Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922

Subject:	**Bulletin No.:** 01-020/18
CHECK ENGINE LIGHT ON WITH DTC P0524:00	**Last Issued:** 10/18/2018

APPLICABLE MODEL(S)/VINS
2018 CX-5 vehicles SKYACTIV-G 2.5 (with cylinder deactivation) with VINs lower than JM3KF******406225 (produced before May 7, 2018)

DESCRIPTION

Some vehicles may experience a check engine light on with DTC P0524 stored in the PCM memory. It is accompanied by a master warning indication/warning light illumination, engine oil pressure indication/engine oil warning light illumination.

- DTC P0524:00: Engine oil pressure too low

Due to improper PCM control logic, the engine oil valve may not work quickly enough under certain situations, resulting in the engine oil pressure increasing slower than usual. To eliminate this concern, the PCM software has been modified.

REPAIR PROCEDURE

1. Inspect the engine oil level. Is it above MIN on the dipstick?
   - If Yes, proceed to the next step.
   - If No, top up oil, then proceed to the next step.

2. Perform engine oil pressure inspection using the DataLogger PIDs.

Oil pressure (reference value)
Lo: 135-165 kPa {1.38-1.68 kgf/cm2, 19.6-23.9 psi} [1,500 - 1,600 rpm]
Hi: 225-275 kPa {2.30-2.80 kgf/cm2, 32.7-39.8 psi} [4,500 - 4,600 rpm]
[Oil temperature: 80-90 °C {176-194 °F}, Coolant temperature: 80-90 °C {176-194 °F}]
M-MDS DATALOGGER PIDs
• EOP: Engine oil pressure [kPa, Bar, psi]
• RPM: Engine Speed [rpm]
• ECT: Engine Coolant temperature [°C, °F]
• OIL_TEMP: Engine Oil temperature [°C, °F]

CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/ equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

© 2018 Mazda North American Operations, U.S.A.

NOTE: Use an external cooling fan or turn on heater and set fan speed to high to maintain engine coolant/oil temperature.

3. Is the oil pressure within specification?
   - If Yes, proceed to the next step.
   - If No, this TSB does not apply. Refer to MGSS DTC P0524:00 for further troubleshooting.
4. Check the PCM calibration in mode 9 data with IDS is prior to the calibration table information.
   - If Yes, proceed to the next step to reprogram the PCM with M-MDS.
   - If No, this TSB does not apply. Refer to MGSS DTC P0524:00 for further troubleshooting.

PCM Reprogramming:

1. Reboot the IDS to clear memory before reprogramming.
2. Using IDS **110.05** or later software, reprogram the PCM to the latest calibration (refer to "Calibration Information" table) by following the "Module Reprogramming" procedure.

NOTE:
• Always update the IDS tool first, then follow on-screen instructions to download the needed calibration file for PCM reprogramming.
• 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.
• IDS shows the calibration part numbers after programming the PCM.
• Please 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.
• 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/issue, it will also contain all previously released calibrations.
• Start/Stop button vehicles only: DO NOT press the start/stop button during the reprogramming process.
• When performing this procedure, we recommend using the "Power Supply" mode in the Battery Management System to keep the vehicle battery up to capacity. If a different charger is used, make sure it does not exceed 20 AMPS. If it exceeds 20 AMPS, it could damage the VCM.

3. After performing the PCM reprogramming procedure, clear DTCs.
4. After clearing DTCs, start the engine and confirm that no warning lights stay on.

NOTE:
• Disconnect the negative battery cable and wait for 30 seconds or more to reset the fuel control learning data.
• 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.

CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/ equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

© 2018 Mazda North American Operations, U.S.A.

CALIBRATION INFORMATION

Spec.	File Name	Note
2WD	PYFA-188K2-F	Mitsubishi
	PYFB-188K2-F	Denso
4WD	PYFC-188K2-F	Mitsubishi
	PYFD-188K2-F	Denso

NOTE:

- If the calibration file is the suffix in the table or later, the PCM already has the modified calibration.
- It is not necessary to order a PCM part for this repair procedure.

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).
• Additional diagnostic time cannot be claimed for this repair.

Warranty Type	A
Symptom Code	6X
Damage Code	9W
Part Number Main Cause	5555-RP-PCM
Quantity	0
Operation Number / Labor Hours:	XXP67XFX / 0.6 Hrs.

CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/ equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

© 2018 Mazda North American Operations, U.S.A.