

# Technical Service Bulletin

Mazda North American Operations  
Irvine, CA 92618-2922

**Subject:**

CHECK ENGINE LIGHT AND A/T WARNING LIGHT ON WITH ONE OR MORE OF THESE DTCS (P0842:00, P0847:00, P0872:00, P0877:00, P0780:00, P1738:00) STORED IN TCM MEMORY

Bulletin No.: 05-002/23

Last Issued : 05/17/2023

**BULLETIN NOTES**

This bulletin supersedes the previously issued bulletin(s) listed below. The changes are noted below in Red.

Previously Issued TSBs:	Date(s) Issued
05-001/21	09/03/21
05-003/20	07/09/20
05-004/19	05/20/19
05-004/18	04/16/18
05-005/16	07/07/16
05-002/15	12/03/15, 10/07/15, 05/27/15, 04/24/15, 03/30/15, 03/26/15 and 03/10/15
05-005/14	04/29/14, 04/09/14, 03/28/14, and 3/25/14
05-003/14	04/04/14 and 02/21/14
05-005/13	10/23/13, 9/25/13, 12/16/13, and 12/17/13

**APPLICABLE MODEL(S)/VINS**

- 2012-2018 Mazda3 with SKYACTIV 6AT
- 2013-2021 CX-5 with SKYACTIV 6AT
- 2014-2021 Mazda6 with SKYACTIV 6AT
- 2016-2021 CX-3 with SKYACTIV 6AT
- 2016-2021 CX-9 with SKYACTIV 6AT

**DESCRIPTION**

Some vehicles may experience the check engine light and automatic transaxle warning light ON with one or more of these DTCs stored in the TCM memory (P0842, P0847, P0872, P0877, P0780, P1738).

- P0842:00 - Oil pressure switch No. 1 (oil pressure switch B) stuck on
- P0847:00 - Oil pressure switch No. 2 (oil pressure switch A) stuck on
- P0872:00 - Oil pressure switch No. 3 (oil pressure switch A) stuck on

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- P0877:00 - Oil pressure switch No. 4 (oil pressure switch B) stuck on
- P0780:00 - Gear shifting malfunction
- P1738:00 Automatic transaxle internal malfunction

This is caused by the oil pressure switch A and/or B at the control valve body temporarily or permanently getting stuck due to contamination entering the passage. To correct the problem, some mass production changes have been implemented to reduce contamination and improve the DTC diagnostic logic.

**NOTE:** If the vehicle also has a delayed engagement concern, this TSB is not applicable. Refer to the instructions on MGSS (SLOW ENGAGING AFTER OPERATING SELECTOR LEVER FROM N TO D POSITION [FW6A-EL/FW6AX-EL]) or (SLOW ENGAGING AFTER OPERATING SELECTOR LEVER FROM N TO D POSITION [EW6A-EL/EW6AX-EL]) for proper diagnosis and repair procedure.

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

## REPAIR PROCEDURE

1. Verify customer concern.
2. Check if one or more of the following DTCs is stored in the TCM memory.

P0729:00	6GR incorrect ratio
P0731:00	1GR incorrect ratio
P0732:00	2GR incorrect ratio
P0733:00	3GR incorrect ratio
P0734:00	4GR incorrect ratio
P0735:00	5GR incorrect ratio
P0736:00	Gear reverse incorrect ratio

- If any of these DTCs are stored, contact the Technical Hotline for the recommended repair, then proceed to TCM programing to verify TCM has the latest calibration file.
- If none of these DTCs are stored, proceed to step 3.

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3. Proceed to either "TCM Reprogramming" or "Oil Pressure Switch Replacement" based on the chart below.

Proceed to TCM Reprogramming	Proceed to Oil Pressure Switch Replacement
2012-2013 Mazda3 SKYACTIV	2016-2018 Mazda3
2014-2015 Mazda3	2016-2017, 2021 Mazda6
2014-2015 Mazda6	2016-2017 CX-5
2018-2020 Mazda6	2016-2021 CX-3
2013-2015, 2021 CX-5	2016-2019, 2021 CX-9
2018-2020 CX-5	
2020 CX-9	

**NOTE:**

- If the concern has occurred with an older TCM file, Oil Pressure Switch replacement is not necessary.
- If the concern has occurred with the new TCM file, proceed to Oil Pressure Switch Replacement.

### TCM Reprogramming

1. Reboot the IDS to clear memory before reprogramming.

2. Using IDS 129.06 or later software, reprogram the TCM 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 TCM reprogramming.
- It is not necessary to remove any fuses or relays during TCM reprogramming when the IDS screen prompts you to do so. You may accidentally stop power to one of the TCM terminals and cause the TCM to be blanked, or you may receive error messages during the IDS reprogramming procedure.
- IDS shows the calibration part numbers after programming the TCM.
- Please be aware that TCM 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 TCM, 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.

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- 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 TCM reprogramming procedure, verify the repair by starting the engine and making sure there is no Check Engine Light or abnormal warning lights present.

**NOTE:**

- If any DTCs should remain after performing DTC erase, diagnose the DTCs using MGSS online.
- After TCM reprogramming, it is no longer necessary to road test the vehicle to “relearn” KAM (Keep Alive Memory).

4. Perform “Initial Learning” according to the instructions on MGSS online (INITIAL LEARNING [FW6AEL, FWAX-EL]).

**NOTE:** If the concern recurs during 10 seconds of idling with the selector lever in the P position and the ATF temperature above 20°C {68°F}, proceed to “Oil Pressure Switch Replacement”.

5. Verify repair.

### Oil Pressure Switch Replacement

**NOTE:**

- Proceed with Oil Pressure Switch Replacement only if the concern recurs after TCM reprogramming for applicable vehicles.
- If the control valve body has been replaced with a new one, no further parts replacement is necessary.

1. Replace both the oil pressure switch A and B with new ones according to the instructions in MGSS (OIL PRESSURE SWITCH REMOVAL/INSTALLATION [FW6A-EL]).

2. Verify repair.

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**CALIBRATION**

**NOTE:** TCM file name may not match to the production date range, especially if the valve body or ATX has ever been replaced.

## 2012-2013 Mazda3

TCM File Name	Production Date Range
PEY0-21PS1-A	Before March 31, 2013
PE08-21PS1-N	After March 31, 2013

## 2014-2015 Mazda3 (US spec)

TCM File Name	Engine	i-ELOOP	VIN
PE5B-21PS1-D	PE (2.0L)	without	JM1 (Japan built)
PEDB-21PS1-B		with	
PY2S-21PS1-D	PY (2.5L)	with	
PEAR-21PS1-A	PE (2.0L)	without	3MZ (Mexico built)

## 2013 CX-5 (US spec)

TCM File Name	Drive	Kickdown Switch	Production Date Range
PEX3-21PS1 (*1)	2WD	without	Before March 31, 2013
PE02-21PS1-J			After March 31, 2013
PEX1-21PS1-A			Service part after August 1, 2013
PEY1-21PS1-A		with	Before March 31, 2013
PEAS-21PS1-C			After March 31, 2013
PEX3-21PS1 (*2)	4WD	without	Before March 31, 2013
PE1B-21PS1-J			After March 31, 2013
PEX2-21PS1-A			Service part after August 1, 2013
PEY2-21PS1-A		with	Before March 31, 2013
PEAT-21PS1-C			After March 31, 2013

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**NOTE:**

- (\*1): Older version is PE02-21PS1-G.
- (\*2): Older version is PE1B-21PS1-G.

## 2014-2015 CX-5 (US spec)

TCM File Name	Engine	Drive	Production Date Range
PEY5-21PS1-A	PE (2.0L)	2WD	Before March 31, 2013
PE1H-21PS1-D			After March 31, 2013
PEY6-21PS1-A		4WD	Before March 31, 2013
PE1K-21PS1-D			After March 31, 2013
PYY0-21PS1-B	PY (2.5L)	2WD	Before March 31, 2013
PY09-21PS1-H			After March 31, 2013
PYY1-21PS1-B		4WD	Before March 31, 2013
PY2W-21PS1-F			After March 31, 2013

## 2018-2019 CX-5 (US spec)

TCM File Name	Engine	Drive
SH9P-21PS1-E	2.2L Diesel	2WD
SH9T-21PS1-F		4WD

## 2018-2020 CX-5 (US spec)

TCM File Name	Engine	Drive
PYB1-21PS1-E	2.5L with cylinder deactivation	2WD
PX37-21PS1-D	2.5L with turbo	2WD
PX39-21PS1-D		4WD

## 2018-2021 CX-5 (US spec)

TCM File name	Engine	Drive
PYB2-21PS1-H	2.5L with cylinder deactivation	4WD

## 2018-2020 CX-5 (Canada spec)

TCM File Name	Drive
PYJ1-21PS1-D	2WD

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## 2018-2021 CX-5 (Canada spec)

TCM File name	Drive
PYJ3-21PS1-G	4WD

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## 2014-2015 Mazda6 (US spec)

TCM File Name	i-ELOOP	Production Date Range
PYY3-21PS1-B	without	Before March 31, 2013
PY1E-21PS1-H		After March 31, 2013
PY1T-21PS1-C	with	--

## 2018-2020 Mazda6 (US spec)

TCM File Name	Engine
PYH2-21PS1-C	w/out cylinder deactivation, w/out turbo
PYH3-21PS1-D	with cylinder deactivation
PYH7-21PS1-D	with turbo

## 2020 CX-9 (US spec.)

TCM File Name	Drive
PXM3-21PS1-B	2WD
PXM4-21PS1-B	4WD

## 2014-2015 Mazda3 (Mexico spec)

TCM File Name	Engine	VIN
PY8F-21PS1-B	PY (2.5L)	JM1 (Japan built)
PEGS-21PS1-A	PE (2.0L)	3MZ (Mexico built)
PEDE-21PS1-A		

## 2013 CX-5 (Mexico spec)

TCM File Name	Engine	Drive
PE2T-21PS1-F	PE (2.0L)	2WD
PE2V-21PS1-F		4WD

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## 2014-2015 CX-5 (Mexico spec)

TCM File Name	Engine	Drive	Production Date Range
PEZ7-21PS1-A	PE (2.0L)	2WD	Before March 31, 2013
PE2P-21PS1-E			After March 31, 2013
PEZ8-21PS1-A		4WD	Before March 31, 2013
PE2R-21PS1-E			After March 31, 2013
PYZ0-21PS1-B	PY (2.5L)	2WD	Before March 31, 2013
PY5L-21PS1-F			After March 31, 2013
PYZ1-21PS1-B		4WD	Before March 31, 2013
PY5M-21PS1-F			After March 31, 2013

## 2018-2021 CX-5 (Mexico spec)

TCM File name	Engine	Drive
PYJ5-21PS1-D	2.5L	2WD

## 2019-2021 CX-5 (Mexico spec)

TCM File name	Engine	Drive
PX38-21PS1-D	2.5L with turbo	2WD

## 2014-2015 Mazda6 (Mexico spec)

TCM File Name	Production Date Range
PYY7-21PS1-B	Before March 31, 2013
PY4K-21PS1-D	After March 31, 2013

## 2019-2020 Mazda6 (Mexico spec.)

TCM File Name
PYH5-21PS1-D

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## PARTS INFORMATION

Part Number	Description	Qty.	Notes
****-21-100* or ****-21-C00*	Valve, Control	1	Only when replacing control valve body
FZ01-19-1X1	Seal, Oil	1	[R] Only when replacing control valve body
FZ01-19-967	Clamp, Hose	1	[R] Only when replacing control valve body
FZ01-21-1P1	Gasket	4	[R] Only when replacing control valve body
FZ01-21-2C0	Switch A	1	Only when replacing oil pressure switches
FZ01-21-2J0	Switch B	1	
9YA0-10-615A	Bolt	16	[R]
FZ01-21-500	Oil strainer	1	[R]
FU31-19-423	Plug	1	[R]
9956-41-400	Drain Packing	1	[R]
FZ01-21-500	Oil Strainer	1	Replace if needed. FZ01-21-031 and FZ01-21-032 (O-rings) are included with this part.
0000-FZ-113E-01	ATF-FZ	4	3.5 US qt (3.3 L, 2.9 Imp qt) max.

[R]: Replace part.

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**WARRANTY INFORMATION****NOTE:**

- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under the following Warranty terms:
  - Oil pressure switch replacement - Powertrain Limited Warranty / CA (short term) and PZEV Emission Warranty where applicable
  - TCM reprogramming and Control Valve Body Replacement - Federal Emission Warranty (long term) / CA (long term) and PZEV Emission Warranty where applicable
  - For vehicles sold and registered in Mexico - New Vehicle Warranty
- Additional diagnostic time cannot be claimed for this repair.

	Oil Pressure Switch A and B Replacement	TCM Reprogramming (includes initial learning)	Control Valve Body Replacement
Warranty Type	A		
Symptom Code	6X		
Damage Code	9W		
DTC	P0842, P0847, P0872, P0877, P0780, P1738		
Part Number Main Cause	FZ01-21-2C0	5555-RP-TCM	****-21-100* or ****-21-C00*
Quantity	1	0	1
Operation Number / Labor Hours:	XXK43ARX / 1.8 Hrs.	XXK43CFX / 0.3 Hrs.	See table below

Model	Operation Number	Labor Hours
2016-2019 Mazda2	XXM4RBRX	2.3 Hrs.
2012-2013 Mazda3		
2014-2018 Mazda3 (2.0L)		
2014-2021 Mazda6 (2.5L)		
2016-2021 CX-3		
2013-2021 CX-5 (2.0L/2.5L)		
2016-2018 CX-9		2.4 Hrs.
2014-2018 Mazda3 (2.5L)		
2018-2021 Mazda6 (2.5T)		
2018-2021 CX-5 (2.5T, 2.2L Diesel)		
2019-2021 CX-9		

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