



MDARS

(Mazda Diagnostic and Repair Software)

Users Guide

Version 5.2

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Mazda Motor Corporation
Diagnostic Service Planning group

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Fundamental Instructions

General Information

■ Warnings, Cautions and Notes:

Several Warnings, Cautions, and Notes are mentioned throughout this user's guide.

WARNING

A Warning indicates a situation in which serious injury or death could result if the warning is ignored.
A Warning indicates a situation in which violation of laws and regulations could result if the warning is ignored.

CAUTION

A Caution indicates a situation in which damage to the vehicle or parts could result if the caution is ignored.

NOTE

A Note provides added information that will help you to complete a particular procedure.

This user guide contains "Warnings" and "Cautions" applicable to risks not normally encountered by technicians. All "Warnings" and "Cautions" should be followed to reduce the risk of injury and the risk that improper service or repair may damage the vehicle or render it unsafe. It is also important to understand that the "Warnings" and "Cautions" are not a complete list. It is impossible to warn of all the hazardous consequences that might result from failure to follow the procedures.

■ Disclaimers:

- Mazda Motor Corporation shall have no liability for any direct or indirect damage resulting from failure or use of this software.
- Mazda Motor Corporation is not responsible for any problems that may arise from the use of this software.
- The cause of such problems may include, but is not limited to, insufficient service-related training, use of improper tools, use of replacement parts of lesser quality than genuine Mazda replacement parts, or improper use of this software.

■ Service Cautions

- Follow service instructions and tips mentioned in a Workshop Manual.
- Confirm and follow "HIGH VOLTAGE SERVICE CAUTIONS" in a Workshop Manual when working on a high voltage system or servicing high voltage parts, otherwise, mistaken operation could cause a serious accident such as electrical shock and result in serious injury or, in the worst case, death. Additionally, when handling an electric vehicle, work must be performed by persons who have acquired qualifications specified by laws and regulations.

WARNING

- Do not disconnect the communication cable or interrupt the application during MDARS processes. Vehicle data required by regulation cannot be collected in some cases, which may violate the regulation.

■ Copyright, Intellectual Property Rights:

All MDARS users shall comply with terms and conditions stipulated by BOSCH AUTOMOTIVE SERVICE SOLUTIONS LTD. for use of MDARS. BOSCH AUTOMOTIVE SERVICE SOLUTIONS LTD. reserves and retains any and all property rights and intellectual property rights including copyright to MDARS.

■ Managing User IDs and Passwords:

User IDs and passwords should be managed appropriately. If a third party uses MDARS with your password, you may be held liable.

- Never give your password to anyone else, including your co-workers and supervisors.
- **DO NOT** write down your ID or password on a memo and stick it on your monitor. If it is necessary to make a note in a notebook as a reminder, make sure that it cannot be viewed by someone other than yourself.
- **DO NOT** have multiple users using the same user ID.
- **DO NOT** take photos of the MDARS or MGSS login screen and share them with anyone.
- **DO NOT** make a list of user IDs and passwords.
- **DO NOT** use a character string that can be easily guessed by others as a password based on

- commonly used words, personal hobbies, personal information such as birthdays etc.
- **DO NOT** use regular and predictable character strings such as employee numbers as passwords.

MDARS Outline

■ What is MDARS?

Mazda Diagnostic and Repair Software (MDARS) is a cloud-based diagnostic and repair software that dramatically improves servicing efficiency and convenience. MDARS also provides cyber security.

■ System Components:

Communication hardware (VCM-II, DLC cable, USB cable) and PCs used with IDS can be used for MDARS. **DST can be used for only MDARS.** In addition, there are no MDARS-specific requirements for the Internet environment.

	DST and accessories	VCM-II and accessories				Recommended PC	Internet connection
			SD Card	DLC Cable	USB Cable		
MDARS	X	X	X	X	X	X	X
IDS	-						

X: Common use

CAUTION:

- The SD card **for VCM-II** is formatted for VCM-II specially.
- **DO NOT** use commercially available micro-SD cards.
- **DO NOT** remove the SD card from the VCM-II while using the VCM-II.

■ Software Components and Updates:

MDARS consists of basic software and diagnostic data/applications.

	Purpose	Storage Location	Manual Software Update	Frequency of Software Updates	Software Version
Basic software	Basic operation control	PC	<u>Required</u> The system will notify users when MDARS is running	<u>Not scheduled</u> Mazda will inform users of software updates on M-MDS	The software version is visible on the initial MDARS screen
Diagnostic data/applications	Diagnosis or repair, fixing vehicle quality problem	Cloud	<u>Not required</u>	Software is continually updated	The software version is not visible on MDARS

■ Usage in Offline Environment:

In recent years, the demand for improving cyber security performance for on-board systems has been increased internationally, and diagnostic equipment that communicates with on-board systems is required to have robust security performance. To meet this requirement, MDARS is designed with an Internet connection in mind. The diagnostic repair function cannot be used without an Internet connection.

MDARS Requirements

■ Required Steps:

To use MDARS, registration of the VCM-II / **DST** to be used on MDARS and the user is required.

To operate the Vehicle History function, the registration details need to be changed if any of the following events occur:

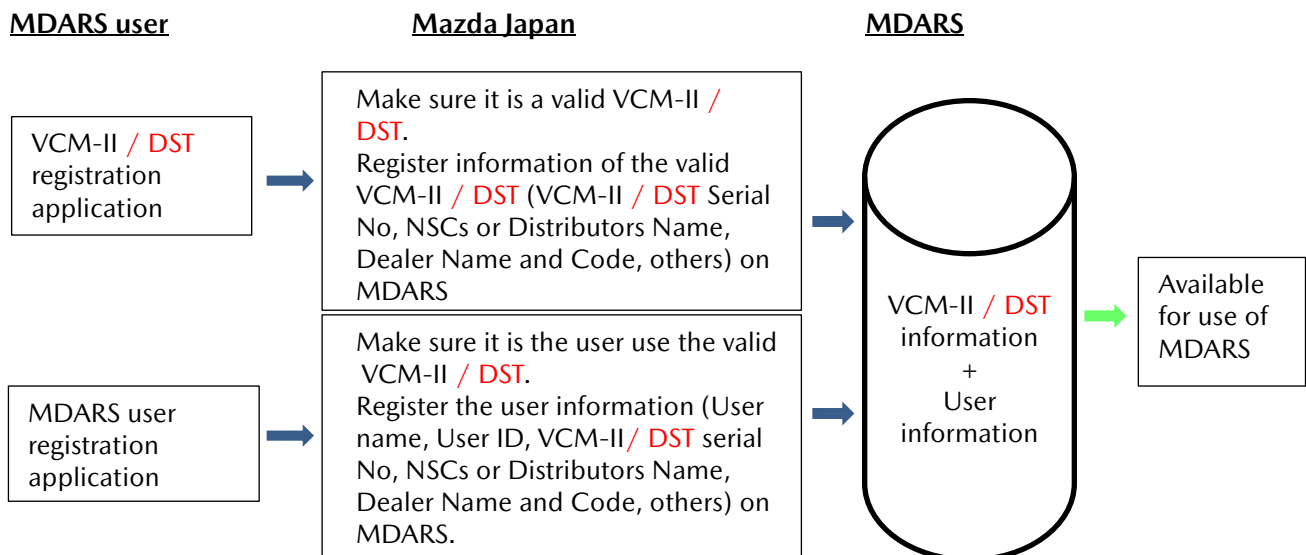
- Transfer VCM-II / **DST** to another dealer
- Discontinue using VCM-II / **DST** (due to damage, theft or loss, or any other reasons)
- Transfer MDARS user to another dealer
- Discontinue using MDARS

Necessary Steps Assumed use-case	VCM-II / DST			MDARS User		
	Register	Transfer	Discontinue	Register	Transfer	Discontinue
Purchase new VCM-II / DST	X			X ^{Note1 *1}		
Add VCM-II / DST on M-MDS support program ^{Note1}	X					
Transfer VCM-II / DST to other dealer ^{Note1}		X				
Discontinue using VCM-II / DST ^{Note1}			X			
Register the user on MDARS ^{Note1}				X		
Transfer MDARS user to other dealer ^{Note1}					X	
Discontinue using MDARS ^{Note1}						X

^{Note1}: Mazda Japan accepts any application request at anytime, however, it will take approx. one month to implement your application request on MDARS.

*1: It is not required to register the user on MDARS if there are registered MDARS users at the dealer purchased new VCM-II / **DST**.

NOTE: Shown below is the process from the application request to the availability of MDARS (Except for North America and Europe):



■ **VCM-II / DST Management (Register, Add, Transfer or Discontinue):**

- **Register a new VCM-II / DST:**
- **Add VCM-II / DST on M-MDS support program:**
- **Transfer a VCM-II / DST to another dealer:**
- **Discontinue using VCM-II / DST:**
To register above in VCM-II / DST, e-mail the "M-MDS Support Program Application form and VCI Serial Number List" to Mazda Vehicle Service Planning Dept.
E-mail: diag-tool-order@mazda.co.jp

■ **MDARS User Management (Register, Change, Delete)**

MGSS User

- **Register the user on MDARS / Transfer MDARS user to other dealer / Discontinue use of MDARS**
Follow the instruction provided by your NSCs or Distributors.

Non-MGSS User

- **Register the user on MDARS**
 - As to Mazda authorized NSCs/distributors, fill in all the necessary information on "MDARS USER ID APPLICATION FORM" and e-mail it to Mazda **Vehicle Service Planning Dept.**
E-mail: diag-tool-order@mazda.co.jp
 - Other than Mazda authorized NSCs/distributors, follow the instruction provided by each NSCs or Distributors.
- **Transfer MDARS user to other dealer / Discontinue use of MDARS**
 - As to Mazda authorized NSCs/distributors, update "MDARS USER ID APPLICATION FORM" submitted for MDARS user registration and e-mail it to Mazda **Vehicle Service Planning Dept.**
E-mail: diag-tool-order@mazda.co.jp
 - Other than Mazda authorized NSCs/distributors, follow the instruction provided by each NSCs or Distributors.

PC Requirements

■ Minimum Hardware Requirements:

Processor	Intel Core i5 Processor (8th generation or later) AMD Ryzen 5 Mobile Processor (4000 series or later)
Memory (RAM)	4 GB and greater
Storage	Free disk space 2.5GB or greater
Other Hardware	USB terminal Type-A (For connect to VCM-II / DST) Internet connection (Wi-Fi etc.)

■ Software Requirements:

Operating Systems	Microsoft Windows 10 Pro (64Bit only) Microsoft Windows 11 Pro
Browser	Microsoft Edge Google Chrome
Other Software	Any software that blocks installation/use of M-MDS software must be disabled or uninstalled. (e.g., Internet security software etc.)

CAUTION: Only supported on a PC with pre-installed Windows 10 / 11.

A PC with updated from other version to Windows 10 / 11 is not supported.

NOTE:

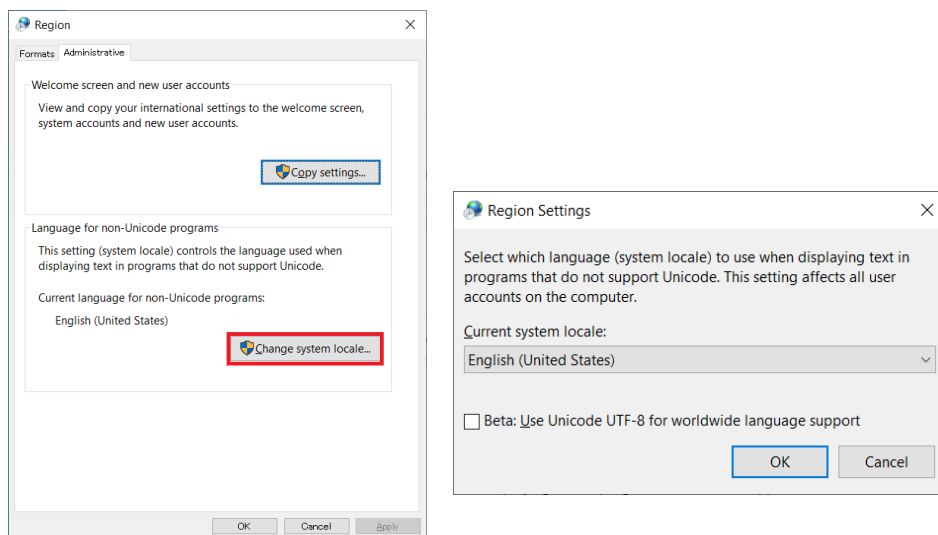
- Any PCs which does not meet the requirements are not supported.
- For PCs that have been in operation for more than 5 years, replace the PC at an appropriate time (such as expiration or renewal of lease contract) to ensure stable operation of the diagnostics.

PC Settings

■ Configuring Windows System Locale:

Select in order: **“Control Panel > Region > Administrative > [Change system locale]”** and select the country/region where you are using MDARS.

CAUTION: MDARS stores diagnostic data in the cloud with country/region information. If this setting is incorrect, the diagnostic history cannot be viewed, or the software writing results cannot be registered on the server, which may cause problems such as infringement of the laws and regulations.



■ Configuring Power Options:

- To avoid unexpected communication loss with a VCM-II / **DST** or vehicle, make sure to configure your PC not to automatically enter power saving (sleep or hibernation) modes.
- Make sure to connect an external power supply, power pack or external battery immediately after low battery warning/alarm appears. Shut the PC down if you do not have access to an external power supply.

Installing MDARS

■ PC for MDARS Installation:

Install MDARS onto a PC where IDS is already installed **when MDARS is used with VCM-II.**

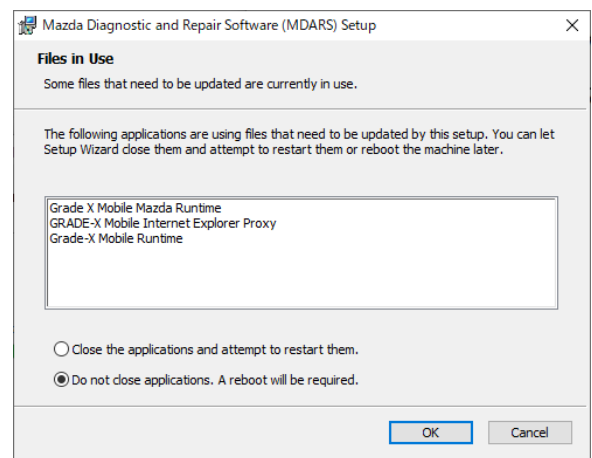
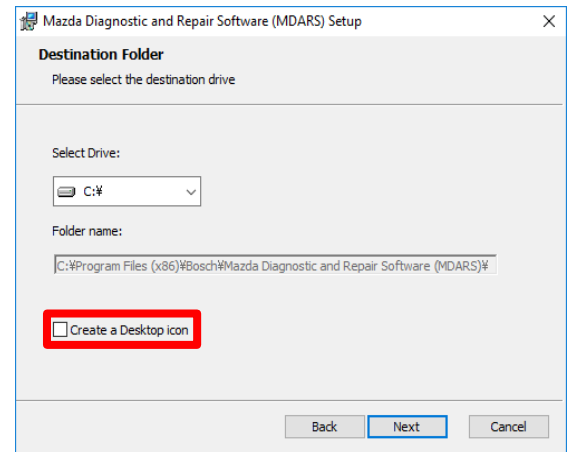
■ Notes During Installation Process:

- The **"Create a desktop icon"** is displayed during the initial installation or reinstallation. This is for users who do not have MGSS installed to start MDARS. If you are an MGSS user, **DO NOT** check the box. If you are a Non-MGSS user, check the box.

NOTE:

MGSS users cannot run MDARS by using a short-cut icon on the desktop. Always run MDARS through MGSS.

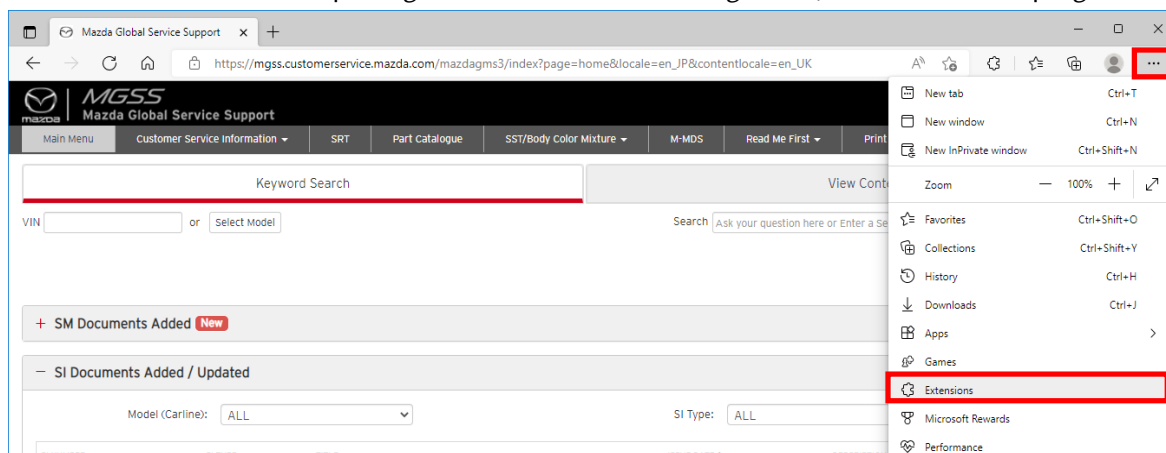
- If a pop-up window like the one shown below appears during the installation process, choose **"Do not close applications. A reboot will be required."** Reboot the PC after the installation is completed.



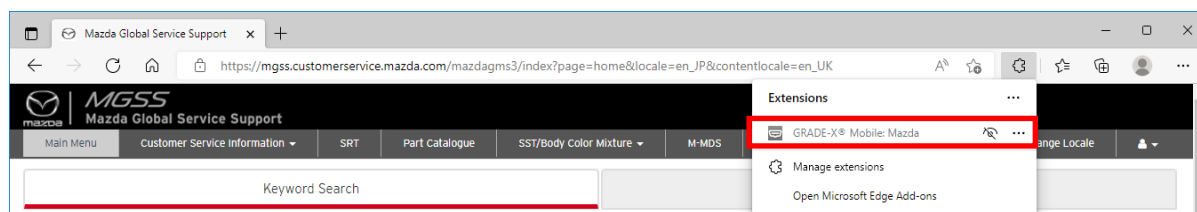
■ **Confirming Extension for Microsoft Edge (MGSS Users):**
Confirm that the extension is enabled after the installation.

NOTE: Trouble might occur if the extension is not enabled. Check if it is enabled by following the steps below.

1. Select **"Extensions"** after opening the browser and selecting **"⋮"** (the icon at the top right corner).

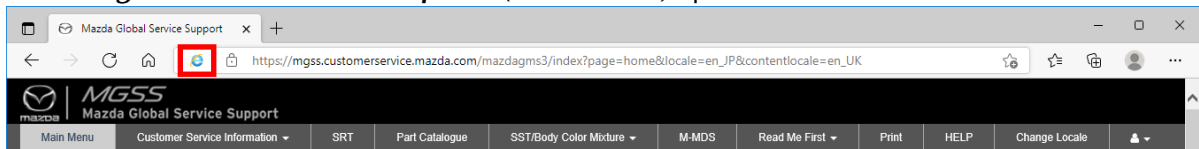


2. If **"GRADE-X® Mobile: Mazda"** is displayed, the extension is enabled.
If **"GRADE-X® Mobile: Mazda"** is not displayed, close all browsers, and return to step 1 to confirm the extension again.

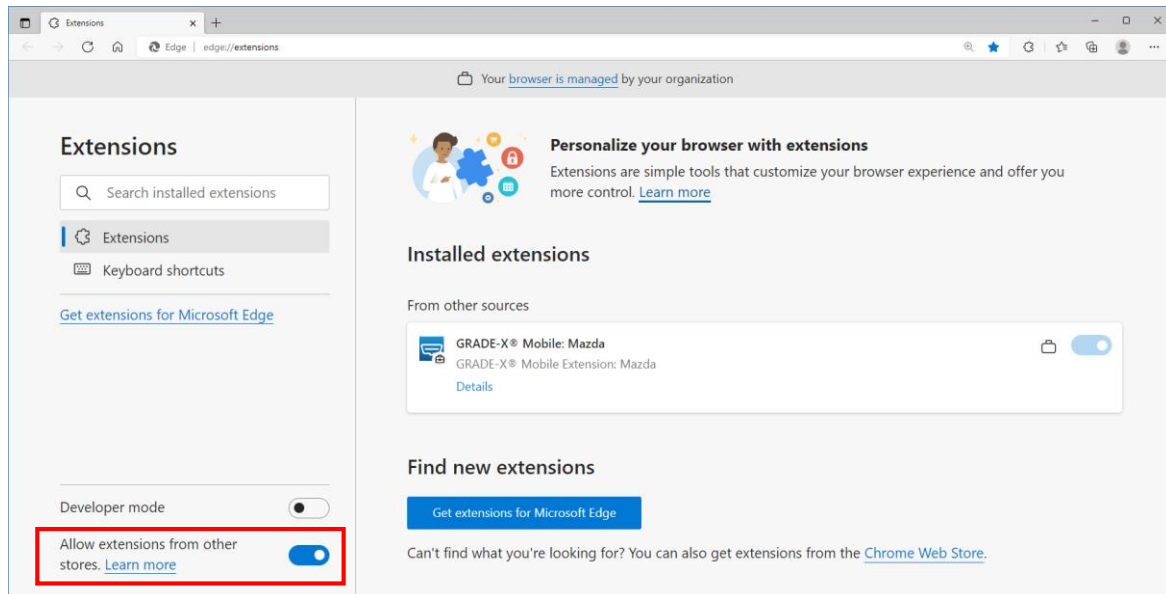


NOTE:

- If MGSS is opened by the Internet Explorer mode (the Internet Explorer icon is displayed), follow the **"Enabling Add-On for Internet Explorer (MGSS Users)"** procedure instead.

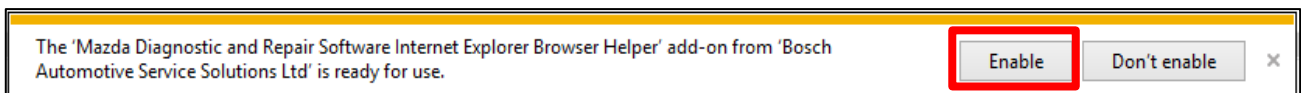


- If you use MDARS without logging into a domain, allow extensions from other stores by the following steps below.
 - (1) Select **"Extensions"** after opening the browser and selecting **"..."** (the icon at the top right corner).
 - (2) Select **"Manage extensions"** in Extensions.
 - (3) Set **"Allow extensions from other store"** to **"On (Allow)"**.



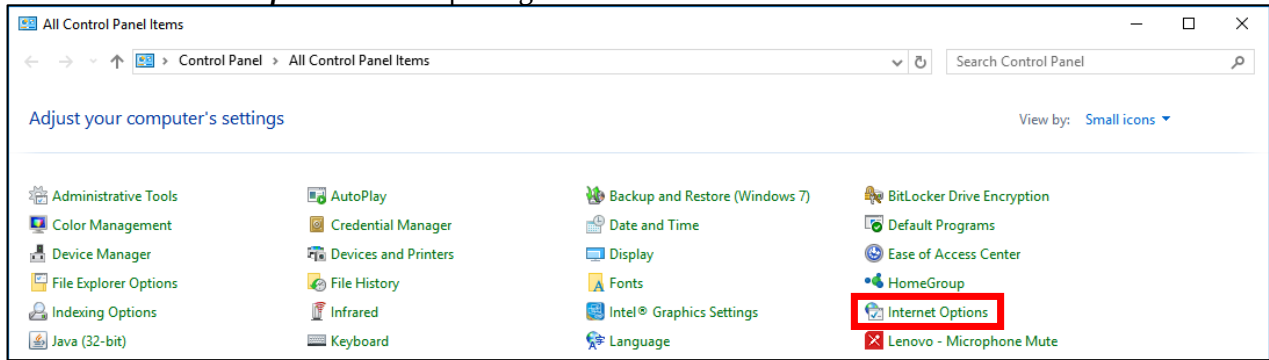
■ Enabling Add-On for Internet Explorer (MGSS Users):

Select **"Enable"** after the installation.

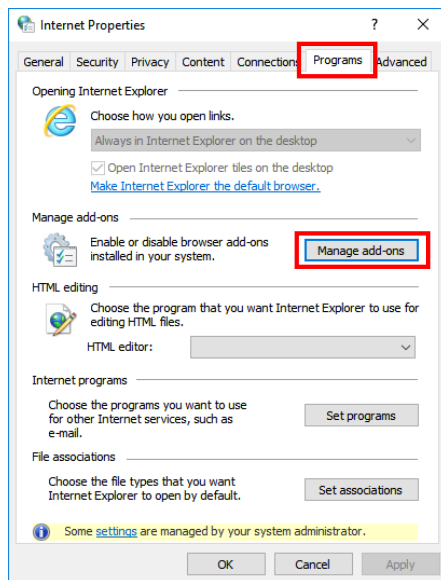


NOTE: Trouble might occur if the add-on is not enabled. Check if it is enabled by following the steps below.

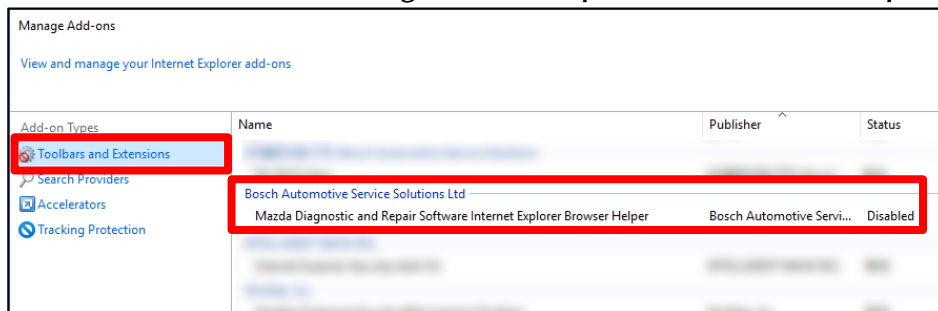
1. Select **"Internet Options"** after opening **"Control Panel"**.



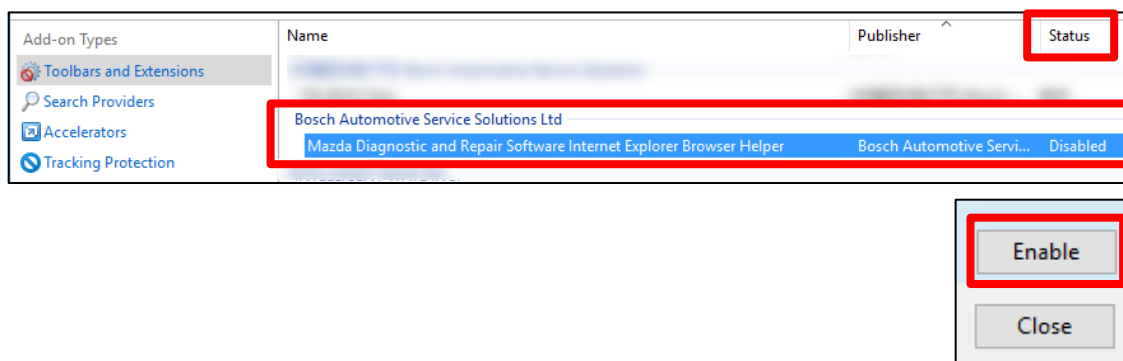
2. Click **"Manage add-ons"** in **"Programs"**.



3. Click **"Toolbars and Extensions"**.
Check the status of **"Mazda Diagnostic and Repair Software Internet Explorer Browser Helper"**.



4. If the status is **"Enabled"**, the add-on is enabled.
If the status is **"Disabled"**, click **"Mazda Diagnostic and Repair Software Internet Explorer Browser Helper"**, then click **"Enable"** at the bottom of the screen, click **"Close"**.



5. Close all browsers including web browsers other than MGSS to enable the add-on.

Running MDARS

■ Multiple Login Rules:

Multiple Login is a state that MDARS is used on multiple PCs at the same time with the same user ID, and MDARS and **"Read VIN/DTC(s)"** on MGSS are simultaneously used with the same ID.

- **DO NOT use MDARS on multiple PCs in parallel with the same user ID.**※1※2

Example: Start MDARS on PC-B after closing MDARS on PC-A as shown below.

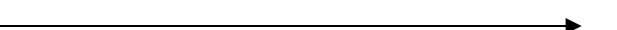
※1: It doesn't matter whether there is an actual operation or VCM-II / DST connected. It is the state that MDARS is displayed on the PC.

※2: To select **"Launch M-MDS"** icon at the top of the MGSS main menu.

	Timeline			
User ID "ABC"	PC-A	Using MDARS	Closing MDARS	Not Using MDARS
	PC-B	Not Using MDARS		Using MDARS

- **For MGSS Users Only:**

When using MDARS※1, do not use **"Read VIN/DTC(s)"** on a different PC. **Close MDARS** on PC-A first as shown below.

	Timeline			
User ID "ABC"	PC-A	Using MDARS	Closing MDARS	Not Using MDARS
	PC-B	Not Using MDARS		Read VIN/DTC

- **For MGSS Users Only:**

When using MDARS, do not use **"Read VIN/DTC(s)"** on the same PC. Use **"Read VIN/DTC(s)"** after closing MDARS.

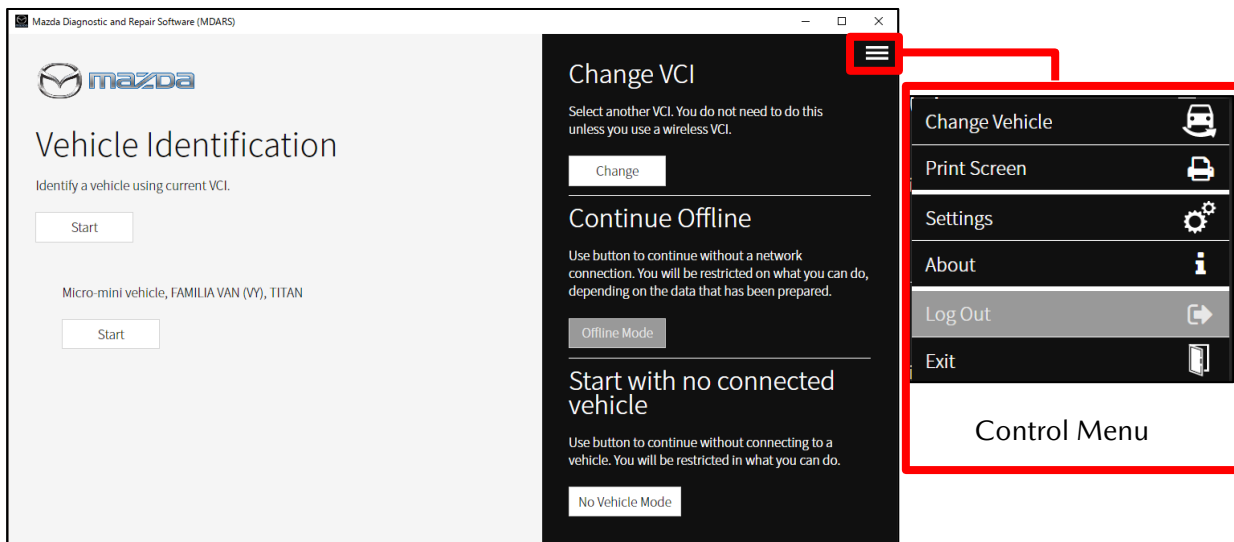
	Timeline					
User ID "ABC"	PC-A	Using MDARS	Closing MDARS	Read VIN/DTC	Closing VIN/DTC	Using MDARS

CAUTION: If the cautions above are not followed, MDARS may suddenly stop during diagnosis or repair. It may be difficult to determine when the operation stopped. There have been reports of cases where operation stops during the rewriting of internal ECU data, such as software updates (reprogramming) or configuration after ECU replacement.

■ Running MDARS (MGSS Users):

- MGSS users cannot run MDARS using a short-cut icon (or favorite) on the desktop.
- Always run MDARS by using the **"Launch M-MDS"** icon on the top of the MGSS main menu.

Initial Screen after Running MDARS



■ Control Menu:

Function	Usage
Change Vehicle	To finish the current diagnostic function in use and return to the initial screen.
Print Screen	To print an MDARS screen
Settings	To change the language or measurement units. The settings are saved for each user and applied for the next login. Details are shown in <i>“Operational Instructions”</i>
About	To show a version of MDARS basic software
Log Out	Not available
Exit	To finish and exit MDARS

■ Change VCI:

Select a VCI (VCM-II / **DST**) which is connected to MDARS (when a different VCM-II / **DST** was previously connected the last time or a generic VCI is connected). MDARS will not work if this selection is not correct.

NOTE: Proper MDARS operation is not guaranteed when used with generic VCIs.

■ Continue Offline:

This menu selection is not available as described in the ***“Outline of MDARS”*** section.

■ Start With No Connected Vehicle:

View what work was previously done for a specific vehicle by entering the VIN.

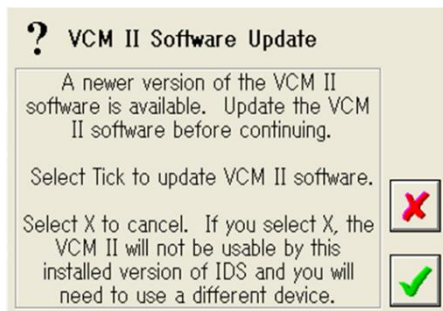
Configuring VCM-II Software

■ Purchasing New or Additional VCM-II OR When Receiving VCM-II after Repair:

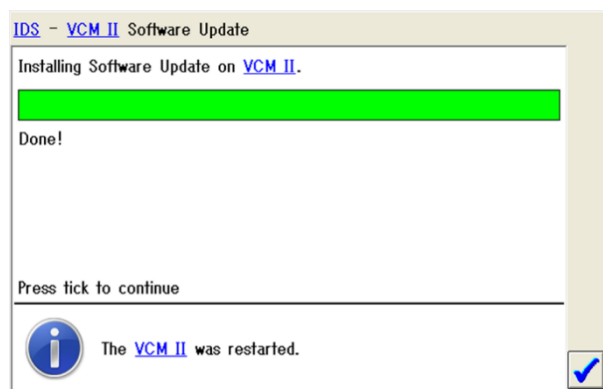
When receiving a new, additional or repaired VCM-II or connecting VCM-II to the new PC, it is necessary to install/update it to the latest software version using the following steps below. If the software is not installed/updated, MDARS will not be able to communicate with the ECU.

NOTE:

- The dedicated VCI Manager will update the VCM-II software. VCI Manager is installed on your PC with IDS.
 - VCM-II firmware is also used for IDS and ECU communication.
1. Update the PC with the latest version of IDS. If IDS is not the latest version, install it or update it now.
 2. Run IDS, then connect the VCM-II to the PC.
 3. The pop-up window (shown below) will appear when the VCI Manager recognizes the VCM-II software update.
 4. Click the green **"Tick"** button and follow the instructions shown on the screen.



5. After the software update is done, press the blue **"Tick"** button.



6. Make sure the VCM-II icon is displayed in the lower right corner of the IDS screen.



Configuring DST Software

When receiving a new, additional or repaired DST, it is necessary to install/update it to the latest software version according to the following steps below. If the software is not installed/updated, MDARS will not be able to communicate with the ECU.

1. Download a Setup manual and an Installer

Access Denso Corporation web site "<https://www.ds3.denso.co.jp/SIHAN/DN-DST-010/en/index.html>" and move on to "Download" tab.

Download the "Setup manual" from "Manual Section and the installer named "DST-010_InstallerXXX.exe" from "For users of Mazda's genuine diagnostic software" section.

DST-010 series 日本語 English

[Top](#) | [Product specifications](#) | [Download](#) | [List of accessories & optional parts](#) | [FAQ](#)

Download

Manual

Name	Latest date of update	Remarks
Setup manual	DEC. 28.2023	
ToolBox User's Guide	DEC. 28.2023	Applicable to DST-010 software Ver.1.0.4 or higher.
Applicable law and regulations	Dec. 19, 2022	

Installer

+ For users of Toyota's genuine diagnostic software

+ For users of Daihatsu's genuine diagnostic software

- For users of Mazda's genuine diagnostic software

Name	Latest date of update	Package Ver.	Firmware Ver. Driver Ver.	Model number
DST-010 software Ver.2.1.0	Dec. 28, 2023	2.1.0	2.0.1.5 2.0.1.2	DN-DST-010-B

+ For users of Hino's genuine diagnostic software

2. Install according to the Setup manual

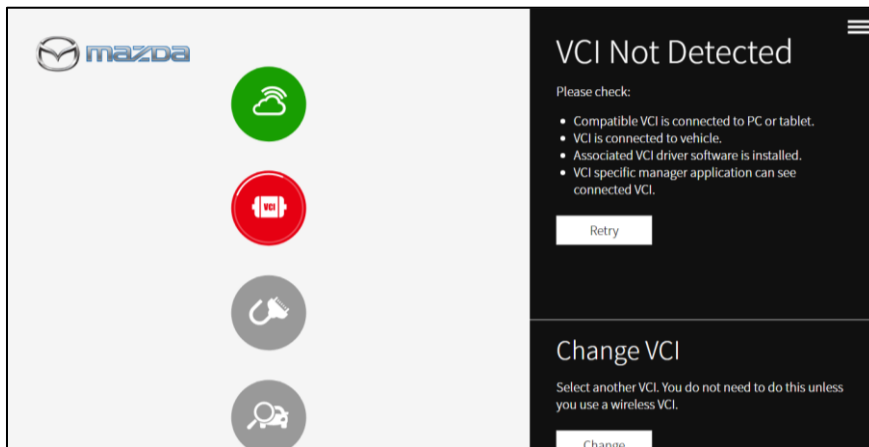
The Setup manual updated on Dec.28,2023 includes instructions for installing software and updating firmware after "3. Installing Driver and ToolBox" section.

After installing software and firmware, check the communication between DST and PC according to the Setup manual.

Selection of VCI (VCM-II / DST)

■ Running MDARS with Unspecified VCI (VCM-II / DST):

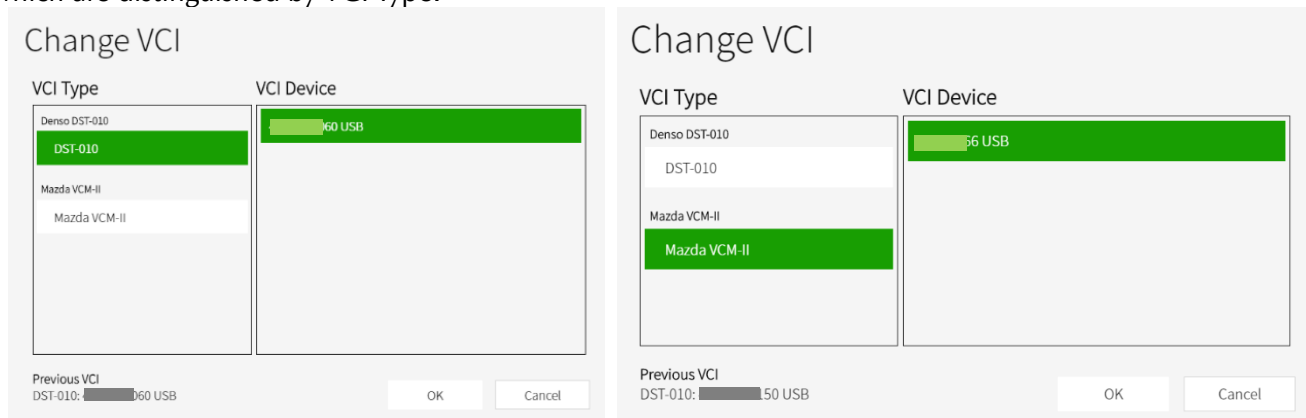
MDARS saves information about the VCI (VCM-II / DST) you last connected to. A VCI (VCM-II / DST) different from the one saved in MDARS could be connected to the PC if **"VCI Not Detected"** is shown during Vehicle Identification. Select a currently connected VCI (VCM-II / DST) in **"Change VCI"** described in the Operational Instructions.



■ VCI Type and VCI Device:

- When using a VCM-II, **"Mazda VCM-II"** is automatically selected as the VCI Type. If you usually use multiple VCM-IIs, multiple VCM-II identifiers (VCM-II serial number) are listed in the VCI Device field. In this case, an identifier for the VCM-II that is currently connected to MDARS need to be manually selected.
- **The same operation applies when using a DST.**
- When using a VCI other than VCM-II / DST, manually select VCI Type and VCI Device.

NOTE: There are US SAE standards and EU ISO Standards for communication type between an on-board ECU and diagnostic software. There are Vehicle Communication Interfaces (VCIs) for each market standard, which are distinguished by VCI Type.



Browsing Vehicle History Items and Captured Recordings in Datalogger

The Vehicle History and Datalogger Recordings allow users to check what work has been performed on the vehicle using MDARS, even after the vehicle has been returned to the customer. Vehicle History items and captured Recordings listed for MDARS users are not only for work performed by the user, but also for work performed by other users. **"Listed Items"** cannot be controlled by users, they are controlled by Mazda Motor Corporation to comply with personal data protection laws.

■ Listed Items:

In addition to items for work performed by a user currently logged onto MDARS, the items listed below are also shown depending on the organization the user belongs to.

- Users in countries or regions to which MME or MMR provide technical support to.
 - Users in MME, MMR, or authorized NSC technical support divisions: Items for work done by users in

countries or regions which MME or MMR provide technical support to.

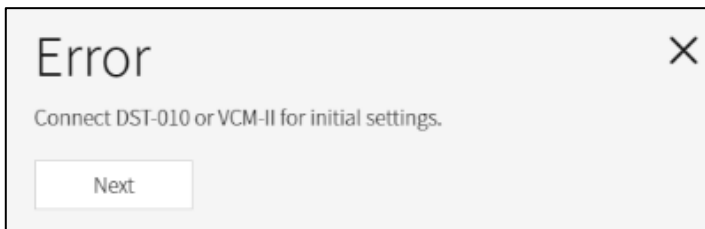
- Other users: Items for work done by users in the country or region the use is in.
- Users in other countries or regions:
 - Users in Mazda authorized distributors which provide technical support to multiple countries or regions: Items for work done by users in those countries or regions.
 - Other users: Items for work done in the country or region the user is in.

NOTE: The organization or company the user belongs to is determined by the order form information when a Mazda VCM-II / **DST** is purchased, or by the application form for the latest M-MDS Support Program. Therefore, when any distributor, dealer or VCM-II / **DST** serial number information is changed, the updated information should be provided in the "Contact Us" section of this document.

Start With No Connected Vehicle

Initial Settings:

When using the "No Vehicle Mode" for the first time, a valid VCM-II / DST information must be available on the MDARS cloud server. If an error message below is displayed, connect a valid VCM-II / DST to the MDARS PC using a USB cable, wait 1 - 2 minutes until the VCM-II / DST is recognized by MDARS, then click "Next".



Configuring when Installing or Removing Accessories

Note when selecting Function Menu:

When installing or removing genuine Mazda accessories, MDARS may be used to change the settings in the ECU as needed. Select the correct MDARS display menu according to the accessory installation manual.

CAUTION: If you make a mistake in this selection, the ECU could become damaged and recovery using MDARS may not be possible.

NOTE: Depending on the market, shipping of accessories may or may not be possible. MDARS does not support shipping settings but does display a common global menu.

Examples of accessory shipping settings and MDARS display menu:

Accessory	Market			MDARS Menu
	Japan	North America	Europe	
Burglar Alarm	X	N/A	N/A	X
Intrusion Sensor	X	N/A	X	X
Ambient Lighting	X	X	N/A	X

X: Applicable/MDARS menu available

N/A: Not applicable

Contact Us

NOTE: The inquiries shown below are unacceptable and should not be sent to Mazda through "**Contact Us**".

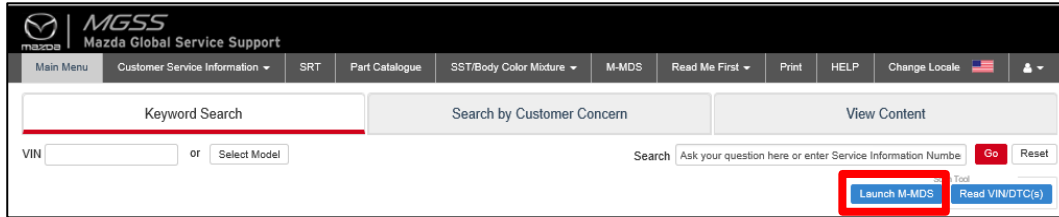
- How to operate a PC or address error message(s) generated by Windows.
 - Business policies regarding Mazda diagnostic tool(s).
 - Non-Mazda genuine parts or accessories are installed on CAN communication lines.
 - Inquiries about non-Mazda recommended diagnostic or repair procedures.
 - When used or non-Mazda genuine part(s) are installed on the subject vehicle.
 - When a non-Mazda recommended PC is used.
-
- Mazda Authorized Dealers
If your distributor/NSC provides you with M-MDS information through your local system, refer to that or contact your technical hotline.
 - Mazda Authorized Distributors/NSCs
If you can access M-MDS information available in Mazda InfoMall website or equivalent provided by Mazda local affiliate, refer to that or contact your technical hotline.
 - Non-Mazda Authorized users
Contact a window you purchased MDARS.

Operational Instructions

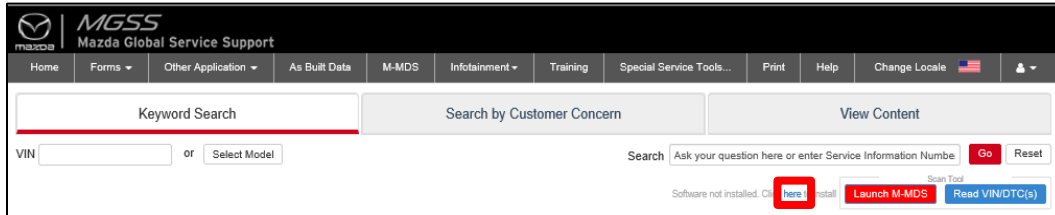
Installing, Setting, Running, and Updating

■ Installing (MGSS Users):

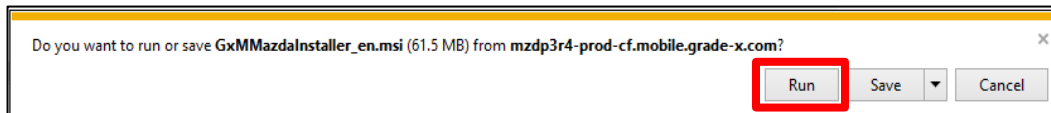
1. Click **"Launch M-MDS"** from the MGSS main menu.



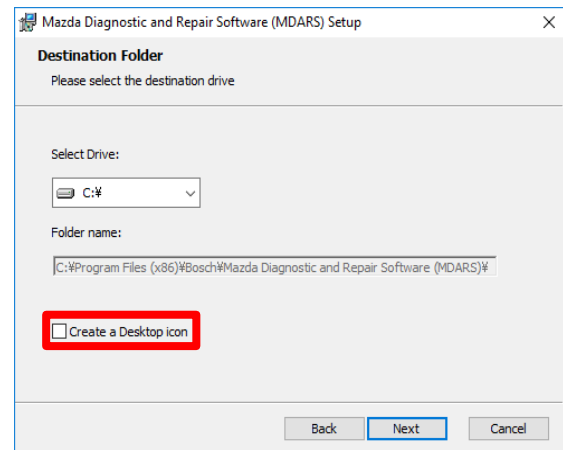
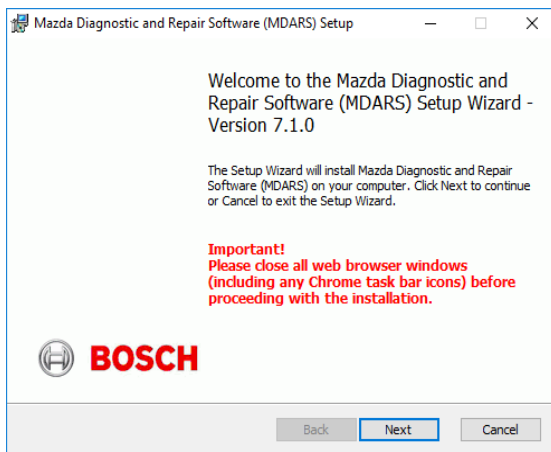
2. Click **"Click here to install"**.



3. Click **"Run"**.

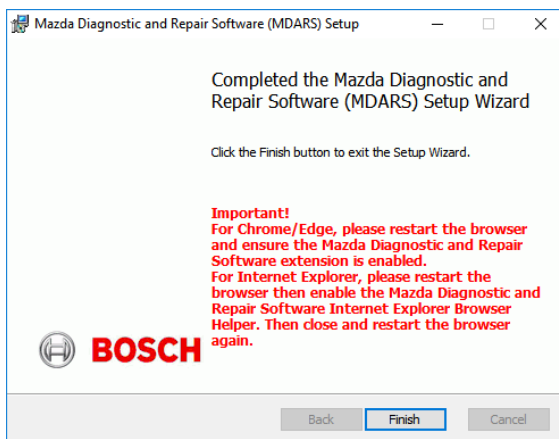


4. Follow the instructions on the screen to complete the installation.



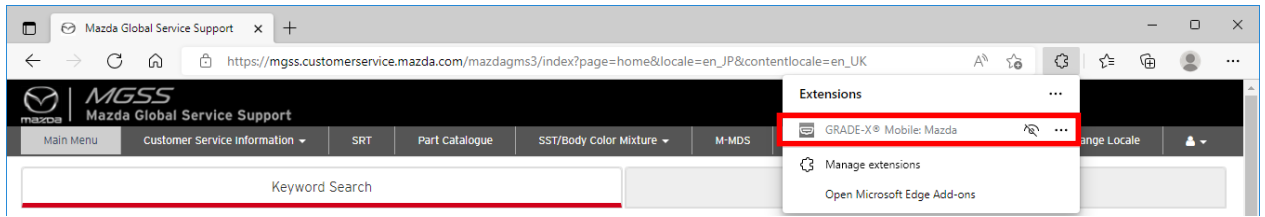
NOTE: DO NOT check the **"Create a Desktop icon"** box.

5. Click **"Finish"**.

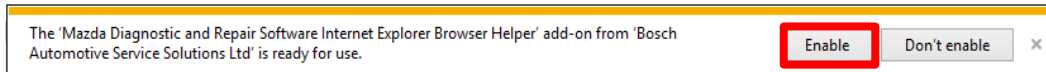


6. Confirm the extension or enable the add-on in your browser.

- Microsoft Edge:
Open the Microsoft Edge browser, confirm that the extension is enabled.



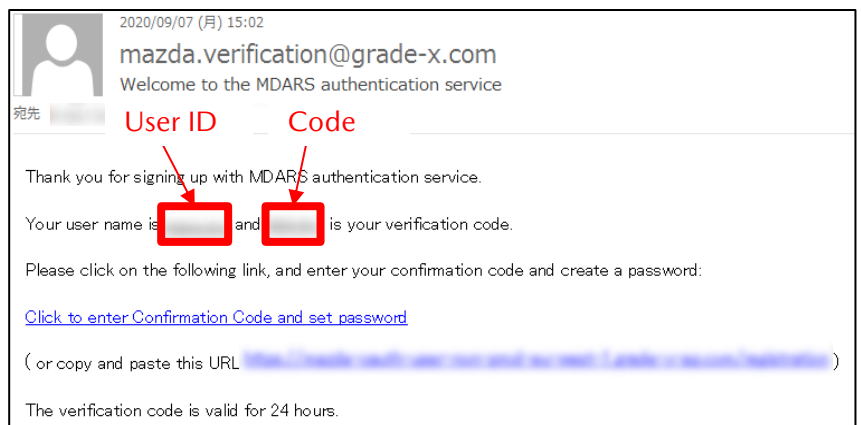
- Internet Explorer:
Open the Internet Explorer browser, select **"Enable"**, then close the browser to complete the installation.



NOTE: For details, refer to the **"Fundamental Instruction, Installing MDARS"** section.

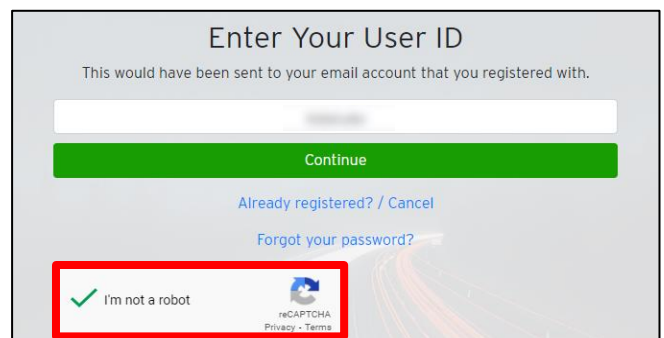
■ Installing (Non-MGSS Users):

1. After signing up with a USER ID (email address), a verification code is sent to the email address.
2. Access the link **"Click to enter Confirmation Code and set password"** in the e-mail by using the Google Chrome browser or the Microsoft Edge browser (the native mode).

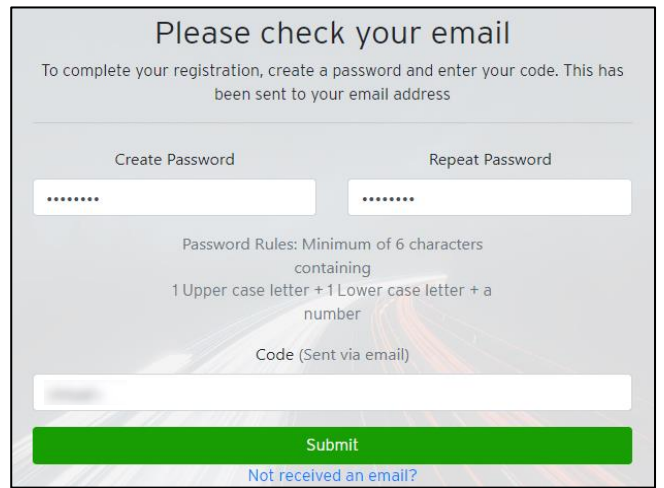


NOTE: Internet Explorer and Microsoft Edge with the Internet Explorer mode do not work for this installation.

3. Enter the **"User ID"** shown in the e-mail and check **"I'm not a robot"**, then click **"Continue"**.



Enter the password and code shown in the e-mail, then click "**Submit**".



Please check your email

To complete your registration, create a password and enter your code. This has been sent to your email address

Create Password Repeat Password

.....

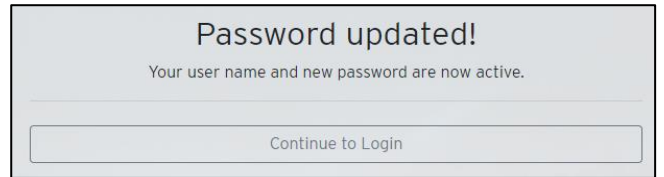
Password Rules: Minimum of 6 characters containing
1 Upper case letter + 1 Lower case letter + a number

Code (Sent via email)

Submit

[Not received an email?](#)

4. Click "**Continue to Login**", then log into MDARS.

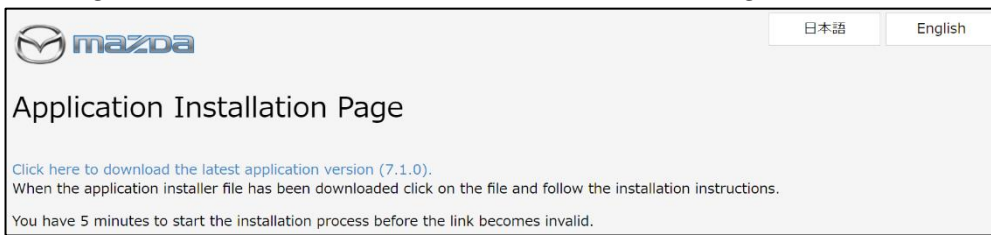


Password updated!

Your user name and new password are now active.

Continue to Login

5. After login, download the MDARS installer from the following screen.



 日本語 English

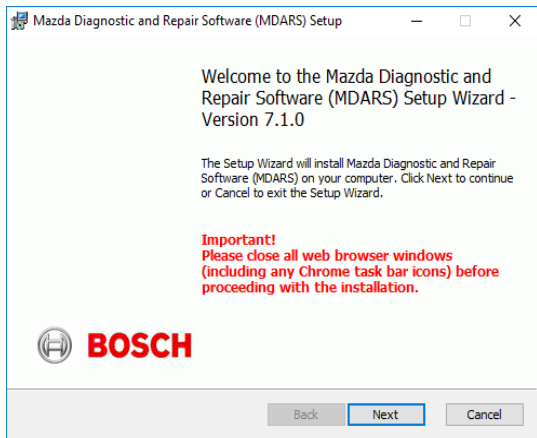
Application Installation Page

[Click here to download the latest application version \(7.1.0\).](#)

When the application installer file has been downloaded click on the file and follow the installation instructions.

You have 5 minutes to start the installation process before the link becomes invalid.

6. Follow the instructions on the screen to complete the installation.



Mazda Diagnostic and Repair Software (MDARS) Setup

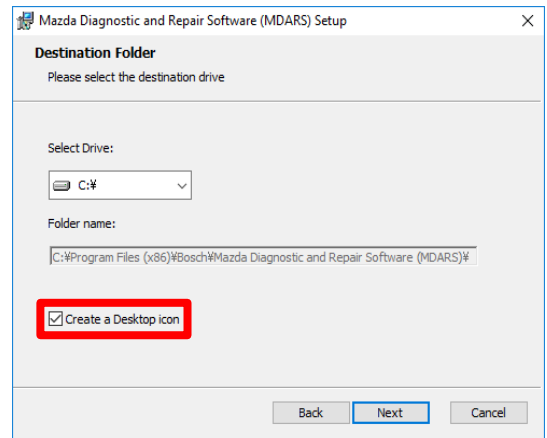
Welcome to the Mazda Diagnostic and Repair Software (MDARS) Setup Wizard - Version 7.1.0

The Setup Wizard will install Mazda Diagnostic and Repair Software (MDARS) on your computer. Click Next to continue or Cancel to exit the Setup Wizard.

Important!
Please close all web browser windows (including any Chrome task bar icons) before proceeding with the installation.



Back Next Cancel



Mazda Diagnostic and Repair Software (MDARS) Setup

Destination Folder

Please select the destination drive

Select Drive:
C:\

Folder name:
C:\Program Files (x86)\Bosch\Mazda Diagnostic and Repair Software (MDARS)\

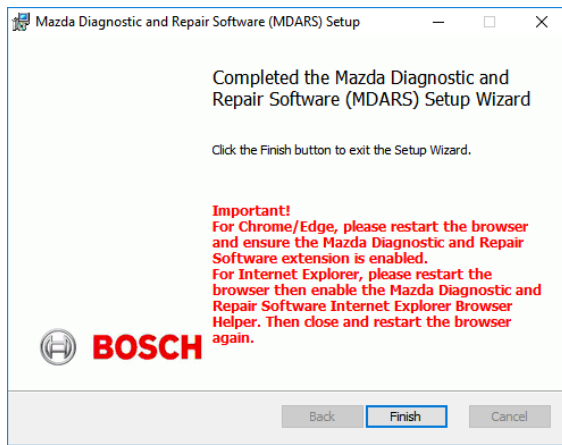
☒ Create a Desktop icon

Back Next Cancel

NOTE:

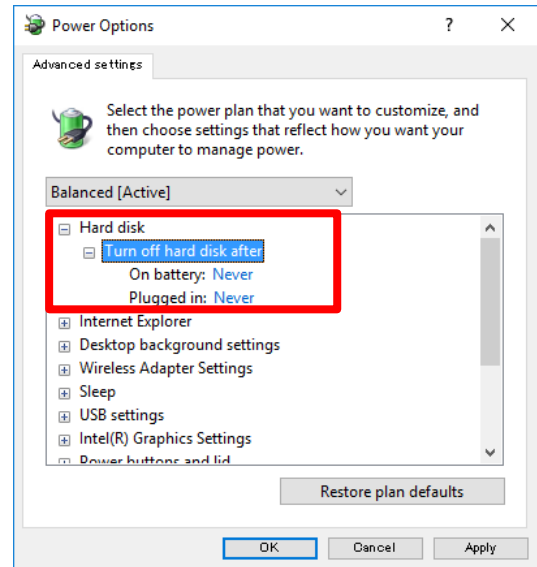
Be sure to check the "**Create a Desktop icon**" box.

7. Click "**Finish**".

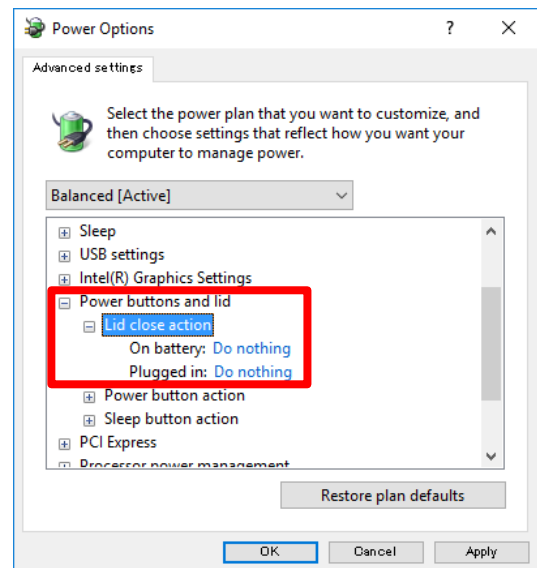


■ Configuring Power Options:

1. Click "**Control Panel**", then click "**Power Options**".
2. Select "**Balanced [Active]**", then click "**Change plan settings**".
3. Set "**Put the computer to sleep**" to "**Never**", then click "**Change advanced power settings**".
4. Set "**Turn off hard disk after**" in "**Hard disk**" to "**Never**".

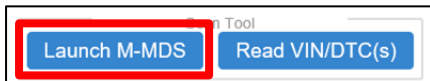


5. Set "**Lid close action**" in "**Power buttons and lid**" to "**Do nothing**".
6. Click "**Apply**", then "**OK**".



■ Running and Updating (MGSS Users)

1. Connect the VCM-II / **DST** to the PC and to the vehicle.
2. Turn the ignition switch ON (Ready ON).
3. Click the "**Launch M-MDS**" button from the MGSS main menu.



NOTE: MDARS cannot be launched from a shortcut or favorite on the desktop.

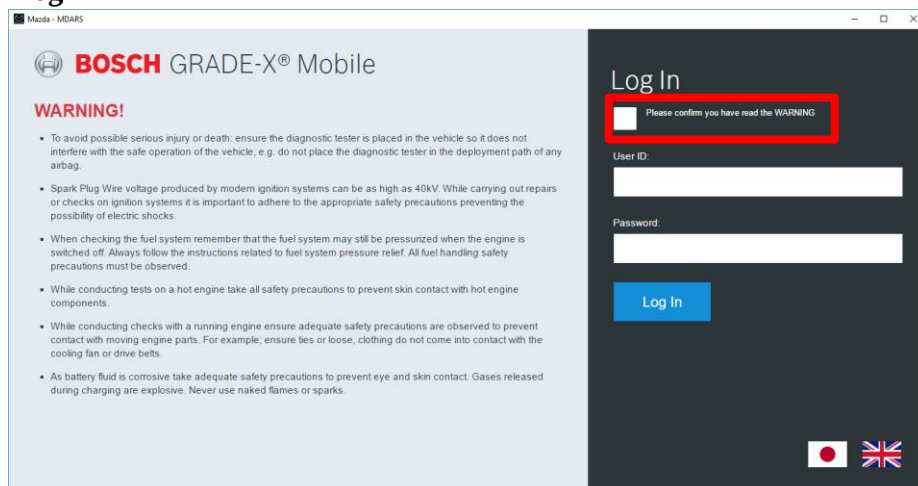
4. If the latest version is available, "**Click here to update**" is shown. Follow the instructions on the screen to update it.



■ Running/Updating MDARS (Non-MGSS users):

1. Connect the VCM-II / **DST** to the PC and to the vehicle.
2. Turn the ignition switch ON (Ready ON).
3. Click the "**MDARS**" desktop icon.

4. Check **"Please confirm you have read the WARNING"**, enter your User ID and Password, then click **"Log In"**.



5. If the latest version is available, **"Click here to update"** is shown. Follow the instructions on the screen to update it.

Configuring Language or Measurement Units

NOTE: MDARS saves user settings for language and measurement units. The settings are applied for the next login.

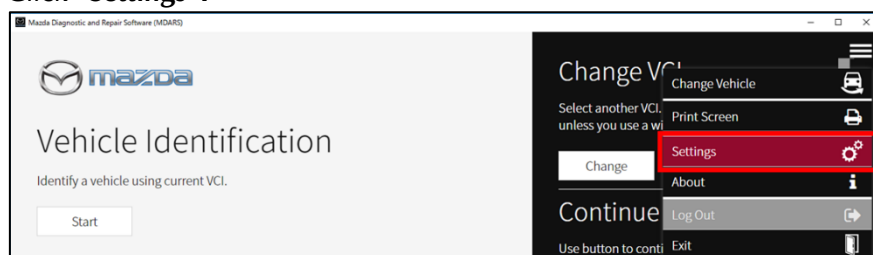
■ Configuring Language:

NOTE: The steps to change the language setting from English to another language are described below. The default setting is English, but the steps are the same as changing from another language.

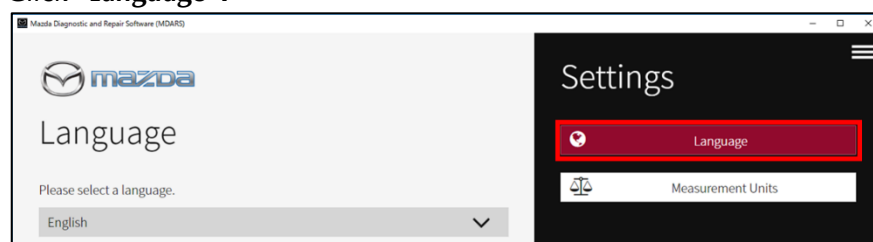
1. Click **"Control Menu"**.



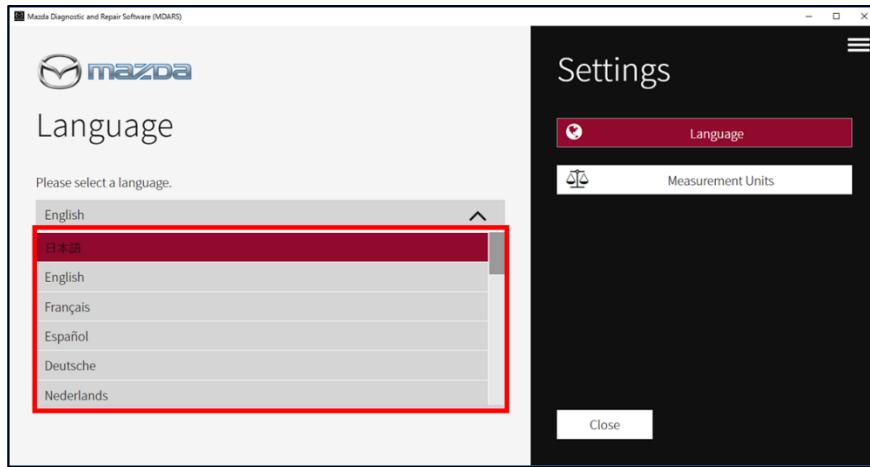
2. Click **"Settings"**.



3. Click **"Language"**.



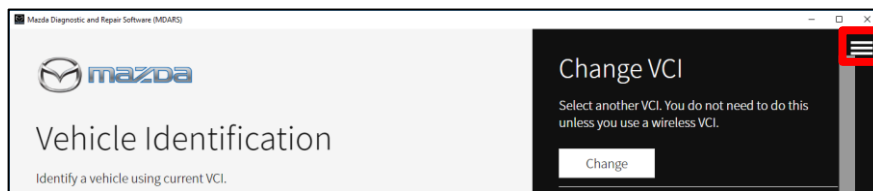
4. Select the language you want to change to.



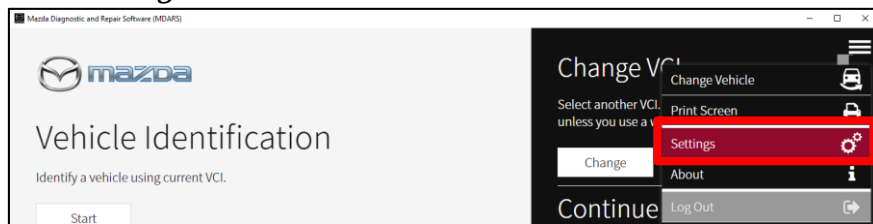
5. Click "**Close**".

■ Configuring Measurement Units:

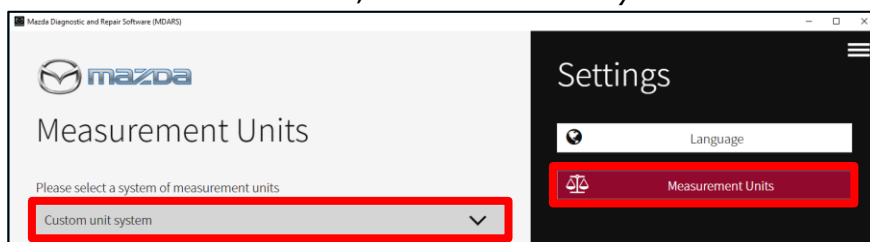
1. Click "**Control Menu**".



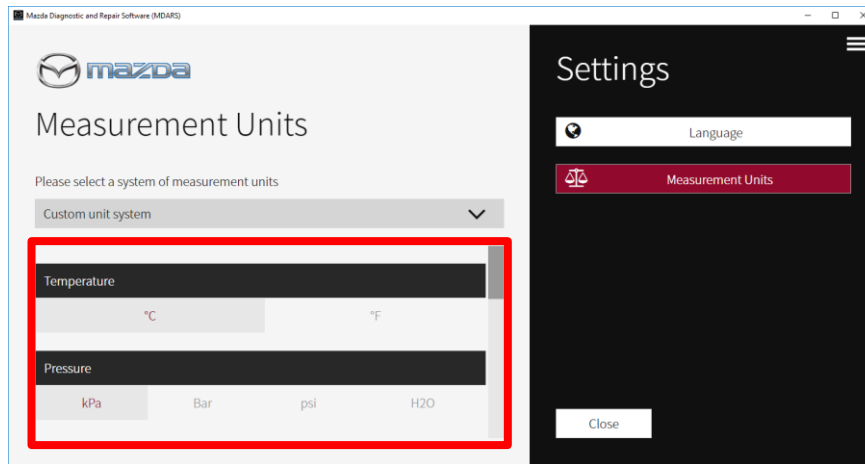
2. Click "**Settings**".



3. Select "**Measurement Units**", then "**Custom unit system**".



4. Select the **measurement** unit(s) you want to change.



5. Click "Close".

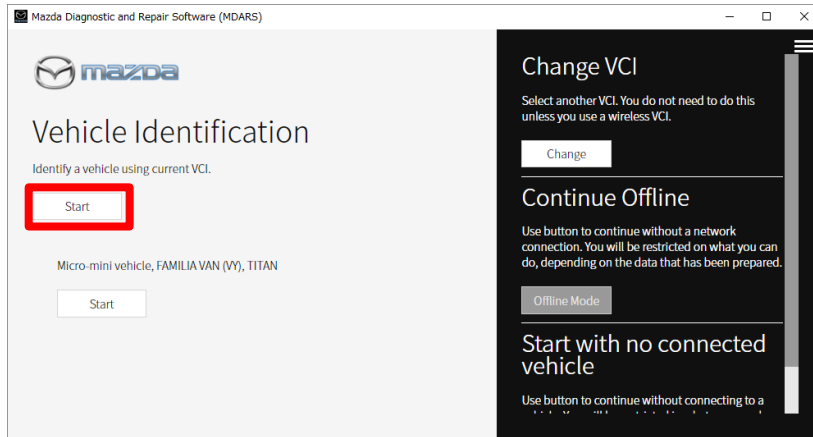
Vehicle Identification

■ Automatic Vehicle Identification:

Connect MDARS with the DLC cable and the VCM-II / **DST** to the vehicle, then set the ignition to the ON position.

CAUTION: Connect the DLC cable and the VCM-II / **DST** to the vehicle with the ignition OFF. The CAN bus line might detect some noise and it might cause a diagnostic error when connecting the DLC cable with the ignition ON.

1. Click the **"Start"** button.



2. The Vehicle Identification process will start and automatically inspect every connection and then collect the vehicle information.



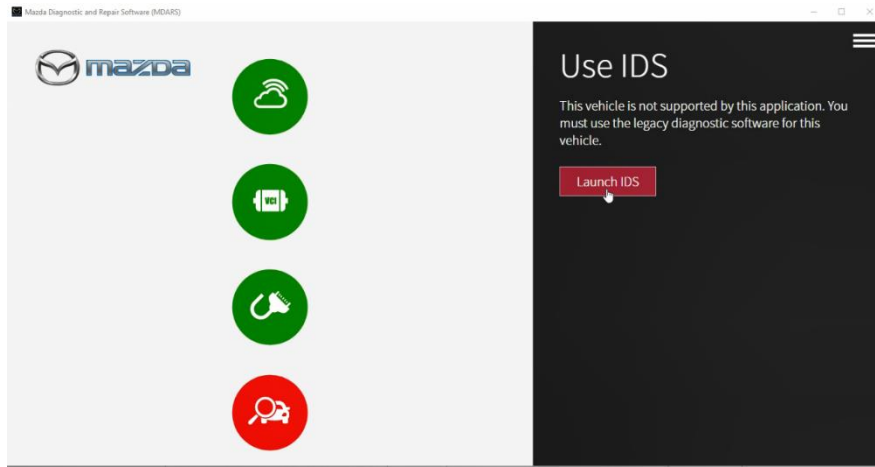
: The connection between the PC and the MDARS cloud **server**.

: The connection between the PC and the VCM-II / **DST**.

: The connection between the vehicle and the VMC-II / **DST**.

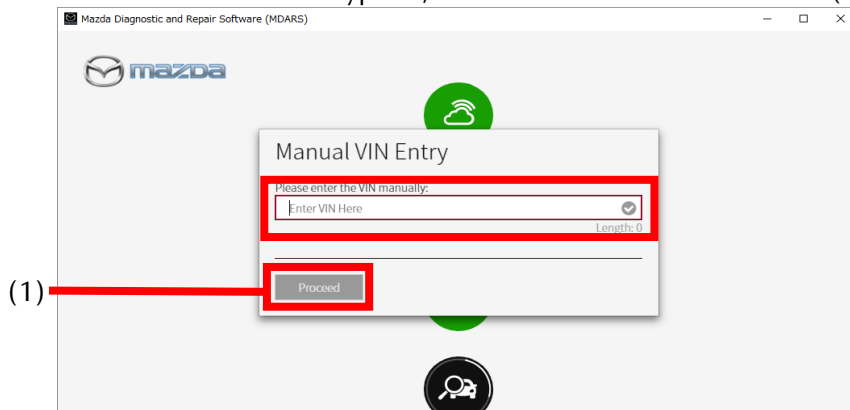
: The collection of vehicle information.

NOTE: The **“Launch IDS”** button will appear when the vehicle is not supported by MDARS.

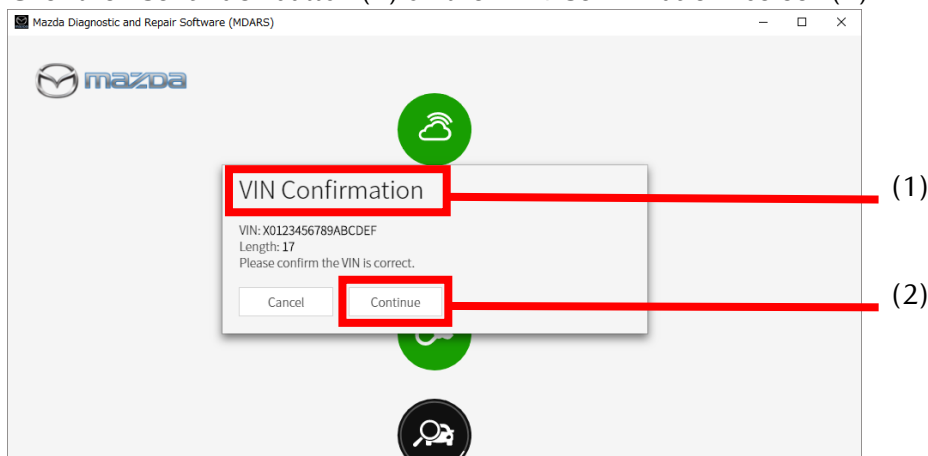


■ Manual Vehicle Identification:

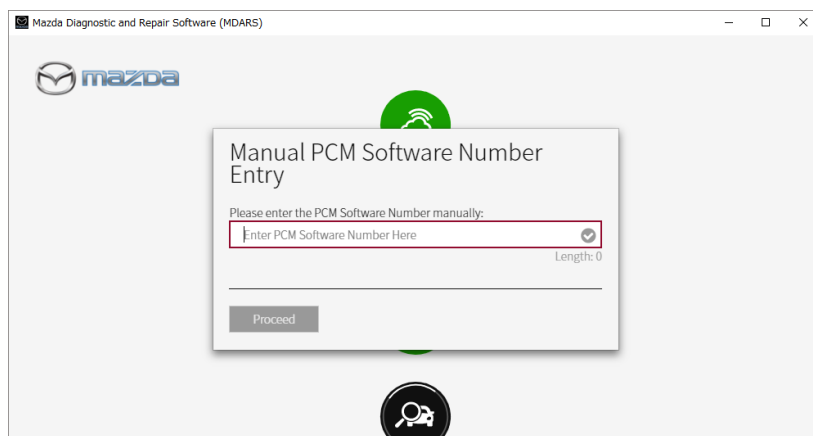
1. Enter the VIN without hyphen, then click the **“Proceed”** button (1).



2. Click the **“Continue”** button (2) on the **“VIN Confirmation”** screen (1).



3. If the **“Manual PCM Software Number Entry”** screen appears, take the necessary actions according to the ignition status (**ON** or **OFF**) listed below.



- In the case of the ignition is OFF:
 - When the vehicle allows setting the ignition to the **OFF** position, close MDARS, then set the ignition to the **ON** position and attempt the vehicle identification process.
 - If the vehicle identification does not successfully complete or the ignition remains in the **OFF** position due to system trouble, contact us according to the “Contact us” section.
- In case of the ignition is ON:
 - Contact us according to “Contact us” section.

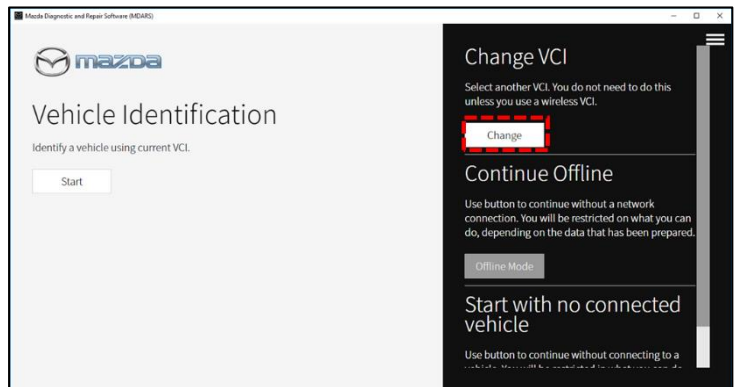
Changing VCI (VCM-II / DST)

■ How to Change VCI:

NOTE: MDARS saves the VCI (VCM-II / DST) information a user used the last time.

Follow the instructions and select a correct VCM-II / DST.

1. Connect a VCM-II / DST to the PC and select the **"Change"** button on **"Change VCI"**.

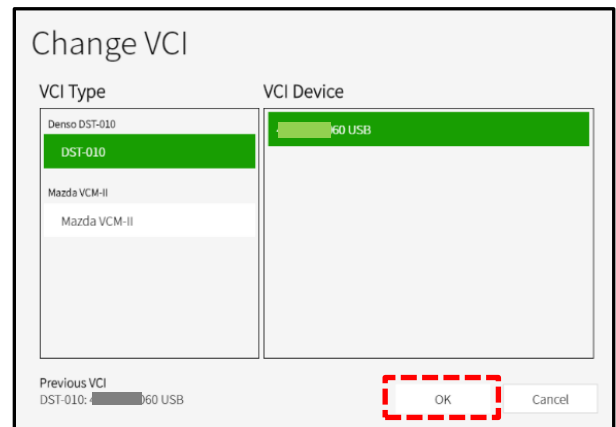


2. When you use a Mazda VCM-II or DST, the **"VCI Type"** is automatically set to **"Mazda VCM-II"** or **"Denso DST-010"**.

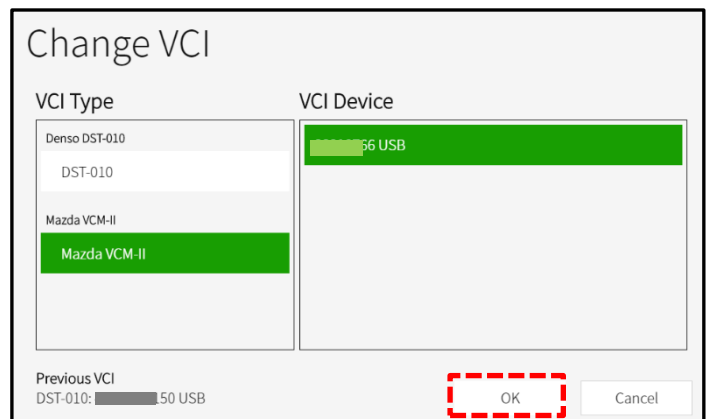
If you connect the same VCM-II / DST as you did before, the **"VCI Device"** is selected automatically.

The serial number of VCM-II shows last 8 digits and DST shows last 11 digits on screen.

Select **"OK"**.



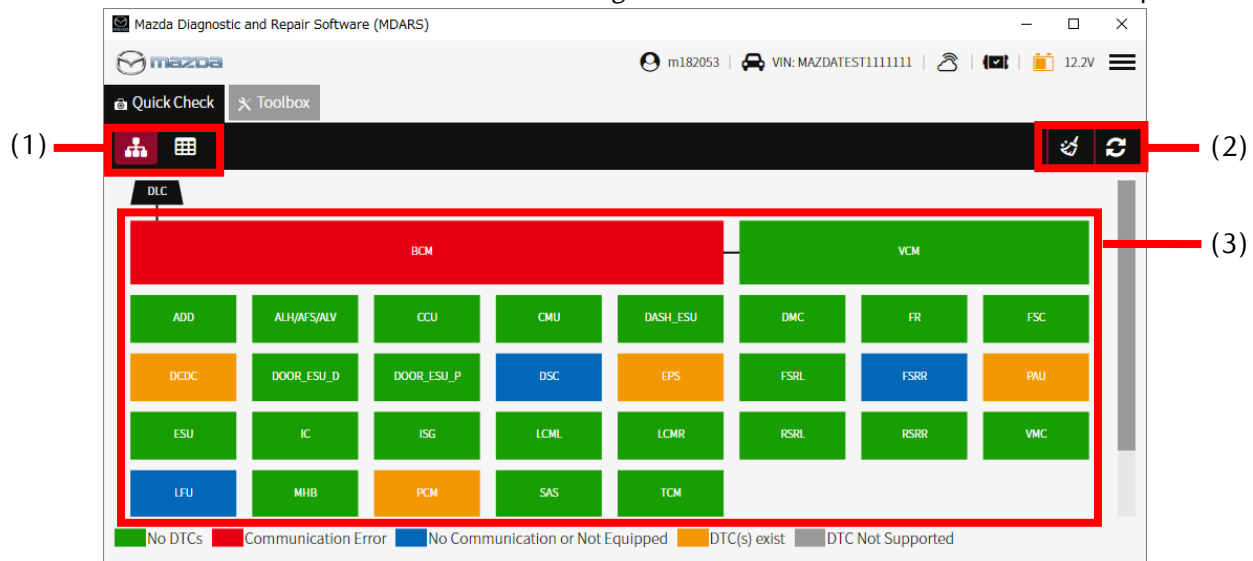
3. When you connect a different VCM-II / DST from the one you connected last time, you will need to manually select it by the serial number under **"VCI Device"**, then select **"OK"**.



4. The vehicle identification process will start automatically.

Network View

The network view shows the ECU status according to the results of the vehicle identification process.



Description:

(1) Navigation buttons:

The navigation buttons change the contents displayed on Quick Check.



Displays the status of communication/DTC(s) in four colors.



Displays a list of DTCs. For details, refer to the *"Selftest"* section.

Module	DTC	Description	Failure Type	Status	Mileage	Time	
DCDC	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	Unknown	📷
DCDC	P1234:9A	Fuel Pump Driver Module Disabled or Off Line (Fuel Pump Driver Module)	Component or System Operating Conditions	Past	65793 km	Unknown	📷
EPS	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	Unknown	📷
EPS	P1234:9A	Fuel Pump Driver Module Disabled or Off Line (Fuel Pump Driver Module)	Component or System Operating Conditions	Past	65793 km	Unknown	📷
PAU	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	Unknown	📷
PAU	P1234:9A	Fuel Pump Driver Module Disabled or Off Line (Fuel Pump Driver Module)	Component or System Operating Conditions	Past	65793 km	Unknown	📷
PAU	P2345:BC	Cylinder 10 Above Knock/Combustion Vibration Threshold	No Additional Failure Type Information for this DTC	Pending	65793 km	Unknown	📷
PAU	C0123:45	Description Not Provided	Program Memory Failure	Current	65793 km	Unknown	📷

(2) Control buttons:



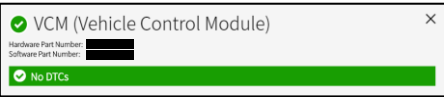
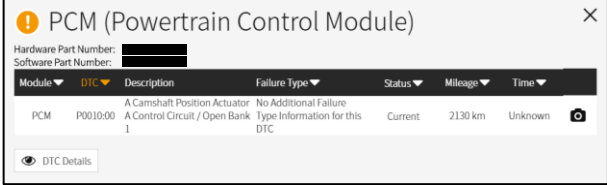
Clears all DTCs: All DTCs stored in the ECUs will be cleared and refreshed.



Refreshing: The communication status and DTCs will be refreshed.

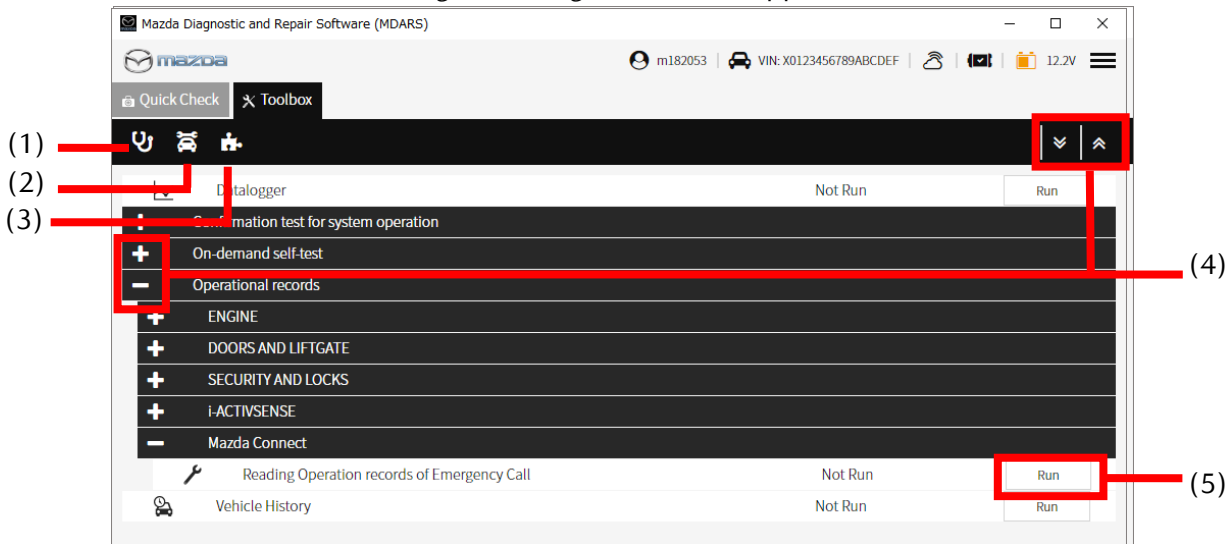
(3) Displays ECU status:

Displays the ECU status (by color) and the detailed information for the selected ECU.

Color	Status	Examples of detail
Green	No DTCs	
Red	Communication Error	
Blue	No Communication or Not Equipped	
Orange	DTC(s) detected	
Gray	Selftest not supported	No example because all ECUs support selftest.

Toolbox

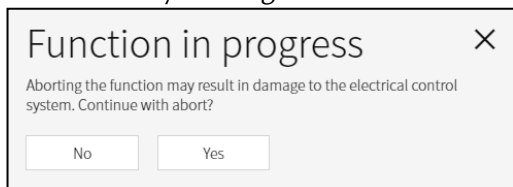
The Toolbox consists of three categories: Diagnosis, Work Support and Accessories.



■ Description:

- (1) **Diagnosis:**
Diagnostic functions like datalogger, on-demand selftest, or operational history are available.
- (2) **Work Support:**
Repair functions like system learning, aiming, ECU software update, or ECU configuration are available.
- (3) **Accessories:**
Configuration functions in installation or uninstallation of accessories are available.
- (4) **Switching the display of selectable functions:**
 - Selectable functions are displayed by clicking **+**.
 - Selectable functions are hidden by clicking **-**.
 - All of the selectable functions will be displayed or hidden by clicking **≡** or **≡**.
- (5) **Starting the function:**
The function will start by clicking the **"Run"** button.

The pop-up window shown below will appear when clicking the **"X"**. The function(s) in progress will be aborted by clicking the **"Yes"** button.



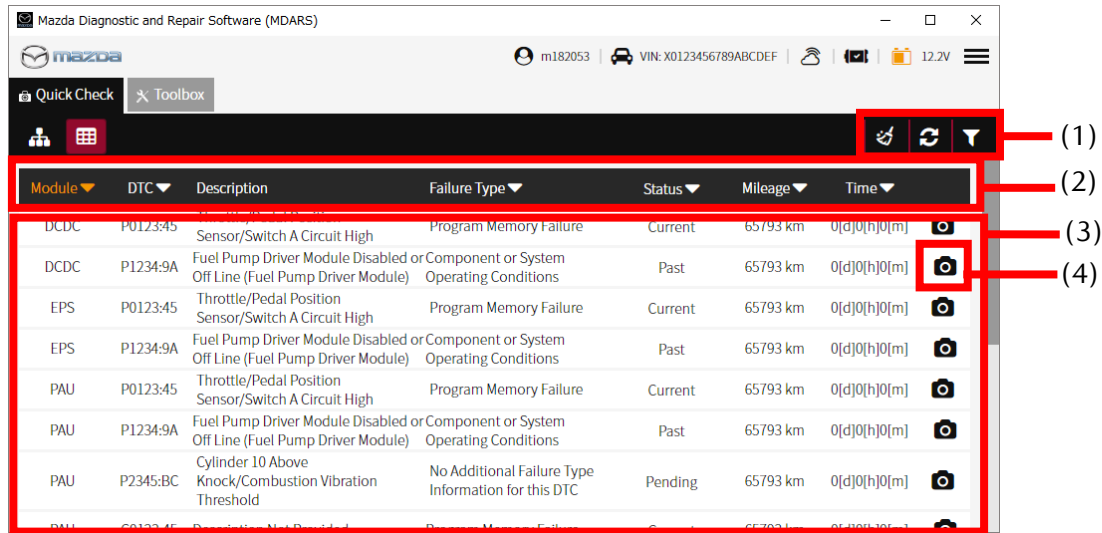
CAUTION: Mazda does not recommend forced termination because it might cause serious damage to the vehicle. Make sure function you are going to run is appropriate before clicking the **"Run"** button.

Diagnostic Functions

Selftest

■ Quick Check Tab:

The **"Quick Check Tab"** displays a list of all DTCs that are stored in ECU(s).



(1) Control buttons:



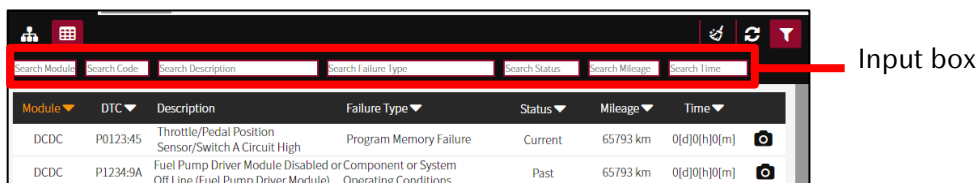
Clears all DTCs: All DTCs stored in the ECUs will be cleared and refreshed.



Refreshing: The communication status and DTCs will be refreshed.



Filtering: The displayed DTCs will be filtered based on the value of the input box.



(2) Sorting:

Switch between ascending & descending order using

(3) DTC List:

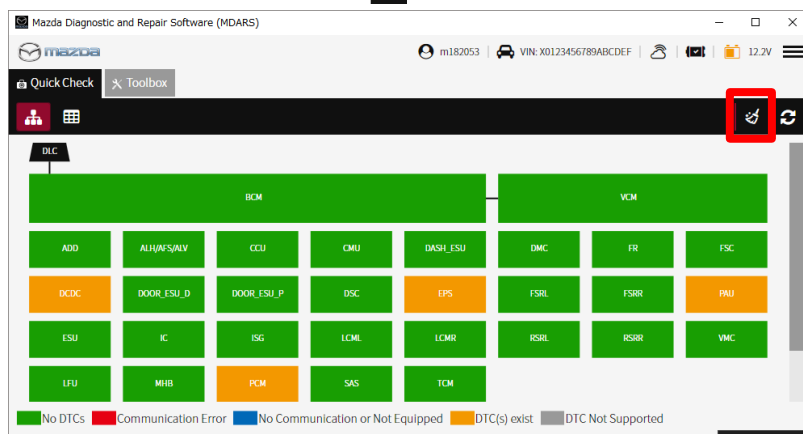
All DTCs stored in the ECUs will be displayed.

(4) Displaying Snapshot Data:

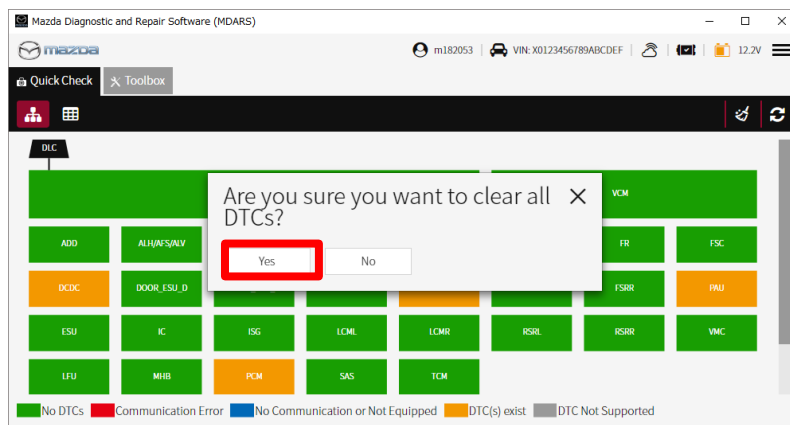
Snapshot data will be displayed by clicking the camera icon. For details, refer to the **"Display Freeze Frame Data / Snapshot Data"** section.

■ Clearing DTC(s):

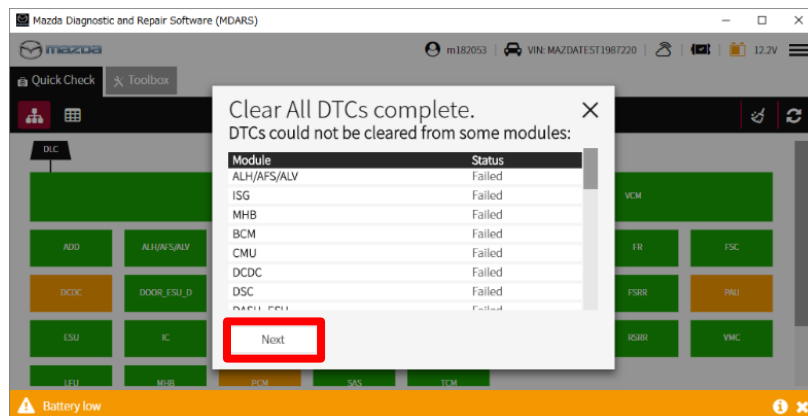
1. Click the **"Quick Check Tab"** 



2. Click **"Yes"**.



3. Click **"Next"**.



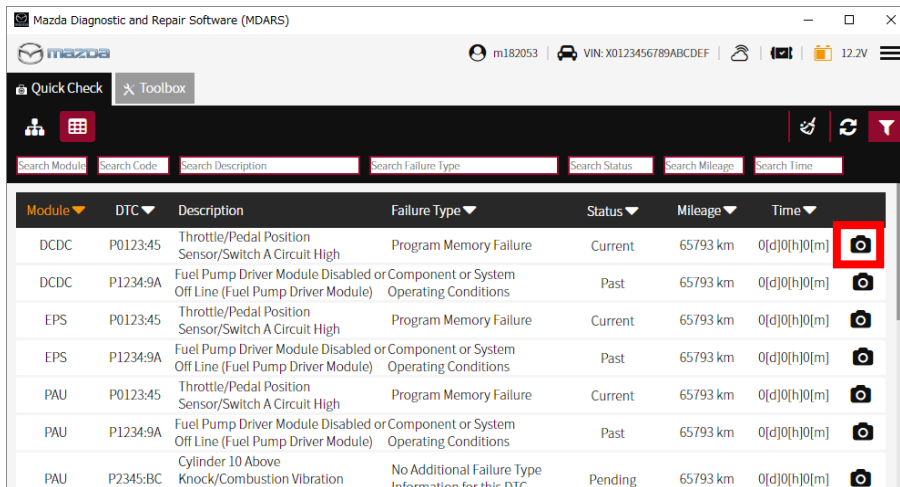
4. Checking DTCs will begin.

■ Display Freeze Frame Data / Snapshot Data:

This function shows status of the vehicle and the system when DTC(s) are detected.

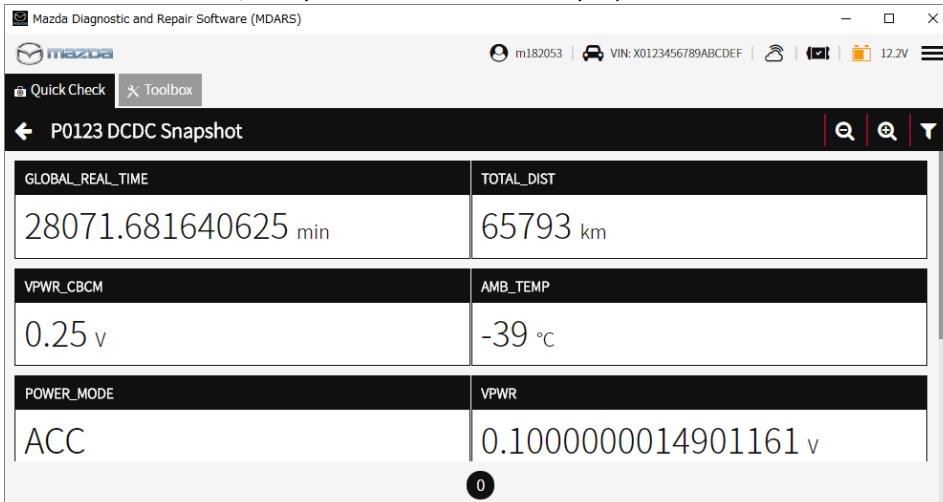
When the camera icon  is displayed on the DTC list screen, freeze frame data / snapshot data is available.

1. Click  on the DTC list screen.



Module	DTC	Description	Failure Type	Status	Mileage	Time
DCDC	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	0(d)0(h)0(m) 
DCDC	P1234:9A	Fuel Pump Driver Module Disabled or Component or System Off Line (Fuel Pump Driver Module)	Operating Conditions	Past	65793 km	0(d)0(h)0(m) 
EPS	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	0(d)0(h)0(m) 
EPS	P1234:9A	Fuel Pump Driver Module Disabled or Component or System Off Line (Fuel Pump Driver Module)	Operating Conditions	Past	65793 km	0(d)0(h)0(m) 
PAU	P0123:45	Throttle/Pedal Position Sensor/Switch A Circuit High	Program Memory Failure	Current	65793 km	0(d)0(h)0(m) 
PAU	P1234:9A	Fuel Pump Driver Module Disabled or Component or System Off Line (Fuel Pump Driver Module)	Operating Conditions	Past	65793 km	0(d)0(h)0(m) 
PAU	P2345:BC	Cylinder 10 Above Knock/Combustion Vibration	No Additional Failure Type Information for this DTC	Pending	65793 km	0(d)0(h)0(m) 

2. Freeze frame data / snap-shot data will be displayed as shown below.



P0123 DCDC Snapshot	
GLOBAL_REAL_TIME	TOTAL_DIST
28071.681640625 min	65793 km
VPWR_CBCM	AMB_TEMP
0.25 v	-39 °C
POWER_MODE	VPWR
ACC	0.1000000014901161 v

Datalogger

■ Outline:

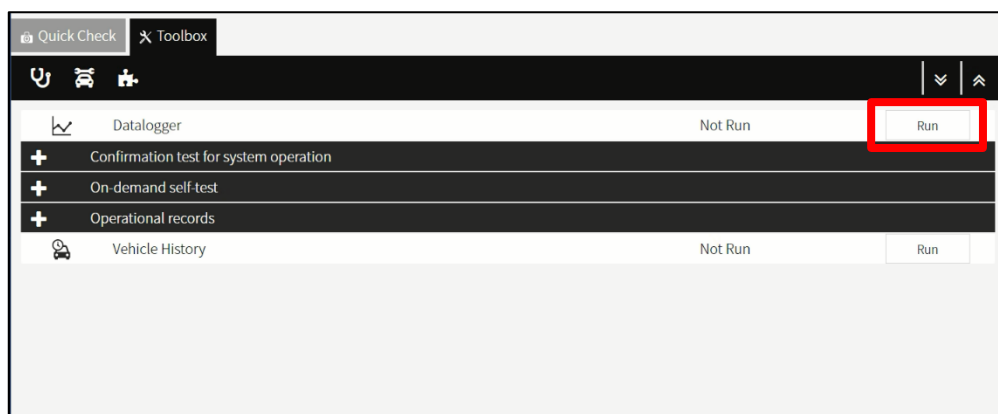
➤ Function:

Datalogger consists of the following functions shown below.

Function	Description
Data Monitor	Data monitor is a function that can display input/output signals of ECU(s) in real time. In the input/output signals that MDARS can display, there is input information for each switch/sensor, activation information for each actuator, and control information for each system.
Simulation	The simulation operates input/output on such parts as an actuator. You can run the simulation for items with  on the PID selection screen.
Capture	Capture function records PID values for designated periods of time. There are two methods, one is to start/stop manually (manual capture) and the other is to start/stop automatically (auto capture).
Playback captured data	This function plays back the captured data.
Save the setup	You can compile several PIDs that are often used in diagnosis and save them as a setup.
Load the saved setup	This function loads the saved setup.

➤ How to Start:

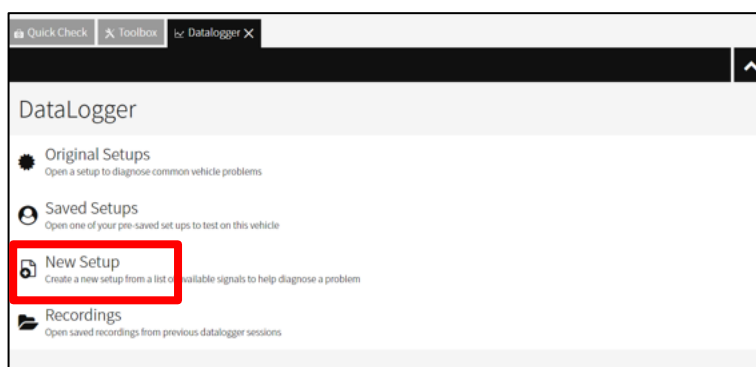
Click **"Run"**.



➤ Operation Flow:

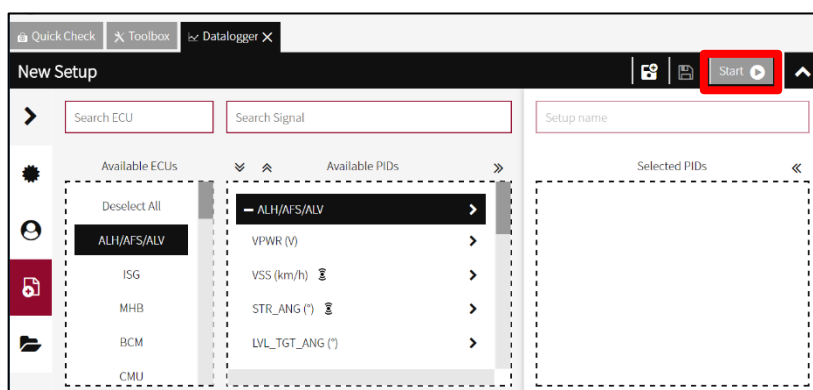
You can operate datalogger according to the following flow.

1. Select **"New Setup"**.



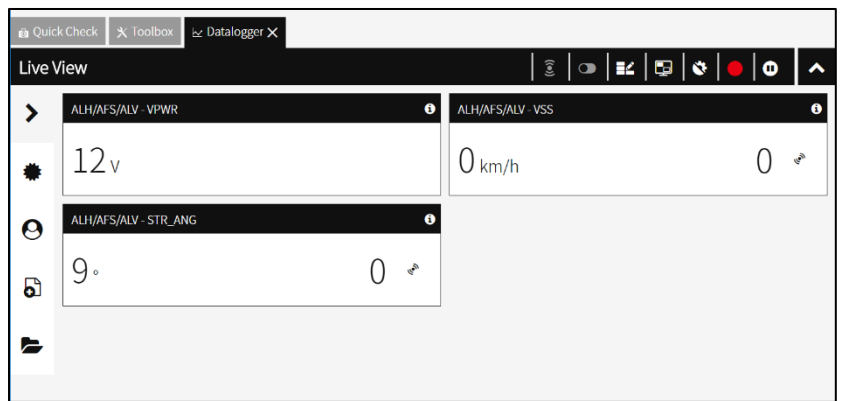
Select the PIDs on the PID selection screen.

NOTE: If necessary, save the selected PIDs. After selecting the PIDs, click **"Start"**.

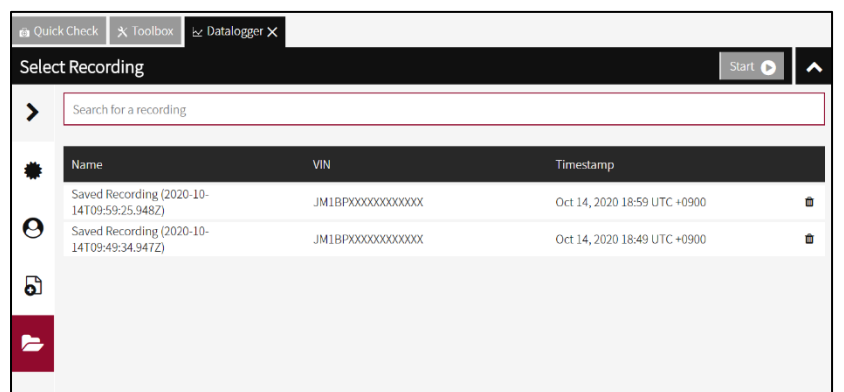
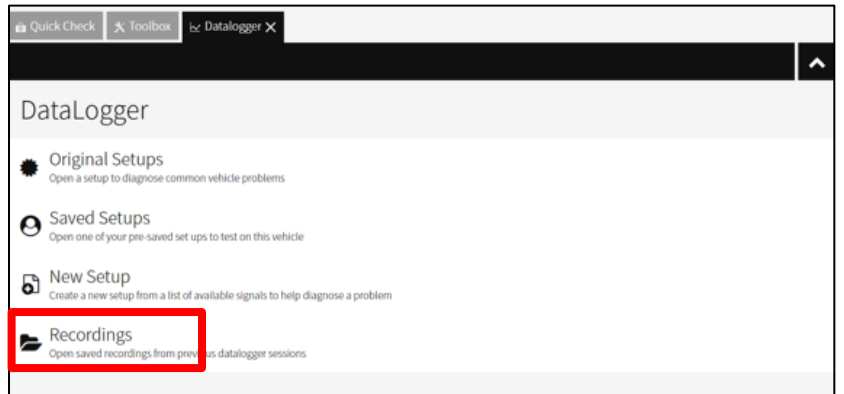


The live view screen is displayed and the data monitor starts.

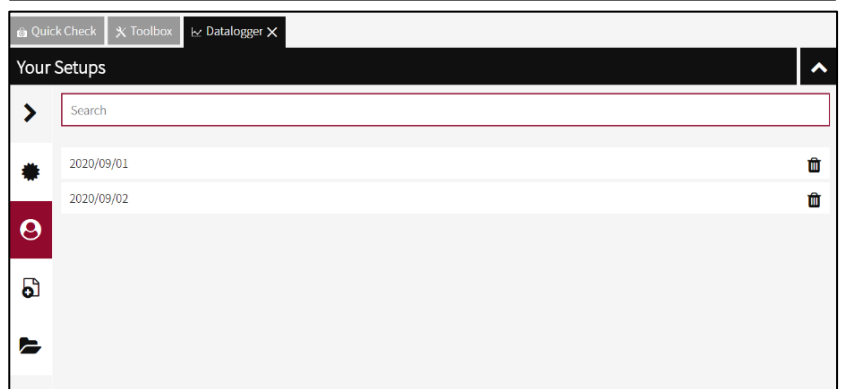
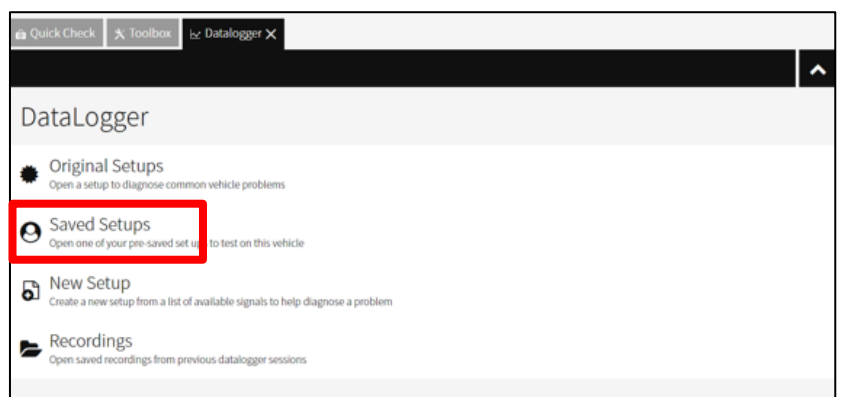
NOTE: If necessary, run simulation and/or capture.



2. To playback the captured data, select **"Recordings"**.



3. To load the saved setup, select **"Saved Setups"**.



■ PID Selection Screen:

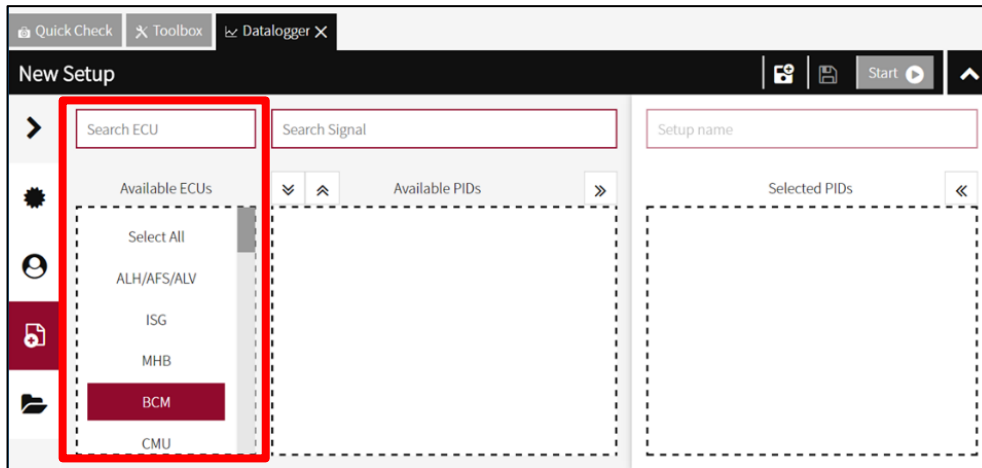
➤ PID Selection:

You can select PIDs to run data monitor and simulation.

1. Select ECU in the **"Available ECUs"** column.

NOTE:

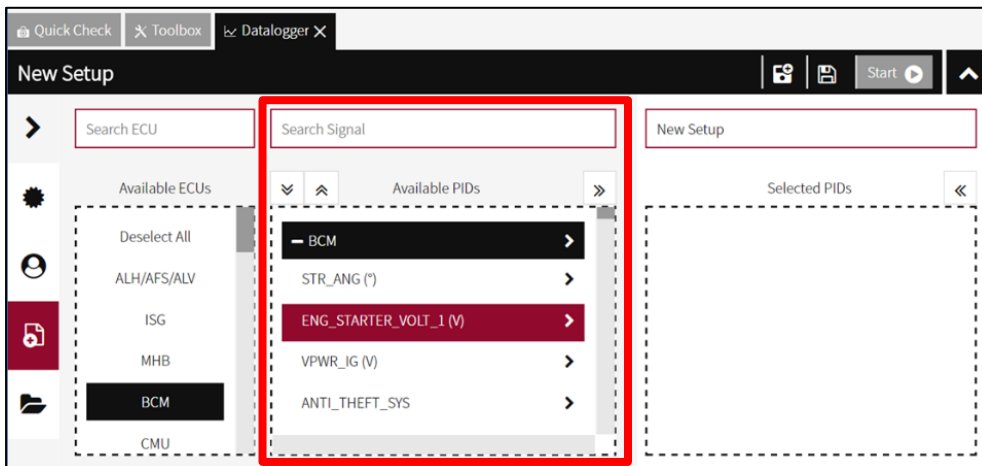
- Multiple ECUs can be selected.
- You can easily find an ECU by typing the abbreviation of the ECU in the **"Search ECU"** box. The search supports partial matches.



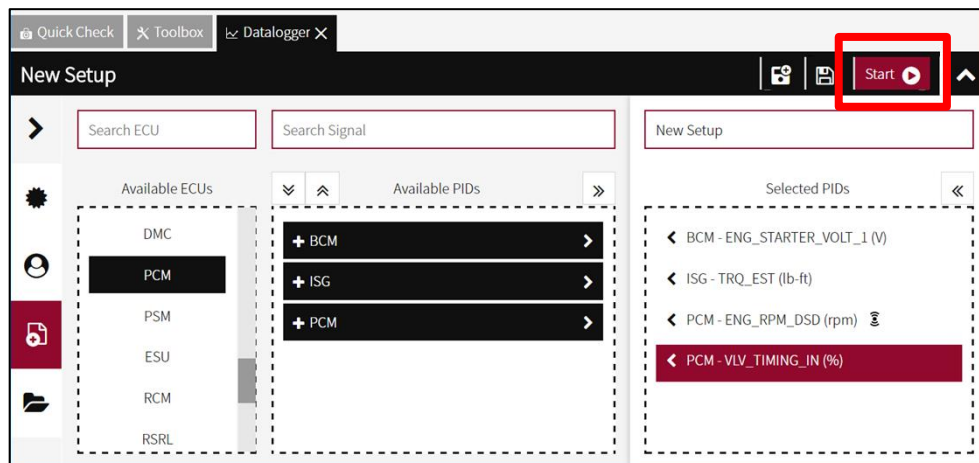
2. Select PIDs in the **"Available PIDs"** column. You can run the simulation for PIDs with .

NOTE:

- You can easily find PIDs by typing the name of the PID in the **"Search Signal"** box. The search supports partial matches. If you select one of the searched PIDs, MDARS deletes the PID name entered in the **"Search Signal"** box and cancels the search.
- By clicking , you can move all PIDs displayed in **"Available PIDs"** to **"Selected PIDs"**.
- You can also move and change the order by dragging and dropping a PID.



3. Click **"Start"** to monitor the selected PIDs.



➤ **Save the Setup:**

You can save the selected PIDs as a group and use them for diagnosis of other vehicles.

1. Type a setup name in the New Setup box, then click **"Save"**.



NOTE:

- Select **"Save"** to save your setup and select **"Save As Copy"** to create a copy of the setup.
- You can load the saved setup from **"Saved Setups"** on the initial selection screen.

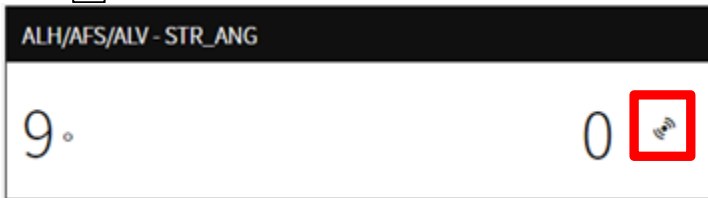
■ **Live View Screen:**

➤ **Icons on Live View Screen:**

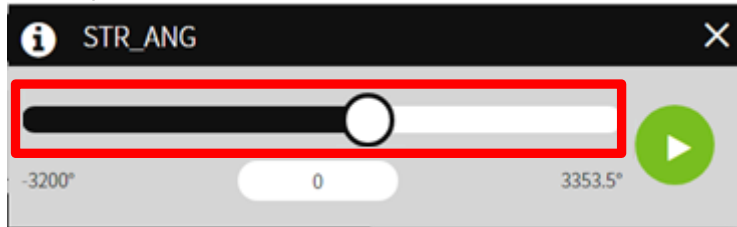
Icons	Description
	Returns to the initial selection screen of the datalogger.
	Displays the module selection screen.
	Displays the list screen of the saved setups.
	Displays the module selection screen for the setup setting.
	Displays the list screen of the captured live views.
	Ends all simulations.
	Switches between disabled/enabled.
	Displays the PID selection screen.
	Displays the screen for switching between the value display/graph display.
	You can set trigger conditions for automatically starting/ending live view capture.
	Starts/ends the live view capture.
	Temporarily cancels/restarts the live view display.
	Changes the datalogger screen to the full screen display.

➤ **Run Simulation:**

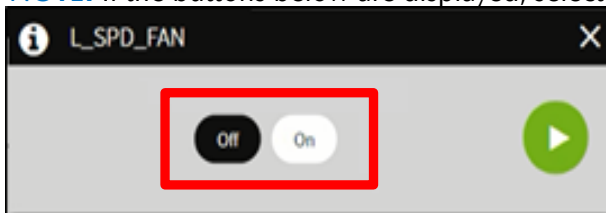
1. Click  of the PID to run the simulation.



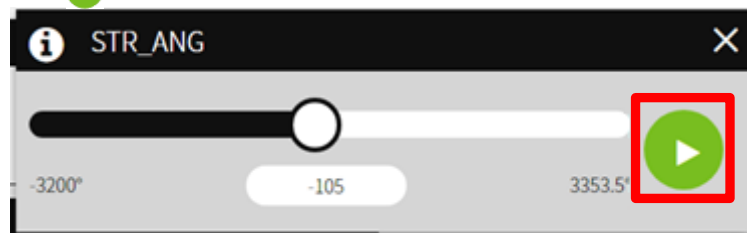
2. Set the parameter to run the simulation.



NOTE: If the buttons below are displayed, select the button of the parameter to run the simulation.



3. Click  to start the simulation.

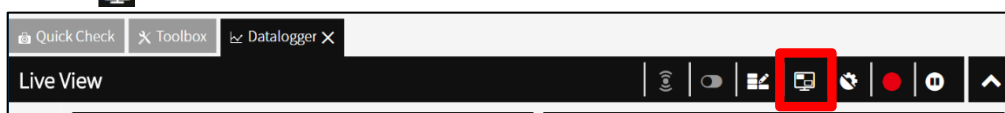


4. Click  to stop the simulation.

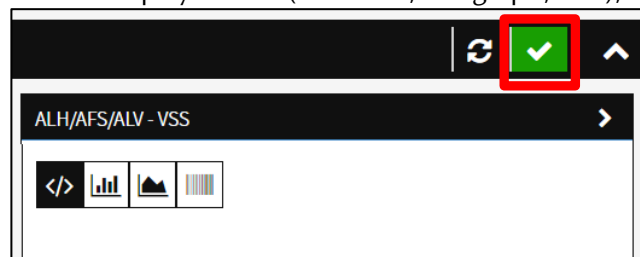


➤ **Display Format Setting:**

1. Select  on the live view screen.



2. Select a display format (i.e. value, bar graph, etc.), then click .



NOTE: You can select the display format from the following types (value, bar, etc.).

Icon	Display Format	Display
	Value	
	Bar graph	
	Line graph	
	Histogram	

➤ Overlapping Line Graph Display:

You can overlap other PIDs with the PID line graph.

1. Select  on the live view display setting screen, then click .



2. Click  for the PID you want to overlap.



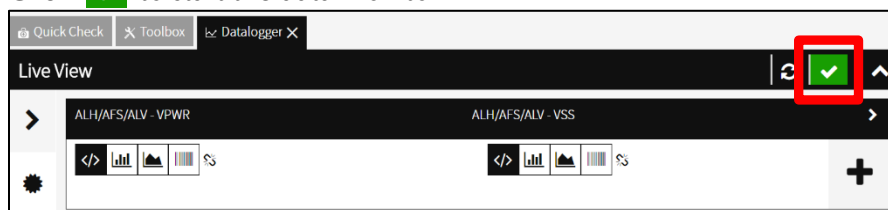
NOTE: You can select a maximum of three (3) PIDS.

3. Click  of the overlapped PID.

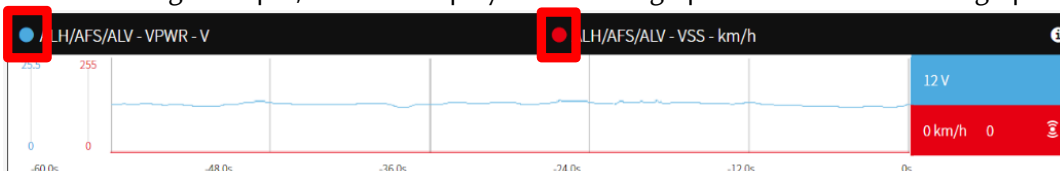


NOTE: You can cancel the overlap display by selecting .

4. Click  to start the data monitor.

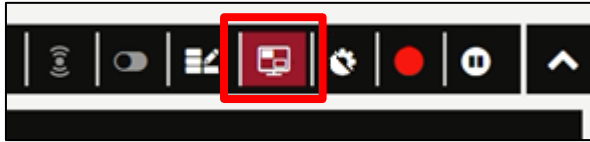


NOTE:  and  displayed to the left of the PID name indicates the color of the graph. In the following example, MDARS displays the VPWR graph in **blue** and the VSS graph in **red**.

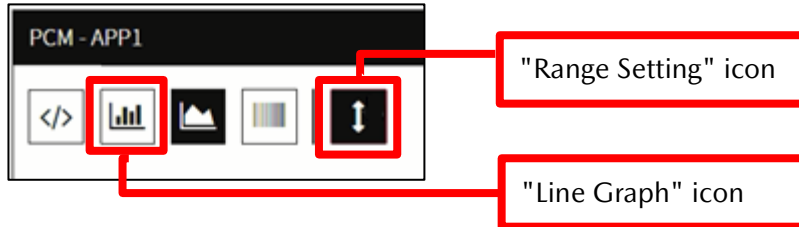


➤ **Manual Line Graph Ranges:**

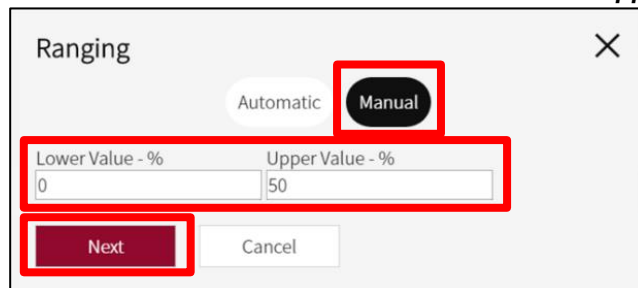
1. Select the **"Change Layout"** icon.



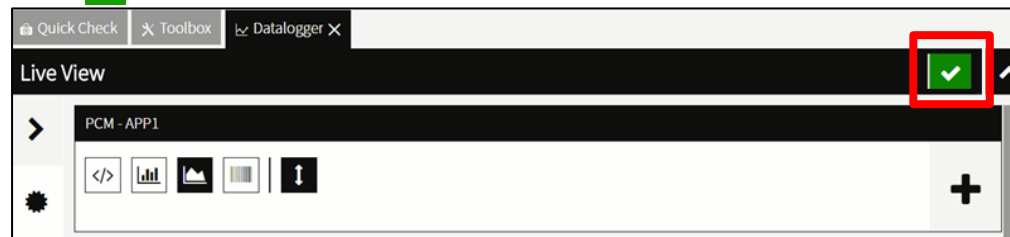
2. Select the **"Line Graph"** icon, then click the **"Range Setting"** icon.



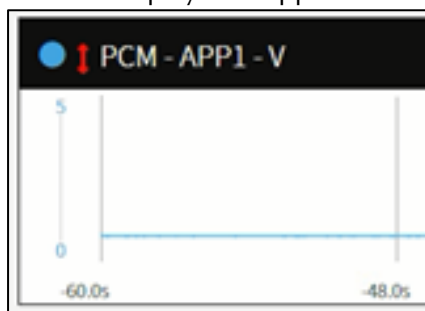
3. Select **"Manual"** and fill in **"Lower Value"** and **"Upper Value"**, then click **"Next"**.



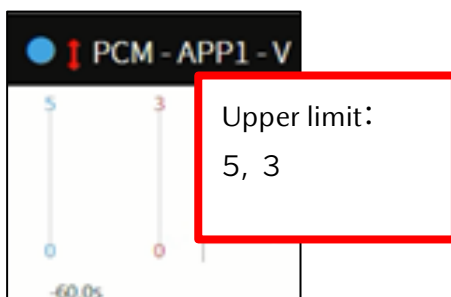
4. Click .



5. MDARS displays the upper and lower values set in the line graph.



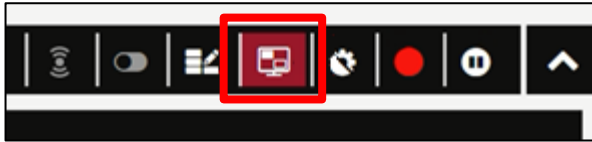
NOTE: The arrow  next to the PID name indicates that a "manual ranging" was used.



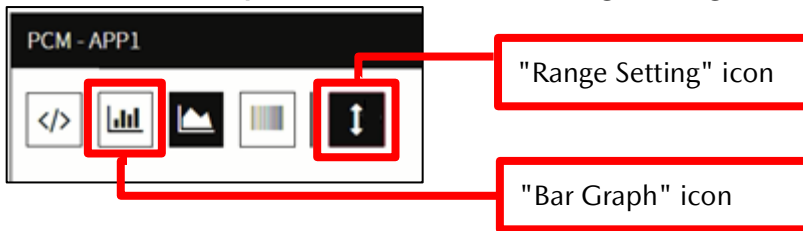
NOTE: When multiple PIDs are monitored together, you can individually set the range for each PID.

➤ **Manual Bar Graph Ranges:**

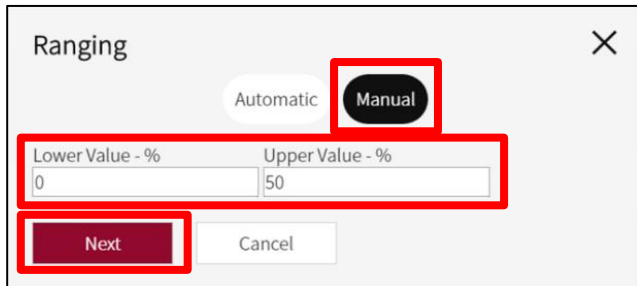
1. Select the **"Change Layout"** icon.



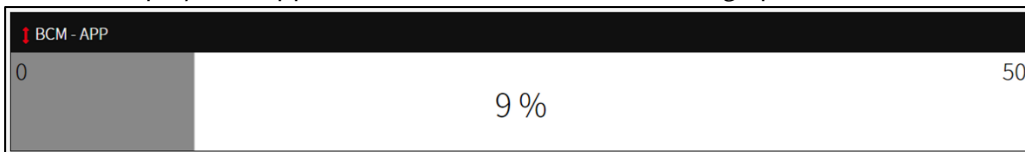
2. Select the **"Bar Graph"** icon, then click the **"Range Setting"** icon.



3. Select **"Manual"** and fill in **"Lower Value - %"** and **"Upper Value - %"**, then click **"Next"**.



4. Click .
5. MDARS displays the upper and lower values set in the bar graph.

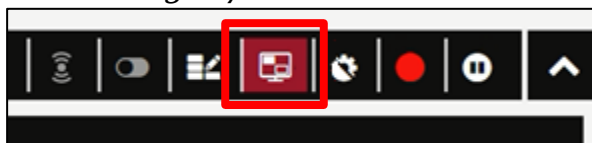


NOTE: The arrow  next to the PID name indicates that a "manual ranging" was used.

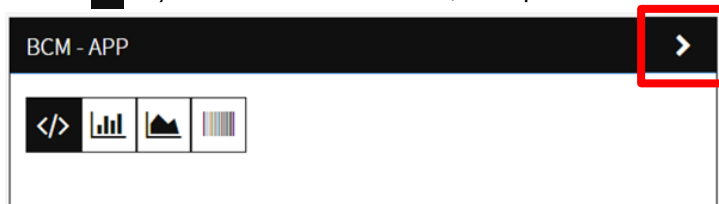
➤ **Hide/Unhide PIDs:**

During live viewing, you can hide or unhide selected PIDs. (For example: This would be helpful when you want to focus on specific PIDs during data monitoring).

1. Select **"Change Layout"**.



2. Select  if you want to hide a PID (Example: Hide **"BCM - APP"**).

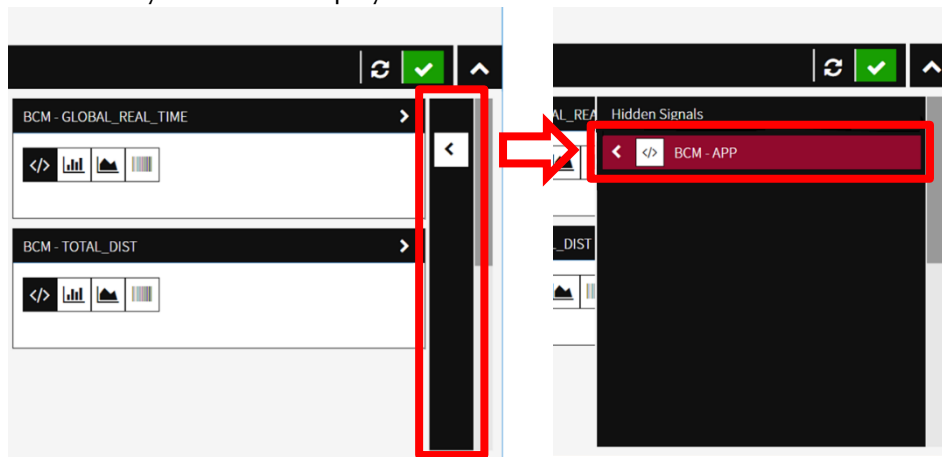


3. Click .

- The PID is now hidden.

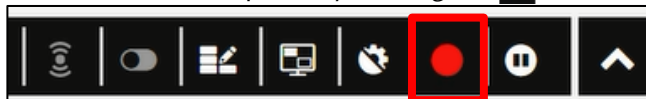
NOTE:

- The PID is hidden, but still captured. Even if you make a recording with some hidden PIDs, you can see the PIDs during the playback of the recording.
- If you want to unhide the PID, mouse over . The hidden PID is temporarily displayed. Click the PID you want to display.



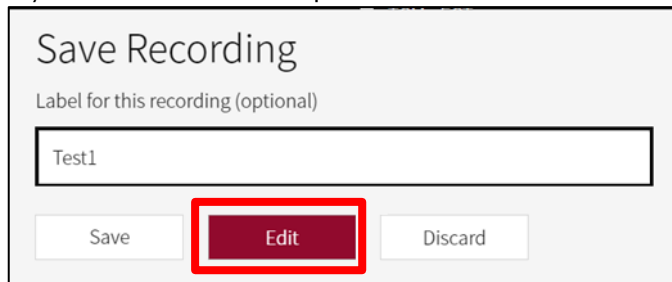
➤ **Manual Capture:**

- Start the manual capture by clicking the  icon.



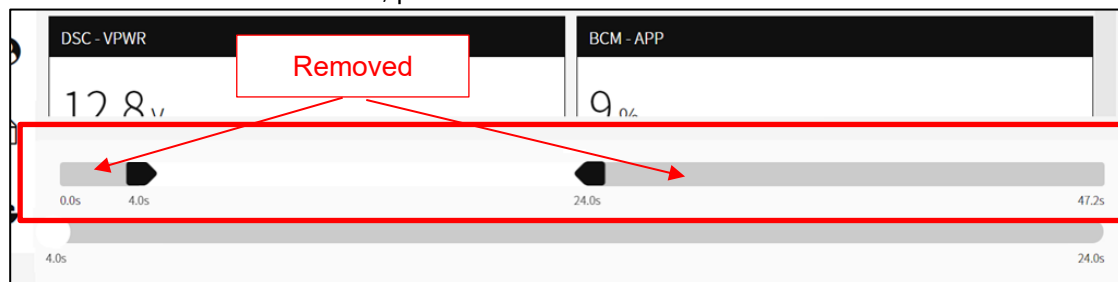
- Cancel the manual capture by clicking the  icon.

- If you want to edit the captured data, click **"Edit"**, otherwise, go to step 6.

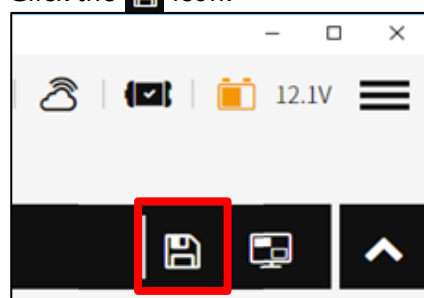


- Slide  from the left side and/or  from the right side. MDARS removes the parts shown in gray.

NOTE: In the screen shot below, parts of **"0.0s to 4.0s"** and **"24.0s to 47.2s"** are removed.

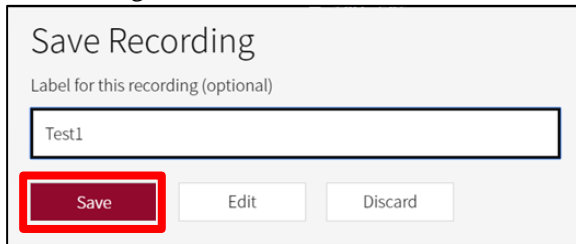


- Click the  icon.



6. Enter the name of the recording, then click **"Save"**.

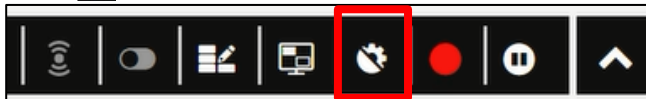
Caution: For personal information protection purposes, **NEVER** use customer names or addresses in the recording name.



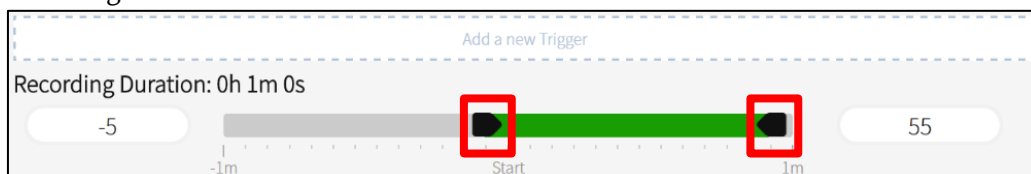
The 'Save Recording' dialog box contains a text input field with 'Test1' entered. Below the field are three buttons: 'Save' (highlighted with a red box), 'Edit', and 'Discard'.

➤ **Auto Capture:**

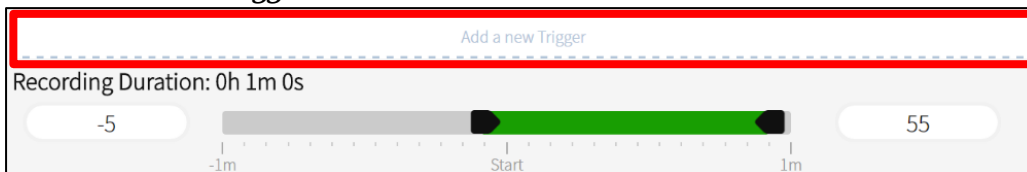
1. Click  on the live view screen.



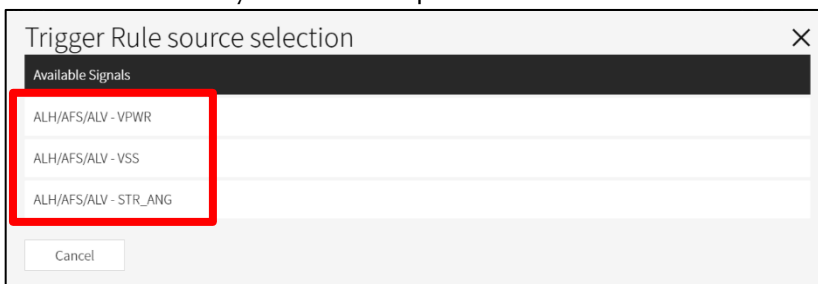
2. Move  from the left side and  from the right side to set the duration of the captured recording.



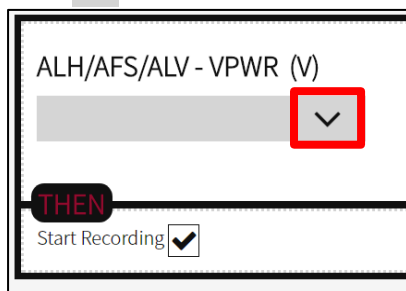
3. Click **"Add a new Trigger"**.



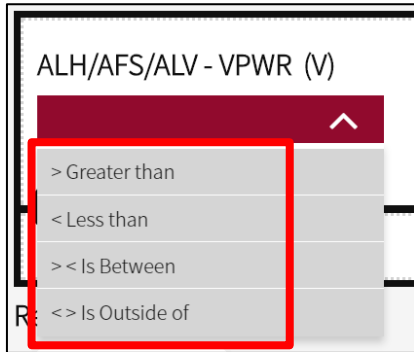
4. Select the PID that you want to capture.



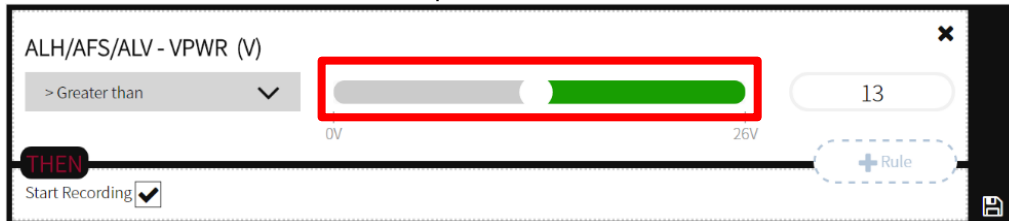
5. Click .



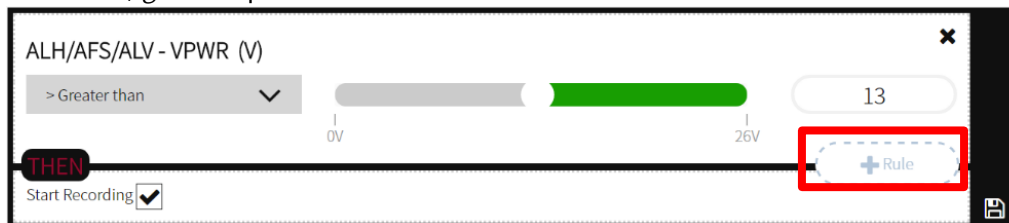
6. Select the capture start condition from the pull-down menu.



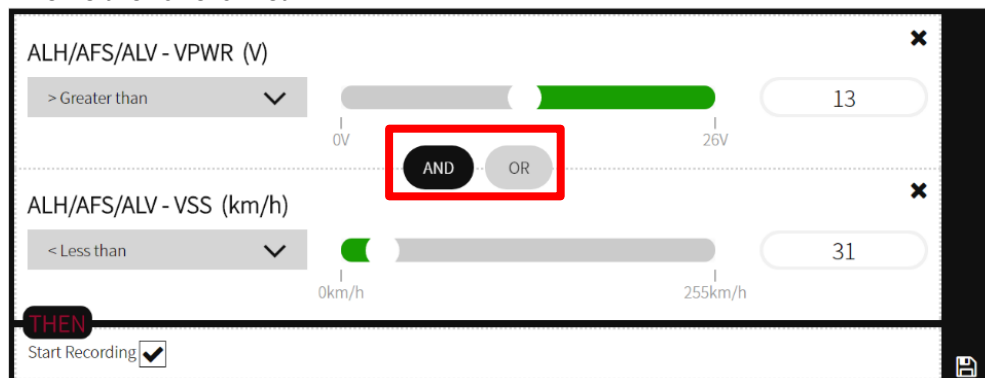
7. Use the slider to set the value of capture start condition.



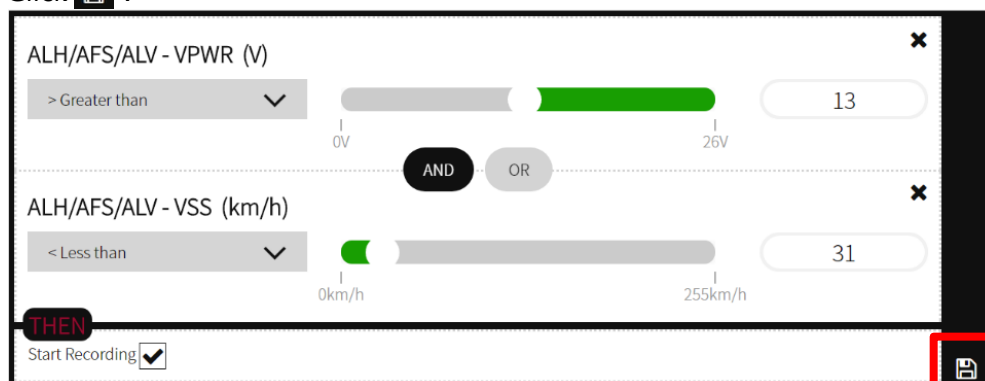
8. To add another PID to the capture start condition, click "+Rule" and set it according to steps 4-7, otherwise, go to step 10.



9. Select "AND" to start the capture when both of the set conditions are met or select "OR" to start when either one is met.



10. Click  .



11. To add a capture start condition, select **"Add a new Trigger"** and set it according to steps 4-10.

ALH/AFS/ALV - VPWR (V) > Greater than 13

AND

ALH/AFS/ALV - VSS (km/h) < Less than 31

THEN

Start Recording

Add a new Trigger

12. After completing the capture start condition settings, click .

Quick Check | Toolbox | Datalogger X

Live View

ALH/AFS/ALV - VPWR (V) > Greater than 13

AND

ALH/AFS/ALV - VSS (km/h) < Less than 31

THEN

Start Recording

ALH/AFS/ALV - STR_ANG (°) > < Is Between -259 & 389

THEN

Start Recording

Add a new Trigger

Recording Duration: 0h 1m 0s

-5 -1m Start 1m 55

NOTE:

- You can delete the capture start condition by clicking .
- When you click , the auto capture start condition is disabled and the icon changes to .
- Click  to enable it.
- You can edit the capture start condition by clicking .

13. MDARS displays a live view screen and enables the auto capture.

Quick Check | Toolbox | Datalogger X

Live View

ALH/AFS/ALV - VPWR

12v

ALH/AFS/ALV - VSS

0 km/h

ALH/AFS/ALV - STR_ANG

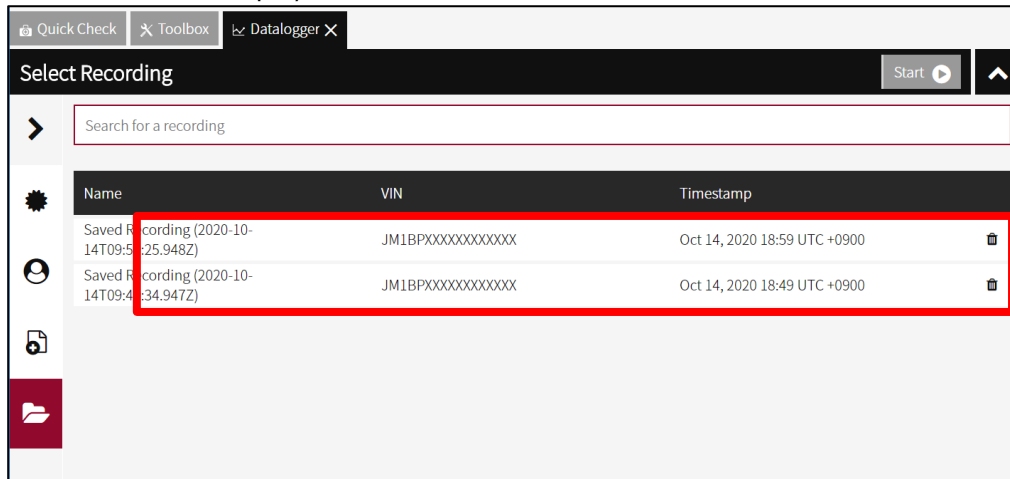
9°

NOTE: When you click , the auto capture is disabled and the icon changes to . Click  to enable it.

■ Captured Data Selection Screen:

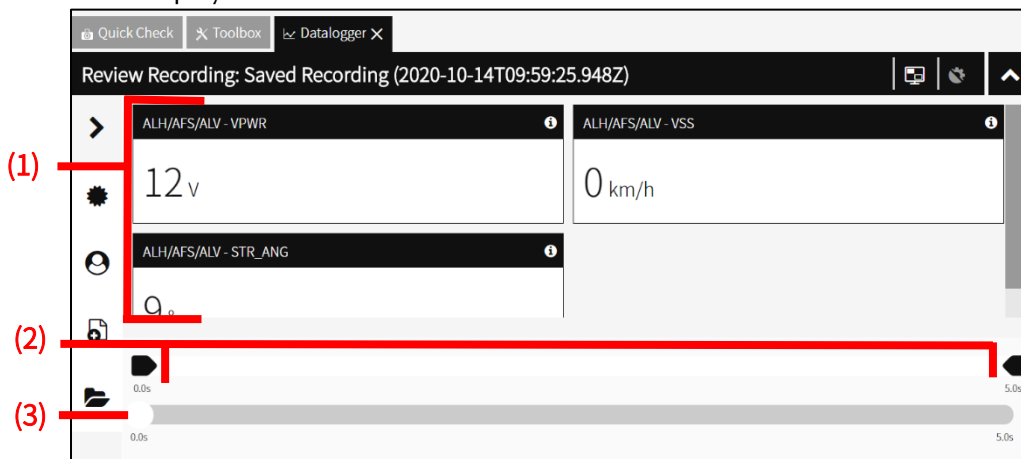
You can playback captured live views.

1. Select a live view to playback.



NOTE: In addition to the history of the work performed by user, MDARS also displays the history of the work performed by other users. For details on the displayed history, refer to "Browsing Vehicle History Items and Captured Recordings in Datalogger" in the "Fundamentals" section.

2. MDARS playbacks the selected live view.

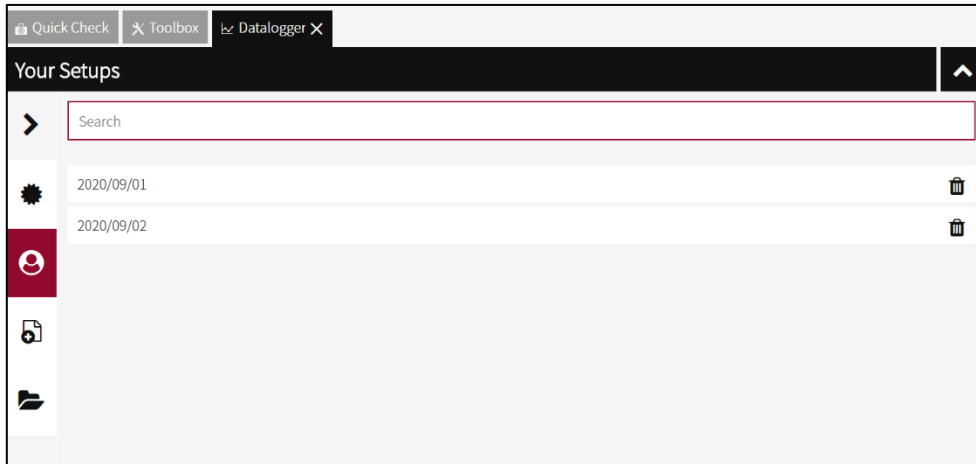


NOTE: During the playback of a saved recording, you can hide or unhide selected PIDs (See "> Hide/Unhide PIDs"). For example, this would be helpful when you want to focus on specific PIDs during the playback of a recording where multiple PIDs were saved.

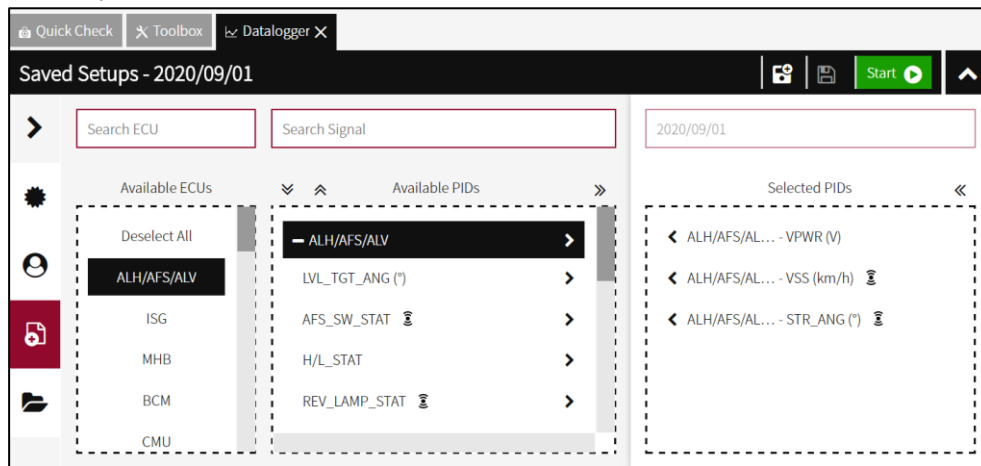
■ Saved Setup Selection Screen:

You can load the saved setup of PIDs.

1. Select the saved setup to load.



2. MDARS displays the PID selection screen and the PIDs included in the setup (in the **"Selected PID"** column).



Software Update

■ Outline:

This function updates the ECU software without removing the ECU.

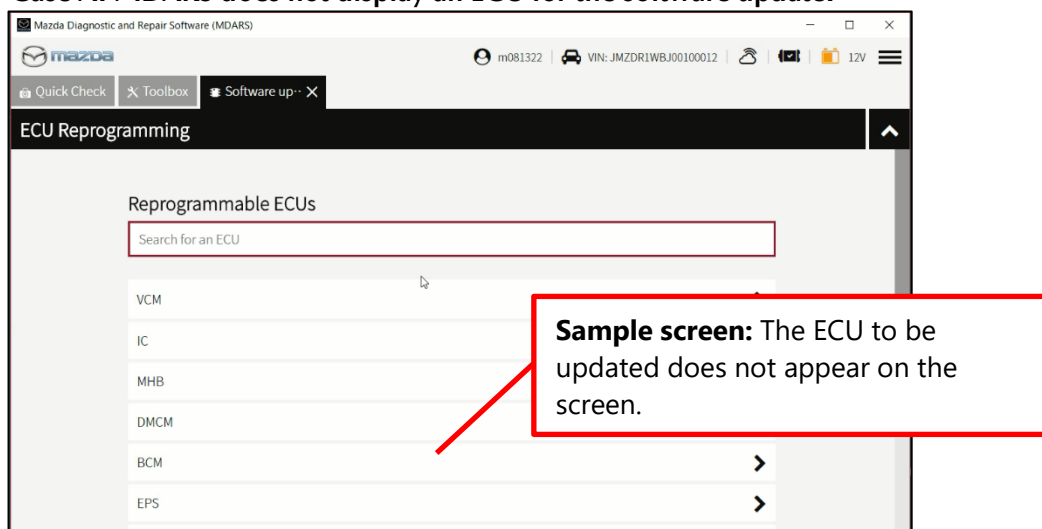
Run the software update in accordance with the service information provided by Mazda.

■ Service Cautions:

- To prevent a failure caused by low battery voltage, connect a battery charger to supply enough voltage to the battery until the end of the software update.
- Turn off all electrical loads before starting the software update.
- Connect an AC adapter to the PC until the end of the software update to prevent failure caused by low battery voltage. **DO NOT** use a vehicle battery outlet as a power source for the PC.
- Remove all non-genuine parts, accessories and non-authorized vehicle modifications before starting the software update.
- **DO NOT** use an ECU from another vehicle, even though it may be the same part number.
- **DO NOT** touch the VCM-II / **DST** or the DLC cable until the end of the software update to prevent failure caused by electrical noise or a loose connection.
- Close all programs other than MDARS. Other programs may affect the performance of the PC and cause it to freeze-up or create other problems.

■ Troubleshooting:

➤ Case A: MDARS does not display an ECU for the software update.



✓ Possible Causes:

- The ECU is not equipped on the vehicle.
- The ECU does not support the software update.
- The ECU cannot communicate with MDARS.

✓ Workaround:

Check the following steps:

(1) Does MDARS display the ECU to reprogram in green, orange, or red on the Quick Check screen?

Yes	Go to step (2).
No (Blue or Not Displayed)	Make sure the vehicle is equipped with the correct ECU. If correct, go to step (2).

(2) Are the VIN and ECU within the scope of the Service Information?

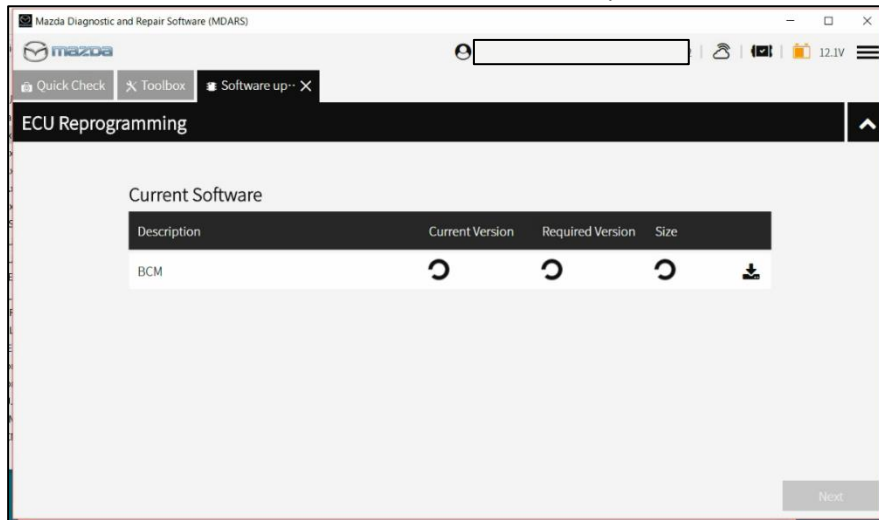
Yes	Go to step (3).
No	MDARS cannot update the ECU software.

(3) Does the VIN displayed on MDARS match the VIN of the subject vehicle?

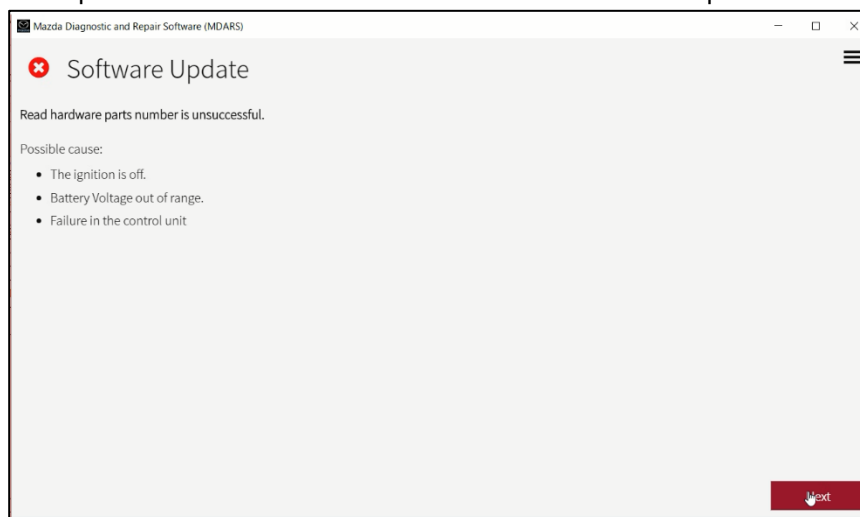
Yes	Contact us according to "Contact us" section.
No	Run the vehicle identification again and retry the software update.

- **Case B: MDARS displayed an error screen without the ECU hardware/software part number after selecting an ECU.**

NOTE: The screen shot below is the MDARS screen just before the error message appeared.



- **Example of Error B-1: MDARS fails to read the hardware part number from the ECU.**



- ✓ **Possible Causes:**
- The ECU cannot communicate with MDARS.
 - There may be an internal malfunction with the ECU.

- ✓ **Workaround:**

Check the following steps:

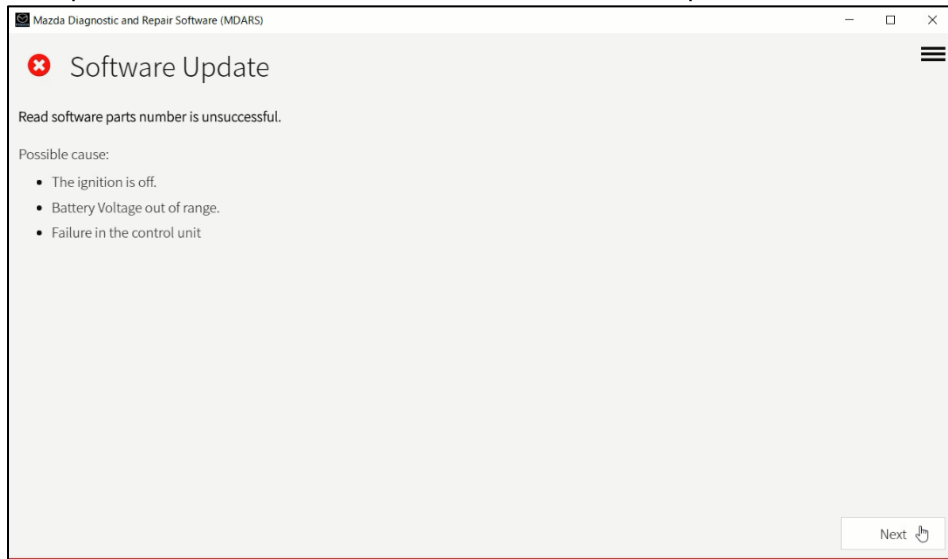
(1) Is the ignition ON?

Yes	Go to step (2).
No	Turn the ignition ON and click the [Next] button, then run the software update again.

(2) Does MDARS display the ECU in green or orange on the Quick Check screen?

Yes	The ECU may have an internal malfunction.
No (Red or Blue)	MDARS may not be able to communicate with the ECU. Inspect the CAN communication line. If no malfunctions are found, the ECU may have an internal malfunction.

■ Example of Error B-2: MDARS fails to read the software part number from the ECU.



- ✓ Possible Causes:
 - The ECU cannot communicate with MDARS.
 - There may be an internal malfunction with the ECU.

✓ Workaround:

Check the following steps:

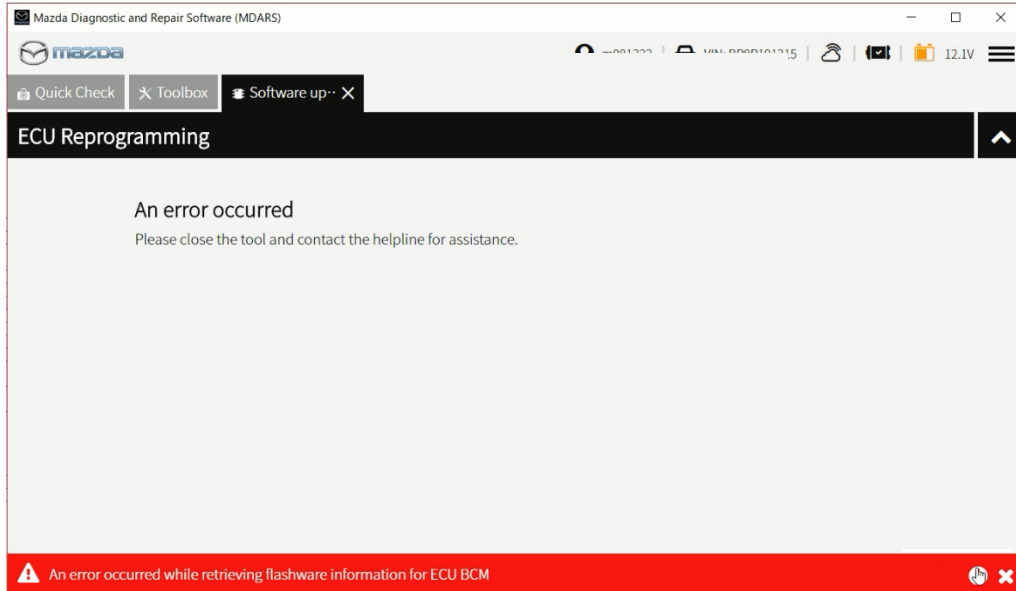
(1) Is the ignition ON?

Yes	Go to step (2).
No	Turn the ignition ON and click the [Next] button, then run the software update again.

(2) Does MDARS display the ECU in green or orange on the Quick Check screen?

Yes	The ECU may have an internal malfunction.
No (Red or Blue)	Inspect the CAN communication line. If no malfunctions are found, the ECU may have an internal malfunction.

■ Example of Error B-3: MDARS fails to specify the software part number to be programmed.



- ✓ Possible Causes:
 - The vehicle may be equipped with the wrong ECU.
 - MDARS may have corrupt or incorrect data.

✓ Workaround:

Check the following steps:

(1) Is the ECU part number correct for the subject vehicle?

Yes*	Go to step (2).
* Either (a) or (b) listed below must be true. (a) There is no history of ECU replacement on the subject vehicle. (b) An ECU from another vehicle has not been used in the subject vehicle and the ECU part number is listed in the parts catalog.	
No	Install a genuine new ECU with the correct part number, then run the software update again.

(2) Does the VIN displayed on MDARS match the VIN of the subject vehicle?

Yes	Go to step (3).
No	Run the vehicle identification again and retry the software update.

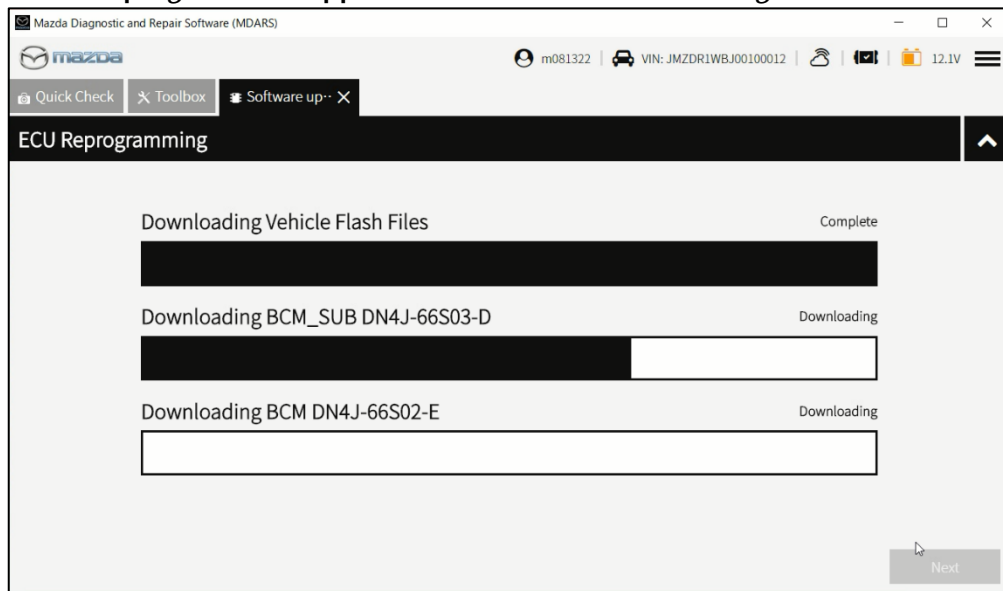
(3) Is there a service history of ECU replacement on the subject vehicle?

Yes	Go to step (4).
No	Contact us according to "Contact us" section.

(4) Was the previous ECU replacement completed successfully?

Yes	Contact us according to "Contact us" section.
No	Replace the ECU according to the procedures in the Workshop Manual, then run the software update again.

➤ **Case C: The progress bar stopped in the middle of downloading the files.**



✓ Possible Causes:

- MDARS failed to download the files from the MDARS cloud.

✓ Workaround:

Check the following steps:

(1) Is the internet connection ok?

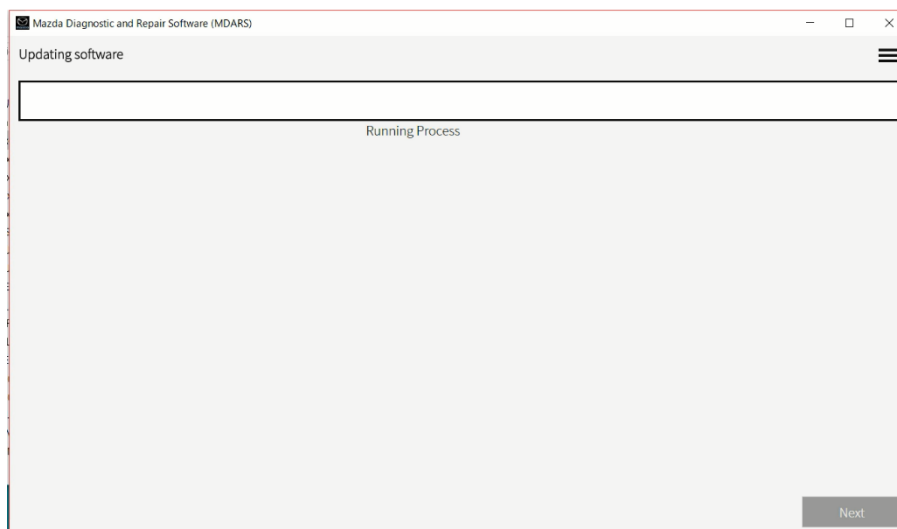
Yes	Try the software update, then go to step (2).
No	Verify the internet connection is ok, then retry the software update.

(2) Does the progress bar stop again while downloading the files?

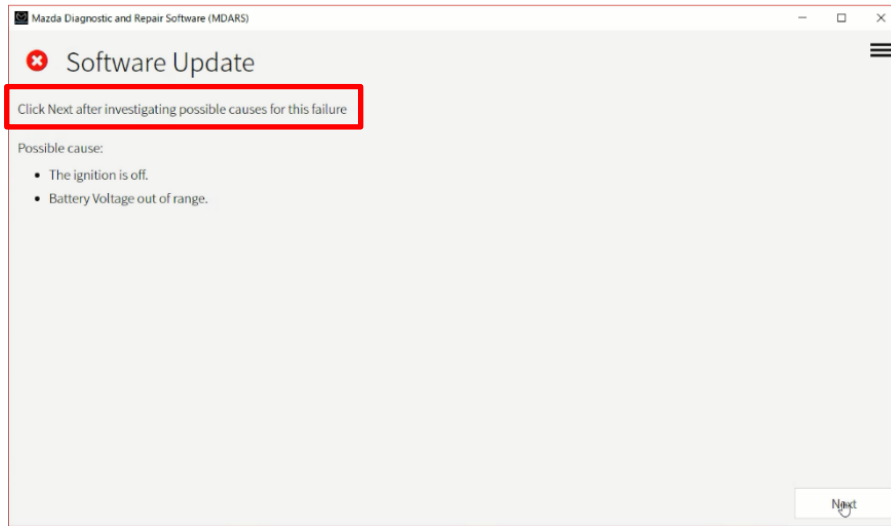
Yes	Contact us according to "Contact us" section.
No	There may have been a temporary communication failure with the cloud. If the file download is successful, continue working.

➤ **Case D: MDARS displayed an error screen in the middle of downloading the files.**

NOTE: The screen shot below is the MDARS screen just before the error message appeared.



- Example of Error D-1: The software update failed, but you can retry it by clicking the “**Next**” button.



- ✓ Possible Causes:
 - The battery voltage is too low.
 - The DLC cable may have an open circuit, a loose connection or it is disconnected from the vehicle or the VCM-II / **DST**.
 - The USB cable may have an open circuit, a loose connection or it is disconnected from the PC or the VCM-II / **DST**.
 - The ECU may have an internal malfunction.
- ✓ Workaround:

CAUTION: DO NOT close MDARS by clicking "X" on the browser when the error screen above is displayed, otherwise, you will not be able to perform the following checks below.

Check the following steps without closing the window:

- (1) Is there a loose connection (or disconnection) between the DLC cable and the vehicle or between the DLC cable and the VCM-II / **DST**?

Yes	Connect the DLC cable, then click the [Next] button. MDARS will automatically restart the software update.
No	Go to step (2).

- (2) Is there a loose connection (or disconnection) between the USB cable and the PC or between the USB cable and the VCM-II / **DST**?

Yes	Connect the USB cable, then click the [Next] button. MDARS will automatically restart the software update.
No	Go to step (3).

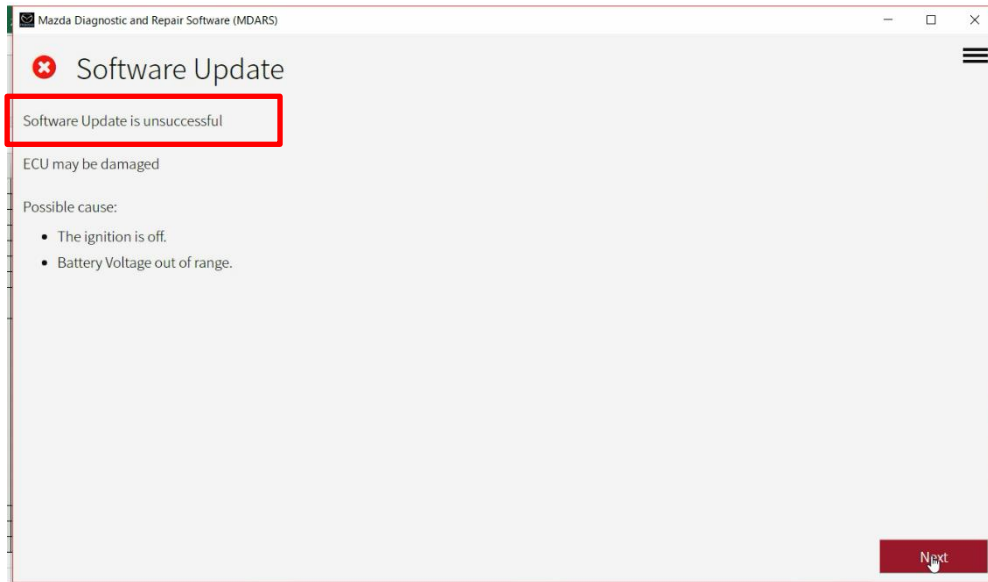
- (3) Is a battery charger connected to the battery?

Yes (Already connected)	Go to step (4).
No	Connect a battery charger to the battery, then click the [Next] button. MDARS will automatically restart the software update.

- (4) Is the battery voltage 11.6V or more?

Yes	Click the [Next] button and try the software update again.
No	Charge the battery to 11.6V or more, then click the [Next] button. MDARS will automatically restart the software update.

- Example of Error D-2: The software update failed. Unfortunately, you CANNOT retry the software update by clicking the "Next" button.



- ✓ Possible Causes:
 - The software update was not successfully completed.
 - The ECU may have an internal malfunction.

- ✓ Workaround:
 - (1) Retry the software update from the beginning.

The software update has been successfully completed.	End of software update.
The software update has failed.	The ECU may have a malfunction where the software update cannot be successfully completed.

Configuration

■ Outline:

- This function configures a new ECU to the appropriate electrical control system.
- Depending on the results of the configuration, additional work may be required after the configuration is completed. Refer to the Workshop Manual for additional details.

■ Service Cautions

- Be aware that there are instances where the ECU value settings return to the default settings (from the assembly plant) during the configuration. (Example: The odometer returns to zero km/miles after a BCM replacement).
- Failure to follow the correct procedures may cause damage to the ECU and/or the vehicle.
- To prevent a failure caused by low battery voltage, connect a battery charger to supply enough voltage to the battery until the end of the software update.
- Turn off all electrical loads before starting the configuration
- Connect an AC adapter to the PC until the end of the configuration to prevent failure caused by low battery voltage. **DO NOT** use a vehicle battery outlet as a power source for the PC.
- Remove all non-genuine parts, accessories and non-authorized vehicle modifications before starting the configuration.
- **DO NOT** use an ECU from another vehicle, even though it may be the same part number.
- **DO NOT** touch the VCM-II / **DST** or the DLC cable until the end of the software update to prevent failure caused by electrical noise or a loose connection.
- Close all programs other than MDARS. Other programs may affect the performance of the PC and cause it to freeze-up or create other problems.
- Additional work may be required after the configuration is completed. Refer to the Workshop Manual for additional instructions.

■ Troubleshooting:

- **Case A: The source of configuration data is unclear. The configuration data may be from an older ECU that was manufactured before the replacement ECU or assembly plant (As-built data).**
- ✓ Workaround:
The vehicle history will provide the data source.
 - When the vehicle history displays "Inhale" in the "Source of Configuration data" column, it means that an old ECU is installed in the subject vehicle.

Mazda Diagnostic and Repair Software (MDARS)

m081322 | VIN: JM1BPAX79K100000X | No Vehicle Mode

Vehicle History | DataLogger

November 26, 2020

Nov 26, 2020 19:22 UTC +0900

Vehicle Identification	11/26/20 7:22 PM	Status: SUCCESS	Duration: 0 seconds
Quick Check > Network View	11/26/20 7:22 PM	PCM	NEW
Quick Check > DTC List	11/26/20 7:22 PM	HW	PAH9-18881-
Collect Diagnostic Information (Autom...	11/26/20 7:22 PM	STE0 SW	PAH9-188K2-L
Collect Diagnostic Information (ECU S...	11/26/20 7:27 PM	Source of Configuration data	inhale
Software update	11/26/20 7:28 PM		
Collect Diagnostic Information (ECU C...	11/26/20 7:35 PM		
Configuration	11/26/20 7:36 PM		
Collect Diagnostic Information (ECU C...	11/26/20 7:39 PM		
Configuration	11/26/20 7:40 PM		
Collect Diagnostic Information (ECU C...	11/26/20 7:44 PM		
Configuration	11/26/20 7:45 PM		

- When the vehicle history displays "as-built" in the "Source of Configuration data" column, it refers to the default data that was originally set at the assembly plant.

The screenshot shows the MDARS interface with the 'Vehicle History' tab selected. The date is September 1, 2020. A timeline of events is shown on the left, with 'Configuration' at 9/1/20 1:35 PM highlighted. On the right, a table displays configuration data for various ECUs. The 'Source of Configuration data' for the BCM is highlighted as 'asbuilt'.

ECU	Source of Configuration data
BCM	NEW
HW	BCKA-67560-
\$726 SW	BCKA-66S02-V
\$707 SW	BCKA-66S01-P
\$750 SW	BCKP-66S03-
Source of Configuration data	asbuilt

➤ **Case B: MDARS did not display an ECU to be configured.**

The screenshot shows the 'ECU Replacement' screen in MDARS. A search bar is present, and a list of replaceable ECUs is shown below. A red box highlights the text 'Example: The ECU to be configured does not appear on the screen.' with an arrow pointing to the list of ECUs.

Replaceable ECUs
Search for an ECU
BCM
PCM
SAS
IC
ADD
ESU

- ✓ Possible Causes:
 - The ECU does not support the configuration.

✓ Workaround:

Check the following steps:

(1) Are you going to start the configuration by following the instructions in the workshop manual?

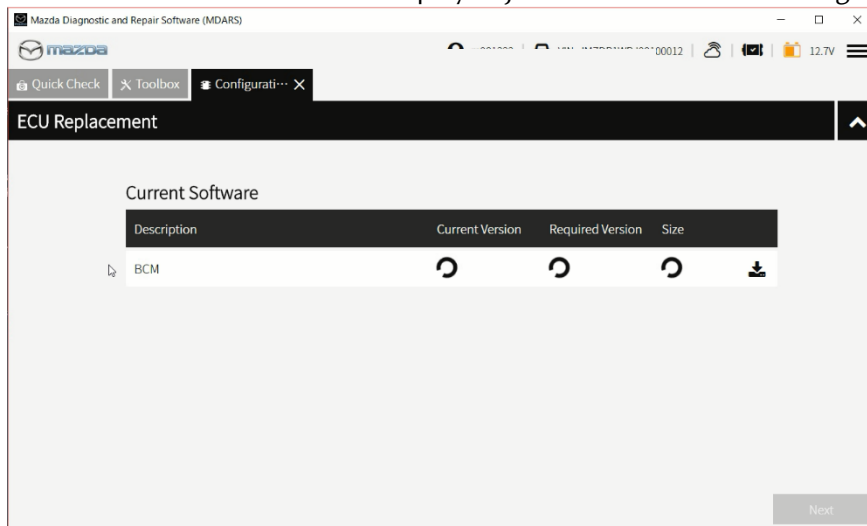
Yes	Go to step (2).
No	It is recommended to refer to the appropriate workshop manual.

(2) Does the VIN displayed on MDARS match the vehicle?

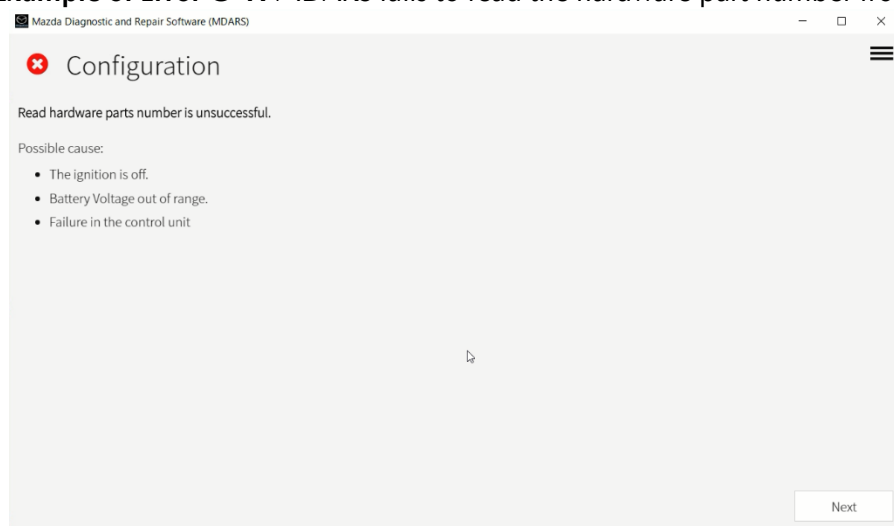
Yes	Contact us according to "Contact us" section.
No	Run the vehicle identification from the beginning and retry.

- **Case C: MDARS displayed an error screen without the ECU hardware/software part number after selecting an ECU.**

NOTE: The screen shot below was displayed just before the error message appeared.



■ **Example of Error C-1: MDARS fails to read the hardware part number from the ECU.**



- ✓ Possible Causes:
- The ECU cannot communicate with MDARS.
 - The ECU has an internal malfunction.

- ✓ Workaround:

Check the following steps:

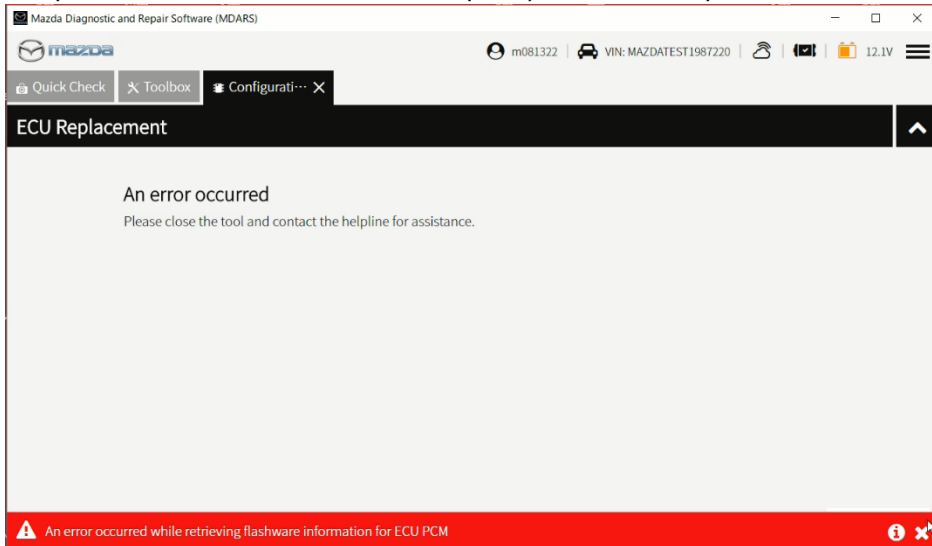
(1) Does the ECU have a history of failed software updates or configurations?

Yes	The ECU may have an internal malfunction.
No	Go to step (2).

(2) Do the procedures follow the instructions in the workshop manual?

Yes	Communication between MDARS and the ECU might fail. Inspect the CAN communication line. If no malfunctions are found, the ECU may have an internal malfunction.
No	Retry the configuration referring to the workshop manual.

■ Example of Error C-2: MDARS fails to specify the software part number to be programmed.



- ✓ Possible Causes:
 - The vehicle may be equipped with the wrong ECU.
 - MDARS may have corrupt or incorrect internal data.

- ✓ Workaround:
Check the following steps:

(1) Is the vehicle equipped with the correct part number ECU?

Yes*	Go to step (2).
* Either (a) or (b) listed below must apply. (a) There is no history of ECU replacement on the subject vehicle. (b) An ECU from another vehicle has not been used on the subject vehicle and the ECU part number is listed in the parts catalog.	
No	Install a genuine new ECU with the correct part number, then retry the configuration.

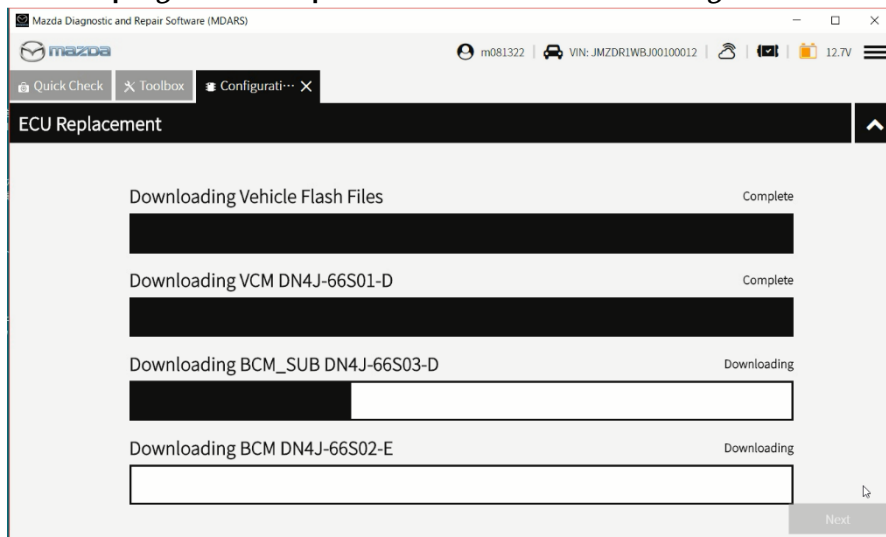
(2) Does the VIN displayed on MDARS match the VIN of the subject vehicle?

Yes	Go to step (3).
No	Run the vehicle identification again and retry the configuration.

(3) Does the BCM have a history of failed software updates or configurations?

Yes	The BCM might have an internal malfunction.
No	Inspect the BCM. If no malfunctions are found, contact us according to "Contact us" section.

➤ **Case D: The progress bar stops in the middle of downloading the files.**



- ✓ Possible Cause:
 - MDARS failed to download the files from the MDARS cloud.
- ✓ Workaround:

Check the following steps:

(1) Is the internet connection okay?

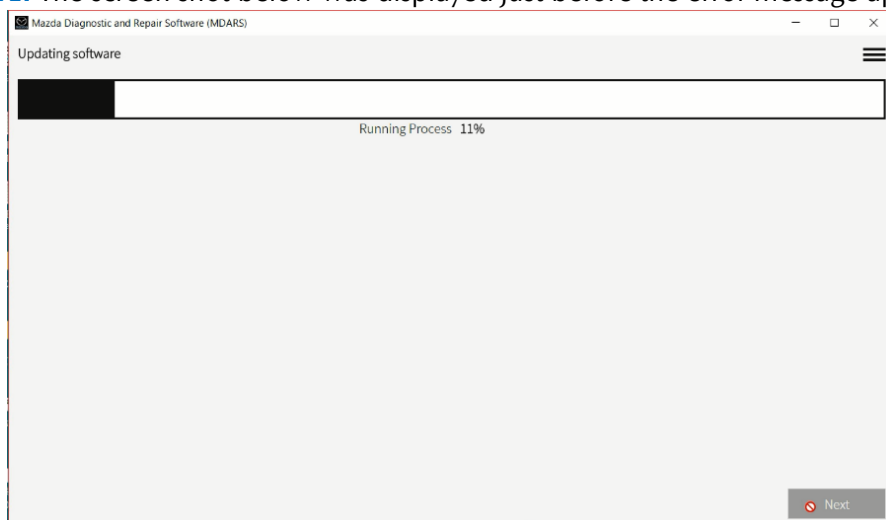
Yes	Retry the configuration, then go to step (2).
No	Verify the internet connection is okay, then retry the configuration. NOTE: If an old ECU is available, install it on the vehicle before retrying the configuration.

(2) Does the progress bar stop again while downloading the files?

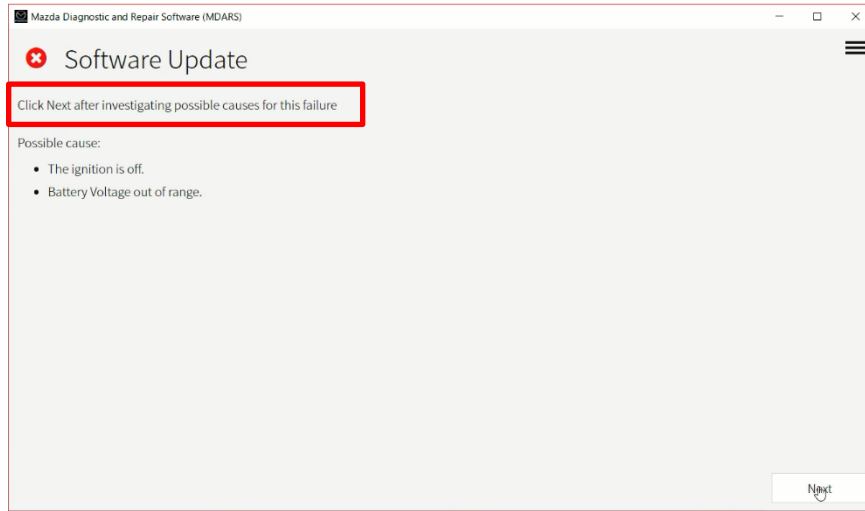
Yes	Contact us according to "Contact us" section.
No	There may be a temporary communication failure with the cloud. If the file download is successful, continue working.

➤ **Case E: MDARS displayed an error screen in the middle of downloading files.**

NOTE: The screen shot below was displayed just before the error message appeared.



- Example of Error E-1: The software update failed, but you can retry it by clicking the "**Next**" button.



- ✓ Possible Causes:
 - The battery voltage is too low.
 - The DLC cable may have an open circuit, a loose connection or it is disconnected from the vehicle or the VCM-II / **DST**.
 - The USB cable may have an open circuit, a loose connection or it is disconnected from the PC or the VCM-II / **DST**.
 - The ECU may have an internal malfunction.
- ✓ Workaround:

CAUTION: DO NOT close MDARS by clicking "X" on the browser when the error screen above is displayed, otherwise, you will not be able to perform the following checks below.

Check the following steps without closing the window:

- (1) Is there a loose connection (or disconnection) between the DLC cable and the vehicle or between the DLC cable and the VCM-II / **DST**?

Yes	Connect the DLC cable, then click the [Next] button. MDARS will automatically restart the configuration.
No	Go to step (2).

- (2) Is there a loose connection (or disconnection) between the USB cable and the PC or between the USB cable and the VCM-II / **DST**?

Yes	Connect the USB cable, then click the [Next] button. MDARS will automatically restart the configuration.
No	Go to step (3).

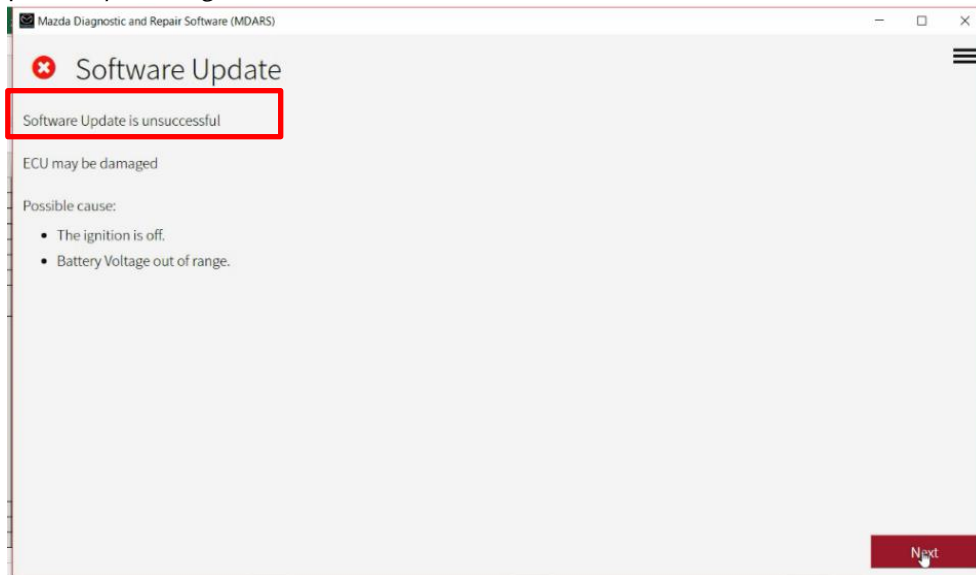
- (3) Is a battery charger connected to the battery?

Yes (Already connected)	Go to step (4).
No	Connect a battery charger to the battery, then click the [Next] button. MDARS will automatically restart the configuration.

- (4) Is the battery voltage 11.6V or more?

Yes	Click the [Next] button and try the configuration again.
No	Charge the battery to 11.6V or more, then click the [Next] button. MDARS will automatically restart the configuration.

- Example of error E-2: The software update failed. Unfortunately, you CANNOT retry the software update by clicking the **"Next"** button.



- ✓ Possible Causes:
 - The software update was not successfully completed.
 - The ECU may have an internal malfunction.
- ✓ Workaround:
 - (1) Retry the software update from the beginning.

The software update has been successfully completed.	End of software update.
The software update has failed.	The ECU may have a malfunction where the software update cannot be successfully completed.

Immobilizer System Related Functions

■ Description:

These functions are used in any of the following cases.

- Activating an extra key (remote transmitter).
- Deactivating all registered keys and activating keys again due to a lost key.
- After replacing an immobilizer related module.

■ Service Cautions:

- Follow Mazda recommended procedures in the workshop manual to complete the entire operation. For an ECU replacement, you may need to run "Configuration" before the immobilizer related service. Key registration will be required for procedures of immobilizer related functions. MDARS will display the detailed procedure.
- If a customer reports a lost key, Mazda strongly recommends running "Deactivating and Activating Advanced key" as soon as possible. The vehicle has a higher risk of theft with a lost key. To avoid such an incident, the function will erase all key information from the vehicle.
- Prepare and register at least two (2) keys to complete "Deactivating and Activating Advanced key" or "Replacing Immobilizer Related Module".
These functions will reset the number of registered keys to zero. After that, engine won't start until at least two (2) keys are registered. You can see the number of currently registered keys with MDARS.
- Use specific keys for the vehicle.
If the wrong key is registered, the vehicle will detect a failure and the keyless system will not operate normally.
- Keep the engine OFF until MDARS shows instructions to start the engine.
If you use these functions while the engine is running, the operation will fail.
- Connect a battery charger to the 12V battery.
You may need to keep the ignition ON (engine not running) for a long period of time. If you do not connect a battery charger, the operation may fail due to low voltage.

■ How to Diagnose When the Ignition Cannot Be Turned ON (Using "Compulsory Ignition ON" Function):

When immobilizer related parts have a malfunction, the ignition cannot be turned ON. In this case, you will need to diagnose the vehicle using the "Compulsory Ignition ON" function.

- (1) Run "Vehicle Identification" with the ignition OFF. Refer to "Manual Vehicle Identification" section for the detailed procedures.
- (2) Run "Compulsory Ignition ON".
- (3) Run "Quick Check" to read DTCs.
- (4) Fix any malfunctions that occur by referring to the workshop manual or MGSS online.

■ FAQ:

If the key registration fails several times, try removing any metal accessories from the key.

For Example:

A key cover, metal coated parts or a key chain, etc. These items may block the radio wave signal from the key.

Mazda Connect Related Functions

Description:

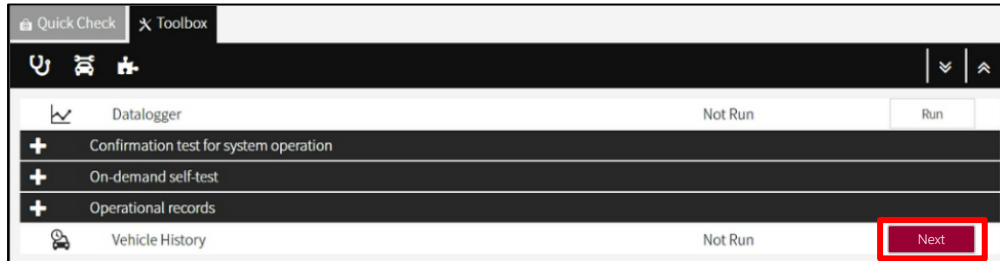
Function Name	Purpose of Function
"Moving into i-ACTIVSENSE data collecting mode"	This function activates the "i-ACTIVSENSE data collecting mode" . NOTE: Technicians should only use this function when instructed to do so by Mazda.
"Withdrawing from i-ACTIVSENSE data collecting mode"	This function deactivates the "i-ACTIVSENSE data collecting mode" . NOTE: Technicians should only use this function when instructed to do so by Mazda.
"Moving into Driving data collecting Mode"	This function activates the "Driving data collecting mode" . NOTE: Technicians should only use this function when instructed to do so by Mazda.
"Withdrawing from "Driving data collecting mode"	This function deactivates the "Driving data collecting mode" . NOTE: Technicians should only use this function when instructed to do so by Mazda.
"Collecting CMU log data"	This function allows the CMU (Connectivity Master Unit) to enable the Diagnostic Record Collection (downloading operation log).
"Moving into Connected Vehicle Maintenance Mode/ Withdrawing from "Connected Vehicle Maintenance Mode"	"Connected Vehicle Maintenance Mode" restricts the transmission of data (malfunction notifications, vehicle status alerts, burglar alerts, etc.) to the server, and rejects remote control commands sent from a customer's smartphone. This means that it prevents sending unnecessary notifications to a customer's smartphone and becoming CO intoxication of technicians due to misuse of remote starter function during parking at dealers. NOTE: When the vehicle is in "Connected Vehicle Maintenance Mode", it displays "Connected Vehicle Maintenance Mode" or "Embedded Communications Restricted" on the Center Display screen.  <u>When to activate "Connected Vehicle Maintenance Mode"?</u> Activate "Connected Vehicle Maintenance Mode" during service only. Regardless of the service performed, set the vehicle status to "Connected Vehicle Maintenance Mode" when a customer comes into your dealership. This operation prevents unnecessary notifications from being sent to the customer's smartphone. Explain to customers that when they receive notifications from MyMazda depends on when "Connected Vehicle Maintenance Mode" was activated on their vehicles. <u>When to DEACTIVATE "Connected Vehicle Maintenance Mode"?</u> Always deactivate "Connected Vehicle Maintenance Mode" before returning the vehicle to a customer.
"Activating TCU"	This transmits new TCU data to the Mazda Connected server to update the control center/carrier data, enabling communication with the new TCU. NOTE: North America: 2019-2021 Mazda3 and 2020-2021 CX-30:

Function Name	Purpose of Function
	- It takes approx. 15 minutes to update a new TCU with data from the control center/carrier after M-MDS transmits the data using "Activating TCU". - The control center and carrier receive and process the data 24 hours a day. All other models except above: - It takes approx. 5 minutes to update a new TCU with data from the control center/carrier after M-MDS transmits the data using "Activating TCU". - The control center and carrier receive and process the data 24 hours a day. European countries: - It takes approx. 5 minutes to update a new TCU with data from the control center/carrier after M-MDS transmits the data using "Activating TCU". - The control center and carrier receive and process the data 24 hours a day.
"Activating Remote Control by Smart Phone"	The "Activating Remote Control by Smart Phone" application registers an encrypted key between the TCU and the BCM/SSU to enable remote control requests sent from a customer's smartphone. This application needs to be run when replacing the above ECU(s), however, it does not work when the vehicle is in the following conditions: - There is no advanced key in the car. - The vehicle is in "Connected Vehicle Maintenance Mode". - The advanced keyless entry system is deactivated (= Keyless radio wave interference protection function for pacemaker is enabled) and/or the transmitter is in power saving function mode. In those cases, return the vehicle status back to the normal condition, then run the application.
"Resetting the Battery of TCU"	When the TCU detects a malfunction of the rechargeable battery (including battery life duration), the TCU sets a flag in the memory as a battery malfunction. After replacing the TCU battery, run the application to clear the flag and allow the TCU to operate properly.

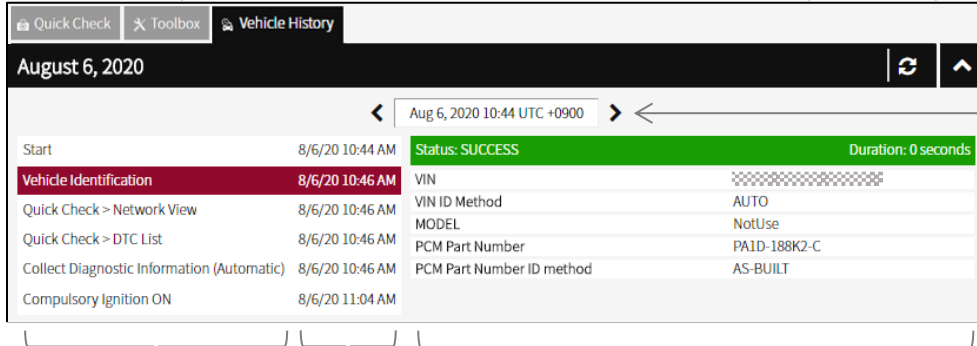
Vehicle History

Browsing Vehicle History:

1. Select "**Vehicle History**" in the Toolbox, then click "**Run**".



2. Vehicle History items for the vehicle which has been automatically/manually identified are listed.



Start date/time for a set of items being displayed

Vehicle History items

Date/time the item started

Result and additional information for an item selected on the left pane

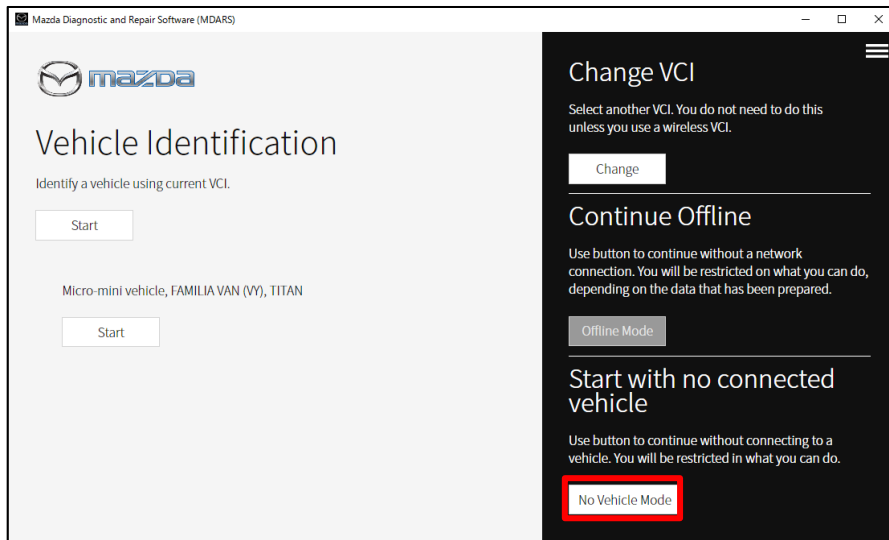
NOTE:

- In addition to Vehicle History items for work performed by the user currently logged into MDARS, items for work performed by other users are also listed. Refer to "**Listed Items**" in the "**Browsing Vehicle History Items and Captured Recordings in Datalogger**" section for details about listed items.
- On-screen date/time is displayed in the time zone set for the PC being used to browse the Vehicle History. The time zone is displayed in a box between ◀ and ▶.
- Additional information on the right pane for a selected item on the left pane differs between items.
- By clicking ◀, the previous item is displayed. By clicking ▶, the next item is displayed.
- By clicking ↺, the latest Vehicle History items are downloaded.

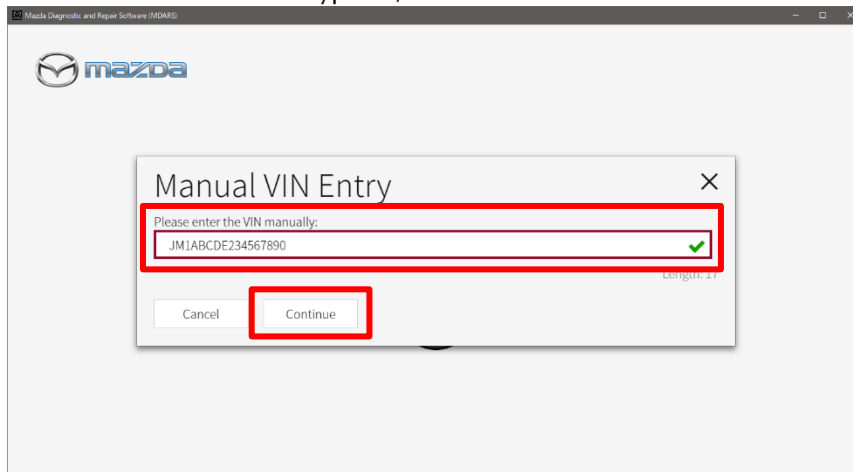
Start With No Connected Vehicle

■ Start with no connected vehicle:

1. Click **"No Vehicle Mode"** under **"Start with no connected vehicle"** after running MDARS.

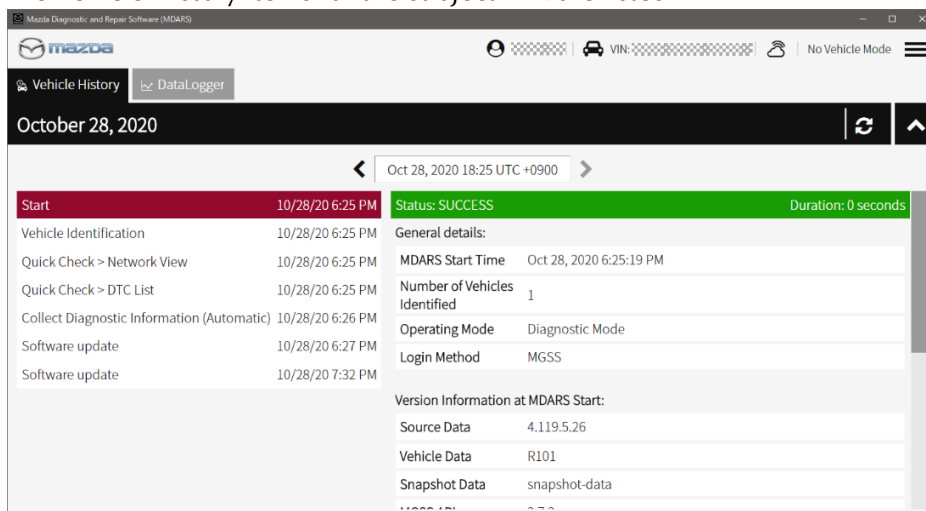


2. Enter the VIN without a hyphen, then click **"Continue"**.

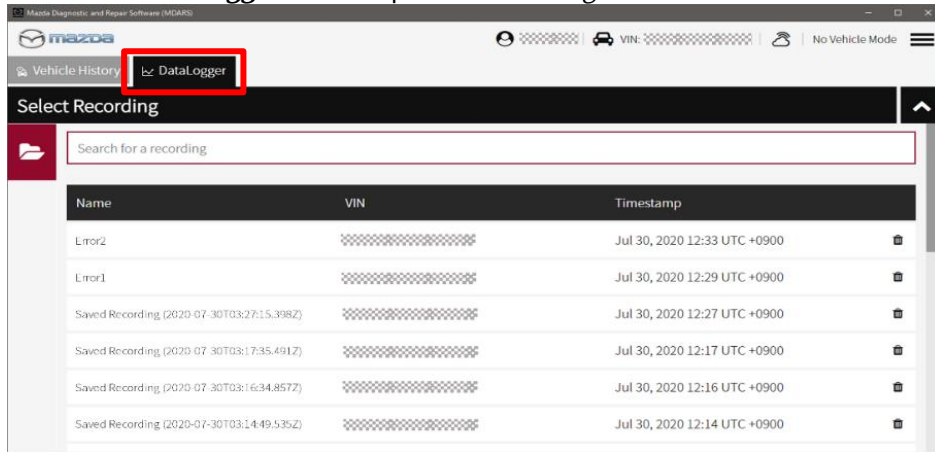


NOTE: The VIN copied to the clipboard from other software/systems can be pasted into the VIN field.

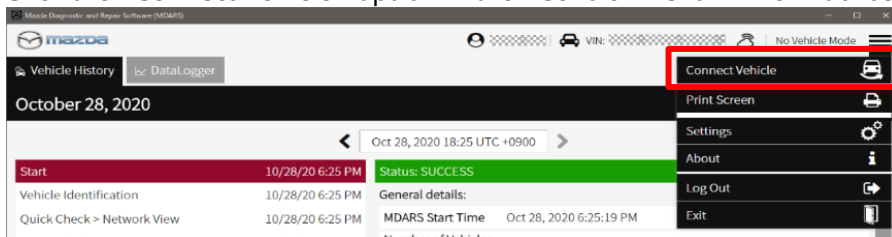
The Vehicle History items for the subject VIN are listed.



3. Select the **"Datalogger"** tab. Captured recordings for the vehicle are listed and can be browsed.



4. Click the **"Connect Vehicle"** option in the **"Control Menu"**. The initial screen is displayed.



Abbreviations

CAN	Controller Area Network
DTC	Diagnostic Trouble Code An alpha-numeric code held in the ECU when it is determined that a malfunction has occurred as a result of diagnosis by OBD. There are two (2) types of DTCs. Those defined commonly by laws and regulations and those defined by the individual vehicle manufacturer.
DST/DST-010	VCI product by DENSO Corporation (Model : DN-DST-010-B) <i>Recommended vehicle communication interface device from MAZDA.</i>
IDS	Integrated Diagnostic Software Diagnostic software that Ford Motor Company possesses its copyright and intellectual property right.
M-MDS	Mazda Modular Diagnostic System Name of overall Mazda genuine diagnostic tool (software/hardware).
MDARS	Mazda Diagnostic and Repair Software Diagnostic software that Bosch Automotive Service Solutions Ltd possesses its copyright.
MGSS	Mazda Global Service Support Technical service support system developed by Mazda.
OBD	On-Board Diagnostics
PID	Parameter Identification Data
VCI	Vehicle Communication Interface General name for a communication interface device between the on-board computer and the diagnostic device. Use the dedicated VCM-II / DST for M-MDS.
VCM-II	Vehicle Communication Module II Mazda genuine communication interface device.
VIN	Vehicle Identification Number

Change History

Version	Date updated	Section(s)	Summary
1.0	Feb. 1st, 2021		Initial release
2.0	Nov. 2nd, 2021	Fundamental Instructions/ General Information/ Service cautions	Warnings for working on a high voltage system or servicing high voltage parts are added.
		PC Requirements/ System Requirements	Microsoft Edge is added as a Browser.
		Repair Function/ Software Update/ Case D Example of Error D-2	A possible cause is added.
		Repair Function/ Configuration/ Case E/ Example of error E-2	A possible cause is added.
		Vehicle History/ Browsing Vehicle History	Detailed explanation for Vehicle History function is added.
3.0	March 11 th , 2022	Fundamental Instructions/ General Information/ Service cautions	A warning for vehicle data traceability management/ cautions for password management as a cyber security countermeasures are added.
		Fundamental Instructions / MDARS Requirements	e-mail address for inquiries about VCM-II Management and MDARS User Management is changed.
4.0	Sep. 23 th , 2022	Fundamental Instructions/ PC Requirements	Microsoft Edge (both the native mode and the Internet Explorer mode) is added in supported browser. Currently, Windows 11 is not supported. Correction.
		Fundamental Instructions/ Installing MDARS	Procedure to confirm the MDARS extension for Microsoft Edge is added. Procedure to enable the add-on of Internet Explorer is updated.
		Operational Instructions/ Installing, Setting, Running, and Updating	Microsoft Edge is added in installing procedures of MDARS. The final screen of MDARS installer is updated.
		Operational Instructions/ Mazda Connect Related Functions	Delete "NOTE" in "Moving into Connected Vehicle Maintenance Mode/ Withdrawing from "Connected Vehicle Maintenance Mode"" section since its function is currently supported on all 7 Gen models.
5.0	Jun. 2 nd , 2023	Fundamental Instructions/ PC Requirements	Windows11 is added in supported OS. Information for PC Requirements are Arranged.
5.1	Jun. 8 th , 2023	Table of Contents	Correction of errors
5.2	Feb.27 th ,2024	MDARS Requirements	Change contact dept. and E-mail address
		Whole of document	Change whole of document because of adding DST as recommended VCI.