1UR-FSE ENGINE CONTROL SYSTEM > SFI SYSTEM > P0012 Camshaft Position "A" - Timing Over-Retarded (Bank 1) / P0022 Camshaft Position "A" - Timing Over-Retarded (Bank 2)

INSPECTION PROCEDURE

HINT:

- Techstream only:
  By using the Active Test's Control the VVT-iE Linear (Bank 1) or Control the VVT-iE Linear (Bank 2) function, it can be determined if the VVT-iE system is malfunctioning.
  1. Connect the Techstream to the DLC3.
  2. Turn the engine switch on (IG) and turn the Techstream on.
  3. Start the engine and warm it up.
  4. Enter the following menus: Powertrain / Engine / Active Test / Control the VVT-iE Linear (Bank 1) or Control the VVT-iE Linear (Bank 2) / All Data / VVT-iE Aim Angle #1 and VVT Change Angle #1 or VVT-iE Aim Angle #2 and VVT Change Angle #2.
  5. Perform the Active Test operation with the engine speed at 1500 rpm.

  OK:

Active Test Movement Order	Difference between "VVT-iE Aim Angle" and "VVT Change Angle"
0 deg → 10 deg → 20 deg → 40 deg → 10 deg → 0 deg → 10 deg → END	Within 4 degFR

- Read freeze frame data using the Techstream. Freeze frame data records the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, and other data from the time the malfunction occurred.

---

1. CHECK ANY OTHER DTCS OUTPUT (IN ADDITION TO DTC P0012 OR P0022)

a. Connect the Techstream to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the Techstream on.

d. Enter the following menus: Powertrain / Engine / Trouble Codes.

e. Read DTCs.

Result:

| Display (DTC Output)	Proceed to
P0012 or P0022	A
P0012 or P0022 and other DTCs	B

NG ⟩ **GO TO DTC CHART (Refer to 1UR-FSE ENGINE CONTROL SYSTEM > SFI SYSTEM > DIAGNOSTIC TROUBLE**

CODE CHART(200909 -))

OK

---

2. INSPECT CAMSHAFT TIMING GEAR ASSEMBLY (BANK 1 OR BANK 2)

a. Turn the engine switch off.

b. Remove the camshaft timing control motor (Refer to 1UR-FSE ENGINE CONTROL SYSTEM > CAMSHAFT TIMING CONTROL MOTOR > REMOVAL(200909 -)).

c. Check if the camshaft timing gear assembly's eccentric shaft rotates smoothly.

   OK:
   Rotates smoothly
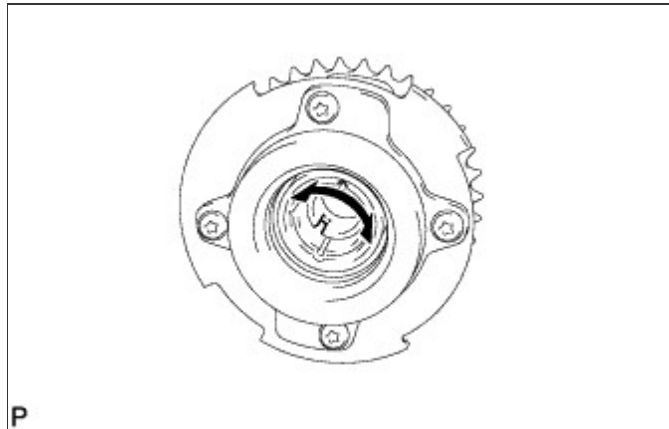
NG → **REPLACE CAMSHAFT TIMING GEAR ASSEMBLY (BANK 1 OR BANK 2) (Refer to 1UR-FSE ENGINE MECHANICAL > ENGINE UNIT > DISASSEMBLY(200909 -))**

OK

---

3. REPLACE CAMSHAFT TIMING CONTROL MOTOR (BANK 1 OR BANK 2)

a. Replace the camshaft timing control motor (Refer to 1UR-FSE ENGINE CONTROL SYSTEM > CAMSHAFT TIMING CONTROL MOTOR > REMOVAL(200909 -)).

NEXT

---

4. CONFIRM WHETHER MALFUNCTION HAS BEEN SUCCESSFULLY REPAIRED

a. Connect the Techstream to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the Techstream on.

d. Clear DTCs (Refer to 1UR-FSE ENGINE CONTROL SYSTEM > SFI SYSTEM > DTC CHECK /

CLEAR(200909 -)).

e. Start the engine.

f. Switch the ECM from normal mode to check mode using the Techstream (Refer to <u>1UR-FSE ENGINE CONTROL SYSTEM > SFI SYSTEM > CHECK MODE PROCEDURE(200909 -)</u>).

g. Drive the vehicle in an urban area for approximately 5 minutes.

h. Enter the following menus: Powertrain / Engine / Trouble Codes.

i. Read the DTCs.

Result:

Display (DTC Output)	Proceed to
No output	A
Other DTCs	B

B	**GO TO DTC CHART (Refer to <u>1UR-FSE ENGINE CONTROL SYSTEM > SFI SYSTEM > DIAGNOSTIC TROUBLE CODE CHART(200909 -)</u>)**

A

END