

Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM1000000029YCI
Model Year Start: 2023	Model: Prius	Prod Date Range: [12/2022 -]
Title: M20A-FXS (ENGINE MECHANICAL): ENGINE UNIT (for HEV Model): REMOVAL; 2023 - 2024 MY Prius [12/2022 -]		

REMOVAL

CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization or registration) that must be performed after parts are removed and installed, or replaced during engine unit removal/installation are shown below.

Necessary Procedures After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Replacement of ECM	Perform Vehicle Identification Number (VIN) registration	DTC is output	INFO
	ECU configuration	-	INFO
	Update ECU security key	Vehicle Control History (RoB) are stored	INFO
<ul style="list-style-type: none"> Replacement of throttle body with motor assembly Cleaning the deposits from the throttle body with motor assembly Replacement of cam timing control motor with EDU assembly* Replacement of camshaft timing gear assembly* Replacement of camshaft (for 	Inspection after repair	<ul style="list-style-type: none"> Poor idle, etc. Engine start function, etc. 	INFO

*: Even when not replacing the part, it is necessary to perform the specified necessary procedures after installation.

*1: Also necessary after performing a tire rotation.

*2: It is not necessary to perform this procedure if the tire pressure warning valve and transmitters are installed to the same location.

*3: The vehicle height changes because of tire replacement.

*4: If matchmarks were not placed when removing parts related to steering operation, perform end position initial setting.

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
intake or exhaust camshaft) <ul style="list-style-type: none"> • Replacement of camshaft timing exhaust gear assembly • Replacement of fuel (engine room side) pump assembly (for high pressure side) • Replacement of ignition coil assembly • Replacement of engine assembly • Gas leak from exhaust system is repaired • Replacement of cylinder head sub-assembly • Replacement of port fuel injector assembly • Replacement of direct fuel injector assembly • Replacement of EGR valve assembly • Replacement of air fuel ratio sensor (sensor 1) • Replacement of spark plug • Replacement of knock control sensor 			

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REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Replacement of inverter with converter assembly	ECU configuration	-	INFO
	Resolver learning	<ul style="list-style-type: none"> DTCs are stored Slight vibration at a vehicle speed of 5 km/h (3 mph) or less Shock or vibration during acceleration 	INFO
Replacement of hybrid vehicle transaxle assembly	<ul style="list-style-type: none"> Resolver learning Initialize resolver 	<ul style="list-style-type: none"> DTCs are stored Slight vibration at a vehicle speed of 5 km/h (3 mph) or less Shock or vibration during acceleration 	INFO
Suspension parts	Rear television camera assembly optical axis (Back camera position setting)	Parking Assist Monitor System	INFO
	Parking assist ECU initialization	Panoramic View Monitor System	INFO
		Advanced Park	INFO
Tires	<ul style="list-style-type: none"> Initialization*1*2 Tire Position Identification*1*2 	Tire Pressure Warning System	Refer to Procedures Necessary When Replacing Parts (for Tire Pressure Warning System) table below INFO
	Rear television camera assembly optical axis (Back camera	Parking Assist Monitor System	INFO

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REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
	position setting)		
	Parking assist ECU initialization*3	Panoramic View Monitor System	INFO
		Advanced Park	INFO
No. 2 steering intermediate shaft assembly*4	End position initial setting	-	INFO
Replacement of front bumper assembly*	Front television camera view adjustment	Panoramic View Monitor System	INFO
		Advanced Park	INFO
Front wheel alignment adjustment	Perform "Calibration"	<ul style="list-style-type: none"> • DTCs are stored • ABS warning light illuminates • Brake system warning light (yellow indicator) illuminates • Slip indicator light illuminates • Electronically controlled brake system disabled or malfunctions 	INFO

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NOTICE:

This procedure includes the removal of small-head bolts. Refer to Small-Head Bolts of Basic Repair Hint to identify the small-head bolts.

Click here [INFO](#)

HINT:

When the cable is disconnected / reconnected to the auxiliary battery terminal, systems temporarily stop operating. However, each system has a function that completes learning the first time the system is used.

Items for which learning is completed by driving the vehicle

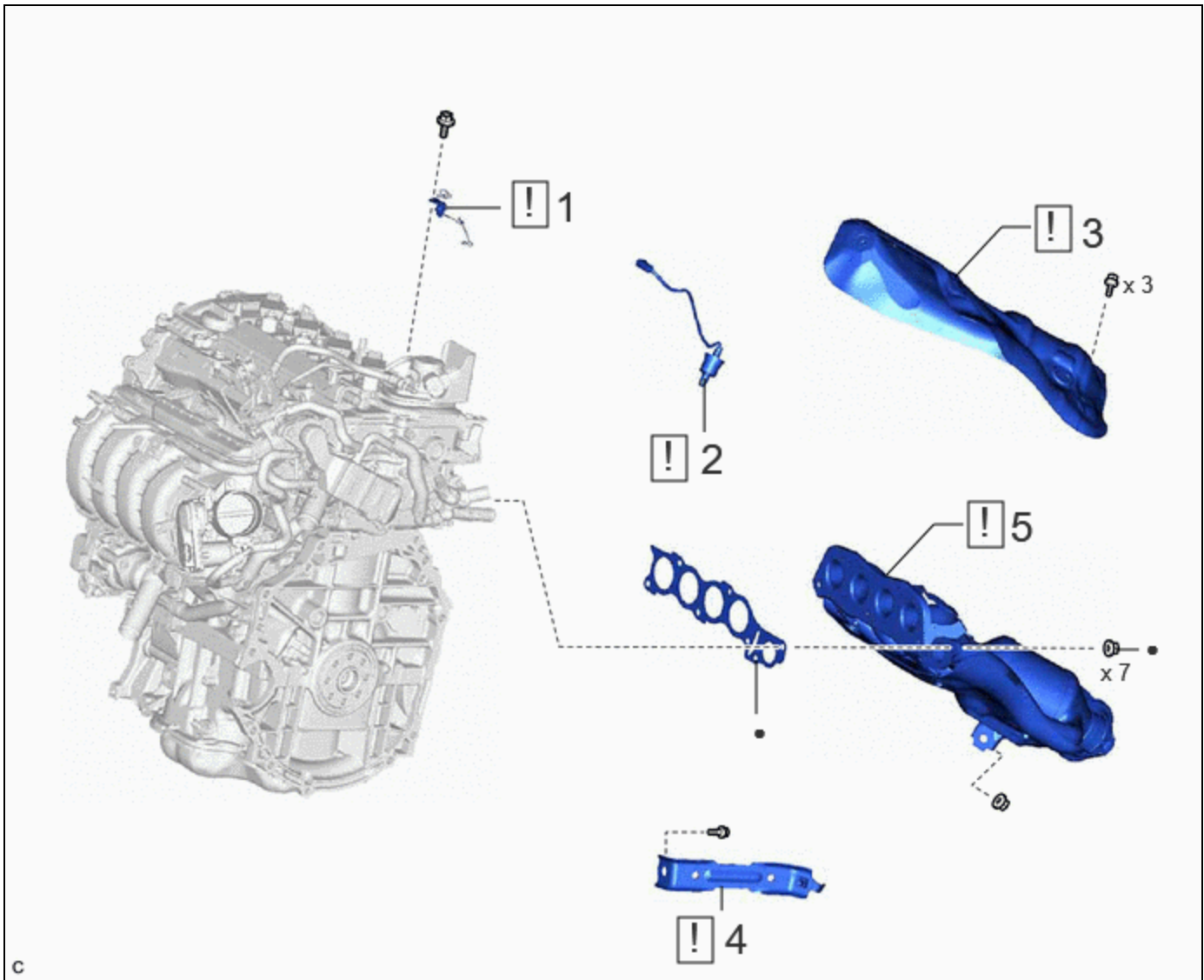
EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	NECESSARY PROCEDURES	LINK
Front Camera System	Drive the vehicle straight ahead at 35 km/h (22 mph) or more for 5 seconds or more.	INFO

Items for which learning is completed by operating the vehicle normally

EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	NECESSARY PROCEDURES	LINK
Power Door Lock Control System*1 <ul style="list-style-type: none"> • Back door opener 	Perform door unlock operation with door control switch or electrical key transmitter sub-assembly switch.	INFO
Power Back Door System*2	Reset back door close position	INFO
Air Conditioning System	After the ignition switch is turned to ON, the servo motor standard position is recognized.	-
*1: w/o Power Back Door System *2: w/ Power Back Door System		

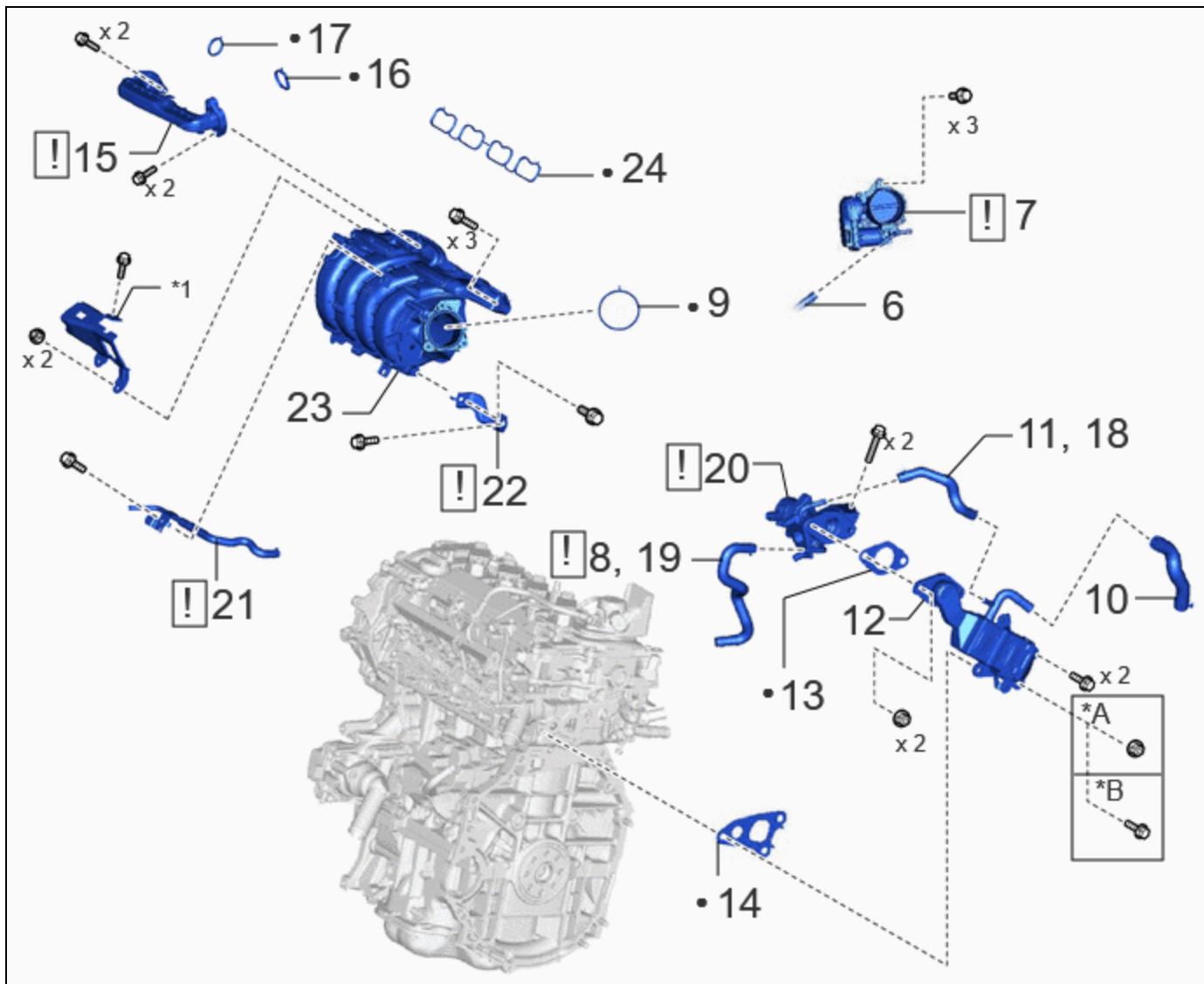
[CAUTION / NOTICE / HINT](#)

COMPONENTS (REMOVAL)









PROCEDURE		PART NAME CODE	!		
1	WIRE HARNESS CLAMP BRACKET	-	INFO	-	-
2	AIR FUEL RATIO SENSOR	89467B	INFO	-	-
3	NO. 1 EXHAUST MANIFOLD HEAT INSULATOR	17167	INFO	-	-
4	MANIFOLD STAY	17118	INFO	-	-
5	EXHAUST MANIFOLD	17141	INFO	-	-

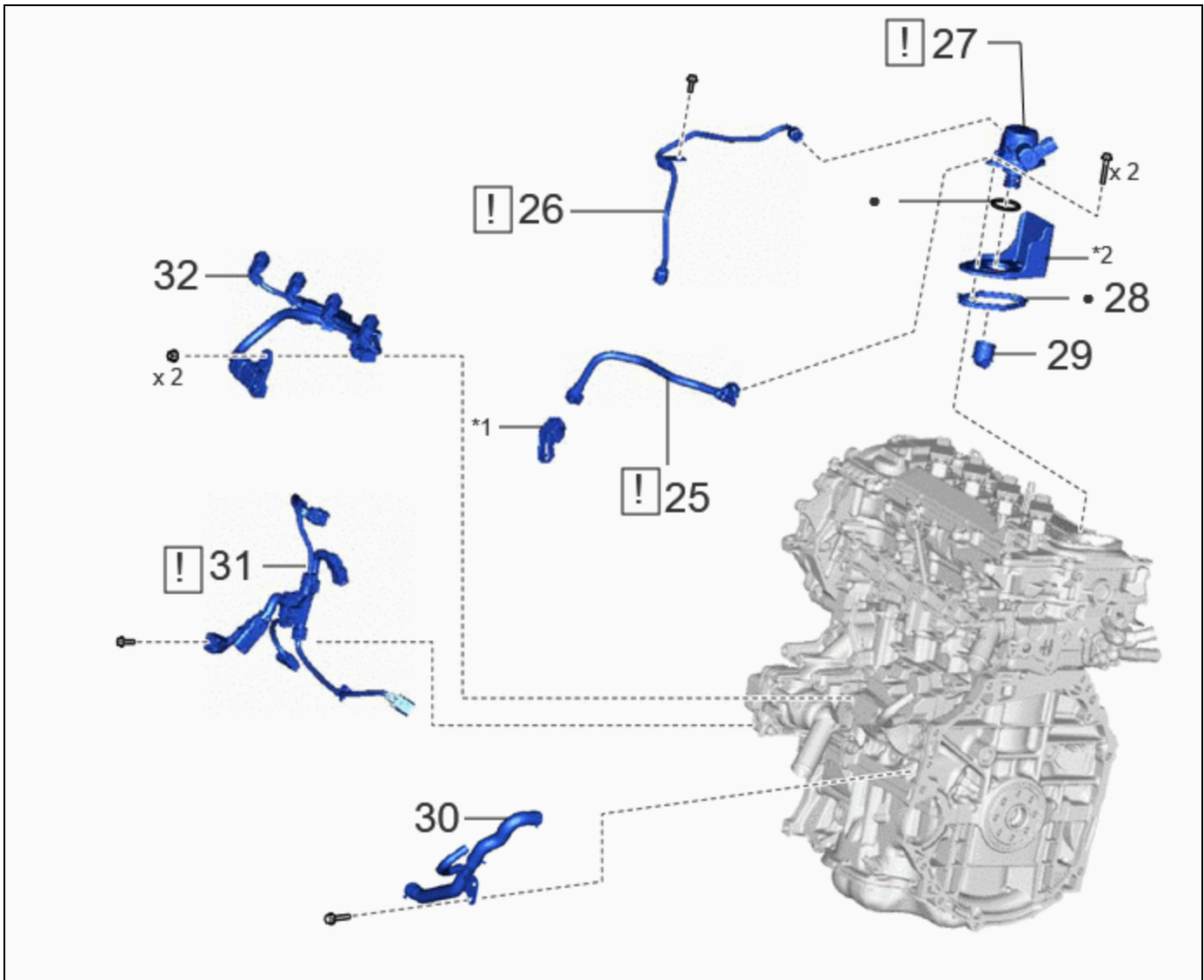
•	Non-reusable part	-	-
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PROCEDURE	PART NAME CODE	!	i	⚙
6 NO. 5 WATER BY-PASS HOSE	16282	-	-	-
7 THROTTLE BODY WITH MOTOR ASSEMBLY	22030	INFO	-	-
8 DISCONNECT NO. 8 WATER BY-PASS HOSE	16296	INFO	-	-
9 THROTTLE BODY GASKET	22271	-	-	-
10 NO. 3 WATER BY-PASS HOSE	16267	-	-	-
11 DISCONNECT NO. 4 WATER BY-PASS HOSE	16281	-	-	-
12 EGR COOLER ASSEMBLY	25680	-	-	-
13 EGR VALVE GASKET	25627	-	-	-
14 NO. 1 EGR COOLER GASKET	25685	-	-	-
15 NO. 1 EGR PIPE SUB-ASSEMBLY	25601	INFO	-	-
16 EGR VALVE ADAPTER GASKET	25629	-	-	-

PROCEDURE		PART NAME CODE			
17	EGR INLET GASKET	25628	-	-	-
18	REMOVE NO. 4 WATER BY-PASS HOSE	16281	-	-	-
19	REMOVE NO. 8 WATER BY-PASS HOSE	16296	-	-	-
20	EGR VALVE ASSEMBLY	25620		-	-
21	NO. 3 WATER BY-PASS PIPE	16279		-	-
22	INTAKE MANIFOLD STAY	17138B		-	-
23	INTAKE MANIFOLD	17111	-	-	-
24	NO. 1 INTAKE MANIFOLD TO HEAD GASKET	17177	-	-	-

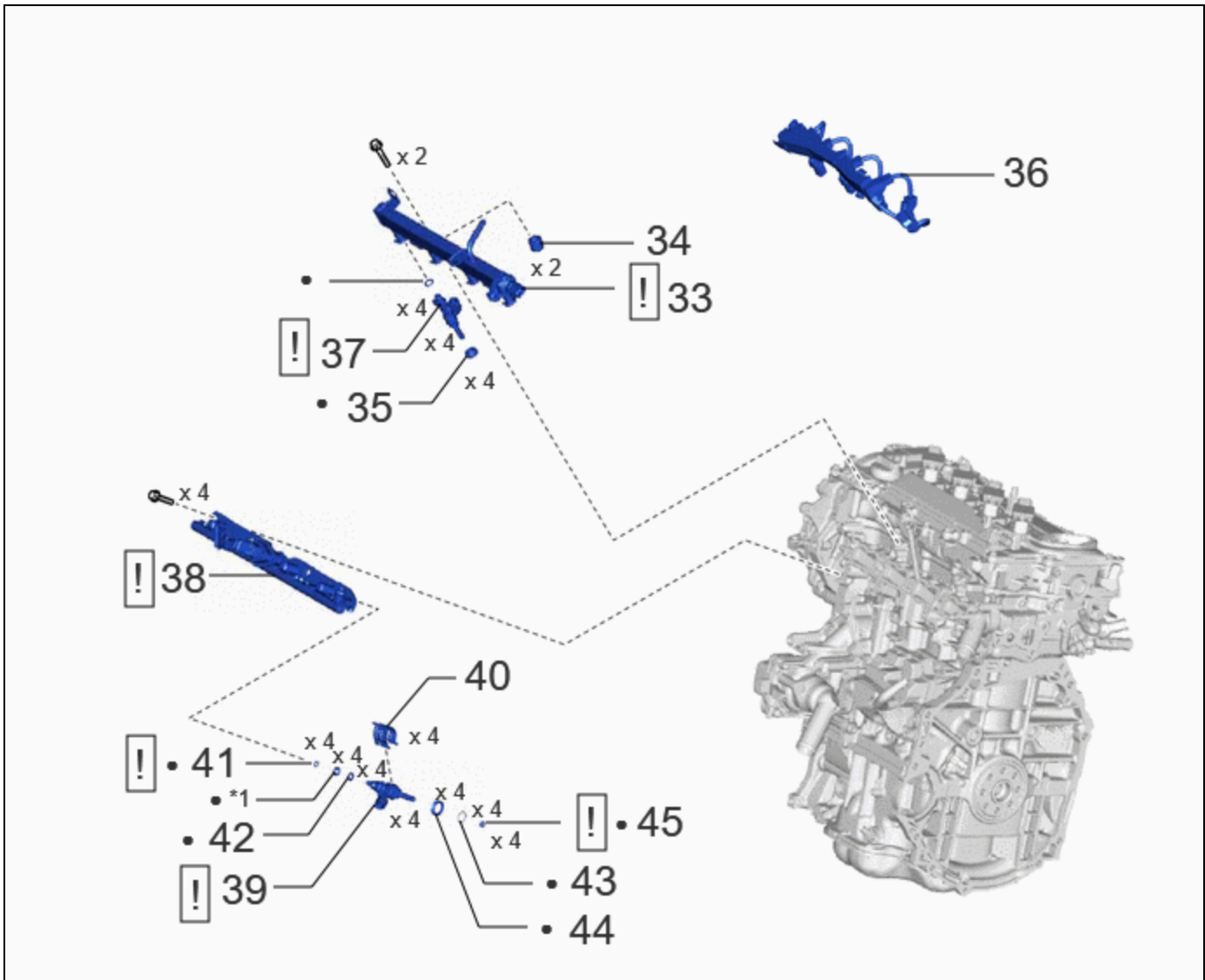
*A	for Type A	*B	for Type B
*1	NO. 2 FUEL DELIVERY GUARD	-	-
•	Non-reusable part	-	-







PROCEDURE		PART NAME CODE			
25	FUEL TUBE SUB-ASSEMBLY	23910A	INFO	-	-
26	NO. 1 FUEL PIPE SUB-ASSEMBLY	23801P	INFO	-	-
27	FUEL (ENGINE ROOM SIDE) PUMP ASSEMBLY (for High Pressure)	23100X	INFO	-	-
28	FUEL PUMP SPACER GASKET	23224D	-	-	-
29	FUEL PUMP LIFTER ASSEMBLY	23470	-	-	-
30	WATER BY-PASS HOSE ASSEMBLY	-	-	-	-
31	SENSOR WIRE	82219A	INFO	-	-
32	NO. 6 ENGINE WIRE	82126A	-	-	-

*1	FUEL PIPE CLAMP	*2	FUEL PUMP FLANGE
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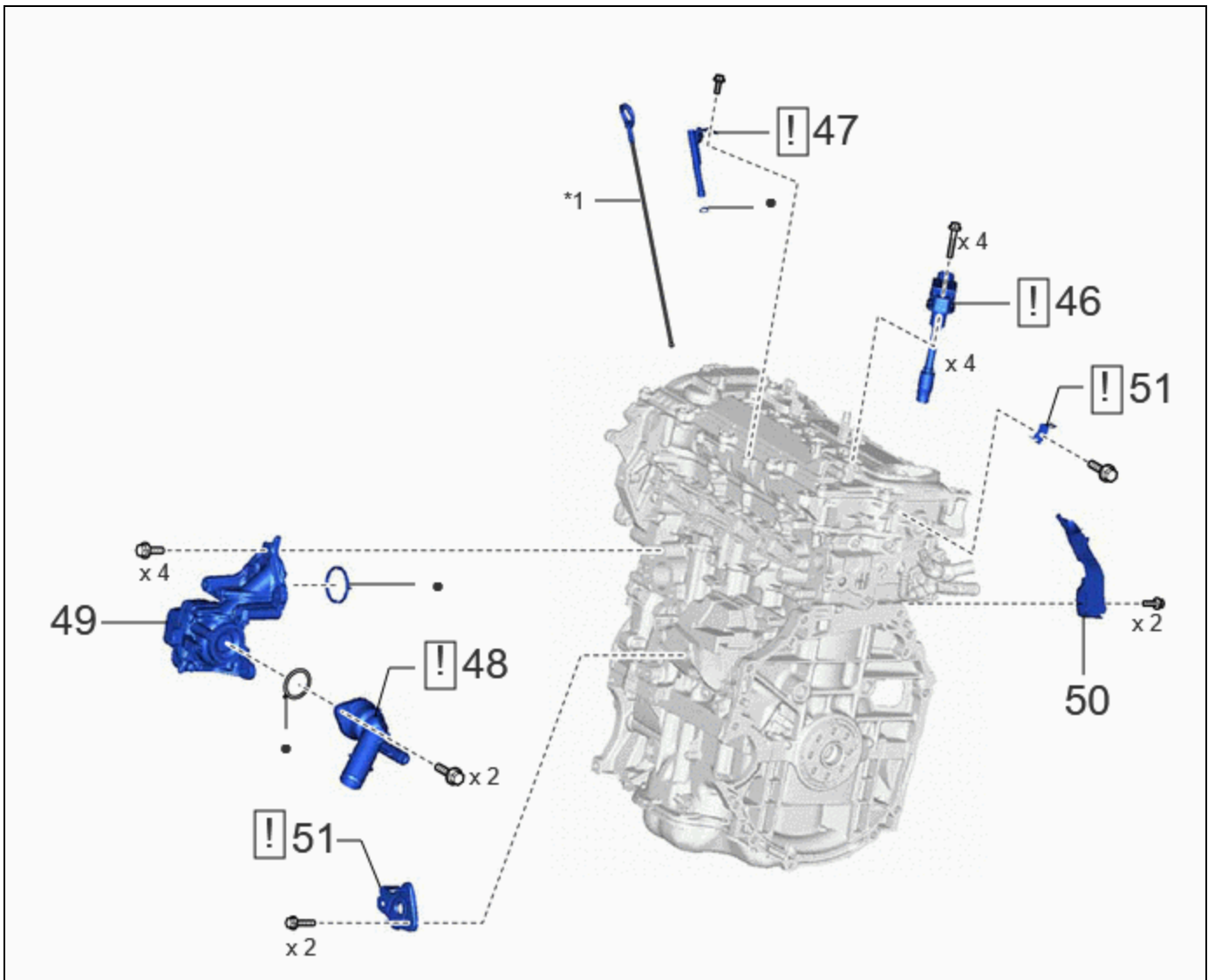
•	Non-reusable part	-	-
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PROCEDURE		PART NAME CODE	!	📄	⚙️
33	FUEL DELIVERY PIPE SUB-ASSEMBLY	23807	INFO	-	-
34	FUEL DELIVERY SPACER	23891	-	-	-
35	INJECTOR VIBRATION INSULATOR	23291	-	-	-
36	NO. 5 ENGINE WIRE	82125N	-	-	-
37	PORT FUEL INJECTOR ASSEMBLY	23250F	INFO	-	-
38	FUEL DELIVERY PIPE	23814B	INFO	-	-
39	DIRECT FUEL INJECTOR ASSEMBLY	23250E	INFO	-	-
40	NOZZLE HOLDER CLAMP	23695A	-	-	-
41	NO. 3 FUEL INJECTOR BACK-UP RING	23258	INFO	-	-

PROCEDURE		PART NAME CODE			
42	NO. 1 FUEL INJECTOR BACK-UP RING	23256	-	-	-
43	C-RING	-	-	-	-
44	INJECTOR VIBRATION INSULATOR	23291A	-	-	-
45	FUEL INJECTOR SEAL	23255A		-	-

*1	O-RING	-	-
•	Non-reusable part	-	-




PROCEDURE		PART NAME CODE			
46	IGNITION COIL ASSEMBLY	19500	INFO	-	-
47	ENGINE OIL LEVEL DIPSTICK GUIDE	11452D	INFO	-	-
48	WATER INLET WITH THERMOSTAT SUB-ASSEMBLY	16031	INFO	-	-
49	ENGINE WATER PUMP ASSEMBLY (WATER INLET HOUSING)	16032	-	-	-
50	NO. 3 EXHAUST MANIFOLD HEAT INSULATOR	17169A	-	-	-
51	WIRE HARNESS CLAMP BRACKET	-	INFO	-	-


*1	ENGINE OIL LEVEL DIPSTICK	-	-
•	Non-reusable part	-	-

PROCEDURE


1. REMOVE WIRE HARNESS CLAMP BRACKET

	Click here INFO
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2. REMOVE AIR FUEL RATIO SENSOR

	Click here INFO
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3. REMOVE NO. 1 EXHAUST MANIFOLD HEAT INSULATOR

	Click here INFO
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4. REMOVE MANIFOLD STAY

	Click here INFO
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5. REMOVE EXHAUST MANIFOLD



Click here [INFO](#)

6. DISCONNECT NO. 5 WATER BY-PASS HOSE

Click here [INFO](#)

7. SEPARATE THROTTLE BODY WITH MOTOR ASSEMBLY



Click here [INFO](#)

8. DISCONNECT NO. 8 WATER BY-PASS HOSE



Click here [INFO](#)

9. REMOVE THROTTLE BODY GASKET

Click here [INFO](#)

10. DISCONNECT NO. 3 WATER BY-PASS HOSE

Click here [INFO](#)

11. DISCONNECT NO. 4 WATER BY-PASS HOSE

Click here [INFO](#)

12. REMOVE EGR COOLER ASSEMBLY

Click here [INFO](#)

13. REMOVE EGR VALVE GASKET

Click here [INFO](#)

14. REMOVE NO. 1 EGR COOLER GASKET

Click here [INFO](#)

15. REMOVE NO. 1 EGR PIPE SUB-ASSEMBLY



Click here [INFO](#)

16. REMOVE EGR VALVE ADAPTER GASKET

Click here [INFO](#)

17. REMOVE EGR INLET GASKET

Click here [INFO](#)

18. REMOVE NO. 4 WATER BY-PASS HOSE

Click here [INFO](#)

19. REMOVE NO. 8 WATER BY-PASS HOSE

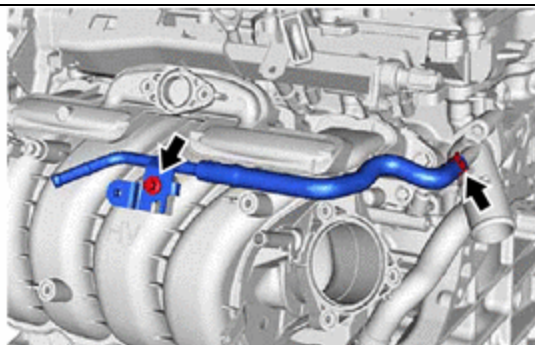
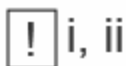
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20. REMOVE EGR VALVE ASSEMBLY



Click here [INFO](#)

21. REMOVE NO. 3 WATER BY-PASS PIPE



(1) Slide the clip and disconnect the No. 3 water by-pass pipe from the water outlet sub-assembly.

(2) Using an 8 mm socket wrench, remove the bolt and No. 3 water by-pass pipe from the intake manifold.

22. REMOVE INTAKE MANIFOLD STAY



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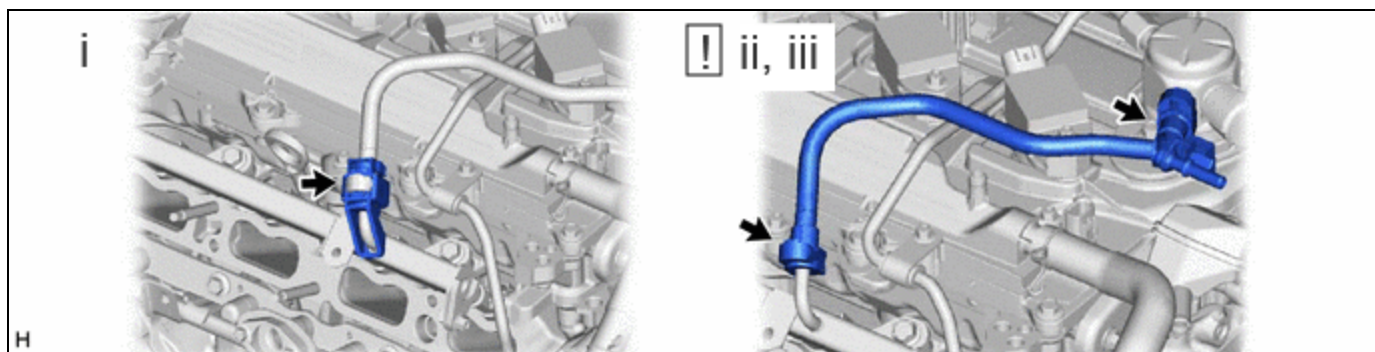
23. REMOVE INTAKE MANIFOLD

Click here [INFO](#)

24. REMOVE NO. 1 INTAKE MANIFOLD TO HEAD GASKET

Click here [INFO](#)

25. DISCONNECT FUEL TUBE SUB-ASSEMBLY



- (1) Remove the fuel pipe clamp from the fuel tube connector.
- (2) Disconnect the fuel tube sub-assembly from the fuel (engine room side) pump assembly.

Click here [INFO](#)

- (3) Disconnect the fuel tube sub-assembly from the fuel delivery pipe sub-assembly.

Click here [INFO](#)

26. REMOVE NO. 1 FUEL PIPE SUB-ASSEMBLY



27. REMOVE FUEL (ENGINE ROOM SIDE) PUMP ASSEMBLY (for High Pressure)



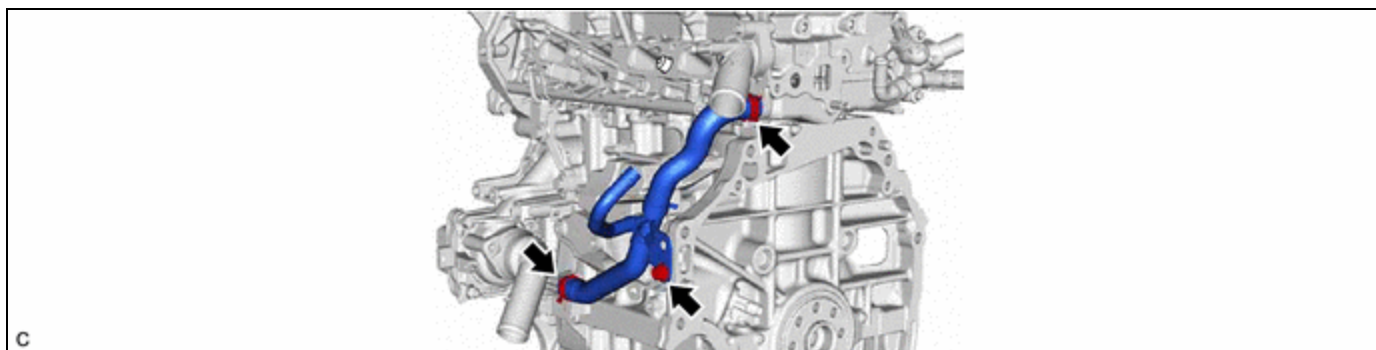
28. REMOVE FUEL PUMP SPACER GASKET

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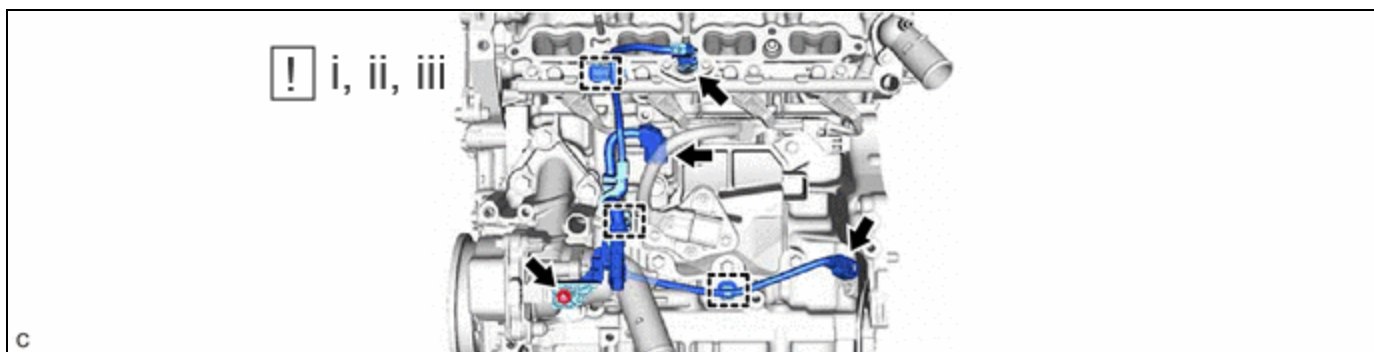
29. REMOVE FUEL PUMP LIFTER ASSEMBLY

Click here [INFO](#)

30. REMOVE WATER BY-PASS HOSE ASSEMBLY

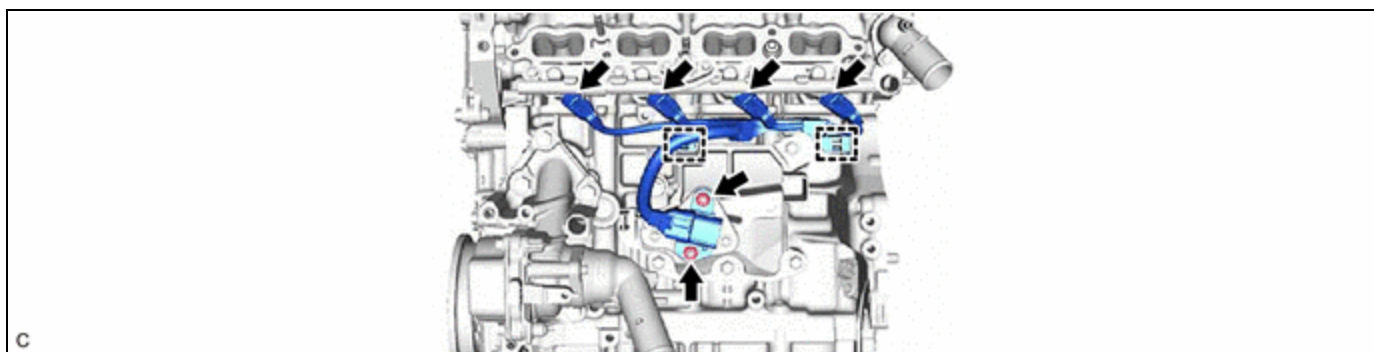


31. REMOVE SENSOR WIRE



- (1) Disconnect the 3 connectors.
- (2) Disengage the 3 clamps.
- (3) Using an 8 mm socket wrench, remove the bolt and sensor wire from the water inlet with thermostat sub-assembly.

32. REMOVE NO. 6 ENGINE WIRE



33. REMOVE FUEL DELIVERY PIPE SUB-ASSEMBLY

	Click here INFO
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34. REMOVE FUEL DELIVERY SPACER

Click here [INFO](#)

35. REMOVE INJECTOR VIBRATION INSULATOR

Click here [INFO](#)

36. REMOVE NO. 5 ENGINE WIRE

Click here [INFO](#)

37. REMOVE PORT FUEL INJECTOR ASSEMBLY

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38. REMOVE FUEL DELIVERY PIPE

	Click here INFO
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39. REMOVE DIRECT FUEL INJECTOR ASSEMBLY

	Click here INFO
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40. REMOVE NOZZLE HOLDER CLAMP

Click here [INFO](#)

41. REMOVE NO. 3 FUEL INJECTOR BACK-UP RING

	Click here INFO
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42. REMOVE NO. 1 FUEL INJECTOR BACK-UP RING

Click here [INFO](#)

43. REMOVE C-RING

Click here [INFO](#)

44. REMOVE INJECTOR VIBRATION INSULATOR

Click here [INFO](#)

45. REMOVE FUEL INJECTOR SEAL

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46. REMOVE IGNITION COIL ASSEMBLY

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47. REMOVE ENGINE OIL LEVEL DIPSTICK GUIDE

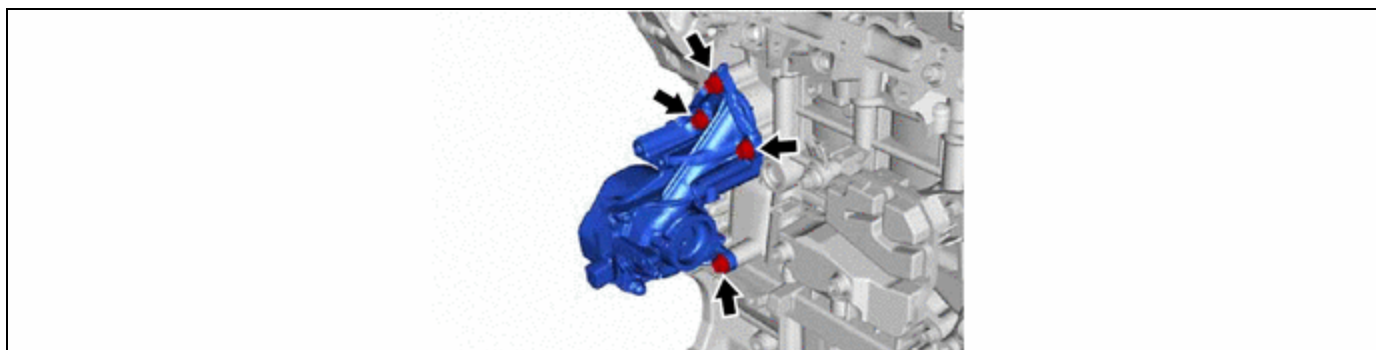


- (1) Remove the engine oil level dipstick.
- (2) Using an 8 mm socket wrench, remove the bolt and engine oil level dipstick guide from the camshaft housing sub-assembly.
- (3) Remove the O-ring from the engine oil level dipstick guide.

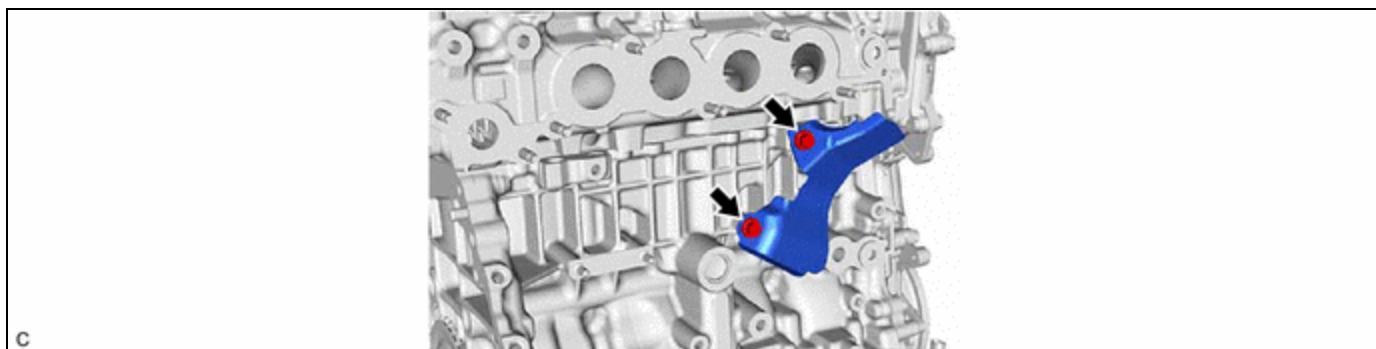
48. REMOVE WATER INLET WITH THERMOSTAT SUB-ASSEMBLY



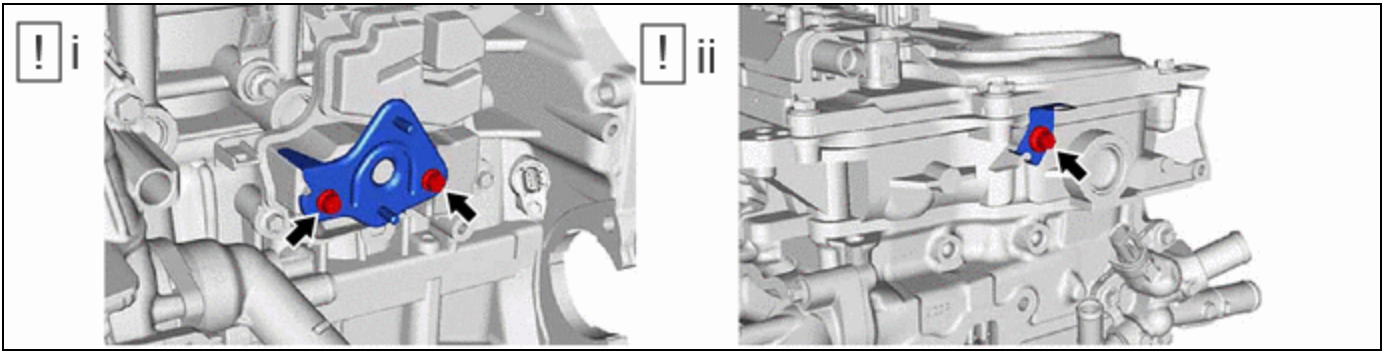
49. REMOVE ENGINE WATER PUMP ASSEMBLY (WATER INLET HOUSING)



50. REMOVE NO. 3 EXHAUST MANIFOLD HEAT INSULATOR



51. REMOVE WIRE HARNESS CLAMP BRACKET



- (1) Using an 8 mm socket wrench, remove the 2 bolts and wire harness clamp bracket from the No. 1 ventilation case.
- (2) Using an 8 mm socket wrench, remove the bolt and wire harness clamp bracket from the camshaft housing sub-assembly.

