

Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922

**Subject:**

CHECK ENGINE LIGHT ON WITH DTC P0012:00

Bulletin No.: 01-014/19

Last Issued: 08/01/2019

APPLICABLE MODEL(S)/VINS

2018 Mazda6 vehicles (equipped with coolant control valve) with VINs lower than JM1GL*****336737
(produced before Dec. 21, 2018)

2018 CX-5 vehicles (equipped with coolant control valve) with VINs lower than JM3KF*****476255
(produced before Sep. 29, 2018)

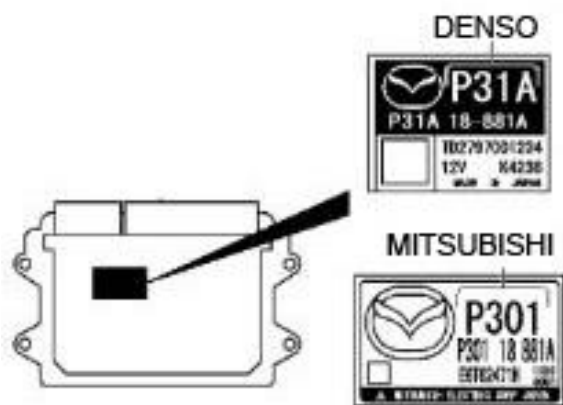
NOTE: Vehicles equipped with SKYACTIV-G 2.5T are not applicable to this service bulletin.

DESCRIPTION

Some customers may experience a check engine light illuminating with DTC P0012:00 stored in PCM memory.

- DTC P0012:00 - Electric variable valve timing control system: Over-retarded

NOTE: This concern occurs only on vehicles with PCMs manufactured by MITSUBISHI.

PCM Identification

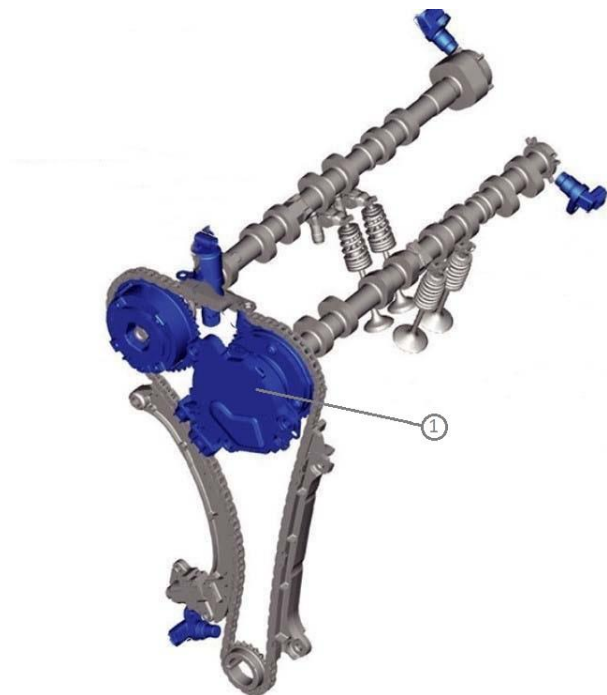
Due to improper control logic of the PCM, a false error may be detected. To eliminate this concern, the PCM software has been modified.

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Customers having this concern should have their vehicle repaired using the following repair procedure.

REPAIR PROCEDURE

1. Verify the customer concern.
2. Using the image above, verify the PCM in the subject vehicle is manufactured by MITSUBISHI, if yes, proceed to next step.
3. Replace the electric variable valve timing actuator (1) according to the instructions on MGSS online:



- CX-5 - ELECTRIC VARIABLE VALVE TIMING ACTUATOR, HYDRAULIC VARIABLE VALVE TIMING ACTUATOR REMOVAL/INSTALLATION
- Mazda6 - ELECTRIC VARIABLE VALVE TIMING ACTUATOR, HYDRAULIC VARIABLE VALVE TIMING ACTUATOR REMOVAL/INSTALLATION

4. After electric variable valve timing actuator replacement, **you must read all cautions and notes below before proceeding to "PCM REPROGRAMMING"**.

ATTENTION: READ ALL CAUTIONS AND NOTES BEFORE AND AFTER REPROGRAMMING PCM!

CAUTIONS:

- IF IDS DOES NOT HAVE SUFFICIENT BATTERY POWER, THE REPROGRAMMING WILL FAIL.
- PCM DAMAGE MAY OCCUR IF THE CORRECT BATTERY CHARGER SETTING IS NOT USED.
- SET THE BATTERY MANAGEMENT SYSTEM TO "POWER SUPPLY MODE" DURING PCM REPROGRAMMING.
- POWER SUPPLY MODE will maintain proper battery voltages during PCM reprogramming.
- If a different charger is used, MAKE SURE IT DOES NOT EXCEED 20 AMPS. IF IT EXCEEDS 20 AMPS,

Page 2 of 6

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IT COULD DAMAGE THE PCM.

- The charger **MUST** be connected directly to the vehicle battery.
- It is **NOT** necessary to remove any fuses or relays during PCM reprogramming when the IDS screen prompts you to do so. You may accidentally stop power to one of the PCM terminals and **CAUSE THE PCM TO BE BLANKED**, or you may receive error messages during the IDS reprogramming procedure.
- Start/Stop button vehicles: **DO NOT** press the start/stop button during the reprogramming process.

BEFORE REPROGRAMMING PCM:**NOTE:**

- Verify the current PCM file name in the vehicle by log view screen. If it's the same as shown in the chart(s) below (or a later one), you do not need to reprogram the PCM.
- Always update the IDS tool first, then follow on-screen instructions to download the needed calibration file for PCM reprogramming.
- If the vehicle exhibits any trouble codes or driveability symptoms, diagnose and repair using MGSS **BEFORE** attempting to reprogram the PCM.
- When reprogramming a PCM, IDS will always display the "latest" calibration P/N available for that vehicle. If any calibration has been revised/updated to contain new information for a new service concern, it will also contain all previously released calibrations.
- Confirm the DLC cable is in good condition before attempting to reprogram the PCM.

PCM REPROGRAMMING:

1. Reboot the IDS to clear memory before reprogramming.
2. Using the latest IDS Software available, reprogram the PCM to the latest calibration (refer to "Calibration Information" table) by following the "Module Reprogramming" procedure.
3. Verify the file name matches with the Calibration chart(s) below.
4. Clear all DTCs.
5. Start the engine and confirm that no warning lights stay on.
6. Record the customers radio presets from the infotainment system.
7. Disconnect the negative battery cable and wait at least 30 seconds to reset the fuel control learning data.
8. Re-connect the negative battery cable.
9. Re-enter the customers presets into the infotainment system.

AFTER REPROGRAMMING PCM:**NOTE:**

- IDS shows the calibration part numbers after programming the PCM.
- If any DTCs should remain after performing DTC erase, diagnose the DTCs using MGSS online instructions and submit a warranty claim according to the normal warranty procedure.
- Be aware that PCM calibration part numbers and file names listed in any Service Bulletin may change due to future releases of IDS software, and additional revisions made to those calibrations for service related concerns.

CALIBRATION INFORMATION**Mazda6**

MY	Engine	Trans- mission	File Name	Note
2018	2.5L	MT	PYH1-188K2-H	w/o cylinder deactivation
		AT	PYH2-188K2-H	w/o cylinder deactivation
			PYH3-188K2-J	with cylinder deactivation

CX-5

MY	Engine	Trans- mission	Drive	File Name	Note
2018	2.0L	MT	2WD	PEL1-188K2-D	---
	2.5L	AT	2WD	PYH9-188K2-E	w/o cylinder deactivation
				PYFA-188K2-H	with cylinder deactivation
			4WD	PYJ2-188K2-E	w/o cylinder deactivation
				PYFC-188K2-H	with cylinder deactivation

PARTS INFORMATION

Part Number	Description	Qty.	Notes
PE02-12-4X0	ACTR,VARIABLE V.TIMING	1	---
PE01-12-257	RING, O	1	[R] For electric variable valve timing motor/driver
9YA0-20-678	BOLT	1	[R] Upper blind plug at timing chain cover
9YA0-20-863	BOLT	1	[R] Lower blind plug at timing chain cover, 2.0L
9YA0-20-865	BOLT	1	[R] Lower blind plug at timing chain cover, 2.5L
PE01-10-235	GASKET, HEAD COVER	1	[R] For 2.0L
PY01-10-235	GASKET, HEAD COVER	1	[R] For 2.5L (w/o cylinder deactivation)
PYFA-10-235	GASKET, HEAD COVER	1	[R] For 2.5L (with cylinder deactivation)

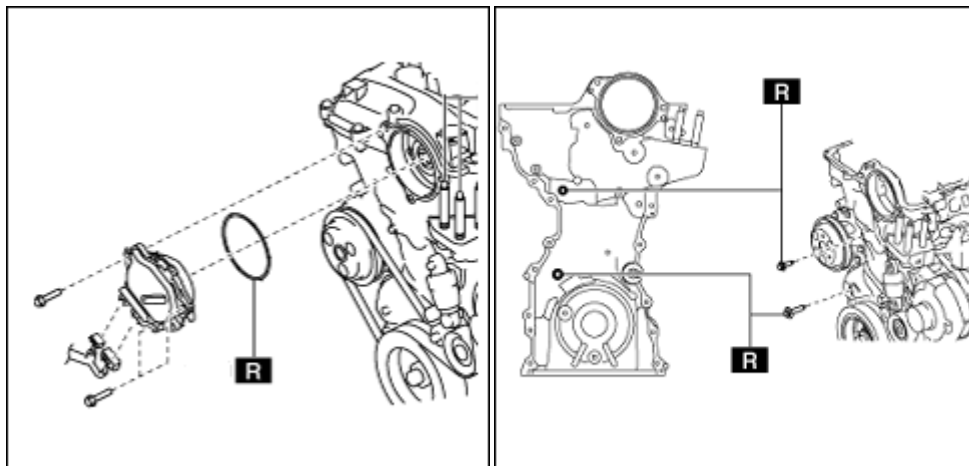
NOTE:

- Use VIN to confirm correct part number(s) in the GEPC.

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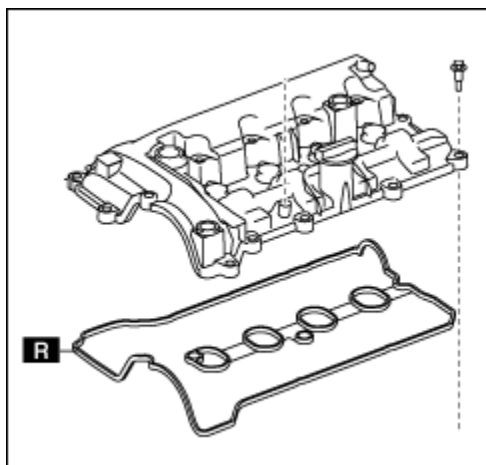
- It is not necessary to order a PCM part for this repair procedure.

Location of the replacement parts [R]



RING, O

BOLT



GASKET, HEAD COVER

WARRANTY INFORMATION

NOTE:

- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under Fed. Emission Warranty (long term).

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- Additional diagnostic time cannot be claimed for this repair.

Symptom Code	6X
Damage Code	9W
Part Number Main Cause	5555-RP-PCM
Part Quantity	0
Labor Operation No. / Labor Hours	(Refer to table shown below)

NOTE: Enter ACTR,VARIABLE V. TIMING (PE02-12-4X0, qty = 1) and replacement parts as related parts.

Model	Spec.	Operation No.	Labor Hours
Mazda6	2.5L	XXR89DFX	2.1 Hrs.
CX-5	2.0L	XXR89FFX	2.0 Hrs.
	2.5L w/o cylinder deactivation		
	2.5L with cylinder deactivation	XXR89GFX	2.1 Hrs.

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