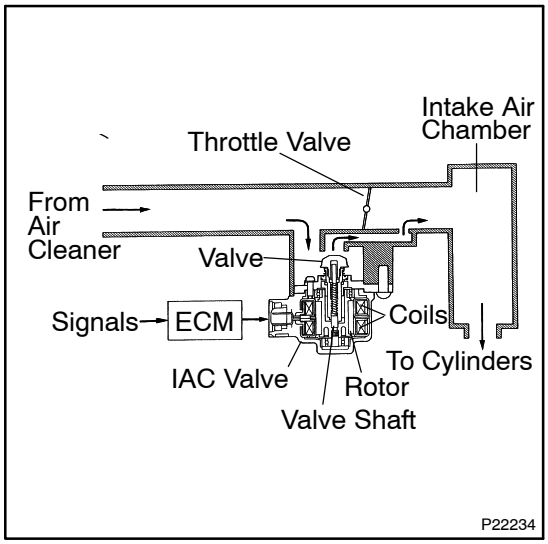
DI5PO–02

DTC	P0505	Idle Control System Malfunction

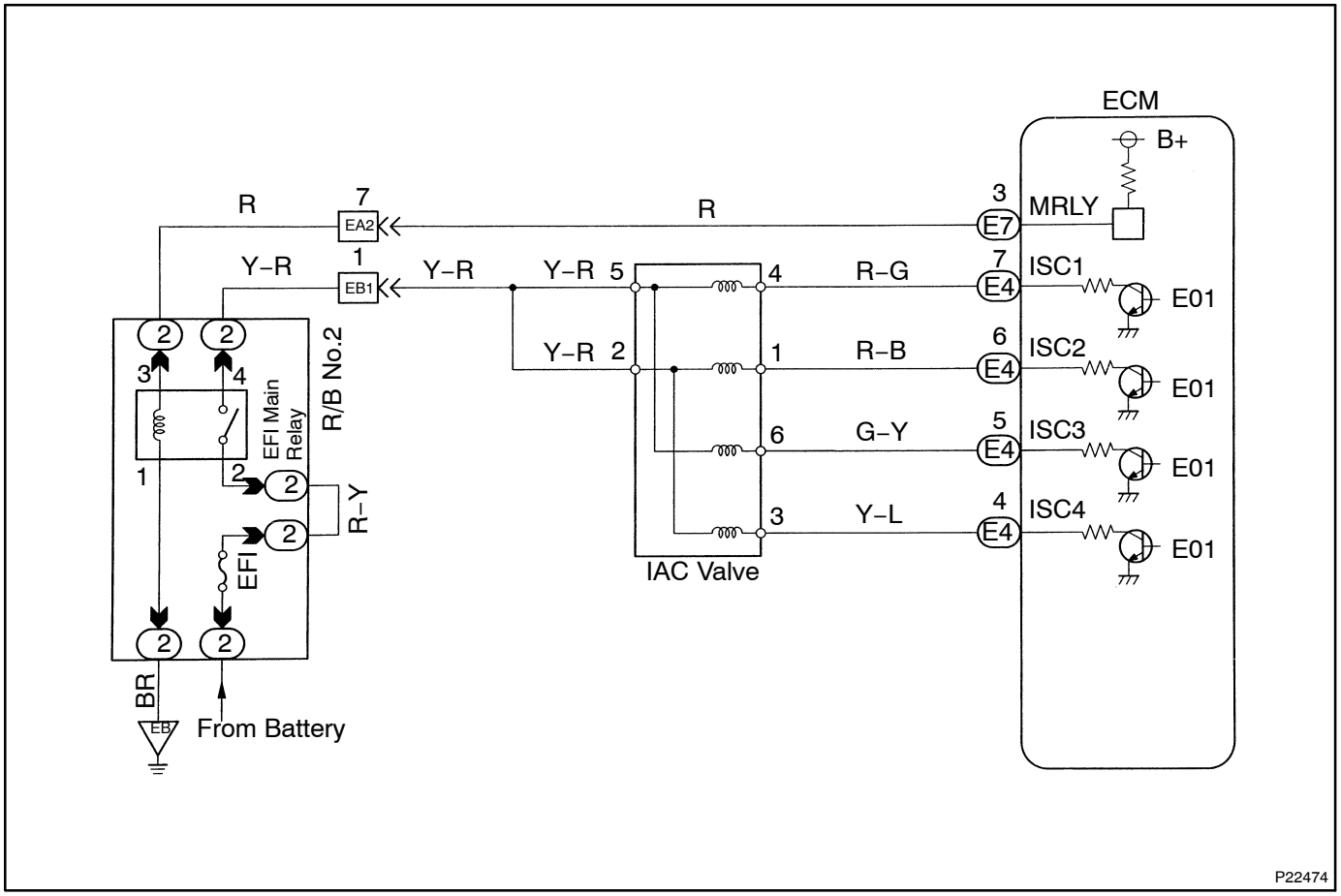
CIRCUIT DESCRIPTION

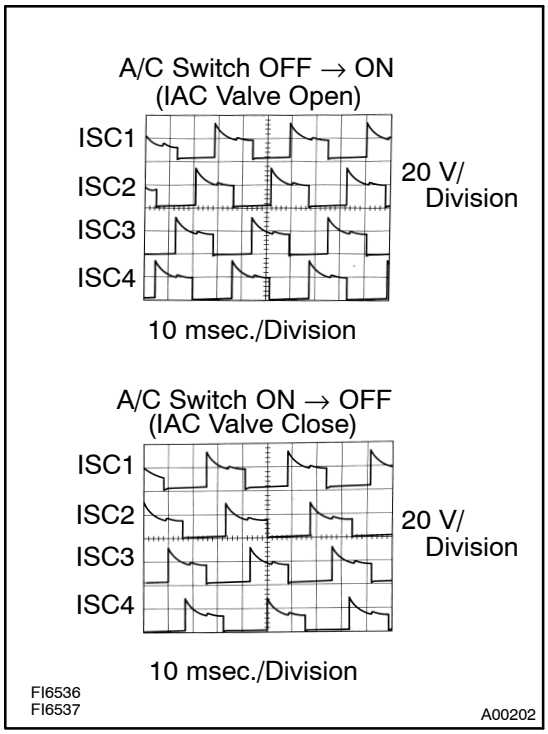


The step motor type IAC valve is located in front of the intake air chamber. Intake air bypassing the throttle valve is directed to the IAC valve through a passage. A step motor is built into the IAC valve. It consists of four coils, a magnetic rotor, valve shaft and valve. When current flows to the coils due to signals from the ECM, the rotor turns and moves the valve shaft forward or backward, changing the clearance between the valve and the valve seat. In this way the intake air volume bypassing the throttle valve is regulated, controlling the engine speed. There are 125 possible positions to which the valve can be opened.

DTC No.	DTC Detecting Condition	Trouble Area
P0505	Idle speed continues to vary greatly from the target speed (2 trip detection logic)	• IAC valve is stuck or closed • Open or short in IAC valve circuit • Open or short in A /C signal circuit • Air intake (hose loose)

WIRING DIAGRAM





Reference: INSPECTION USING OSCILLOSCOPE

With the engine idling measure wavefoms between terminals ISC1, ISC2, ISC3, ISC4 and E01 of ECM when A/C switch ON or OFF.

HINT:

The correct waveforms are as shown.

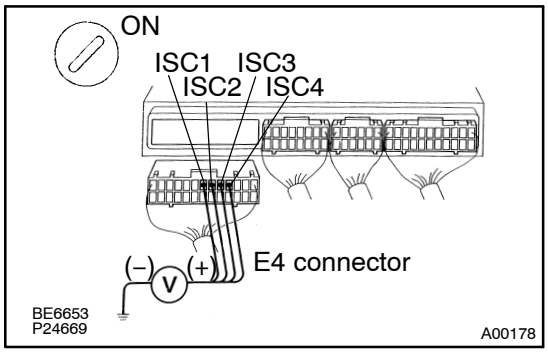
INSPECTION PROCEDURE

1	**Check air induction system (See page SF–1).**

NG → **Repair or replace.**

OK

2	**Check voltage terminals ISC1, ISC2, ISC3, ISC4, of ECM connector and body ground.**



PREPARATION:

(a) Remove instrument panel speaker No.1 panel (See page SF–64).

(b) Disconnect the E4 connector of ECM.

(c) Turn ignition switch ON.

CHECK:

Measure voltage between terminals ISC1, ISC2, ISC3, ISC4 of ECM connector and body ground.

OK:

Voltage: 9 – 14 V

OK → **Go to step 4.**

NG

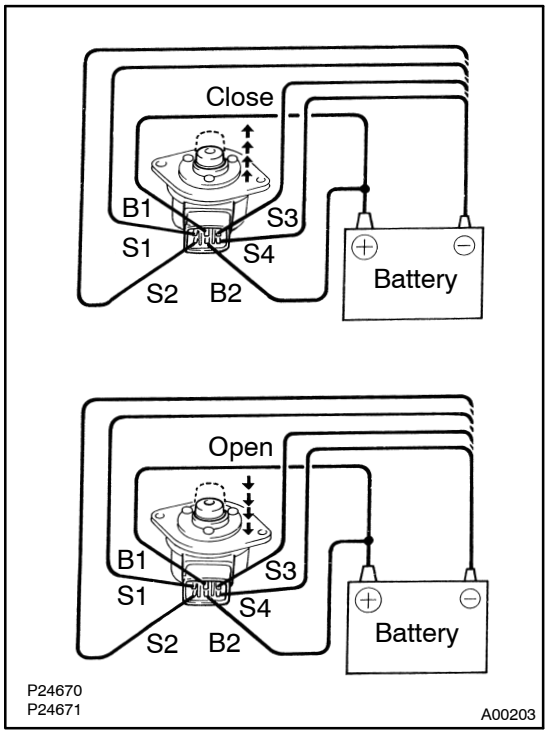
3	**Check IAC valve (See page SF–48).**

NG → **Replace IAC valve.**

OK

Check for open and short in harness and co–nnector between EFI main relay (Marking:EFI) and IAC valve and ECM (See page IN–27).

4	Check operation of the IAC valve .



PREPARATION:

Remove IAC valve (See page SF–50).

CHECK:

(a) Connect the positive (+) leak from the battery to terminals 5 (B1) and 2 (B2), and the negative (–) lead to terminals 4 (S1), –1 (S2), –6 (S3), –3 (S4) in that order.

(b) Connect the positive (+) lead from the battery to terminals 5 (B1) and 2 (B2), and the negative (–) lead to terminals 3 (S4), – 6 (S3), –1 (S2), – 4 (S1) in that order.

OK:

(1) The valve moves to close direction.

(2) The valve moves to open direction.

HINT:

The ACTIVE TEST mode of the TOYOTA hand–held tester can be used to change the step of the IAC valve as desired.

NG → **Repair or replace IAC valve.**

OK

Check and replace ECM (See page IN–27).