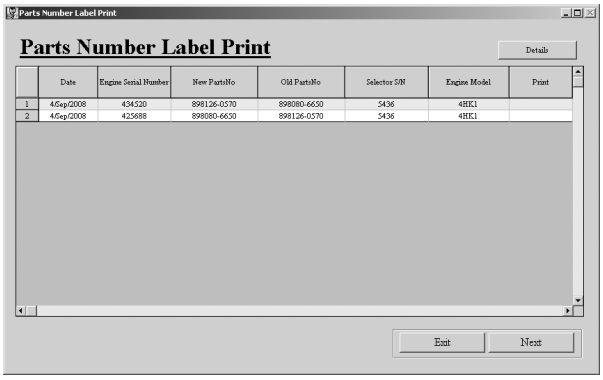
Click the [Option] button to advance to “Option” screen.



1. EMPS version check
   Performs version check of the program. If the version does not match, proceed to the upgrading procedure to the latest version.
2. Time setting
   Displays the time setting properties screen on your computer to manage the saved date and time that is acquired by snapshot correctly.
3. Parts Number Label Printing
   When reflashing in any country other than the United States, enter a reflashed new Parts Number on a label, and paste it on the ECM.

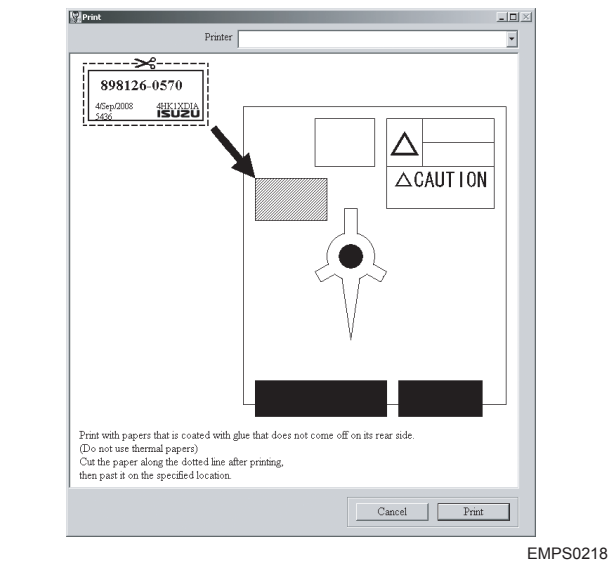
Parts Number Label Printing Procedure

With PC connected to printer, prepare a label sheet.
Click the [Parts Number Label Print] button on the “Option” screen to advance to “Parts Number Label Print” screen.



EMPS0217

This screen displays the history data of reflashing. Select the item you want to print, and click the [Next] button to advance to the print preview screen.



EMPS0218

Click the [Print] button to start printing.

8. Error Code List

Start-up

Code	Message	Description	Response
0001	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	Working folder not acquisition	Reinstall the system.
0002	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	Working folder does not exist.	Reinstall the system.
0003	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	INI file does not exist.	Reinstall the system.
0004	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	INI file invalid	Reinstall the system.

Connection Command Screen

Code	Message	Description	Response
0005	The CD-ROM drive does not exist.	CD drive cannot be found.	Check the CD-ROM drive.
0006	The CD cannot be read.	CD read failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0007	The CD has not been inserted. Insert the CD and click Retry button.	The CD has not been inserted.	Insert the Data CD into the CD-ROM drive.
0008	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	MDB file copy failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0009	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	CD version file copy failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0010	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	CD version file read failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0011	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	MDB Open failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.

Mode Select Screen

Code	Message	Description	Response
0012	Service address of OEM master cannot be obtained.	OEM master service address read failure	Check the Data CD. Contact your administrator if there is no fault.

User Authentication Screen

Code	Message	Description	Response
0013	Enter your ID.	ID not input	Enter your ID.
0014	Enter your PASSWORD.	Password not input	Enter your password.
0015	Enter the PASSWORD for compulsory reflash.	Password for compulsory reflash not input	Enter the password for compulsory reflash.
0016	ID and PASSWORD are invalid.	ID does not correspond to password.	Enter your correct password.
0017	The PASSWORD for compulsory reflash is invalid.	Password for compulsory reflashing cannot be analyzed.	Enter the correct password for compulsory reflash.
0018	The PASSWORD for compulsory reflash is invalid.	Password for compulsory reflash does not correspond to ID.	Enter the correct password for compulsory reflash.
0019	The PASSWORD for compulsory reflash has expired.	Password for compulsory reflash has expired.	Obtain the correct password for compulsory reflash from your administrator.
0020	Service address of OEM master cannot be obtained.	OEM master service address read failure	Check the Data CD. Contact your administrator if there is no fault.

OEM Manufacturer Selection Screen

Code	Message	Description	Response
0021	Select the machine's manufacturer and click “OK.”	OEM not selected	Select OEM NAME.

Connection Confirmation Screen

Code	Message	Description	Response
0022	Enter the COM port.	COM port not input	Enter the COM port.
0023	Select transmission bit rate.	Transmission bit rate not selected	Check if COM port operates properly.
0024	Setting of COM port is invalid.	Input port invalid digit number	Enter the correct COM port.
0025	Setting of COM port is invalid.	Input port invalid number	Enter the correct COM port.
0026	Communication setting is invalid.	Invalid communication setting	Check if COM port operates properly.
0027	Process was terminated last time (P_DATE). Do you want to continue?	Previous file exits. (Last process continuation confirmation)	Click the [Yes] button to advance to “2.5 Current ECM Parts Number Confirmation Screen.
0028	Previous ECM Parts Number information will be deleted. Is it OK?	Previous file deletion confirmation (This message appears to confirm deletion of the data when the [No] button of the above message box is clicked.)	Carry out the procedure following the instructions on the screen.

Selector S/N Reading (1st time)

Code	Message	Description	Response
0029	Selector S/N Request cannot be sent.	Selector S/N request failure	Click the [OK] button to exit the process, and then check the selector.
0030	This is unconfirmed selector. Check the selector.	Selector unconfirmed	Click the [OK] button to exit the process, and then check the selector.
0031	User ID does not correspond to selector S/N. Confirm user ID again.	User ID not verified	Enter your correct user ID.

Code	Message	Description	Response
0032	Communication error If the error occurs again, contact the administrator.	Incorrect number of digits in S/N	Check each wiring connection, and restart the process again.
0033	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0034	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0035	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0036	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0037	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0038	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0039	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0040	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0041	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0042	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0043	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0044	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0045	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0046	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0047	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

Former Parts No. Reading (1st time)

Code	Message	Description	Response
0048	ECM Parts Number Request cannot be sent.	Parts Number request failure	Click the [OK] button to exit the process, and then check the selector.
0049	Communication error If the error occurs again, contact the administrator.	Invalid number of digits for Parts Number	Click the [OK] button to exit the process, and then check the selector. If the error occurs again, contact the administrator.
0050	Record of current Parts No. does not exist. The part number will be confirmed again. Clicking the [OK] button returns to Selection Menu.	Either former or current code does not exist.	Click the [OK] button to return to “Process Menu” screen in each section. Clicking the [Cancel] button displays a message to confirm exiting of the program.
0051	Record of current Parts No. does not exist. The part number will be confirmed again. Clicking the [OK] button returns to Selection Menu.	Record acquisition error	Click the [OK] button to return to “Process Menu” screen in each section. Clicking the [Cancel] button displays a message to confirm exiting of the program.
0052	Service address does not correspond. Do you want to search again?	Service address does not correspond.	Click the [Yes] button to search again.Check the Data CD. If the error occurs again, contact the administrator.
0053	ECM Parts Number Request cannot be sent.	Parts Number request failure of service address retry	Click the [OK] button to exit the process, and then check the selector.
0054	Current ECM Parts Number cannot be obtained. Do you want to execute an integrated confirmation process?	Parts Number cannot be obtained.	Click the [Yes] button for integrated confirmation process. To cancel the process, click the [No] button.
0055	Integrated confirmation process takes about 60 minutes. Do you want to execute this process?	Execution confirmation of integrated confirmation process if clicking the [Yes] button in the message above.	Carry out the procedure following the instructions on the screen.
0056	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. If the ECM Parts Number cannot be obtained even after compulsory reflash, the ECM may be damaged. Program will be ended.	Parts Number cannot be obtained even after the integrated confirmation process.	Perform the compulsory reflash. If this message appears in the compulsory reflash process, ECM may be damaged.
0057	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0058	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0059	Communication error Operate EMPS again after quitting EMPS application. When this error occurs again, deal with according to contents of an error code table in the operating manual.	Command error reception	Communication error may occur due to devices such as USB device connected to the personal computer. Disconnect EMPS and all communication devices (including USB device) from the personal computer. Restart the personal computer and connect only EMPS related devices, then operate EMPS again. If the error occurs again, contact the administrator.

Code	Message	Description	Response
0060	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0061	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0062	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0063	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0064	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0065	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0066	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0067	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0068	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0069	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0070	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0071	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

New ECM Parts Number Search Screen

Code	Message	Description	Response
0072	Select “ENGINE MODEL”, “ENGINE TYPE” from pull-down menu respectively, and click “Select” button.	ENGINE MODEL not selected	Select the ENGINE MODEL and ENGINE TYPE.
0073	Select “ENGINE MODEL”, “ENGINE TYPE” from pull-down menu respectively, and click “Select” button.	ENGINE TYPE not selected	Select the ENGINE MODEL and ENGINE TYPE.
0074	Select “OEM NAME” from pull-down menu.	OEM NAME not selected	Select the OEM NAME.
0075	Enter the six-digit number into the “ENGINE NUMBER” field.	ENGINE NUMBER not input	Enter the ENGINE NUMBER.
0076	ECM Parts Number cannot be found.	Appropriate new Parts Number does not exist.	Click the OK button and follow the instructions on the screen.

New ECM Parts Number Search Confirmation Screen

Code	Message	Description	Response
0077	Enter new ECM Parts Number.	New Parts Number not input	Enter the parts number.
0078	Record of former ECM Parts No. to be reflashed compulsorily does not exist.	No record for compulsory reflash	Confirm the parts number and enter it again.
0079	ECM Parts Number is not compatible	No compatible code exists.	Confirm the parts number and enter it again.
0080	Enter search condition for ECM Parts Number.	OEM search refinement condition not selected	Select the search condition.
0081	New ECM Parts Number cannot be identified.	Refinement is not possible.	After checking the search refinement condition, search again.

Rewriting Result Confirmation Screen

Code	Message	Description	Response
0082	The CD cannot be read.	CD cannot be read.	Check the CD-ROM.
0083	The CD has not been inserted. Insert the CD and click Retry button.	The CD has not been inserted.	Insert the Data CD into the CD-ROM drive.
0084	The CD, which is inserted, may be different from one used to start this program, or may be damaged. Program will be ended in this status. Check the CD and start the program again to restart the process.	CD version cannot be obtained.	Carry out the procedure following the instructions on the screen.
0085	Setting of the program file does not exist. Reflash cannot be processed. Select again.	Program file cannot be obtained.	Carry out the procedure following the instructions on the screen.
0086	The CD, which is inserted, may be different from one used to start this program, or may be damaged. Program will be ended in this status. Check the CD and start the program again to restart the process.	Program file cannot be decompressed.	Carry out the procedure following the instructions on the screen.

READY LED (ON)

Code	Message	Description	Response
0087	Check the switch status.	Switch status is incorrect.	Check the switch status of selector.

Rewriting Initialization Process

Code	Message	Description	Response
During execution			
0088	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0089	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0090	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0091	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

Code	Message	Description	Response
At CALL BACK			
0092	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0093	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0094	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0095	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0096	Reflash error Do you want to try reflash again?	Flash memory cannot be erased with boot mode. (at initializing only)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0097	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

Rewriting Reflashing Process

Code	Message	Description	Response
During execution			
0098	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0099	Reflash error Do you want to try reflash again?	Inconsistent execution state (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0100	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0101	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0102	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
At CALL BACK			
0103	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0104	Reflash error Do you want to try reflash again?	User program file cannot be found. (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0105	Reflash error Do you want to try reflash again?	Invalid user program file (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0106	Reflash error Do you want to try reflash again?	No data to be written to flash memory (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

Code	Message	Description	Response
0107	Reflash error Do you want to try reflash again?	Close (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0108	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0109	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0110	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0111	Reflash error Do you want to try reflash again?	Writing error (at writing only)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0112	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

Rewriting Verification Process

Code	Message	Description	Response
During execution			
0113	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0114	Reflash error Do you want to try reflash again?	Inconsistent execution state (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0115	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0116	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0117	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
At CALL BACK			
0118	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0119	Reflash error Do you want to try reflash again?	User program file cannot be found. (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0120	Reflash error Do you want to try reflash again?	Invalid user program file (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0121	Reflash error Do you want to try reflash again?	No data to be written to flash memory (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0122	Reflash error Do you want to try reflash again?	Close (at writing and verifying)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

Code	Message	Description	Response
0123	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0124	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0125	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0126	Reflash error Do you want to try reflash again?	Verification error (at verification only)	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.
0127	Reflash error Do you want to try reflash again?	Unknown	Click the [YES] button to return to “Process Menu” screen. To cancel, click the [No] button.

READY LED (OFF)

Code	Message	Description	Response
0128	Check the switch status.	LED not off	Check the switch status.

Selector S/N Reading (2nd time)

Code	Message	Description	Response
0129	Selector S/N Request cannot be sent.	Selector S/N request failure	Click the [OK] button to exit the process, and then check the selector.
0130	Communication error If the error occurs again, contact the administrator.	Incorrect number of digits in S/N	Check each wiring connection, and restart the process again.
0131	The device, which is different from one used to read the ECM Part Number, is connected. This ECM cannot operate properly. Do you want to try the process again?	Differ from the first time.	Carry out the procedure following the instructions on the screen.
0132	Process will be terminated. Connect the selector correctly and try again.	Confirmation of canceling process if clicking the [No] button in the reflash error screen	Click the [OK] button to return to User Authentication Screen.
0133	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0134	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0135	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0136	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0137	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0138	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.

Code	Message	Description	Response
0139	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0140	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0141	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0142	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0143	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0144	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0145	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0146	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0147	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

New Parts No. Reading (2nd time)

Code	Message	Description	Response
0148	ECM Parts Number Request cannot be sent.	Parts Number request failure	Click the [OK] button to exit the process, and then check the selector.
0149	Communication error If the error occurs again, contact the administrator.	Invalid number of digits for Parts Number	Click the [OK] button to exit the process, and then check the selector. If the error occurs again, contact the administrator.
0150	Reflashed Parts Number does not correspond to the entered/selected Parts Number.	Differ from the entry value	Check ECM Parts Number, and restart the process again.
0151	Service address does not correspond. Do you want to search again?	Service address retry	Carry out the procedure following the instructions on the screen.
0152	ECM Parts Number Request cannot be sent.	Parts Number request failure of service address retry	Click the [OK] button to exit the process, and then check the selector.
0153	Current ECM Parts Number cannot be obtained. Do you want to execute an integrated confirmation process?	Parts Number cannot be obtained.	Click the [Yes] button for integrated confirmation process. To cancel the process, click the [No] button.
0154	Integrated confirmation process takes about 60 minutes. Do you want to execute this process?	Execution confirmation of integrated confirmation process if clicking the [Yes] button in the message above.	Carry out the procedure following the instructions on the screen.

Code	Message	Description	Response
0155	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. If the ECM Parts Number cannot be obtained even after compulsory reflash, the ECM may be damaged. Program will be ended.	Parts Number cannot be obtained even after the integrated confirmation process.	Perform the compulsory reflash. If this message appears in the compulsory reflash process, ECM may be damaged.
0156	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0157	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0158	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0159	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0160	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0161	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0162	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0163	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0164	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0165	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0166	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0167	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0168	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0169	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0170	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

Campaign

Code	Message	Description	Response
0171	Campaign log could not be output.	Campaign decoding error	Check the HDD has enough free space, and perform the process again.
0172	Campaign log could not be output.	Campaign file coupling error	Check the HDD has enough free space, and perform the process again.
0173	Campaign log could not be output.	No file being coupled for campaign	Check the HDD has enough free space, and perform the process again.
0174	Campaign log could not be output.	Encryption error	Check the HDD has enough free space, and perform the process again.
0175	Desktop folder could not be obtained.	Desktop cannot be obtained.	Check the HDD has enough free space, and perform the process again.
0176	File copy cannot be performed.	Desktop cannot be copied.	Check the HDD has enough free space, and perform the process again.
0177	Setting of COM port is invalid.	Invalid port (communication setting)	Check if COM port operates properly.

Others

Code	Message	Description	Response
0178	Do you want to read the Parts No. and QR data from a file? (If you select “No,” data will be read from ECM.)	Read confirmation	Carry out the procedure following the instructions on the screen.
0179	Download has not been completed successfully. Perform termination, and restart the process from the beginning.	Download failure	Carry out the procedure following the instructions on the screen.
0180	Engine Serial Number has not been entered.	No Engine Serial Number is entered.	Enter the Engine Serial Number.
0181	Entered Engine S/N does not correspond to connected ECM.	No appropriate data exists in DB.	Check the engine model, and restart the process again.
0183	Failed to upload. Do you want to continue the later process?	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0184	Failed to upload. Perform termination, and restart the process from the beginning.	Process exit confirmation	Carry out the procedure following the instructions on the screen.
0185	QR data has not been set. (The item “Check OK” does not exist.)	No QR data is entered.	Enter the QR data.
0186	Error is found in setting data.	QR data is incorrect.	Enter the correct data.
0187	Do you want to start the registration of injector QRMSG to be changed?	Confirmation of starting registration process	Carry out the procedure following the instructions on the screen.
0188	Do you want to continue the change process for injector? (If you select “No,” the process will be ended.))	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0189	Replace the ECM, and then click the OK button.	Direction to replace ECM	Carry out the procedure following the instructions on the screen.

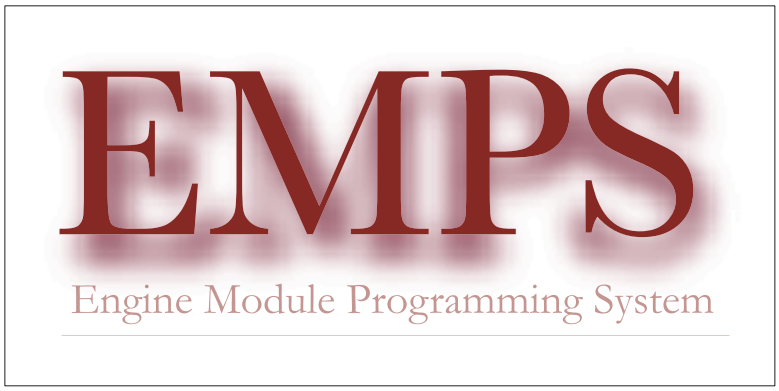
Code	Message	Description	Response
0190	Engine Serial Number has not been changed. Do you want to continue this process? (If you continue, data read from ECM will be used.)	S/N check	Carry out the procedure following the instructions on the screen.
0191	Uploaded QR data does not exist.	QR data does not exist.	Perform upload.
0192	Do you want to start downloading injector QR code?	Confirmation of starting process	Carry out the procedure following the instructions on the screen.
0193	Do you want to cancel the process, then return to Process Menu?	Cancel of QR code setting screen	Carry out the procedure following the instructions on the screen.
0194	Setting process for injector will be continued.	Confirmation after reflashing	Carry out the procedure following the instructions on the screen.
0195	Changed QR code does not exist.	QR code not changed	Set the correct QR code.
0196	Connected ECM is blank ECM. Quit the EMPS program and connect other ECM. Or perform the reflashing process.	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.
0197	Connected ECM is blank ECM. Do you want to continue the replacement process for injector?	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.
0198	Connected ECM does not correspond to EMPS. Perform reflash.	The ECM that does not correspond is connected.	Carry out the procedure following the instructions on the screen.
0199	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. Return to Process Menu.	Failed to obtain ECM Parts Number	Carry out the procedure following the instructions on the screen.
0200	Connected ECM corresponds to the engine.	Model check when setting back to the factory setting	Carry out the procedure following the instructions on the screen.
0201	Data corresponding to Engine S/N of connected ECM does not exist.	The ECM that does not correspond is connected.	Check the version of data CD, and restart the process again.
0202	The ECM prior to changing connection does not correspond to the current ECM. Return to the previous screen to change selection items. Or restart the process from the beginning.	ECM compatibility error	Carry out the procedure following the instructions on the screen.
0203	There is injector on which no QR code is set. (QR code setting value remains “0.”)	In case that injector QR code has not been set yet.	Set the correct QR code.
0204	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0205	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0206	Select “ENGINE TYPE” from pull-down menu.	Some items on the screen have not been selected.	Select the ENGINE TYPE.
0207	Entered Engine Serial Number does not exist in database. Confirm the Number and enter it again.	Incorrect Engine Serial Number input	Check the Engine Serial Number and enter it again.
0208	Perform reflash or connect other ECM. Entered Engine S/N does not correspond to connected ECM.	In case that invalid ECM is connected, such as the one that parts number is not set.	Carry out the procedure following the instructions on the screen.
0209	Engine cannot be started with currently connected ECM.	Try to register the Engine Serial Number that is not compatible with ECM connected.	Check the Engine Serial Number and enter it again.

Code	Message	Description	Response
0210	Do you want to download the database contained in the CD to the hard disk?	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0211	Versions of the databases in the CD and hard disk are the same.	For download and confirmation of database	Check the Data CD, and perform the process again.
0212	Downloading completed.	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0213	No database is found in the hard disk. Download a database from the CD.	Select “Use the database in the hard disk.” and try the process without database downloaded to the hard disk.	Carry out the procedure following the instructions on the screen.
0214	Communication between the selector failed. Check the wiring and the switch.	Communication error (connection)	Check each wiring connection, and restart the process again. USB driver installation might be failed. Refer to “Precautions on EMPSIII Setup Procedure” on the separate sheet, then retry to install the USB driver for EMPS.
0215	Cannot be operated while acquiring Snapshot data.	Try to perform other process while acquiring Snapshot data.	Carry out the procedure after acquiring Snapshot data.
0216	(File Name) type is not a Snapshot type.	File Name selected in “Read saved data” is not the file storing Snapshot data.	Carry out the procedure after checking the data.
0217	Error is found in setting data.	Error is found in setting value on the Snapshot display setting screen (KW mode).	Enter the correct setting value.
0218	Too many graphs. Only 10 graphs can be accepted.	The number of graphs selected on the Snapshot screen exceeds the maximum number of graphs available for display.	Reduce the number of graphs display, and carry out the procedure.
0219	Processing Snapshot but receiving no DTC code. Quitting the application, OK?	Try to finish the Snapshot before receiving the DTC code with the setting that storing Snapshot data starts when DTC code is received.	Carry out the procedure following the instructions on the screen.
0220	No DTC code input.	Try to complete the setting without entering the DTC code while “Start at DTC code reception” is selected on Snapshot trigger setting screen.	Enter DTC code.
0221	Input DTC code does not exist.	Enter the DTC code that does not exist while “Start at DTC code reception” is selected on Snapshot trigger setting screen.	Enter the correct setting value.
0223	Invalid minimum value.	The minimum input value on Actuator rail pressure control screen is not a figure.	Enter the correct value.
0224	Invalid maximum value.	The maximum input value on Actuator rail pressure control screen is not a figure.	Enter the correct value.
0225	The maximum input value is 80.	The maximum input value on Actuator rail pressure control screen exceeds the upper limit (80).	Enter the correct value.

Code	Message	Description	Response
0226	The minimum input value is 30.	The minimum input value on Actuator rail pressure control screen is below the lower limit (30).	Enter the correct value.
0227	Set the minimum value lower than the maximum value.	The maximum input value is lower than minimum input value on Actuator rail pressure control screen.	Enter the correct value.
0228	Input integral number value between (Min) and (Max).	Enter the value that is out of specified range on the number input field.	Enter the correct value.
0229	An error occurred at (Snapshot Filename). Application cannot be continued and is quitting.	Snapshot data saved file error	Carry out the procedure following the instructions on the screen.
0230	An error occurred while closing a file. Application cannot be continued and is closing.	Snapshot data saved file error	Carry out the procedure following the instructions on the screen.
0231	An error occurred between DataParameter and line on setting file (Filename). Application cannot be continued and is quitting.	Snapshot data saved file error	Carry out the procedure following the instructions on the screen.
0232	An error occurred during communication. Canceling the Snapshot acquiring.	Communication error (occurred while receiving Snapshot file)	Carry out the procedure following the instructions on the screen.
0233	Saving completed.	Confirmation message	Carry out the procedure following the instructions on the screen.
0252	Select “OEM NAME” from pull-down menu.	Some items on the screen have not been selected.	Select the OEM NAME.
0253	Select “ENGINE MODEL” from pull-down menu.	Some items on the screen have not been selected.	Select the ENGINE MODEL.
0254	Decompression is failed. Do you want to continue?	Confirmation message	Carry out the procedure following the instructions on the screen.
0255	Installation of HTML manual has completed.	Confirmation message	Carry out the procedure following the instructions on the screen.
0256	Reception time-out error was received. Perform termination, and restart the process from the beginning."	Communication error (CAN, KW2000)	Carry out the procedure following the instructions on the screen.
0257	A command error occurred. Restart the process from the beginning.	Communication error (CAN, KW2000)	Carry out the procedure following the instructions on the screen. USB driver installation might be failed. Refer to “Precautions on EMPSIII Setup Procedure” on the separate sheet, then retry to install the USB driver for EMPS.
0258	Select injector.	Injector is not selected on Actuator test.	Carry out the procedure following the instructions on the screen.
0259	Information of working folder cannot be written in the registry.	Error occurred while setup	Carry out the procedure following the instructions on the screen.
0260	Communication to ECM has not been completed successfully. Refer to “Scan tool communication circuit system check” in the Troubleshooting Manual. Check the ignition key and connection, and restart the process from the beginning.	Communication error (improper connection)	Carry out the procedure following the instructions on the screen.

Code	Message	Description	Response
0261	The value of QR code and BCC are wrong. Check the entered items.	QR code or BCC is not entered correctly.	Enter the correct value.
0262	Setting of COM port is invalid. Configure the setting of COM port.	COM port number set on the PC is different from one set in EMPS program.	Check the communication port number on [Control Panel] – [System] – [Device Manager] on the PC. Check each cable connection conditions.
0263	Mismatch of ECM connected and EMPS user authority As ECM connected is for other manufacturer, you cannot reflash ECM with the user authority of EMPSIII connected.	ECM for other manufacturer is connected.	Connect the appropriate ECM.
0264	Service address does not correspond. Do you want to search again?	Correct value is set in the parts number acquisition command or the parts number information does not be obtained from ECM.	After quitting the EMPS program, check the connection etc. and try again. If the symptom is not improved, contact the administrator.

EMPS
(Engine Module Programming System)
Operating Instructions



Flash Tool

Table of Contents

Flash Tool (EMPS)

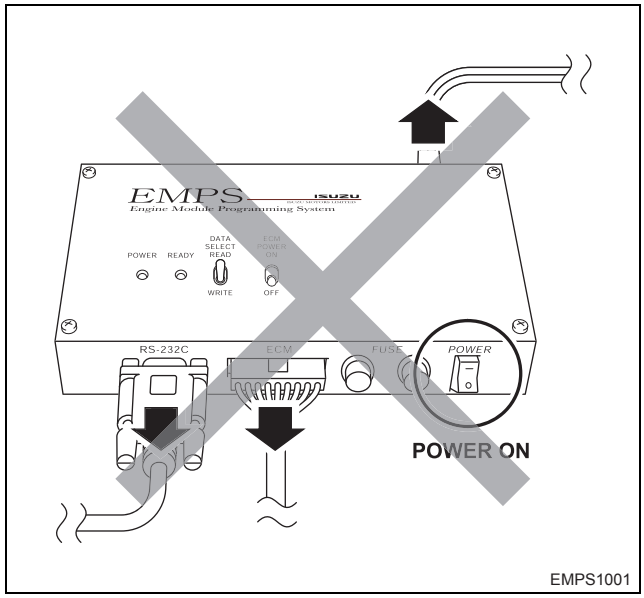
Introduction

Only the person with approval of the machine manufacturer or engine manufacturer can reflash ECM using EMPS.

Cautions

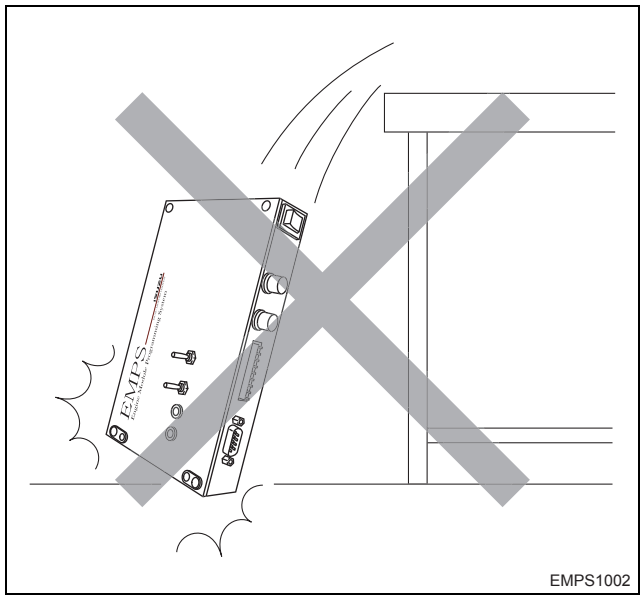
For your safety, read the following cautions.

1. Always turn the POWER switch of EMPS selector to OFF before connecting/disconnecting the cables. Before turning on the POWER switch of EMPS selector, make sure that the cables are connected securely.

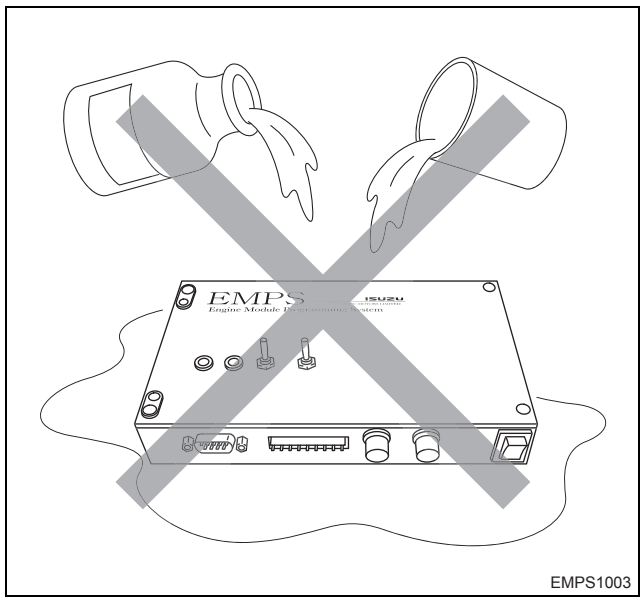


EMPS1001

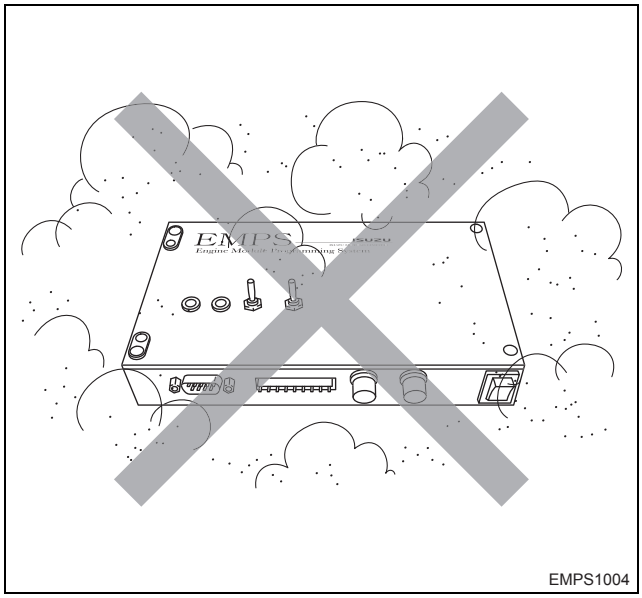
2. Do not disassemble the EMPS selector.
3. ECM can be reflashed up to around 100 times. (The number of times varies depending on the conditions of use.)
4. If the POWER lamp does not come on when turning the POWER switch ON with the power source connected, check the fuse.
5. Do not have an impact on it by dropping. It causes internal faults even no damage on appearance.


EMPS1002

6. Avoid using and storing it in a place that it may contact water or chemicals. When cleaning, use cloth with mild detergent, not highly-volatile solvent such as thinner, and wipe out using dry cloth.

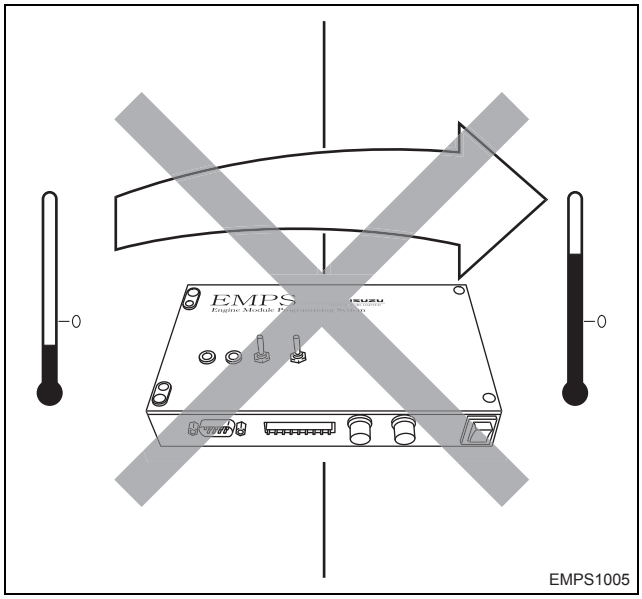

EMPS1003

7. Avoid using and storing it in dusty area. Store it to avoid dust on the connector etc. when you don't use.



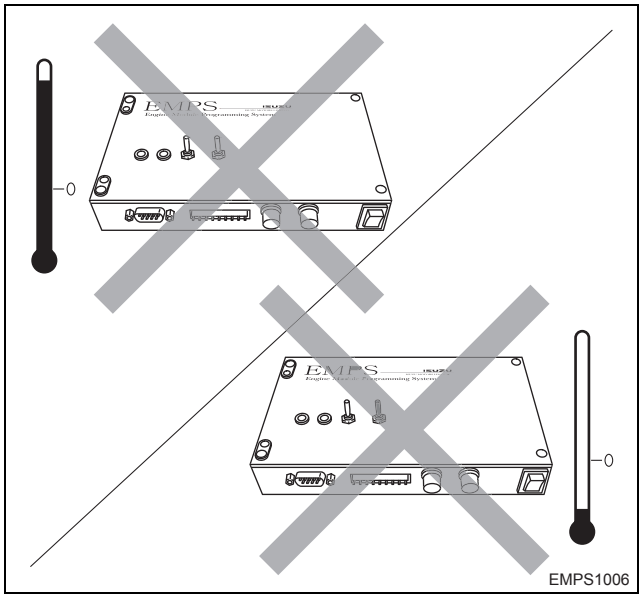
EMPS1004

8. Avoid using and storing it in a place with rapid changes of temperature. If bringing it from cold outside into warm indoor suddenly, dew condensation may occur resulting in malfunction or trouble.



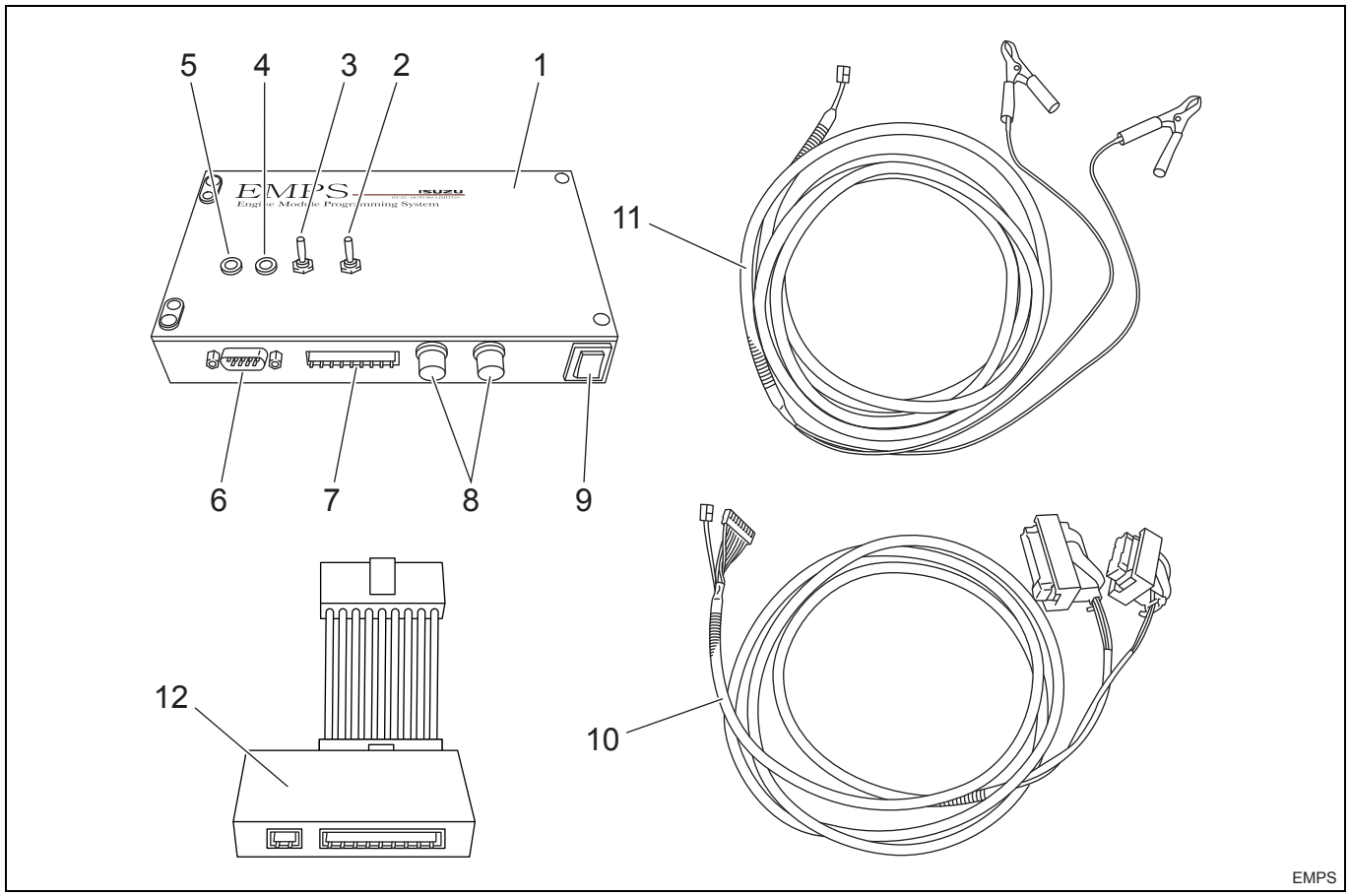
EMPS1005

9. Avoid using and storing it in a place with extreme high or low temperature. Especially in summer, do not leave it in the machine exposed to direct sunlight.



EMPS1006

EMPS Component Parts



Name

1. Selector
2. ECM POWER switch
3. DATA SELECT switch
4. READY lamp
5. POWER lamp
6. RS-232C connector
7. ECM connector
8. Fuse
9. POWER switch
10. ECM connection cable
11. Battery cable
12. Extension box

Note:
If your PC has no RS-232C port, you can use a USB to RS-232C converter (optional) to connect.
However, error may occur during reflashing with some converters.
The converter shown below was verified for operation.

Except Windows 7

Maker	Product name	Model	JAN code	57.6 k	38.4 k	19.4 k
Buffalo	USB Serial Converter Cable	BHC-US01/GP	4981254134788	×	❍	×
Dynex	USB PDA/Serial Adapter Cable	DX-UBDB9	—	×	❍	*❍
Elecom	USB to Serial Cable	UC-SGT	4953103133716	×	❍	❍
Loas	USB RS-232C Converter Cable	ZUR-101	4967101189217	×	❍	❍
Sanwa supply	USB RS-232C Converter	USB-CVRS9	4969887652039	×	❍	*❍
Akizuki Denshi Tsusho	USB Serial Converter Cable	M-00720	—	×	❍	×

*Error may occur depending on the model of personal computer.

Corresponding to Windows 7 (Download the driver from the manufacturer's site.)

Maker	Product name	Model	JAN code	57.6 k	38.4 k	19.4 k
Elecom	USB to Serial Cable	UC-SGT	4953103133716	×	❍	×
Sanwa supply	USB RS-232C Converter	USB-CVRS9	4969887652039	×	❍	×
Akizuki Denshi Tsusho	USB Serial Converter Cable	M-00720	—	×	❍	×
CablesToGo	USB to Serial Adapter	26886	—	×	❍	×

ECM (hardware) compatibility

- ECM (hardware) that can be reflashed has no compatibility.
  Use the ECM that corresponds to the engine type and voltage specification.

	Voltage Specifications		Remarks
	12 V specifications	24 V specifications	
Eng Model	4HK1	4HK1	
	6HK1	6HK1	
	—	6WG1 6UZ1	ECM (hardware) for 6WG1 and 6UZ1 is the same.
	4JJ1	4JJ1	

- Using EMPS can reflash the ECM of industrial common rail engine only.
- Using EMPS cannot reflash the ECM of industrial engine (RED – 4 type injection system) that meets Phase 2 Emission Standards.

ECM Variation

	ECM for Shipping	Service ECM	Blank ECM
Calibration data	×	N/A	N/A
QR code	×	N/A	N/A
Q trim	×	N/A	N/A

System Requirements for EMPS Software (Recommended)

System Component	Specifications
PC	PC/AT compatible machine
CPU	Pentium III 800 MHz or more
OS*	Windows 2000 SP4, Windows XP SP1, SP2, Windows 7 in Japanese or English version
Memory	256MB or more
HDD	20GB or more
Video card	1024 × 768 dots or more, 256-color or more
Serial interface	One or more RS-232C ports (USB conversion connector etc. is also available)
External drive	CD-ROM drive

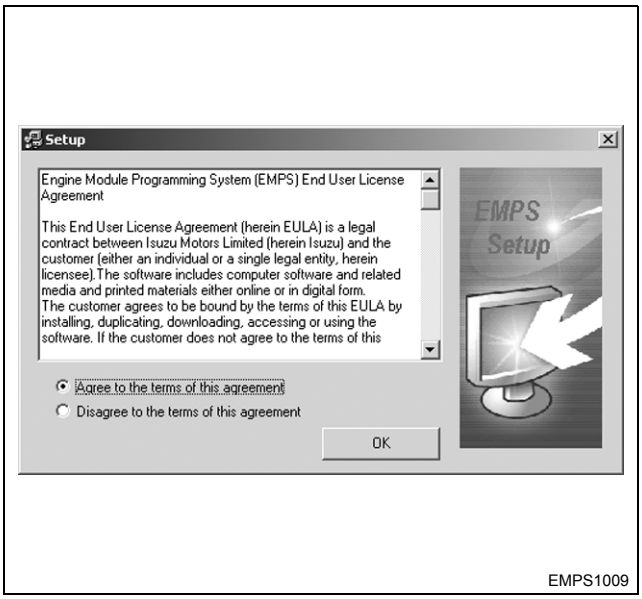
*32 bit only

EMPS (software) Setup Procedure

1. Insert the “EMPS setup CD” into the CD-ROM drive.
   This automatically starts up the setup program, and the following message appears.

EMPS1008

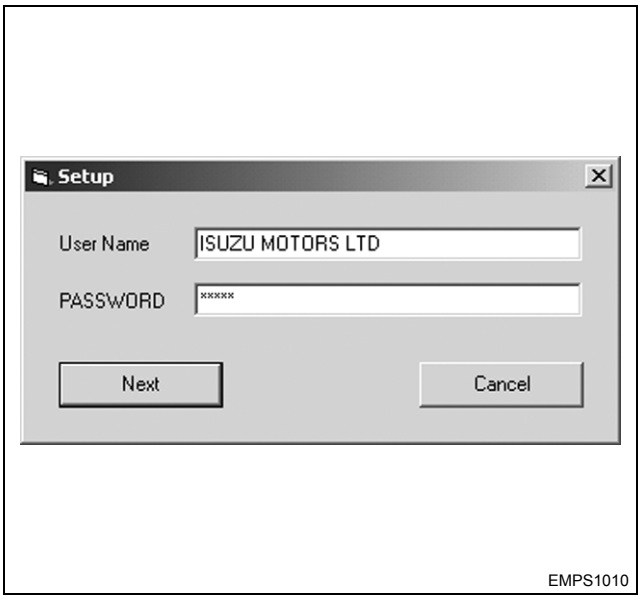
   Quit other application if it is running. Click the [OK] button.
   To cancel installation, click the [Cancel] button.



EMPS1009

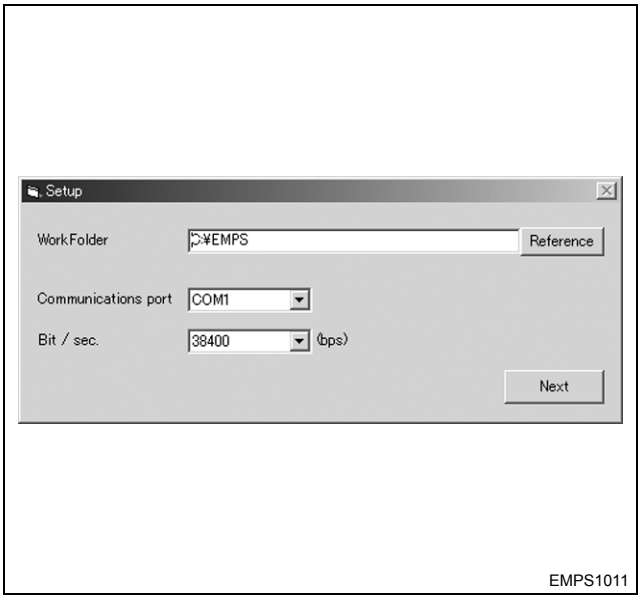
   Read the license agreement. If you agree to the terms, click [Agree to the terms of this agreement] and click the [OK] button.
   If you do not agree, click [Disagree to the terms of this agreement] and click the [OK] button to end the setup.

2. Enter the user name and password, and then click the [Next] button.



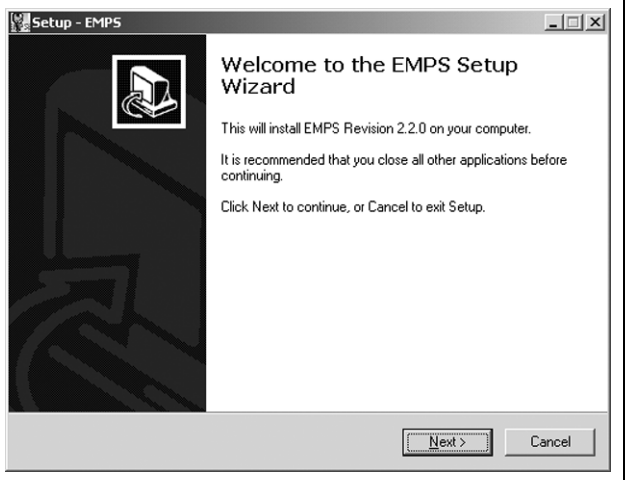
EMPS1010

3. Configure operating environment.
   Configure the work folder that system uses, the initial value of the COM port, and the initial value of the data transmission rate, and click the [Next] button.
   COM port and data transmission rate can be changed later. If you are not sure about this setting, do not change the value and click the [Next] button.



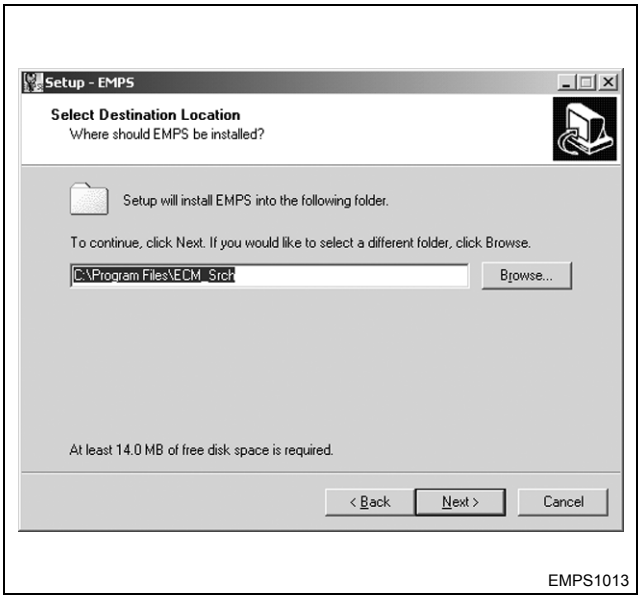
EMPS1011

4. After the user name and password are verified, the following display appears.
   Click the [Next] button.



EMPS1012

5. In the following display, confirm the installation destination and click the [Next] button.
   To change the installation destination, click the [Browse] button and select the folder you want to install.

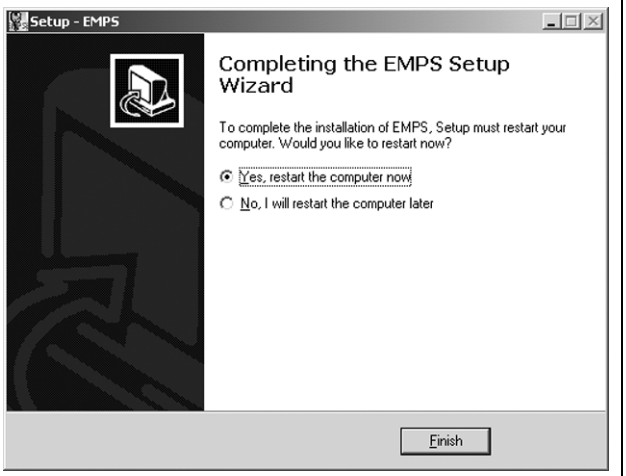


EMPS1013

6. This starts the setup.
   To cancel the setup halfway, click the [Cancel] button.

7. Setup completion
   The setup is completed, and the following display appears. Select [Yes, I want to restart my computer now.], and then click the [Finish] button.

Note:
You can also select [No. I want to restart my computer later.], but unexpected error may occur if you reflash with the EMPS before restart. Be sure to restart the computer before starting the EMPS.

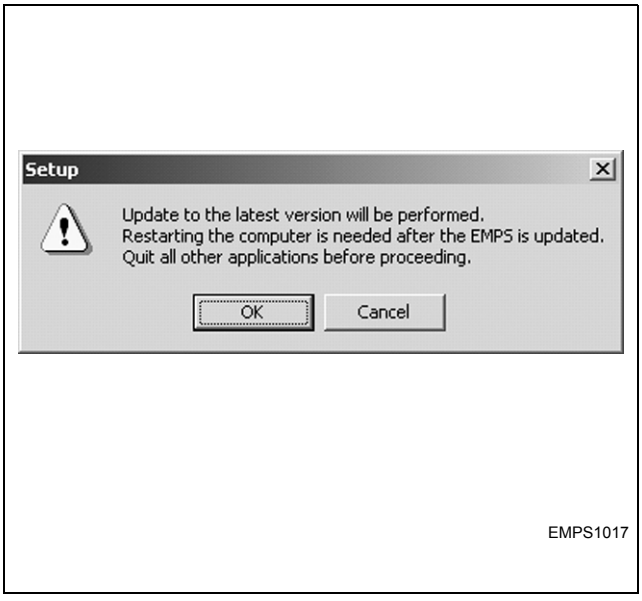


EMPS1015

System version upgrade

If the system has been upgraded, the update program will start automatically after the CD is inserted.
The following message will appear. Quit the EMPS if it is running, and click the [OK] button.
Clicking the [Cancel] button cancels the update process. Update must be performed before reflash with EMPS.

EMPS1016



EMPS1017

EMPS Operation Procedure

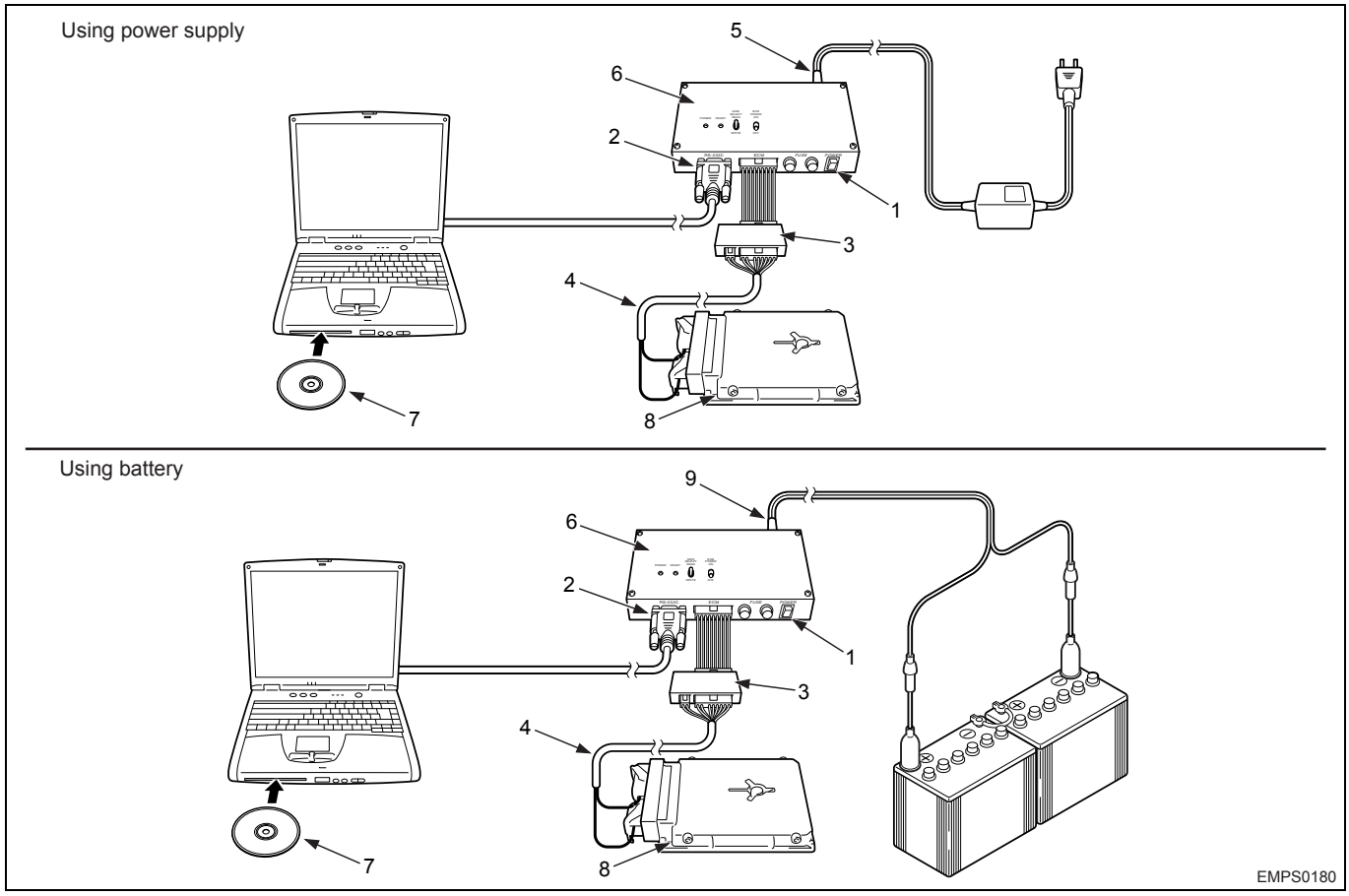
1. Preparation

This section describes preparation for starting the EMPS program.

1.1 Preparation

1. Printed label with update parts number is necessary to proceed reflashing in all countries except the US. Proceed next steps to get updated parts number. Contact pt_service@notes.isuzu.co.jp in order to obtain the updated parts number label. If engine is certified in the US, it is not necessary to replace the label. Proceed all steps.
2. After reflashing, you need to write down the new Parts Number on a label and attach it on the ECM.
3. Check the serial number of the selector, and have your user ID and password ready.
4. Check the engine serial number.
5. To perform compulsory reflash, obtain the specific password from the machine manufacturer or the engine manufacturer.

1.2 EMPS Selector Connection



Name

1. Power SW
2. RS-232C cable
3. Extension box
4. ECM harness
5. AC adapter cable
6. Selector
7. Data CD
8. ECM
9. Battery cable

Connection Procedure

1. Turn the POWER SW to OFF.
2. Connect the RS-232C cable.
3. Connect the Extension box to ECM harness.
4. Connect the Extension box to EMPS.
5. Connect the ECM harness to ECM.

Note:
Do not roll up the harness cord.

6. Connect the AC adapter or battery cable.
7. Insert the Data CD into the PC.

Removal Procedure

1. Turn the POWER SW to OFF.
2. Remove the AC adapter or battery cable.
3. Remove the Extension box from EMPS.
4. Remove the ECM harness.
5. Remove the RS-232C cable.
6. Eject the Data CD from the PC.

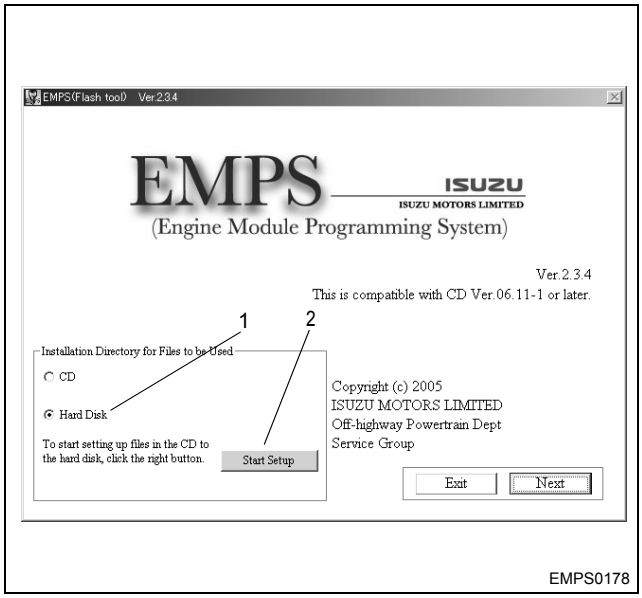
Caution:

- **Do not use an AC adapter at the same time when drawing power from a battery.**
- **Use the optionally available AC adapter when drawing power with an AC adapter.**
- **Prepare the AC adapter that matches the rating (12V/24V) of the ECM when drawing power with an AC adapter.**
- **Do not use a battery at the same time when drawing power from an AC adapter.**
- **Do not roll up the ECM harness. Data communication error will result.**
- **Make sure that the POWER switch of EMPS selector is turned to OFF before connecting/ disconnecting the ECM harness. Damage to EMPS or ECM selector will result.**

1.3 Reading data from the hard disk

This system is designed for running with the CD inserted to the CD drive, but can be run without the CD once after setting up the CD contents to the hard disk drive.
The setup procedure is as follows.

1. Select [Hard Disk] on the main screen.
2. Click the [Start Setup] button.

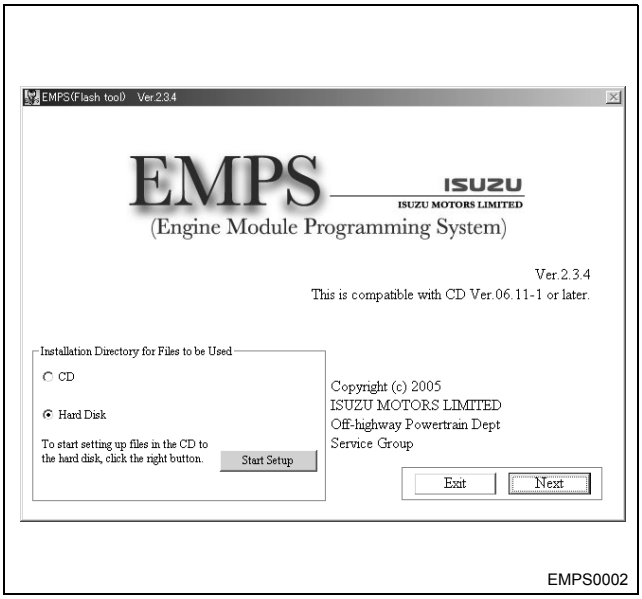


2. ECM Reflash

This section describes the process procedure for normal reflash.

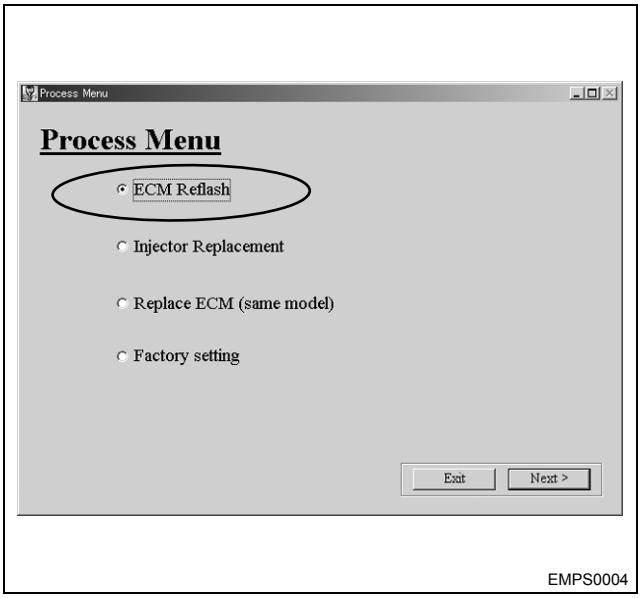
2.1 Startup

Double-click the “EMPS” icon on your Windows desktop to display the “Initial Startup” screen.



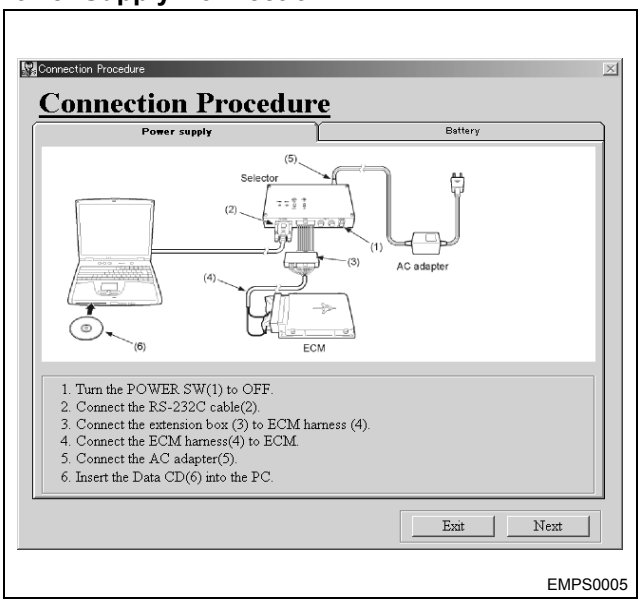
Clicking the [Next] button displays the message shown below.

Clicking the [OK] button displays the “Process Menu” screen.

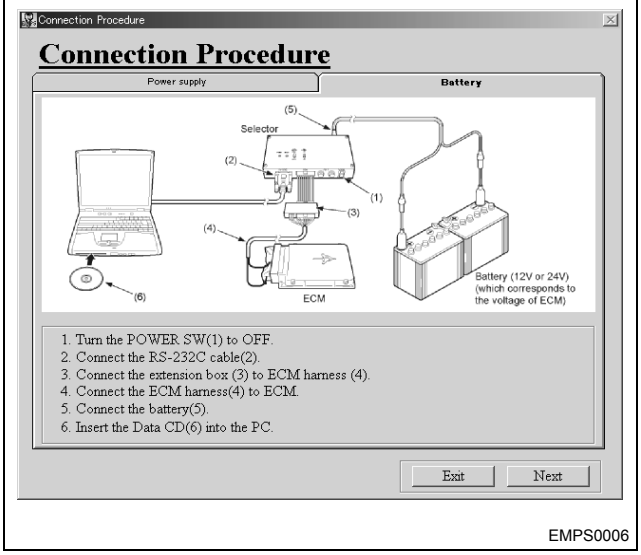


Select the [ECM Reflash], and click the [Next] button to advance to “Connection Procedure” screen.

Power Supply Connection

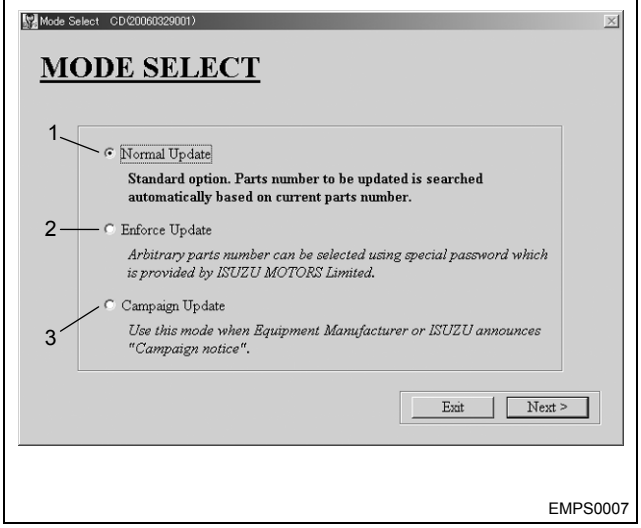


Battery Connection



EMPS0006

Connect the PC, selector, and ECM according to the procedure.
After connection, click the [Next] button to proceed to the mode selection screen.



EMPS0007

Name

1. Normal Update
2. Enforce Update
3. Campaign Update

[Normal Update] (normal reflash)
Compatible parts number with reflashed parts number is searched automatically and updated.

[Enforce Update] (compulsory reflash)
An arbitrary parts number is designated and updated.
Select this when reflashing was failed, or when reflashing the parts number with no compatibility.
Specific password is necessary.

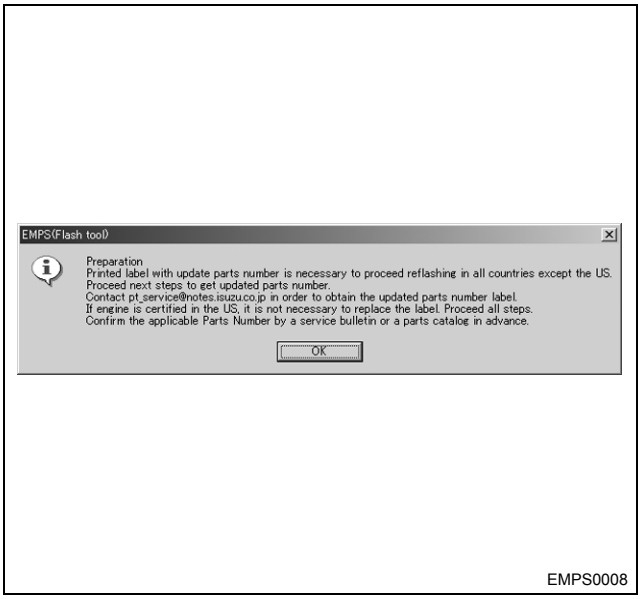
[Campaign Update] (Campaign)
This is performed at the campaign designated by manufacturer. After reflashing, send the campaign log file created to the administrator.

Select [Normal Update], [Enforce Update] (compulsory reflash), or [Campaign Update], and then click the [Next] button.

One of the following operations is performed when the [Next] button is clicked.

Selected Option	Settings/Operation Performed
Normal Update	Advances to “2.2.1 User Authentication Screen” – “For [Normal] or [Campaign].”
Enforce Update	Advances to “2.2.1 User Authentication Screen” – “For [Compulsory Reflash].”
Campaign Update	Advances to “2.2.1 User Authentication Screen” – “For [Normal] or [Campaign].”

Clicking the [Next] button displays the message shown below.



EMPS0008

Check the content, and click the [OK] button to advance to next.

2.2 User Authentication Screen

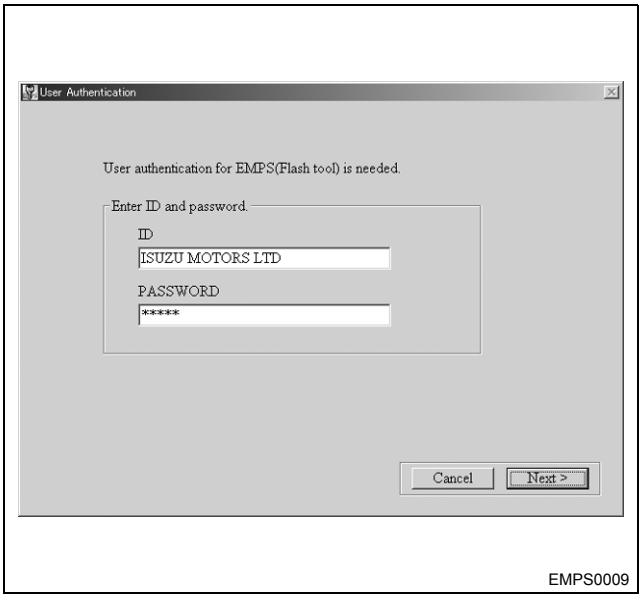
This screen is used for EMPS user authentication.

2.2.1 User Authentication Screen

For [Normal] or [Campaign]

After entering information in the [ID] and [PASSWORD] fields, click the [Next] button to advance to “2.2.2 OEM Manufacturer Selection Screen.”

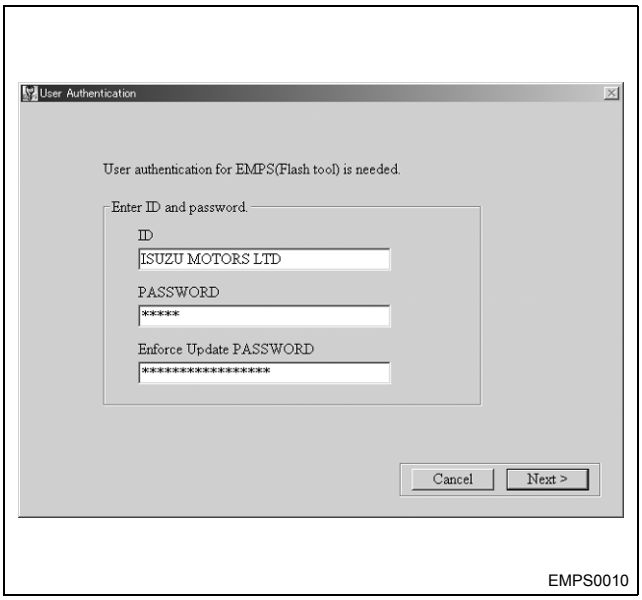
To cancel user authentication at any point, click the [Cancel] button.



For [Compulsory Reflash]

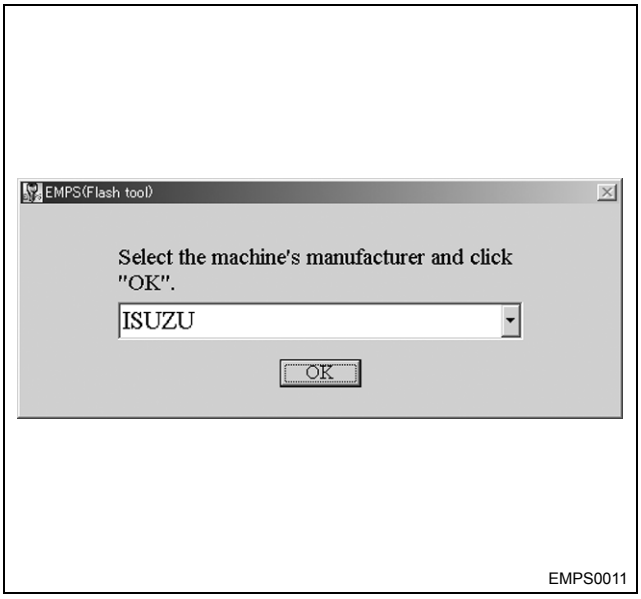
After entering information in the ID, PASSWORD, and Enforce Update PASSWORD (Password for compulsory reflash) boxes, click [Next] to advanced to “2.2.2 OEM Manufacturer Selection Screen.”

To cancel user authentication at any point, click the [Cancel] button.



2.2.2 OEM Manufacturer Selection Screen

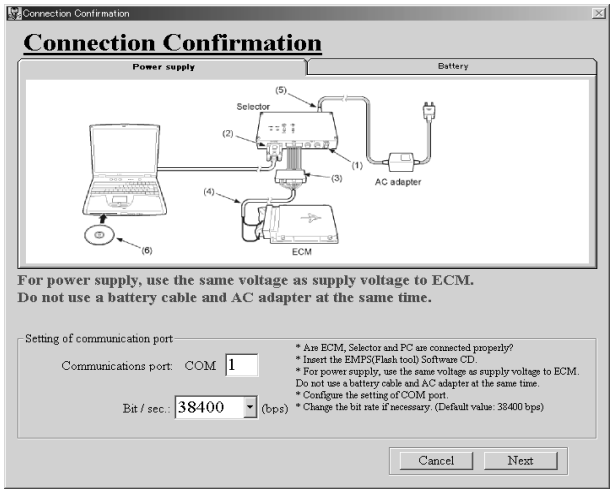
After selecting the OEM manufacturer, click the [OK] to advance to “2.3 Connection Confirmation Screen.”



2.3 Connection Confirmation Screen

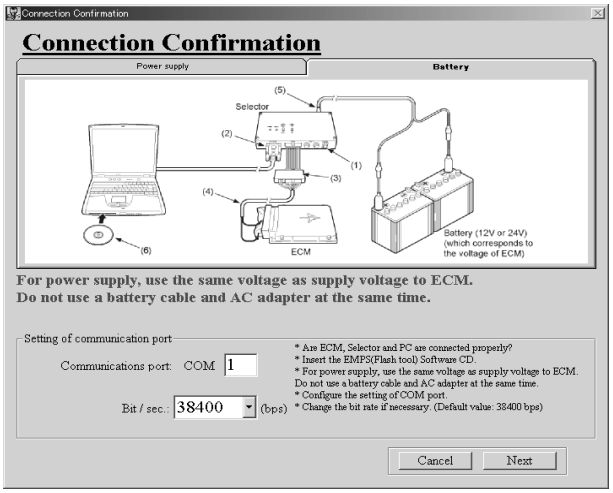
This screen shows the connection status of the computer, selector, ECM, and power supply/battery.

Power Supply Connection



EMPS0012

Battery Connection



EMPS0013

After selecting the COM port (Communication port) and transmission bit rate (Bit/sec), click [Next] to advance to "2.4 Switch Confirmation Screen 1."

Selection Item Descriptions

Items	Description
COM port	Select the RS-232C port to which the selector is connected.
Transmission bit rate	Select the data transmission bit rate.
Cancel button	Displays a confirmation message for exiting the tool.
Next button	Performs a check and then displays "2.4 Switch Confirmation Screen 1."

One of the error messages will appear if an error is discovered by the check that is performed when the [Next] button is clicked. Refer to "7. Error Code List."

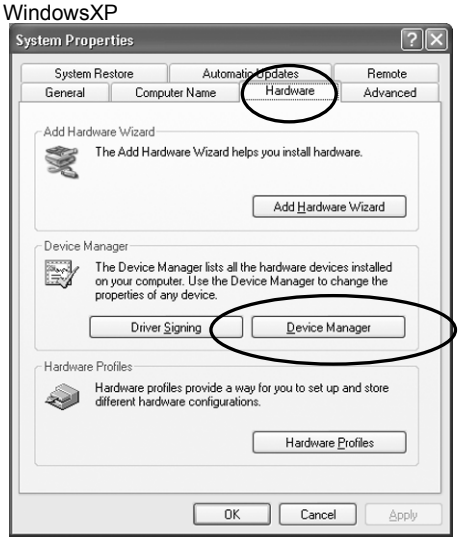
2.3.1 PC Setting

Normally select COM1 if RS-232C is used for connection.
In the case of a PC that is not equipped with an RS-232C port, connect using a commercially available USB conversion cable. For details about port settings, refer to the user documentation that comes with the USB conversion cable.

To check standard COM port settings

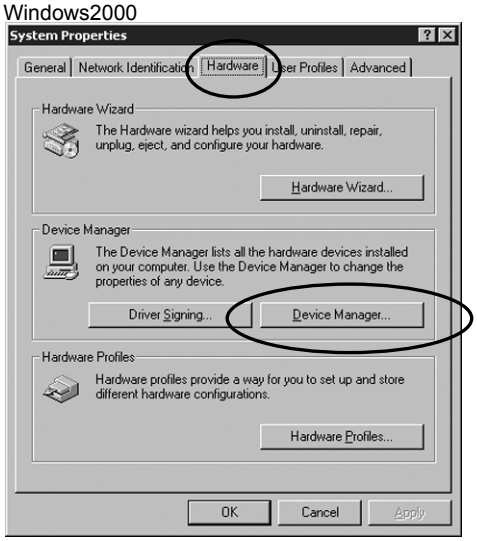
1. On the Windows [Start] menu, select [Control Panel].
2. On [Control Panel], open [System].
3. When system properties appear, select [Hardware].

WindowsXP



EMPS0014

Windows2000

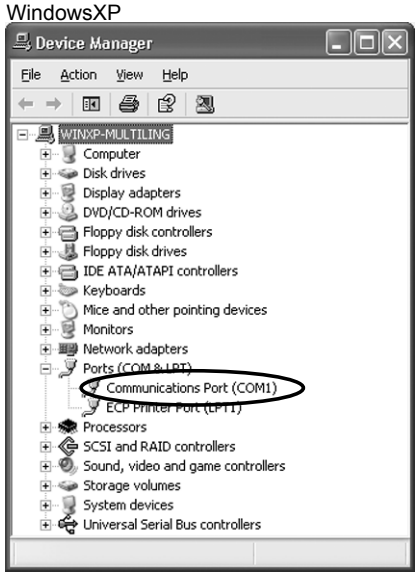


EMPS0015

4. Select [Device Manager] to open it.

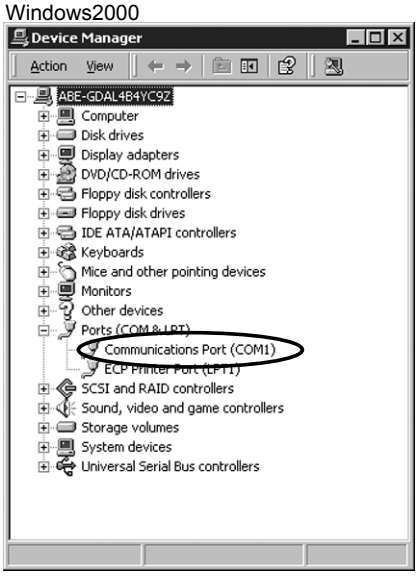
5. On [Device Manager], select [Ports (COM & LPT)].

WindowsXP



EMPS0016

Windows2000

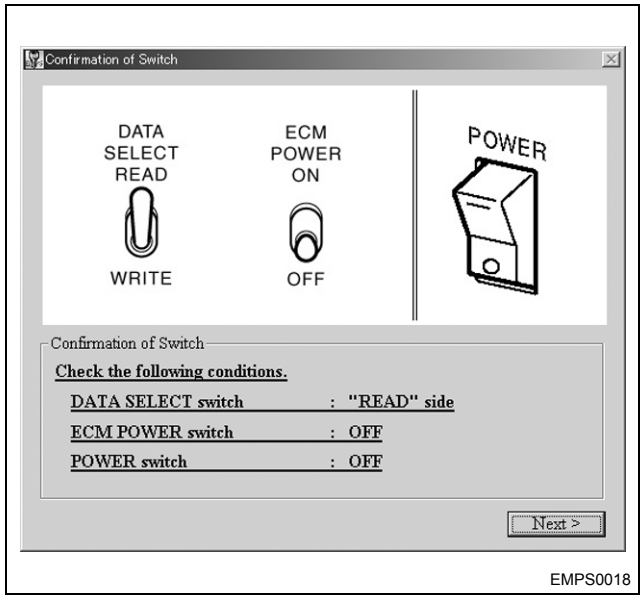


EMPS0017

6. In the displayed items for communication ports, confirm the COM port to which the EMPS is connected.

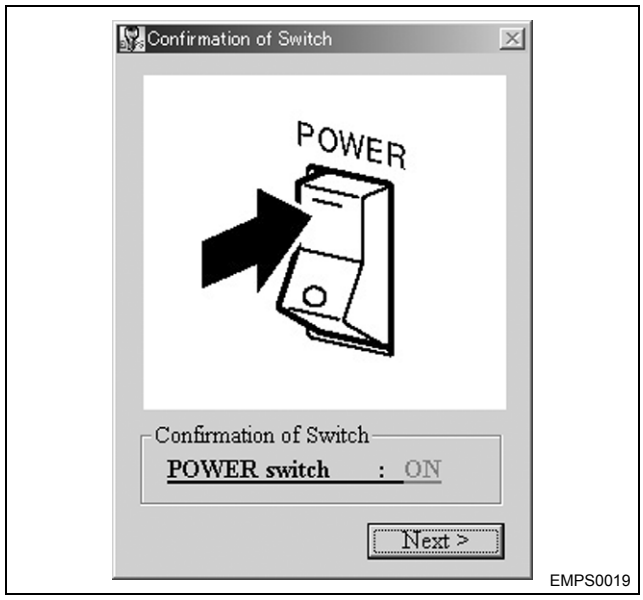
2.4 Switch Confirmation Screen 1

After checking to make sure that the initial settings of the switches are as shown on the screen, click the [Next] button.



EMPS0018

Turn on the power switch, and then click the [Next] button.

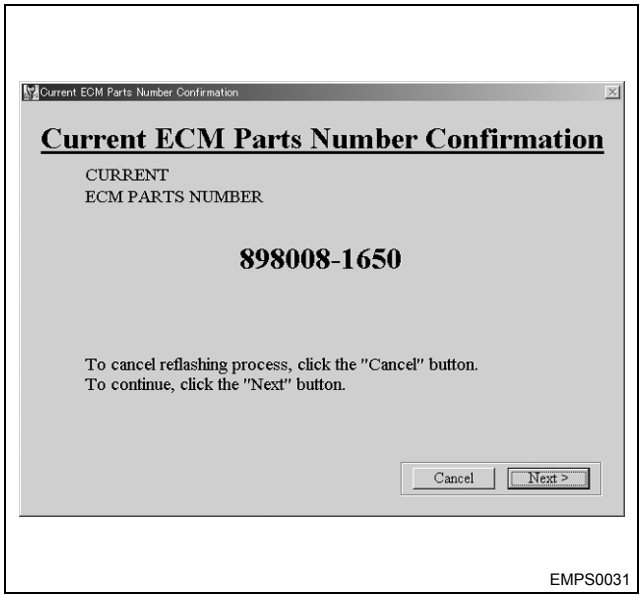


EMPS0019

This starts selector confirmation.
Advance to “2.5 Current ECM Parts Number Confirmation Screen” in accordance with displayed instructions.

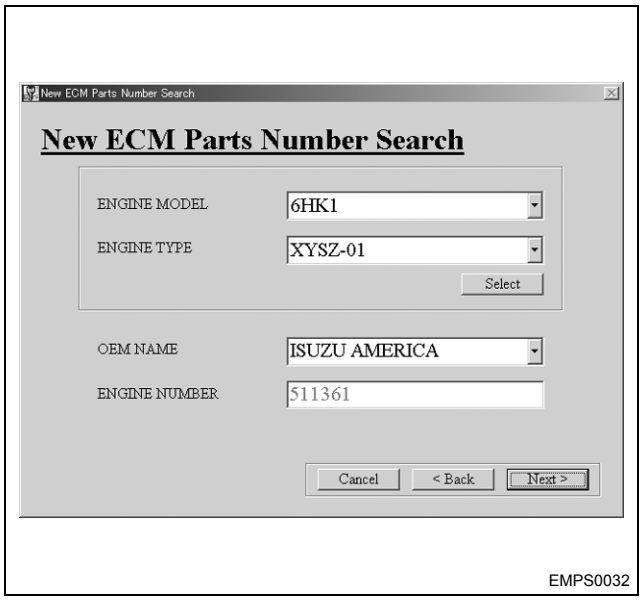
2.5 Current ECM Parts Number Confirmation Screen

This screen displays the current ECM parts number.
Clicking the [Next] button advances to “2.6 New ECM Parts Number Search Screen.”
To cancel former ECM parts number confirmation, click the [Cancel] button.



2.6 New ECM Parts Number Search Screen

This screen is used to select the search conditions for Parts Number.
Choose the option from [ENGINE MODEL] and [ENGINE TYPE], and then click the [Select] button.
Next, choose option from the [OEM NAME], and click the [Next] button.
To return to “2.5 Current ECM Parts Number Confirmation Screen,” click the [Back] button.



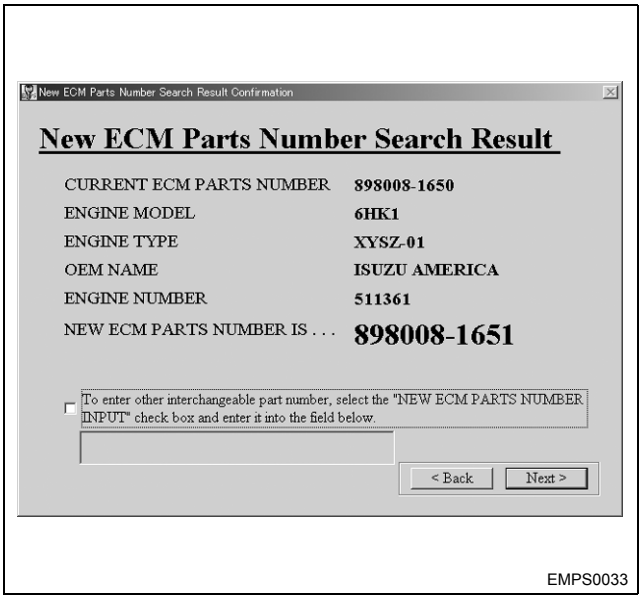
Selection Item Descriptions

Items	Settings/Operation Performed
ENGINE MODEL	Select the engine model that corresponds to the current ECM parts number. In the case of enforced update, you can select all engine models.
ENGINE TYPE	Select the engine type that corresponds to the current ECM parts number. In the case of enforced update, you can select all engine types.
Select button	Extracts the applicable OEM names for the applicable ENGINE MODEL and ENGINE TYPE, and provides them for selection in the OEM NAME box.
OEM NAME	Select the OEM NAME from among those that correspond to the selected ENGINE MODEL and ENGINE TYPE.
ENGINE NUMBER	Engine Serial Number uploaded at startup is displayed. You cannot enter in this field except the process that includes Engine S/N change.
Back button	Returns to “2.5 Current ECM Parts Number Confirmation Screen.”
Next button	Performs a check and then advances to “2.7 New ECM Parts Number Search Result Confirmation Screen.”

A message will appear if an error is discovered by the check that is performed when the [Next] button is clicked.

2.7 New ECM Parts Number Search Result Confirmation Screen

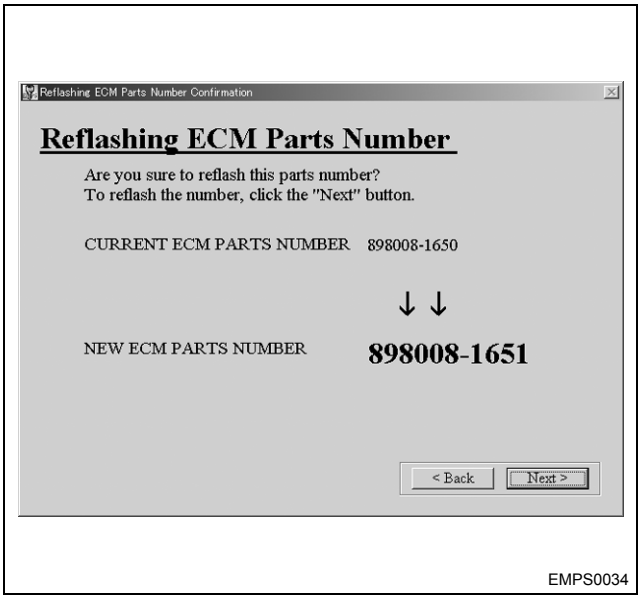
This screen displays the search results.
After checking the contents, click the [Next] button to advance to “2.8 Reflashing ECM Parts Number Confirmation Screen.”
If the search results do not show the parts number you want, select the NEW ECM PARTS NUMBER INPUT check box, and then input the correct parts number. (Be sure you input a compatible parts number.)
To return to “2.6 New ECM Parts Number Search Screen,” click the [Back] button.



EMPS0033

2.8 Reflashing ECM Parts Number Confirmation Screen

This screen displays the reflashing ECM parts number.
After checking the contents, click the [Next] button to perform a CD check and advance to “2.9 Switch Confirmation Screen 2.”
To return to “2.6 New ECM Parts Number Search Screen,” click the [Back] button.

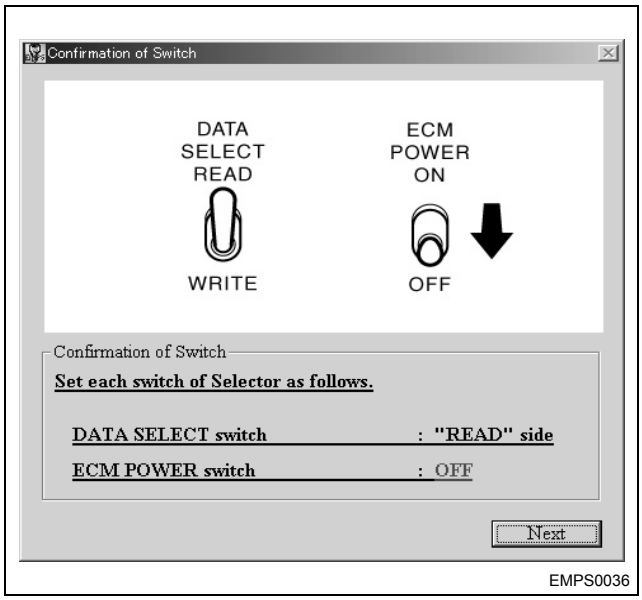


EMPS0034

The message will appear during the CD check if a CD is not inserted or if the version does not match.
Click the [OK] button to exit the program.
If program file name acquisition fails, advance to “6. Recover Point.”

2.9 Switch Confirmation Screen 2

The switch confirmation screen is shown below.



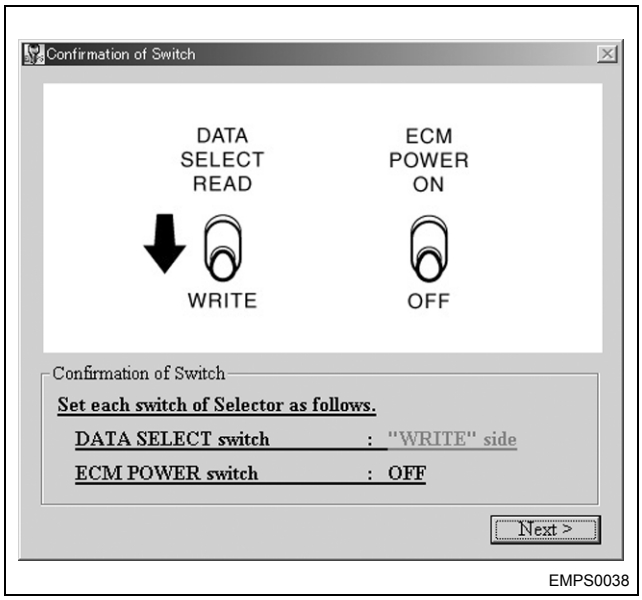
Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “2.10 Switch Confirmation Screen 3.”

2.10 Switch Confirmation Screen 3

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: OFF

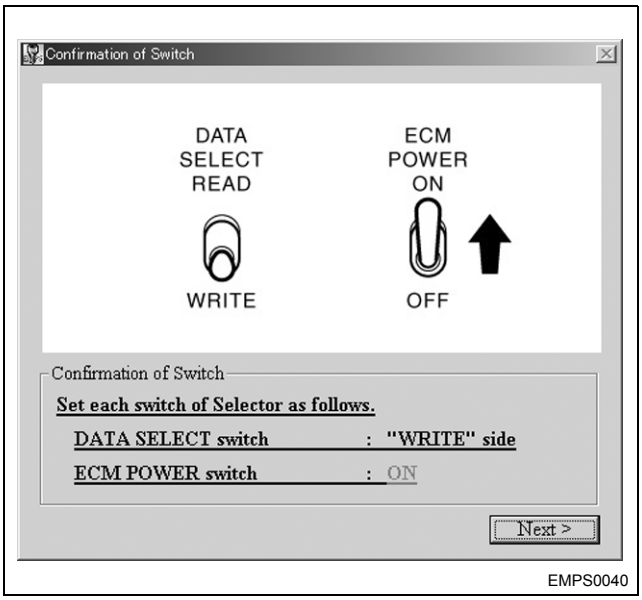
After configuring the switch settings, click the [Next] button.
This will advance to “2.11 READY LED Confirmation Screen 1.”

2.11 READY LED Confirmation Screen 1

The selector LED confirmation screen is shown below.
After confirming that the LED is lit, click the [Yes] button to advance to “2.12 Switch Confirmation Screen 4.”
If confirmation is not possible, click the [No] button to return to “2.8 Reflashing ECM Parts Number Confirmation Screen.”

2.12 Switch Confirmation Screen 4

The switch confirmation screen is shown below.



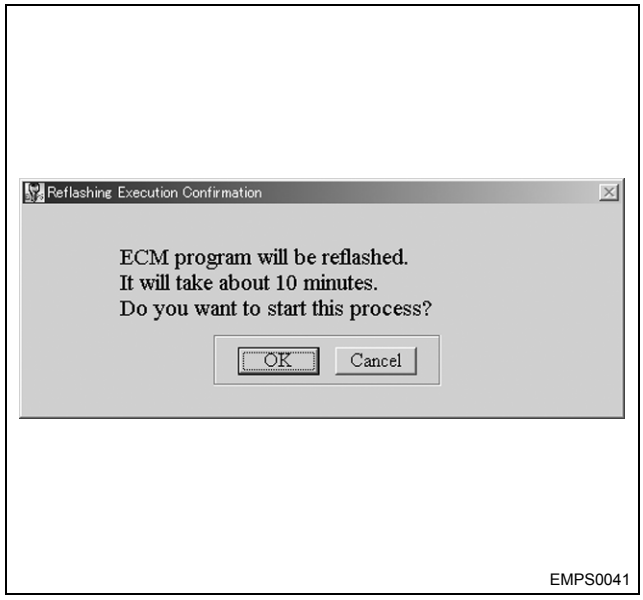
Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “2.13 Reflashing Execution Confirmation Screen.”

2.13 Reflashing Execution Confirmation Screen

This screen displays a confirmation message for reflashing.
Click the [OK] button to continue.
If you need to make changes, click the [Cancel] button to return to “2.5 Current ECM Parts Number Confirmation Screen.”

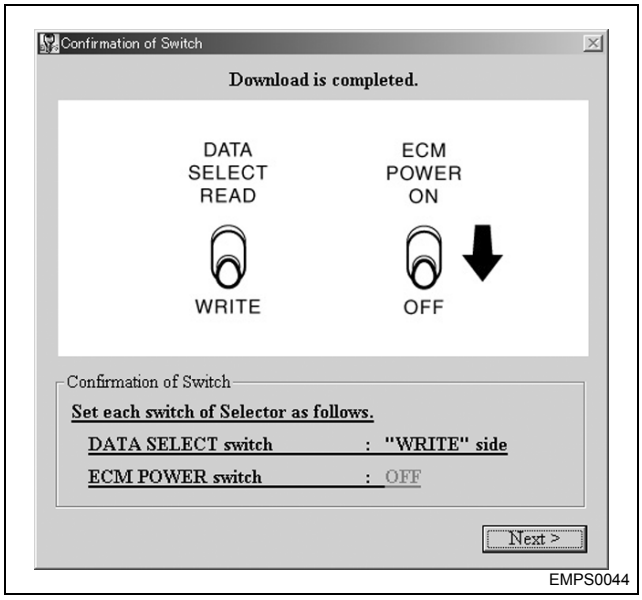


This starts reflashing.
After reflashing is complete, advance to “2.14 Switch Confirmation Screen 5.”

Note:
One of the messages will appear if an error occurs during reflashing.
(Refer to “7. Error Code List.”)

Click the [Yes] button to return to “2.13 Reflashing Execution Confirmation Screen.”
Click the [No] button to advance to “6. Recover Point.”

2.14 Switch Confirmation Screen 5



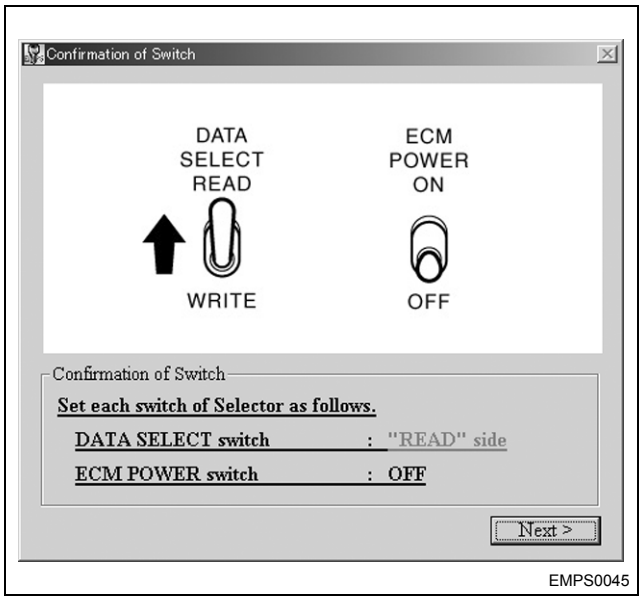
The switch confirmation screen is shown below.
Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “2.15 Switch Confirmation Screen 6.”

2.15 Switch Confirmation Screen 6

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

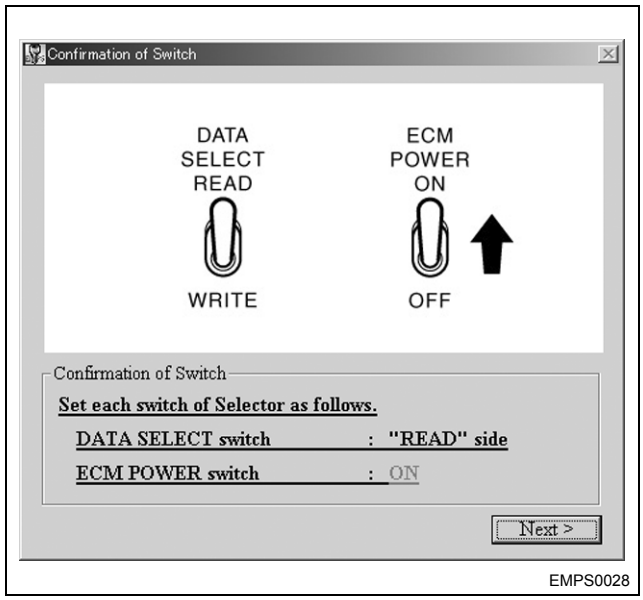
After configuring the switch settings, click the [Next] button.
This will start communication with the selector and advance to “2.16 READY LED Confirmation Screen 2.”
A message will appear if an error occurs during communication. Refer to “7. Error Code List.”
If a communication error occurs, advance to the “6. Recover Point” screen.

2.16 READY LED Confirmation Screen 2

The selector LED confirmation screen is shown below.
After confirming that the LED is unlit, click the [Yes] button to advance to “2.17 Switch Confirmation Screen 7.”
If confirmation is not possible, click the [No] button to return to “2.15 Switch Confirmation Screen 6.”

2.17 Switch Confirmation Screen 7

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This starts data confirmation. After confirmation is complete, advance to “2.18 Reflashing Result Confirmation Screen.”
A message will appear if an error occurs during confirmation. Refer to “7. Error Code List.”
If a communication error occurs, advance to the “6. Recover Point” screen.

2.18 Reflashing Result Confirmation Screen

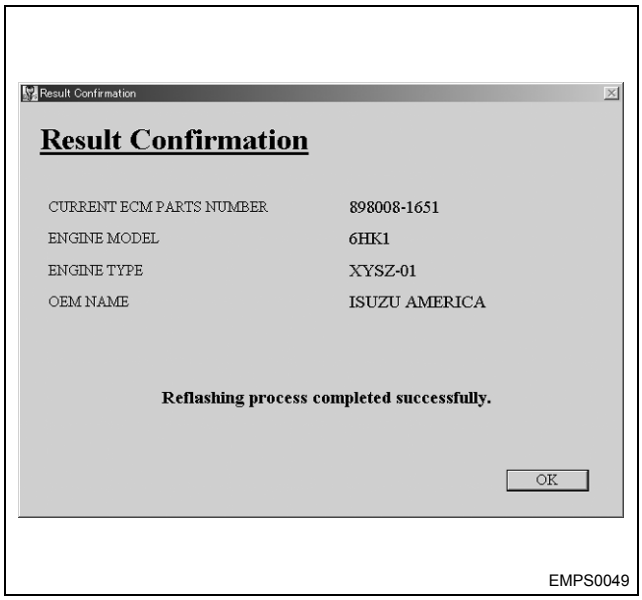
This screen displays the parts number reflash result.

Clicking the [Next] button displays the message. Check the content and click the [OK] button.

Note:
For [Normal] or [Campaign], this advances to “2.19 Final Result Confirmation Screen.”
For [Compulsory Reflash], this advances to “2.22 Engine Serial Number Confirmation (when Engine Serial Number changed).”

2.19 Final Result Confirmation Screen

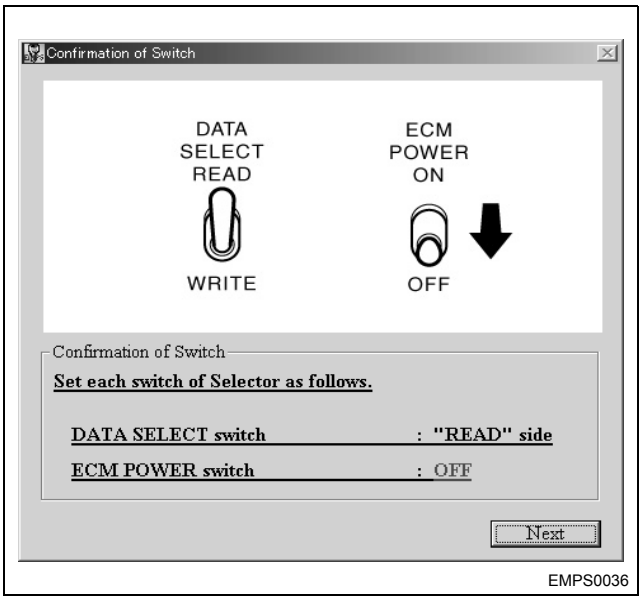
This screen displays the result of reflashing.



Clicking the [OK] button advances to “2.20 Switch Confirmation Screen 8.”

2.20 Switch Confirmation Screen 8

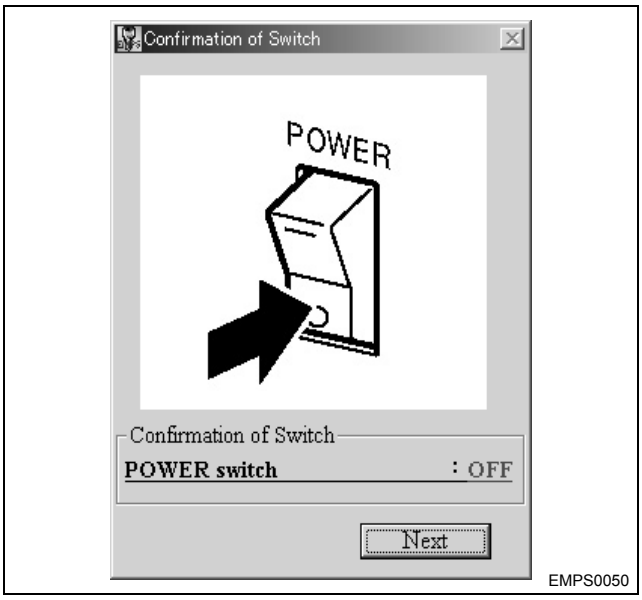
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
Then Switch Confirmation screen will be displayed.



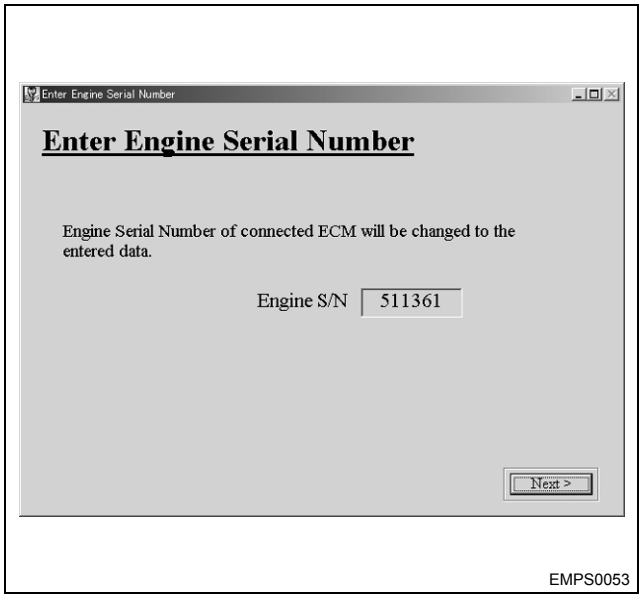
After configuring the power switch setting, click the [Next] button to advance to “2.21 Cable Removal Procedure Screen.”

2.21 Cable Removal Procedure Screen

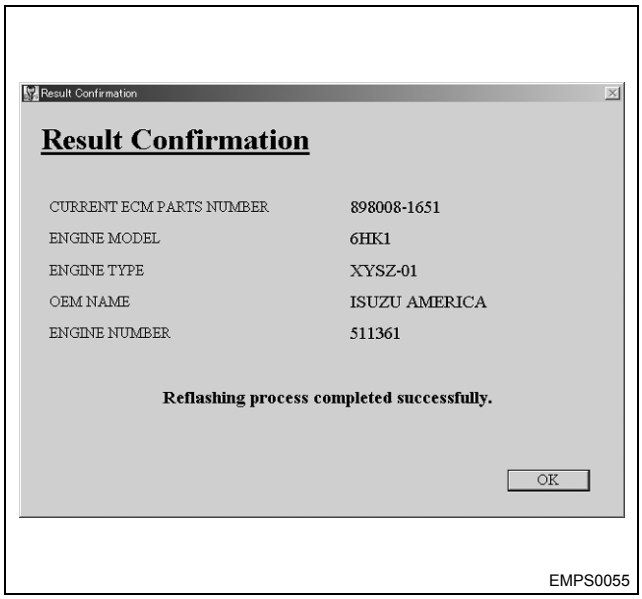
Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This will advance to “2.23 Memory Clear.”

2.22 Engine Serial Number Confirmation (when Engine Serial Number changed)

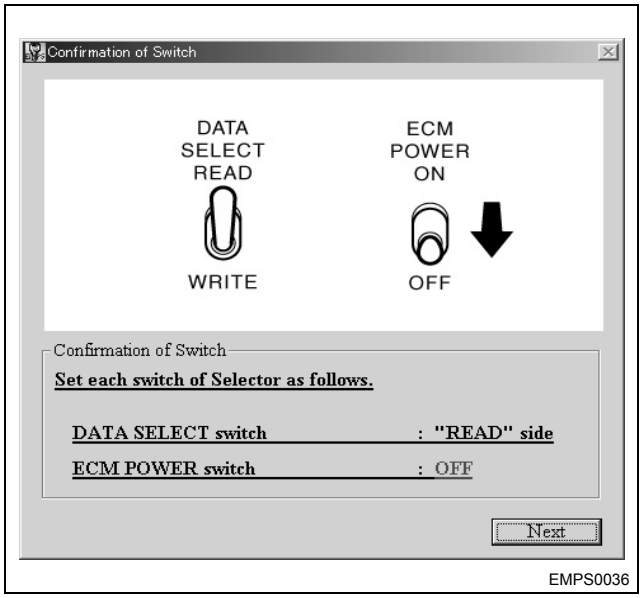
Engine Serial Number entered in “2.6 New ECM Parts Number Search Screen” is displayed.



After confirming the displayed content, click the [Next] button to start downloading Engine Serial Number.
After download, the “Result Confirmation Screen” appears.



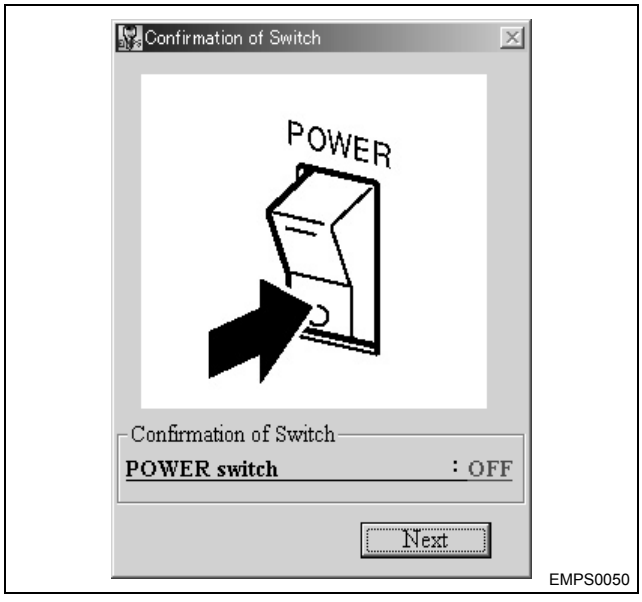
Confirm the displayed content and click the [OK] button.



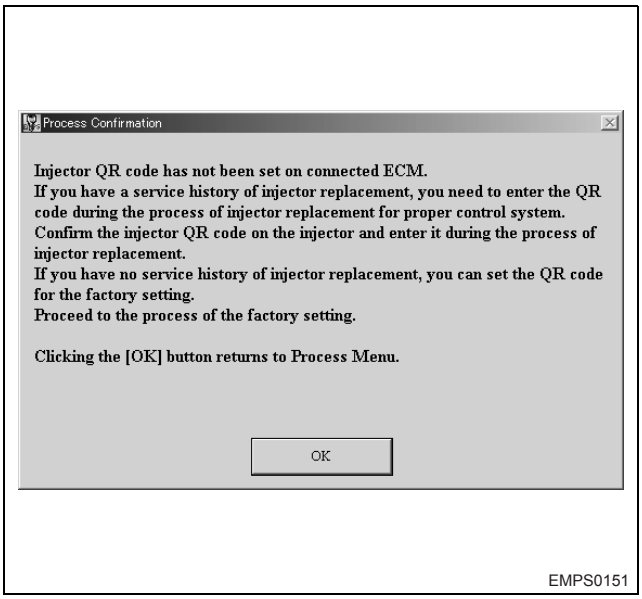
Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
The message appears, then Switch Confirmation screen will be displayed.
Turn the EMPS power OFF, then click the [Next] button.



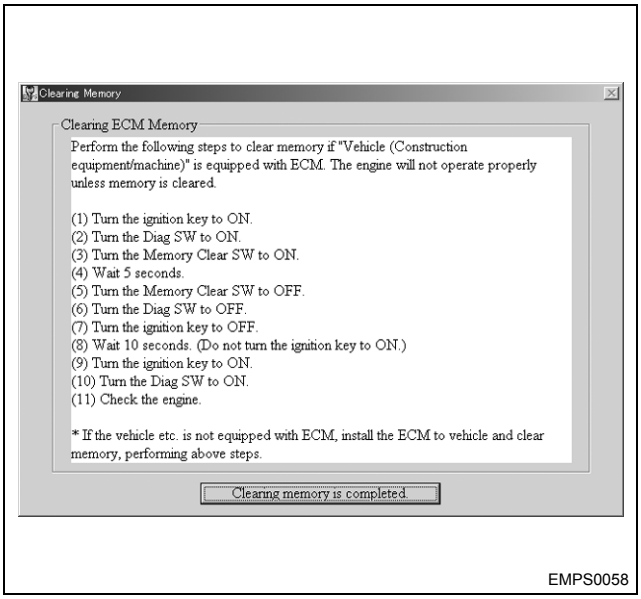
The message shown below appears.



Read the message, then click the [OK] button.

2.23 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



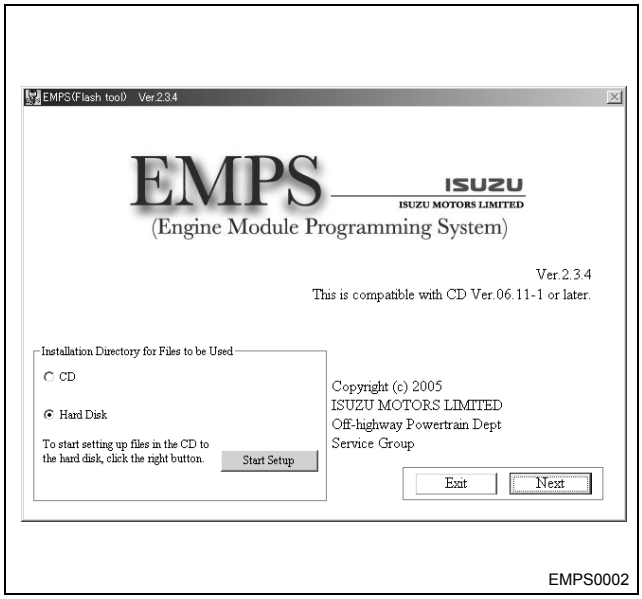
After memory clear is complete, click the [Clearing memory is completed.] button to exit the program.

3. Injector Replacement

This section describes the procedure to change the QR code during injector replacement.

3.1 Startup

Double-click the “EMPS” icon on your Windows desktop to display the “Initial Startup” screen.

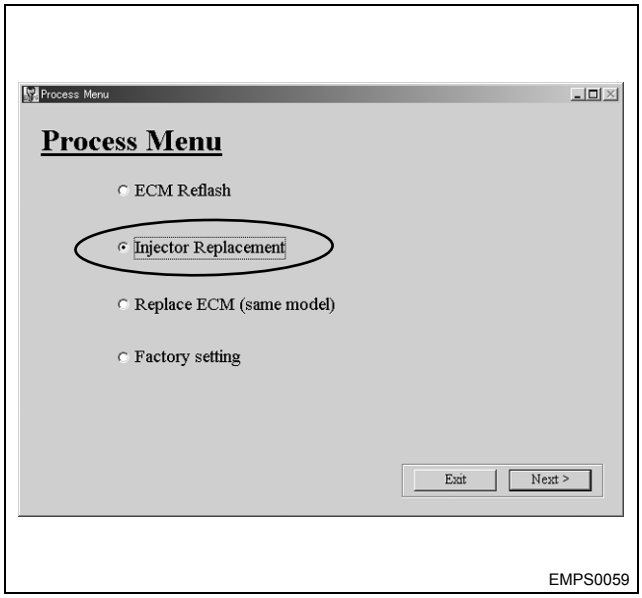


EMPS0002

Clicking the [Next] button displays the message shown below.

EMPS0003

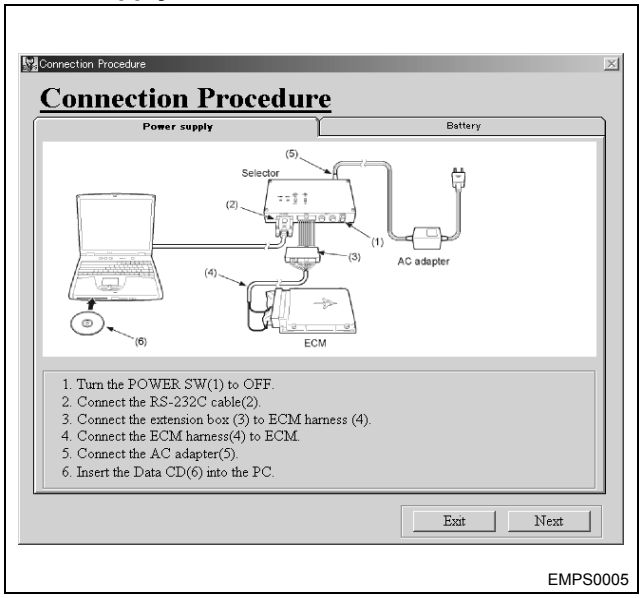
Clicking the [OK] button displays the “Process Menu” screen shown below.



EMPS0059

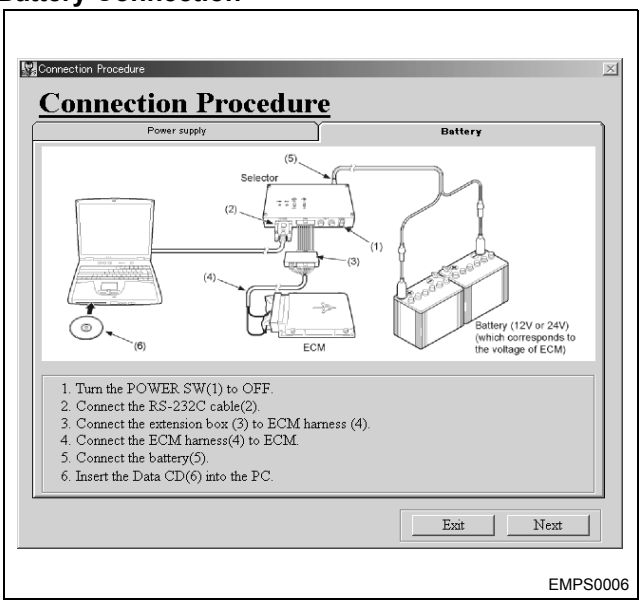
Click the [Next] button to advance to the “Connection Procedure” screen.

Power Supply Connection



EMPS0005

Battery Connection



EMPS0006

Connect the PC, selector, and ECM according to the procedure.
After connection, clicking the [Next] button advances to the next “3.2 User Authentication Screen.”

3.2 User Authentication Screen

This screen is used for EMPS user authentication.
Refer to “2.2 User Authentication Screen.”

3.3 Connection Confirmation Screen

This screen shows the connection status of the computer, selector, ECM, and power supply/battery.
Refer to “2.3 Connection Confirmation Screen.”

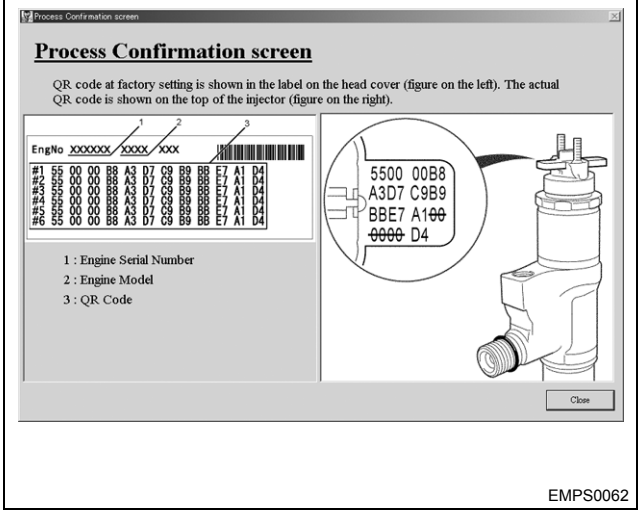
3.4 Switch Confirmation Screen 1

Refer to “2.4 Switch Confirmation Screen 1” to advance to “3.5 Change Injector QR Code.”

3.5 Change Injector QR Code

3.5.1 Process Confirmation Screen

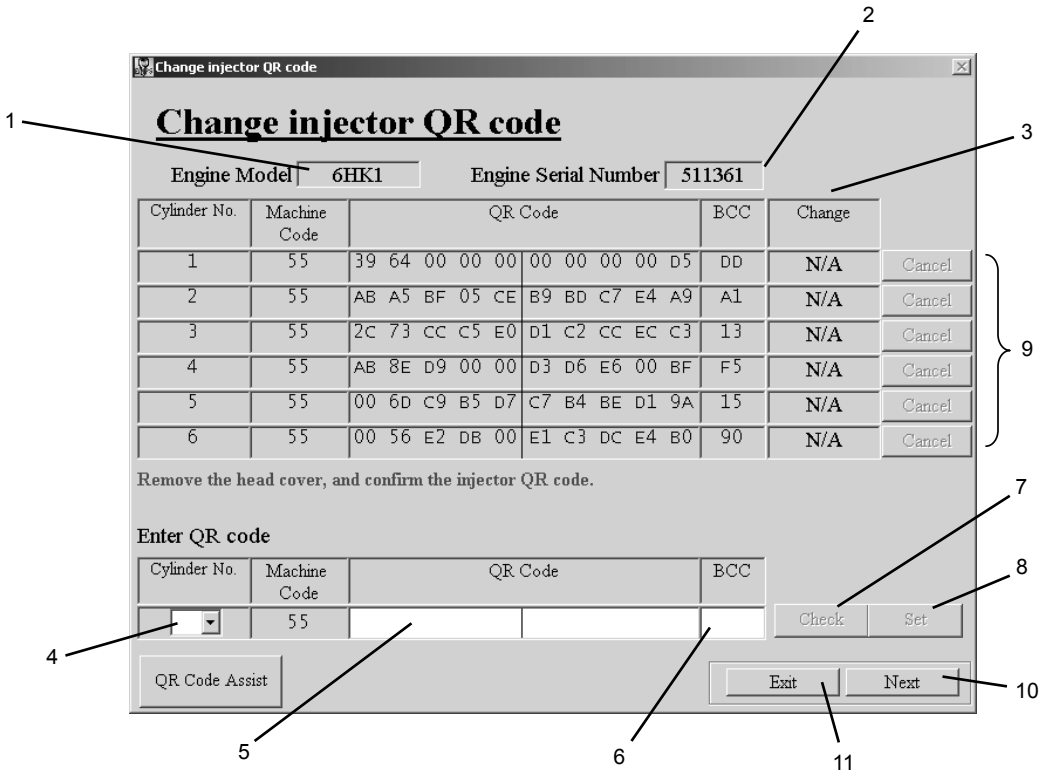
After the upload, the location where you can find the QR code to be entered appears, and then “Change injector QR code” screen appears.



EMPS0062

Clicking the [Close] button displays the next “Change injector QR code” screen.

3.5.2 Change Injector QR Code Screen



EMPS0063

Name

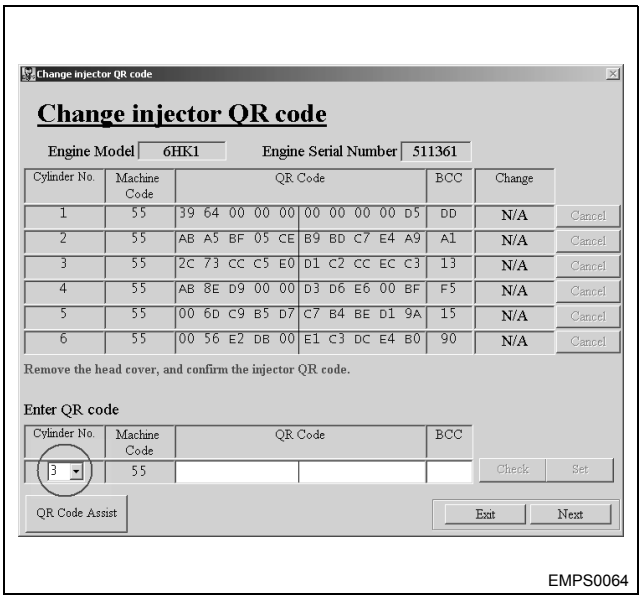
1. Engine Model field
2. Engine Serial Number field
3. QR data field
4. Cylinder No. selection field
5. QR Code entry field
6. BCC entry field
7. Check button
8. Set button
9. Cancel button
10. Next button
11. Exit button

Selection Item Descriptions

Items	Settings/Operation Performed
Engine Model field	Displays Engine Model uploaded from ECM.
Engine Serial Number field	Displays Engine Serial Number uploaded from ECM.
QR data field	Displays QR data uploaded from ECM.
Cylinder No. selection field	Select or enter the number of cylinder that its QR code is changed.
QR Code entry field	Enter the QR code.
BCC entry field	Enter the BCC.
Check button	Performs error check for entered data. If error occurs, entered QR code and BCC will turn red. If no error occurs, the [Set] button will be active.
Set button	Sets the entered data to reflect it on the QR data fields on the top of the screen. ('Complete' will be displayed in blue in the Check columns of QR data fields for the corresponding cylinder No.)
Cancel button	Discards the set QR codes in the QR data fields to return to the initial state.
Next button	Advances to the next process (registration of entered data).
Exit button	Quits EMPS program.

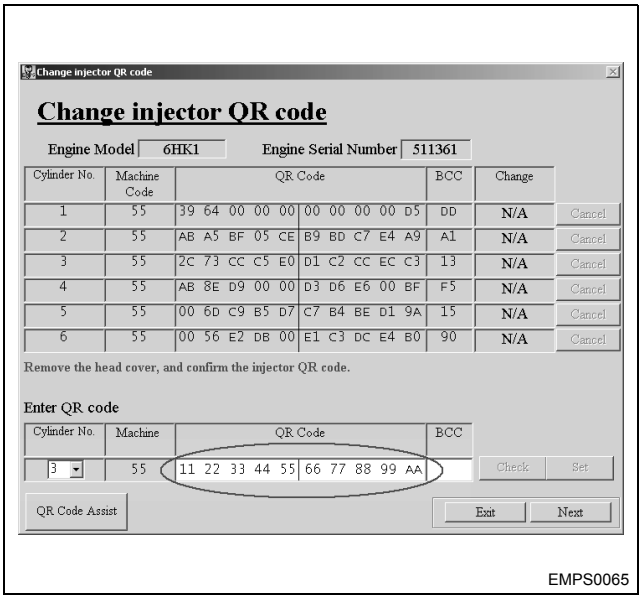
3.5.3 Procedure to Enter QR Code

1. Select or enter Cylinder No.



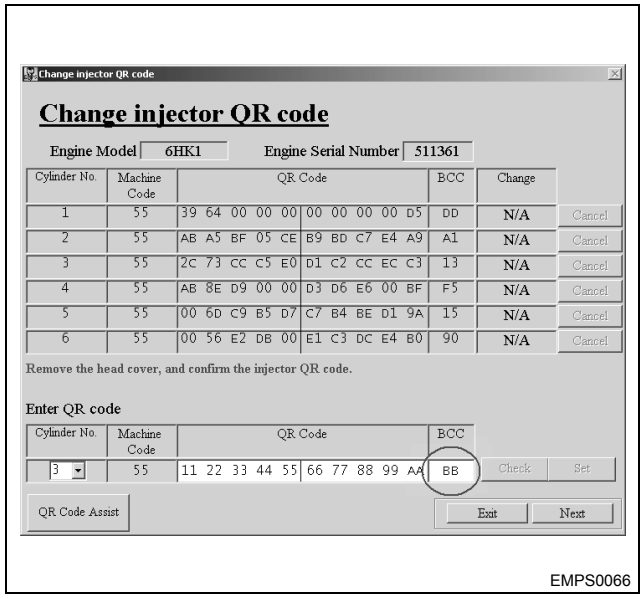
EMPS0064

2. Enter the injector QR code.



EMPS0065

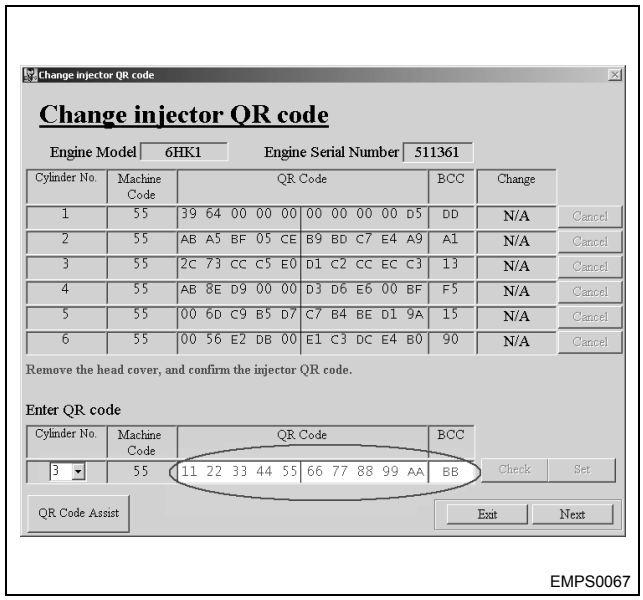
3. Enter the BCC.
   After entering, [Check] button will become active.



EMPS0066

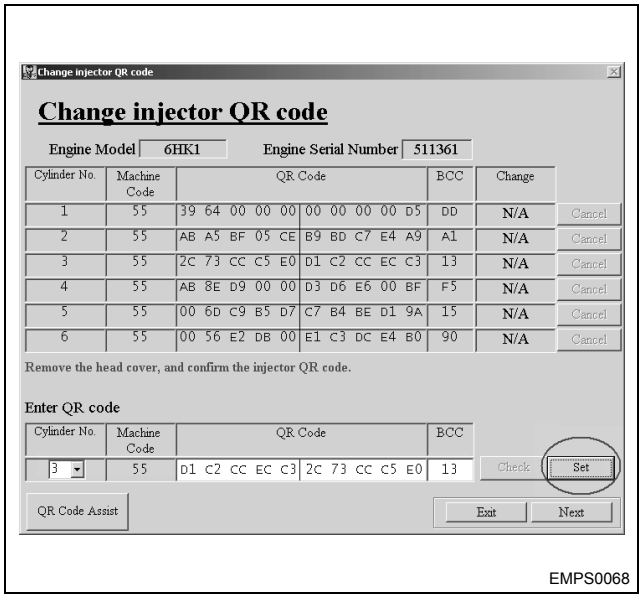
4. Click the [Check] button.
   Error check for entered data will be performed.

Note:
If error for entered data occurred.
The letters in QR code and BCC fields will turn red.
Enter them again.



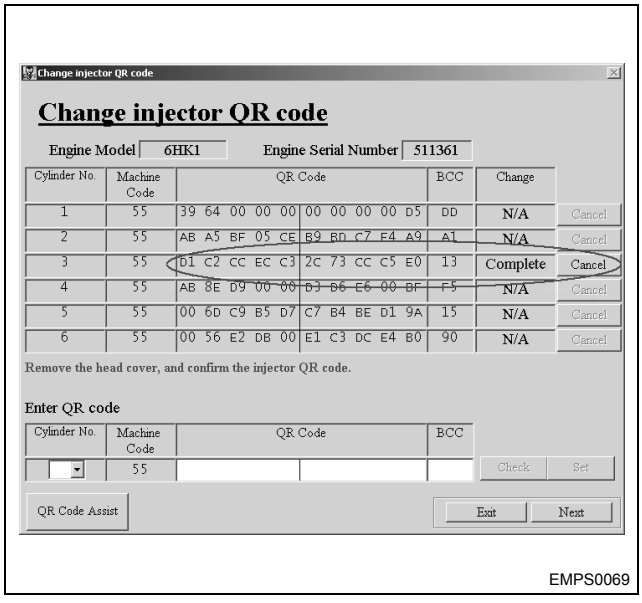
EMPS0067

Note:
If no error for entered data occurred.
[Set] button will become active.



EMPS0068

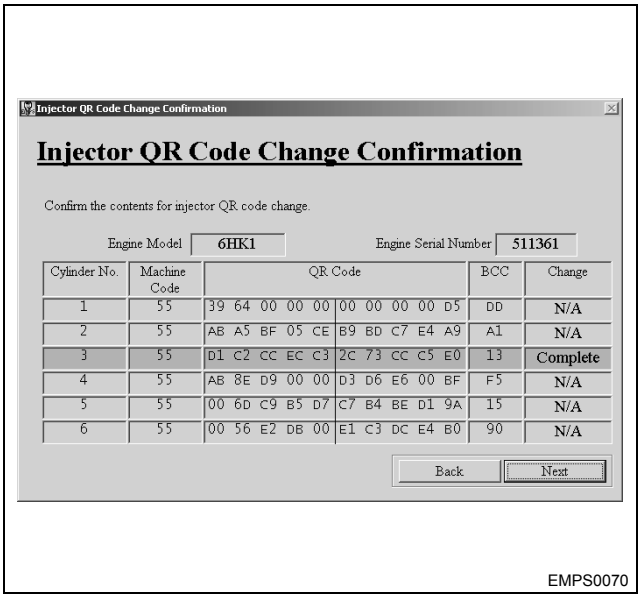
5. Click the [Set] button.
   Entered data is reflected in the field on the top of the screen, then the ”Change” field shows “Complete.”
   [Cancel] button will also become active.
   To return the status prior to change, click the [Cancel] button.



EMPS0069

To continue to enter other data, repeat the procedure from step 1.
To complete, click the [Next] button.

6. Confirm download.
   Clicking the [Next] button displays “Injector QR Code Change Confirmation” screen.
   The background color of changed cylinder has turned light blue.

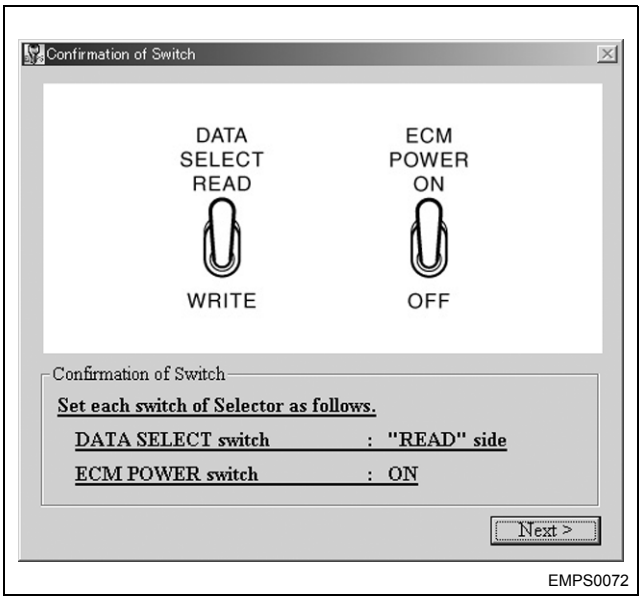


EMPS0070

To correct the setting, click the [Back] button to return to “Change Injector QR Code Screen.”
If the setting is OK, click the [Next] button to register it into the ECM.
The confirmation message will appear.
Clicking the [Yes] button displays the “3.6 Injector QR Code Download” screen.

3.6 Injector QR Code Download

The switch confirmation screen is shown below.



Check the switch status.

DATA SELECT switch: READ
ECM POWER switch: ON

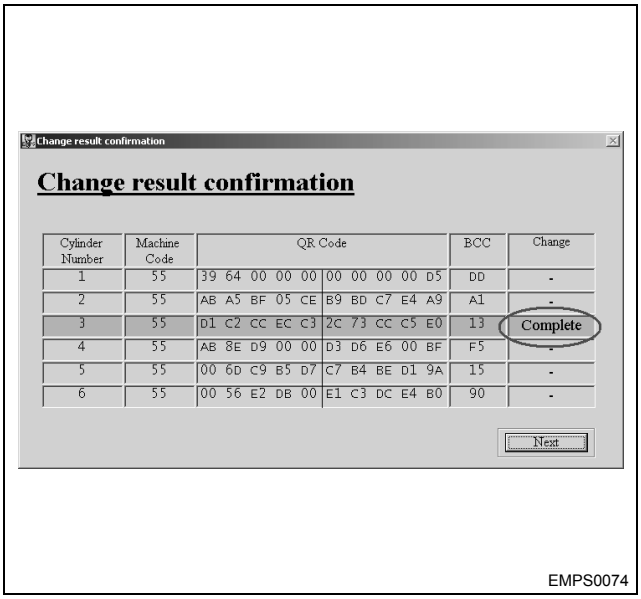
After configuring the switch settings, click the [Next] button, and starts to download.

Selection Item Descriptions

Items	Settings/Operation Performed
Next button	Starts to download the entered QR code.

3.7 Change Result Confirmation Screen

This screen displays downloaded QR code for confirmation.

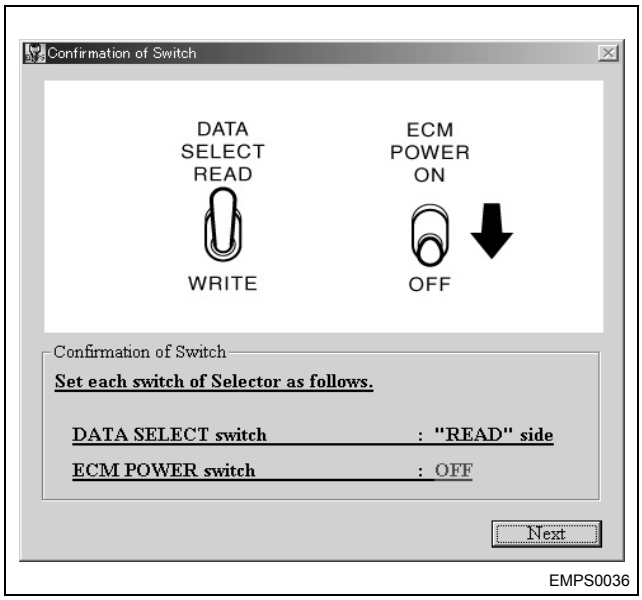


Selection Item Descriptions

Items	Settings/Operation Performed
Next button	Advances to “3.8 Switch Confirmation Screen 2” to perform termination.

3.8 Switch Confirmation Screen 2

The switch confirmation screen is shown below.

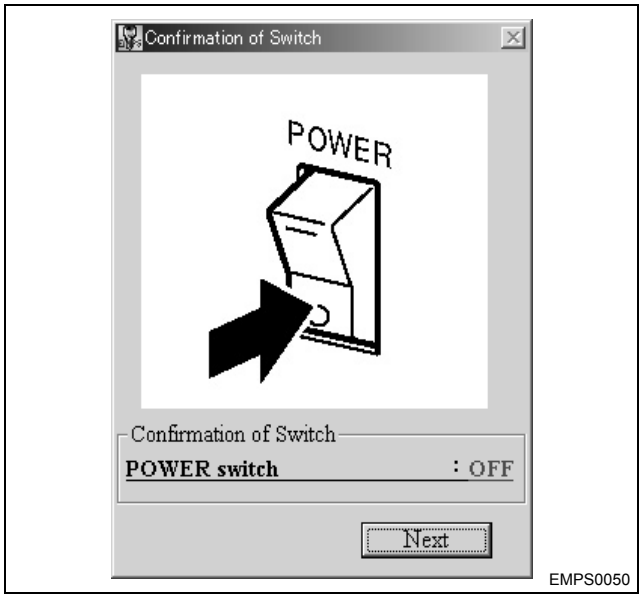


EMPS0036

Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
The message appears, then Switch Confirmation screen will be displayed.



EMPS0050

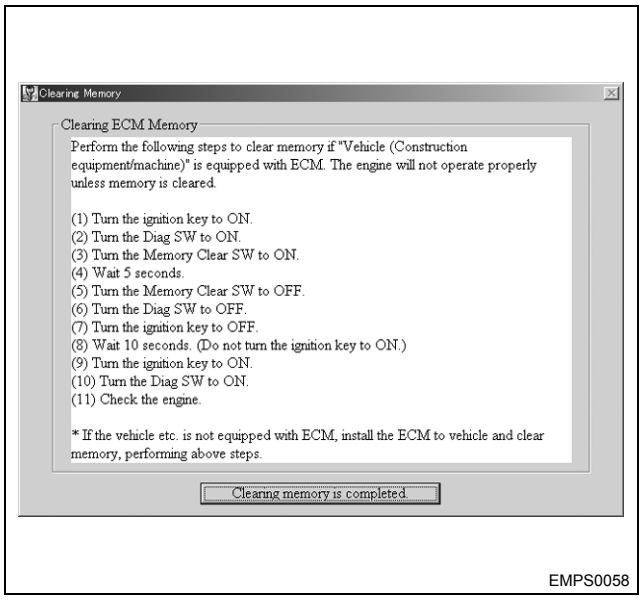
After configuring the power switch setting, click the [Next] button to advance to “3.9 Cable Removal Procedure Screen.”

3.9 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This advances to “3.10 Memory Clear.”

3.10 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



EMPS0058

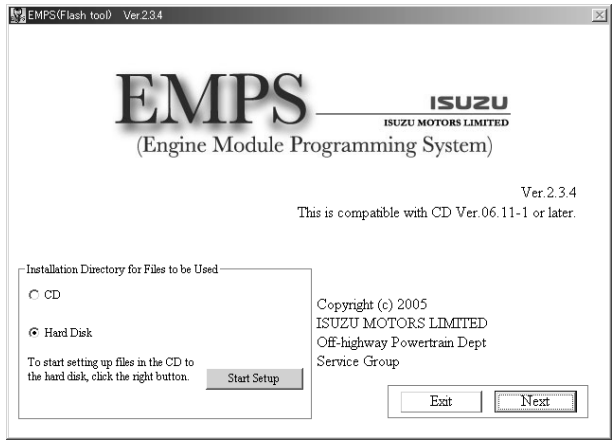
After memory clear is complete, click the [Clearing memory is completed.] button to exit the program.

4. Replace ECM (Same Model)

This section describes the procedure to replace the ECM (or to make a copy) on the same model.

4.1 Startup

Double-click the “EMPS” icon on your Windows desktop to display the “Initial Startup” screen.

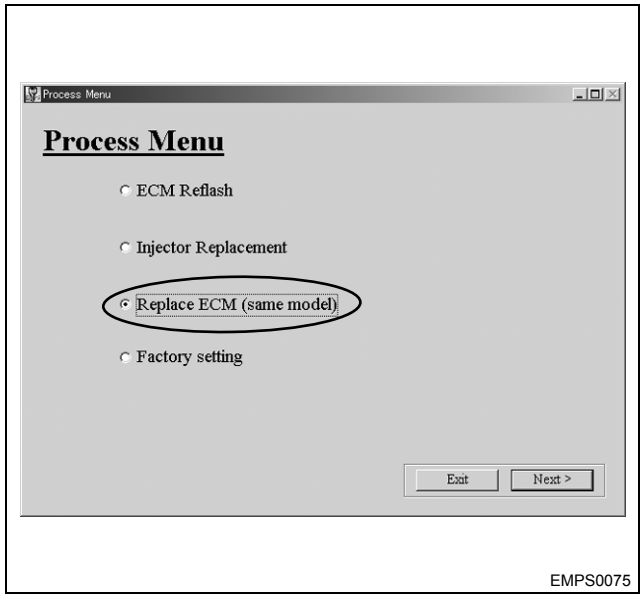


EMPS0002

Clicking the [Next] button displays the message shown below.

EMPS0003

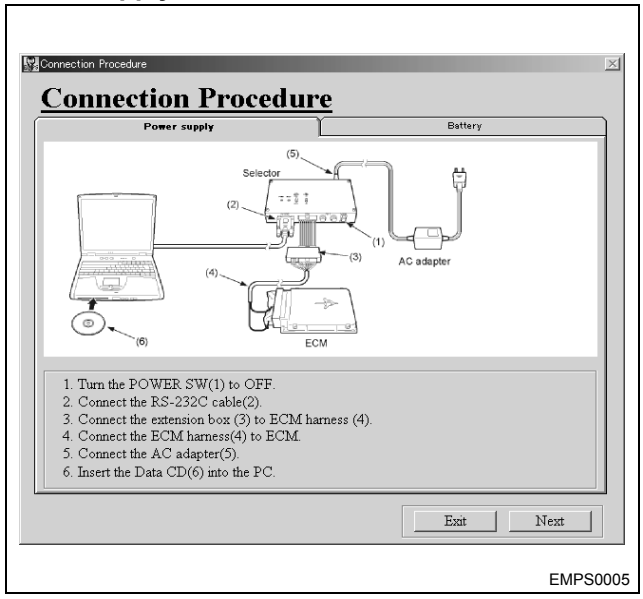
Clicking the [OK] button displays the “Process Menu” screen shown below.



EMPS0075

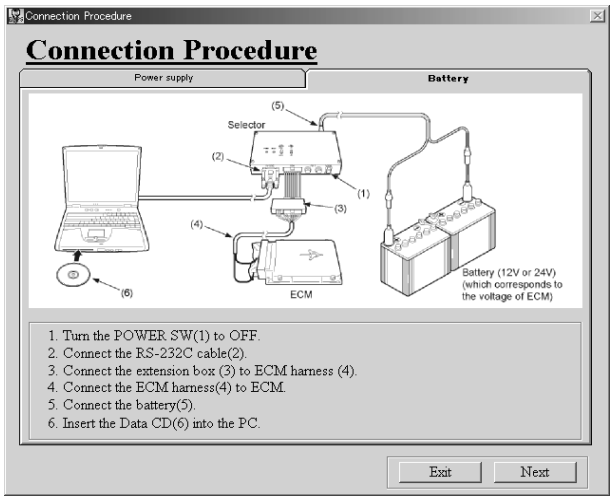
Select the [Replace ECM (Same Model)], and click the [Next] button to advance to the next “Connection Procedure” screen.

Power Supply Connection



EMPS0005

Battery Connection



EMPS0006

Connect the PC, selector, and ECM according to the procedure.
Click the [Next] button to advance to “4.2 User Authentication Screen.”

4.2 User Authentication Screen

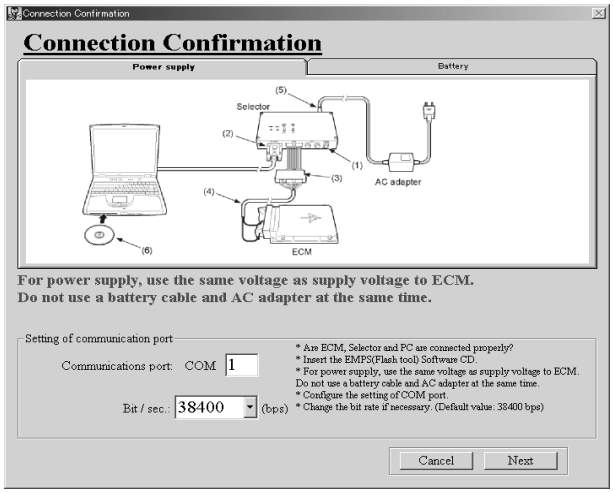
This screen is used for EMPS user authentication.
Refer to “2.2 User Authentication Screen.”

4.3 Connection Confirmation Screen

4.3.1 At the First Connection

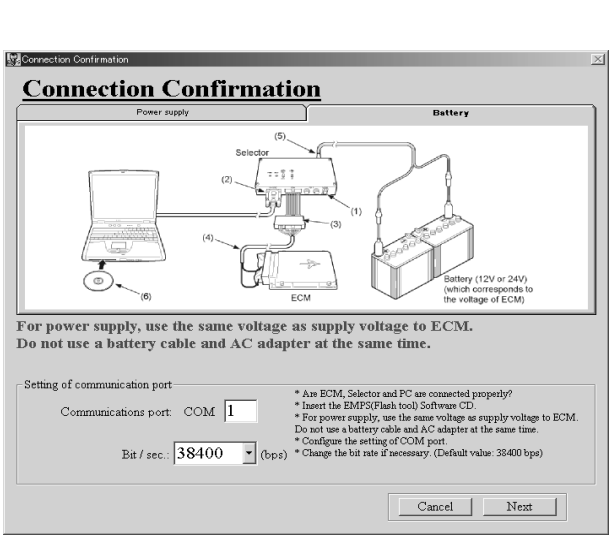
This screen shows the connection status of the computer, selector, ECM, and power supply/battery.

Power Supply Connection



EMPS0012

Battery Connection



EMPS0013

After selecting the COM port (Communication port) and transmission bit rate (Bit/sec), click [Next] to advance to “4.4 Switch Confirmation Screen 1.”

Selection Item Descriptions

Items	Description
COM port	Select the RS-232C port to which the selector is connected.
Transmission bit rate	Select the data transmission bit rate.
Cancel button	Displays a confirmation message for exiting the tool.
Next button	Performs a check and then displays “4.4 Switch Confirmation Screen 1.”

One of the error messages will appear if an error is discovered by the check that is performed when the [Next] button is clicked. Refer to “7. Error Code List.”

4.3.2 At the Reconnection After ECM Replacement

If you repeat upload or download (when reconnecting after ECM replacement), you will start with this screen. But you cannot change COM port and bit rate (bps).

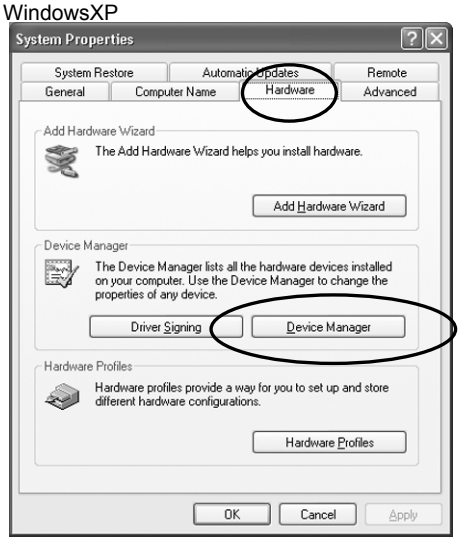
4.3.3 PC Setting

Normally select COM1 if RS-232C is used for connection.
In the case of a PC that is not equipped with an RS-232C port, connect using a commercially available USB conversion cable. For details about port settings, refer to the user documentation that comes with the USB conversion cable.

To check standard COM port settings

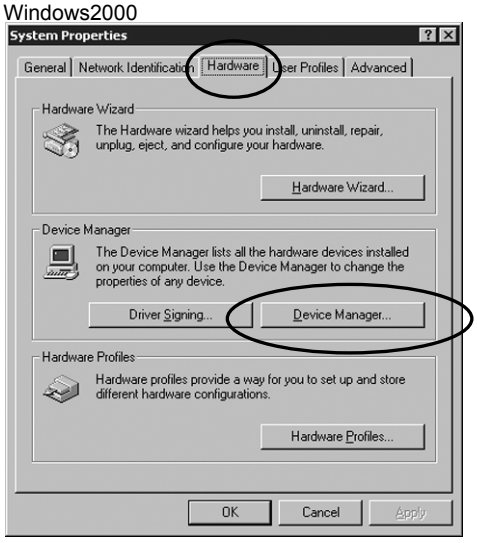
1. On the Windows [Start] menu, select [Control Panel].
2. On [Control Panel], open [System].
3. When system properties appear, select [Hardware].

WindowsXP



EMPS0014

Windows2000

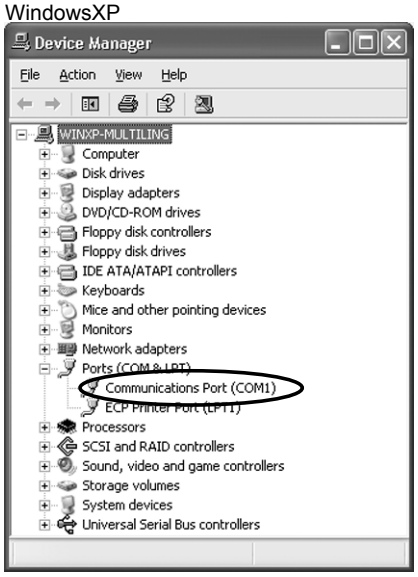


EMPS0015

4. Select [Device Manager] to open it.

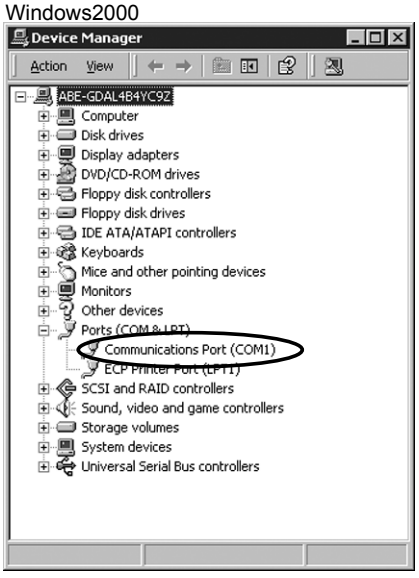
5. On [Device Manager], select [Ports (COM & LPT)].

WindowsXP



EMPS0016

Windows2000



EMPS0017

6. In the displayed items for communication ports, confirm the COM port to which the EMPS is connected.

4.4 Switch Confirmation Screen 1

Refer to “2.4 Switch Confirmation Screen 1” to advance to “4.5 Current ECM Parts Number Confirmation Screen.”

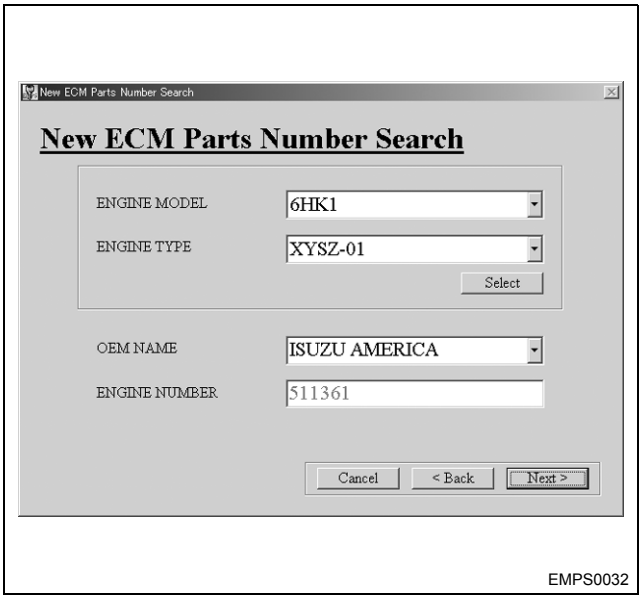
4.5 Current ECM Parts Number Confirmation Screen

This screen displays the current ECM parts number.
Clicking the [Next] button advances to “4.6 New ECM Parts Number Search Screen.”
To cancel former ECM parts number confirmation, click the [Cancel] button.

EMPS0031

4.6 New ECM Parts Number Search Screen

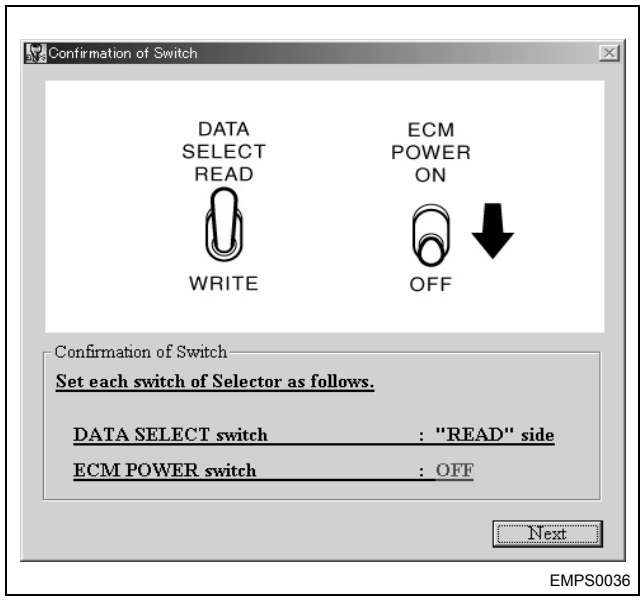
This screen is used to select the search conditions for Parts Number.
Choose the option from [ENGINE MODEL] and [ENGINE TYPE], and then click the [Select] button.
Next, choose option from the [OEM NAME], and click the [Next] button.
To return to “4.5 Current ECM Parts Number Confirmation Screen,” click the [Back] button.



A message will appear if an error is discovered by the check that is performed when the [Next] button is clicked.

4.7 Switch Confirmation Screen 2

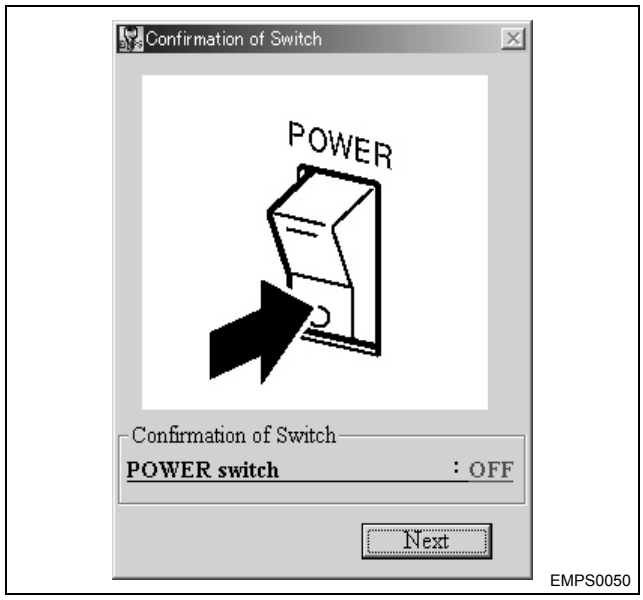
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.



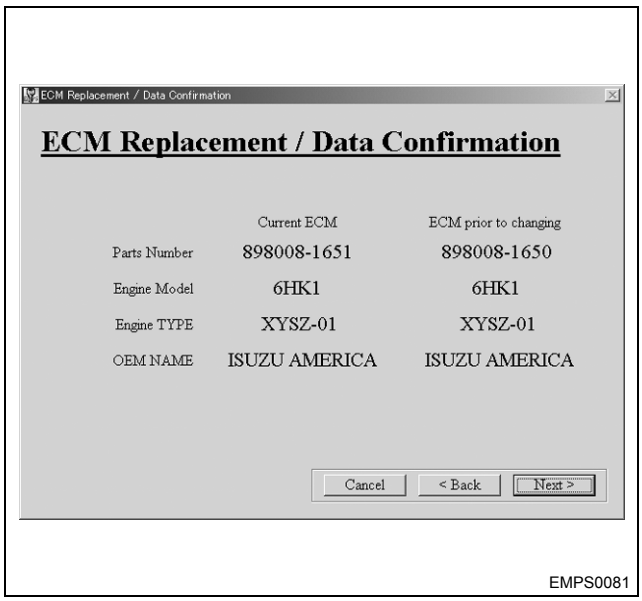
After configuring the power switch setting, click the [Next] button.
After connecting other ECM, click the [OK] button.
“4.8 Connection Confirmation (After Connecting ECM) and Reflash Mode Selection” will appear.

4.8 Connection Confirmation (After Connecting ECM) and Reflash Mode Selection

Refer to “2. ECM Reflash” to advance to “4.9 ECM Replacement / Data Confirmation” in accordance with the displayed instructions.

4.9 ECM Replacement / Data Confirmation

Data obtained from ECM prior to changing connection and from ECM currently connected are compared.
If data other than Parts Number is different, click the [Back] button to return to “New ECM Parts Number Search Screen” and change the selection, or click the [Cancel] button to quit the EMPS program and start from the beginning again.
If the displayed contents are OK, click the [Next] button.



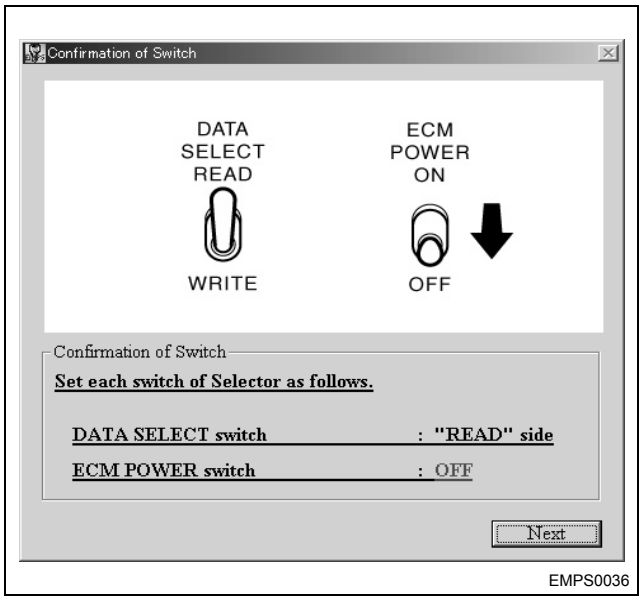
EMPS0081

Selection Item Descriptions

Items	Settings/Operation Performed
Cancel	Performs termination, and quits EMPS program.
Back	Returns to “New ECM Parts Number Search Screen.”
Next	Advances to “4.10 Switch Confirmation Screen 5.”

4.10 Switch Confirmation Screen 5

The switch confirmation screen is shown below.



EMPS0036

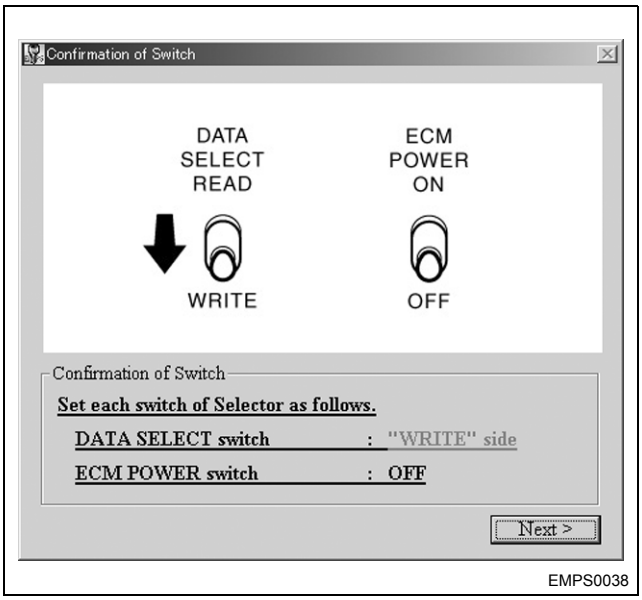
Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “4.11 Switch Confirmation Screen 6.”

4.11 Switch Confirmation Screen 6

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: OFF

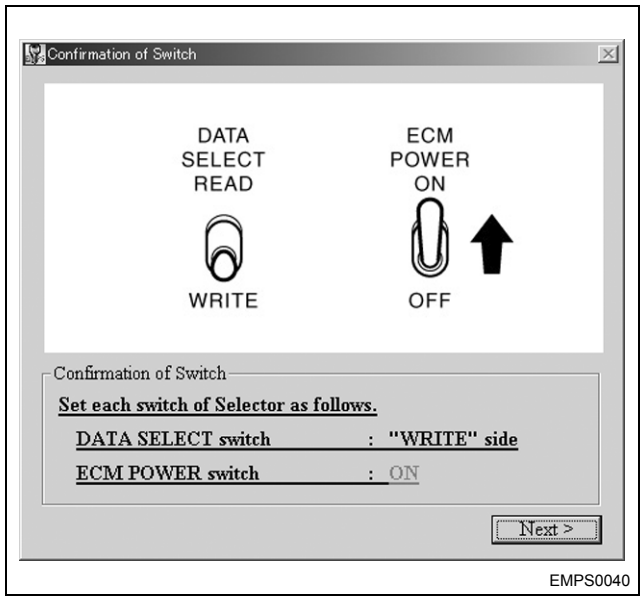
After configuring the switch settings, click the [Next] button. This will advance to “4.12 READY LED Confirmation Screen 1.”

4.12 READY LED Confirmation Screen 1

The selector LED confirmation screen is shown below. After confirming that the LED is lit, click the [Yes] button to advance to “4.13 Switch Confirmation Screen 7.”
If confirmation is not possible, click the [No] button to return to “4.9 ECM Replacement / Data Confirmation.”

4.13 Switch Confirmation Screen 7

The switch confirmation screen is shown below.



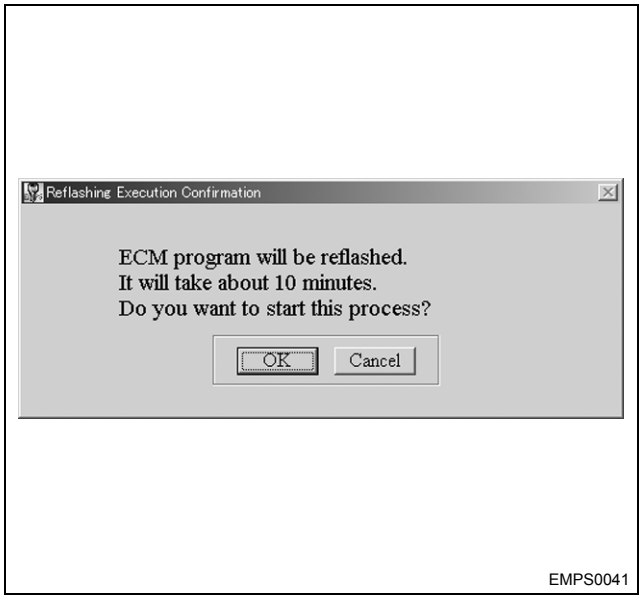
Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “4.14 Reflashing Execution Confirmation Screen.”

4.14 Reflashing Execution Confirmation Screen

This screen displays a confirmation message for reflashing.
Click the [OK] button to continue.
If you need to make changes, click the [Cancel] button to return to “Current ECM Parts Number Confirmation Screen.”



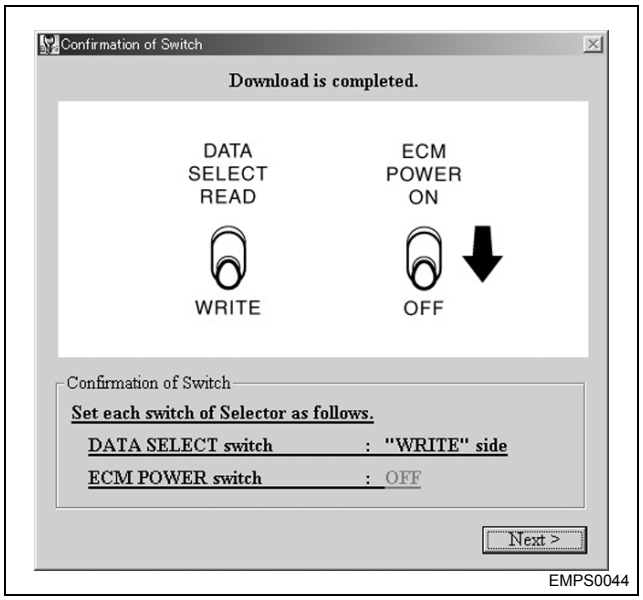
This starts reflashing.
After reflashing is complete, advance to “4.15 Switch Confirmation Screen 8.”

Note:
One of the messages will appear if an error occurs during reflashing. (Refer to “7. Error Code List.”)

Click the [Yes] button to return to “4.14 Reflashing Execution Confirmation Screen.”
Click the [No] button to advance to “6. Recover Point.”

4.15 Switch Confirmation Screen 8

The switch confirmation screen is shown below.



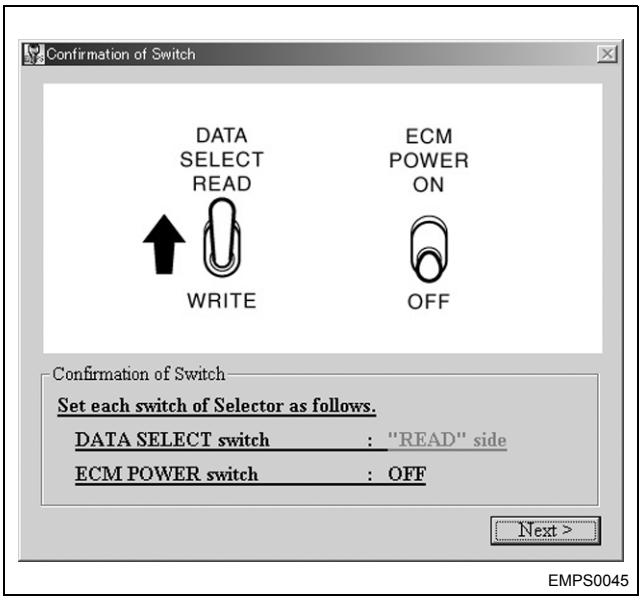
Configure the switch settings as shown below.

DATA SELECT switch: WRITE
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
This will start data confirmation and advance to “4.16 Switch Confirmation Screen 9.”

4.16 Switch Confirmation Screen 9

The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

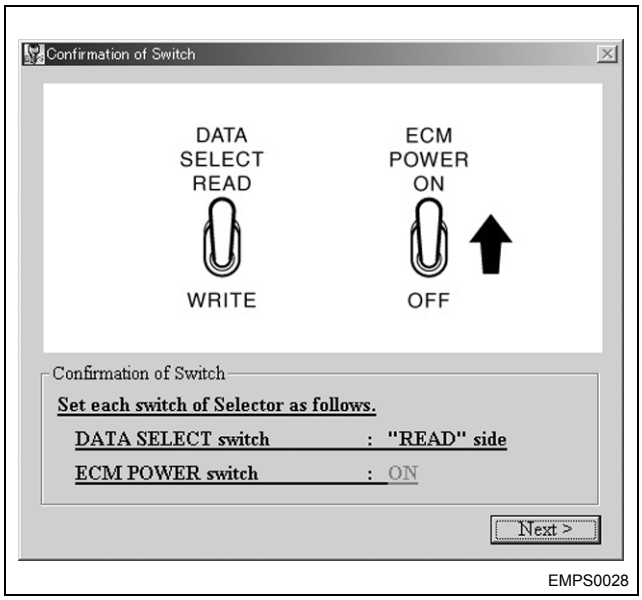
After configuring the switch settings, click the [Next] button.
This will start communication with the selector and advance to “4.17 READY LED Confirmation Screen 2.”
A message will appear if an error occurs during communication. Refer to “7. Error Code List.”
If a communication error occurs, advance to the “6. Recover Point” screen.

4.17 READY LED Confirmation Screen 2

The selector LED confirmation screen is shown below.
After confirming that the LED is lit, click the [Yes] button to advance to “4.18 Switch Confirmation Screen 10.”
If confirmation is not possible, click the [No] button to return to “4.16 Switch Confirmation Screen 9.”

4.18 Switch Confirmation Screen 10

The switch confirmation screen is shown below.



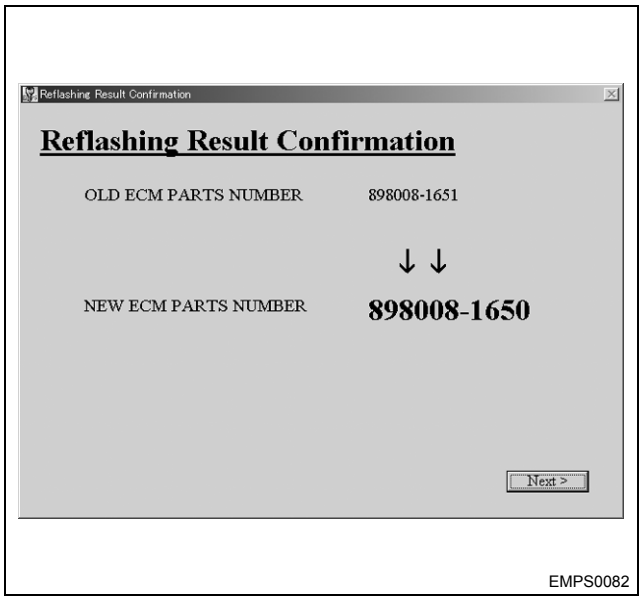
Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: ON

After configuring the switch settings, click the [Next] button.
This starts data confirmation. After confirmation is complete, advance to “4.19 Reflashing Result Confirmation Screen.”
A message will appear if an error occurs during confirmation. Refer to “7. Error Code List.”
If a communication error occurs, advance to the “6. Recover Point” screen.

4.19 Reflashing Result Confirmation Screen

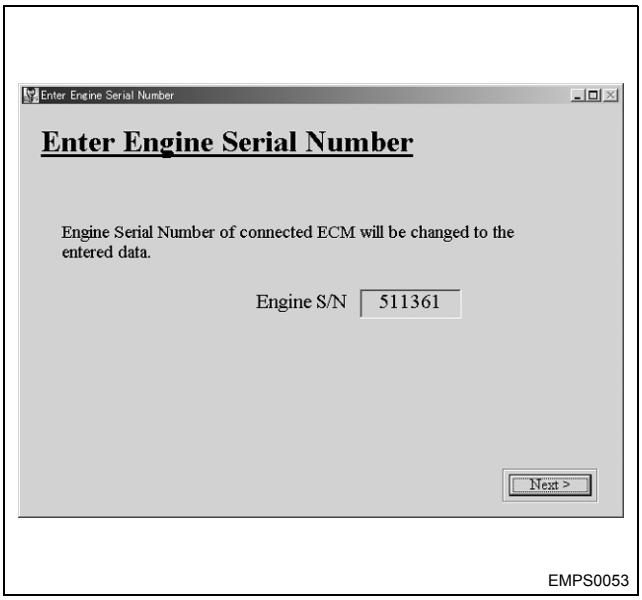
This screen displays the parts number reflash result.



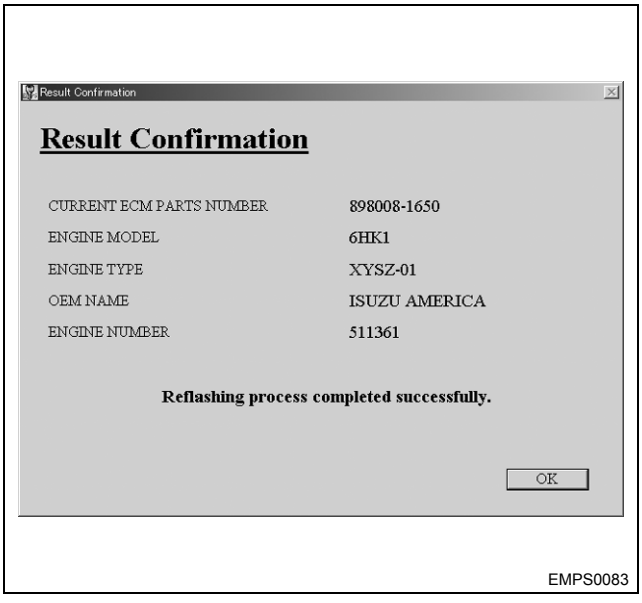
Clicking the [Next] button displays the message.
Check the content and click the [OK] button.
This advances to “4.20 Engine Serial Number Confirm” screen.

4.20 Engine Serial Number Confirm

Engine Serial Number of ECM prior to changing connection will be displayed.



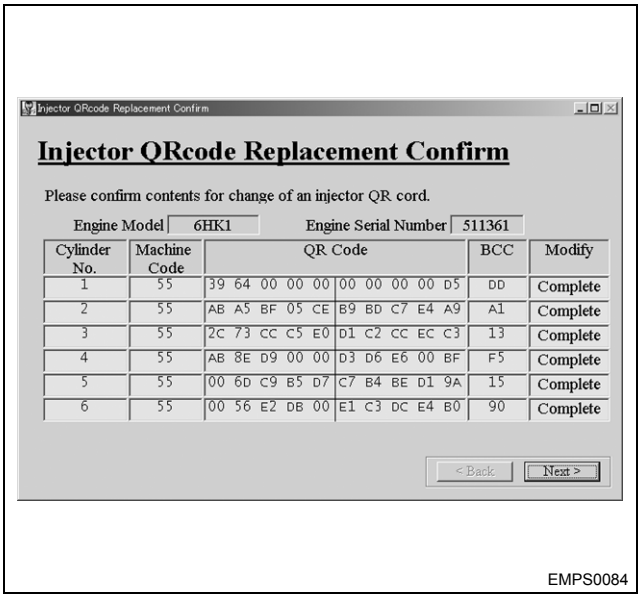
After confirming the displayed content, click the [Next] button to start downloading Engine Serial Number.
After download, the “Result Confirmation Screen” appears.



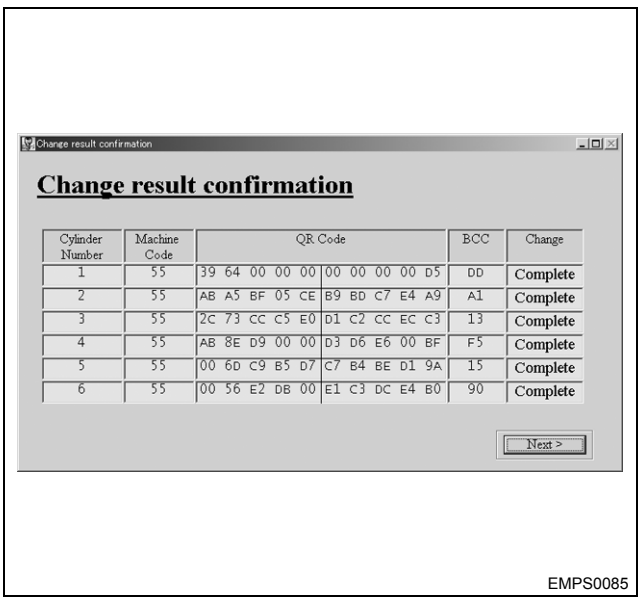
Confirm the displayed content and click the [OK] button to advance to “4.21 Injector QR Code Change Confirmation Screen.”

4.21 Injector QR Code Change Confirmation Screen

QR code uploaded from ECM prior to changing connection will be displayed.



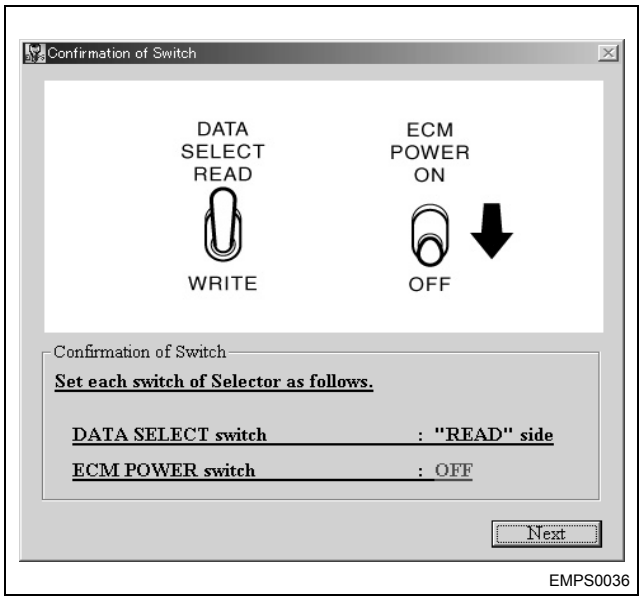
Clicking the [Next] button starts to download the injector QR code.
After download, the confirmation screen appears.



Click the [Next] button to advance to “4.22 Switch Confirmation Screen 11.”

4.22 Switch Confirmation Screen 11

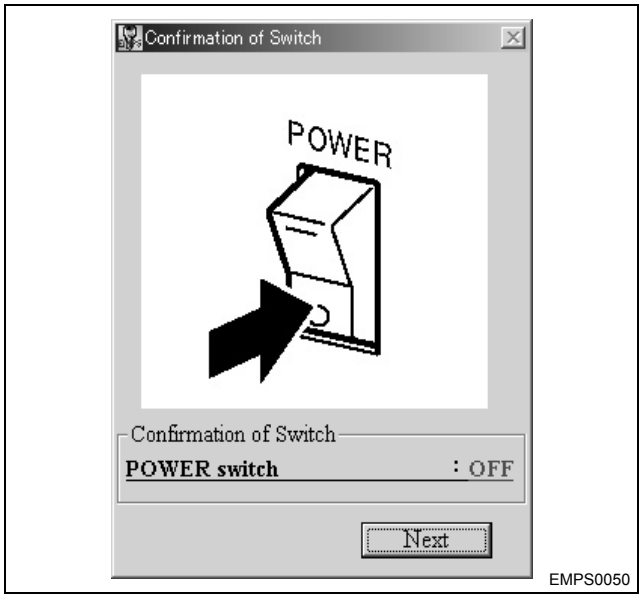
The switch confirmation screen is shown below.



Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
The message appears, then Switch Confirmation screen will be displayed.



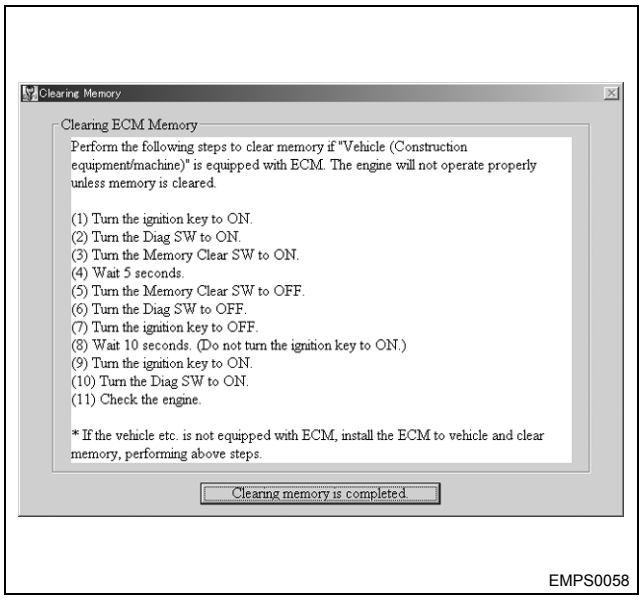
After configuring the power switch setting, click the [Next] button to advance to “4.23 Cable Removal Procedure Screen.”

4.23 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.

4.24 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.



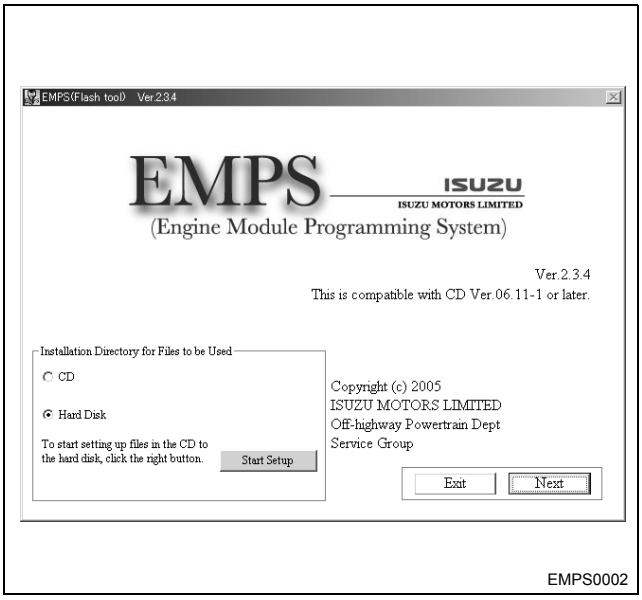
After memory clear is complete, click the [Clearing memory is completed.] button to exit the program.

5. Factory Setting

This section describes the procedure to set the injector QR code of connected ECM back to the factory setting data.

5.1 Startup

Double-click the “EMPS” icon on your Windows desktop to display the “Initial Startup” screen.

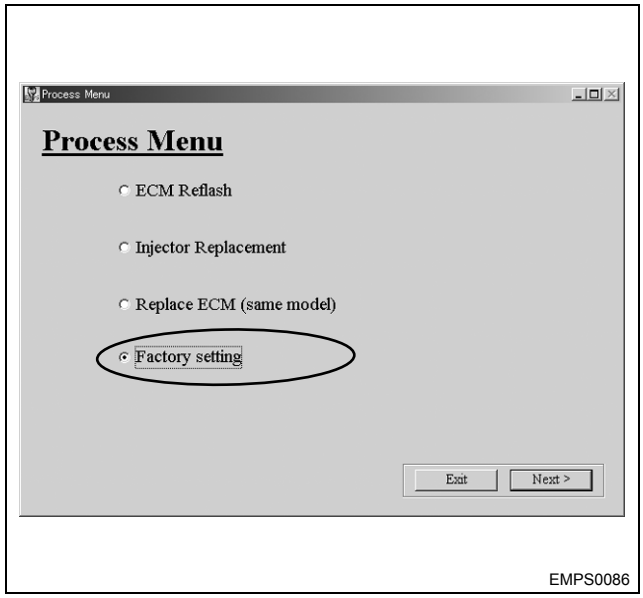


EMPS0002

Clicking the [Next] button displays the message shown below.

EMPS0003

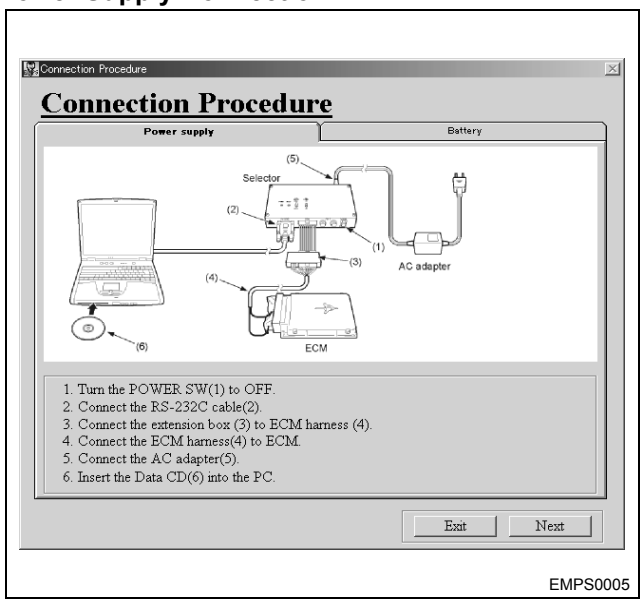
Clicking the [OK] button displays the “Process Menu” screen shown below.



EMPS0086

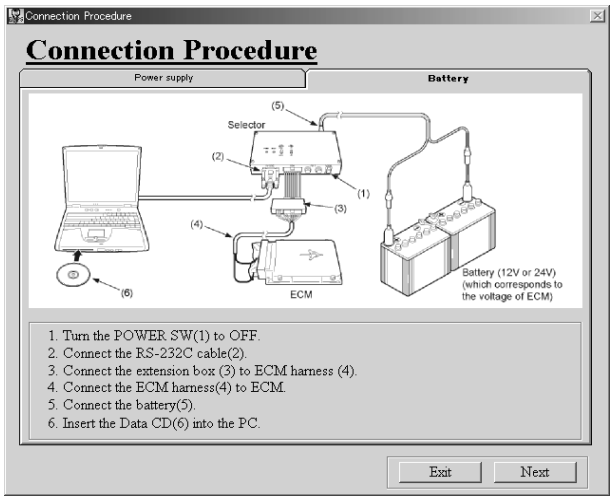
Select the [Factory setting], and click the [Next] button to advance to the next Connection Procedure screen.

Power Supply Connection



EMPS0005

Battery Connection



EMPS0006

Connect the PC, selector, and ECM according to the procedure.
After connection, clicking the [Next] button advances to "5.2 User Authentication Screen."

5.2 User Authentication Screen

This screen is used for EMPS user authentication.
Refer to "2.2 User Authentication Screen."

5.3 Connection Confirmation Screen

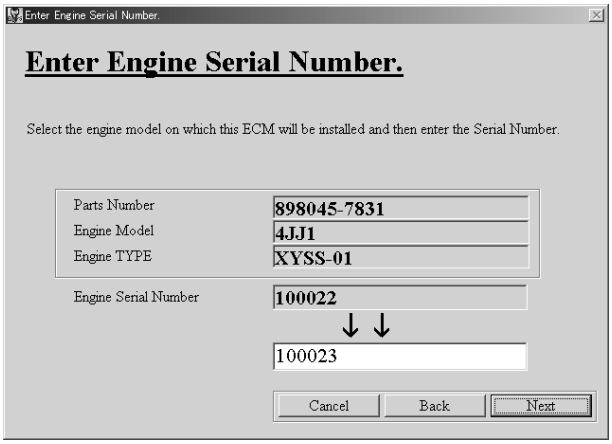
This screen shows the connection status of the computer, selector, ECM, and power supply/battery.
Refer to "2.3 Connection Confirmation Screen."

5.4 Switch Confirmation Screen 1

Refer to "2.4 Switch Confirmation Screen 1" to advance to "5.5 Enter Engine Serial Number."

5.5 Enter Engine Serial Number

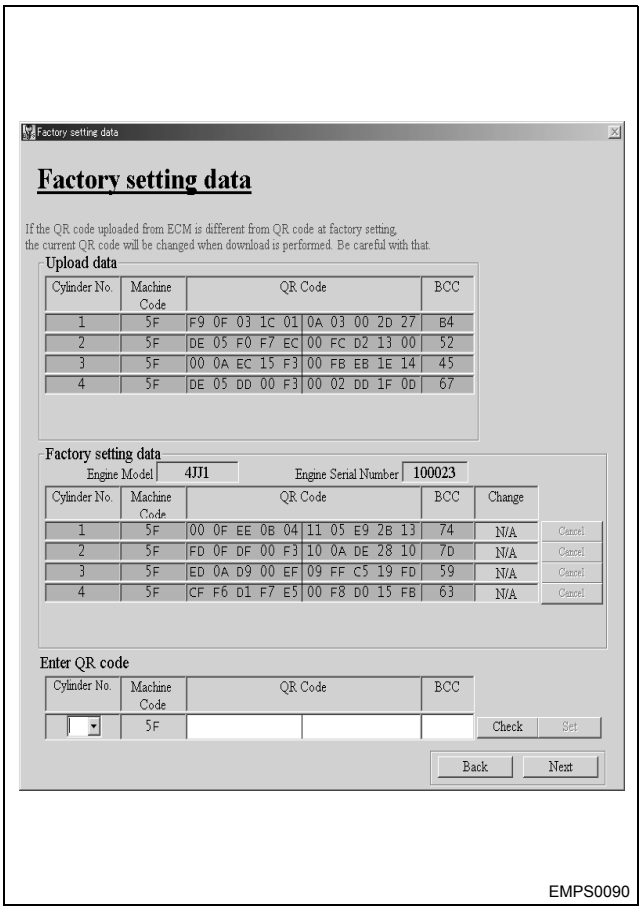
Enter the serial number of the engine on which connected ECM is installed.



EMPS0089

5.6 Factory Setting Data Screen

QR code uploaded from ECM and factory setting data are compared.

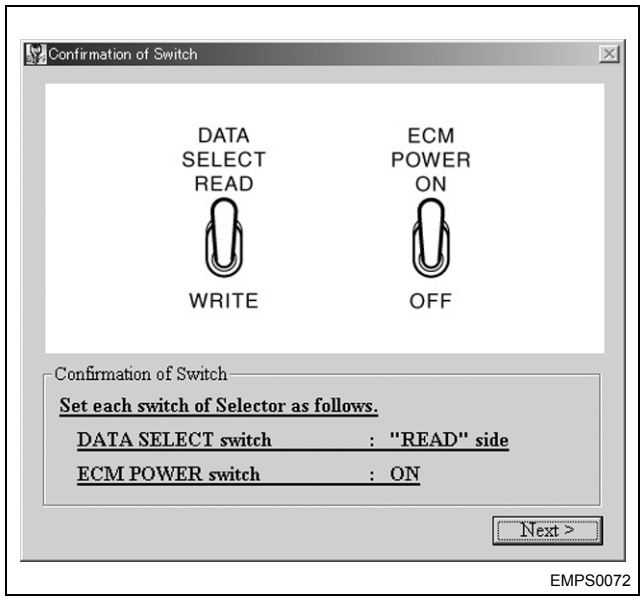


EMPS0090

Refer to “3.5.3 Procedure to Enter QR Code” to change injector QR code.
Clicking the [Next] button displays the confirmation message.
Clicking the [Yes] button displays “5.7 Injector QR Code Download.”

5.7 Injector QR Code Download

The switch confirmation screen is shown below.



EMPS0072

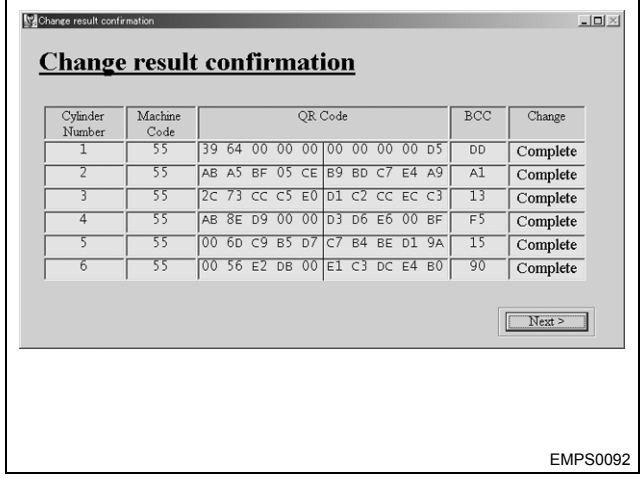
Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: ON

After configuring the switch settings, click the [Next] button and starts to download the factory setting data of injector QR code to ECM.

5.8 Download Result Confirmation

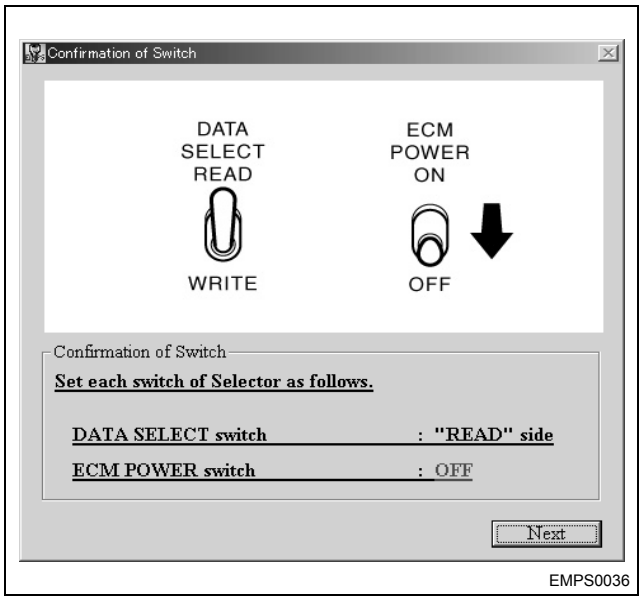
This screen displays the result of download.



EMPS0092

5.9 Switch Confirmation Screen 2

The switch confirmation screen is shown below.

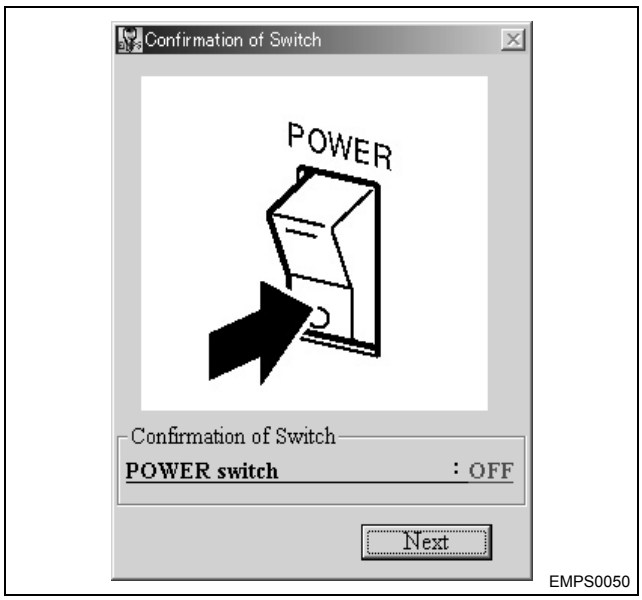


EMPS0036

Configure the switch settings as shown below.

DATA SELECT switch: READ
ECM POWER switch: OFF

After configuring the switch settings, click the [Next] button.
The message appears, then Switch Confirmation screen will be displayed.



EMPS0050

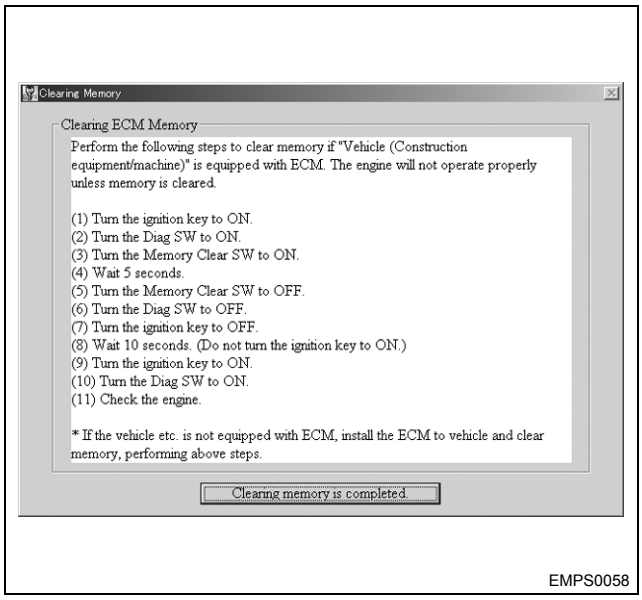
After configuring the power switch setting, click the [Next] button to advance to “5.10 Cable Removal Procedure Screen.”

5.10 Cable Removal Procedure Screen

Disconnect the cable which connects the selector to ECM, and then click the [Next] button.
This advances to “5.11 Memory Clear.”

5.11 Memory Clear

Perform memory clear in accordance with the instructions that are displayed.
Clicking the [OK] button displays the following procedure.

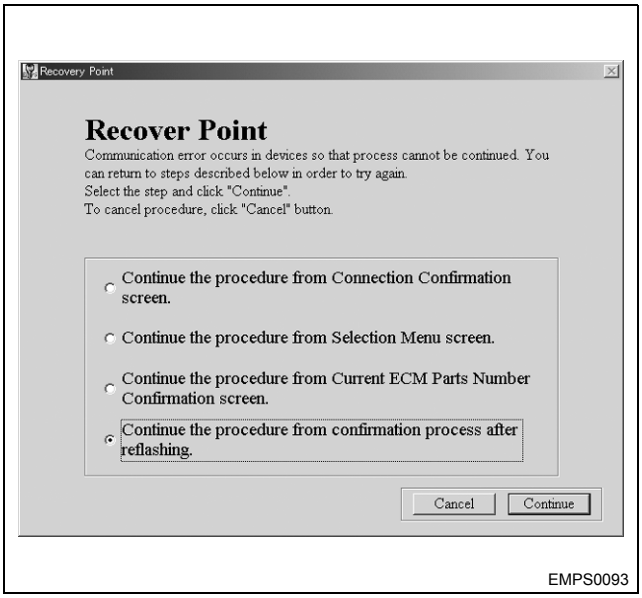


EMPS0058

After memory clear is complete, click the [Clearing memory is completed.] button to exit the program.

6. Recover Point

When data exchange with the selector is not performed correctly, you can select the point from which to continue the procedure.

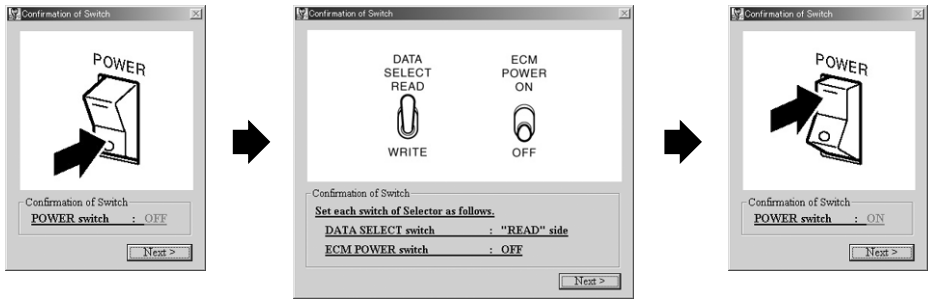


The procedure that can be continued depends on where the communication error was generated.

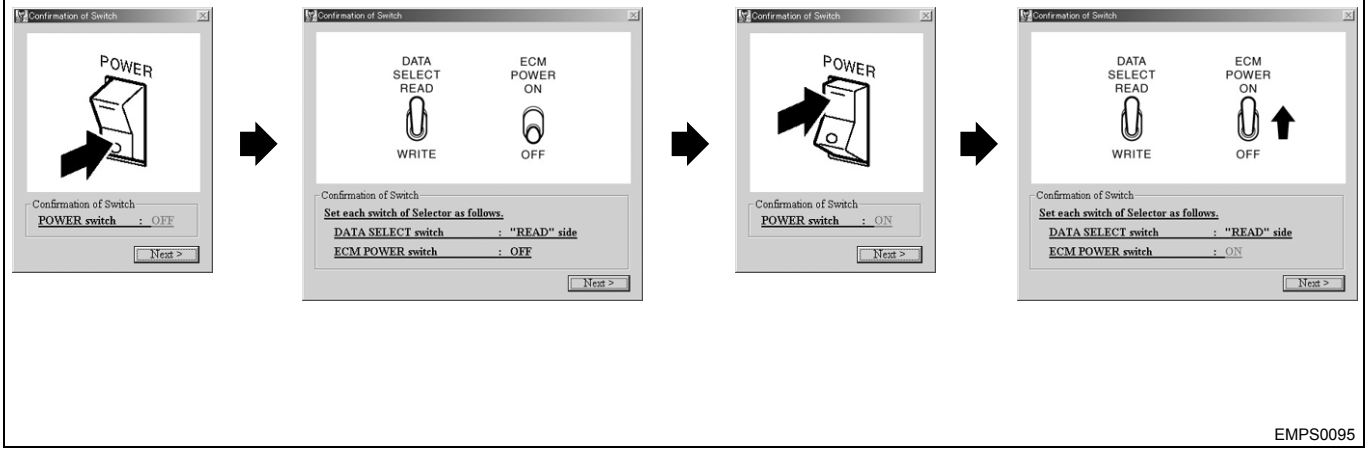
Selection Item Descriptions

Items	Description
Continue the procedure from Connection Confirmation screen.	Returns to “Connection Confirmation Screen” in each section.
Continue the procedure from Selection Menu screen.	After the Switch Confirmation Screen is displayed, returns to “Selection Menu” in each section.
Continue the procedure from Current ECM Parts Number Confirmation screen.	After the Switch Confirmation Screen is displayed, returns to “Current ECM Parts Number Confirmation Screen” in each section.
Continue the procedure from confirmation process after reflashing.	After the Switch Confirmation Screen is displayed, returns to “Switch Confirmation Screen 6” in each section.

To continue, select a process and then click the [Continue] button.
For some processes, a switch confirmation screen will appear.
Put switch settings back according to the following screens, and then click the [Next] button.
Switch Confirmation screen for “Continue the procedure from Selection Menu screen.”

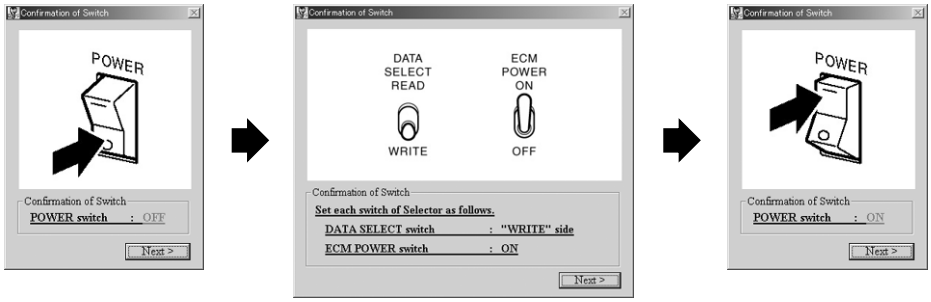


Switch Confirmation screen for “Continue the procedure from Former ECM Parts Number Confirmation screen.”



EMPS0095

Switch Confirmation screen for “Continue the procedure from confirmation process after reflashing.”



EMPS0096

To exit the program without continuing, click the [Cancel] button.
After the message appears, click the [OK] button to exit the program.

7. Error Code List

Start-up

Code	Message	Description	Response
0001	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	Working folder not acquisition	Reinstall the system.
0002	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	Working folder does not exist.	Reinstall the system.
0003	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	INI file does not exist.	Reinstall the system.
0004	Operating environment setting error Reinstall the EMPS. If the error occurs again, contact the administrator.	INI file invalid	Reinstall the system.

Connection Command Screen

Code	Message	Description	Response
0005	The CD-ROM drive does not exist.	CD drive cannot be found.	Check the CD-ROM drive.
0006	The CD cannot be read.	CD read failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0007	The CD has not been inserted. Insert the CD and click Retry button.	The CD has not been inserted.	Insert the Data CD into the CD-ROM drive.
0008	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	MDB file copy failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0009	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	CD version file copy failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0010	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	CD version file read failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.
0011	Data read error Check the CD and CD drive. If the error occurs again, contact the administrator.	MDB Open failure	Check the CD-ROM drive and Data CD. Contact your administrator if there is no fault.

Mode Select Screen

Code	Message	Description	Response
0012	Service address of OEM master cannot be obtained.	OEM master service address read failure	Check the Data CD. Contact your administrator if there is no fault.

User Authentication Screen

Code	Message	Description	Response
0013	Enter your ID.	ID not input	Enter your ID.
0014	Enter your PASSWORD.	Password not input	Enter your password.
0015	Enter the PASSWORD for compulsory reflash.	Password for compulsory reflash not input	Enter the password for compulsory reflash.
0016	ID and PASSWORD are invalid.	ID does not correspond to password.	Enter your correct password.
0017	The PASSWORD for compulsory reflash is invalid.	Password for compulsory reflashing cannot be analyzed.	Enter the correct password for compulsory reflash.
0018	The PASSWORD for compulsory reflash is invalid.	Password for compulsory reflash does not correspond to ID.	Enter the correct password for compulsory reflash.
0019	The PASSWORD for compulsory reflash has expired.	Password for compulsory reflash has expired.	Obtain the correct password for compulsory reflash from your administrator.
0020	Service address of OEM master cannot be obtained.	OEM master service address read failure	Check the Data CD. Contact your administrator if there is no fault.

OEM Manufacturer Selection Screen

Code	Message	Description	Response
0021	Select the machine's manufacturer and click “OK.”	OEM not selected	Select OEM NAME.

Connection Confirmation Screen

Code	Message	Description	Response
0022	Enter the COM port.	COM port not input	Enter the COM port.
0023	Select transmission bit rate.	Transmission bit rate not selected	Check if COM port operates properly.
0024	Setting of COM port is invalid.	Input port invalid digit number	Enter the correct COM port.
0025	Setting of COM port is invalid.	Input port invalid number	Enter the correct COM port.
0026	Communication setting is invalid.	Invalid communication setting	Check if COM port operates properly.
0027	Process was terminated last time (P_DATE). Do you want to continue?	Previous file exits. (Last process continuation confirmation)	Click the [Yes] button to advance to “2.5 Current ECM Parts Number Confirmation Screen.
0028	Previous ECM Parts Number information will be deleted. Is it OK?	Previous file deletion confirmation (This message appears to confirm deletion of the data when the [No] button of the above message box is clicked.)	Carry out the procedure following the instructions on the screen.

Selector S/N Reading (1st time)

Code	Message	Description	Response
0029	Selector S/N Request cannot be sent.	Selector S/N request failure	Click the [OK] button to exit the process, and then check the selector.
0030	This is unconfirmed selector. Check the selector.	Selector unconfirmed	Click the [OK] button to exit the process, and then check the selector.
0031	User ID does not correspond to selector S/N. Confirm user ID again.	User ID not verified	Enter your correct user ID.

Code	Message	Description	Response
0032	Communication error If the error occurs again, contact the administrator.	Incorrect number of digits in S/N	Check each wiring connection, and restart the process again.
0033	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0034	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0035	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0036	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0037	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0038	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0039	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0040	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0041	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0042	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0043	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0044	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0045	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0046	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0047	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

Former Parts No. Reading (1st time)

Code	Message	Description	Response
0048	ECM Parts Number Request cannot be sent.	Parts Number request failure	Click the [OK] button to exit the process, and then check the selector.
0049	Communication error If the error occurs again, contact the administrator.	Invalid number of digits for Parts Number	Click the [OK] button to exit the process, and then check the selector. If the error occurs again, contact the administrator.
0050	Record of current Parts No. does not exist. The part number will be confirmed again. Clicking the [OK] button returns to Selection Menu.	Either former or current code does not exist.	Click the [OK] button to return to Selection Menu in each section. Clicking the [Cancel] button displays a message to confirm exiting of the program.
0051	Record of current Parts No. does not exist. The part number will be confirmed again. Clicking the [OK] button returns to Selection Menu.	Record acquisition error	Click the [OK] button to return to Selection Menu in each section. Clicking the [Cancel] button displays a message to confirm exiting of the program.
0052	Service address does not correspond. Do you want to search again?	Service address does not correspond.	Click the [Yes] button to search again.Check the Data CD. If the error occurs again, contact the administrator.
0053	ECM Parts Number Request cannot be sent.	Parts Number request failure of service address retry	Click the [OK] button to exit the process, and then check the selector.
0054	Current ECM Parts Number cannot be obtained. Do you want to execute an integrated confirmation process?	Parts Number cannot be obtained.	Click the [Yes] button for integrated confirmation process. To cancel the process, click the [No] button.
0055	Integrated confirmation process takes about 60 minutes. Do you want to execute this process?	Execution confirmation of integrated confirmation process if clicking the [Yes] button in the message above.	Carry out the procedure following the instructions on the screen.
0056	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. If the ECM Parts Number cannot be obtained even after compulsory reflash, the ECM may be damaged. Program will be ended.	Parts Number cannot be obtained even after the integrated confirmation process.	Perform the compulsory reflash. If this message appears in the compulsory reflash process, ECM may be damaged.
0057	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0058	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0059	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0060	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0061	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.

Code	Message	Description	Response
0062	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0063	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0064	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0065	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0066	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0067	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0068	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0069	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0070	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0071	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

New ECM Parts Number Search Screen

Code	Message	Description	Response
0072	Select “ENGINE MODEL”, “ENGINE TYPE” from pull-down menu respectively, and click “Select” button.	ENGINE MODEL not selected	Select the ENGINE MODEL and ENGINE TYPE.
0073	Select “ENGINE MODEL”, “ENGINE TYPE” from pull-down menu respectively, and click “Select” button.	ENGINE TYPE not selected	Select the ENGINE MODEL and ENGINE TYPE.
0074	Select “OEM NAME” from pull-down menu.	OEM NAME not selected	Select the OEM NAME.
0075	Enter the six-digit number into the “ENGINE NUMBER” field.	ENGINE NUMBER not input	Enter the ENGINE NUMBER.
0076	ECM Parts Number cannot be found.	Appropriate new Parts Number does not exist.	Click the OK button and follow the instructions on the screen.

New ECM Parts Number Search Confirmation Screen

Code	Message	Description	Response
0077	Enter new ECM Parts Number.	New Parts Number not input	Enter the parts number.
0078	Record of former ECM Parts No. to be reflashed compulsorily does not exist.	No record for compulsory reflash	Confirm the parts number and enter it again.
0079	ECM Parts Number is not compatible	No compatible code exists.	Confirm the parts number and enter it again.
0080	Enter search condition for ECM Parts Number.	OEM search refinement condition not selected	Select the search condition.
0081	New ECM Parts Number cannot be identified.	Refinement is not possible.	After checking the search refinement condition, search again.

Rewriting Result Confirmation Screen

Code	Message	Description	Response
0082	The CD cannot be read.	CD cannot be read.	Check the CD-ROM.
0083	The CD has not been inserted. Insert the CD and click Retry button.	The CD has not been inserted.	Insert the Data CD into the CD-ROM drive.
0084	The CD, which is inserted, may be different from one used to start this program, or may be damaged. Program will be ended in this status. Check the CD and start the program again to restart the process.	CD version cannot be obtained.	Carry out the procedure following the instructions on the screen.
0085	Setting of the program file does not exist. Reflash cannot be processed. Select again.	Program file cannot be obtained.	Carry out the procedure following the instructions on the screen.
0086	The CD, which is inserted, may be different from one used to start this program, or may be damaged. Program will be ended in this status. Check the CD and start the program again to restart the process.	Program file cannot be decompressed.	Carry out the procedure following the instructions on the screen.

READY LED (ON)

Code	Message	Description	Response
0087	Check the switch status.	Switch status is incorrect.	Check the switch status of selector.

Rewriting Initialization Process

Code	Message	Description	Response
During execution			
0088	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0089	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0090	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0091	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

Code	Message	Description	Response
At CALL BACK			
0092	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0093	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0094	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0095	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0096	Reflash error Do you want to try reflash again?	Flash memory cannot be erased with boot mode. (at initializing only)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0097	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

Rewriting Reflashing Process

Code	Message	Description	Response
During execution			
0098	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0099	Reflash error Do you want to try reflash again?	Inconsistent execution state (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0100	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0101	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0102	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
At CALL BACK			
0103	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0104	Reflash error Do you want to try reflash again?	User program file cannot be found. (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0105	Reflash error Do you want to try reflash again?	Invalid user program file (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0106	Reflash error Do you want to try reflash again?	No data to be written to flash memory (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

Code	Message	Description	Response
0107	Reflash error Do you want to try reflash again?	Close (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0108	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0109	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0110	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0111	Reflash error Do you want to try reflash again?	Writing error (at writing only)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0112	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

Rewriting Verification Process

Code	Message	Description	Response
During execution			
0113	Reflash error Do you want to try reflash again?	Being processed (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0114	Reflash error Do you want to try reflash again?	Inconsistent execution state (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0115	Reflash error Do you want to try reflash again?	Invalid startup parameter (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0116	Reflash error Do you want to try reflash again?	Thread startup failure (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0117	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
At CALL BACK			
0118	Reflash error Do you want to try reflash again?	No response from rewriting module	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0119	Reflash error Do you want to try reflash again?	User program file cannot be found. (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0120	Reflash error Do you want to try reflash again?	Invalid user program file (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0121	Reflash error Do you want to try reflash again?	No data to be written to flash memory (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0122	Reflash error Do you want to try reflash again?	Close (at writing and verifying)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

Code	Message	Description	Response
0123	Reflash error Do you want to try reflash again?	Port open error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0124	Reflash error Do you want to try reflash again?	Communication error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0125	Reflash error Do you want to try reflash again?	Time-out error (all)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0126	Reflash error Do you want to try reflash again?	Verification error (at verification only)	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.
0127	Reflash error Do you want to try reflash again?	Unknown	Click the [OK] button to advance to “6. Recover Point.” To cancel, click the [No] button.

READY LED (OFF)

Code	Message	Description	Response
0128	Check the switch status.	LED not off	Check the switch status.

Selector S/N Reading (2nd time)

Code	Message	Description	Response
0129	Selector S/N Request cannot be sent.	Selector S/N request failure	Click the [OK] button to exit the process, and then check the selector.
0130	Communication error If the error occurs again, contact the administrator.	Incorrect number of digits in S/N	Check each wiring connection, and restart the process again.
0131	The device, which is different from one used to read the ECM Part Number, is connected. This ECM cannot operate properly. Do you want to try the process again?	Differ from the first time.	Carry out the procedure following the instructions on the screen.
0132	Process will be terminated. Connect the selector correctly and try again.	Confirmation of canceling process if clicking the [No] button in the reflash error screen	Click the [OK] button to return to User Authentication Screen.
0133	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0134	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0135	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0136	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0137	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0138	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.

Code	Message	Description	Response
0139	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0140	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0141	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0142	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0143	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0144	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0145	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0146	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0147	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

New Parts No. Reading (2nd time)

Code	Message	Description	Response
0148	ECM Parts Number Request cannot be sent.	Parts Number request failure	Click the [OK] button to exit the process, and then check the selector.
0149	Communication error If the error occurs again, contact the administrator.	Invalid number of digits for Parts Number	Click the [OK] button to exit the process, and then check the selector. If the error occurs again, contact the administrator.
0150	Reflashed Parts Number does not correspond to the entered/selected Parts Number.	Differ from the entry value	Check ECM Parts Number, and restart the process again.
0151	Service address does not correspond. Do you want to search again?	Service address retry	Carry out the procedure following the instructions on the screen.
0152	ECM Parts Number Request cannot be sent.	Parts Number request failure of service address retry	Click the [OK] button to exit the process, and then check the selector.
0153	Current ECM Parts Number cannot be obtained. Do you want to execute an integrated confirmation process?	Parts Number cannot be obtained.	Click the [Yes] button for integrated confirmation process. To cancel the process, click the [No] button.
0154	Integrated confirmation process takes about 60 minutes. Do you want to execute this process?	Execution confirmation of integrated confirmation process if clicking the [Yes] button in the message above.	Carry out the procedure following the instructions on the screen.

Code	Message	Description	Response
0155	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. If the ECM Parts Number cannot be obtained even after compulsory reflash, the ECM may be damaged. Program will be ended.	Parts Number cannot be obtained even after the integrated confirmation process.	Perform the compulsory reflash. If this message appears in the compulsory reflash process, ECM may be damaged.
0156	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0157	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0158	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0159	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.
0160	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0161	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0162	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0163	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0164	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0165	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0166	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0167	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0168	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0169	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0170	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

Campaign

Code	Message	Description	Response
0171	Campaign log could not be output.	Campaign decoding error	Check the HDD has enough free space, and perform the process again.
0172	Campaign log could not be output.	Campaign file coupling error	Check the HDD has enough free space, and perform the process again.
0173	Campaign log could not be output.	No file being coupled for campaign	Check the HDD has enough free space, and perform the process again.
0174	Campaign log could not be output.	Encryption error	Check the HDD has enough free space, and perform the process again.
0175	Desktop folder could not be obtained.	Desktop cannot be obtained.	Check the HDD has enough free space, and perform the process again.
0176	File copy cannot be performed.	Desktop cannot be copied.	Check the HDD has enough free space, and perform the process again.
0177	Setting of COM port is invalid.	Invalid port (communication setting)	Check if COM port operates properly.

Others

Code	Message	Description	Response
0178	Do you want to read the Parts No. and QR data from a file? (If you select “No,” data will be read from ECM.)	Read confirmation	Carry out the procedure following the instructions on the screen.
0179	Download has not been completed successfully. Perform termination, and restart the process from the beginning.	Download failure	Carry out the procedure following the instructions on the screen.
0180	Engine Serial Number has not been entered.	No Engine Serial Number is entered.	Enter the Engine Serial Number.
0181	Entered Engine S/N does not correspond to connected ECM.	No appropriate data exists in DB.	Check the engine model, and restart the process again.
0183	Failed to upload. Do you want to continue the later process?	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0184	Failed to upload. Perform termination, and restart the process from the beginning.	Process exit confirmation	Carry out the procedure following the instructions on the screen.
0185	QR data has not been set. (The item “Check OK” does not exist.)	No QR data is entered.	Enter the QR data.
0186	Error is found in setting data.	QR data is incorrect.	Enter the correct data.
0187	Do you want to start the registration of injector QRMSG to be changed?	Confirmation of starting registration process	Carry out the procedure following the instructions on the screen.
0188	Do you want to continue the change process for injector? (If you select “No,” the process will be ended.))	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0189	Replace the ECM, and then click the OK button.	Direction to replace ECM	Carry out the procedure following the instructions on the screen.

Code	Message	Description	Response
0190	Engine Serial Number has not been changed. Do you want to continue this process? (If you continue, data read from ECM will be used.)	S/N check	Carry out the procedure following the instructions on the screen.
0191	Uploaded QR data does not exist.	QR data does not exist.	Perform upload.
0192	Do you want to start downloading injector QR code?	Confirmation of starting process	Carry out the procedure following the instructions on the screen.
0193	Do you want to cancel the process, then return to Process Menu?	Cancel of QR code setting screen	Carry out the procedure following the instructions on the screen.
0194	Setting process for injector will be continued.	Confirmation after reflashing	Carry out the procedure following the instructions on the screen.
0195	Changed QR code does not exist.	QR code not changed	Set the correct QR code.
0196	Connected ECM is blank ECM. Quit the EMPS program and connect other ECM. Or perform the reflashing process.	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.
0197	Connected ECM is blank ECM. Do you want to continue the replacement process for injector?	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.
0198	Connected ECM does not correspond to EMPS. Perform reflash.	The ECM that does not correspond is connected.	Carry out the procedure following the instructions on the screen.
0199	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. Return to Process Menu.	Failed to obtain ECM Parts Number	Carry out the procedure following the instructions on the screen.
0200	Connected ECM corresponds to the engine.	Model check when setting back to the factory setting	Carry out the procedure following the instructions on the screen.
0201	Data corresponding to Engine S/N of connected ECM does not exist.	The ECM that does not correspond is connected.	Check the version of data CD, and restart the process again.
0202	The ECM prior to changing connection does not correspond to the current ECM. Return to the previous screen to change selection items. Or restart the process from the beginning.	ECM compatibility error	Carry out the procedure following the instructions on the screen.
0203	There is injector on which no QR code is set. (QR code setting value remains “0.”)	In case that injector QR code has not been set yet.	Set the correct QR code.
0204	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0205	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0206	Select “ENGINE TYPE” from pull-down menu.	Some items on the screen have not been selected.	Select the ENGINE TYPE.
0207	Entered Engine Serial Number does not exist in database. Confirm the Number and enter it again.	Incorrect Engine Serial Number input	Check the Engine Serial Number and enter it again.
0208	Perform reflash or connect other ECM. Entered Engine S/N does not correspond to connected ECM.	In case that invalid ECM is connected, such as the one that parts number is not set.	Carry out the procedure following the instructions on the screen.
0209	Engine cannot be started with currently connected ECM.	Try to register the Engine Serial Number that is not compatible with ECM connected.	Check the Engine Serial Number and enter it again.

Code	Message	Description	Response
0210	Do you want to download the database contained in the CD to the hard disk?	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0211	Versions of the databases in the CD and hard disk are the same.	For download and confirmation of database	Check the Data CD, and perform the process again.
0212	Downloading completed.	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0213	No database is found in the hard disk. Download a database from the CD.	Select “Use the database in the hard disk.” and try the process without database downloaded to the hard disk.	Carry out the procedure following the instructions on the screen.
0214	Communication between the selector failed. Check the wiring and the switch.	Communication error (connection)	Check each wiring connection, and restart the process again.

Code	Message	Description	Response
0145	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0146	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0147	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

New Parts No. Reading (2nd time)

Code	Message	Description	Response
0148	ECM Parts Number Request cannot be sent.	Parts Number request failure	Click the [OK] button to exit the process, and then check the selector.
0149	Communication error If the error occurs again, contact the administrator.	Invalid number of digits for Parts Number	Click the [OK] button to exit the process, and then check the selector. If the error occurs again, contact the administrator.
0150	Reflashed Parts Number does not correspond to the entered/selected Parts Number.	Differ from the entry value	Check ECM Parts Number, and restart the process again.
0151	Service address does not correspond. Do you want to search again?	Service address retry	Carry out the procedure following the instructions on the screen.
0152	ECM Parts Number Request cannot be sent.	Parts Number request failure of service address retry	Click the [OK] button to exit the process, and then check the selector.
0153	Current ECM Parts Number cannot be obtained. Do you want to execute an integrated confirmation process?	Parts Number cannot be obtained.	Click the [Yes] button for integrated confirmation process. To cancel the process, click the [No] button.
0154	Integrated confirmation process takes about 60 minutes. Do you want to execute this process?	Execution confirmation of integrated confirmation process if clicking the [Yes] button in the message above.	Carry out the procedure following the instructions on the screen.
0155	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. If the ECM Parts Number cannot be obtained even after compulsory reflash, the ECM may be damaged. Program will be ended.	Parts Number cannot be obtained even after the integrated confirmation process.	Perform the compulsory reflash. If this message appears in the compulsory reflash process, ECM may be damaged.
0156	Communication error If the error occurs again, contact the administrator.	Command error (receiver)	Check each wiring connection, and restart the process again.
0157	Communication error If the error occurs again, contact the administrator.	BCC error (receiver)	Check each wiring connection, and restart the process again.
0158	Communication error If the error occurs again, contact the administrator.	Command error reception	Check each wiring connection, and restart the process again.
0159	Communication error If the error occurs again, contact the administrator.	BCC error reception	Check each wiring connection, and restart the process again.

Code	Message	Description	Response
0160	Communication error If the error occurs again, contact the administrator.	Time-out error reception	Check each wiring connection, and restart the process again.
0161	Communication error If the error occurs again, contact the administrator.	Other error reception	Check each wiring connection, and restart the process again.
0162	Communication error If the error occurs again, contact the administrator.	Communication error (interrupt signal)	Check each wiring connection, and restart the process again.
0163	Communication error If the error occurs again, contact the administrator.	Communication error (frame error)	Check each wiring connection, and restart the process again.
0164	Communication error If the error occurs again, contact the administrator.	Communication error (port overrun)	Check each wiring connection, and restart the process again.
0165	Communication error If the error occurs again, contact the administrator.	Communication error (receive buffer overflow)	Check each wiring connection, and restart the process again.
0166	Communication error If the error occurs again, contact the administrator.	Communication error (parity error)	Check each wiring connection, and restart the process again.
0167	Communication error If the error occurs again, contact the administrator.	Communication error (the send buffer is full)	Check each wiring connection, and restart the process again.
0168	Communication error If the error occurs again, contact the administrator.	Communication error (DCB error)	Check each wiring connection, and restart the process again.
0169	Communication error If the error occurs again, contact the administrator.	Communication other error	Check each wiring connection, and restart the process again.
0170	Communication error If the error occurs again, contact the administrator.	No response from selector	Click the [OK] button, switch the selector to continue or exit the process following the instructions on the screen.

Campaign

Code	Message	Description	Response
0171	Campaign log could not be output.	Campaign decoding error	Check the HDD has enough free space, and perform the process again.
0172	Campaign log could not be output.	Campaign file coupling error	Check the HDD has enough free space, and perform the process again.
0173	Campaign log could not be output.	No file being coupled for campaign	Check the HDD has enough free space, and perform the process again.
0174	Campaign log could not be output.	Encryption error	Check the HDD has enough free space, and perform the process again.
0175	Desktop folder could not be obtained.	Desktop cannot be obtained.	Check the HDD has enough free space, and perform the process again.

Code	Message	Description	Response
0176	File copy cannot be performed.	Desktop cannot be copied.	Check the HDD has enough free space, and perform the process again.
0177	Setting of COM port is invalid.	Invalid port (communication setting)	Check if COM port operates properly.

Others

Code	Message	Description	Response
0178	Do you want to read the Parts No. and QR data from a file? (If you select “No,” data will be read from ECM.)	Read confirmation	Carry out the procedure following the instructions on the screen.
0179	Download has not been completed successfully. Perform termination, and restart the process from the beginning.	Download failure	Carry out the procedure following the instructions on the screen.
0180	Engine Serial Number has not been entered.	No Engine Serial Number is entered.	Enter the Engine Serial Number.
0181	Entered Engine S/N does not correspond to connected ECM.	No appropriate data exists in DB.	Check the engine model, and restart the process again.
0183	Failed to upload. Do you want to continue the later process?	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0184	Failed to upload. Perform termination, and restart the process from the beginning.	Process exit confirmation	Carry out the procedure following the instructions on the screen.
0185	QR data has not been set. (The item “Check OK” does not exist.)	No QR data is entered.	Enter the QR data.
0186	Error is found in setting data.	QR data is incorrect.	Enter the correct data.
0187	Do you want to start the registration of injector QRMSG to be changed?	Confirmation of starting registration process	Carry out the procedure following the instructions on the screen.
0188	Do you want to continue the change process for injector? (If you select “No,” the process will be ended.))	Process continuation confirmation	Carry out the procedure following the instructions on the screen.
0189	Replace the ECM, and then click the OK button.	Direction to replace ECM	Carry out the procedure following the instructions on the screen.
0190	Engine Serial Number has not been changed. Do you want to continue this process? (If you continue, data read from ECM will be used.)	S/N check	Carry out the procedure following the instructions on the screen.
0191	Uploaded QR data does not exist.	QR data does not exist.	Perform upload.
0192	Do you want to start downloading injector QR code?	Confirmation of starting process	Carry out the procedure following the instructions on the screen.
0193	Do you want to cancel the process, then return to Process Menu?	Cancel of QR code setting screen	Carry out the procedure following the instructions on the screen.
0194	Setting process for injector will be continued.	Confirmation after reflashing	Carry out the procedure following the instructions on the screen.
0195	Changed QR code does not exist.	QR code not changed	Set the correct QR code.
0196	Connected ECM is blank ECM. Quit the EMPS program and connect other ECM. Or perform the reflashing process.	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.

Code	Message	Description	Response
0197	Connected ECM is blank ECM. Do you want to continue the replacement process for injector?	In case that all of uploaded QR code are 0.	Carry out the procedure following the instructions on the screen.
0198	Connected ECM does not correspond to EMPS. Perform reflash.	The ECM that does not correspond is connected.	Carry out the procedure following the instructions on the screen.
0199	Current ECM Parts Number could not be obtained. This ECM needs compulsory reflash. Return to Process Menu.	Failed to obtain ECM Parts Number	Carry out the procedure following the instructions on the screen.
0200	Connected ECM corresponds to the engine.	Model check when setting back to the factory setting	Carry out the procedure following the instructions on the screen.
0201	Data corresponding to Engine S/N of connected ECM does not exist.	The ECM that does not correspond is connected.	Check the version of data CD, and restart the process again.
0202	The ECM prior to changing connection does not correspond to the current ECM. Return to the previous screen to change selection items. Or restart the process from the beginning.	ECM compatibility error	Carry out the procedure following the instructions on the screen.
0203	There is injector on which no QR code is set. (QR code setting value remains “0.”)	In case that injector QR code has not been set yet.	Set the correct QR code.
0204	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0205	Select “ENGINE MODEL”, “OEM NAME” from pull-down menu respectively, and click “Select” button.	Some items on the screen have not been selected.	Select the ENGINE MODEL and OEM NAME.
0206	Select “ENGINE TYPE” from pull-down menu.	Some items on the screen have not been selected.	Select the ENGINE TYPE.
0207	Entered Engine Serial Number does not exist in database. Confirm the Number and enter it again.	Incorrect Engine Serial Number input	Check the Engine Serial Number and enter it again.
0208	Perform reflash or connect other ECM. Entered Engine S/N does not correspond to connected ECM.	In case that invalid ECM is connected, such as the one that parts number is not set.	Carry out the procedure following the instructions on the screen.
0209	Engine cannot be started with currently connected ECM.	Try to register the Engine Serial Number that is not compatible with ECM connected.	Check the Engine Serial Number and enter it again.
0210	Do you want to download the database contained in the CD to the hard disk?	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0211	Versions of the databases in the CD and hard disk are the same.	For download and confirmation of database	Check the Data CD, and perform the process again.
0212	Downloading completed.	For download and confirmation of database	Carry out the procedure following the instructions on the screen.
0213	No database is found in the hard disk. Download a database from the CD.	Select “Use the database in the hard disk.” and try the process without database downloaded to the hard disk.	Carry out the procedure following the instructions on the screen.
0214	Communication between the selector failed. Check the wiring and the switch.	Communication error (connection)	Check each wiring connection, and restart the process again.

Tech2
Operating Instructions

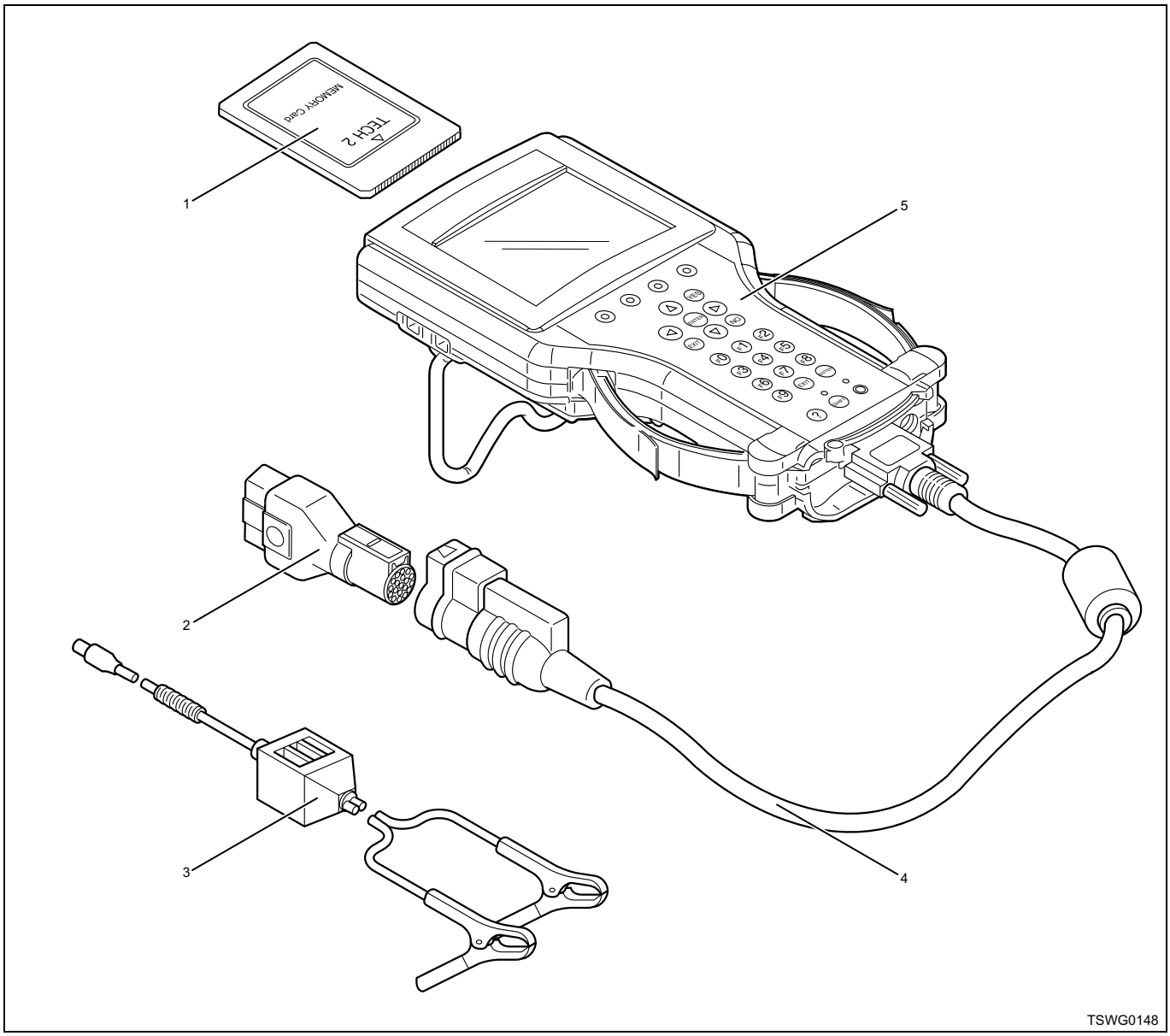
Tech2

Table of Contents

Tech2

How to use Tech2

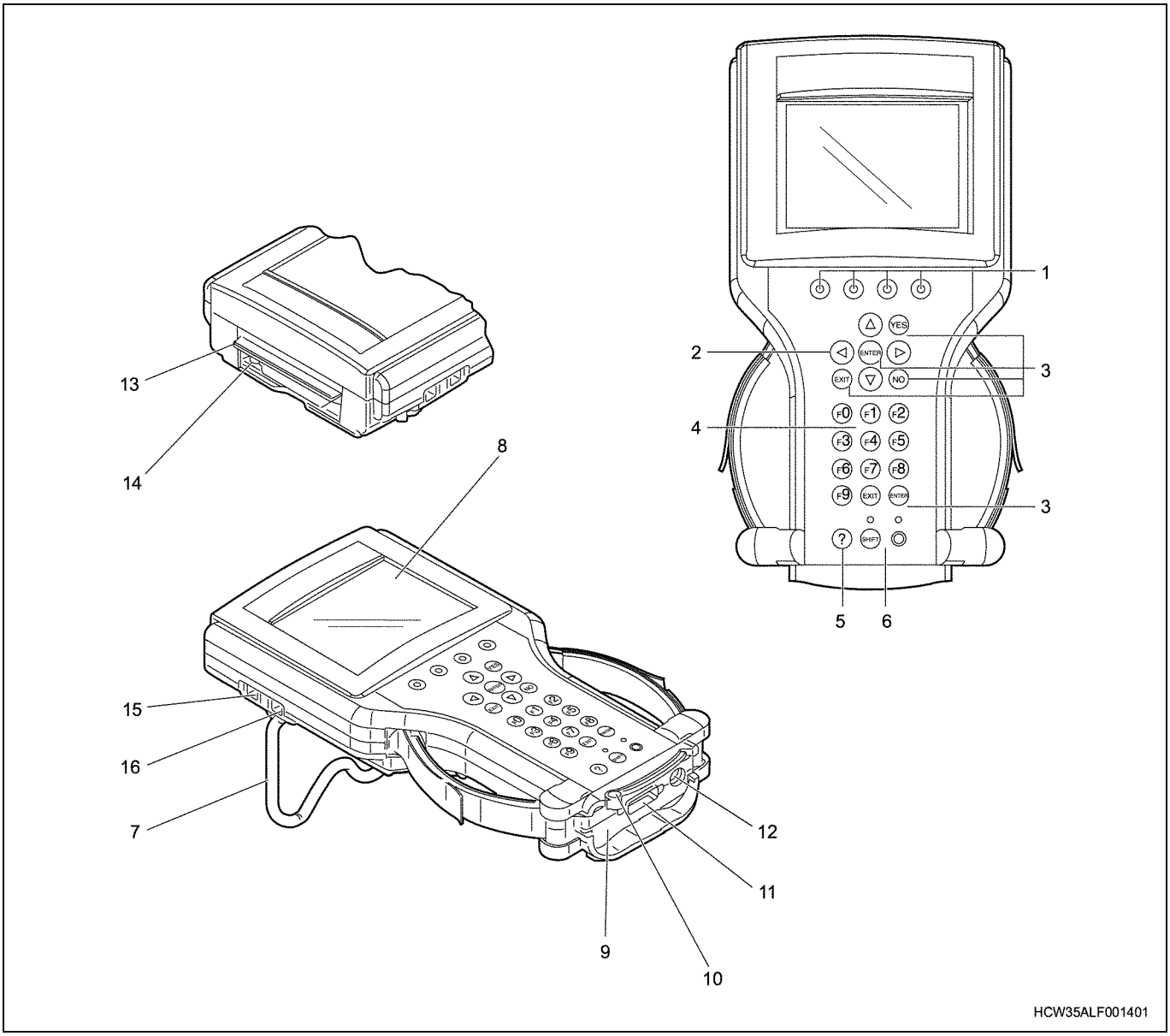
Components of Tech2



Name

1. PCMCIA card
2. SAE 16/19 adapter
3. Power cable
4. DLC cable
5. Tech2

Each part of Tech2



Name

1. Softkeys
2. Selection keys (Arrow keys)
3. Action keys (YES, NO, ENTER, EXIT)
4. Function keys (F0 — F9)
5. Help key (?)
6. Control keys (PWR / SHIFT)
7. Wide stand
8. Display area (LCD)
9. Machine communication interface (VCI) module
10. Fastening bar of VCI module
11. Connector of DLC cable connection
12. Connector for AC adapter connection
13. PCMCIA card insertion slot with cover
14. PCMCIA card release button
15. Connector for external communication (RS-232 port)
16. Connector for external communication (RS-485 port)

Softkeys

While operating the Tech2, selection boxes appear on the upper part of the screen. The softkeys correspond the selection boxes. They cannot be used unless the selection boxes are displayed.

Selection keys (Arrow keys)

They are used to select the menu or switch the display on the screen of Tech2. Selected part is highlighted in the screen.

Action keys (YES, NO, ENTER, EXIT)

They are used to execute the operation of Tech2, respond to instruction/question, and switch/move to each menu screen.

Function keys (F0 — F9)
They are used to execute a menu function in the screen. These keys also correspond to F numbers, such as “F0”, when they are displayed on the menu screen.

Help key (?)
Explanation of Tech2 function, which is being used at the time when the key is pressed, is displayed

Control keys (PWR / SHIFT)
The PWR key turns on/off the power to the Tech2. The SHIFT key is used to adjust the screen contract. When the SHIFT key is active, the orange LED illuminates. In this case, all the keys except selection keys and functions are locked. When the power is on, the green LED illuminates.

Wide stand
Use this as a stand. The stand opens angle of 0 — 180°.

Display area (LCD)
This is liquid crystal display (LCD) with contrast adjusting function. It displays ECM information and various instructions.

Machine communication interface (VCI) module
This is a module to communicate between the machine and Tech2.

Fastening bar of VCI module
The bar is used to install/fasten/remove the VCI.

Connector of DLC cable connection
This is used to connect the Tech2 to the machine. Connect the DLC cable.

Connector for AC adapter connection
This is used to connect the attached AC adapter when using Tech2 with other than the machine.

PCMCIA card insertion slot with cover
Open the cover when inserting the PCMCIA card into Tech2. Insert the PCMCIA card with the cover opened. Never insert/remove the PCMCIA card when the Tech2 is powered on.

PCMCIA card release button
This is used to remove the PCMCIA card from Tech2. Press the button to remove the PCMCIA card. Never remove the PCMCIA card when the Tech2 is powered on.

Connector for external communication (RS-232 port)
This is used to connect the Tech2 to a computer.

Connector for external communication (RS-485 port)
This is a connector for phone line connection, however it is not currently used. Do not connect the phone line etc. to this connector.

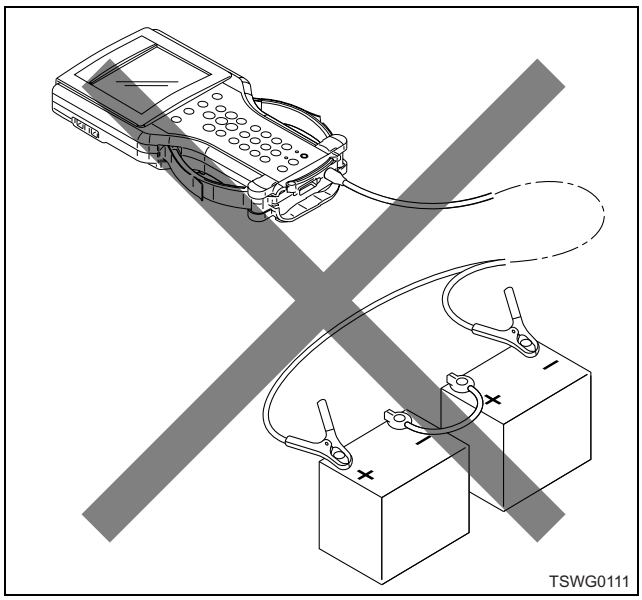
Precautions on handling Tech2

Ventilation

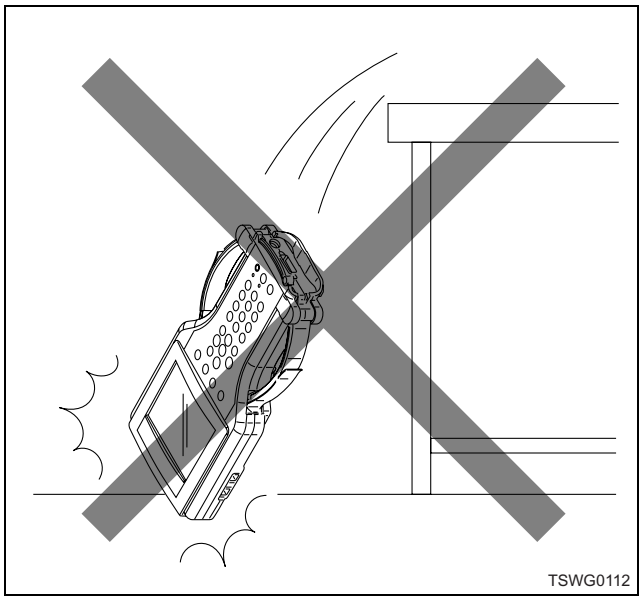
If performing inspection and test with engine running in badly ventilated area, such as garage, ventilate sufficiently. In badly ventilated area, poisoning may occur due to inhaling colorless, odorless carbon monoxide included exhaust gas.

Handling

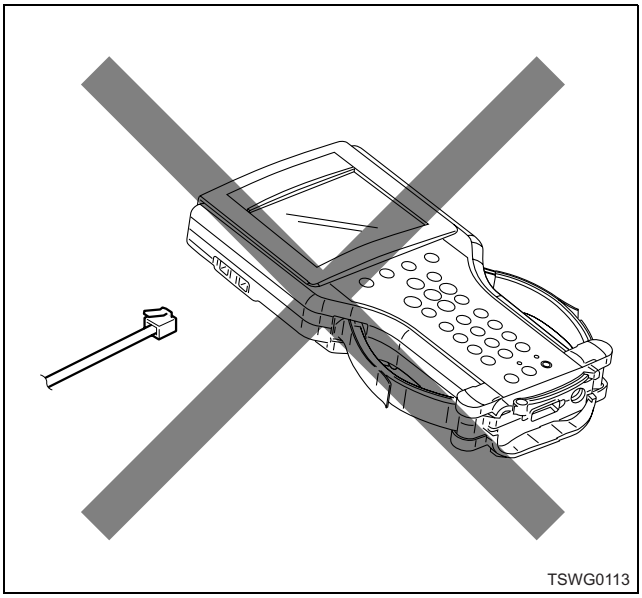
- The Tech2 is “precision electronic device”. Handle with extreme care.
- Operating voltage of Tech2 is DC 12 V. Do not energize 24 V to it.



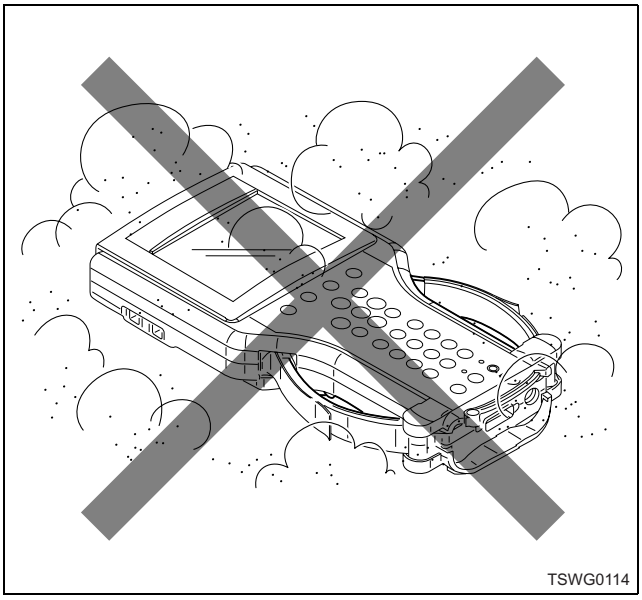
- Do not have an impact on it by dropping. It causes internal faults even no damage on appearance.



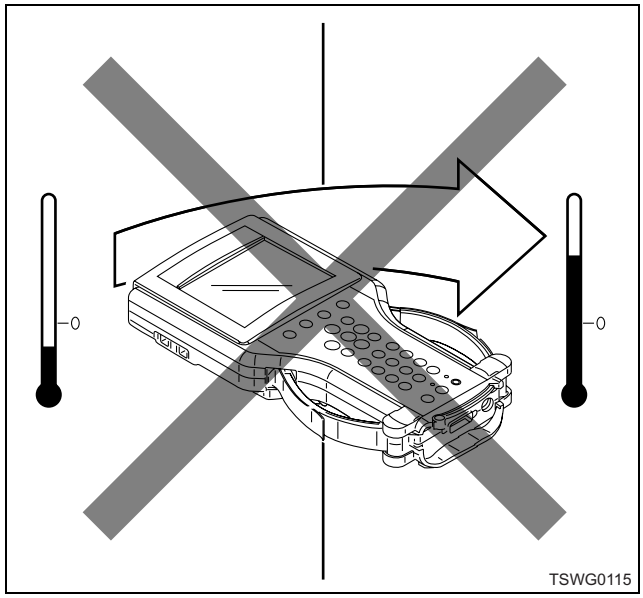
- Be sure to turn off the power of Tech2 when installing/removing the PCMCIA card. Avoid repetition of installing/removing the card as possible. Otherwise, the card may be deteriorated.
- Before turning on the Tech2, make sure that the cables and adapters are connected securely.
- Do not disconnect the cables and adapters connected to Tech2 while the key switch is ON or the engine is starting.
- Do not connect the phone jack to communication port on the side of Tech2.


TSWG0113

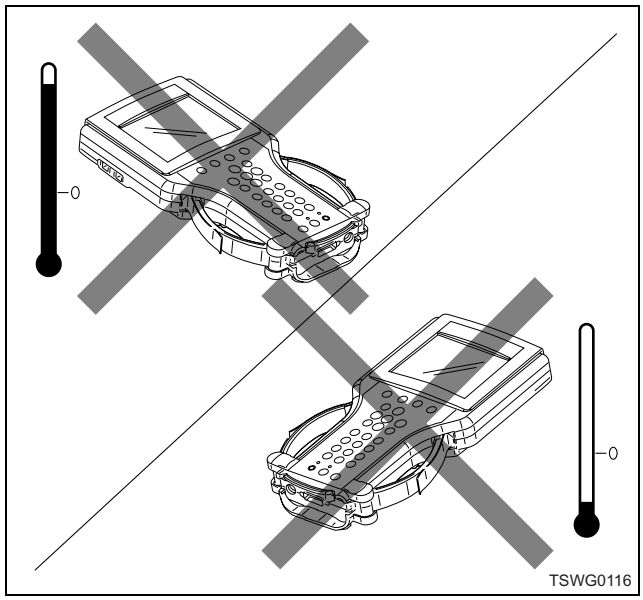
- Avoid using and storing it in dusty area. When not using it, always put it in its case to prevent the adapter from getting dust.


TSWG0114

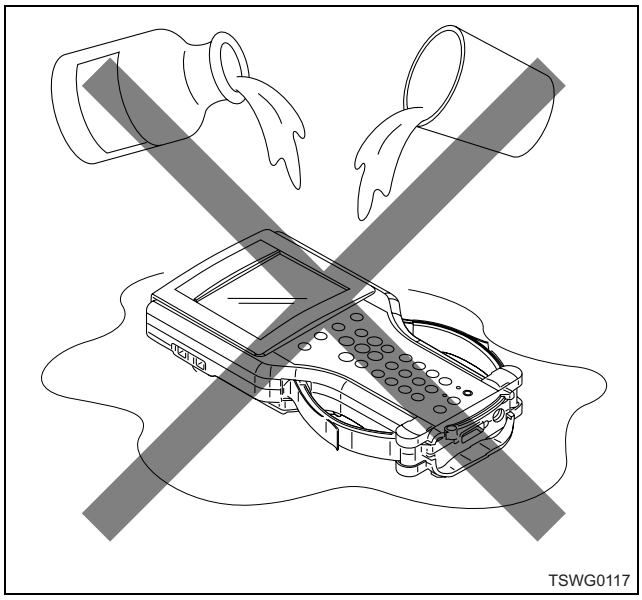
- Avoid using and storing it in a place with rapid changes of temperature. If bringing it from cold outside into warm indoor suddenly, dew condensation may occur resulting in malfunction or trouble.


TSWG0115

- Avoid using and storing it in a place with extreme high or low temperature. Especially in summer, do not leave it in the machine exposed to direct sunlight.


TSWG0116

- Avoid using and storing it in a place that it may contact water or chemicals. When cleaning, use cloth with mild detergent, not highly-volatile solvent such as thinner, and wipe out using dry cloth. Its display is easy to get dirty, clean periodically using antistatic cloth.



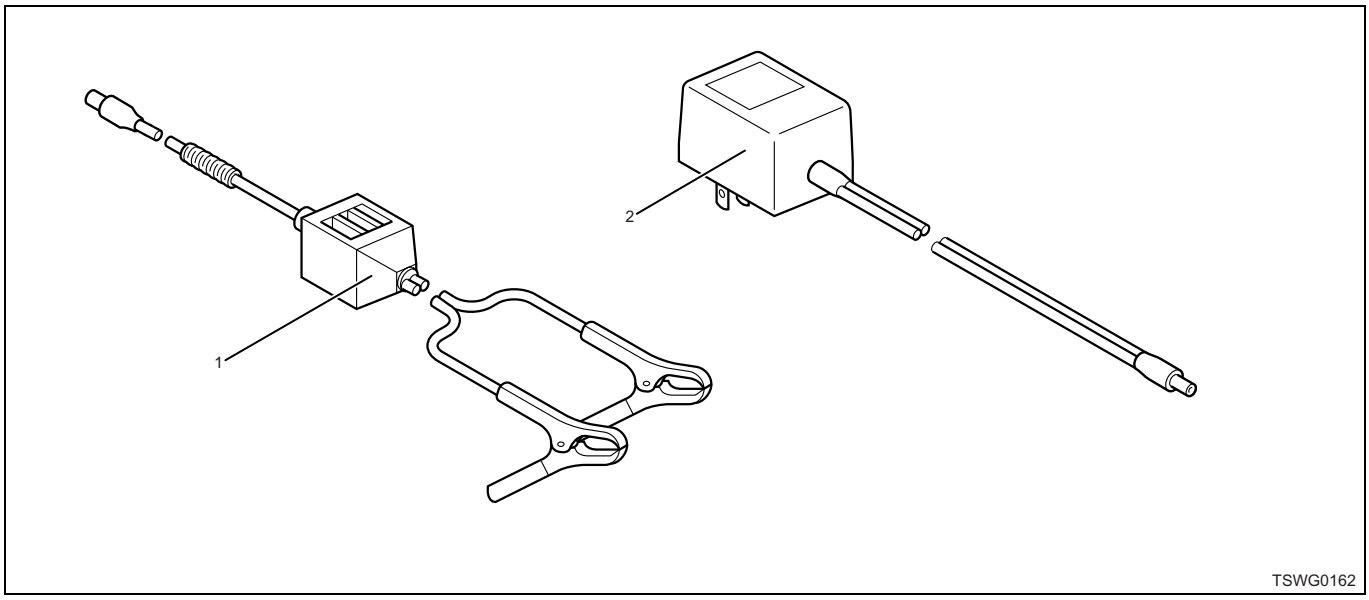
Power supply

About power supply

The power supply method for the Tech2 varies depending on the voltage of the machine, shape of DLC and the situation in which the unit is used. Therefore the user will have to gain good understanding of the relevant connecting procedure.
Notice that machine data and DTC will not be able to be checked if the connection is not established in accordance with the power supply of the machine.

Note:
Use of the external power (AC power) does not allow to utilize the applications.

Power Supply Connection



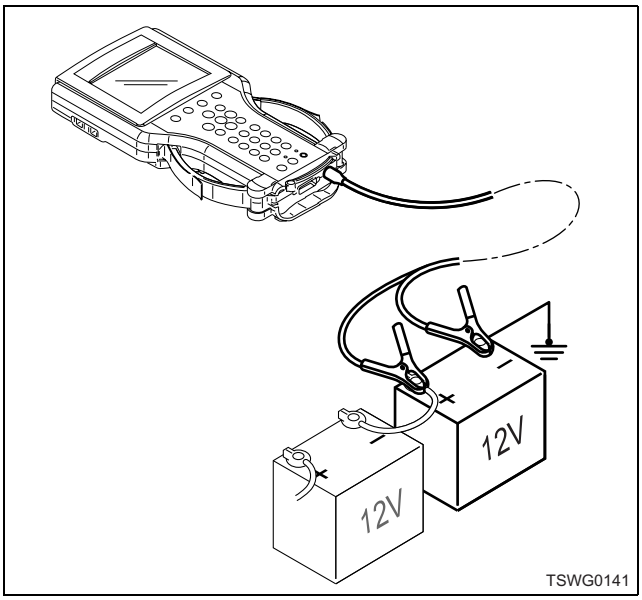
Name

1. Battery cable
2. Power socket cable (AC/DC adapter)

Battery cable

This cable should be used, in the case where no power is supplied even when the Tech2 is connected to the machine through the machine DLC cable, or where the machine works with a higher voltage than the operating voltage of the unit. When connecting the cable, pay heed to the polarities of the clamps. (The black clip of the cable is to be connected to the negative terminal of the battery and the red clip to the positive terminal.)

Caution:
In the case of a 24-V machine, connect to battery on the body ground side to take out 12 V.



Power socket cable (AC/DC adapter)

This is used to check the captured data by operating Tech2 away from the machine.

Caution:
Be sure to use the power socket cable adapted to local standards. Otherwise, it may result in failure of Tech2 or power socket cable due to different voltage and current depending on regions.

Check items before use

VCI

Check to see whether the VCI module is securely inserted and whether the fastening latch bar of the VCI module is located on the left-hand end.
Attach the DLC cable and fasten it by tightening the two lock screws.

PCMCIA Card

Check to see whether the slot (upper side) has this card inserted with its “Tech2” label side up.

Caution:
If the card is not inserted properly and the unit is switched on, “NO PCMCIA CARD INSERTED” will appear. If that is the case, turn off the power and redo the insertion of the PCMCIA Card.

Connection

Check to see whether the DLC cable is fitted with an adapter compatible with the machine.

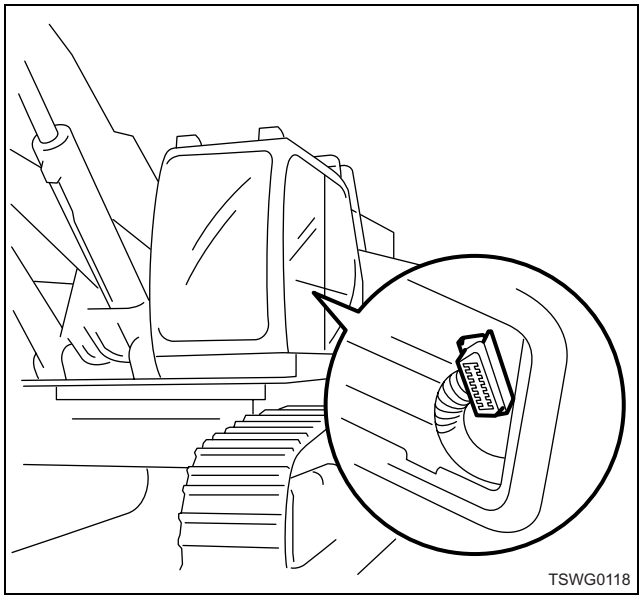
Note:
Before connecting the cable to the machine, verify that the key switch is in the “OFF” position.

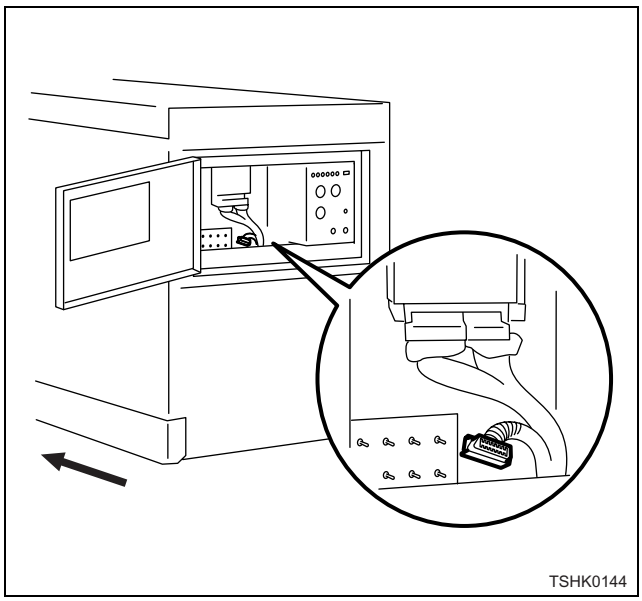
Caution:
In the case of a 24-V machine, connect to battery on the body ground side to take out 12 V.

How to connect Tech2

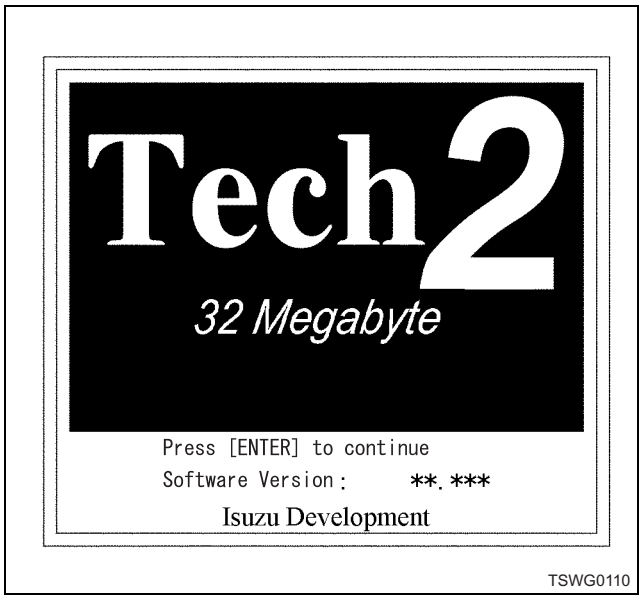
1. Insert the PCMCIA Card with the latest version of ISUZU system into the Tech2.
2. Connect the SAE 16/19 adapter to the DLC cable.
3. Connect the DLC cable to the Tech2.
4. Make sure that the key switch is OFF.
5. Connect the SAE 16/19 adapter of Tech2 to the machine DLC.

Caution:
Connecting method varies depending on each machine. Refer to the machine's manual. The following description is for the machine with DLC.





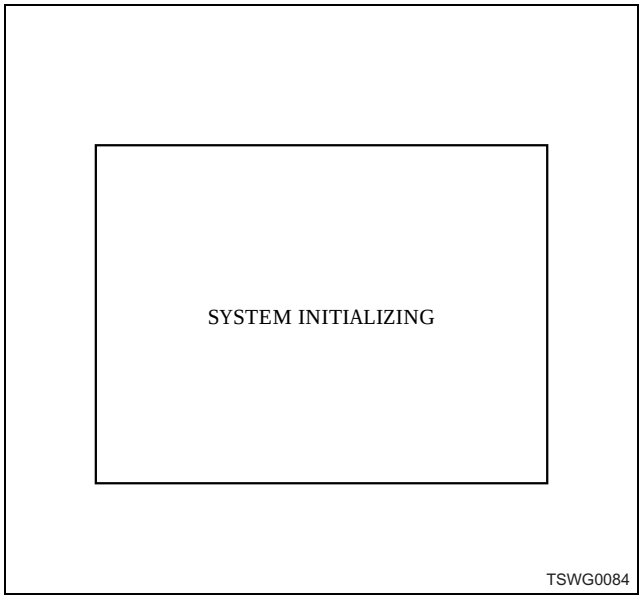
6. Turn the ignition switch to ON and press the "PWR" key of the Tech2.
7. Check the display of the Tech2.



Caution:
Be sure to turn off the power of Tech2 when installing/removing the PCMCIA card.

Startup

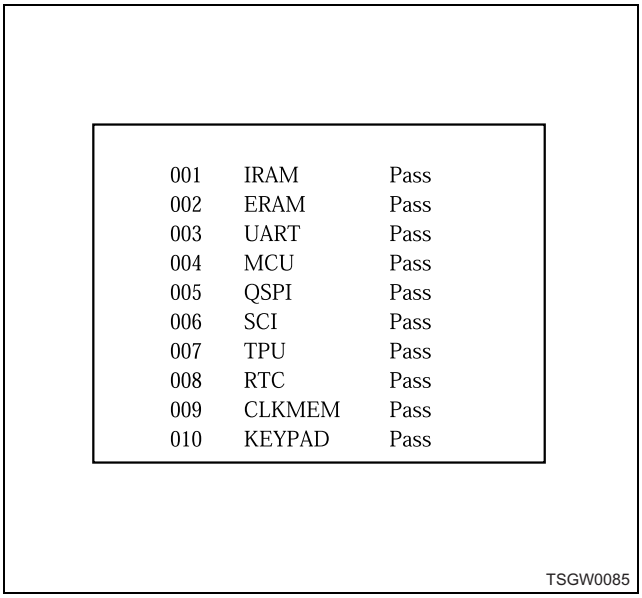
The Tech2 is designed to automatically conduct a self-function test every time it is started. Immediately after the unit has been switched on, the "SYSTEM INITIALIZING" message will appear. During this period, POST (Power-On Self Test) is carried out, and if the test ends normally, a sound will be issued at the completion of the test. Simultaneously, the LED of the SHIFT key will momentarily come on. This is also meant to check the normality of the LED.



Display of POST results:
If the test ends normally, "Pass" will appear and one short sound will be heard.
If the test ends abnormally, "Fail" will appear and three short sounds will be heard.

Note:

- If the LED fails to come on, it means a malfunction of the LED, not a malfunction of the SHIFT key.
- Absence of sound means a malfunction of the Sound Transducer*1, but the unit can be used as is, without any problem.
  *1. Sound Transducer: The sound is intended to indicate the completion of a data setup or an error in a setup.



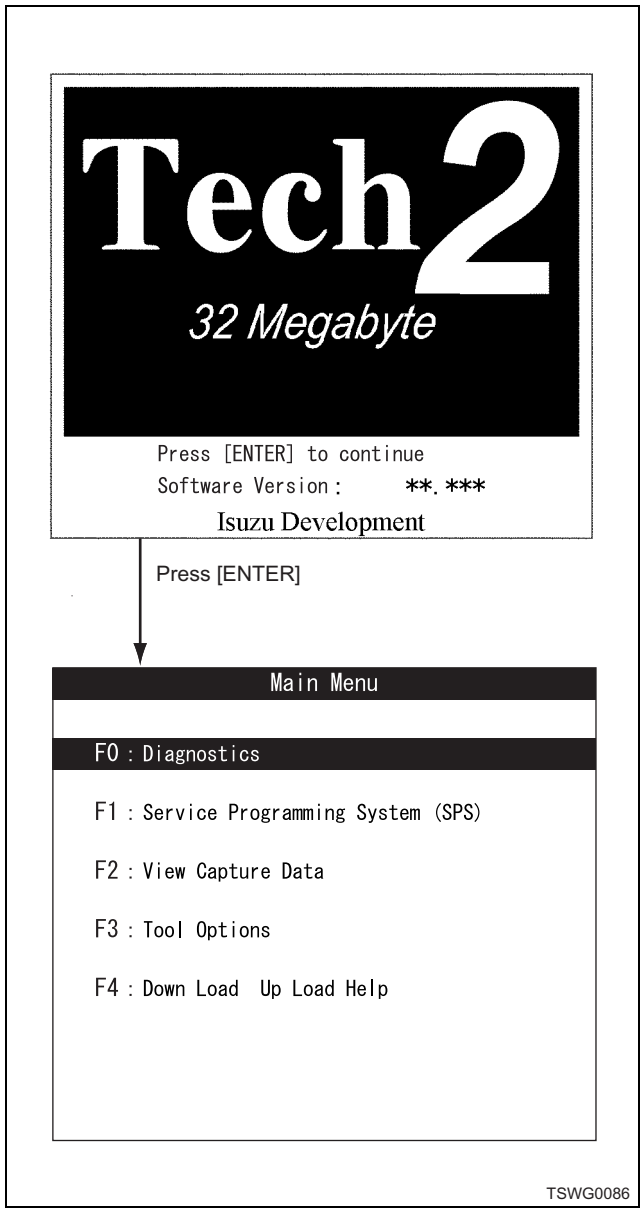
Pass: Normal, Fail: Abnormal

Note:
Only for UART, SCI, RTC, and CLKMEM in particular, the test result may appear as “Fail” without this meaning any trouble. For “Fail” above, refer to 1E-25, “Tool option menu, How to use Tech2, Tech2”.

IRAM: Internal RAM
ERAM: External RAM
UART: Universal Asynchronous Receiver and Transmitter
MCU: MC68332 Microcontroller
QSPI: Queued Serial Peripheral Interface
SCI: Serial Communication Interface
TPU: Time Processor Unit
RTC: Real-Time Clock
CLKMEM: Clock Memory
KEYPAD: Keypad

Main Menu

If all the functions are normal after the Tech2 has been switched on, the Start Up screen will open, displaying the Version No. and the applicable model year, stored on the PCMCIA card, to allow the user to verify the information. After the Start Up screen has opened, pressing the [ENTER] key will cause the “Main Menu” to appear. The Main Menu offers 4 different applications to select from. The desired menu can be executed moving the highlight bar to it with the relevant function key or selection keys and pressing the [ENTER] key.



F0: Diagnostics
Allows the user to check data, including Tech2-compatible DTC (Diagnostics Trouble Codes), Data Display, Snapshot, Miscellaneous Tests, etc., by selecting a machine ID and System.

- DTC: Shows the contents and situation of DTC stored in the controller of the system.

- Data Display: Shows the input/output data to/from the machine controller under test. Since the displayed data varies from a system to another, and besides, most of the items do not have their guidance standard values installed, it is necessary to first check what the displayed data means.
- Snapshot: Allows to record and display the data of malfunctions occurred. The displayed data not only includes the one corresponding to the moment when a malfunction occurred, but also those that existed before and after the occurrence of the malfunction. It also provides the function (Plot) to draw graphs.

F1: Service Programming System (SPS)

Note:
Except industrial engine.

F2: View Capture Data
Allows to review data recorded under Snapshot of “F0: Diagnostics”.
F3: Tool Options
Offers the function to make settings for the Tech2 main unit, to display POST (Power On Self Test) results, and to perform detailed tests (PCB, VCI).

- Tech2 Self Test: Performs troubleshooting on the functions of the main unit.

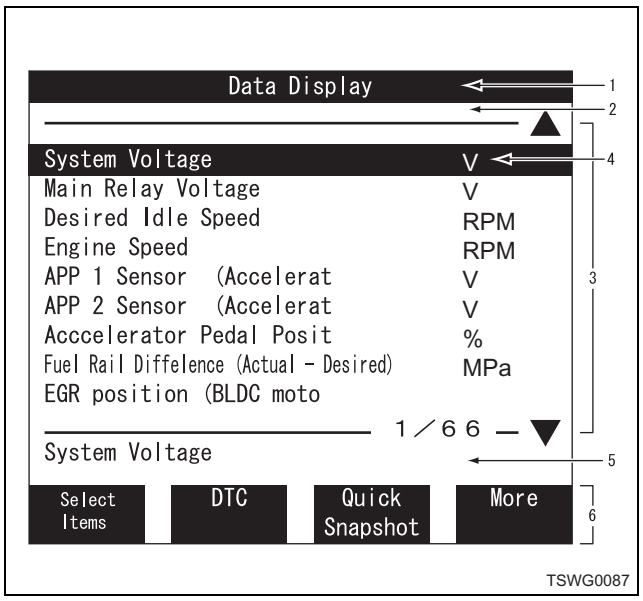
WARNING:
WHILE THIS FUNCTION IS UNDER EXECUTION, DO NOT CONNECT THE UNIT TO THE MACHINE!

- Set Clock: Sets the internal clock of the Tech2.
- Set Unit: Switches between the Metric system and the English system.
- Set Contrast: Adjusts the brightness of the display.

F4: Down Load Up Load Help
The function to upload/download data (DTC, Snapshot, etc.) acquired through the Tech2 to/from a PC, and the Help function to render assistance in case the operation encounters a hitch.

Data display screen composition

The screen for data display is composed in the following manner.



Name

1. TITLE AREA
2. MESSAGE AREA
3. DISPLAY AREA
4. highlight bar
5. FULL TEXT AREA
6. SOFT KEY AREA

TITLE AREA
Shows the item currently selected.

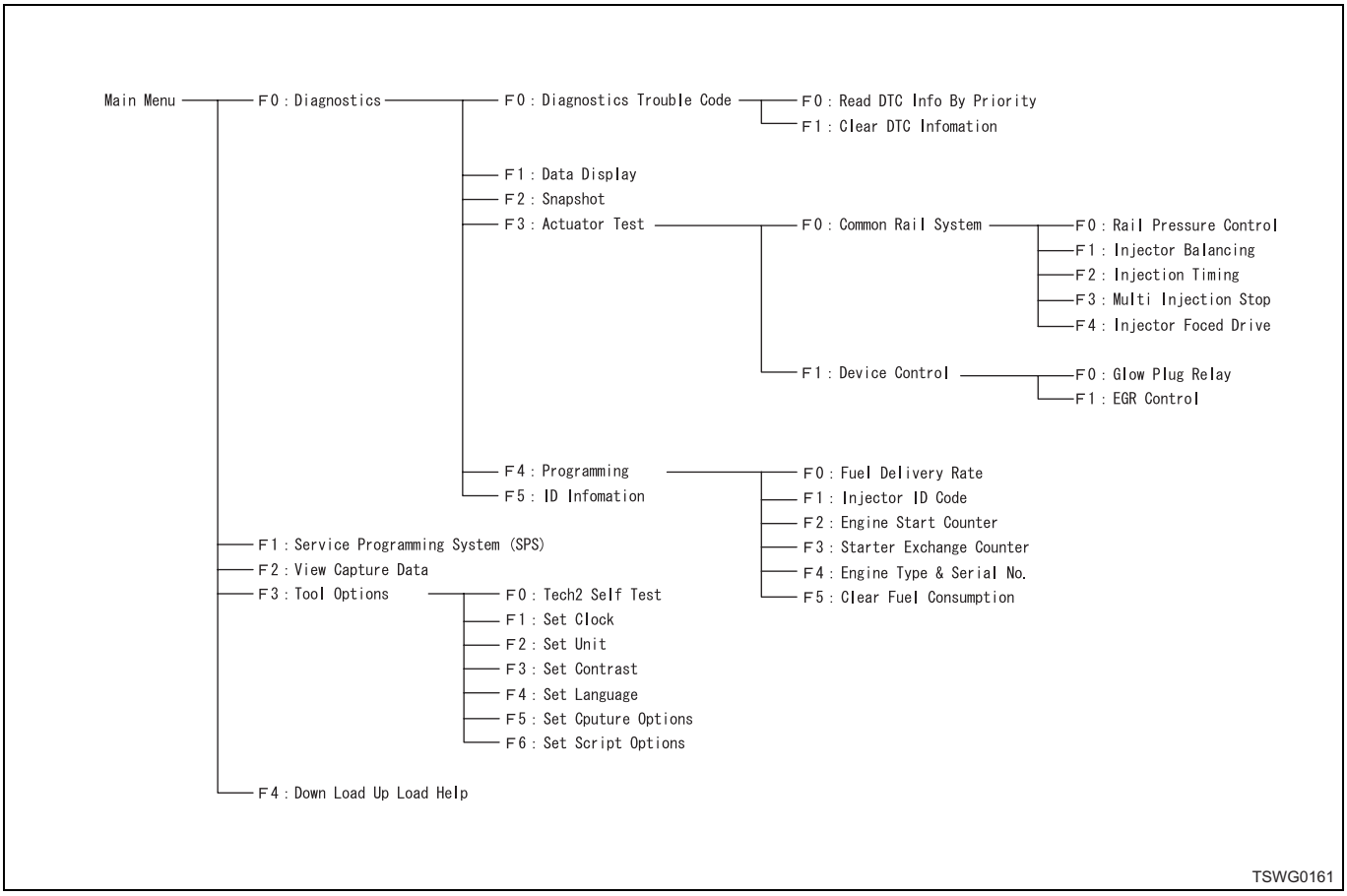
MESSAGE AREA
Shows a supplementary explanation or instruction.

DISPLAY AREA
Displays data parameters and values (9 lines × 23 characters).

FULL TEXT AREA
Shows details of the parameter under the highlight bar.

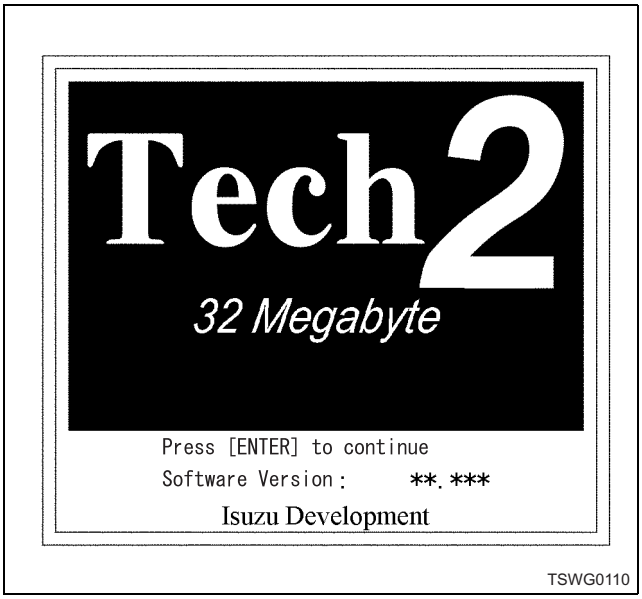
SOFT KEY AREA
The softkeys below the function item display boxes are valid.

List of functions of Tech2

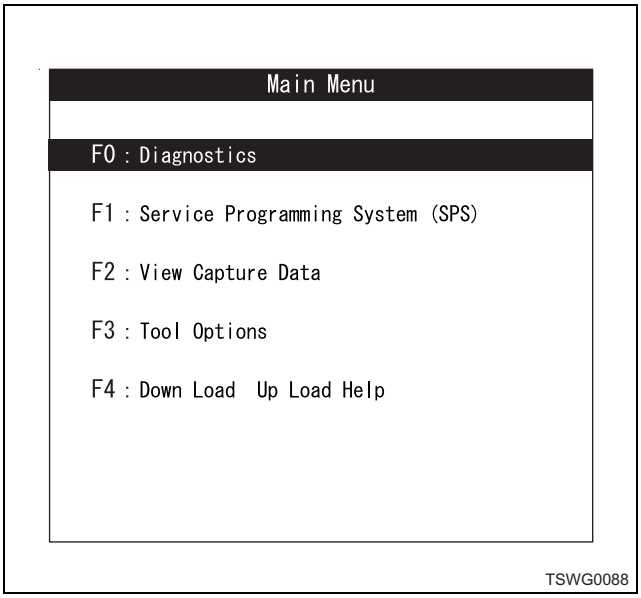


Diagnostic procedure

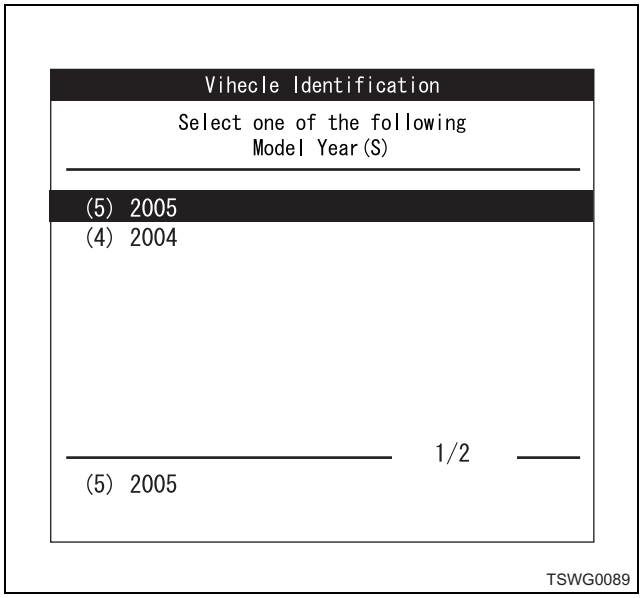
1. When the Tech2 is switched on, the software version and the model year applicable to the software will also be shown. Confirm the display and press the [ENTER] key.



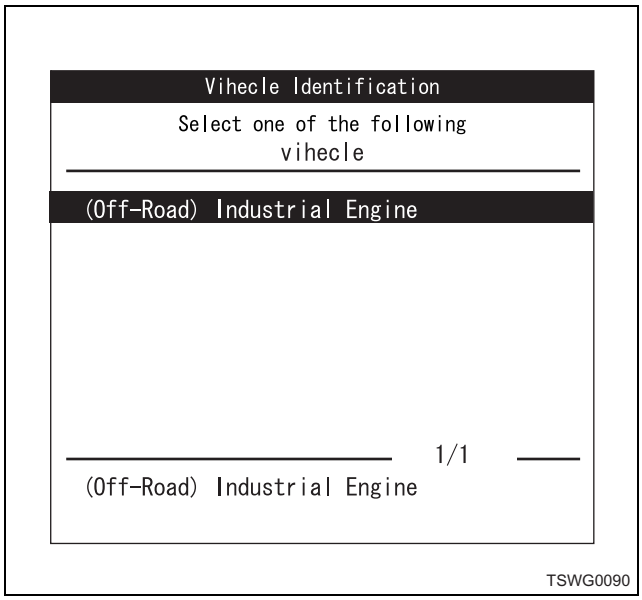
2. Press the function key [F0] or bring the cursor to [F0: Diagnostics] on the “Main Menu” screen by operating the selection keys (▲▼). And then, press the [ENTER] key.



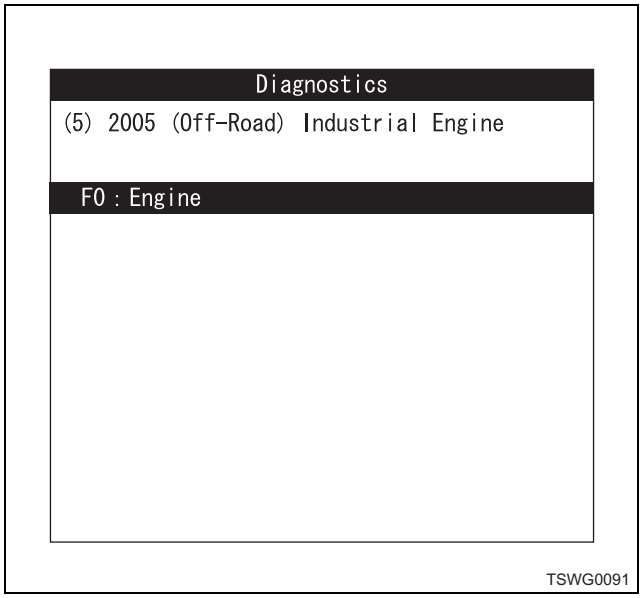
3. Select the Model Year corresponding to the desired diagnostic action on the “Vehicle Identification” screen and press the [ENTER] key.



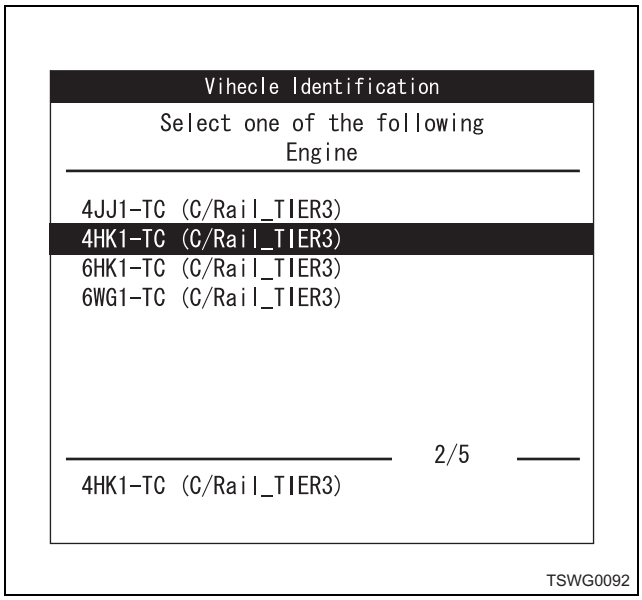
4. Select the Vehicle Type on the “Vehicle Identification” screen and press the [ENTER] key.



5. Press the function key [F0] or bring the cursor to [F0: Engine] by operating the selection keys (▲▼). And then, press the [ENTER] key.

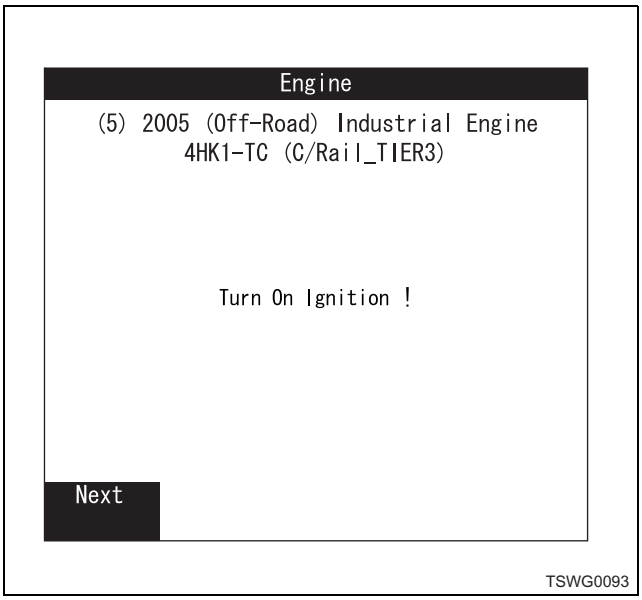


6. Select Powertrain (Eng. name) on the “Vehicle Identification” screen and press the [ENTER] key.

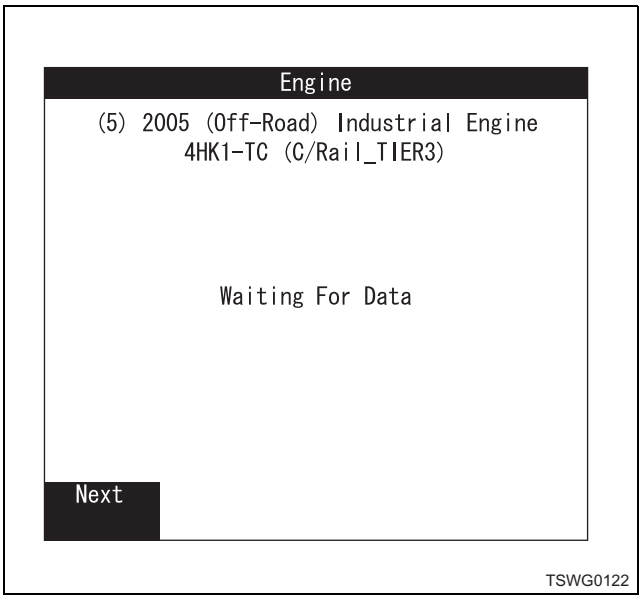


7. The items chosen in steps 3 to 6 are shown in the Message Area display section. If the identification of the machine is OK, turn the ignition key “ON” to “START” and press “Next” by following instructions given on the screen.

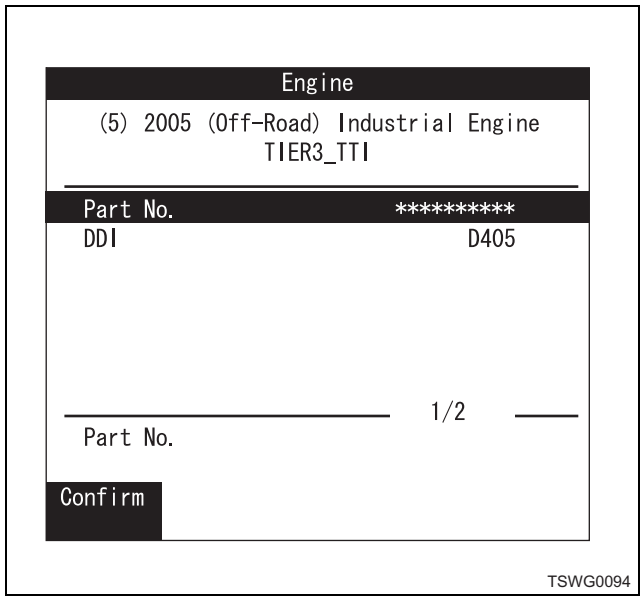
Note:
If you make any mistake, pressing the [EXIT] key will return you to the “Main Menu”.



8. The following illustration shows the state in which the Tech2 is waiting for communication with the machine controller. If the softkey “Next” is pressed with the ignition key in “OFF”, this display will stay forever. (State of communication disabled) However, turning the ignition key “ON” to “START” in this condition will place the unit in the waiting state for communication.



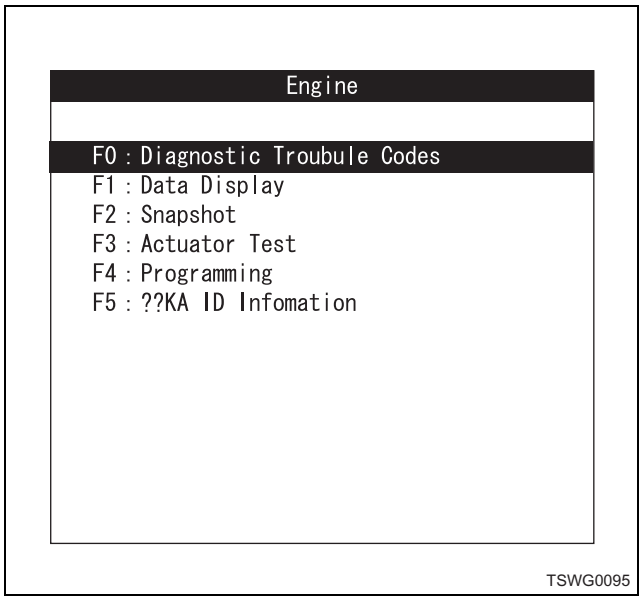
9. Once the communication is established, the unit will show the part No. and DDI (Diagnostic Data Identification) (which varies from a system to another). Press the softkey [Confirm] and go on to the application. If any mistake was made in the selection of the vehicle type, despite that the communication is enabled, a message to that effect will appear flashing. If that is the case, check the vehicle type again and redo the operation from step 1.



Pressing [EXIT] key in the steps 3 to 9 will return you to the “Main Menu” screen.

DTC check

1. Select “F0: Diagnostic Trouble Codes” on the “Engine” screen.

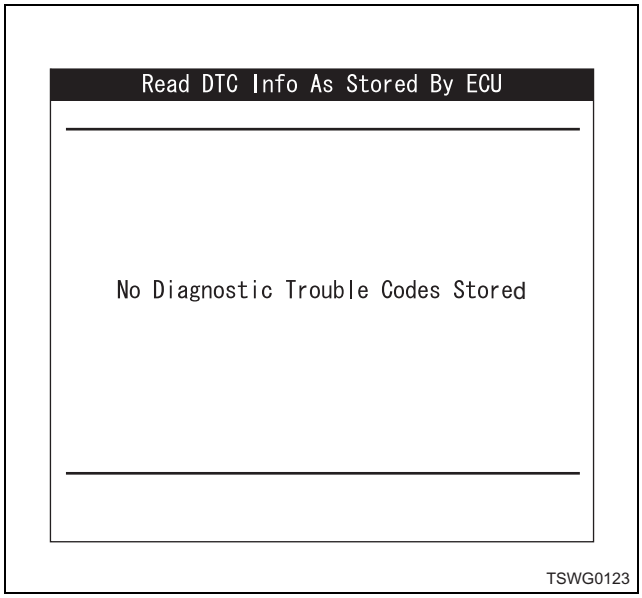


   F0: Diagnostic Trouble Codes
   This function allows the user to analyze the information on the Trouble Code related to the system currently under test.
2. Choosing “F0: Diagnostic Trouble Codes”, the following menu is displayed.
   F0: DTC Display
   F1: DTC Clear

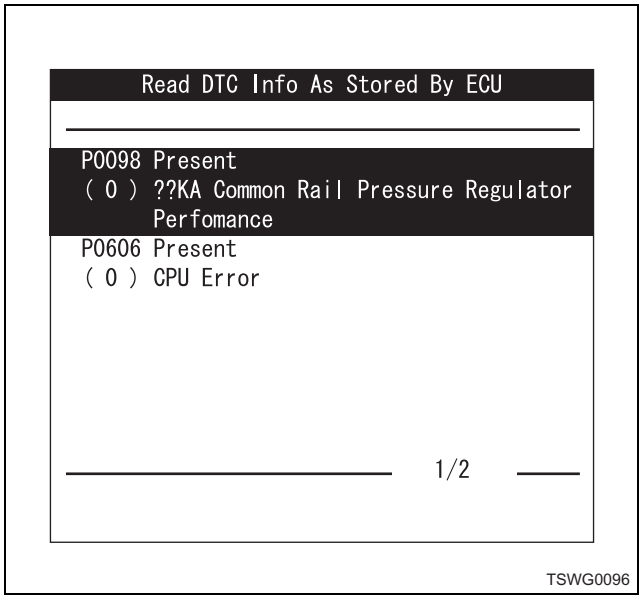
F0: DTC Display
Loads and displays the DTC information stored in the machine controller in a priority order.
F1: DTC Clear
Depending on a machine, DTC is not clearing by Tech2. (The memory clear harness on the machine side needs to be connected to ground.)

DTC application menu display screen

[Example] Industrial Engine
F0: DTC Display
If no DTC stored

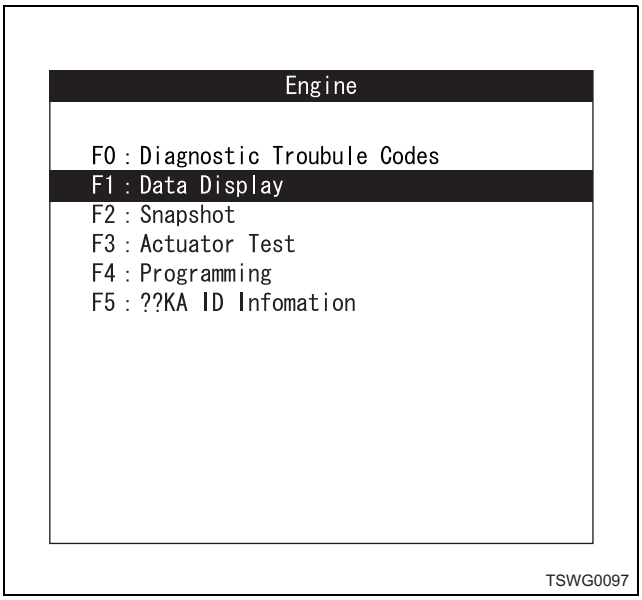


If DTC stored

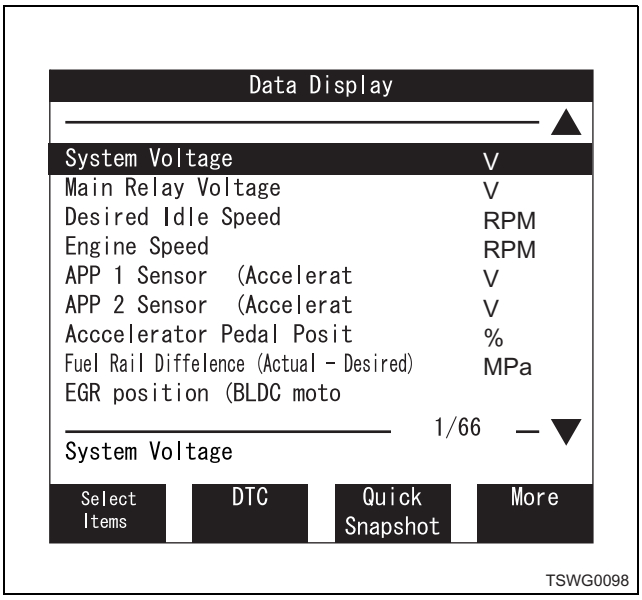


Data Display

1. Select “F1: Data Display” on the “Engine” screen.
   F1: Data Display
   Displays the information concerning various parts of the engine and transmission as data on the screen of the Tech2.



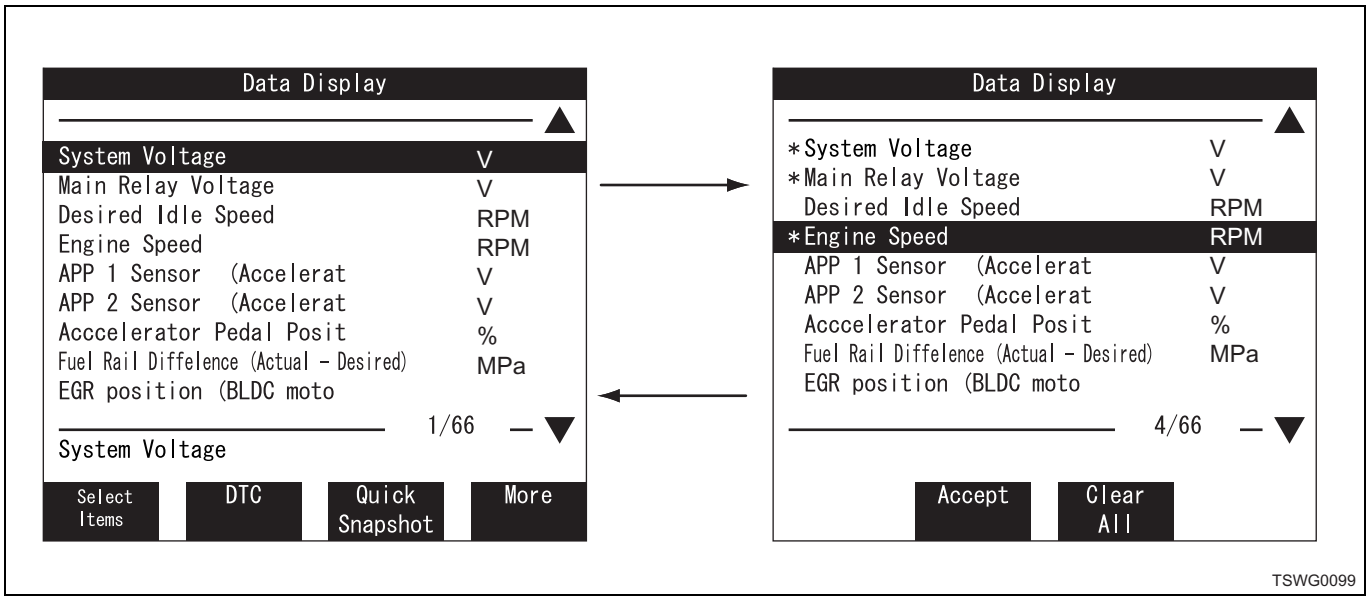
2. F1: Choosing “Data Display”, the engine data is displayed.



Softkey functions

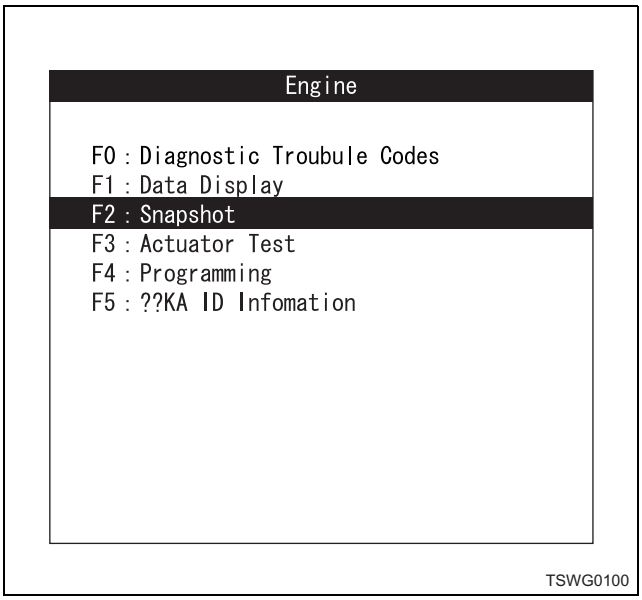
A maximum of 5 data parameters can be fixed on the “Data Display” screen. The 5 fixed parameters will be retained at the upper part of the screen, even when the display is scrolled up or down. To fix parameters, bring the highlight bar to the desired parameter on the screen, which appears as you select the softkey “Select Items”, and press the [ENTER]. The selected item can be identified by the asterisk (*) which will be placed atop the parameter. Move the highlight bar with the selection keys (▲▼), and once you have chosen all the parameters you want fixed, press the softkey [Accept]. “Data Display” screen is displayed again. To modify the fixed parameter list, choose “Select Items”, move the highlight bar to the parameter you want changed, and press the [ENTER] key. The parameter will be cleared. Choosing “Clear All” will clear all the fixed parameters.

If you select the softkey “DTC” while the “Data Display” function remains active, DTC will be displayed on the “Data Display” screen.
Snapshot can be used while the “Data Display” function remains active. For this, choose “Quick Snapshot.”
Choosing the softkey “More” allows to use additional functions.
For “Quick Snapshot,” refer to 1E-17, “Snapshot, How to use Tech2, Tech2”.



Snapshot

1. Select “F2: Snapshot” on the “Engine” screen.



2. Choosing “F2: Snapshot”, the following menu is displayed.
   F0: Manual Trigger
   F1: Any Code
   F2: Single Code
   F4: Beginning
   F5: Center
   F6: End

Snapshot
Snapshot is intended to save information received by the machine controller during its execution. It provides an effective means to analyze data generated when the machine encounters a trouble. Use of this function enables the user to focus on the situation in which the trouble took place, without having to view all the data for suspected malfunctions. The Tech2 is capable of holding two different Snapshot data. This ability of storing two different Snapshot data allows to compare Good and Bad machine states with each other. Since these data are saved on a first-in, first-out basis, the first Snapshot data (of older date/time) stored on the PCMCIA card will be lost as it is overwritten when a third data comes in. Therefore, be sure to set the internal clock of the Tech2 precisely before starting the Tech2. If a given data must not be erased, highlight that data and choose the softkey “Write Protect”. This prevents the data from being overwritten. Pressing the softkey “Clear” cancels the Protect.

Snapshot is available in the following 2 types:

- Snapshot: To be chosen in the Snapshot Menu.
- Quick Snapshot: To be chosen through the softkey on the “Data Display” screen.

The Snapshot Data will not be lost even when the Tech2 is switched off, because the data is saved on the PCMCIA card.

About trigger type:

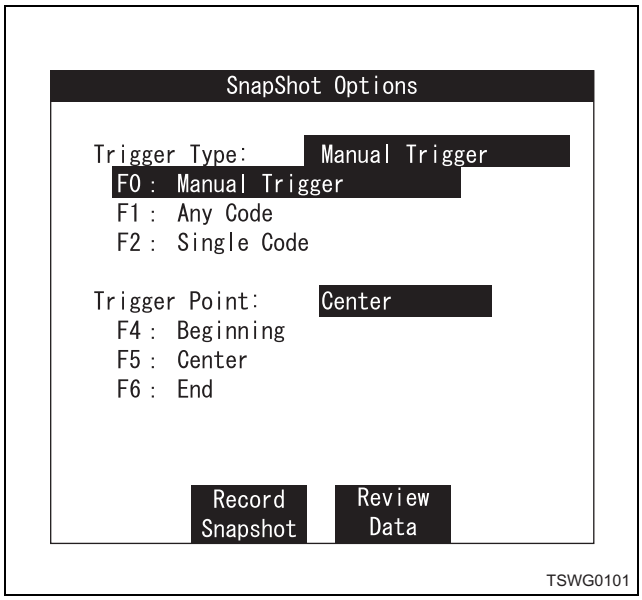
Choosing the Trigger Type Menu allows to check the cause that triggered [Snapshot]. [Snapshot] is executed when there is one of the three causes of occurrence.
F0: Manual Trigger:
Pressing the softkey “Trigger” saves data.
F1: Any Code:
Data is saved in case any trouble code is issued.
F2: Single Code:
Data is saved in case the specified trouble code is issued.

About trigger point:

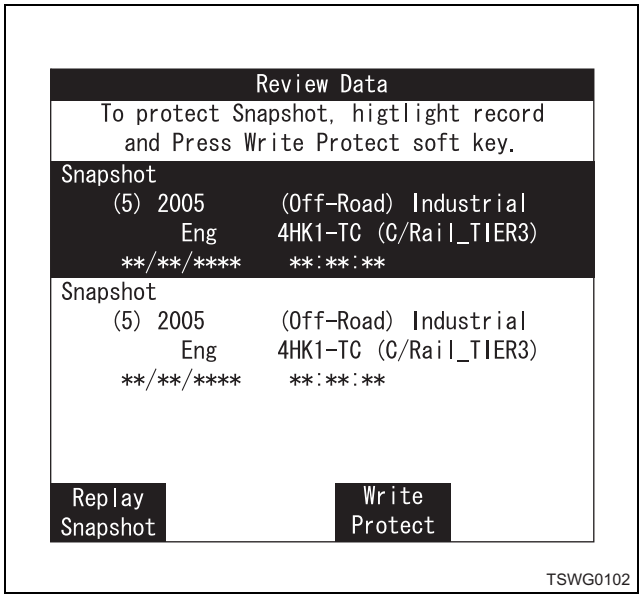
Trigger Point corresponds to the point in time where triggering is originated by a code issued or by Manual Trigger activated. This information is useful to know the time point of Snap Point and to investigate changes in the data parameter. Trigger Point can be set up at “Beginning”, “Center”, or “End.”
F4: Beginning
Starts saving data from Trigger Point, and keeps on saving it, until the Snapshot recording area is filled up. This selection is effective when the trouble that constitutes the cause is foreseeable.
F5: Center
This function is commonly utilized, since it saves not only the data after Trigger Point, but also those prior to that. This selection allows to compare data that existed before the occurrence of a trouble, those present at the time of occurrence of the trouble, and those after the trouble, among themselves.
F6: End
Saves only the data prior to Trigger Point. This selection is useful when it is desired to terminate Snapshot after the occurrence of a trouble.

Snapshot data replay

1. Press the softkey [Review Data] on the “Snapshot Options” screen.



2. Move the highlight bar to the data you want replayed, and press the [ENTER] key. The data will be replayed.

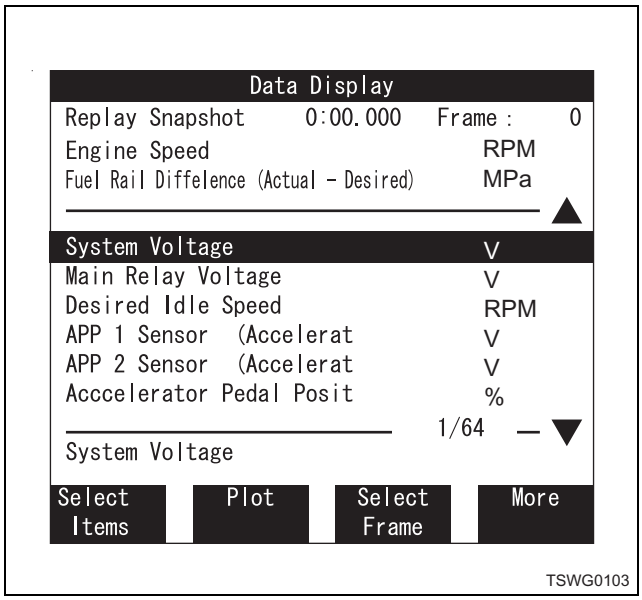


Note:
Flashing “Trigger” means that data is being recorded. Pressing the [EXIT] key in this condition will abort the recording. The recording will also be cancelled when the memory capacity is filled up. In either case, the data is saved in memory.

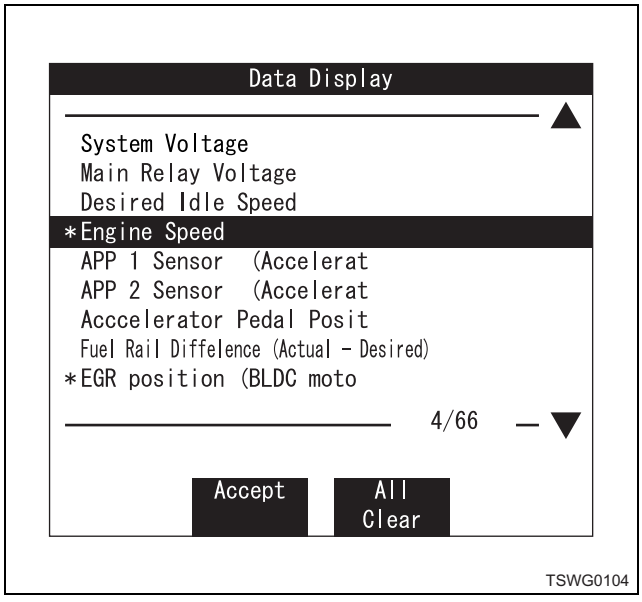
Plot

Snapshot can also be replayed in “View Captured Data.”
Plot setup procedure

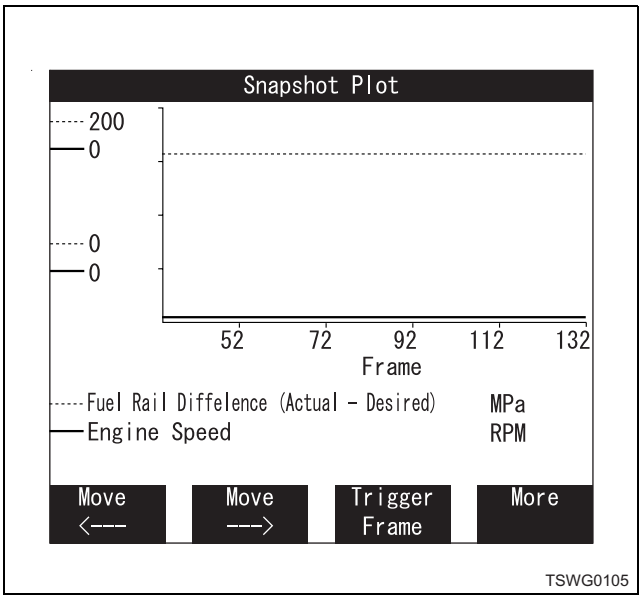
1. Pressing the softkey “Plot” switches the “Data Display” screen.



2. Bring the highlight bar to the parameter you want plotted in a graph, as with “Select Items”, and press the [ENTER] key.
3. The selected parameter can be identified by the asterisk that appears at its top. No more than 3 parameters can be displayed.



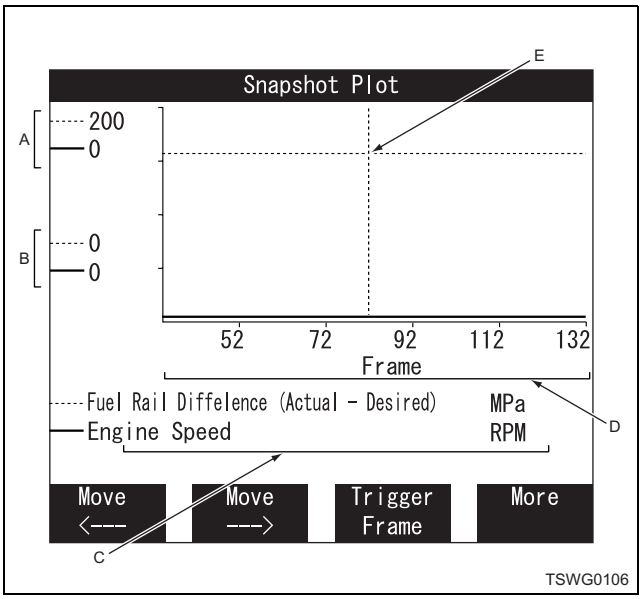
4. Choosing the softkey “Accept” changes the display screen and shows a graph after a while.



Plot cancel

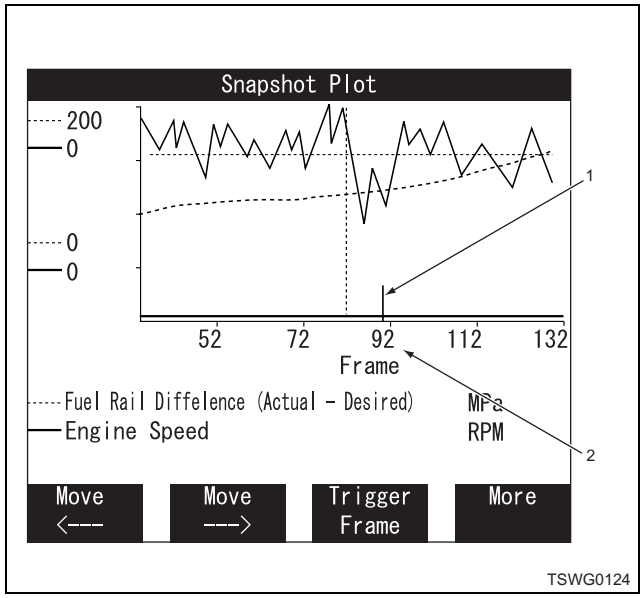
To close the graph display screen, press the [ENTER] key and you will be returned to the “Data Display” screen.

Explanation of Plot data displayed



Name

A. Maximum values of selected parameters
B. Minimum values of selected parameters
C. Values of selected parameters at Center Point (E) in frame
D. Number of frames/time
E. Center point of graph indication



1. Denotes recognition of DTC.
   A vertical line appears in abscissa, if there is a Trouble Code issued in the Snapshot Data loaded. When plotting a graph, it is advisable to check for DTC through “Over View”.
2. DTC-recognized frame 236 (Actually issued in Frame 235.)

Softkey functions

Choose the “More” on the snapshot graph display screen.

- Move ←: Allows to view changes of data preceding the display screen.
- Move →: Allows to view changes of data following the display screen.
- Trigger Frame: Displays a trigger point.
- More: Switches the displayed softkeys.

Choose the “More” on the plot display screen.

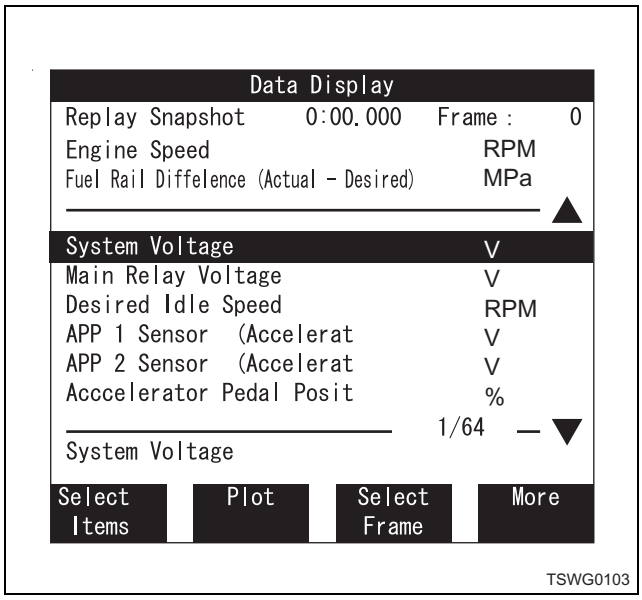
- Zoom In: Shows the abscissa by enlarging it (each press doubles the display).
- Zoom Out: Shows the abscissa by reducing it (each press halves the display).
- Over View: Shows the entire frame.
- More: Switches the displayed softkeys.

Choose the “More” on the plot display screen.

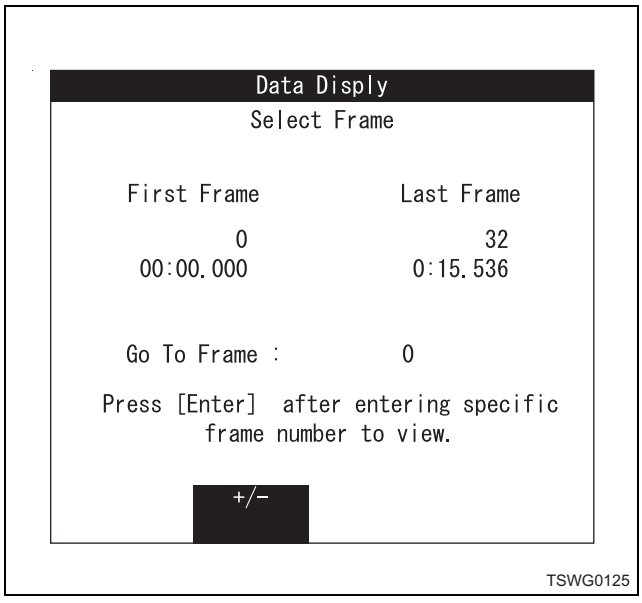
- Time / Frame conversion: Switches the value in abscissa.
- More: Switches the displayed softkeys.

Select frame

1. Press softkey “Select Frame.”

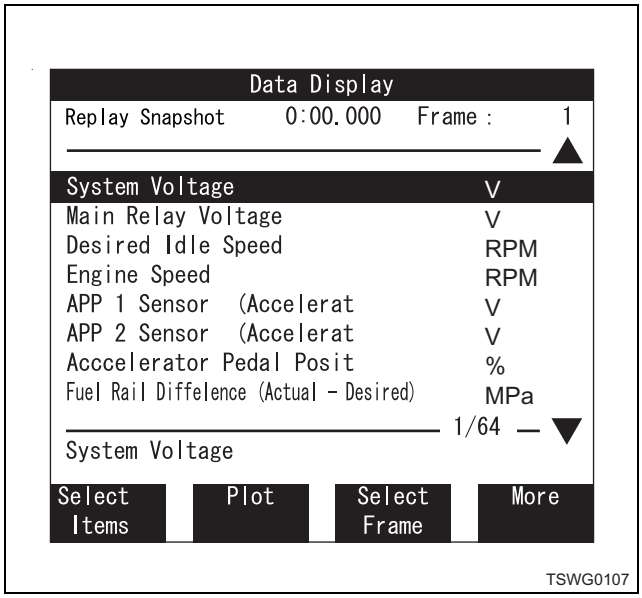


2. Pressing the softkey “Select Frame” causes the following screen.



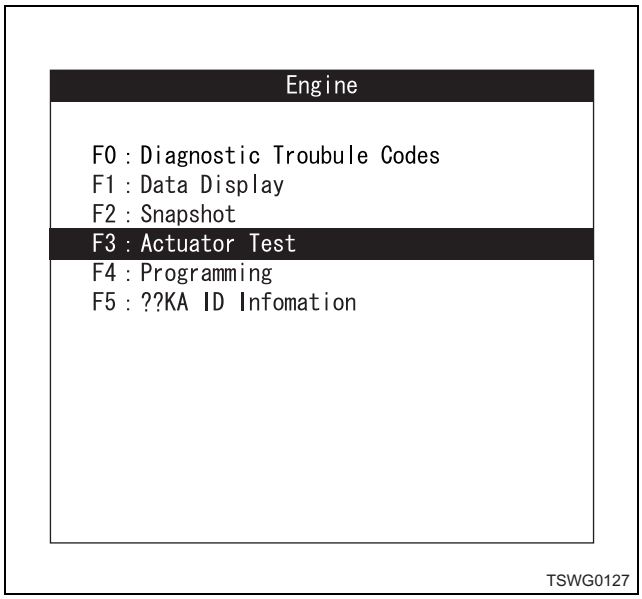
- First Frame: First frame No. and data acquisition time from Trigger Point (calculated backward).
- Last Frame: Last frame No. and data acquisition time from Trigger Point (integrated).
- Go To Frame: Entering a frame No. allows to view its data.
- +/–: Only the “–” sign is displayed.

3. “1” entered via keys in the “Go To Frame” area.



Frame No. 1 and recording time displayed, and data values in Display Area represent those of Frame 1.

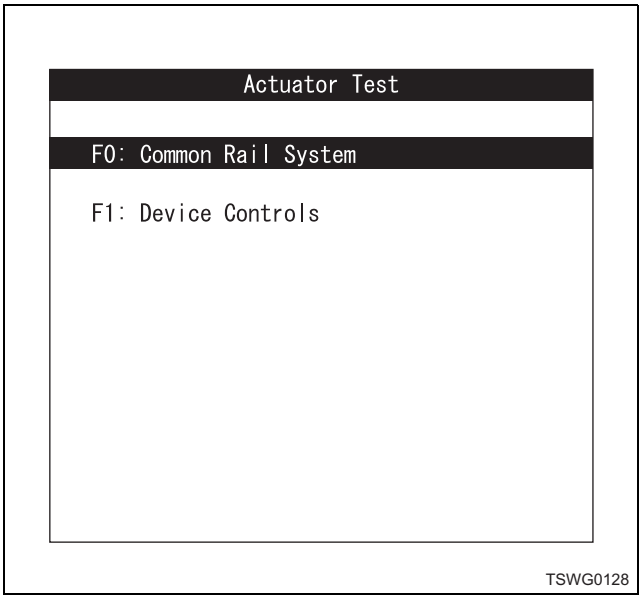
Actuator test



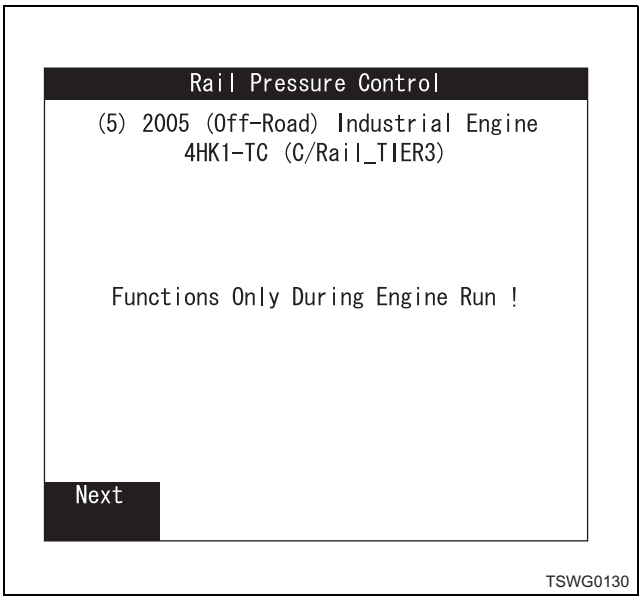
Common rail pressure control test

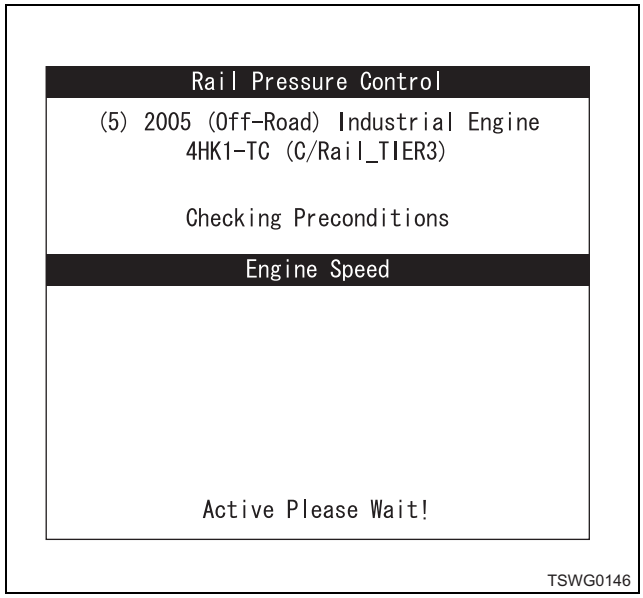
This test is performed to check the operation of RPCV.
The Tech2 must be used in this test.
Test procedure

1. Connect the Tech2 to the machine DLC.
2. Start the engine and run it at idle.
3. Select the Common Rail System.

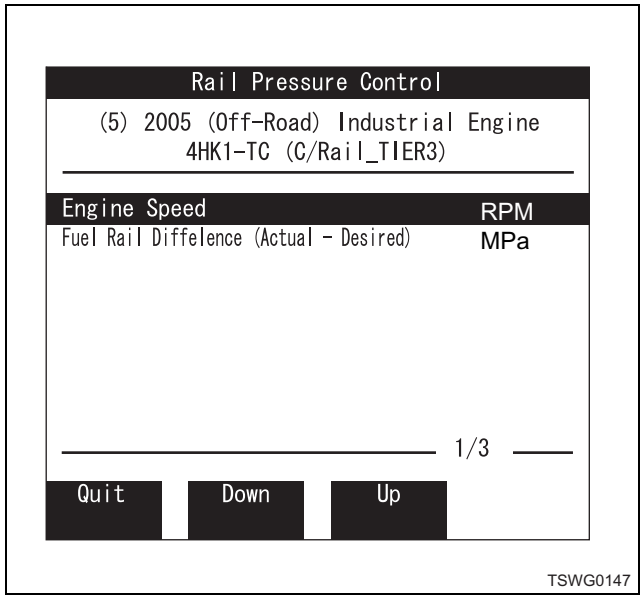


4. Select the Rail Pressure Test.





5. Send the instruction to RPCV and check the data list.



6. If variation of data list is proper value, RPCV is judged as normal.

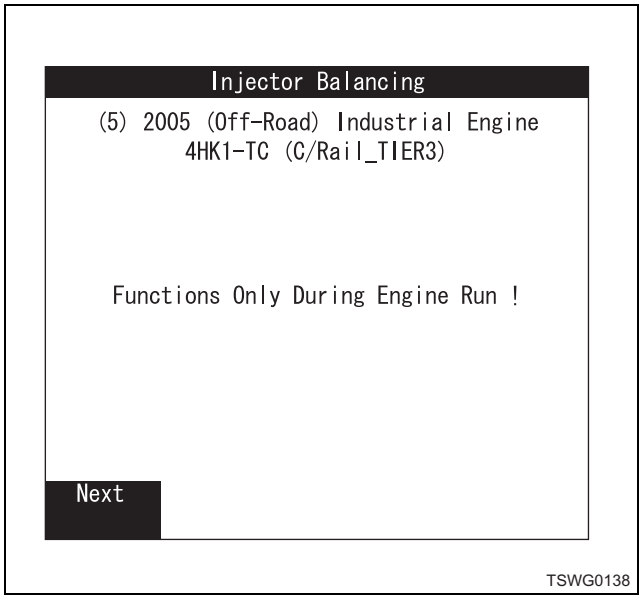
Injector balance test

This test is performed to confirm that proper electric signal is sent to injector while the engine is running.

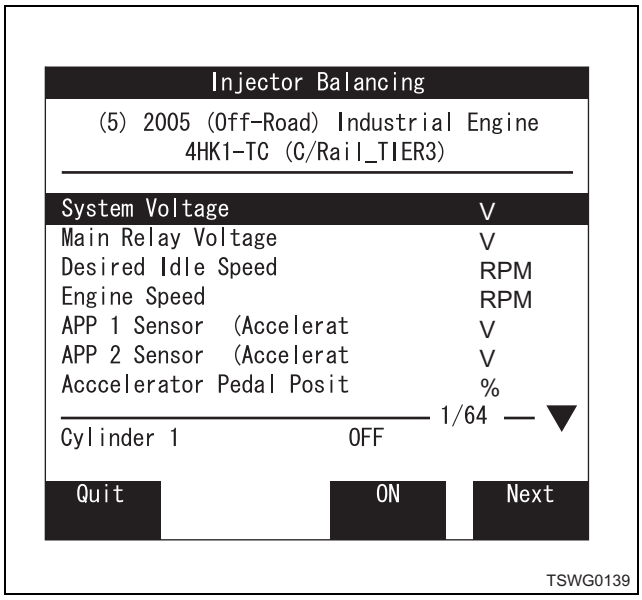
Note:
At test, the engine is controlled to low idle speed, in order to clarify the variation of engine speed.

Test procedure

1. Connect the Tech2 to the machine DLC.
2. Start the engine and run it at idle.
3. Select the Common Rail System.
4. Select Injection Stop for Each Injector.



5. Send instruction to each injector (set to OFF by softkey on Tech2 screen) to stop the injector, and check the variation of engine speed.

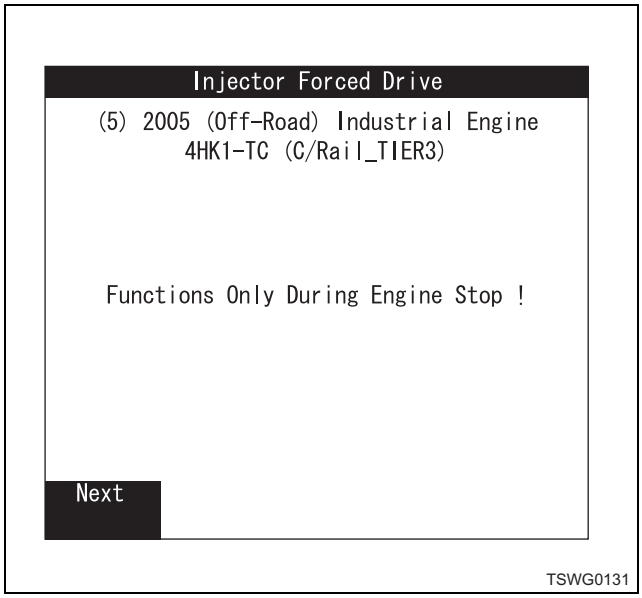


6. If the engine speed varies when the injector stops, electrical circuit of that injector is judged as normal.
   If the engine speed does not vary when the injector stops, electrical circuit of that injector or injector body is judged as faulty.

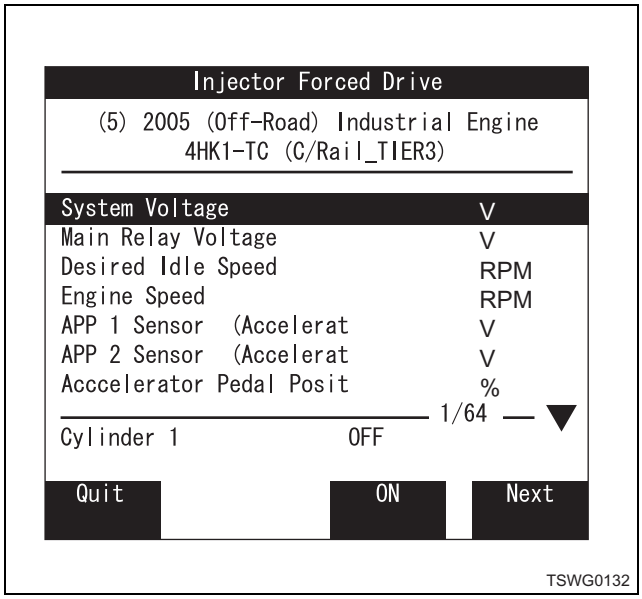
Injector control test

This test is performed to confirm that proper electric signal is sent to each injector. The Tech2 must be used in this test.
Test procedure

1. Connect the Tech2 to the machine DLC.
2. Turn the key switch to ON (engine is standstill).
3. Select the Common Rail System.
4. Select Injector Force Drive.



5. Send instruction to each injector (set to ON by soft-key on Tech2 screen), and check the operation sound of injector.



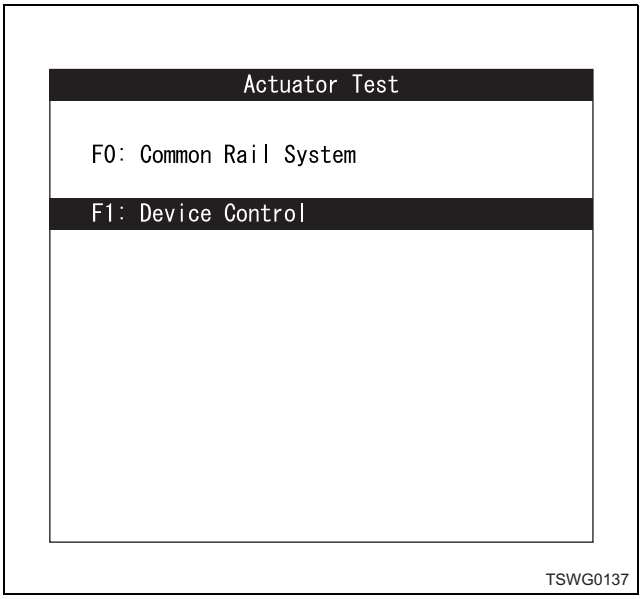
6. If the operation sound is heard, electrical circuit of that injector is judged as normal.
   If the operation sound is not heard, electrical circuit of that injector or injector body is judged as faulty.

Note:
After injector control test, the key switch must be turned to OFF once to restart.

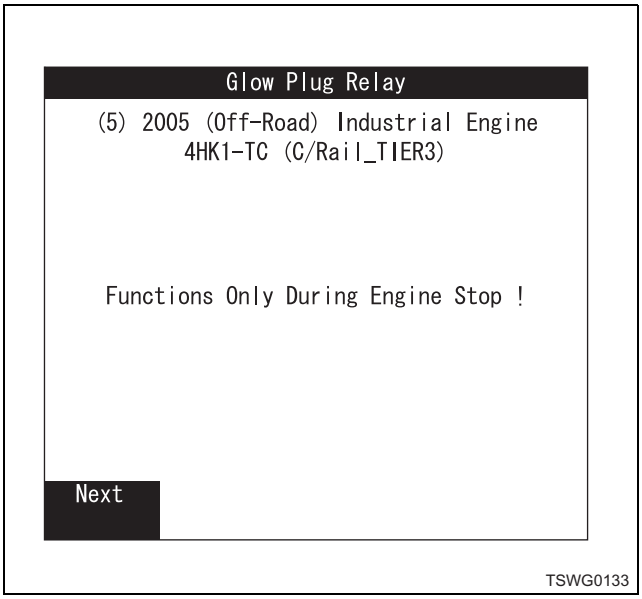
Glow time relay test

This test is performed to check the operation of QOS lamp.
The Tech2 must be used in this test.
Test procedure

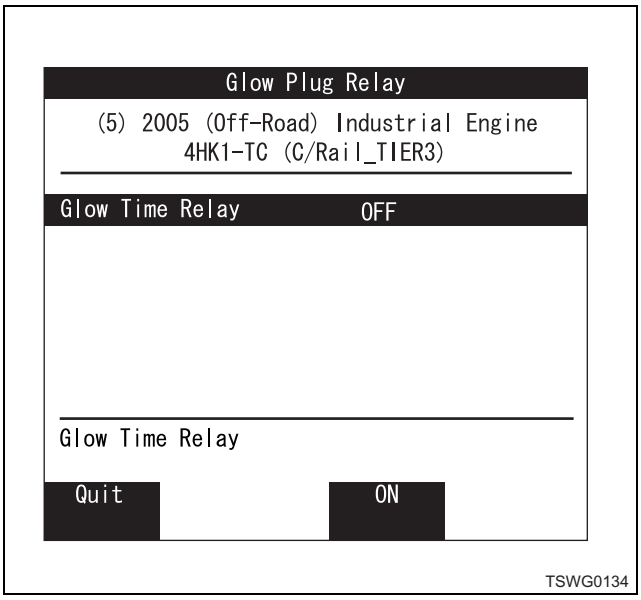
1. Connect the Tech2 to the machine DLC.
2. Turn the key switch to ON.
3. Select the Device Control.



4. Select the Glow Plug Relay.



5. Send the instruction to glow plug relay and check whether the lamp on the machine operates.

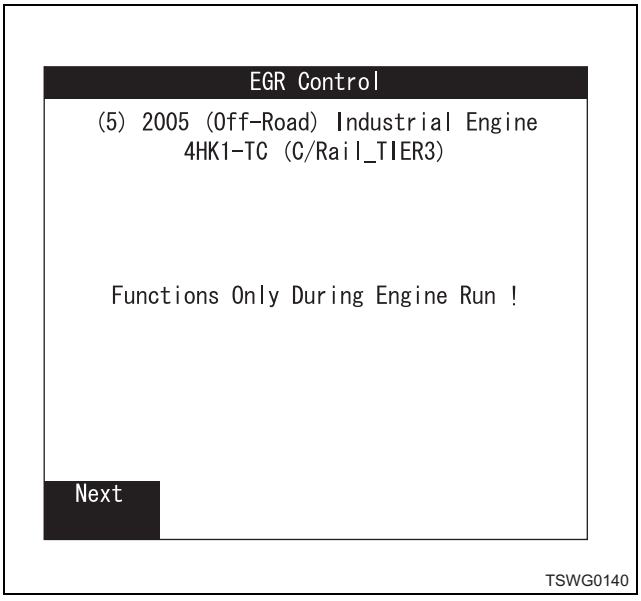


6. If the lamp operates properly, it is judged as normal.

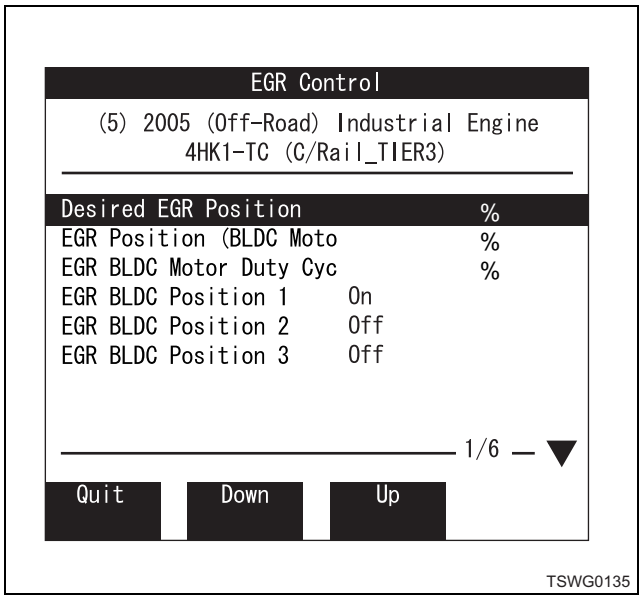
EGR regulating valve test

This test is performed to check the operation of EGR valve.
The Tech2 must be used in this test.
Test procedure

1. Connect the Tech2 to the machine DLC.
2. Start the engine and run it at idle.
3. Select the Device Control.
4. Select the EGR Control.



5. Send the instruction to EGR valve and check the data list.



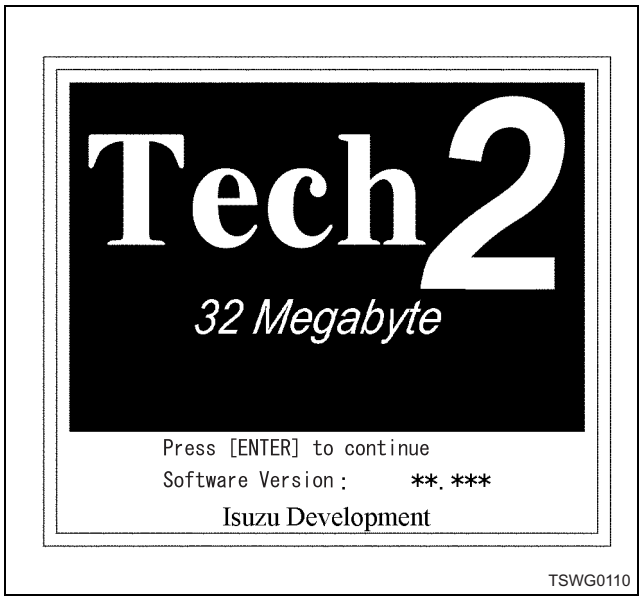
6. If variation of data list is proper value, EGR valve is judged as normal.

View captured data

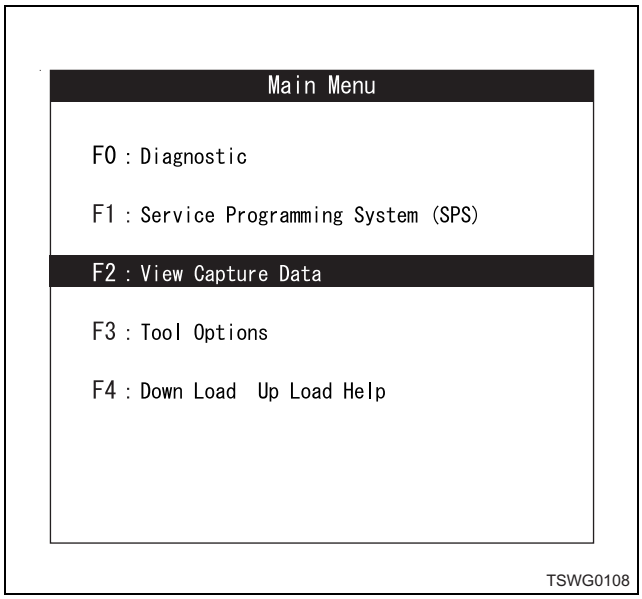
The Snapshot data acquired through the application menu “F2: Snapshot” under the “Main Menu, F0: Diagnostics” can be replayed.
Since the data is saved on the PCMCIA card, it can be viewed after disconnecting the Tech2 (DLC) from the machine. Two data items can be saved there. The internal clock of the Tech2 needs to be set precisely, since the data are identified with dates and times.

Sample use of snapshot data replay

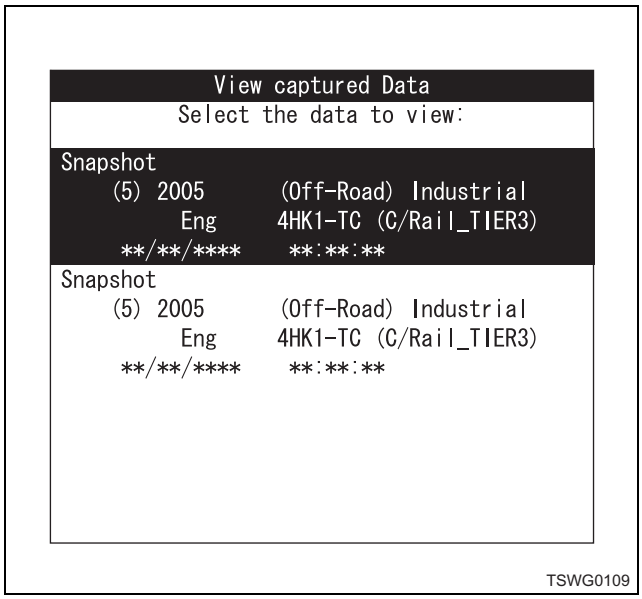
1. Turn on the power.



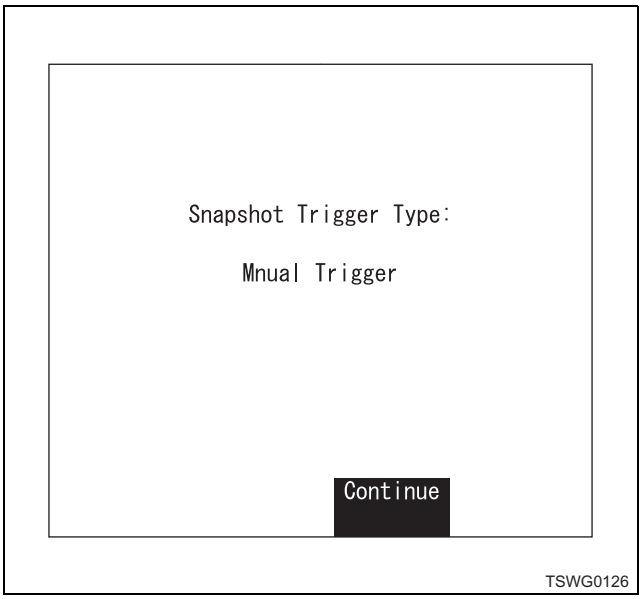
2. Press the [ENTER] key.



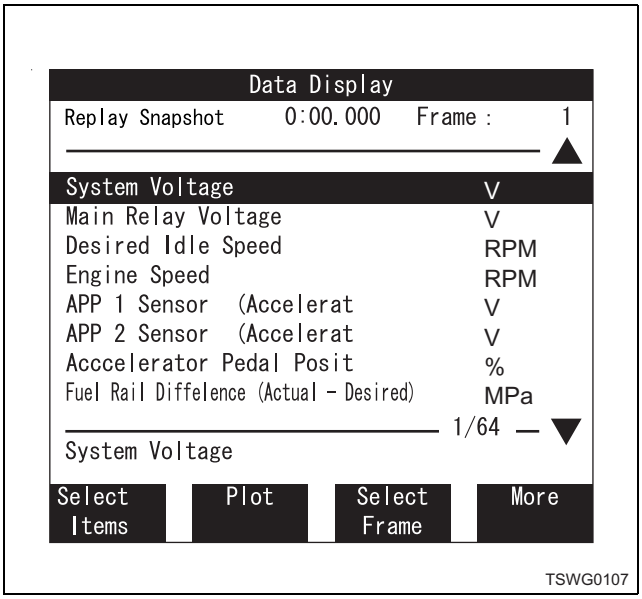
3. Choose “F2: View Capture Data” and press the [ENTER] key. “View Captured Data” appears.
4. Choose “Snapshot Data” with selection keys (▲▼) and press the [ENTER] key.



5. Press the softkey [Continue] on the display screen.



6. Snapshot Replay Screen appears.



Softkey functions

1. Choose the softkey “More” on the Snapshot Replay screen
   - Select Items: Chosen to fix and display a parameter (up to 5 parameters).
   - Plot: Draws a graph (Up to 3 parameter items).
   - Select Frame: Allows to specify a frame No. and to move a parameter to the specified frame.
   - More: Switches the displayed softkeys.
2. Choose “More” out of the 4 softkeys on the display screen.
   - Auto Reverse: Allows to view changes of data of each frame.
   - Stop: Stops a frame in motion.
   - Auto Forward: Allows to view changes of data of each frame.
   - More: Switches the displayed softkeys.
3. Choose “More” out of the 4 softkeys on the display screen.
   - First Frame: Allows to view the top data frame.
   - Trigger Frame: Allows to view a triggered frame.
   - Last Frame: Allows to view the last data frame.
   - More: Switches the displayed softkeys.
4. Choose “More” out of the 4 softkeys on the display screen.
   - Units: Changes the unit (speed/temperature).
   - Previous Frame: Allows to view changes of data by reversing it, frame No. by frame No.
   - Next Frame: Allows to view changes of data by feeding it forward, frame No. by frame No.
   - More: Switches the displayed softkeys.
5. Choose “More” out of the 4 softkeys on the display screen.
   - DTC: Shows the frames in which a Trouble Code was issued, in the range from the top frame to the displayed frame.
   - Previous DTC-Chg: Shows the frames in which a Trouble Code was issued, in the range before the displayed frame.
   - Next DTC-Chg: Shows the frames in which a Trouble Code was issued, in the range after the displayed frame.
   - More: Switches the displayed softkeys.
6. Choose “More” out of the 4 softkeys on the display screen.
   The Snapshot Replay screen is restored.

Difference in operation of Snapshot Data Replay:

The operations of Snapshot Data Replay under “F2: View Captured Data” are somewhat different from those of Replay (softkey function “Review Data”) under “F2: Snapshot”. Be careful not to confuse them.

Tool options

Tool Options is the function to conduct a detailed test, in case communication cannot be established with the machine at the time of setup of the Tech2 or at the time of Power On Self Test (POST).

Tool option menu

F0: Tech2 Self Test
Allows to conduct a test that assists with the diagnostics of the Tech2 itself. Normally the Self Test function need not be executed, since the Tech2 conducts the Power On Self Test (POST) every time it is switched on. If the POST demonstrates any trouble, the results of the POST can be checked choosing the Self Test menu.
F1: Set Clock

Resets the date and time of the Tech2. Before exiting this menu, press the softkey [Set Clock] to save the settings.
F2: Set Unit
Switches the unit between the English and the Metric system.
F3: Set Contrast
Changes the screen contrast (lighter or darker). The change will be saved even after the Tech2 is switched off.

Tech2 self test menu

F0: Automated Main PCB and VCI
Automatically executes function tests on the Main PCB and VCI modules.
F1: Automated Main PCB
Automatically executes function tests on the Main PCB module.
F2: Automated VCI
Automatically executes function tests on the VCI module.
F3: Selectable Main PCB
Allows to check detailed information on the PCB module test items.
F4: Selectable VCI
Allows to check detailed information on the VCI module test items.
F5: Power On Self Test Results
Displays POST test results again.

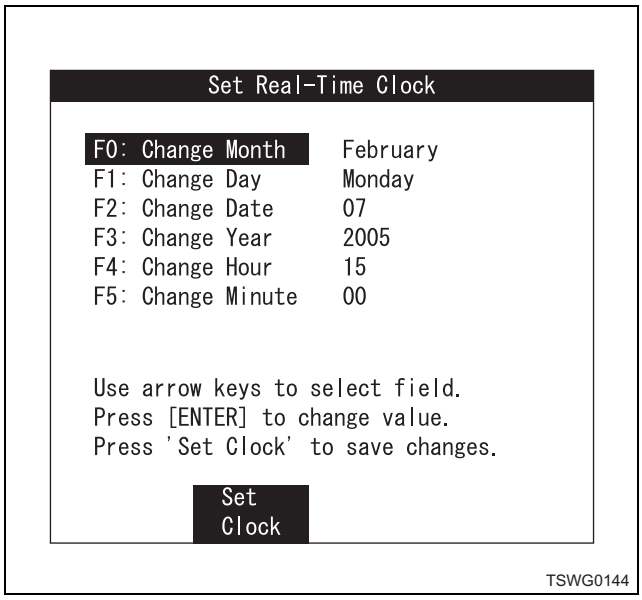
Set clock

Operation procedure:

1. Choose the “F2: Tool Options” and press the [ENTER].
2. Choose the “F1: Set Clock” and press the [ENTER].
3. Display the “Set Real-Time Clock” screen. Move the cursor to the item you want changed by operating the selection keys (▲▼), and press the [ENTER] key.

Note:
Each press on the [ENTER] key will increment the numeric value one by one, but it will not exceed the preset maximum value.

4. After all the values have been entered, press the softkey [Set Clock] and the changes will be saved.

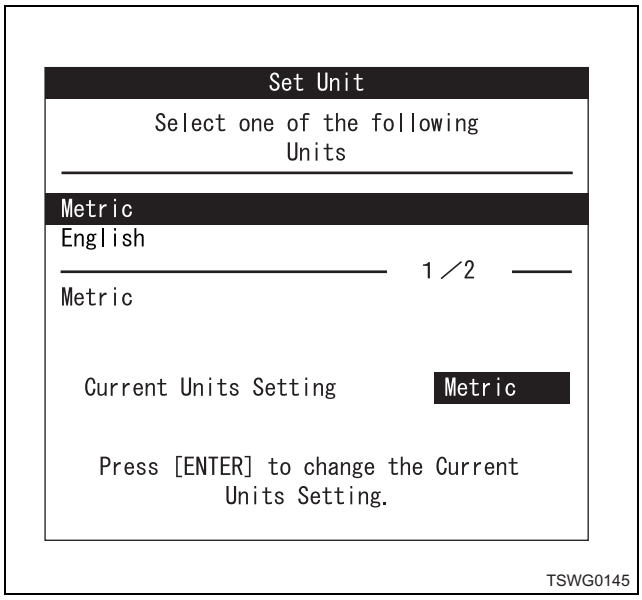


Set units

Operation procedure:

1. Choose the “F2: Tool Options” and press the [ENTER].
2. Choose the “F2: Set Unit” and press the [ENTER].
3. Display the “Set Unit” screen, and move the cursor to the item you want changed by operating the selection keys (▲▼), and press the [ENTER] key.
4. When the setup is complete, press the [EXIT] key to save the current setting.

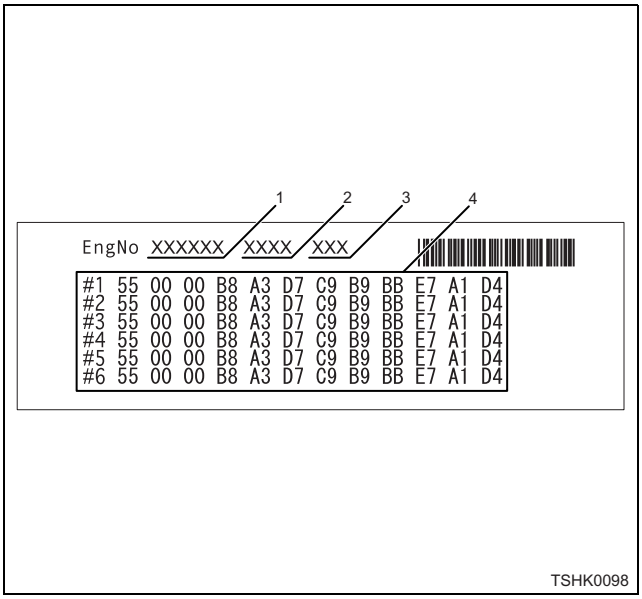
Note:
It will take effect next time the Tech2 is switched on.



* Metric
Temperature: °C Speed: km/h
* English
Temperature: °F Speed: MPH

Rewriting of Q adjust correction data by Tech2

"Q adjust, Injector code label" is attached to the cylinder head cover. It is used for rewriting and registering the ID.



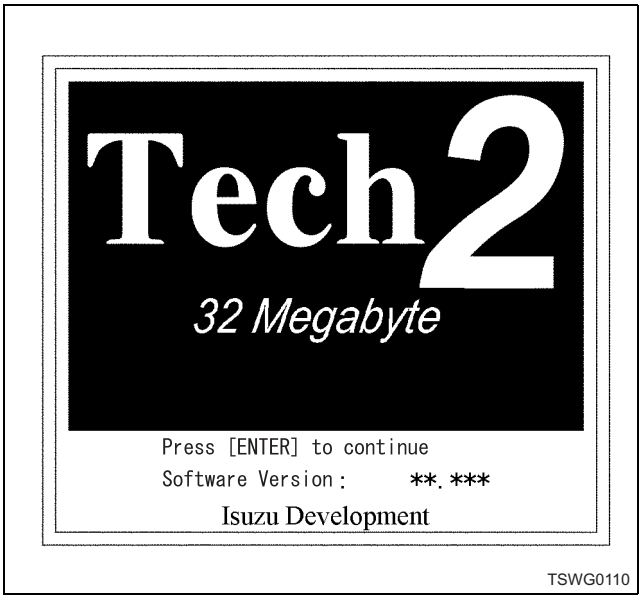
Name

1. Engine number
2. Typical engine model
3. Q adjust information
4. Injector information

There is the injector code on the top of injector as well. When replacing the injector, register its code.
Refer to the following instruction for how to setup the Q adjust data.

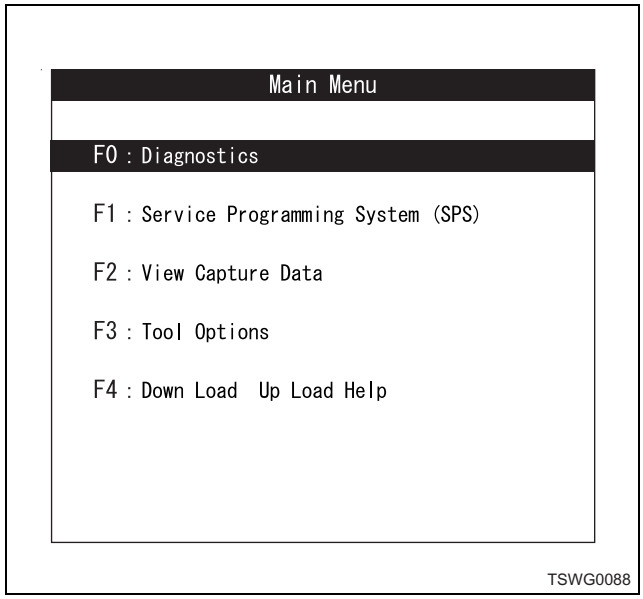
Step 1

- Press the [ENTER] key.



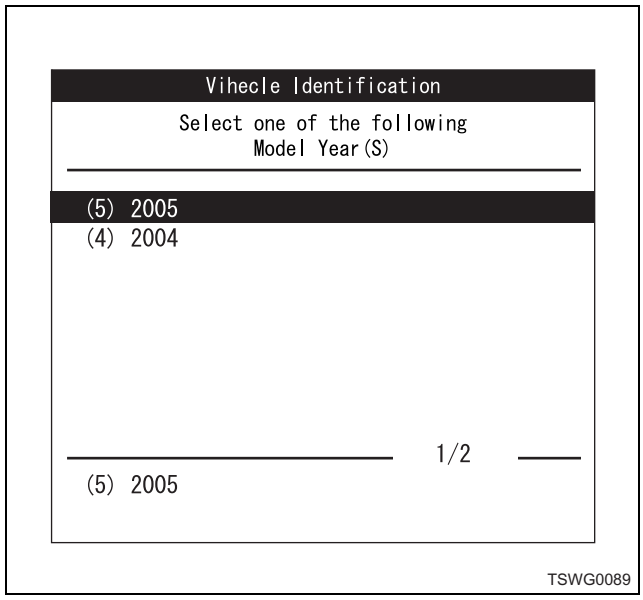
Step 2

- Choose the menu F0: Diagnostics with ▲, ▼ (up/down) keys or F0 (function) key, and press the [ENTER] key.



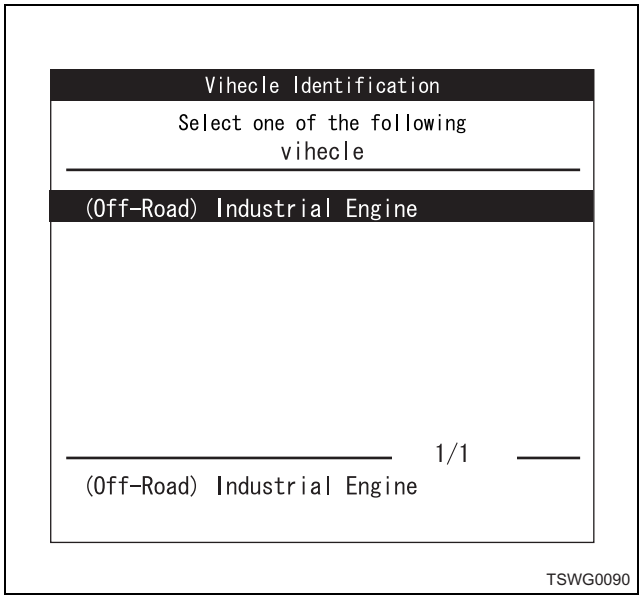
Step 3

- Choose the menu (5) 2005 with ▲, ▼ (up/down) keys, and press the [ENTER] key.
  * Applicable for 2000MY or later.



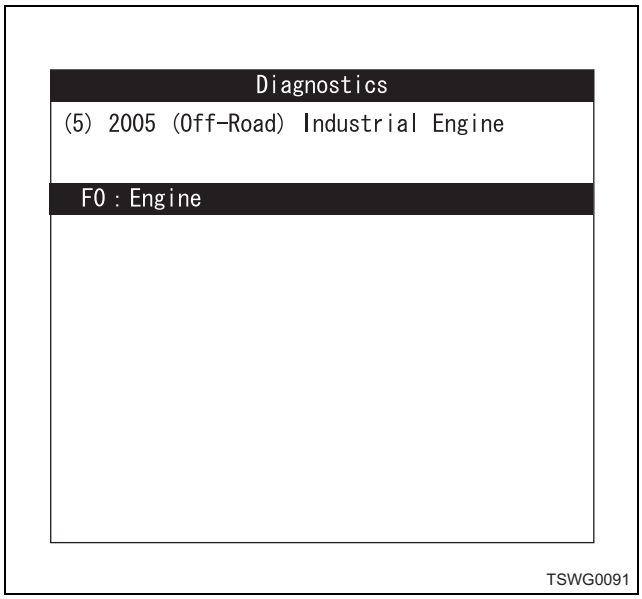
Step 4

- Choose the menu (Off-Road) Industrial Engine with ▲, ▼ (up/down) keys, and press the [ENTER] key.



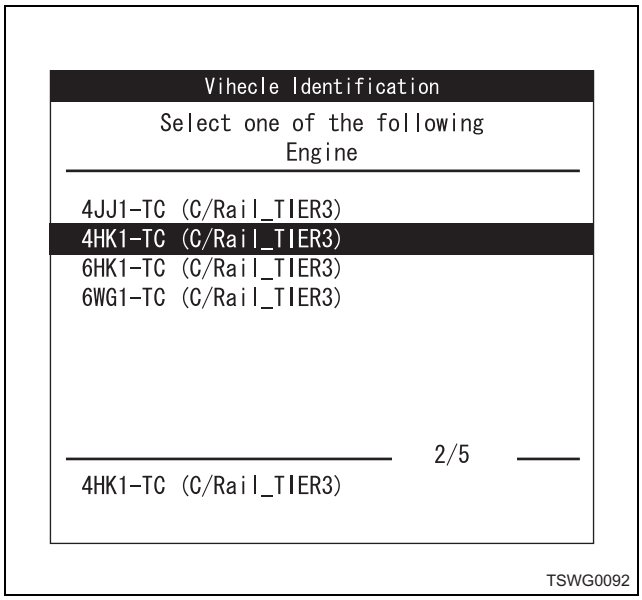
Step 5

- Choose F0: Engine in Menu with ▲, ▼ (up/down) keys or F0 (function), and press the [ENTER] key.



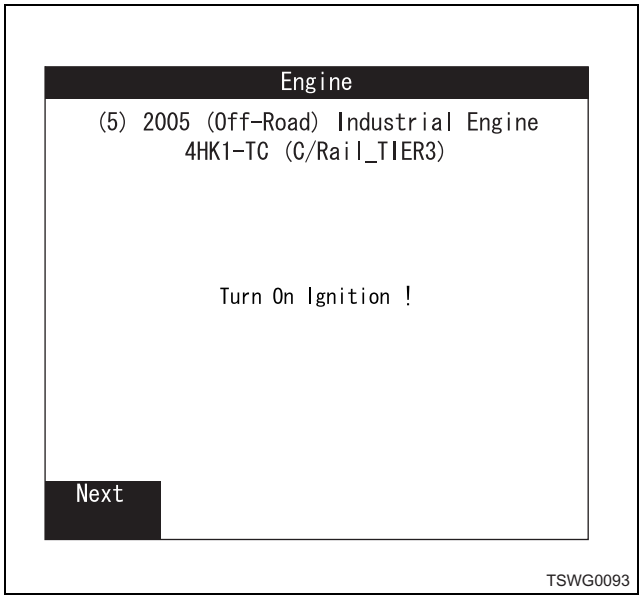
Step 6

- Choose 6HK1-TC (C/Rail_TIER3) with ▲, ▼ (up/down) keys, and press the [ENTER] key.

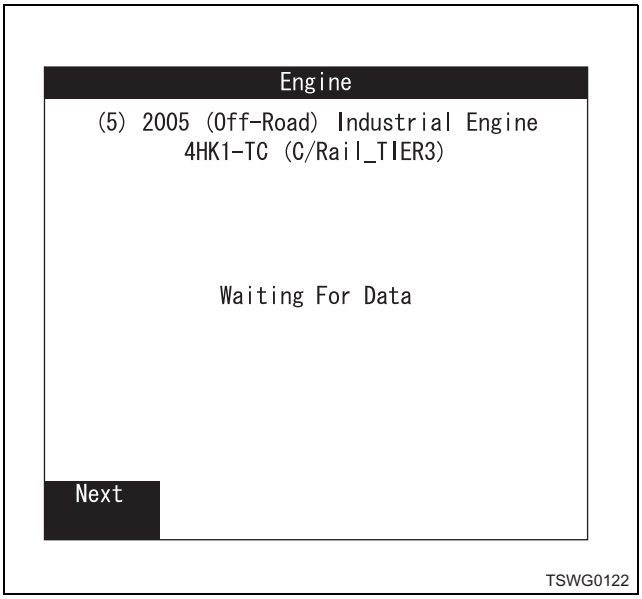


Step 7

- Press the softkey [Next].
- The ignition is ON at this time.

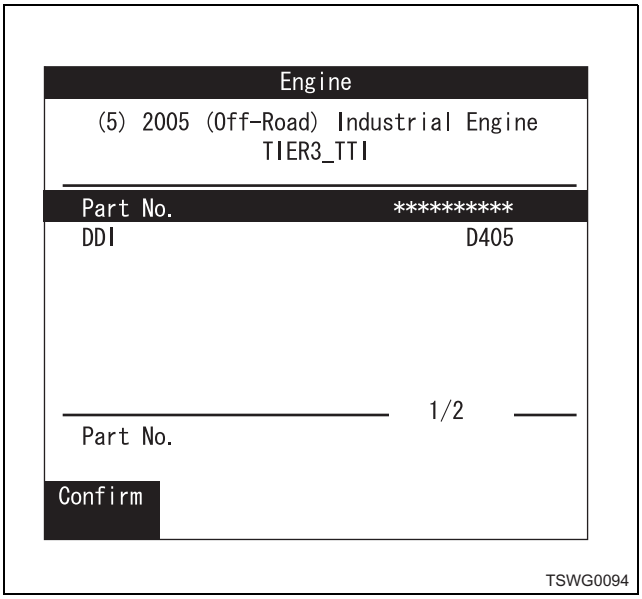


Step 7-1



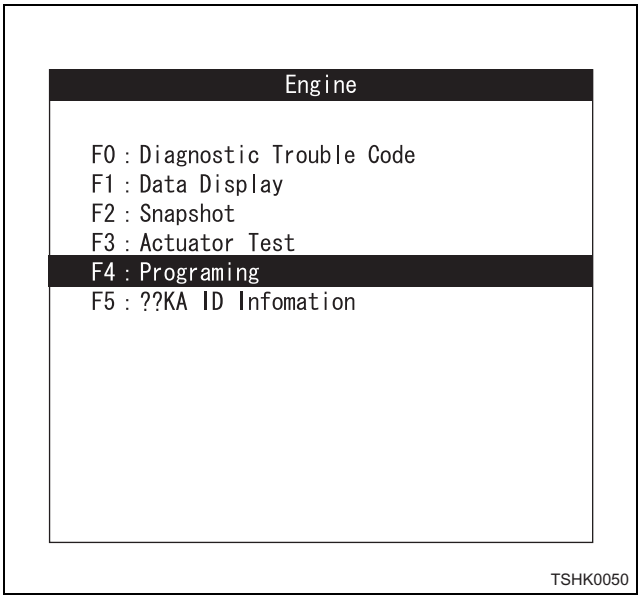
Step 8

- Press the softkey [Confirm].
- This displays the ECU ID information.



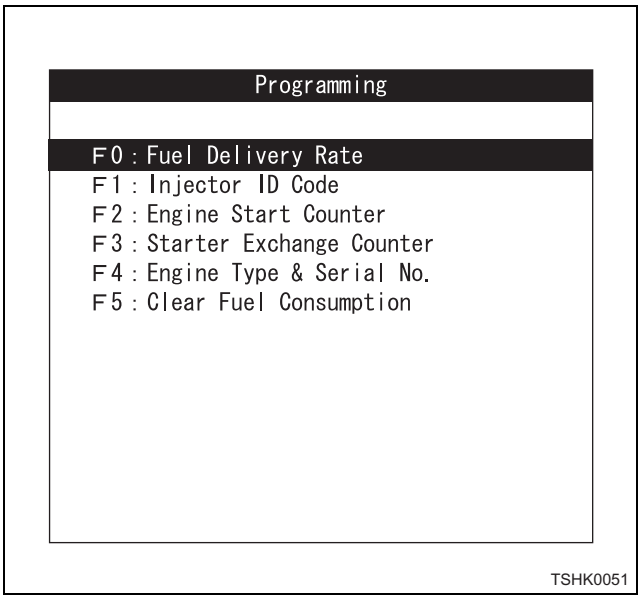
Step 9

- Choose the menu F4: Programming with ▲, ▼ (up/down) keys or F4 (function) key, and press the [ENTER] key.



Step 10

- Choose the menu F0: Q adjust with ▲, ▼ (up/down) keys or F0 (function) key, and press the [ENTER] key.



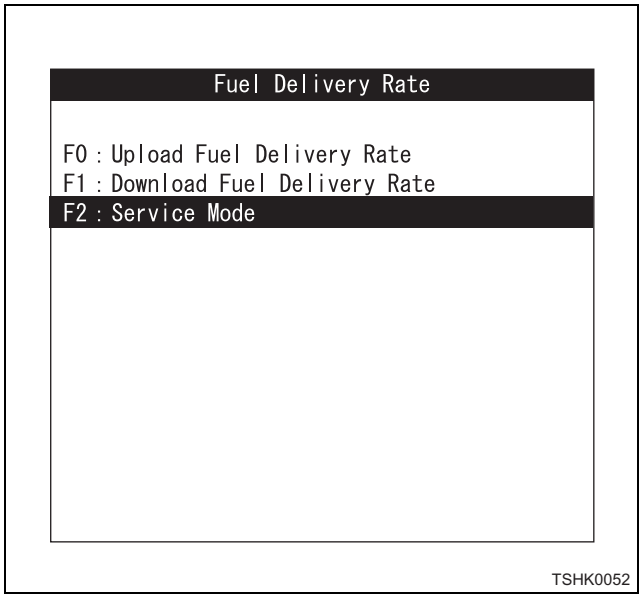
Step 11

- Choose the menu F2: Service mode with ▲, ▼ (up/down) keys or F2 (function) key, and press the [ENTER] key.

F0: Uploads the three-point Q adjust data stored in the ECM to the Tech2.
* Registers the data when replacing ECM.

F1: Writes the three-point Q adjust data temporarily stored in the Tech2 to the ECM.
* Registers to the ECM after replacing ECM.

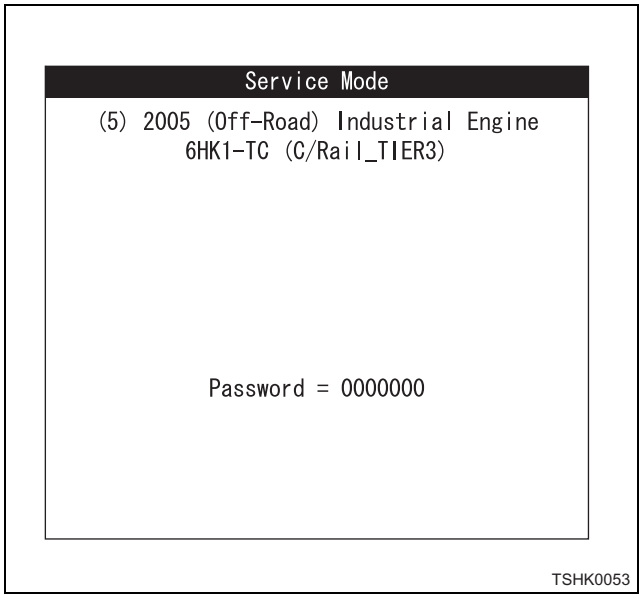
F2: Any data can be written. However, password and ID are required.



TSHK0052

Step 12

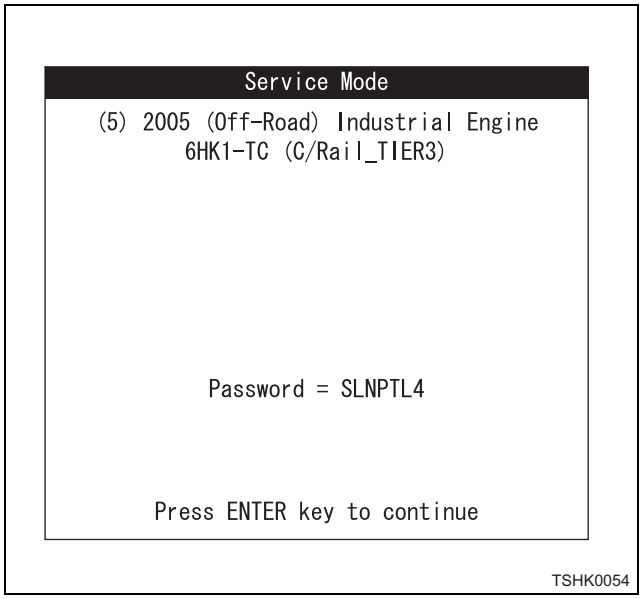
- Password input screen
- This procedure will end automatically if the registration is not completed within 120 seconds. The message “Time Over” appears.



TSHK0053

Step 12-1

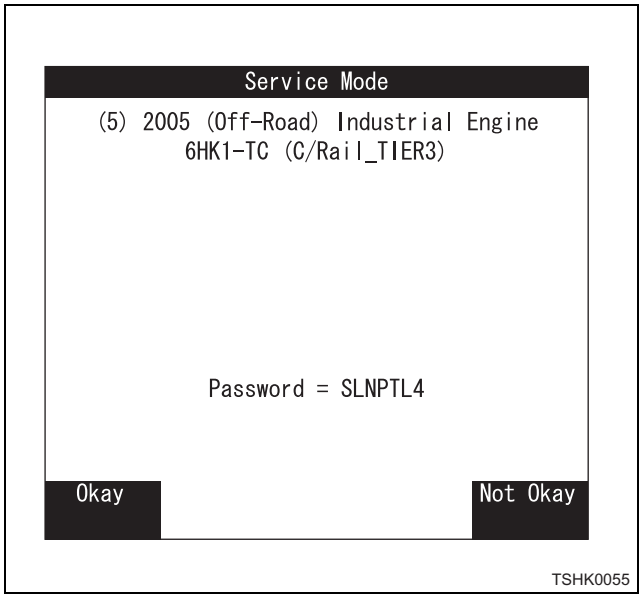
- After entering the password, press the [ENTER] key.
- The password for 4/6HK1 and 4JJ1 is “SLNPTL4”.
- The password for 6WG1 and 6UZ1 is “SLNPTL6”.
- Entering wrong password will return to the previous menu.



TSHK0054

Step 12-2

- If the password you have entered is correct, press the softkey [Okay].
- Enter the password within 120 seconds. Failure to enter the password within 120 seconds will return to Step 11.



TSHK0055

Step 13

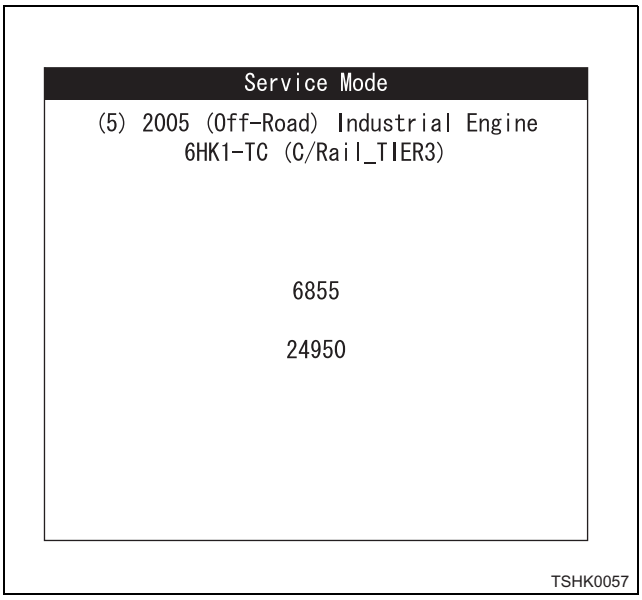
- After completing the password registration, proceed to ID registration.

Step 13-1

The numbers will appear on the screen. Obtain the ID code from the machine manufacturer's service center or Isuzu Industrial Engine Dept. service section by using this number (6855 in this case).
Enter the obtained ID code (2495 in this case). At this time, the suffix "0" will be added to the end of it on the Tech2 screen. Press the [ENTER] key.

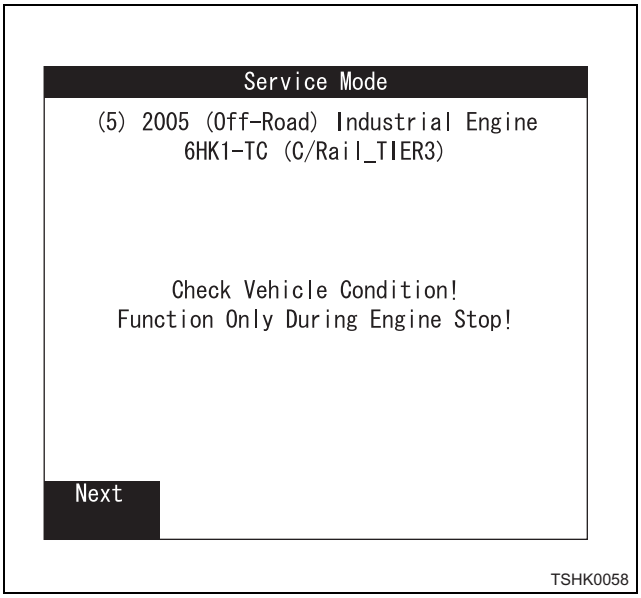
Note:
The ID code you have entered will appear on the screen, suffixed with "0".
The clock of Tech2 must be correctly set.

- After entering, press the [ENTER] key.



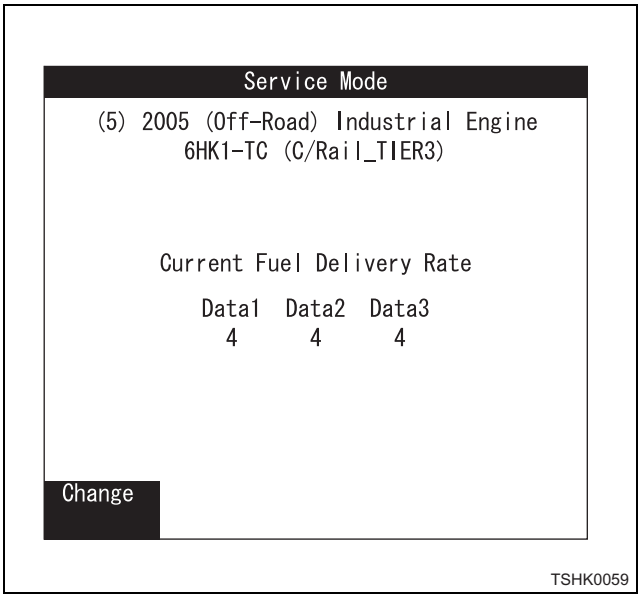
Step 14

- When the ID code matches, the following screen will appear.
  Press the softkey [Next].
- This step can be performed only when the engine speed is 0 rpm.



Step 15

- Displays the three-point Q adjust data in the ECM.
  1. To modify the Q adjust data, press the softkey [Change].

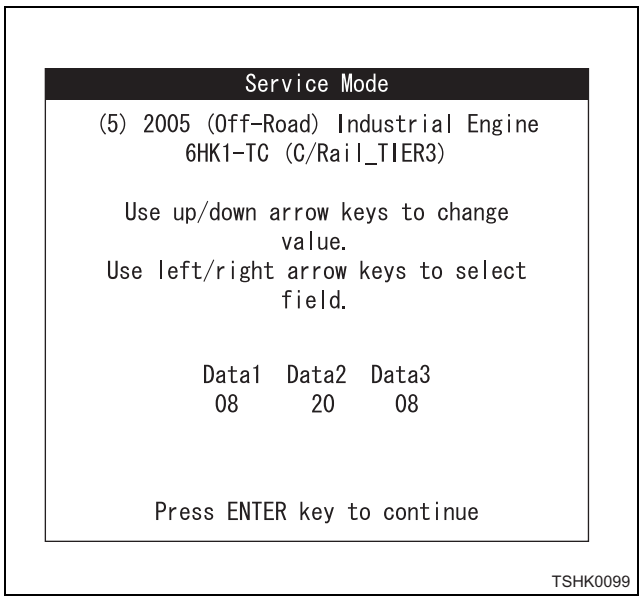


Step 15-1

- If the Q adjust data you have entered is correct, press the [ENTER] key.
  1. The entry conditions are as follows.
     Conditions:
     C/Rail system entry setting is “1 – 15”.
     TIS system entry setting is “1 – 8”.

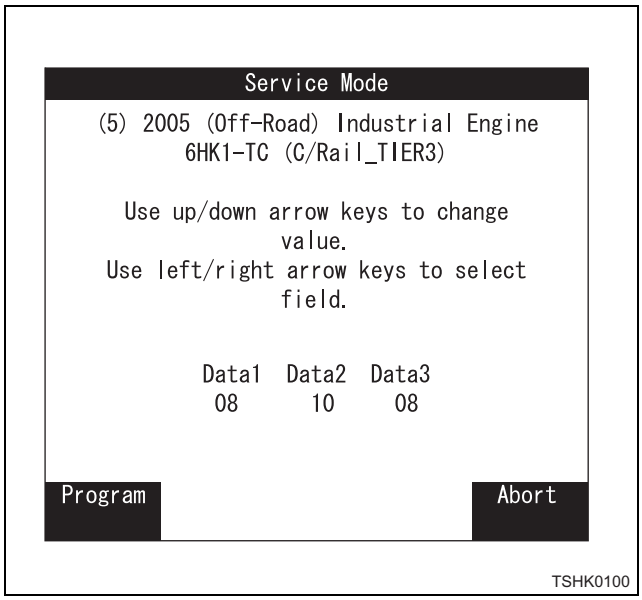
Note:
Q adjust information in the label attached to the cylinder head cover is given in hexadecimal number. Enter it into Tech2 in decimal number as below.

Label information	Enter into Tech2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15



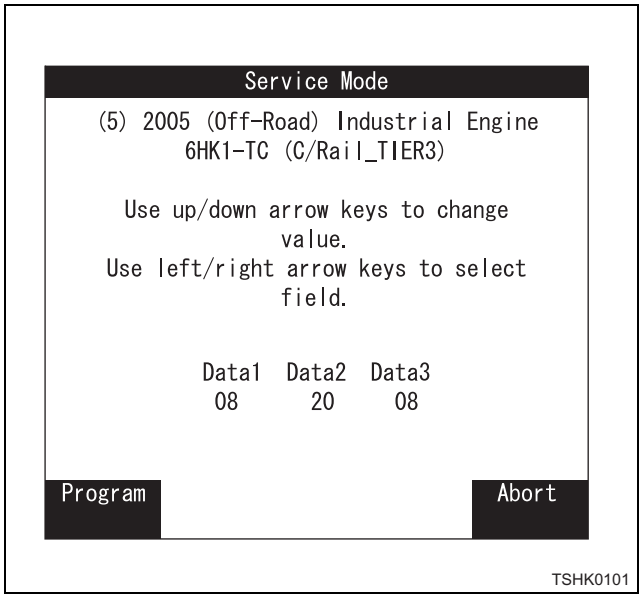
Step 15-2

- If the Q adjust data you have entered is correct, press the softkey [Program].



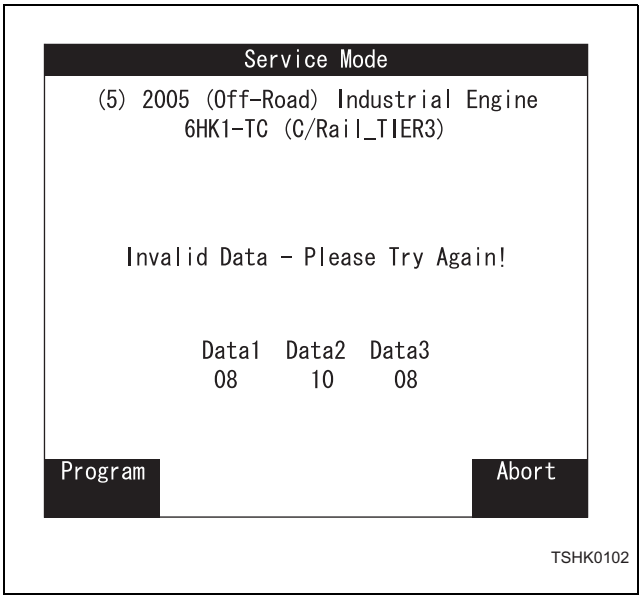
Step 15-3

- If the Q adjust data you have entered is off the set value, the message shown as Step 15-4 appears.



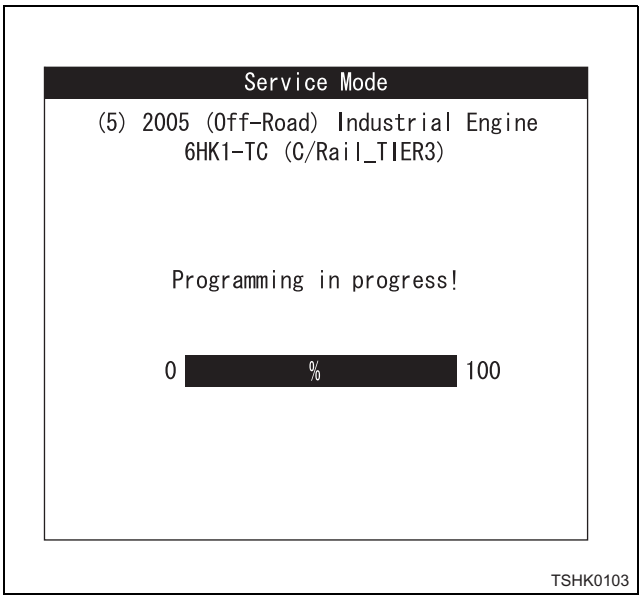
Step 15-4

- To go to Step15-5, modify the Q adjust data within the set value and press the softkey [Program].



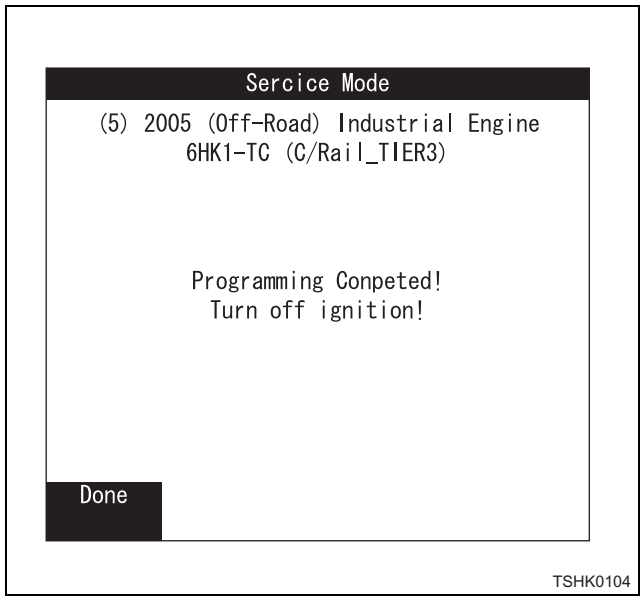
Step 15-5

- If the entered values meet the conditions in Step 15-1 and 15-3, the status display of data registration (writing) from the Tech2 to ECM as shown below will appear.



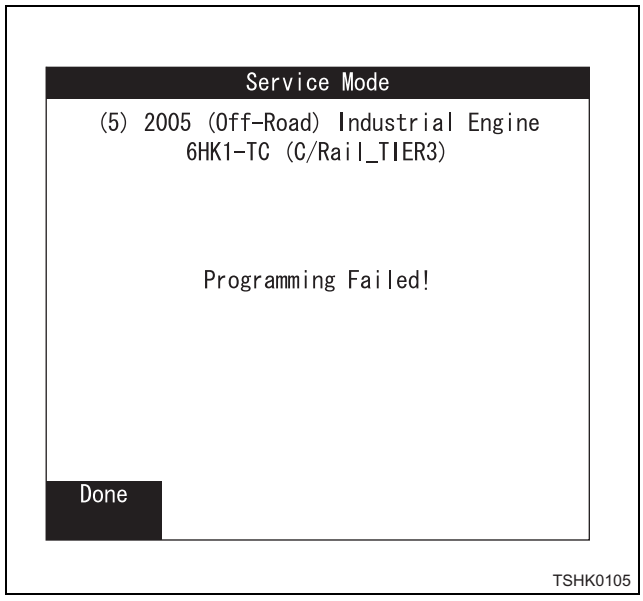
Step 16

- When the writing of data completes, the following screen will appear.
  This indicates that the result of comparison of entered data with that written in the EEPROM of the ECM is in good condition.



Step 16-1

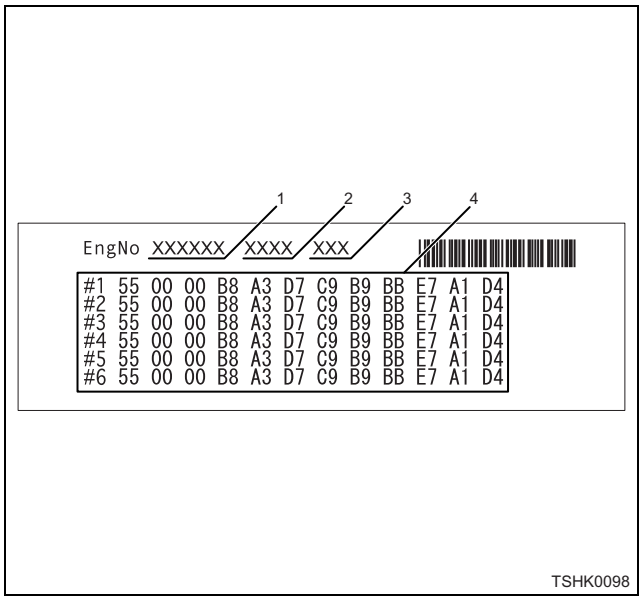
- If the entered Q adjust data in Step 15-1 does not correspond to that written in the EEPROM of the ECM, the following message will appear.
  Pressing the softkey [Done] returns you to Step 11.



Injector ID code (No. 1 cylinder – No. 6 cylinder or No. 4 cylinder) registration setting using Tech2

Preparation

If you plan to reflash the ECM part number at the QR code registration setting, reflash first.
If you reflash after the registration, the QR code cannot be correctly registered in ECM.
“Q adjust, Injector code label” is attached to the cylinder head cover. It is used for rewriting and registering the ID.



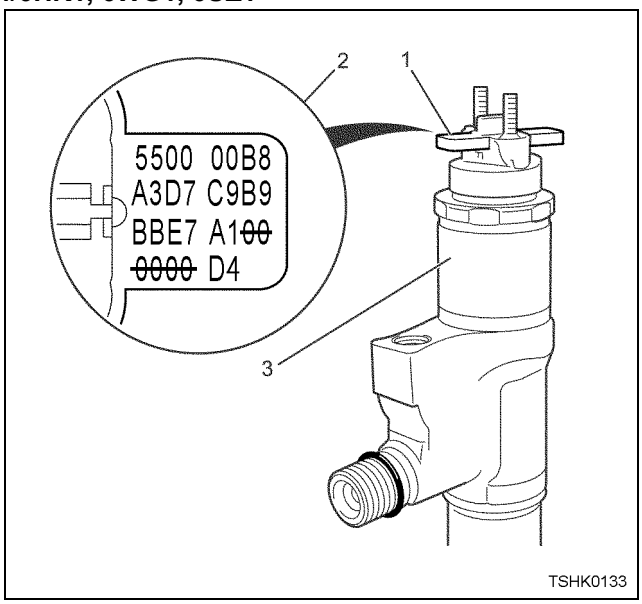
Name

1. Engine number
2. Typical engine model
3. Q adjust information
4. Injector information

There is the injector code on the top of injector as well. When replacing the injector, register its code.

Note:
Do not enter the six figures 0, indicated with strike through in the illustration, of ID code on the injector ID plate. (except 4JJ1)

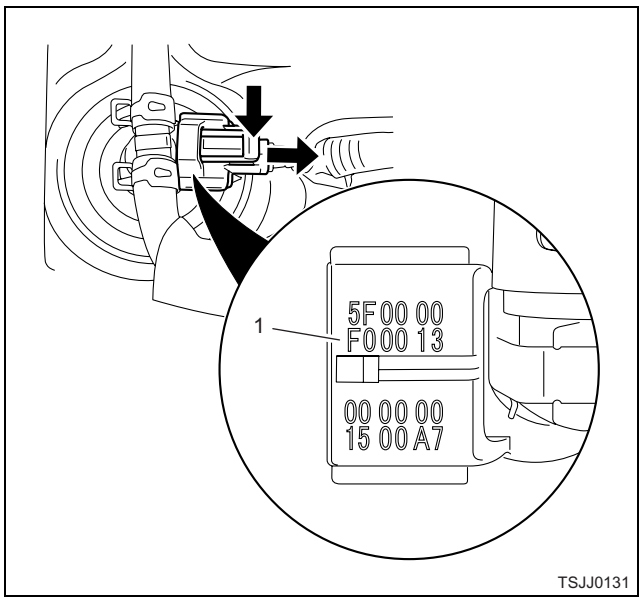
4/6HK1, 6WG1, 6UZ1



Name

1. Injector ID plate
2. Injector ID code
3. Injector

4JJ1



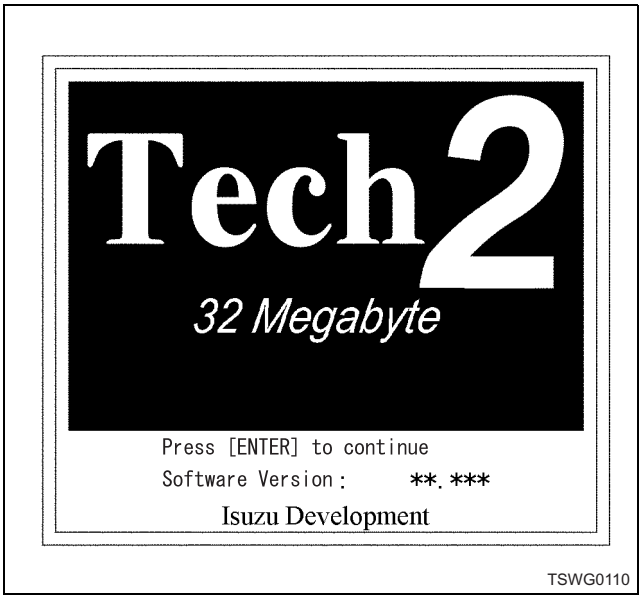
Name

1. Injector ID code

Refer to the following instruction for how to register Injector ID code.

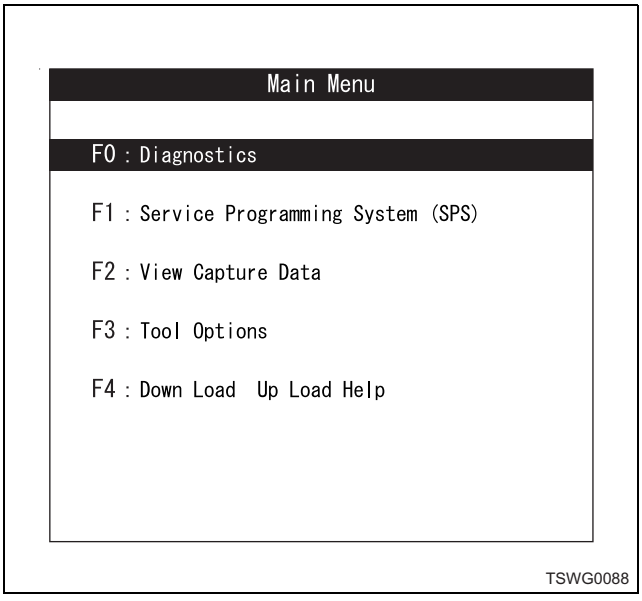
Step 1

- Press the [ENTER] key.



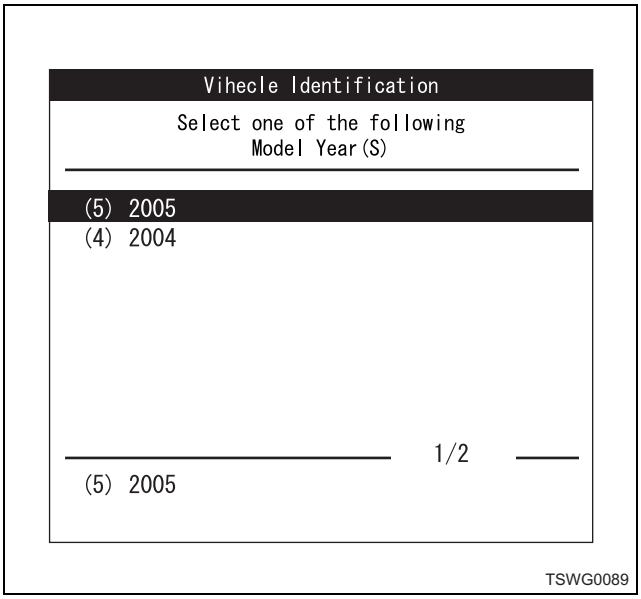
Step 2

- Choose the menu F0: Diagnostics with ▲, ▼ (up/down) keys or F0 (function) key, and press the [ENTER] key.



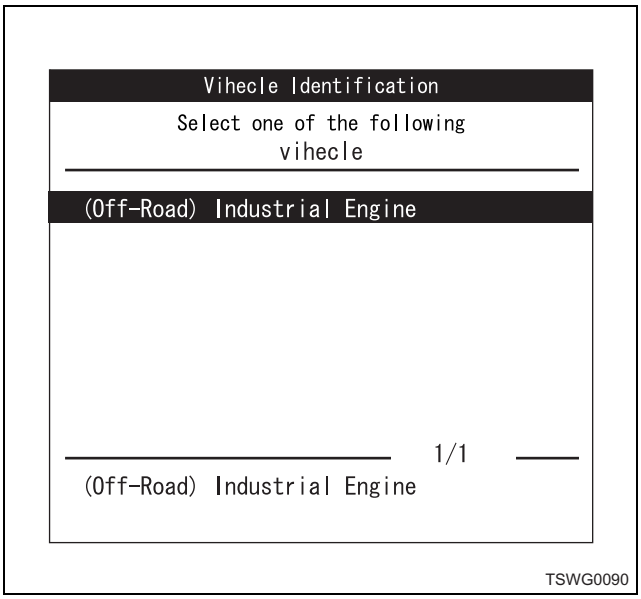
Step 3

- Choose the menu (5) 2005 with ▲, ▼ (up/down) keys, and press the [ENTER] key.



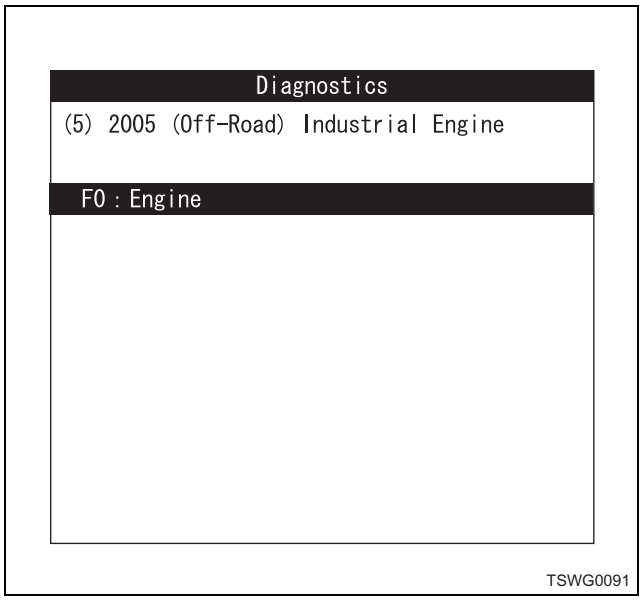
Step 4

- Choose the menu (Off-Road) Industrial Engine with ▲, ▼ (up/down) keys, and press the [ENTER] key.



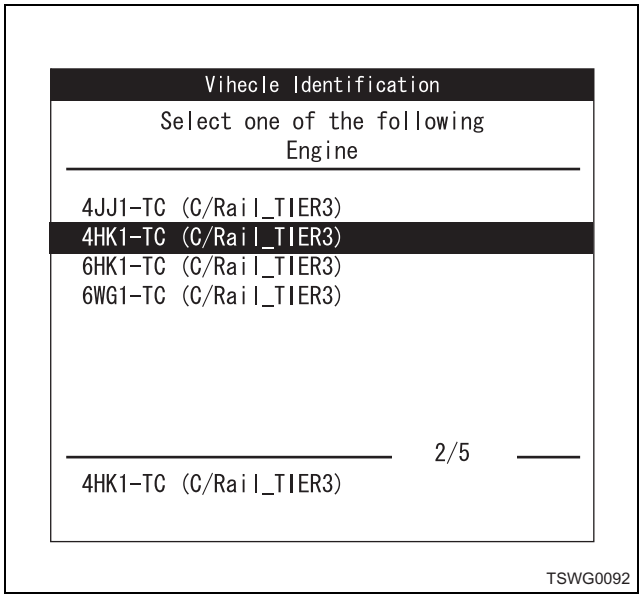
Step 5

- Choose F0: Engine in Menu with ▲, ▼ (up/down) keys or F0 (function), and press the [ENTER] key.



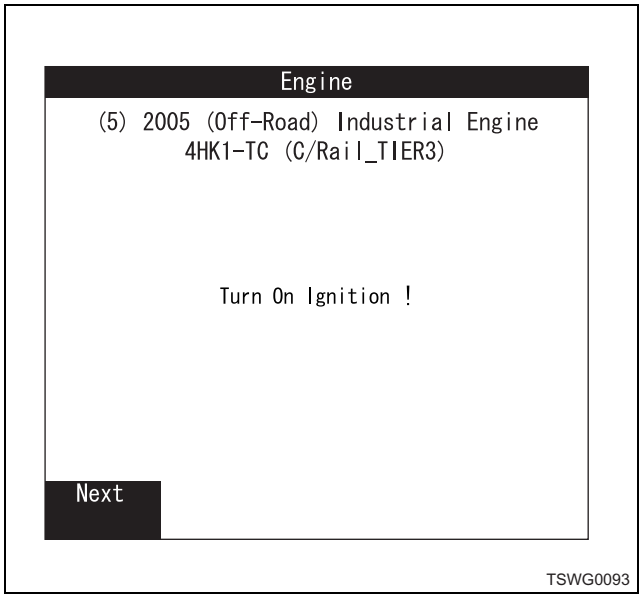
Step 6

- Choose 6HK1-TC (C/Rail_TIER3) with ▲, ▼ (up/down) keys, and press the [ENTER] key.

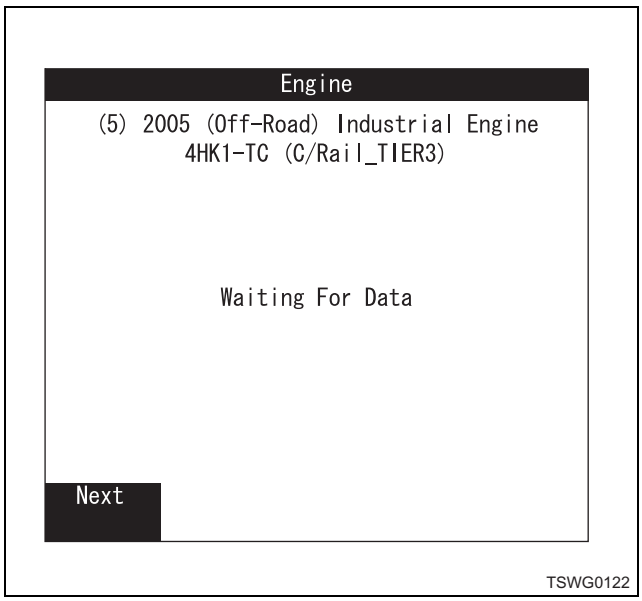


Step 7

- Press the softkey [Next].
- The ignition is ON at this time.

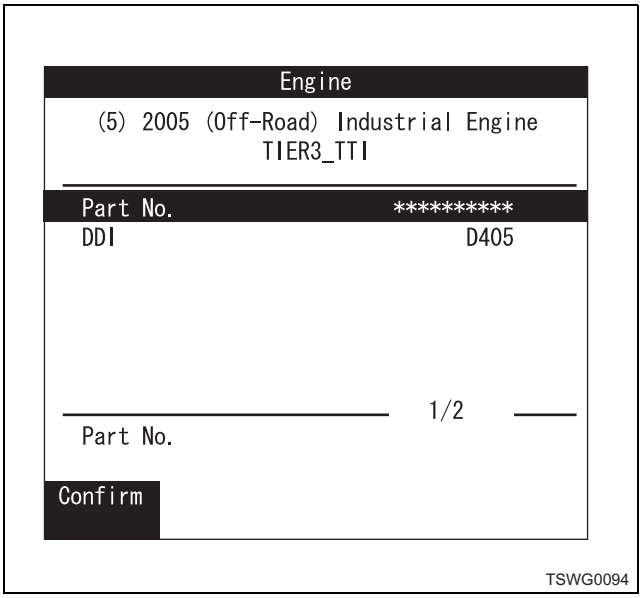


Step 7-1



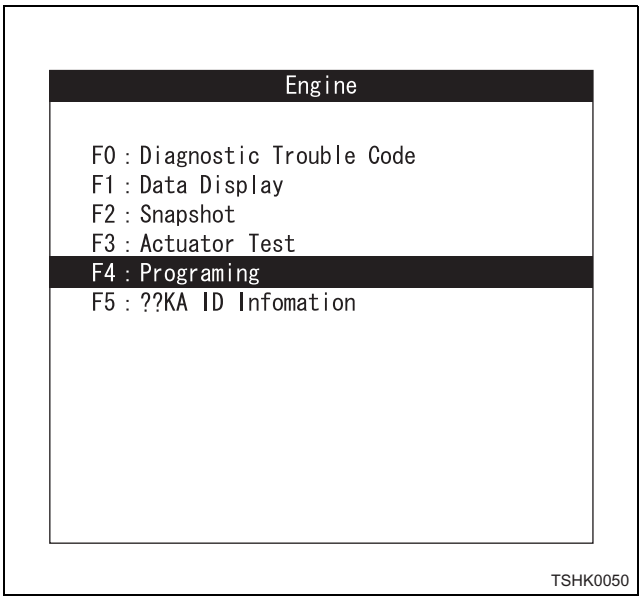
Step 8

- Press the softkey [Confirm].
- This displays the ECU ID information.



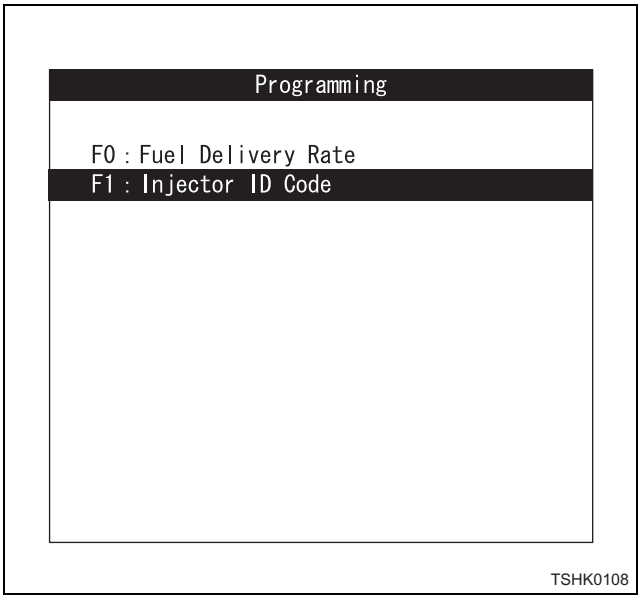
Step 9

- Choose the menu F4: Programming with ▲, ▼ (up/down) keys or F4 (function) key, and press the [ENTER] key.



Step 10

- Choose the menu F1: Injector ID Code with ▲, ▼ (up/down) keys or F1 (function) key, and press the [ENTER] key.



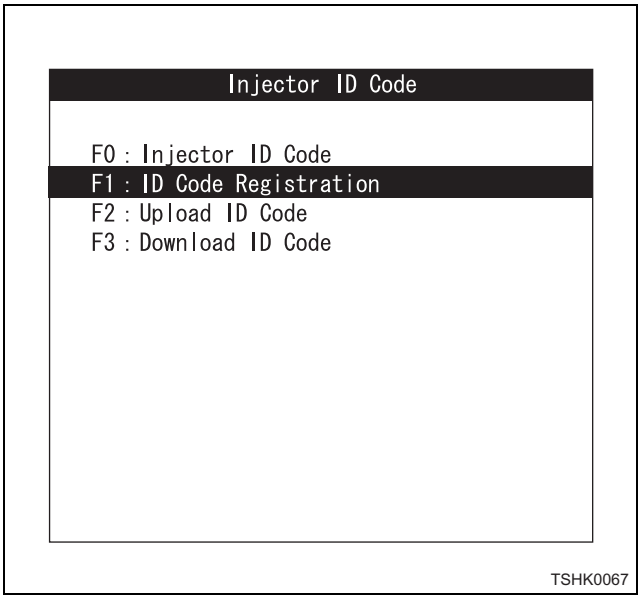
Step 11

- Choose the menu F1: ID Code registration with ▲, ▼ (up/down) keys or F1 (function) key, and press the [ENTER] key.

F0: Displays the Injector ID codes (hereinafter called ID code) of Cyl.1-Cyl.6.
Allows you to confirm the ID code after registration.

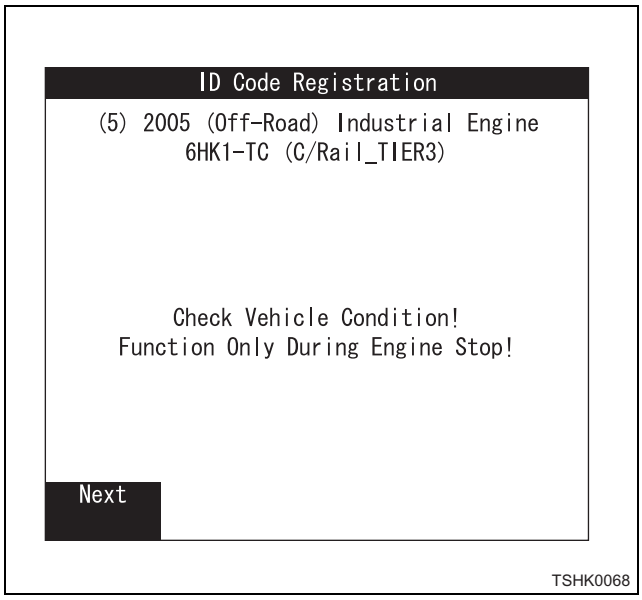
F2: Uploads (transfers) the ID code (No. 1 cylinder – No. 6 cylinder) registered in the ECM to Tech2 to store in its memory.

F3: Allows you to download (batch registration) the uploaded ID codes from Tech2 to the ECM.



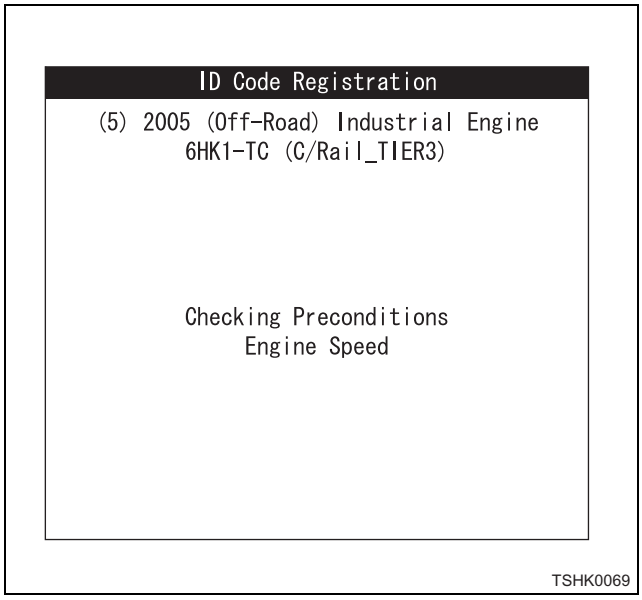
Step 12

- Press the softkey [Next].
- As an example, the vehicle will be checked whether it is in the condition (engine stopped) that the ECM requests during ID registration.

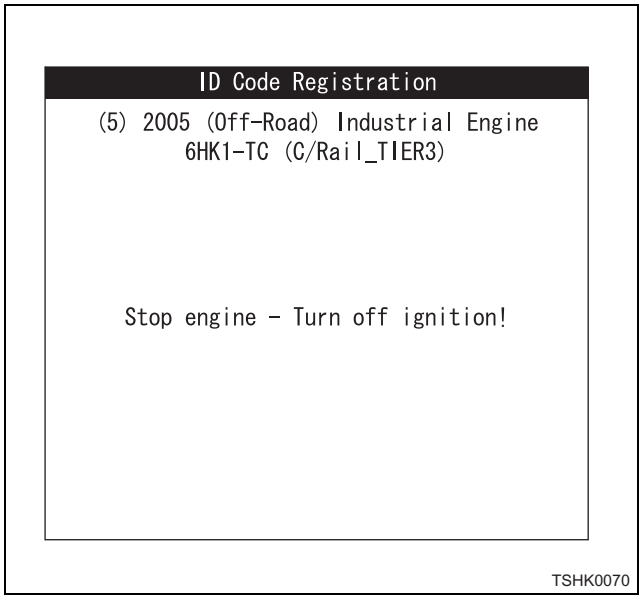


Step 12-1

- The following display appears while checking if the engine speed is 0 rpm.
  When the engine speed is 0 rpm, it will take you to Step 13.

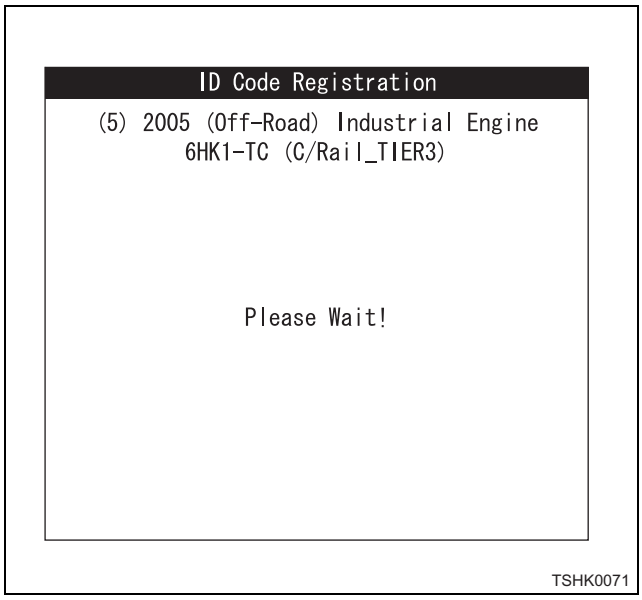


Step 12-2



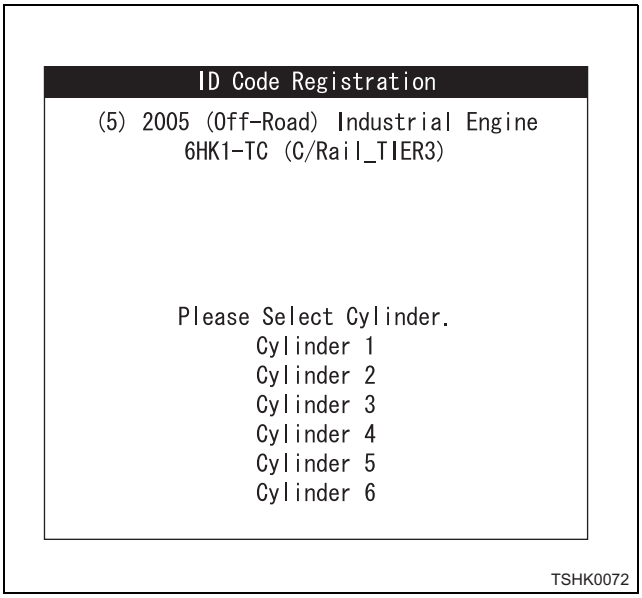
Step 12-3

- You need to enter the ID on the following display. ID code is number of year. The following conditions must be met.
  Conditions:
  1. The time setting of Tech2 matches with the calendar.
  2. Press the function keys (F0 – F9) to enter.



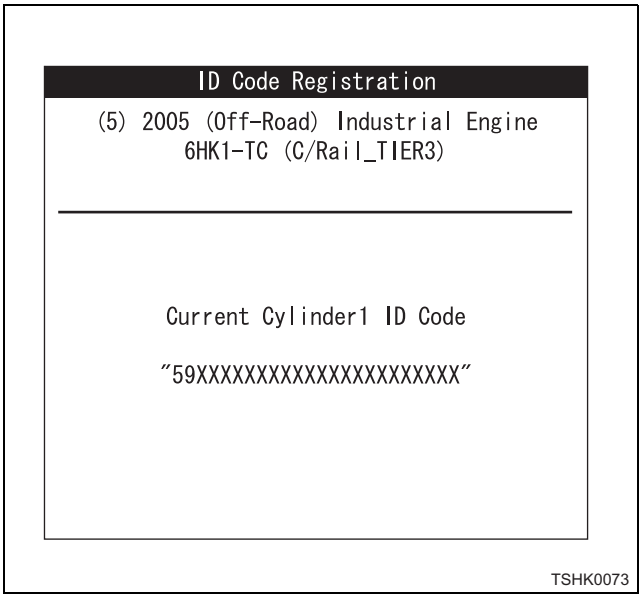
Step 13

- Choose the cylinder (No. 1 cylinder – No. 6 cylinder) you want to register the ID code with ▲, ▼ (up/down) keys, and press the [ENTER] key.
- As an example, this describes about No. 1 cylinder.



Step 14

- To register the ID code, press the softkey [Change].
- The ID code for Cylinder1 (No. 1 cylinder) selected at Step 13 is shown here.



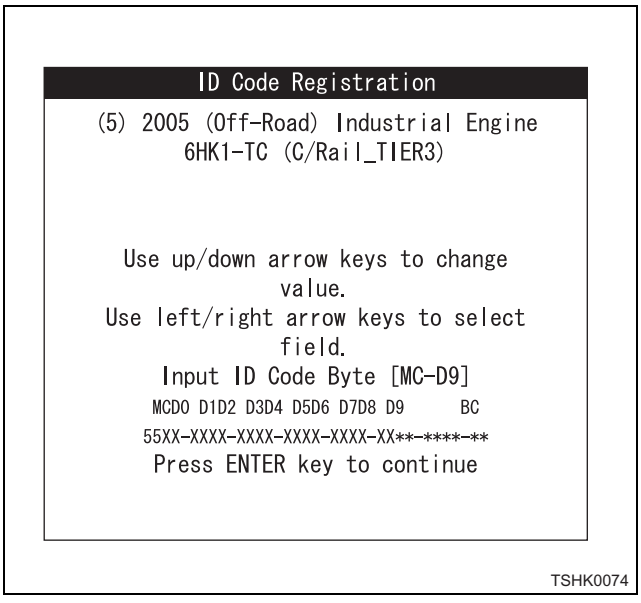
Step 15

ID code registration (data entry)

1. The cursor is positioned at M (model code) in the default setting.
2. At this point, enter the model code (MC) and ID code (D0) in this order.

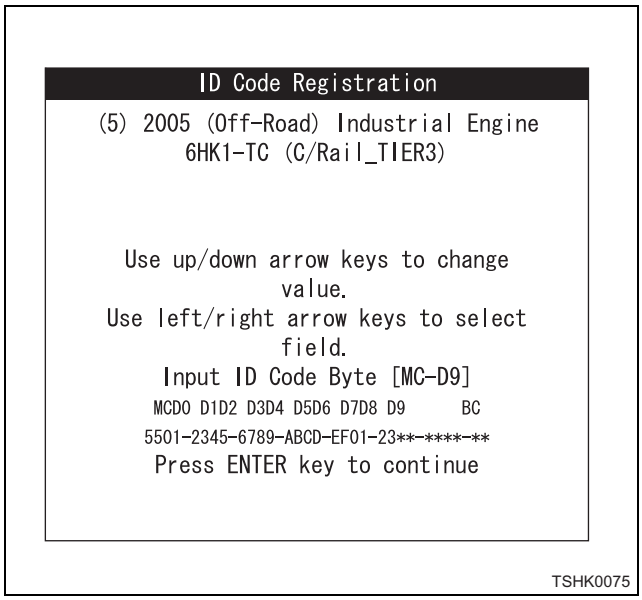
Model code (MC)	Engine model
55	4HK1
55	6HK1
5A	6WG1 (Varies depending on the machine)
63	6WG1 (Varies depending on the machine)
5F	4JJ1
5B	6UZ1

   - Entering with the function keys (F0 – F9) will automatically move the cursor to the right. However, if you enter with ▲, ▼ (up/down) keys, you need to move the cursor with the arrow (left/right) keys.
3. Data must be entered within 00 – FF.
   - You can enter 0 through 9 with the function keys (F0 – F9), or 0 through Z with ▲, ▼ (up/down) keys.
4. Enter BCC code.
   - Tech2 calculates the entered data and displays the following message.
     When entered ID code (QR) is off the set value: Writing unable
     When entered BCC code is off the set value: Writing unable
     When the ID code (QR) does not correspond to BCC code: Writing unable



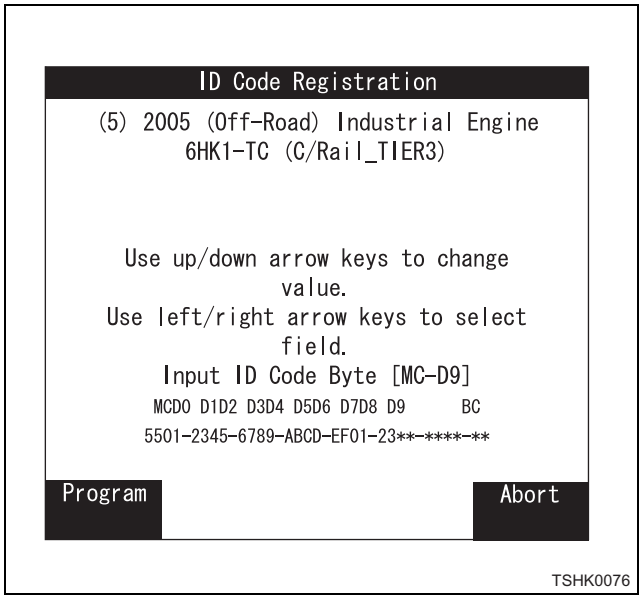
Step 15-1

After entering the ID code input data byte (MC-D9), press the [ENTER] key.



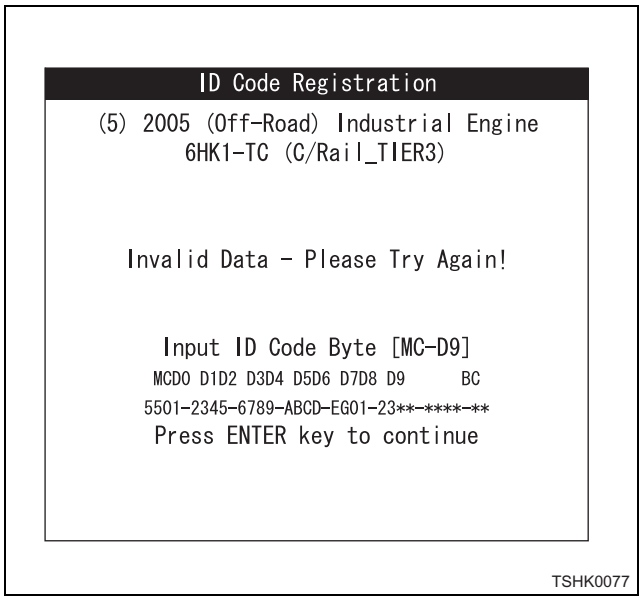
Step 15-2

- If the ID code you have entered is correct, press the softkey [Program].
  If you want to quit the program (registration), press the softkey [Abort] or press [EXIT] key.
- Quitting the registration or pressing [EXIT] key returns you to Step 11.



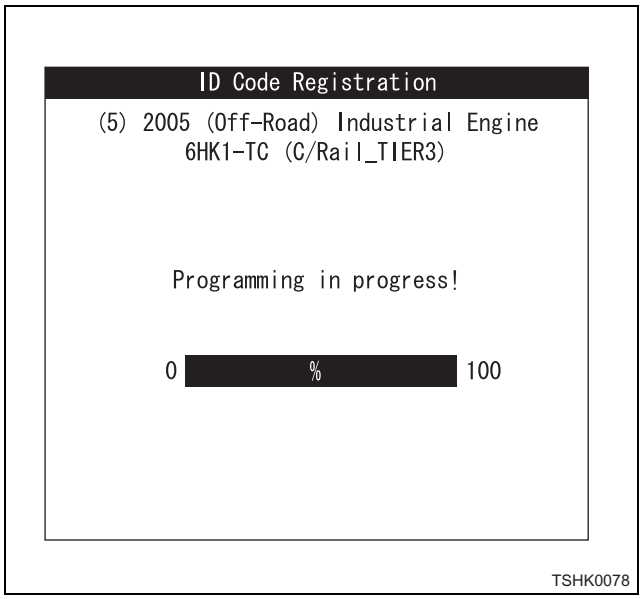
Step 15-3

If you have entered incorrectly (D7:EG), do the following.
After pressing [ENTER] key as with Step 15-1, press the softkey [Program]. This cause the error message “Invalid data – Please Try again!” to appear.



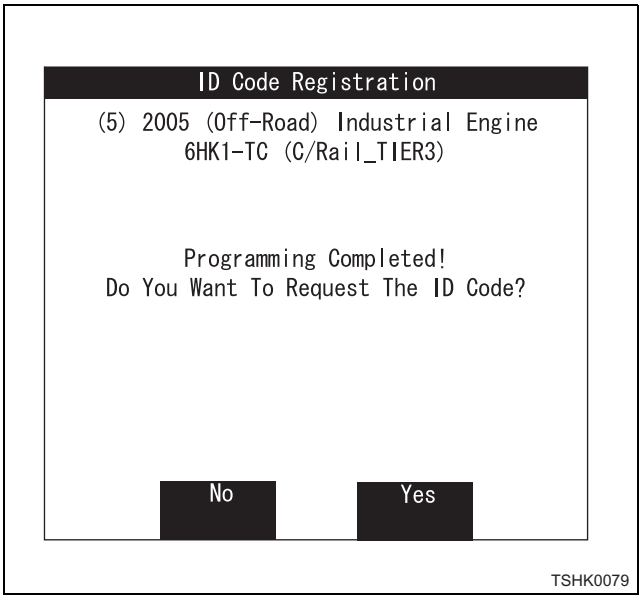
Step 16

- If the entered values meet the conditions in Step 15-1 and 15-3, the status display of data registration (writing) from the Tech2 to ECM as shown below will appear.



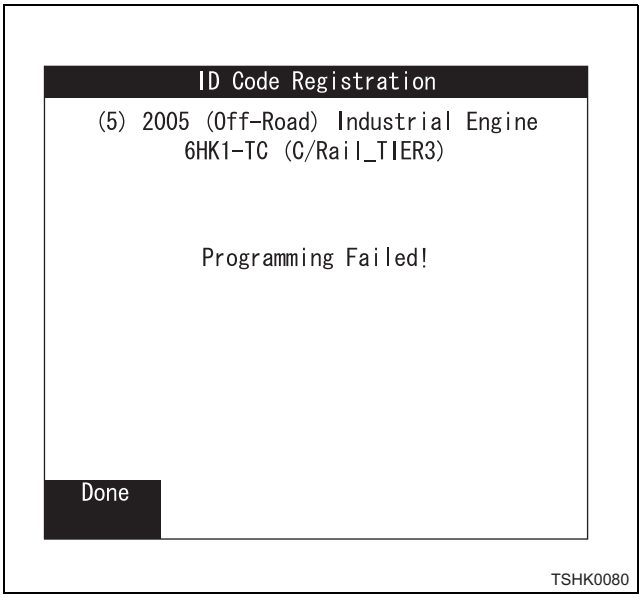
Step 17

- When the ID code entered in Steps 15-1 and 15-3 corresponds to that registered in the ECM, the following message will appear. Also, if you want to register ID again, press the softkey [Yes]. This returns you to Step 13, and allows you make registration as before. Pressing the softkey [No] will take you to Step 18.
  This completes the ID code registration.



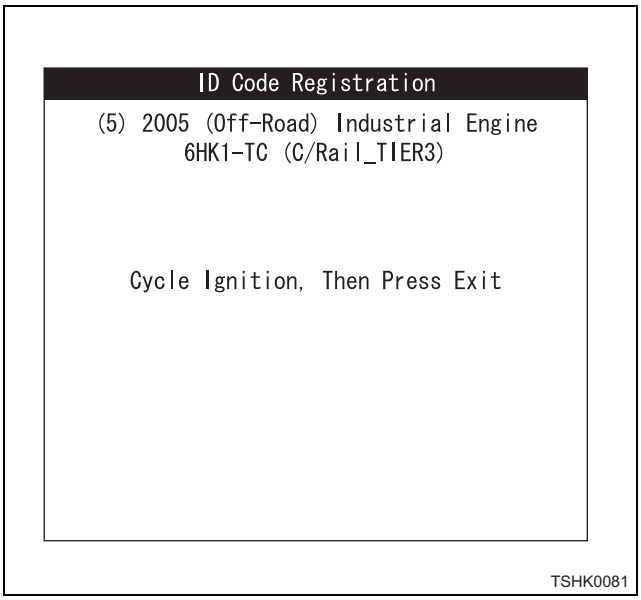
Step 17-1

- When the ID code entered in Steps 15-1 and 15-3 does not correspond to that registered in the ECM, the following message will appear.
  Pressing the softkey [Done] returns you to Step 11.



Step 18

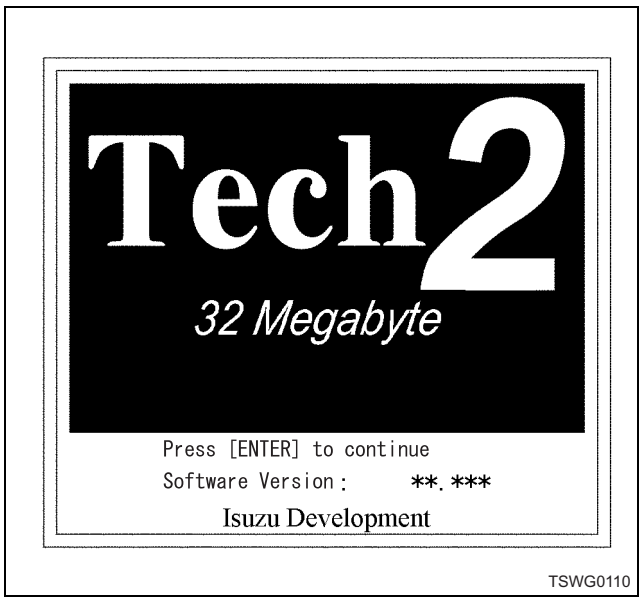
- Pressing [EXIT] key returns you to Step 11.



ID code upload (Tech2)

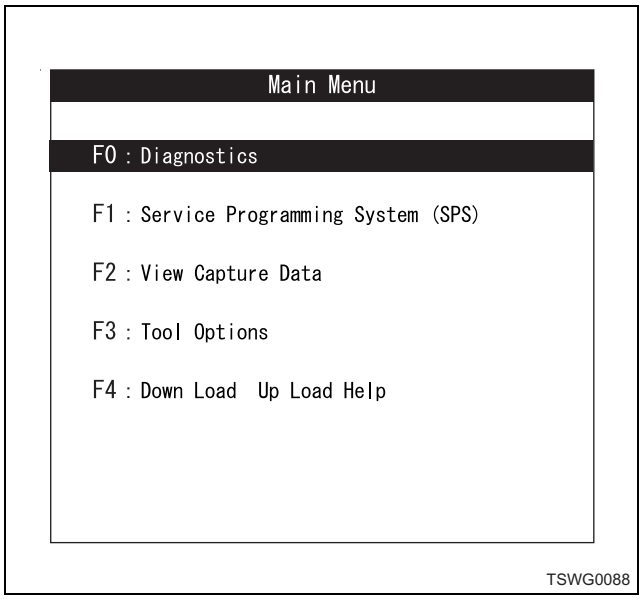
Step 1

- Press the [ENTER] key.



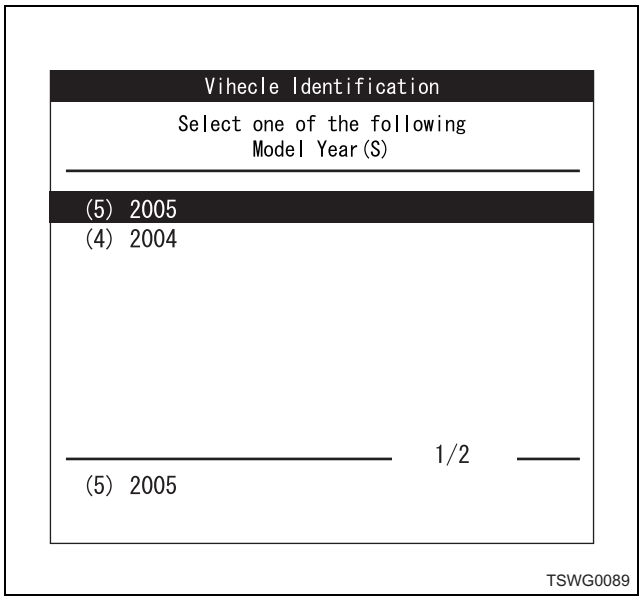
Step 2

- Choose the menu F0: Diagnostics with ▲, ▼ (up/down) keys or F0 (function) key, and press the [ENTER] key.



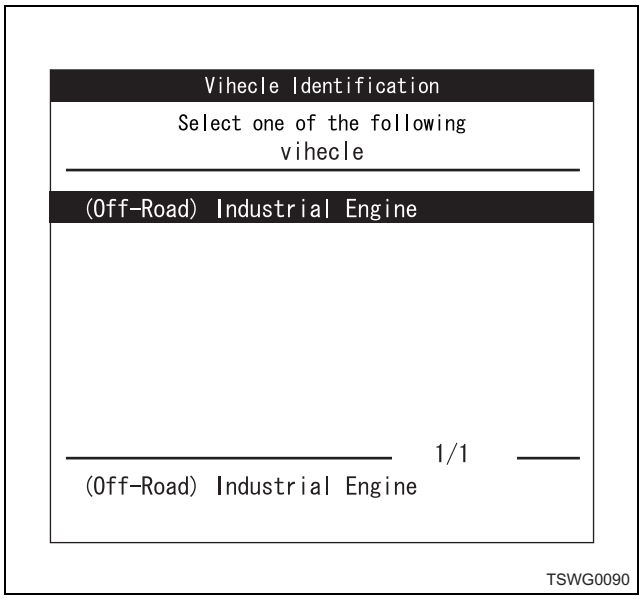
Step 3

- Choose the menu (5) 2005 with ▲, ▼ (up/down) keys, and press the [ENTER] key.



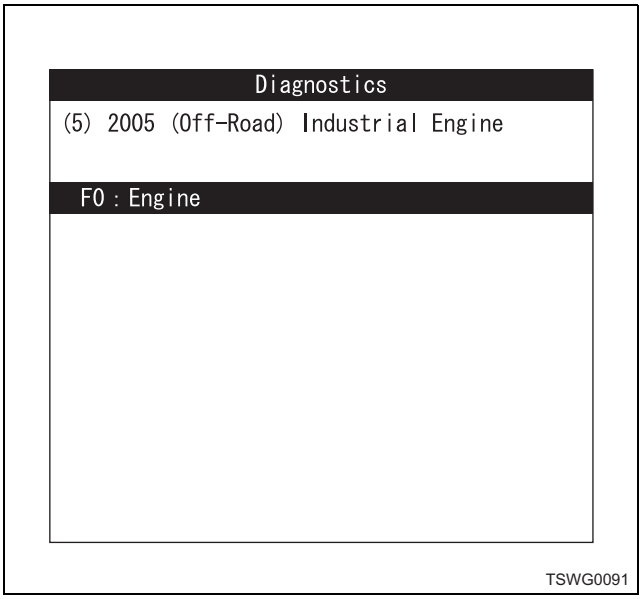
Step 4

- Choose the menu (Off-Road) Industrial Engine with ▲, ▼ (up/down) keys, and press the [ENTER] key.



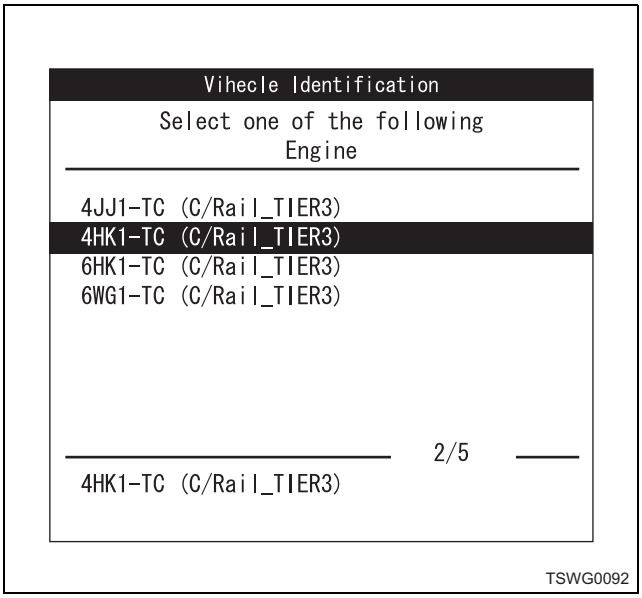
Step 5

- Choose F0: Engine in Menu with ▲, ▼ (up/down) keys or F0 (function), and press the [ENTER] key.



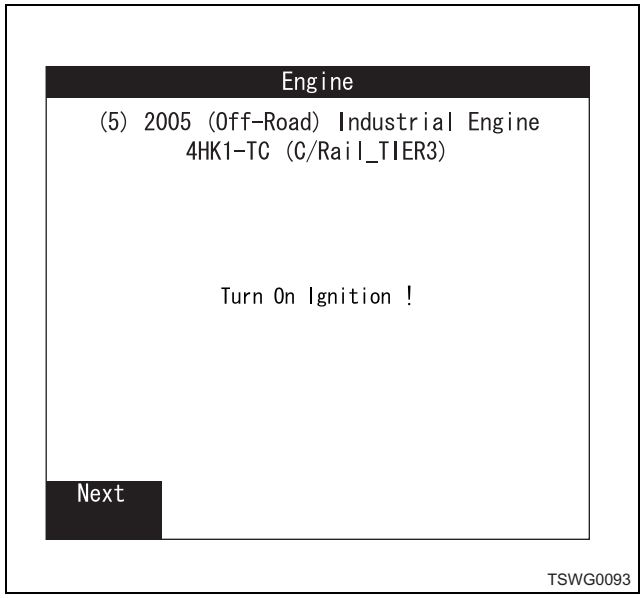
Step 6

- Choose 6HK1-TC (C/Rail_TIER3) with ▲, ▼ (up/down) keys, and press the [ENTER] key.

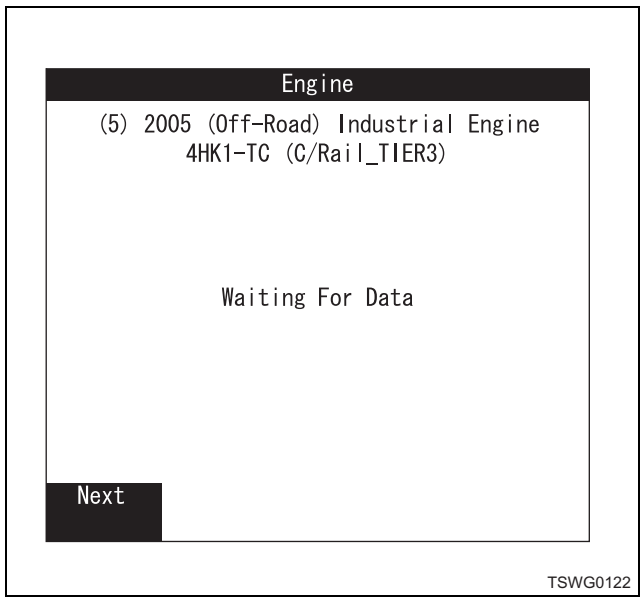


Step 7

- Press the softkey [Next].
- The ignition is ON at this time.

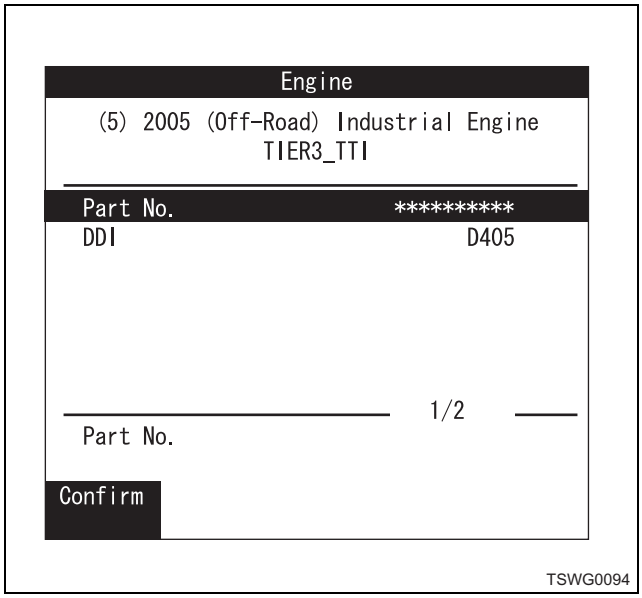


Step 7-1



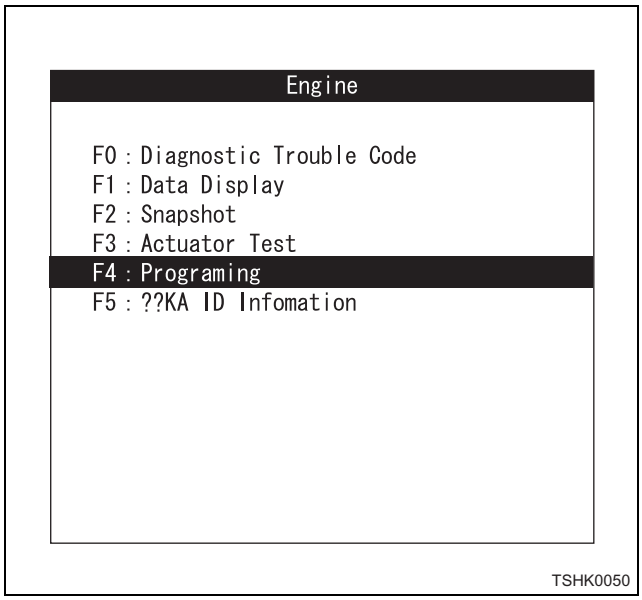
Step 8

- Press the softkey [Confirm].
- This displays the ECU ID information.



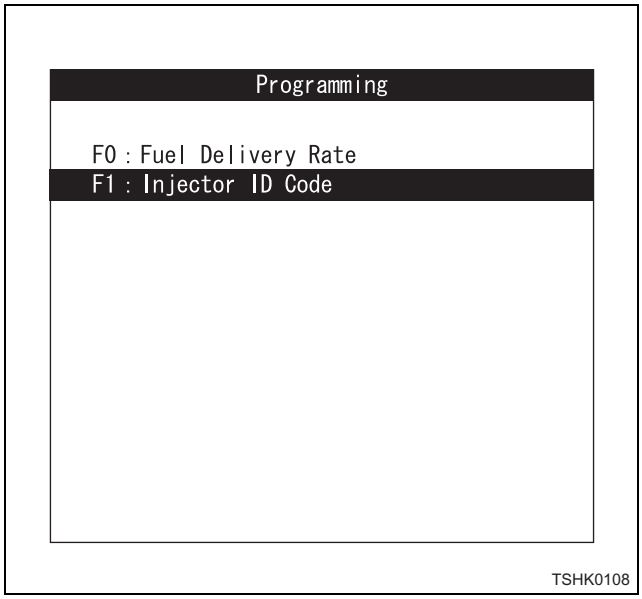
Step 9

- Choose the menu F4: Programming with ▲, ▼ (up/down) keys or F4 (function) key, and press the [ENTER] key.



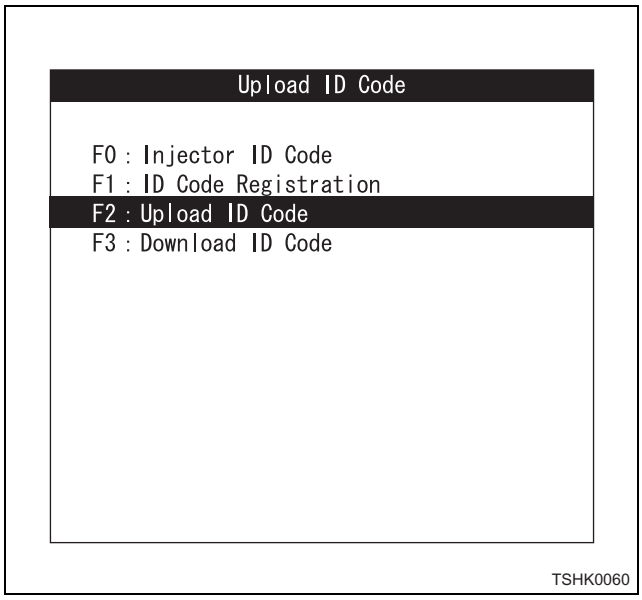
Step 10

- Choose the menu F1: Injector ID Code with ▲, ▼ (up/down) keys or F1 (function) key, and press the [ENTER] key.

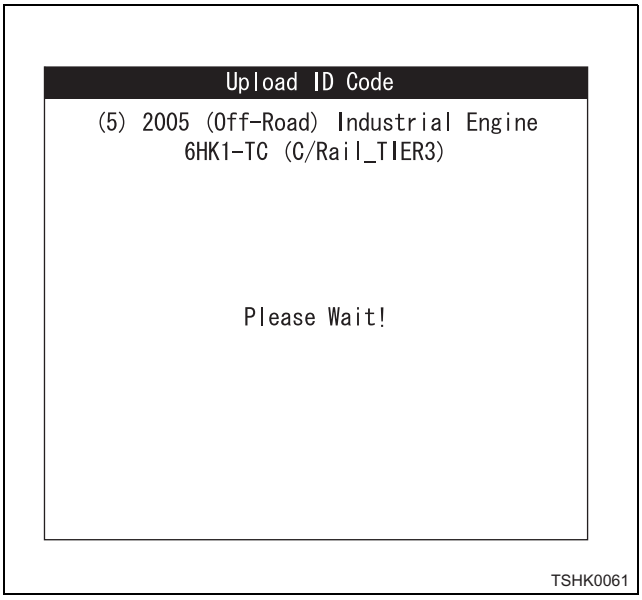


Step 11

- Choose the menu F2: Upload ID Code (Tech2) with ▲, ▼ (up/down) keys or F2 (function) key, and then press the [ENTER] key.

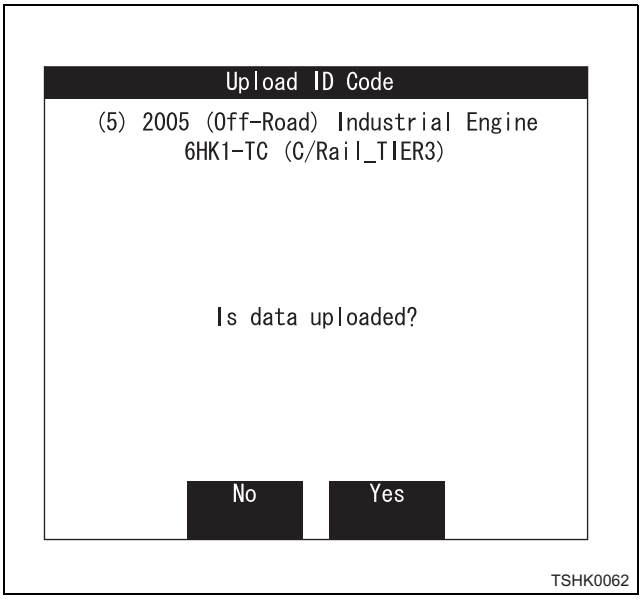


Step 11-1

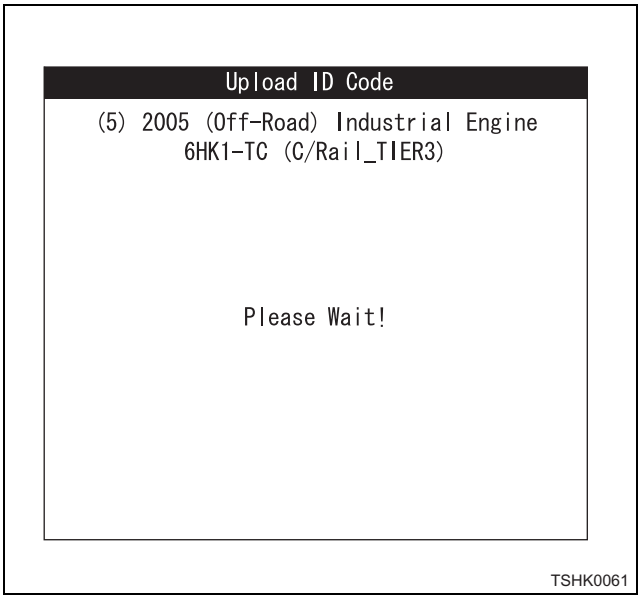


Step 12

- Pressing the softkey [Yes] updates the ID codes of No. 1 cylinder – No. 6 cylinder stored in the ECM, to the Tech2.
  Pressing the softkey [No] returns you to Step 11 without uploading the data.
- Upload is the function to transfer the registered ID code from ECM to Tech2 to store the data in it.

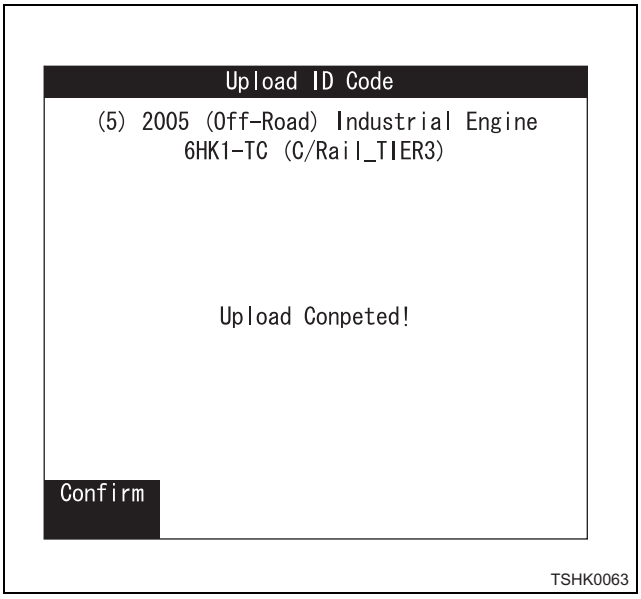


Step 12-1



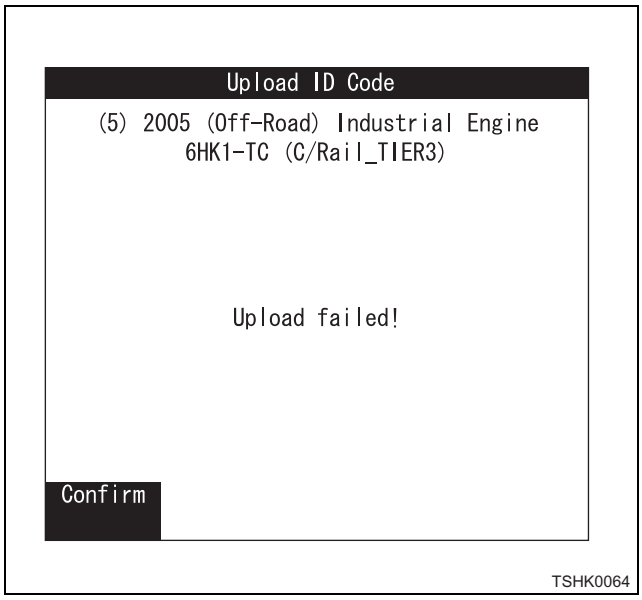
Step 12-2

- When the ID code registered in the ECM corresponds to that uploaded to the Tech2, the following message will appear.
  Upload is completed.
  Pressing the softkey [Confirm] returns you to Step 11.



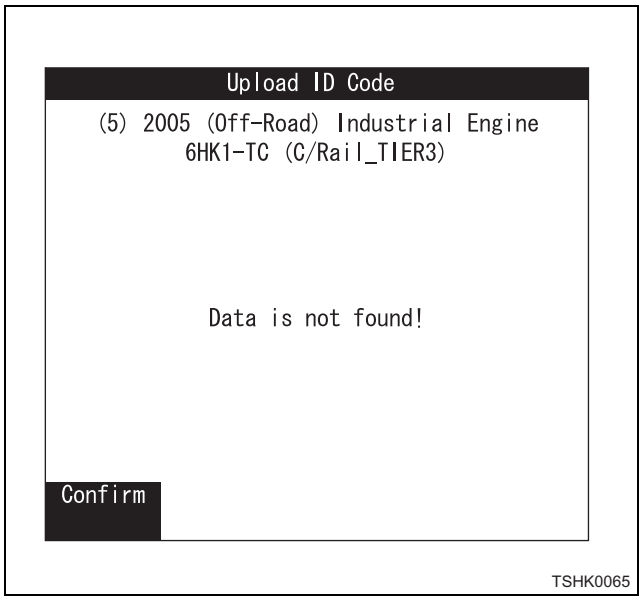
Step 12-3

- When the ID code registered in the ECM does not correspond to that uploaded to the Tech2, the following message will appear.
  Pressing the softkey [Confirm] returns you to Step 11.
- In this case, the uploaded ID code will be erased. Therefore, perform upload again. The message shown in Step 12-4 will appear.



Step 12-4

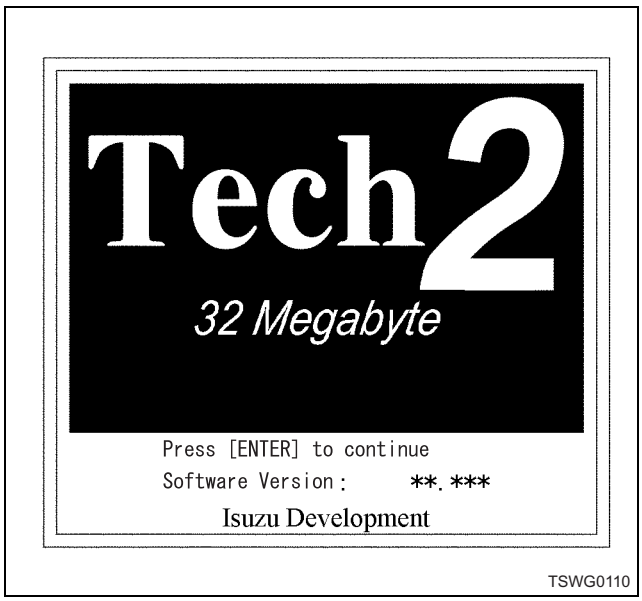
- Pressing the softkey [Confirm] returns you to Step 11.



ID code download (ECM)

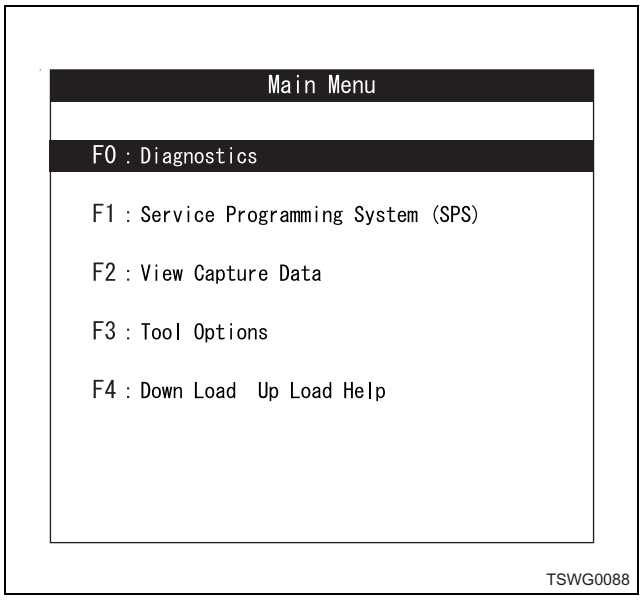
Step 1

- Press the [ENTER] key.



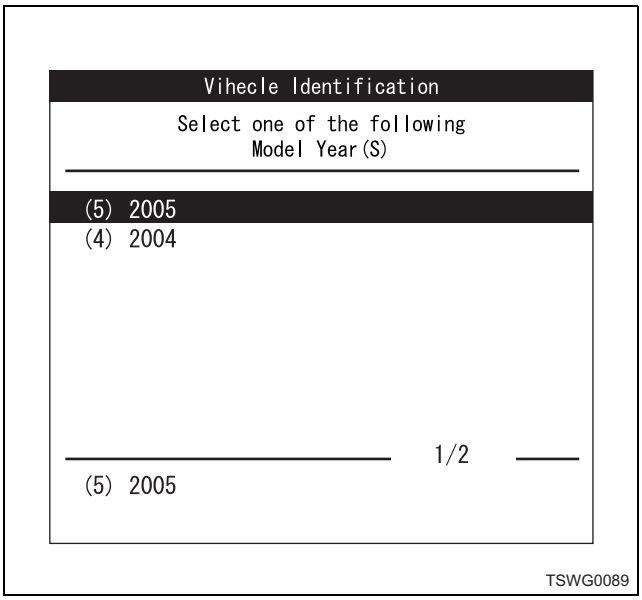
Step 2

- Choose the menu F0: Diagnostics with ▲, ▼ (up/down) keys or F0 (function) key, and press the [ENTER] key.



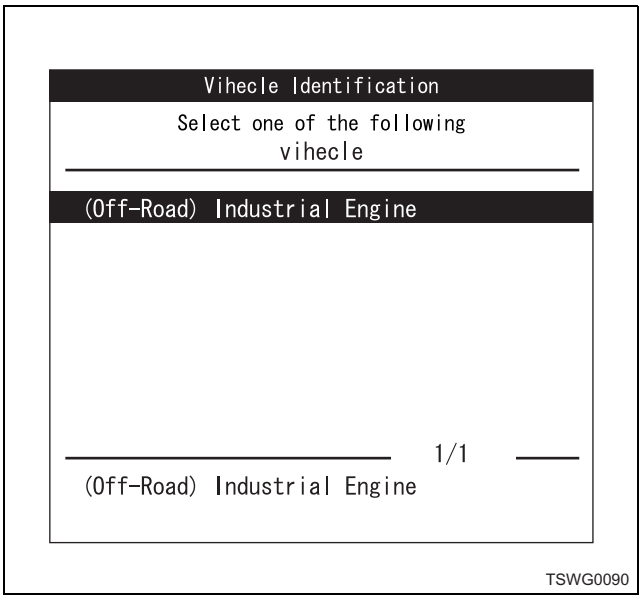
Step 3

- Choose the menu (5) 2005 with ▲, ▼ (up/down) keys, and press the [ENTER] key.



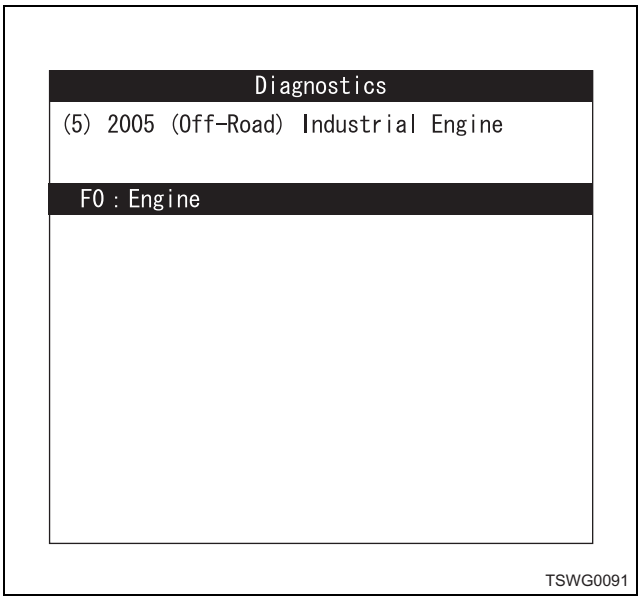
Step 4

- Choose the menu (Off-Road) Industrial Engine with ▲, ▼ (up/down) keys, and press the [ENTER] key.



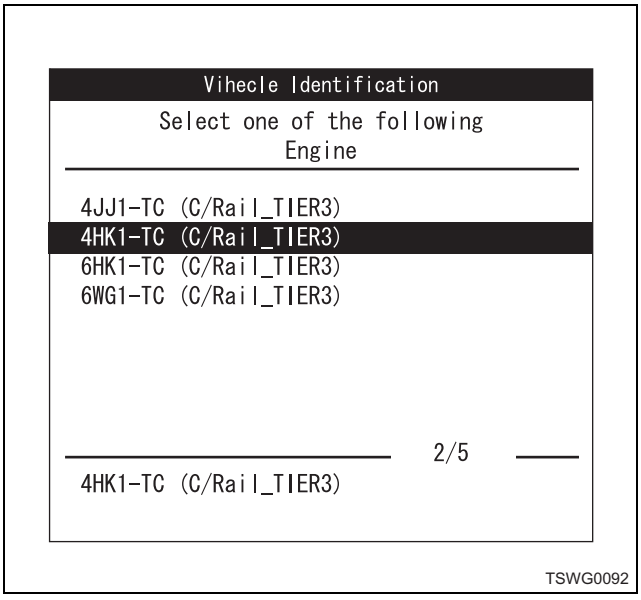
Step 5

- Choose F0: Engine in Menu with ▲, ▼ (up/down) keys or F0 (function), and press the [ENTER] key.



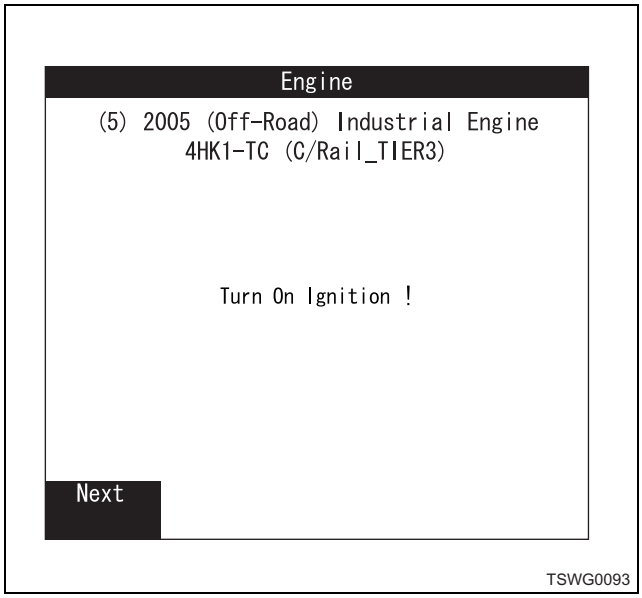
Step 6

- Choose 6HK1-TC (C/Rail_TIER3) with ▲, ▼ (up/down) keys, and press the [ENTER] key.

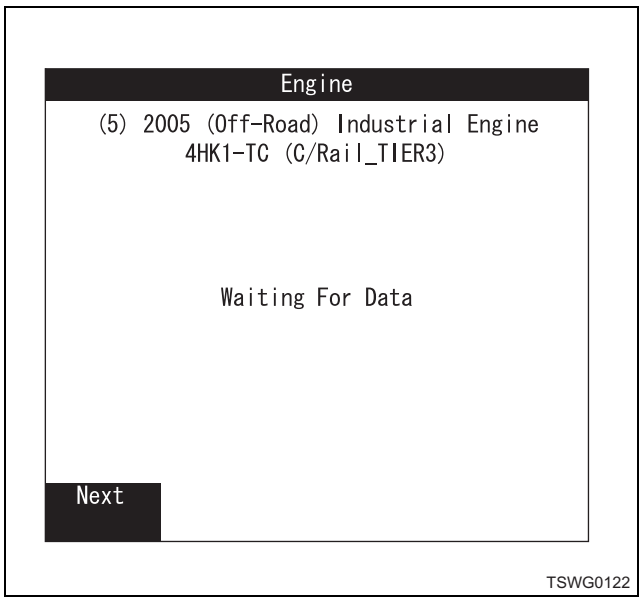


Step 7

- Press the softkey [Next].
- The ignition is ON at this time.

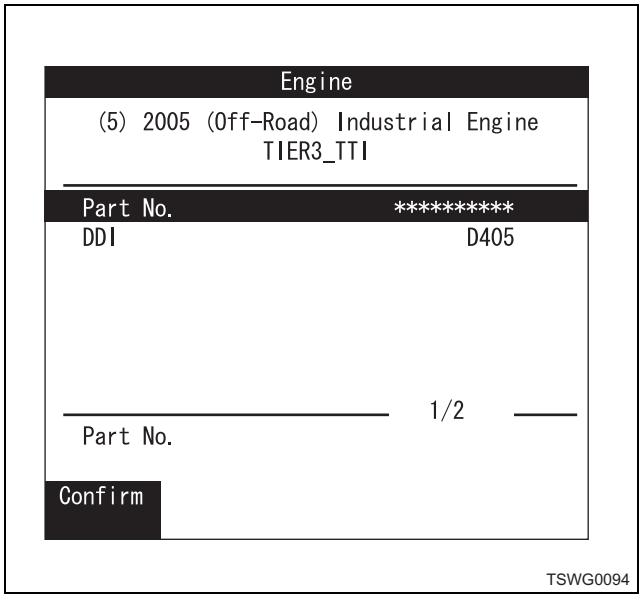


Step 7-1



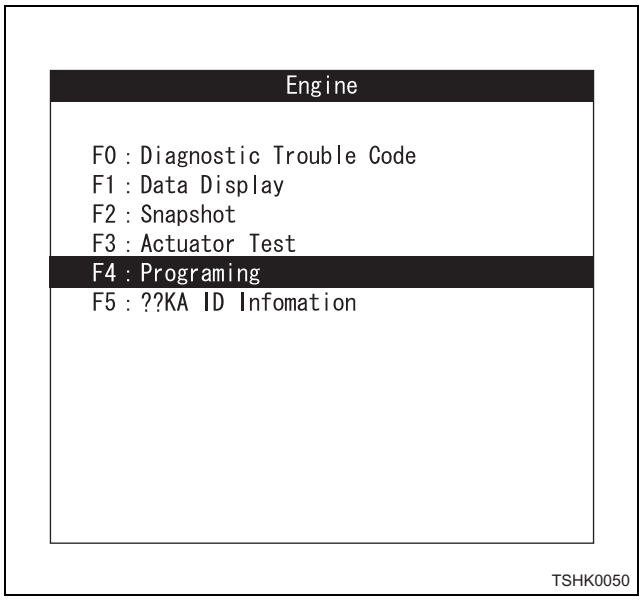
Step 8

- Press the softkey [Confirm].
- This displays the ECU ID information.



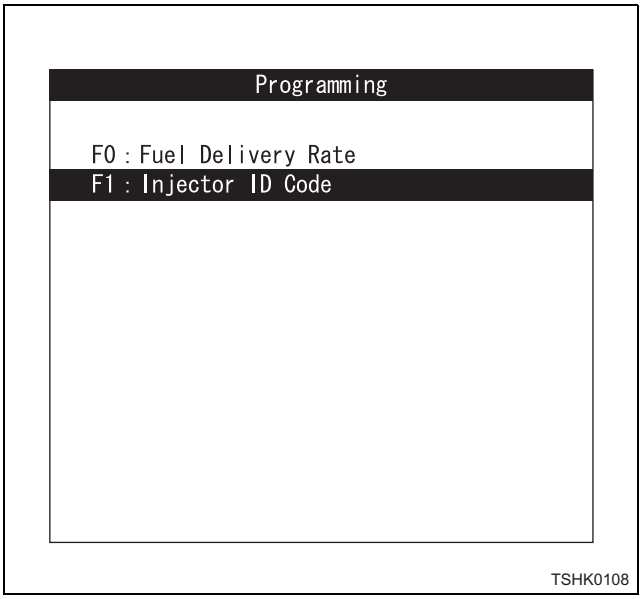
Step 9

- Choose the menu F4: Programming with ▲, ▼ (up/down) keys or F4 (function) key, and press the [ENTER] key.



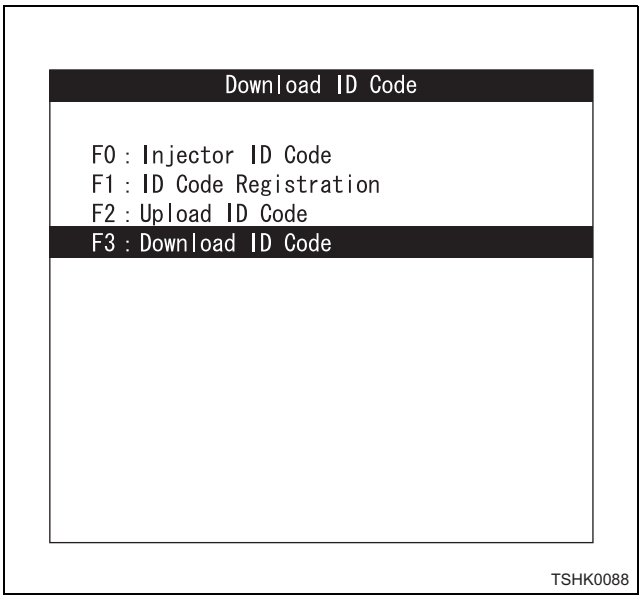
Step 10

- Choose the menu F1: Injector ID Code with ▲, ▼ (up/down) keys or F1 (function) key, and press the [ENTER] key.

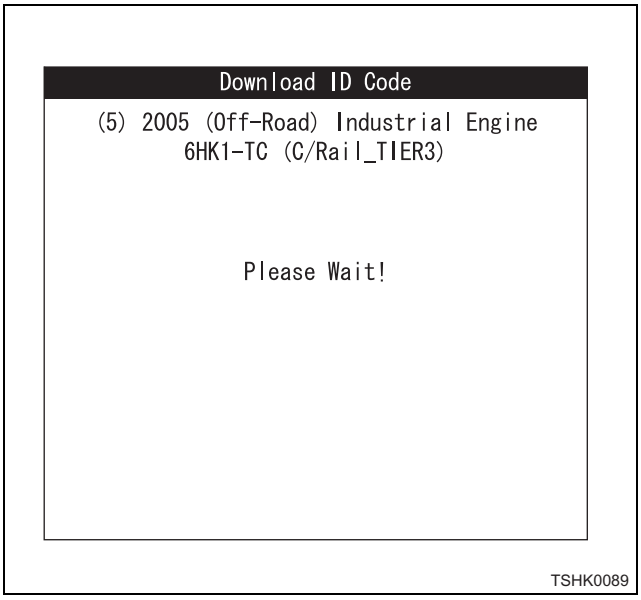


Step 11

- Choose the menu F3: Download ID Code (ECM) with ▲, ▼ (up/down) keys or F2 (function) key, and then press the [ENTER] key.

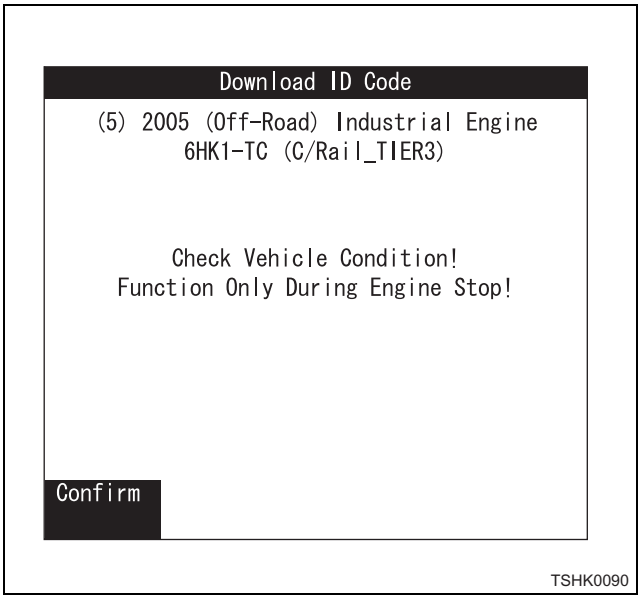


Step 11-1



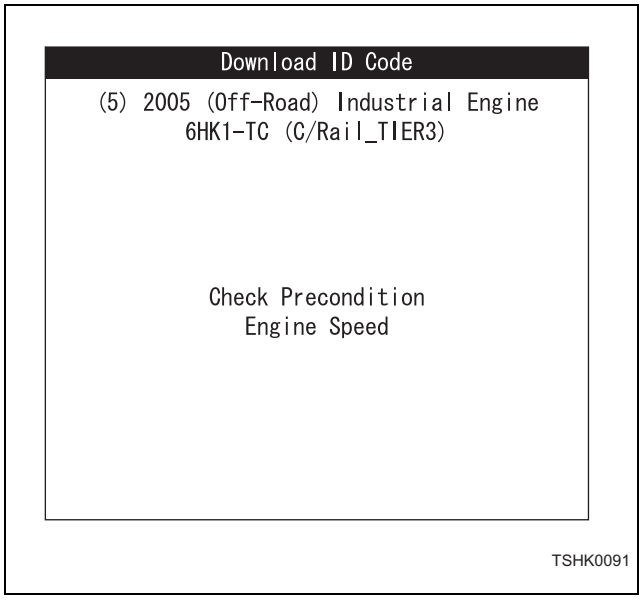
Step 12

- Press the softkey [Confirm].
- As an example, the vehicle will be checked whether it is in the condition (engine stopped) that the ECM requests during ID registration.



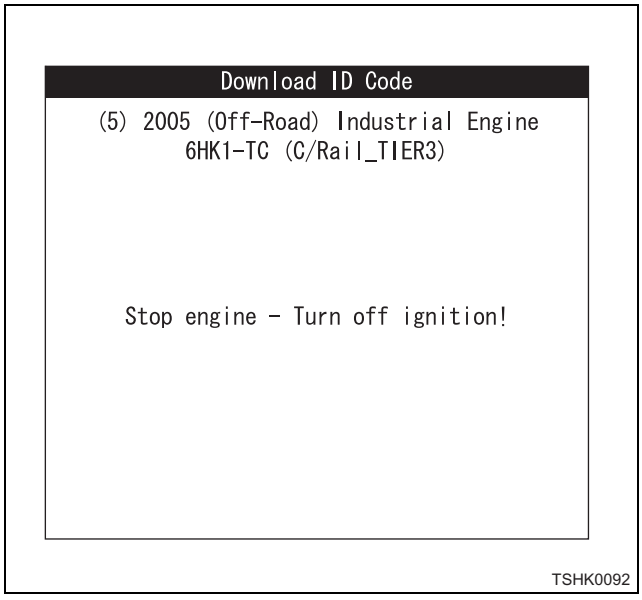
Step 12-1

- The following display appears while checking if the engine speed is 0 rpm.
  When the engine speed is 0 rpm, it will take you to Step 13.



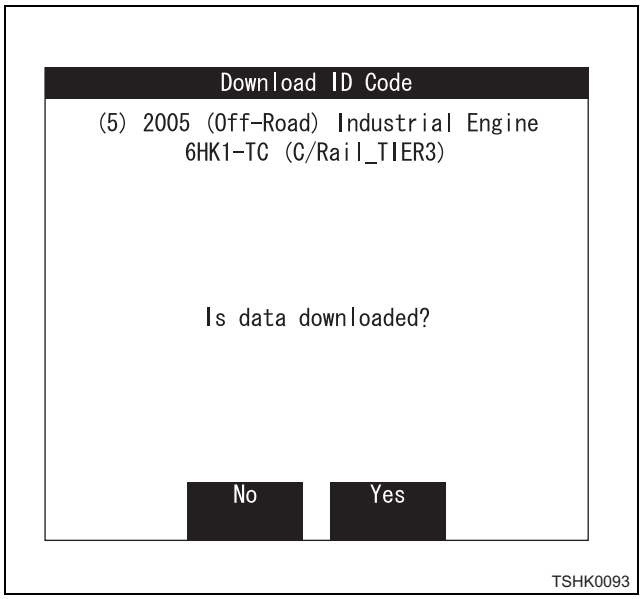
Step 12-2

- The following display appears when the engine speed is not 0 rpm.
  In this case, stop the engine as instructed in the message, and try again from Step 1.



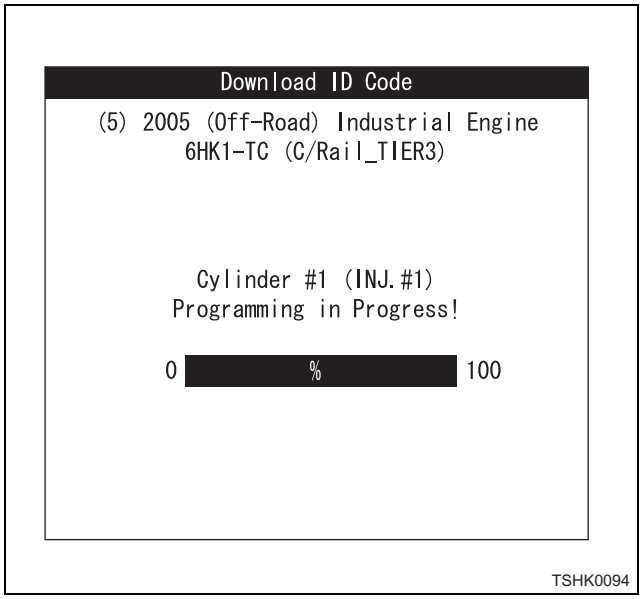
Step 13

- Pressing the softkey [Yes] downloads (registers) the uploaded ID codes (Cyl.1-Cyl.6) to the ECM. Pressing the softkey [No] returns you to Step 11.
- Download is the function to register (write) the stored (uploaded) ID codes (No. 1 cylinder – No. 6 cylinder) in the Tech2 to the ECM. ID is registered from No. 1 cylinder to No. 6 cylinder in the order.



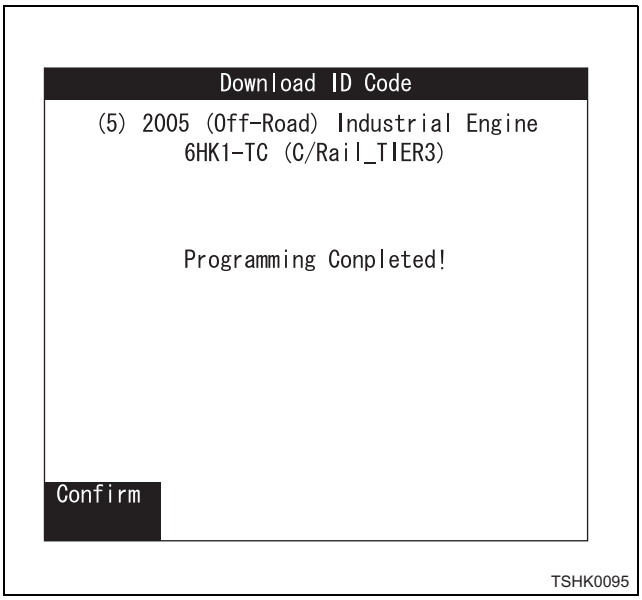
Step 13-1

- Registration is started from No. 1 cylinder (INJ.#1) to No. 2 cylinder (INJ.#5) and the ECM in the order.
  The status for registration (writing) of data to ECM will appear.
  The message in the screen changes in the order of No. 1 cylinder (INJ.#1) and No. 2 cylinder (INJ.#5).
  When it is abnormal, the registration repeats 3 times.



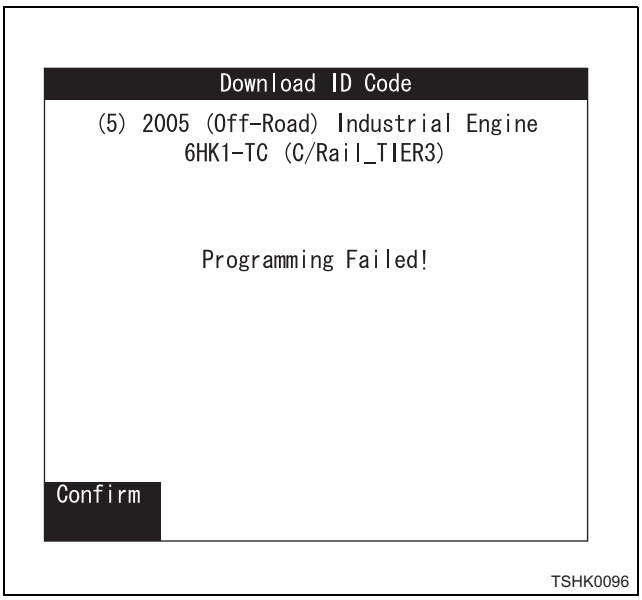
Step 13-2

- When the downloaded ID code corresponds to that registered (written) in the ECM, the following message will appear. Download (registration) is completed.
  Pressing the softkey [Confirm] returns you to Step 11.



Step 13-3

- When the downloaded ID code does not correspond to that registered (written) in the ECM, the following message will appear.
  Pressing the softkey [Confirm] returns you to Step 11.



TIS2000

TIS 2000 installation procedure

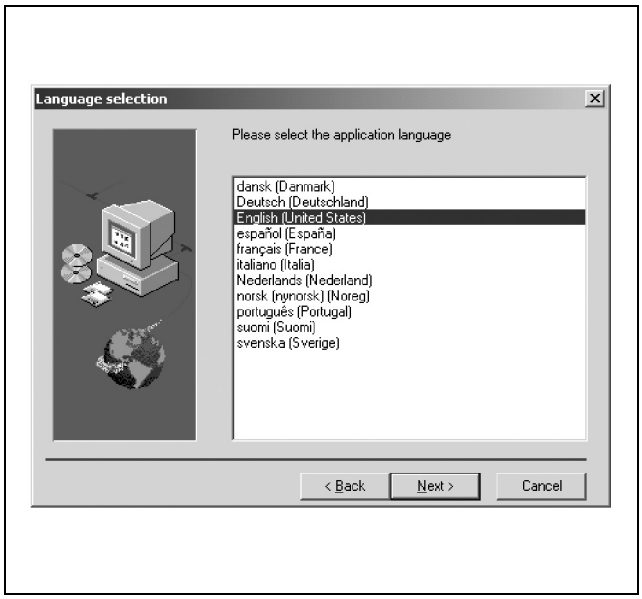
(Time needed: 30 minutes)

System Requirements	1. PC OS: Windows 95 or higher CD-ROM drive 2. Distribution CD-ROM	Free hard disk space: 150MB or more RS-232C connector

- Internet Explorer version 4.01 or later is required to use TIS 2000.
- Internet Explorer version 4.01 (English version) will be installed automatically if prior to version 4.01 is installed, or it is not installed on your PC.

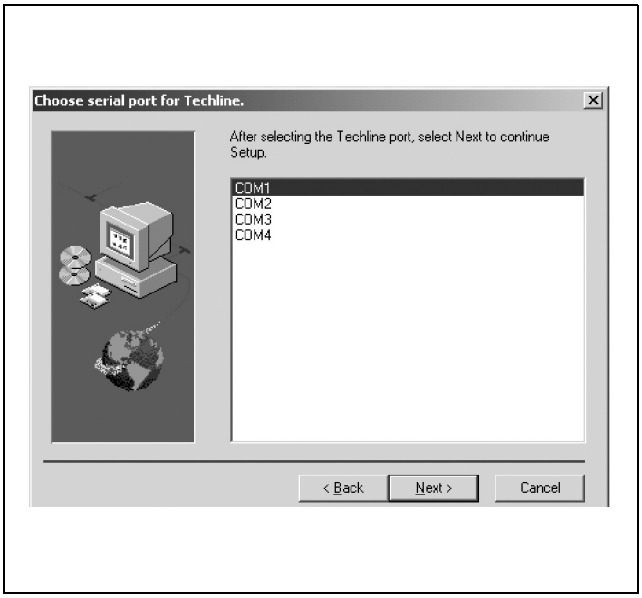
1. Turn on the power to start-up Windows.
2. Insert the distribution CD-ROM into the CD-ROM drive of PC.
3. The following screen will appear in approx. 10 seconds.
   - If the screen does not appear, open the file of “Autorun.Exe” in the CD-ROM.
4. When the “Welcome” screen appears, click the “Next”.

5. Select the language to be used, and click the “Next”.

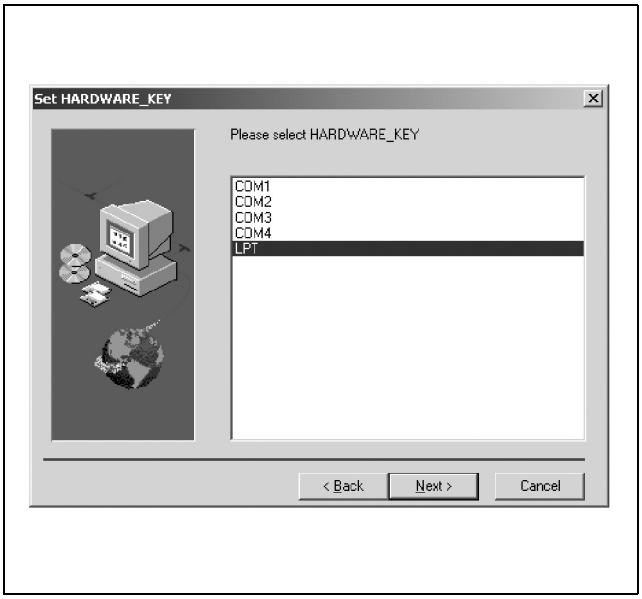


6. Usually, leave the “Destination Directory” as it is, and click the “Next”.

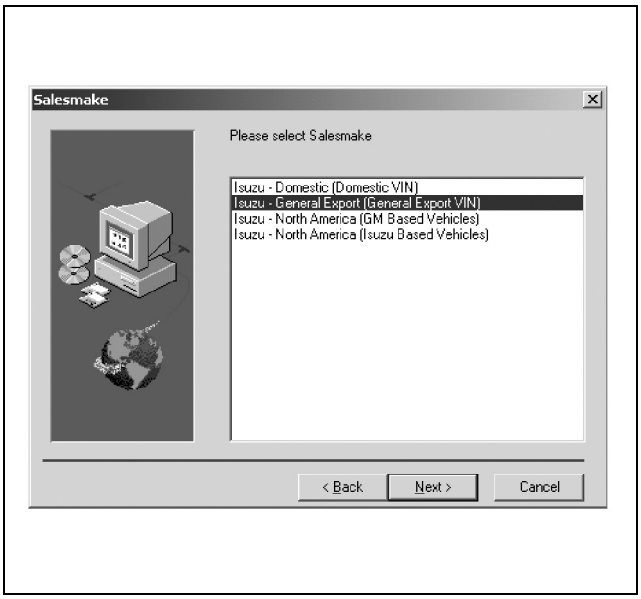
7. On the “Choose serial port for Techline.” screen, select the serial port of the serial cable to connect Tech2 to the PC.
   Normally, select the “COM1” and click the “Next”.



8. On the “Set HARDWARE_KEY” screen, select the “LPT” and click the “Next”.



9. On the “Salesmake” screen, select either the “Isuzu - General Export (General Export VIN)” or “Isuzu US (US VIN)” and click the “Next”.
   [Example (UBS 6VE1 engine)]
   General VIN: JACUBS26GY7100001
   US VIN: JACDJ58X3Y7100001



10. On the “TIS 2000 installation mode”, select the “Standalone” and click the “Next”.

11. On the “TIS 2000 Update” screen, click the “OK”.

12. If the installation is completed, the “TIS 2000” icon is displayed on the desktop.
    - An error message may appear when restarting the PC at Step 12.
      In this case, install the following file in the CD-ROM.
      ~cosids¥Diag¥Mdac_type.ex_
      Copy this file on your hard disk, change the file name into “mdac.exe”, and double-click “mdac.exe”.
      After this work, install TIS 2000 again.

How to display snapshot

Fig. 1: “Application Selection” screen

This describes about how to transmit and display Tech2 snapshot data using the “Snapshot Upload” function of TIS 2000. Snapshot data can be displayed with the “Snapshot Upload” function of TIS 2000. The trouble symptom can be checked by analyzing snapshot data with various methods. To display the snapshot data, perform the following 3 steps;

1. Record the snapshot data in Tech2.
2. Transmit the snapshot data to PC.
   After recording the snapshot data to Tech2, transmit the data from Tech2 to PC in the following procedure.
   a. Startup TIS 2000.
   b. Choose the “Snapshot Upload/Display” on the initial screen of TIS 2000.
   c. Either select the “Upload from diagnostic tool” or click the appropriate icon on the tool bar.
   d. Select the “Tech2” and transmit the saved snapshot data.
   e. Select the “Transmitted Snapshot”.
   f. When the snapshot data transmission is completed, the data parameter list will appear on the screen.

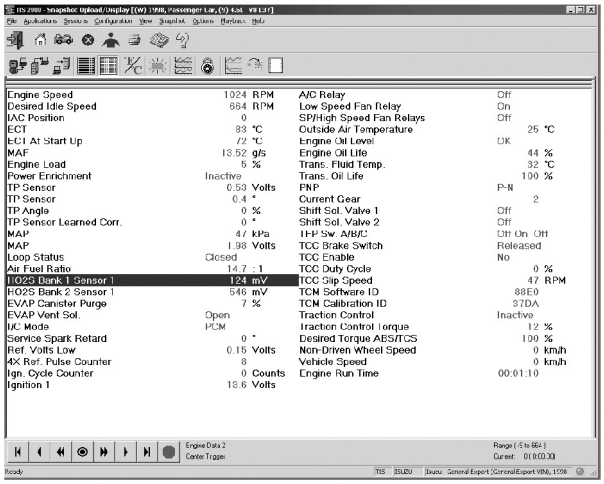


Fig. 2: Data display (sample)

3. Display snapshot data with the “Snapshot Upload” function of TIS 2000.
   Snapshot data are stored in the PC hard disk or floppy disk, and they can be displayed any time. Stored snapshot can be displayed in the following procedure.
   a. Startup TIS 2000.
   b. Choose the “Snapshot Upload/Display” on the initial screen of TIS 2000.
   c. Either select the “Open file” or click the relevant icon on the tool bar.
   d. Select the “Transmitted Snapshot”.
   e. When the snapshot data opens, the data parameter list will appear on the screen.

Icons to be displayed

The following icons are used for data display.

	Transmits the snapshot from Tech to PC.
	Uploads the snapshot data from the floppy disk or hard disk.
	Saves the snapshot data on the floppy disk or hard disk.
	Displays the data parameters in one frame.
	Displays the data parameters in two frames.
	Changes the unit.
	Displays the data parameters in graph and list (up to 3 parameter items for graph display).
	Selects/cancels the parameter.
	Displays the data parameters in graph only (up to 6 parameter items).
	Prints (data parameter print out).

Snapshot data replay

Snapshot data can be replayed using icons in the bottom of the screen.

	1st record: Displays the first record of the snapshot.
	Previous record: Displays the previous record of that currently displayed.
	Regeneration in reverse direction: Replays in the reverse direction.
	Trigger of record: Moves to the trigger position and displays the snapshot.
	Regeneration in forward direction: Replays all the snapshot in the forward direction.
	Next record: Displays the next record of that currently displayed.
	Last record: Displays the last record of the snapshot.
	End of regeneration: Clicking the snapshot ends the replay of record.

Graph display

Numeric value and graph (up to 3 for graph display):

1. Clicking the icon for graph display opens “Graph Parameters” window.
2. Click the 1st graph icon in the top of the window, and select one parameter from the list in the bottom of the window. Selected parameter is shown next to the graph icon. Graph category can be selected with the field located in the right hand of the parameter.
3. Perform the same procedure for the 2nd and 3rd graph icons.
4. After selecting all the parameters (up to 3 parameters) you wish to view, click the [OK] button.

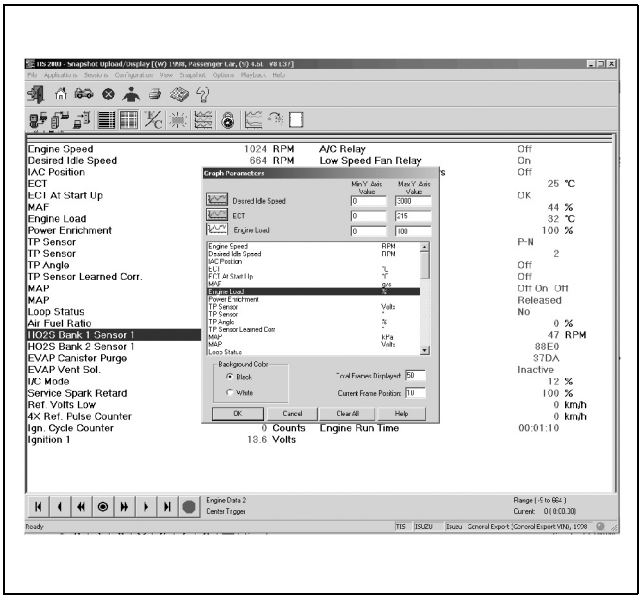


Fig. 4: “Graph Parameters” window (sample)

5. Selected parameter is shown in graph form, in the right hand of the data parameter on the screen.

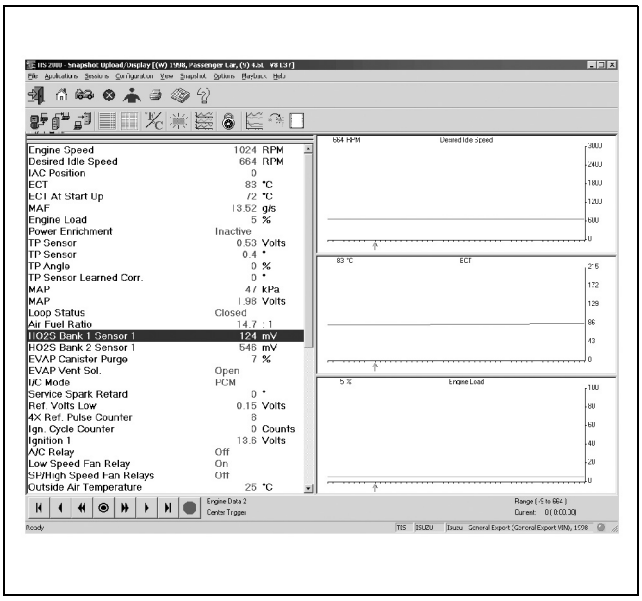


Fig. 5: Graph display screen (sample)

6. Graph display can be moved with the navigation icons.
7. If you wish to view the graph with different parameter, drag the parameter in the list onto the display screen. (Click the parameter and move the cursor with the mouse button pressed, and then release the mouse button in the display screen.) New parameter appears to replace the old one. To view the graph in full screen, move the cursor to the top of the screen, and click the screen where the cursor changes to magnifying glass icon. This will display the graph in full screen.

Graph display in one frame (up to 6 for graph display)

1. Click the Six graph icon. This opens “Graph Parameters” window.

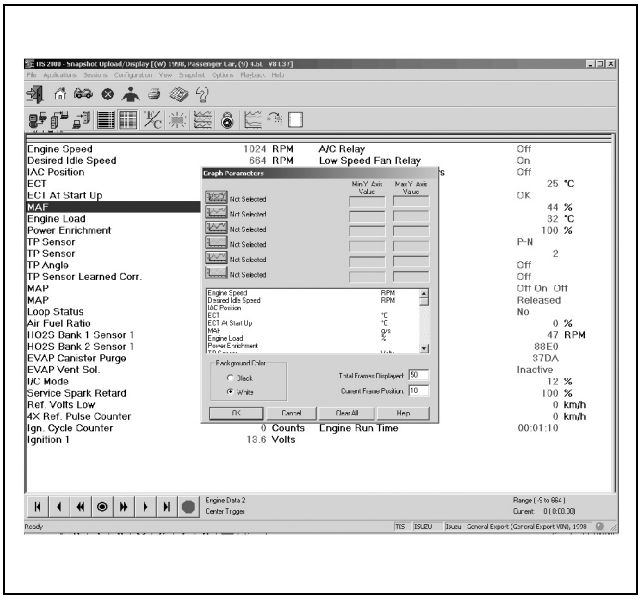


Fig. 6: “Graph Parameters” window

2. Click the graph icon, and select the parameter you wish to view from the list. Change the graph category as required.
3. Perform the same procedure for the 2nd to 6th parameters with graph icons.
4. Clicking the [OK] button displays the graph.

5. In this case, parameters are available only in graph form. All the parameters are shown in one frame.

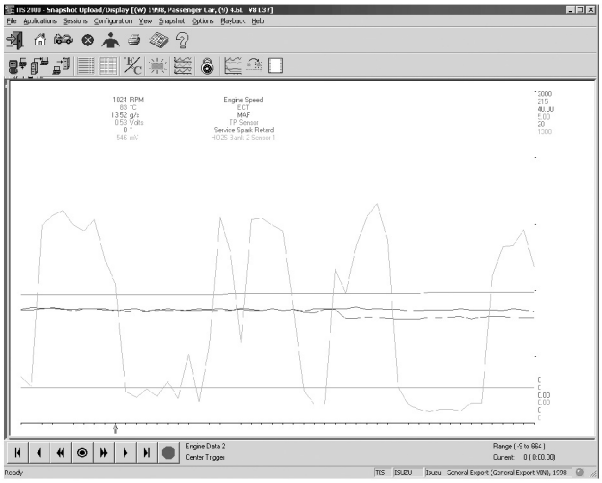


Fig. 7: Graph display screen (sample)

6. Graph display screen can be moved with the navigation icons.

Selects/cancels the parameter.

Use of parameter select/cancel function allows to select particular parameter from the list and to display it instantly. First click the parameter you want to view to mark it, then click “Select/Cancel Parameters”. Selected parameter is shown in the upper area of [Lock line] on the top of the data list. Other parameters can be added in the same procedure. Use of parameter [LOCK] allows the parameters to be displayed continuously for data comparison. To eliminate a parameter from the list, click the parameter you want to eliminate to put mark on it, then click “Select/Cancel Parameters”. When quitting the [Snapshot Display] application, “Do you want to save this file?” dialog box appears automatically. The file can be saved on the PC hard disk or floppy disk.

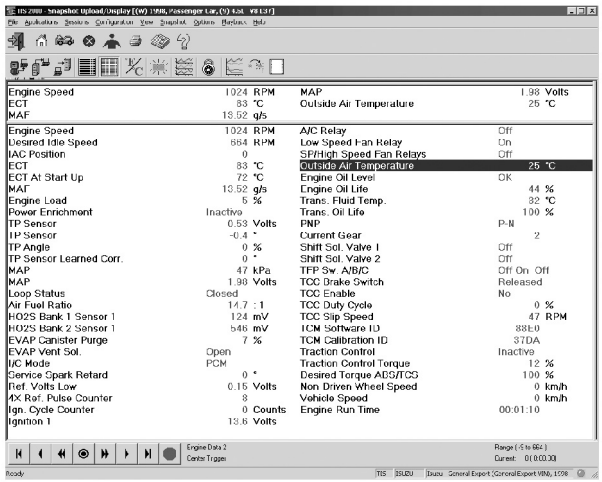


Fig. 8: Parameter selection

Directory to save data

Normally data is saved in “C:¥Program Files¥cosids¥DATA¥ SNAPSHOT¥” folder. This directory is different if you changed installation directory when installing the application. Two sample files (“10000000SUR”, “10000001.SUR”) are already stored when installing the application.

TIS 2000 navigation

TIS 2000 application can be operated using the following icons.

	[TIS2000 end]: Quits all TIS 2000 applications to return to the Windows desktop screen.
	[Select page]: Returns to the initial page of TIS 2000 without quitting applications currently used. The applications currently used run in the background.
	[Vehicle data]: Starts [Vehicle data display] function. This displays all the vehicle information.
	[Executed applications end]: Quits the application currently used to return to the initial page of TIS 2000.
	[Session]: Allows to register and display user information.
	[Print]: Prints the screen.
	[Help]: Launches the integrated help function of TIS 2000.

Software download

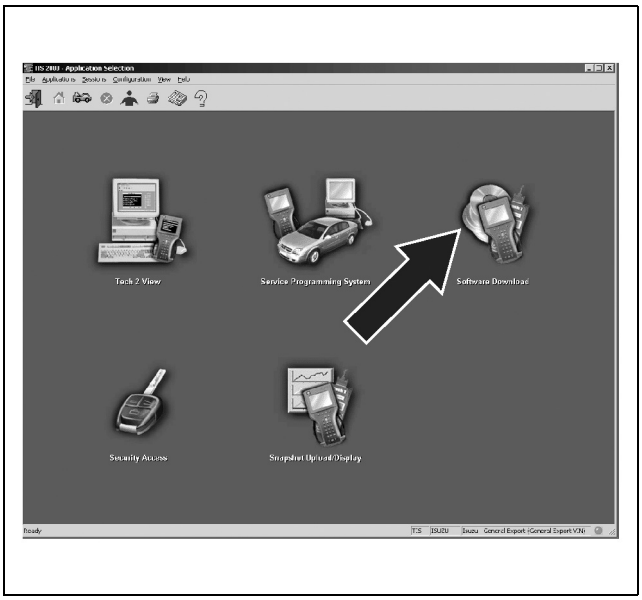


Fig. 1: “Application Selection” screen

Herein, it is described about how to update Tech2 software using “Software Download” function of TIS 2000.

Updating Tech2 (Software download)

Update the Tech2 software to the latest version using “Software Download” function of TIS 2000.
Tech2 software is updated on a regular basis to correspond to the change in vehicle specifications and diagnostic methods. Updated information includes new vehicle system, amendment of diagnostic method, update from previous version, addition of new diagnostic method, etc.
There are two kinds of download mode; “Standard” and “Custom”.
Standard update (This mode is not used this time. Select the “Custom”.)
Description: Standard mode can be used only when the old version of software is installed and registered in the database. Only “Custom” mode can be used in any other cases. In “Standard” mode, the latest version will be installed for the language and the model (manufacturer) which are set in Tech2 at that time.

The procedure of Tech2 “Standard” update, using “Software Download” function, is as follows.

1. Connect the Tech2 to the PC with RS232C cable.
2. Connect the standard accessory power cable to Tech2.
3. Startup TIS 2000 on the PC.
4. Choose “Software Download” icon on the initial screen of TIS 2000.
5. Check the selected location on the “Select Diagnostic Tool for Download” screen, and go to next.

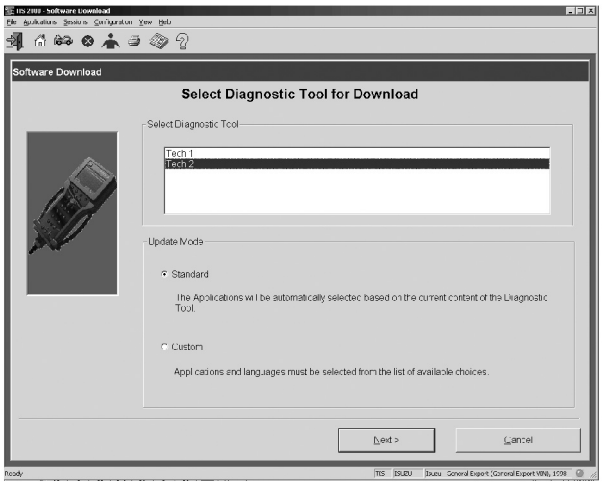


Fig. 2: Selection of diagnostic tool to be updated and update mode

- Check the selected location and click “Next”. An explanation appears as “Reading information of diagnostic tool”.

6. The “Software Update Confirmation” screen appears on the PC.
   Also, the stored contents of the current Tech2 and stored data after transmitting diagnostic software appear on the screen. Click the [Continue] to go on.
7. “Transmitting Software” appears on the screen to tell the transmission status.
8. When the transmission is completed, “Transmission is completed” will appear on the screen. Click the [Close] button to quit the application. The latest software has been transmitted to the diagnostic tool.

Custom update

Use custom update when installing the old version software, software other than Isuzu software or software with different language, or when the database cannot identify the software version being installed. After selecting “Custom” on the selection screen (See Fig. 2), perform the following procedure.

1. The “Application Selection” appears on the screen. The list of the software release No. appears on the left hand of the screen. Clicking [+] mark allows to view the list of available language of each release.

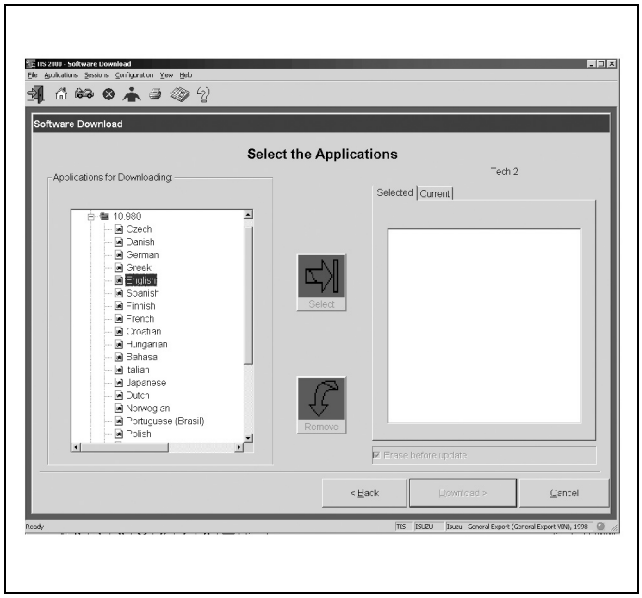


Fig. 3: Selection of application for “Custom” mode

2. Either double-click the relevant software version and language, or click the “Select” button to select. The software you have chosen appears on the right hand of the screen. To compare current software with selected software of the diagnostic tool, click the mark on the right hand of the screen.
3. Clicking the [Download] button starts updating.
4. “Transmitting Software” appears on the screen to tell the transmission status.
5. When the transmission completes, “Transmission is completed” will appear on the screen. Click the [Close] button to quit the application. The selected software has been transmitted to the diagnostic tool.

TIS 2000 navigation

TIS 2000 application can be operated using the following icons.

	[TIS2000 end]: Quits all TIS 2000 applications to return to the Windows desktop screen.
	[Select page]: Returns to the initial page of TIS 2000 without quitting applications currently used. The applications currently used run in the background.
	[Vehicle data]: Starts [Vehicle data display] function. This displays all the vehicle information.
	[Executed applications end]: Quits the application currently used to return to the initial page of TIS 2000.
	[Session]: Allows to register and display user information.
	[Print]: Prints the screen.
	[Help]: Launches the integrated help function of TIS 2000.

Snapshot transmission method using e-mail

- Upload the snapshot data from Tech2 to hard disk on PC.
- Open the file in the following procedure to download data.
- Double-click “C: ¥Program Files”.
- Double-click the cosids folder.
- Double-click the DATA folder.
- Double-click the SNAPSHOT folder to download.
- Make sure that the file extension is “.sur”, and attach the file to e-mail.