Service Information

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MAZDA

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Coverage ☐ Distributor only ■ Please inform your dealers	Date Issued January 23, 2014

Please convey this information to your ☐ Director ■ General Manager ■ Warranty Dept. ■ Parts Dept. ■ Training Dept. ■ Field Rep.	Date Revised **February 4, 2014**

Applicable Model Mazda3 (BM), Mazda6 (GJ), CX-5 (KE) with SKYACTIV Engine & i-ELOOP	Applicable Countries or Specifications Worldwide (Except North America)

REVISED

Revision Note: The Beginning VIN & Date of Modification have been revised.

Subject: i-Stop Warning Light flashing, Master Warning Light & Charging System Warning Light illumination and a message "Charging System Malfunction/Engine could stop unexpectedly" in LCD (DTC P1794 and P2502)

DESCRIPTION

After driving in the rain and on a road with rain puddles, the i-stop warning light is flashing and the master warning light & charging system warning light are illuminated. A message "Battery Management System Inspection Required" is indicated in TFT LCD, and afterward the message changes to "Charging System Malfunction/Engine could stop unexpectedly". The DTC P1794:00 and P2502:00 are stored in the PCM memory.

- P1794:00:   Capacitor (i-ELOOP) system: Capacitor (i-ELOOP) malfunction
- P2502:00:   Generator system: Malfunction in voltage generated by generator

CAUSE

Improper control logic of the PCM.

MASS PRODUCTION CHANGE

Control logic of the PCM has been changed.

SUBJECT VIN & PRODUCTION DATE

Mazda3
  ADR Spec.
    TBD
  EU Spec.
    TBD
  Israel Spec.
    TBD
  General Spec.
    TBD
Mazda6
  ADR Spec.
    TBD
  EU Spec.
    TBD
  Russia Spec.
    TBD
CX-5
  China Spec.
  TBD

<u>REPAIR PROCEDURE</u>
Customers having this concern should have their vehicle repaired using the following repair procedure.

Note (for CX-5):
In order to make it easier to perform the battery condition initialization setting (i-stop setting) afterward, first verify and take a note of PID **"BATT_SOC"** value. To do so, connect the Mazda Modular Diagnostic System (M-MDS) to the vehicle and then select "Datalogger"→ "PCM" → PID **"BATT SOC"**.

1. Verify the DTC P1794:00 & P2502:00 are stored in PCM memory.
2. If both the DTCs are confirmed in memory, select M-MDS initial screen → "Datalogger" → "Module" →"PCM"→ PID **"CAP_SYS_13"** and read the value.
   ON ➤ Go to next step.
   OFF ➤ This Service Information is not applicable. Diagnose the concern according to the instructions in the workshop manual.
3. Reprogram the PCM with M-MDS using IDS 88.03 or later software, or IDS 89.00 or later software.

   Note:
   • Always update the IDS tool first, then follow on-screen instructions to download the needed calibration file for PCM reprogramming.
   • Follow the attached "Service Caution for reprogramming"

Calibration Files Information

Spec.	Model	Engine (*1)	Transmission	File Name	Memo
ADR	Mazda3	2.5L	AT	PY7B-188K2-B	Denso
				PY6W-188K2-B	Mitsubishi
	Mazda6			PY4H-188K2-E	Denso
				PY4E-188K2-E	Mitsubishi
		2.2L		SH08-188K2-K	-
EU	Mazda3	2.0L	MT	PEAN-188K2-B	Denso
				PE20-188K2-B	Mitsubishi
	Mazda6	2.0L	MT	PE6G-188K2-H	Denso
				PE5T-188K2-H	Mitsubishi
			AT	PE6H-188K2-H	Denso
				PE5V-188K2-H	Mitsubishi
		2.5L	AT	PY3H-188K2-E	Denso
				PY3E-188K2-E	Mitsubishi
		2.2L	MT	SH1R-188K2-M	Sedan
				SH3A-188K2-J	Wagon
				SH4J-188K2-C	Sedan, High Gear type
				SH4K-188K2-C	Wagon, High Gear type
				SH05-188K2-M	High power
			AT	SH1S-188K2-L	Low power
				SH06-188K2-M	High power
Russia	Mazda6	2.5L	AT	PY3J-188K2-E	Denso
				PY3F-188K2-E	Mitsubishi
Israel	Mazda3	2.0L	AT	PEFR-188K2-A	Denso
				PEFP-188K2-A	Mitsubishi
General	Mazda3	1.5L St5	AT	P53D-188K2-A	Denso
				P53C-188K2-A	Mitsubishi
		1.5L St4		P52X-188K2-A	Denso, E-OBD
				P52W-188K2-A	Mitsubishi, E-OBD
				P52S-188K2-A	Denso, P-OBD
				P52R-188K2-A	Mitsubishi, P-OBD
				P53K-188K2-A	Denso, P-OBD
				P53J-188K2-A	Mitsubishi, P-OBD
		2.0L St5		PEGG-188K2-A	Denso
				PEGF-188K2-A	Mitsubishi
		2.0L St4		PEFT-188K2-A	Denso, E-OBD
				PEFS-188K2-A	Mitsubishi, E-OBD
				PEGE-188K2-A	Denso, P-OBD
				PEGD-188K2-A	Mitsubishi, P-OBD
				PEFW-188K2-A	Denso, P-OBD
				PEFV-188K2-A	Mitsubishi, P-OBD
	Mazda6	2.5L	AT	PY5C-188K2-E	Denso, P-OBD
				PY4V-188K2-E	Mitsubishi, P-OBD
				PY5D-188K2-E	Denso, E-OBD
				PY4W-188K2-E	Mitsubishi, E-OBD
China	CX-5	2.5L	AT	PY6M-188K2-A	-
				PY6L-188K2-A	-

(*1)
1.5L: SKYACTIV-G 1.5   **2.0L:** SKYACTIV-G 2.0   **2.5L:** SKYACTIV-G 2.5
2.2L: SKYACTIV-D 2.2
1.5L St5: SKYACTIV-G 1.5(Emission Stage5)   **1.5L St4:** SKYACTIV-G 1.5(Emission Stage4)
2.0L St5: SKYACTIV-G 2.0(Emission Stage5)   **2.0L St4:** SKYACTIV-G 2.0(Emission Stage4)

4. Perform the battery condition initialization setting (i-stop setting). Charge or replace the battery if necessary according to the result of battery electrolyte gravity inspection.

Note: During PCM reprogramming, some vehicles may show some warning messages with flashing Start stop switch. This is caused by reset function of ABS/DSC CU not working properly.
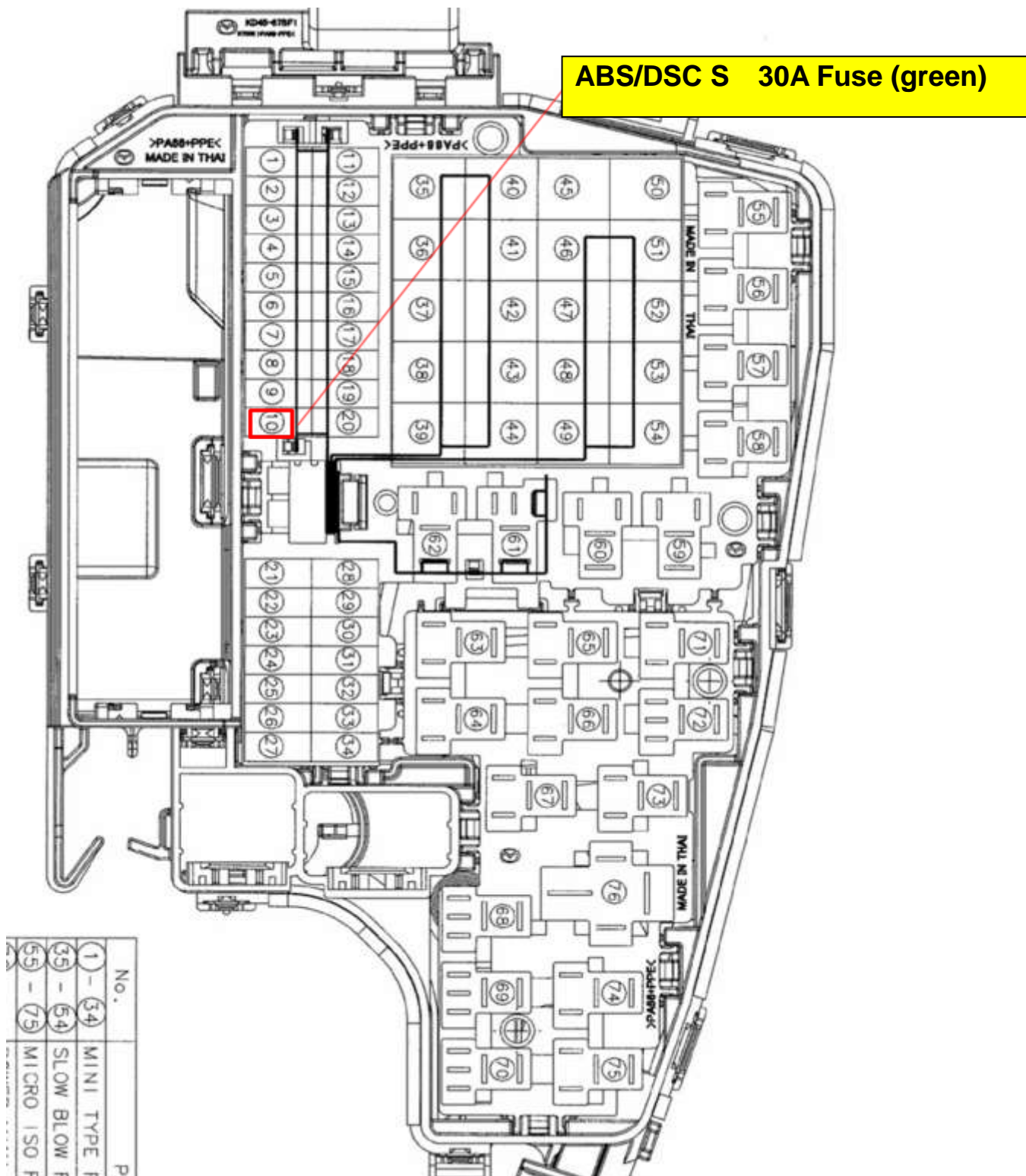

Start Stop switch light flashes.

Below warning messages are displayed.

COUNTERMEASURE

1. After PCM reprogramming has been finished, turn the IG-off by pushing Start Stop switch for long time (around 3 seconds) to turn off.
2. After that, disconnect **ABS/DSC S 30A** Fuse for 30 seconds so that the system is reset back to normal.

ABS/DSC S   30A Fuse (green)

Note: There is a similar named fuse "ABS/DSC M 50A. Be sure to avoid confusion.

WARRANTY INFORMATION
This warranty information applies only to verified customer complaint ON VEHICLE eligible for warranty repair.

Assembly group		F – Fuel and Emission Control	
Subassembly group		08 – EMISSION CONTROLS	
Symptom Code		6X	
Damage Code		9W	
DTC Code		P1794	
Causal Part No.		5555 RP PCM	
Q'ty		0	Not applicable for Europe as only Mazda3 and Mazda6 are affected
Operation No. & Labor Hours	PCM, Reprogramming	XXK2XAFX, 0.3 Hrs.	
	* Reprogramming * Battery Electrolyte Gravity Inspection (once).	XXK2XBFX, 0.4 Hrs.	
	* Reprogramming * Battery Electrolyte Gravity Inspection (twice) * Recharge.	XXK2XCFX, 0.6 Hrs.	
Period Covered		Normal Warranty Period	

After the reprogramming, be sure to keep the copy of "Log Viewer" screen on M-MDS along with the repair order and warranty application sheet, until the vehicle's warranty period expires. Please refer to S/I E005/10.

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Technical Service Dept.
Mazda Motor Corporation
1D70470702 (MC Internal Use)

-Attachment-
Service Caution for Reprogramming

CAUTION
· Perform reprogramming only when the concern matches to the condition described on Service Information. Unnecessary reprogramming may change drive feeling and result in customer complaint.
· Do NOT perform reprogramming with modules which are taken from other vehicles and installed on the repaired vehicle. There is a possibility that the engine will not start.

1. Regular maintenance requirements for PC.
- Verify that the latest M-MDS software is installed on the PC.
- Make sure to keep proper free space on the PC's hard disc. Insufficient free space (less than 1 GB) may result in PC freeze during reprogramming.

2. Attentions for PC operation.
- When following M-MDS instructions such as "Select YES/NO", "Turn IG on" etc., carefully read the instructions first then acts the next operation correctly. Too quick action will cause incorrect selection/ key touching and the following PC freeze. Wait for a few seconds and then select and press correct button.
- Terminate all programs other than IDS on the PC.   Or, it will take longer time for reprogramming, PC may freeze or it will cause any other problem.
- Perform reprogramming under proper Internet environment.   Especially when using wireless network, make sure to have good connection.
- Set the power management of the PC to 'Always ON'.

3. Before reprogramming
- For vehicles equipped with i-stop, the parameter "Battery State of Charge" is reset during the PCM reprogramming procedure, but it is needed for "Battery condition initialization setting (i-stop setting)" to decide whether battery charging is necessary or not. Therefore check and record the PID BATT_SOC inside the PCM first by using M-MDS Data logger function before reprogramming the PCM.

- Low voltage may result in abnormal termination and/or PCM (TCM) data corruption. Please check following items.

· Do NOT connect AC adapter to VCM when M-MDS is communicating with a vehicle.

Do NOT connect
VCM

· Connect AC adapter to the PC in order to stabilize voltage fluctuation during reprogramming (Do NOT use vehicle battery outlet as power source for the PC).

Connect
ノートPC

· Connect battery charger (charge current maintained within 10 to 15A) to the vehicle to stabilize voltage fluctuation.

Connect

· Make sure to turn off all the electrical loads. (Especially A/C (blower), audio, rear defogger and headlights).

· Disconnect all non-genuine aftermarket electrical parts and modifications.
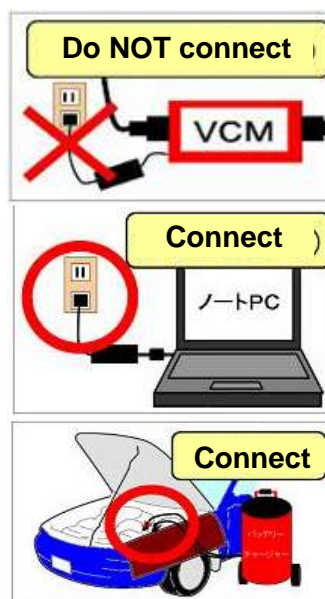
4. *During reprogramming*
- On some models, the meter illumination turns off during reprogramming. This is normal operation.
- Do not touch the VCM and DLC cable to prevent noise occurrence and bad connection.

5. *After reprogramming*
- After reprogramming, delete all DTCs, then perform self-test and verify no DTC is stored.
  Note: After reprogramming, communication error related DTCs may be stored. This is normal operation and you can delete these DTCs.
  Note: In some cases the vehicle may set U-codes that will not clear and the engine will not shut off. To correct this concern, disconnect the F-45 (30 amp ABS fuse) for 10 seconds, then recheck. The F-45 fuse is located in the F-01 fuse block on the left side of the engine compartment.
- Please close the session once even when you continue the reprogramming on another same model.
  Note: Even with the same model, the applicable reprogramming file may be different depending on the equipment type/level of transmission, immobilizer, etc.

- Please confirm the file name on the "Log Viewer" screen after reprogramming.

> **NOTE:**
> After reprogramming, once close the session.　Then, open a new session again and go to the "Log Viewer" screen on which the programmed file name is displayed as shown in figure. Take the screen copy and keep it with the reprogramming date written on it.

Filename (PCM):
SW-**LFCA**E**A**000

LFCA : Base No.
A : Suffix

Please verify the suffix is same or later than the Service Information.

Filename (PCM):
PE7B-188K2-D

PE7B-188K2 : Base No.
D : Suffix

Please verify the suffix is same or later than the Service Information.

Filename (TCM):
PE25-21PS1-A
PE25-21PS1 : Base No.
A : Suffix

<Caution for vehicle with i-stop>
- For vehicles equipped with i-stop, perform "battery condition initial learning" after reprogramming, or i-stop does not function.