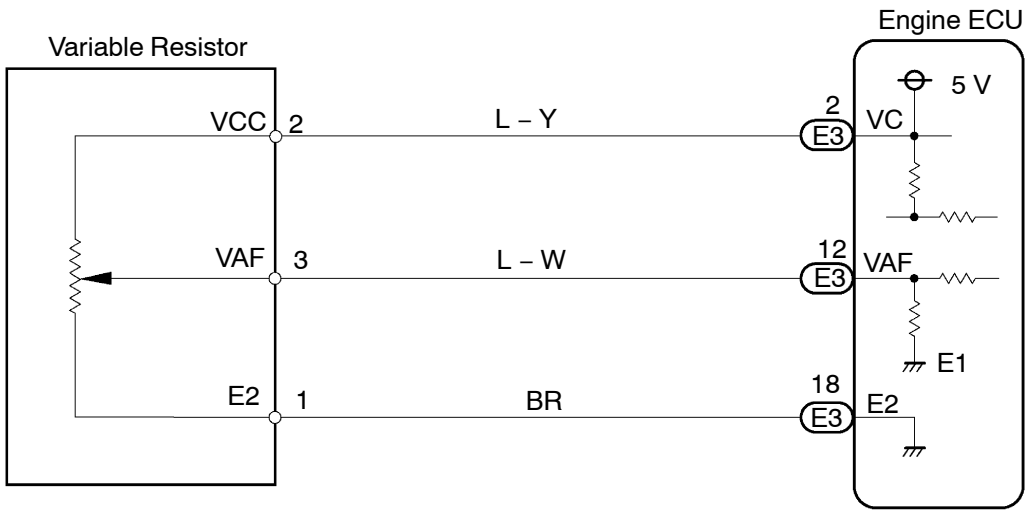
DI2SV–02

Variable Resistor Circuit (Only for vehicles w/o TWC)

CIRCUIT DESCRIPTION

This resistor is used to change the air–fuel ratio of the air–fuel mixture.
The idle mixture is adjusted using this resistor.
Turning the idle mixture adjusting screw clockwise moves the contacts inside the resistor, raising terminal VAF voltage. Conversely, turning the screw counterclockwise lowers the terminal VAF voltage.
When the terminal VAF voltage rises, the engine ECU increases the injection volume slightly, making the air–fuel
mixture a little richer.

WIRING DIAGRAM



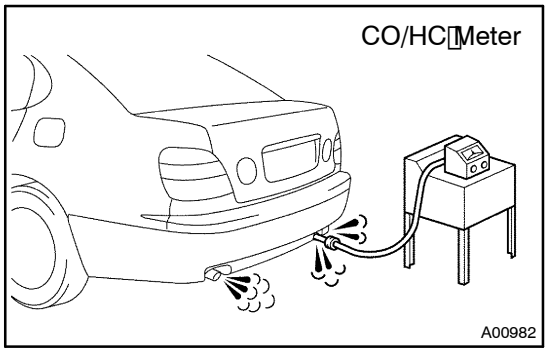
A04441

INSPECTION PROCEDURE

NOTICE:

Always use a CO meter when adjusting the idle mixture. If a CO meter is not available, DO NOT ATTEMPT TO ADJUST IDLE MIXTURE.

1	**Check CO concentration.**



PREPARATION:

(a) Warm up engine to normal operating temperature.
(b) All accessories switched OFF.
(c) All vacuum lines properly connected.
(d) Transmission in "N" position.
(e) Connect the tachometer.
(f) Ignition timing check correctly.
(g) Idle speed check correctly.
(h) Check that the CO meter is properly calibrated.
(i) Race the engine at 2,500 rpm about 2 minutes.

CHECK:

Insert a tester probe at least 40 cm (1.3 ft) into the tailpipe.
Measure the concentration with 1 – 3 minutes after racing the engine to allow the the concentration to stabilize.

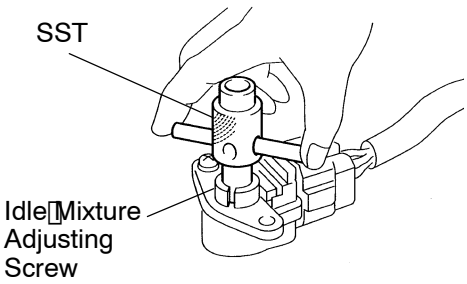
OK:

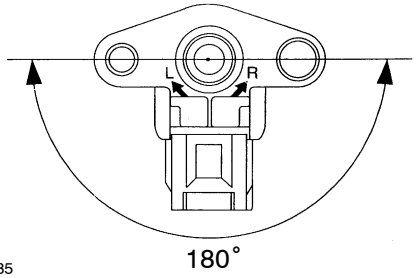
Idle CO concentration: 1.0 – 2.0 %

OK	**CO concentration is normal. Proceed to next circuit inspection shown problem symptom tables (See page DI–24).**

NG

2	Adjust CO concentration.





A01435
A01434
A01431

PREPARATION:

Same condition as step 1 of this chart.

CHECK:

Using SST, adjust the mixture by turning the idle mixture adjusting screw in the variable resistor.

SST 09243 – 00020

RESULT:

OK	CO concentration: 1.0 ± 0.5
NG (type I)	Change in CO concentration
NG (type II)	No change in CO concentration

HINT:

Always check idle speed after turning the idle mixture adjusting screw. If it is incorrect, readjust idle speed.

Adjustable range of the idle mixture adjust to turn this screw is 260 degrees. Do not turn this screw more than it.

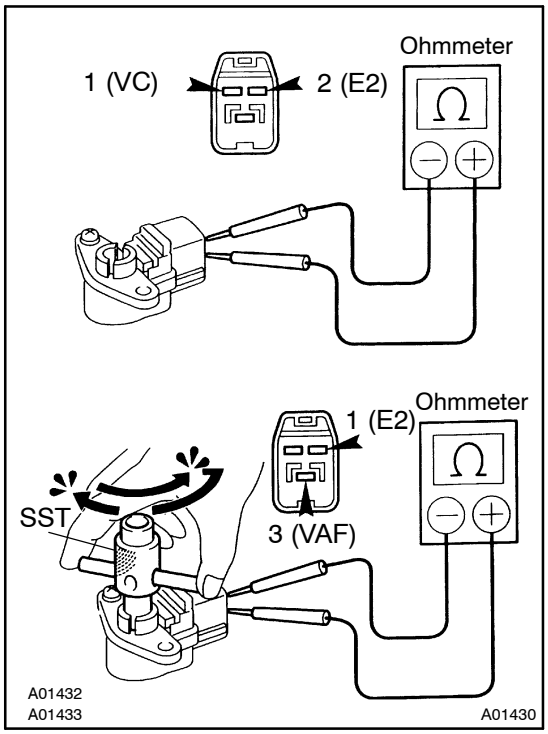
Type I → **See page EM–1 and go on troubleshooting.**

Type II → **Go to step 3.**

OK

Adjustment is complete.

3	Check resistance of variable resistor.



Check Resistance Between 1 and 2:

PREPARATION:

Disconnect the variable resistor connector.

CHECK:

Measure resistance between terminals 1 and 2 of the variable resistor.

OK:

Resistance: 4 – 6 kΩ

Check Resistance Between 1 and 3:

CHECK:

Measure resistance between terminals 1 and 3 when turning the idle mixture adjusting screw fully clockwise and counter-clockwise using SST.

SST 09243 – 00020

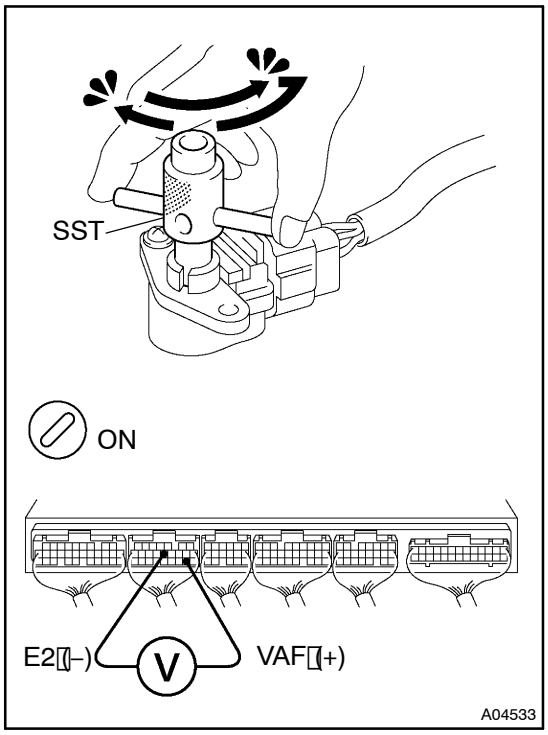
OK:

Resistance: Change from about 5 kΩ to 0 kΩ accordingly

NG → **Replace variable resister.**

OK

4	Check voltage between terminals VAF and E2 of engine ECU connector.



PREPARATION:

(a) Reconnect the variable resistor connector.
(b) Remove the console box.
(c) Turn the ignition switch ON.

CHECK:

Measure voltage between terminals VAF and E2 of engine ECU connector while slowly turning the idle mixture adjusting screw first fully counterclockwise, and then fully clockwise, using SST.

SST 09243 – 00020

OK:

Voltage changes smoothly from 0 V to about 5 V; i.e., does not suddenly jump up to 5 V or down to 0 V.

OK	Check and replace engine ECU.

NG

5	Check for open and short in harness and connector between variable resistor and engine ECU (See page IN–29).

NG	Repair or replace harness or connector.

NG

Check and replace engine ECU.