

# Service Information

Mazda Motor Corporation

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Category <b>F</b>	<b>Repair Guidance</b>	Ref. No. R083/12A	Page 1 of 2
Coverage <input type="checkbox"/> Distributor only <input checked="" type="checkbox"/> Please inform your dealers		Date Issued November 15, 2012	
Please convey this information to your <input type="checkbox"/> Director <input checked="" type="checkbox"/> General Manager <input checked="" type="checkbox"/> Warranty Dept. <input checked="" type="checkbox"/> Parts Dept. <input checked="" type="checkbox"/> Training Dept. <input checked="" type="checkbox"/> Field Rep.		Date Revised <b>July 11, 2013</b>	
Applicable Model CX-5 (KE) with SKYACTIV-D 2.2	Applicable Countries or Specifications Europe		

[Revised]

The "Mass Production Change", "Beginning VIN & Date of Modification" and "Repair Procedure" have been revised.

**Subject: MIL Illumination with DTC P0421:00 <SKYACTIVE-D 2.2>**

## DESCRIPTION

Some vehicles may experience a MIL illumination with DTC P0421:00 stored in PCM memory and i-stop function being inoperative.

- P0421:00 Warm up catalyst system efficiency below threshold

## CAUSE

Improper diagnosis logic of PCM.

## MASS PRODUCTION CHANGE

The diagnosis logic of PCM has been ~~changed~~ further improved.

## BEGINNING VIN & DATE OF MODIFICATION

### **Europe Spec.**

~~JMZ KE \*\*\*\* \* 145113 — Nov 2, 2012~~

JMZ KE\*\*\*\*\* 224556 May 29, 2013

### **ADR Spec**

JM0 KE \*\*\*\* \* 130311 Oct 31, 2012

## REPAIR PROCEDURE

1. Verify customer complaint with DTC P0421:00 being stored in the PCM memory.
2. Verify the current PCM file name of the vehicle by log viewer screen.
  - If it is the same as that in the below chart or later one, this Service Information is not applicable. Troubleshoot DTC P0421:00 following the instructions in the Workshop Manual.
  - If the PCM file name is before the below chart, reprogram the PCM with M-MDS using IDS 85.04 or later software, or IDS 86.00 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.	Power	Transmission	Drive	Kickdown Switch	File Name
ADR	High	4WD	AT		SH04-188K2-N
EU	Low	MT	2WD	N/A	SH01-188K2-S
			4WD	N/A	SH1A-188K2-S
		AT	2WD	Without	SH02-188K2-R
			4WD	With	SH3E-188K2-E
	High	MT	4WD	Without	SH1B-188K2-R
				With	SH3F-188K2-E
		AT	4WD	N/A	SH1J-188K2-S
				Without	SH1K-188K2-R
With	SH3G-188K2-E				
Russia	High	AT	4WD	With	SH3N-188K2-D

3. After PCM reprogramming, conduct the battery condition initial setting (i-stop setting) following the Workshop Manual “**BATTERY CONDITION INITIALIZATION SETTING (i-stop SETTING) [SKYACTIV-D 2.2]**”.

<Workshop Manual>

~~Required procedure after negative battery cable disconnection/connection~~

~~**BATTERY CONDITION INITIALIZATION SETTING (i-stop SETTING) [SKYACTIV-D 2.2]**~~

WARRANTY INFORMATION

This warranty information applies only to verified customer complaint on vehicle eligible for warranty repair.

Symptom Code	6X
Damage Code	9W
DTC Code	P0421
Causal Part No.	5555 RP PCM
Q'ty	0
Operation No. & Labor Hours	• Reprogramming XXH9AXFX 0.3 Hrs
	• Reprogramming • Battery Electrolyte Gravity Inspection (once). XXH9BXXFX 0.4 Hrs
Period Covered	Normal warranty period

**Note:**

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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2C61910745 (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.

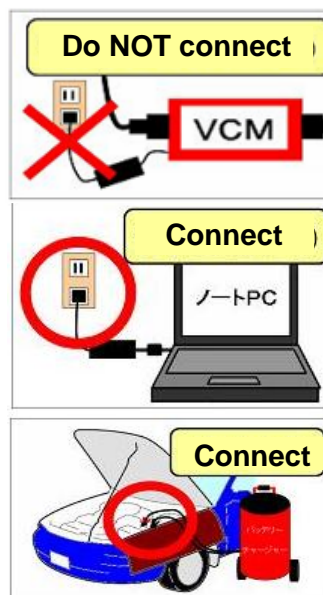
- When following M-MDS instructions such as "Select YES/NO", "Turn IG on" etc., carefully read the instructions first then acts the next operation correctly. Too quick action will cause incorrect selection/ key touching and the following PC freeze. Wait for a few seconds and then select and press correct 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.
- 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 battery charger (charge current maintained within 10 to 15A) to the vehicle to stabilize voltage fluctuation.
- 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-**LFCAEA000**

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

(TCM) FILENAME = PE25-21PS1-A

**<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.