

MIL ON With Companion Cylinder Misfire DTCs

Service Category Engine/Hybrid System

Section Engine Mechanical

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2018 - 2021	RX350	

REVISION NOTICE

May 20, 2021 Rev1:

- **Applicability has been updated to include 2018 and 2019 model year RX 350 vehicles.**
- **The Parts Information, Calibration Information, and Repair Procedure sections have been updated.**
- **The Production Change Information section has been added.**

Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2018 – 2021 model year RX 350 vehicles may exhibit a MIL ON condition with one or more of the following companion cylinder misfire Diagnostic Trouble Code (DTC) combinations:

- P030100 and P030400 (Cylinders 1 and 4 Misfires Detected).
- P030200 and P030500 (Cylinders 2 and 5 Misfires Detected).
- P030300 and P030600 (Cylinders 3 and 6 Misfires Detected).

One or more of the following ancillary DTCs may also be present:

- P030027 (Random/Multiple Cylinder Misfire Detected [Emission] Signal Rate of Change Above Threshold).
- P030085 (Random/Multiple Cylinder Misfire Detected [Over Temperature] Signal Above Allowable Range).

Follow the Repair Procedure in this bulletin to address this condition.

MIL ON With Companion Cylinder Misfire DTCs

Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VINs shown below.

MODEL	PLANT	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
RX350	TMMC	2WD	2T2HZMAA#MC203410 2T2HZKEA#MC203410 2T2AZMAA#MC203410 2T2JZMAA#MC203410 2T2SZMAA#MC203410 2T2JZKEA#MC203410 2T2YZMAA#MC203410 2T2AZKEA#MC203410
		4WD	2T2HZMDA#MC284286 2T2HZKFA#MC284286 2T2YZMDA#MC284286 2T2SZMDA#MC284286 2T2JZMDA#MC284286 2T2AZMDA#MC284286 2T2JZKFA#MC284286 2T2AZKFA#MC284286

NOTE

VINs starting with "JTJ" may be repaired by following the Repair Procedure in this bulletin if the vehicle's calibration ID precedes that listed in the Calibration Information section.

MIL ON With Companion Cylinder Misfire DTCs

Warranty Information

OP CODE	DESCRIPTION	DRIVETRAIN	TIME	OFP	T1	T2
EL2033	R & R Crank Sensor Rotor & Reprogram ECM (PCM)	2WD	7.2	19315-#####*	8A	50
EL2034		4WD	7.9			

*Warranty claim MUST be submitted with the correct 10-digit OFP. Choose the correct OFP for the vehicle being repaired by searching for the parts in the Electronic Parts Catalog using the VIN filter.

APPLICABLE WARRANTY

- This repair is covered under the Lexus Powertrain Warranty. This warranty is in effect for 72 months or 70,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

Parts Information

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
19315-0P050 19315-31020	19315-31050	Plate, Crank Angle Sensor, No. 1	1
89661-#####		Computer, Engine Control (ECM)	–
00451-00001-LBL		Authorized Modifications Labels	1

NOTE

- The ECM (PCM) should NOT be replaced as part of the Repair Procedure.
- Authorized Modifications Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through *Dealer Daily – Parts – Dealer Support Materials Orders*.

MIL ON With Companion Cylinder Misfire DTCs

Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVI*	ADE	TSADVUNIT	1
Techstream 2.0		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

*Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 16.00.021 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- Use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Battery Diagnostic Tool*	DCA-8000P_I	1

*Essential SST.

NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

MIL ON With Companion Cylinder Misfire DTCs

Calibration Information

MODEL YEAR	MODEL	VDS	F-SPORT	CALIBRATION ID	
				PREVIOUS	NEW
2018 – 2019	RX 350	ZZMCA	N	896630E58000 896630EA3000 896630EA3100 896630EA3200 896630EA3300 896650E24000 896650E48000 896650E48100 896650E48200	896630EA3400/ 896650E48300
			Y	896630E59000 896630EA5000 896630EA5100 896630EA5200 896630EA5300 896650E24000 896650E48000 896650E48100 896650E48200	896630EA5400/ 896650E48300
		BZMCA	N	896630E60000 896630EA4000 896630EA4100 896630EA4200 896630EA4300 896650E24000 896650E48000 896650E48100 896650E48200	896630EA4400/ 896650E48300
			Y	896630E61000 896630EA6000 896630EA6100 896630EA6200 896630EA6300 896650E24000 896650E48000 896650E48100 896650E48200	896630EA6400/ 896650E48300

MIL ON With Companion Cylinder Misfire DTCs

Calibration Information (continued)

MODEL YEAR	MODEL	VDS	F-SPORT	CALIBRATION ID	
				PREVIOUS	NEW
2018 – 2019	RX 350L	GZKCA	N/A	8966348S6000 8966348W1000 8966348W1100 8966348W1200 8966348W1300 896654843000 896654852000 896654852100 896654852200	8966348W1400/ 896654852300
		DZKCA		8966348S7000 8966348W2000 8966348W2100 8966348W2200 8966348W2300 896654843000 896654852000 896654852100 896654852200	8966348W2400/ 896654852300
2020	RX 350	HZMAA AZMAA HZKEA JZMAA JZKEA SZMAA YZMAA		896630EA9000	896630EA9100
		HZMDA YZMDA JZMDA HZKFA SZMDA AZMDA JZKFA AZKFA		896630EB0000	896630EB0100

MIL ON With Companion Cylinder Misfire DTCs

Calibration Information (continued)

MODEL YEAR	MODEL	VDS	F-SPORT	CALIBRATION ID	
				PREVIOUS	NEW
2020	RX 350L	HZKEA JZKEA AZKEA	N/A	8966348W9000	8966348W9100
		HZKFA JZKFA AZKFA		8966348X0000	8966348X0100
2021	RX 350	HZMAA HZKEA AZMAA JZMAA SZMAA JZKEA YZMAA AZKEA		896630EC9000	896630EC9100
		HZMDA HZKFA YZMDA SZMDA JZMDA AZMDA JZKFA AZKFA		896630ED0000	896630ED0100
	RX 350L	HZKEA JZKEA AZKEA		896634D11000	896634D11100
		HZKFA JZKFA AZKFA		896634D12000	896634D12100

MIL ON With Companion Cylinder Misfire DTCs

Repair Procedure

Confirmation

1. Confirm the condition exists.

Does the vehicle exhibit a MIL ON condition with one or more of the following companion cylinder misfire Diagnostic Trouble Code (DTC) combinations?

- P030100 and P030400 (Cylinders 1 and 4 Misfires Detected).
- P030200 and P030500 (Cylinders 2 and 5 Misfires Detected).
- P030300 and P030600 (Cylinders 3 and 6 Misfires Detected).
- **YES** — Continue to step 2.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

2. Check the freeze frame data of AT LEAST one cylinder misfire DTC and locate the All Cylinders Misfire Count parameter.

Is the All Cylinders Misfire Count parameter four or less?

- **YES** — Continue to the Crank Sensor Rotor Replacement subsection.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

Figure 1. All Cylinders Misfire Count Parameter

Parameter	Value	Unit
Closed Throttle Position SW	OFF	
TC Terminal	OFF	
MIL ON Run Distance	0	mile
Running Time from MIL ON	0	min
Time after DTC Cleared	1	min
Distance from DTC Cleared	0	mile
Warmup Cycle Cleared DTC	0	
Distance Traveled from Last Battery Cable Disconnect	0	mile
IG OFF Elapsed Time	0	min
Soak IC Current Timer Value	721.875	sec
Soak IC First Start Time	30	min
Soak Timer Start History	OFF	
Ignition Trigger Count	0	
Misfire Count Cylinder #1	0	
Misfire Count Cylinder #2	1	
Misfire Count Cylinder #3	0	
Misfire Count Cylinder #4	0	
Misfire Count Cylinder #5	0	
Misfire Count Cylinder #6	0	
All Cylinders Misfire Count	1	

MIL ON With Companion Cylinder Misfire DTCs

Repair Procedure (continued)

Crank Sensor Rotor Replacement

1. Remove the crank sensor rotor.

Refer to TIS, applicable model and model year Repair Manual (steps 1 and 2 ONLY):

- [2018 – 2019](#) RX 350:
Engine / Hybrid System – Engine Mechanical – “2GR-FKS (Engine Mechanical): Rear Crankshaft Oil Seal: Removal”
- [2020 – 2021](#) RX 350:
Engine / Hybrid System – Engine Mechanical – “2GR-FKS (Engine Mechanical): Rear Crankshaft Oil Seal: Removal”

2. Install the NEW crank sensor rotor.

Refer to TIS, applicable model and model year Repair Manual (steps 2 and 3 ONLY):

- [2018 – 2021](#) RX 350:
Engine / Hybrid System – Engine Mechanical – “2GR-FKS (Engine Mechanical): Rear Crankshaft Oil Seal: Installation”

MIL ON With Companion Cylinder Misfire DTCs

Repair Procedure (continued)

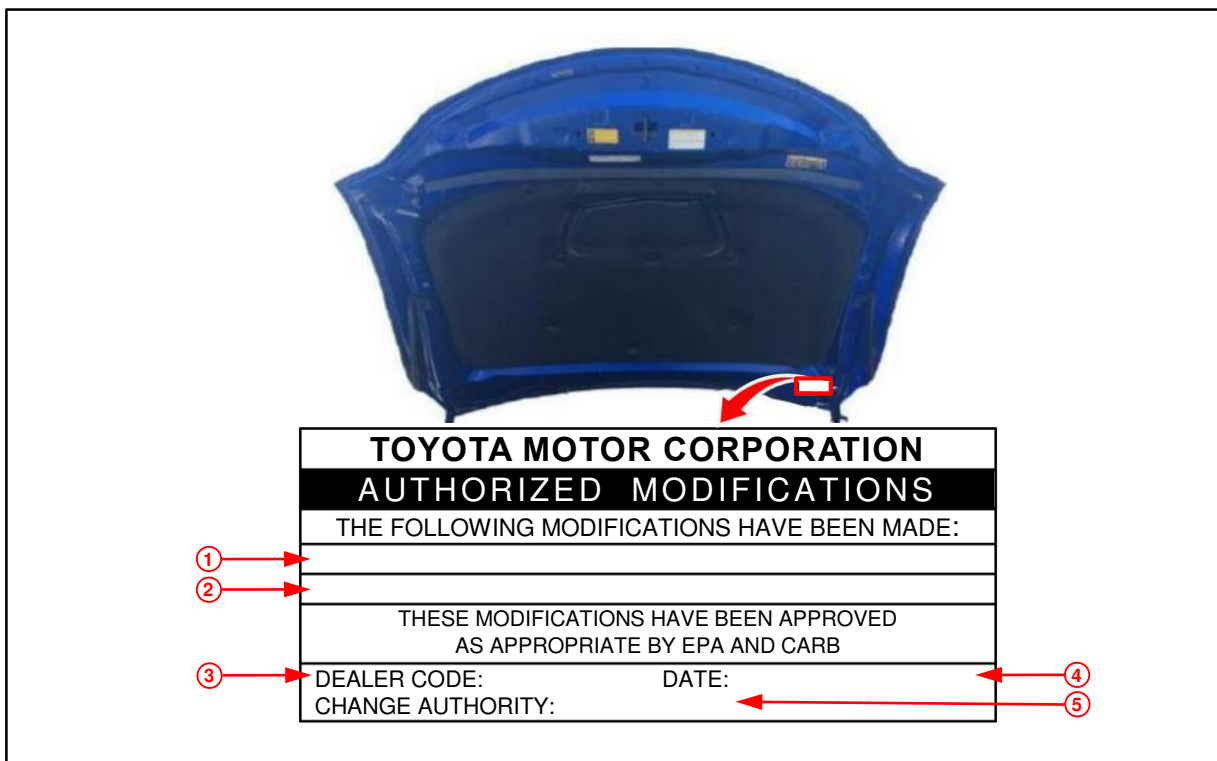
Reprogram ECM (PCM)

1. Use Techstream to confirm if the ECM (PCM) calibration has been updated and check for the Authorized Modifications Label affixed to the vehicle in the location shown below.

Is the calibration ID listed in Techstream and on the label the latest ECM (PCM) calibration?

- **YES** — Go to step 4.
- **NO** — Continue to step 2.

Figure 2. Location of Authorized Modifications Label on 2018 – 2021 RX 350



1	Replacement ECM (PCM) Part Number e.g., 89661-####
2	New Calibration ID e.g., 896634D11100
3	Dealer Code

4	Date Completed
5	This SB Number

MIL ON With Companion Cylinder Misfire DTCs

Repair Procedure (continued)

Reprogram ECM (PCM) (continued)

2. Flash reprogram the ECM (PCM).

NOTE

- The battery diagnostic tool **MUST** be used in Power Supply Mode to maintain battery voltage at 13.5V while flash reprogramming the vehicle.
- For details on how to use the battery diagnostic station, refer to the [DCA-8000 Instruction Manual](#) located at *TIS – Diagnostics – Tools & Equipment – Battery Diagnostics*.

Follow the procedures outlined in [L-SB-0001-18](#), *Techstream ECU Flash Reprogramming Procedure*, and flash the ECM (PCM) with the NEW calibration file update.

3. Prepare and install the Authorized Modifications Label.
 - A. Using a permanent marker, enter the following information on the label:
 - ECM (PCM) part number [*Refer to the **Parts Information** section for the **NEW PART NUMBER**.*]
 - Calibration ID(s) [*Refer to the **Calibration Information** section for the **NEW CALIBRATION ID**.*]
 - Dealer Code.
 - Repair Date.
 - Change Authority [***This bulletin number***].
 - B. Install the Authorized Modifications Label onto the vehicle at the location shown in Figure 1. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.

4. Test-drive the vehicle to confirm the condition no longer exists.