1GR-FE LUBRICATION OIL PUMP REMOVAL

PROCEDURE

■ 1.RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM (w/ Air Conditioning System)

Click hereVehicle Interior>HEATING / AIR CONDITIONING>REFRIGERANT>REPLACEMENT

2.DRAIN ENGINE COOLANT

Click hereEngine / Hybrid System>1GR-FE COOLING>COOLANT>REPLACEMENT

3.DRAIN ENGINE OIL

Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL AND OIL FILTER>REPLACEMENT

4.REMOVE INTAKE MANIFOLD

17111

Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>INTAKE MANIFOLD>REMOVAL

5.REMOVE EXHAUST MANIFOLD

Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>REMOVAL

6.REMOVE FAN SHROUD

16711

Click hereEngine / Hybrid System>1GR-FE COOLING>RADIATOR>REMOVAL

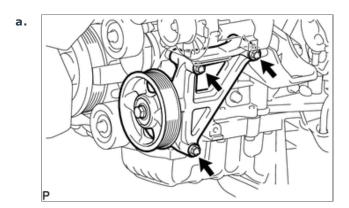
7.REMOVE COOLER COMPRESSOR ASSEMBLY (w/ Air Conditioning System)

88320

Click hereVehicle Interior>HEATING / AIR CONDITIONING>COMPRESSOR(for 1GR-FE)>REMOVAL

8.REMOVE IDLER PULLEY BRACKET (w/o Air Conditioning System)

16631B



Remove the 3 bolts and idler pulley bracket.

9.REMOVE GENERATOR ASSEMBLY

27020

Click herePower Source / Network>1GR-FE BATTERY / CHARGING>GENERATOR>REMOVAL

■ 10.DISCONNECT VANE PUMP ASSEMBLY

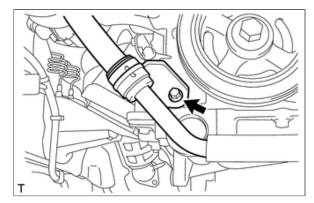
44310

Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE ASSEMBLY>REMOVAL

11.DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION HOSE (w/ Air Conditioning System)

88712

a.



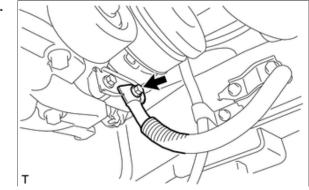
for LHD:

Remove the bolt and disconnect the No. 1 cooler refrigerant suction hose.

■ 12.DISCONNECT NO. 7 ENGINE WIRE

82127

a.

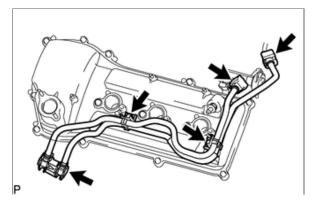


Remove the bolt and disconnect the No. 7 engine wire.

13.REMOVE NO. 1 FUEL PIPE SUB-ASSEMBLY AND NO. 2 FUEL PIPE SUB-ASSEMBLY

23801P

a.



Remove the No. 1 fuel pipe clamp and 2 No. 2 fuel pipe clamps.

- b. Disconnect the No. 1 fuel pipe sub-assembly and No. 2 fuel pipe sub-assembly. Click hereEngine / Hybrid System>1GR-FE FUEL>FUEL SYSTEM>PRECAUTION
- c. Remove the 2 bolts, No. 1 fuel pipe sub-assembly and No. 2 fuel pipe sub-assembly.

■ 14.REMOVE IGNITION COIL ASSEMBLY

19500

Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>IGNITION COIL AND SPARK PLUG>REMOVAL

■ 15.REMOVE VVT SENSOR (for Bank 1)

■ 16.REMOVE VVT SENSOR (for Bank 2)

Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>CAMSHAFT POSITION SENSOR>REMOVAL

17.REMOVE CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY LH (for Bank 1)

Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>CAMSHAFT OIL CONTROL VALVE>REMOVAL

■ 18.REMOVE CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY RH (for Bank 2) 15330B

Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>CAMSHAFT OIL CONTROL VALVE>REMOVAL

19.REMOVE INLET HEATER WATER HOSE

87245A

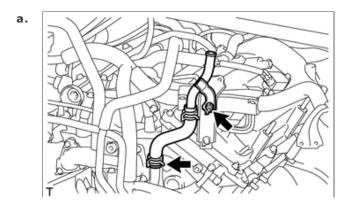
15340

a.

Slide the 2 clamps and remove the inlet heater water hose.

20.REMOVE WATER HOSE SUB-ASSEMBLY

87209



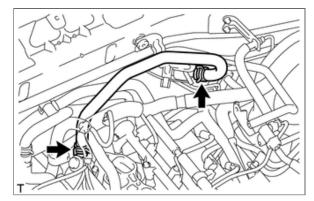
Slide the clamp and disconnect the water hose sub-assembly.

b. Remove the bolt and water hose sub-assembly.

■ 21.REMOVE OUTLET HEATER WATER HOSE

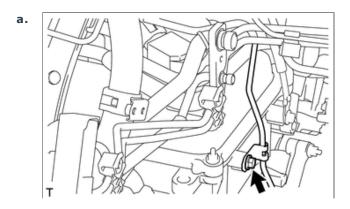
87246A

a.



Slide the 2 clamps and remove the outlet heater water hose.

22.DISCONNECT CLUTCH TUBE



Remove the bolt and disconnect the clutch tube.

23.DISCONNECT WIRE HARNESS

24.REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY LH 11202

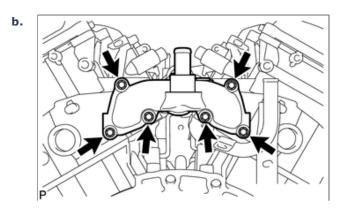
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY

25.REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY 11201

Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY

■ 26.REMOVE REAR WATER BY-PASS JOINT 16356

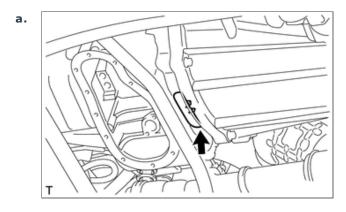
a. Disconnect the engine coolant temperature sensor connector.



Remove the 2 bolts, 4 nuts and rear water by-pass joint.

c. Remove the 2 gaskets and O-ring.

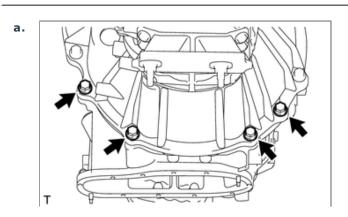
27.REMOVE V-RIBBED BELT TENSIONER ASSEMBLY	16620
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>REMOVAL	
28.REMOVE NO. 2 IDLER PULLEY SUB-ASSEMBLY	16604
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>REMOVAL	
29.REMOVE NO. 1 IDLER PULLEY SUB-ASSEMBLY	16603
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>REMOVAL	
■ 30.REMOVE CRANKSHAFT PULLEY	13471
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
31.REMOVE NO. 2 OIL PAN SUB-ASSEMBLY	12102A
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
32.REMOVE OIL STRAINER SUB-ASSEMBLY	15104
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
■ 33.REMOVE UNDER FLYWHEEL HOUSING COVER	11361J



Remove the under flywheel housing cover.

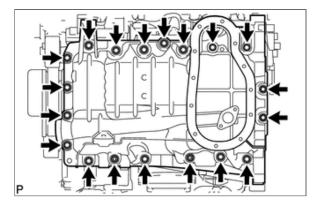
■ 34.REMOVE OIL PAN SUB-ASSEMBLY

12101



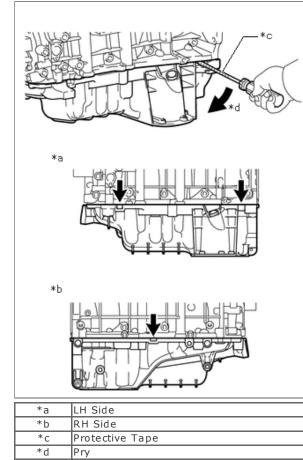
Remove the 4 bolts.





Remove the 17 bolts and 2 nuts.





Using a screwdriver, remove the oil pan sub-assembly by prying between the oil pan sub-assembly and cylinder block sub-assembly as shown in the illustration.

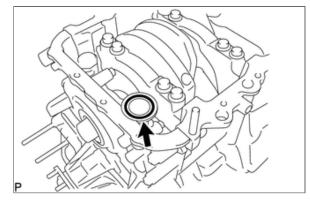
NOTICE:

Be careful not to damage the contact surfaces of the cylinder block sub-assembly and oil pan sub-assembly.

HINT:

Tape the screwdriver tip before use.

d.



Remove the O-ring from the timing chain cover sub-assembly.

35.DISCONNECT NO. 2 OIL COOLER HOSE	15778
Click hereEngine / Hybrid System>1GR-FE LUBRICATION>ENGINE OIL COOLER>REMOVAL	
36.DISCONNECT OIL COOLER HOSE	15777
Click hereEngine / Hybrid System>1GR-FE LUBRICATION>ENGINE OIL COOLER>REMOVAL	
37.REMOVE WATER INLET HOUSING	16323
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
38.REMOVE OIL FILTER BRACKET SUB-ASSEMBLY	15609
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
39.REMOVE TIMING CHAIN COVER SUB-ASSEMBLY	11302
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY	
40.REMOVE FRONT CRANKSHAFT OIL SEAL	11301C

Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE UNIT>DISASSEMBLY

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