

MIL ON DTC P2646, P265B, P10A0, or P1055

Service Category Engine/Hybrid System

Section Engine Control

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2018 - 2019	C-HR	
2020	Corolla	

Introduction

Some 2018 – 2019 model year C-HR (equipped with a 3ZR-FAE engine) and 2020 model year Corolla (equipped with a 2ZR-FAE engine) vehicles may exhibit a MIL ON condition with one or more of the following Diagnostic Trouble Codes (DTCs):

- P2646 (A Rocker Arm Actuator System Performance or Stuck Off [Bank 1])
- P265B (B Rocker Arm Actuator Position Sensor Circuit Range Performance [Bank 1])
- P10A0 (Valvematic Angle Difference [CSS])
- P1055 (Valvematic Angle Difference [ECU])

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

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Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EG1905	R & R Valve Lift Controller	2.0	222A0-37023	8A	74
EG1906	Learn Value Reset (One Time)	0.3			
EG1907	Learn Value Reset (Two Times)	0.6			
EG1908	Learn Value Reset (One Time) and R & R CV Valve Lift Controller	2.3			
EG1909	Learn Value Reset (Two Times) and R & R CV Valve Lift Controller	2.6			

APPLICABLE WARRANTY

- This repair is covered under the Toyota Powertrain Warranty. This warranty is in effect for 60 months or 60,000 miles, whichever occurs first, from the vehicle's in-service date.
- For California specification vehicles sold, registered, and operated in California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington. This repair is covered under the California Long-Term Emission Warranty. This warranty is in effect for 84 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		
222A0-37023	222A0-37024	Controller Assy, Continuously Variable Valve Lift	1
90301-38010		Ring, O	1
90068-14030			2
11213-37021		Gasket, Cylinder Head Cover	1
90430-10024		Gasket	1
11159-37010		Gasket, Camshaft Bearing Cap Oil Hole	2
16258-37010		Washer, Seal (For Cylinder Head Cover)	1

NOTE

Order parts only as needed.

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Required Tools & Equipment

REQUIRED TOOLS & MATERIAL	QUANTITY
Toyota Genuine Seal Packing Black, Three Bond 1207B, or Equivalent	As Needed

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 14.10.028 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

Repair Procedure

- Using Techstream, check for stored DTCs.
Are DTCs P2646, P265B, P10A0, or P1055 present?
 - **YES** — Continue to step 2.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
- Clear ALL DTCs, start the engine in Park or Neutral, and increase the engine's RPM to 3500 for 5 seconds.
Did the DTCs return?
 - **YES** — Continue to step 3.
 - **NO** — Go to step 7.
- With the vehicle in IG ON/Engine OFF, clear the DTCs that reset, then perform the Learn Value Reset Utility: *Engine and ECT – Utility – Learn Value Reset*.

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Repair Procedure (continued)

4. Reset the connection cycle to ensure active test function.
 - A. Turn the ignition to IG OFF. If the vehicle is equipped with a standard key, remove it from the ignition.
 - B. Disconnect Techstream from DLC and exit Techstream software.
 - C. Open Techstream software, then connect Techstream to DLC.
 - D. Turn the ignition to IG ON. Do NOT start the vehicle.
 - E. On Techstream, select Connect to Vehicle, then select Engine and ECT, then choose Data List.

5. Perform the Engine Off VALVEMATIC Active Test.
 - A. Set up custom data list to show VALVEMATIC Target Angle and VALVEMATIC Current Angle.
 - B. Select Active Test Activate the VALVEMATIC (ENG OFF) and ensure parameters are met.
 - C. Perform active test LOW first (right arrow). Check for change to VALVEMATIC Current Angle (it should go to approximately 105 – 106 degrees).
 - D. Perform active test HIGH (it should climb above 108 degrees).
 - E. It may take more than one LOW and HIGH cycle attempt to get the numbers to increase or decrease.

6. After verifying VALVEMATIC Current Angle value changes, close Techstream software, start engine, and increase RPM to 3500 for 5 seconds.
 Did the DTCs return?
 - **YES** — Repeat steps 3 – 5.

NOTE

If the DTCs return after steps 3 – 5 have been repeated, go to step 8.

 - **NO** — Continue to step 7.

7. Start the engine and warm it up to normal operating temperature and test drive to confirm proper vehicle operation.
 Did the DTCs return?
 - **YES** — Continue to step 8.
 - **NO** — This Service Bulletin is complete. If ANY additional DTCs remain continue diagnosis using the applicable Repair Manual.

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Repair Procedure (continued)

8. Replace the continuously variable valve lift controller assembly.
 - A. Remove the continuously variable valve lift controller assembly.

Refer to TIS, applicable model and model year Repair Manual:

 - [2018](#) / [2019](#) C-HR:
Engine / Hybrid System – Engine Control – “3ZR-FAE Engine Control: Continuously Variable Valve Lift Controller: Removal”
 - 2020 Corolla:
Engine Hybrid System – Engine Control – “2ZR-FAE (Engine Control): Continuously Variable Valve Lift Controller: Removal [\[01/2019 - 03/2019\]](#) / [\[03/2019 - \]](#)”
 - B. Install the NEW continuously variable valve lift controller assembly.

Refer to TIS, applicable model and model year Repair Manual:

 - [2018](#) / [2019](#) C-HR:
Engine Hybrid System – Engine Control – “3ZR-FAE Engine Control: Continuously Variable Valve Lift Controller: Installation”
 - 2020 Corolla:
Engine Hybrid System – Engine Control – “2ZR-FAE (Engine Control): Continuously Variable Valve Lift Controller: Installation [\[01/2019 - 03/2019\]](#) / [\[03/2019 - \]](#)”
9. Using Techstream, clear ANY stored DTCs.
10. Start the engine and warm it up to normal operating temperature.
11. Test-drive the vehicle.
 - A. Perform the steering sensor zero point calibration:
 - (1) On an appropriate road, drive the vehicle straight ahead at 22 mph or more for 5 seconds or more.
 - (2) Move the vehicle to a safe parking location and turn the engine switch OFF.
 - B. Confirm vehicle operation.
 - (1) Start the engine and complete the test drive to confirm proper vehicle operation.
12. Perform a Health Check to confirm the subject DTCs are no longer present.