Print Exit

1GR-FE ENGINE MECHANICAL ENGINE ASSEMBLY INSTALLATION

PROCEDURE

■ 1.INSTALL FRONT ENGINE MOUNTING INSULATOR

12361

HINT:

Only perform this procedure when replacement of the front engine mounting insulator is necessary.

a. Install the 2 front engine mounting insulators with the 2 nuts.

Torque:

72 N*m (734 kgf*cm, 53 ft.*lbf)

2.INSTALL ENGINE HANGER

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

■ 3.REMOVE ENGINE STAND

- a. Attach an engine sling device and hang the engine with a chain block.
- **b.** Lift the engine and remove it from the engine stand.

4.INSTALL ENGINE ASSEMBLY

- **a.** Slowly lower the engine into the engine compartment.
- b. Install the front engine mounting insulator LH and RH to the body with the 2 washers and 2 nuts.

Torque:

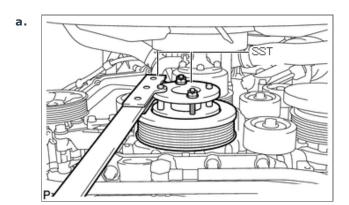
87 N*m (887 kgf*cm, 64 ft.*lbf)

5.REMOVE ENGINE HANGER

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

6.INSTALL FLYWHEEL SUB-ASSEMBLY

13405



Using SST, hold the crankshaft.

SST

09213-54015 (91651-60855) 09330-00021

b. Clean the bolts and their installation holes.

- c. Temporarily install the flywheel sub-assembly with 8 new bolts.
- d. Install and tighten the 8 mounting bolts uniformly in several steps.

Torque:

30 N*m (306 kgf*cm, 22 ft.*lbf)

- e. Mark the top of the bolts with paint.
- **f.** Tighten the 8 bolts 90° in the same sequence.
- **g.** Check that the paint marks are now at a 90° angle to the top.

T.INSTALL CLUTCH DISC ASSEMBLY Click hereDrivetrain>CLUTCH>CLUTCH UNIT(for 1GR-FE)>INSTALLATION 8.INSTALL CLUTCH COVER ASSEMBLY Click hereDrivetrain>CLUTCH>CLUTCH UNIT(for 1GR-FE)>INSTALLATION 9.INSPECT AND ADJUST CLUTCH COVER ASSEMBLY Click hereDrivetrain>CLUTCH>CLUTCH UNIT(for 1GR-FE)>INSTALLATION 10.INSTALL REAR NO. 1 ENGINE MOUNTING INSULATOR 12371

HINT:

Only perform this procedure when replacement of the rear No. 1 engine mounting insulator is necessary.

Click hereDrivetrain>H150F MANUAL TRANSMISSION / TRANSAXLE>MANUAL TRANSMISSION ASSEMBLY(for 1GR-FE)>INSTALLATION

■ 11.INSTALL MANUAL TRANSMISSION WITH TRANSFER

Click hereDrivetrain>H150F MANUAL TRANSMISSION / TRANSAXLE>MANUAL TRANSMISSION ASSEMBLY(for 1GR-FE)>INSTALLATION

■ 12.INSTALL FRONT PROPELLER SHAFT ASSEMBLY 37140

Click hereDrivetrain>DRIVE SHAFT / PROPELLER SHAFT>FRONT PROPELLER SHAFT ASSEMBLY>INSTALLATION

■ 13.INSTALL PROPELLER SHAFT ASSEMBLY 37110

Click hereDrivetrain>DRIVE SHAFT / PROPELLER SHAFT>PROPELLER SHAFT ASSEMBLY>INSTALLATION

14.CONNECT NO. 1 FUEL PIPE SUB-ASSEMBLY AND NO. 2 FUEL PIPE SUB-ASSEMBLY 23801P

- a. Connect the No. 1 fuel pipe sub-assembly and No. 2 fuel pipe sub-assembly. Click hereEngine / Hybrid System>1GR-FE FUEL>FUEL SYSTEM>PRECAUTION
- b. Install the No. 1 fuel pipe clamp.

■ 15.INSTALL COOLER COMPRESSOR ASSEMBLY (w/ Air Conditioning System) 88320

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

■ 16.INSTALL IDLER PULLEY BRACKET (w/o Air Conditioning System) 16631B

Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL PUMP>INSTALLATION

■ 17.INSTALL GENERATOR ASSEMBLY 27020

■ 18.INSTALL ENGINE MOUNTING BRACKET HEAT INSULATOR

12395

a. Install the engine mounting bracket heat insulator with the 3 bolts.

Torque:

19 N*m (194 kgf*cm, 14 ft.*lbf)

■ 19.CONNECT VANE PUMP ASSEMBLY

44310

a. Connect the vane pump assembly with the 2 bolts.

Torque:

21 N*m (214 kgf*cm, 15 ft.*lbf)

b. Connect the connector.

20.CONNECT NO. 1 COOLER REFRIGERANT SUCTION HOSE (w/ Air Conditioning System)

88712

Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL PUMP>INSTALLATION

21.CONNECT CLUTCH TUBE

31482

Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL PUMP>INSTALLATION

22.CONNECT ENGINE WIRE

82121

a. Connect the No. 7 engine wire with the bolt.

Torque:

8.4 N*m (86 kgf*cm, 74 in.*lbf)

b. Connect the ground cable with the bolt to the rear water by-pass joint.

Torque:

8.4 N*m (86 kgf*cm, 74 in.*lbf)

c. Connect the No. 2 engine wire with the 2 nuts and attach the 2 wire harness clamps.

Torque:

7.6 N*m (77 kgf*cm, 67 in.*lbf)

- **d.** Connect the connector to the engine room main wire.
- e. Connect the No. 2 engine wire to the fuse block with the bolt.

Torque:

8.4 N*m (86 kgf*cm, 74 in.*lbf)

- f. Attach the 2 claws to install the fuse block cover.
- g. Attach the 2 wire harness clamps.
- h. Connect the 5 connectors.

23.CONNECT OUTLET HEATER WATER HOSE

87246A

a. Connect the outlet heater water hose to the hose and valve assembly, and slide the hose clamp to secure the hose.

a. Connect the inlet heater water hose to the heater core, and slide the hose clamp to secure the hose.	
25.INSTALL EXHAUST MANIFOLD SUB-ASSEMBLY RH	17104
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
26.INSTALL NO. 1 MANIFOLD STAY	17118
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
27.INSTALL EXHAUST MANIFOLD SUB-ASSEMBLY LH	17105
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
28.INSTALL NO. 2 MANIFOLD STAY	17119
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
29.INSTALL FRONT FENDER APRON SEAL RH	53736
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
30.INSTALL FRONT FENDER APRON SEAL LH	53737B
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
31.INSTALL FRONT EXHAUST PIPE ASSEMBLY (for Model Code #J78, #J79 Series)	17410
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST PIPE(for Model Code #J78, #J79 Series)>INSTALLATION	
32.INSTALL FRONT EXHAUST PIPE ASSEMBLY (for Model Code #J71, #J76 Series)	17410
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST PIPE(for Model Code #J71, #J76 Series)>INSTALLATION	
33.INSTALL INTAKE AIR SURGE TANK	17129
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>INTAKE MANIFOLD>INSTALLATION	
34.INSTALL AIR CLEANER ASSEMBLY	17700
 Install the air cleaner assembly with the 2 bolts and nut. Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf) 	
35.INSTALL AIR CLEANER FILTER ELEMENT SUB-ASSEMBLY	17801
a. Install the air cleaner filter element sub-assembly.	
36.INSTALL AIR CLEANER CAP SUB-ASSEMBLY WITH NO. 1 AIR CLEANER HOSE	17705
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>INTAKE MANIFOLD>INSTALLATION	
37.INSTALL RADIATOR ASSEMBLY	16400
Click hereEngine / Hybrid System>1GR-FE COOLING>RADIATOR>INSTALLATION	
38.CONNECT CABLE TO NEGATIVE BATTERY TERMINAL	

39.ADD ENGINE COOLANT	
Click hereEngine / Hybrid System>1GR-FE COOLING>COOLANT>REPLACEMENT	
40.ADD MANUAL TRANSMISSION OIL	
Click hereDrivetrain>H150F MANUAL TRANSMISSION / TRANSAXLE>MANUAL TRANSMISSION OIL>REPLACEME	NT
41.ADD ENGINE OIL	
Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL AND OIL FILTER>REPLACEMENT	
42.CHARGE REFRIGERANT (w/ Air Conditioning System)	
Click hereVehicle Interior>HEATING / AIR CONDITIONING>REFRIGERANT>REPLACEMENT	
43.INSPECT FOR FUEL LEAK	
Click hereEngine / Hybrid System>1GR-FE FUEL>FUEL INJECTOR>INSTALLATION	
44.INSPECT FOR COOLANT LEAK	
Click hereEngine / Hybrid System>1GR-FE COOLING>COOLING SYSTEM>ON-VEHICLE INSPECTION	
45.INSPECT FOR OIL LEAK	
Click hereEngine / Hybrid System>1GR-FE LUBRICATION>OIL AND OIL FILTER>REPLACEMENT	
46.CHECK ENGINE OIL LEVEL	
Click hereEngine / Hybrid System>1GR-FE LUBRICATION>LUBRICATION SYSTEM>ON-VEHICLE INSPECTION	
47.INSPECT FOR EXHAUST GAS LEAK	
Click hereEngine / Hybrid System>1GR-FE INTAKE / EXHAUST>EXHAUST MANIFOLD>INSTALLATION	
48.CHECK FOR REFRIGERANT LEAK (w/ Air Conditioning System)	
Click hereVehicle Interior>HEATING / AIR CONDITIONING>REFRIGERANT>REPLACEMENT	
49.INSPECT IGNITION TIMING	
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE>ON-VEHICLE INSPECTION	
50.INSPECT ENGINE IDLE SPEED	
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE>ON-VEHICLE INSPECTION	
51.INSPECT CO/HC	
Click hereEngine / Hybrid System>1GR-FE ENGINE MECHANICAL>ENGINE>ON-VEHICLE INSPECTION	
52.INSTALL HOOD SUB-ASSEMBLY 533	301
a. Install the hood sub-assembly with the 4 bolts. Torque:	
18 N*m (184 kgf*cm, 13 ft.*lbf)	
b. Connect the washer hose.	

53301

53.ADJUST HOOD SUB-ASSEMBLY

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