PROCEDURE

1.PERFORM SPARK TEST

a. Check for DTCs.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>SFI SYSTEM>DTC CHECK / CLEAR

NOTICE:
If any DTC is output, perform the troubleshooting procedures for that DTC.

b. Check if sparks occur.

i. Remove the 6 ignition coil assemblies and 6 spark plugs.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>IGNITION COIL AND SPARK PLUG>REMOVAL

ii. Install the spark plug to the ignition coil assembly and connect the ignition coil connector.

iii. Disconnect the fuel pump connector.
Click hereEngine / Hybrid System>1GR-FE FUEL>FUEL SYSTEM>PRECAUTION

iv. Ground the spark plug.

v. Visually check that sparks occur while the engine is being cranked.

NOTICE:

- Be sure to ground the spark plug when checking.
- Replace the ignition coil assembly if it receives an impact.
- Do not crank the engine for more than 2 seconds.

2.INSPECT IGNITION COIL AND SPARK TEST

a. Check that the wire harness side connector of the ignition coil assembly is securely connected.

Result

Result	Proceed to
NG	Connect securely
OK	Go to next step

b. Perform a spark test on each ignition coil assembly.

i. If there is a cylinder where sparks do not occur, replace its ignition coil assembly with the ignition coil of a cylinder where sparks occur normally.

ii. Crank the engine and visually check that sparks occur at the cylinder with the normally operating ignition coil assembly.

Result

Result	Proceed to
OK	Replace ignition coil assembly
NG	Go to next step

c. Inspect the spark plug.

i. Replace the spark plug with a normal one.

ii. Perform spark test again.

Result

Result	Proceed to
OK	Replace spark plug
NG	Go to next step

d. Check the power supply to the ignition coil assembly.

i. Turn the ignition switch to ON.

ii. Check that there is battery voltage at the ignition coil positive (+) terminal.

Result

Result	Proceed to
NG	Check wiring between ignition switch and ignition coil assembly
OK	Go to next step

e. Check the VVT sensor.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>SFI SYSTEM>P0340

f. Check the crankshaft position sensor.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>SFI SYSTEM>P0335

g. Check the IGT signal circuit.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>SFI SYSTEM>P0351

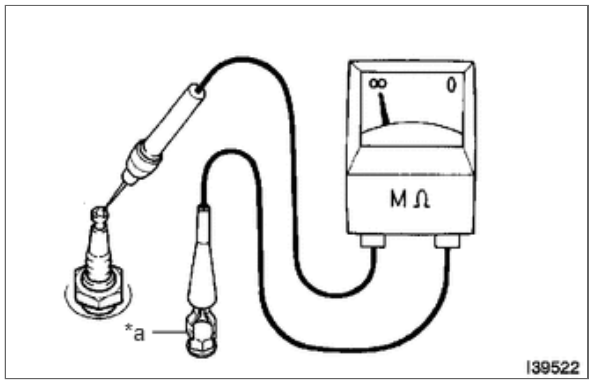
h. Install the 6 ignition coil assemblies and 6 spark plugs.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>IGNITION COIL AND SPARK PLUG>INSTALLATION

i. Connect the fuel pump connector.

j. Clear the DTCs.
Click hereEngine / Hybrid System>1GR-FE ENGINE CONTROL>SFI SYSTEM>DTC CHECK / CLEAR

3.CHECK SPARK PLUG 19100P

a.



*a	Body Ground

Check the electrode.

i. Using a megohmmeter, measure the insulation resistance.

Standard Insulation Resistance:

Tester Connection	Condition	Specified Condition
Spark plug (terminal part) - Body ground	Always	10 MΩ or higher

If a megohmmeter is not available, perform the following simple inspection.

b. Alternative inspection method:

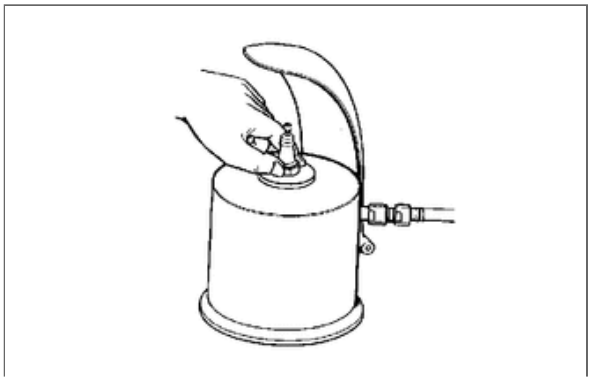
i. Quickly accelerate the engine to 4000 rpm 5 times.

ii. Remove the spark plug.

iii. Visually check the spark plug.
If the electrode is dry, the spark plug is functioning properly. If the electrode is damp, proceed to the next step.

c. Check the spark plug for any damage on its threads and insulator.
If there is damage, replace the spark plug.

d.



Clean the spark plugs.

e. Check and adjust the electrode gap.

Recommended Spark Plug and Electrode Gap:

Manufacturer	Product	Electrode gap for new spark plug	Maximum electrode gap for used spark plug
DENSO made	K20HR-U11	1.0 to 1.1 mm (0.0394 to 0.0433 in.)	1.3 mm (0.0512 in.)
NGK made	LFR6C-11		

If the gap is more than the maximum, replace the spark plug.