

Diag. Code	25	Air–Fuel Ratio Lean Malfunction
	26	Air–Fuel Ratio Rich Malfunction

— CIRCUIT DESCRIPTION —

Refer to page [TR-62](#) for the circuit description.

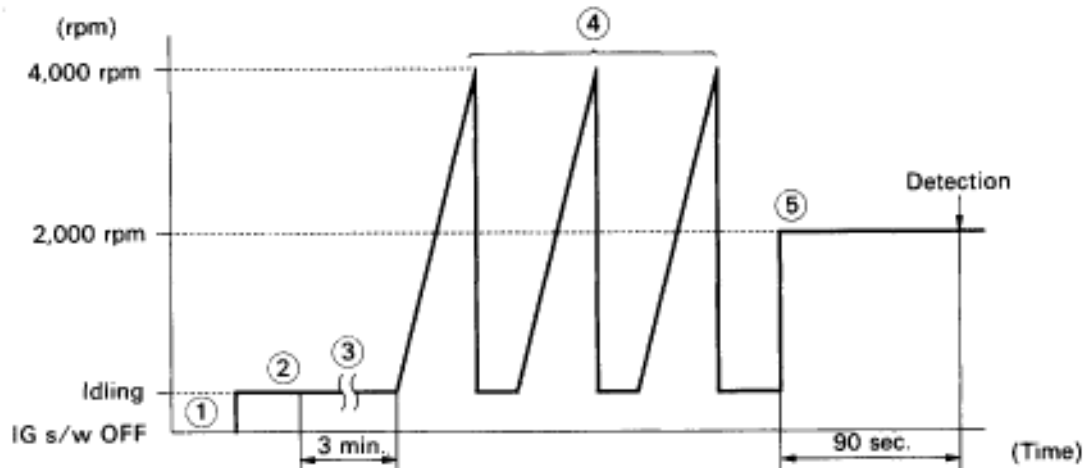
Code No.	Diagnostic Code Detecting Condition	Trouble Area
25 26	(1) Main oxygen sensor voltage is 0.45 V or less (lean) for 90 sec. under conditions (a) and (b). (2 trip detection logic)* (a) Coolant temp.: 60°C (140°F) or more. (b) Engine speed: 1,500 rpm or more.	<ul style="list-style-type: none"> •Open or short in main oxygen sensor circuit •Main oxygen sensor •Ignition system •Water temp. sensor
	(2) Main oxygen sensor voltage is alternating above and below 0.45 V at 5 times per second or more under conditions (a) and (b). (2 trip detection logic)* (a) Engine speed: Idling (b) Coolant temp.: Between 60°C (140°F) and 95°C (203°F)	<ul style="list-style-type: none"> •Open or short in injector circuit. •Fuel line pressure (injector blockage) •Air flow meter (air intake) •Engine ground bolt loose •Foreign object caught in valve
	(3) Difference of air–fuel ratio feedback compensation value between right and left banks is more than 10 percentage for 30 sec. or more under conditions (a) and (b). (2 trip detection logic)* (a) Engine speed : 2,000 rpm or more. (b) Coolant temp.: Between 60°C (140°F) and 95°C (203°F)	<ul style="list-style-type: none"> •Fuel line pressure (injector leak, blockage) •Mechanical system malfunction (skipping teeth of timing belt) •Ignition system

*: See page [TR-21](#).

CIRCUIT DESCRIPTION (Cont'd)**DIAGNOSIS CODE DETECTION DRIVING PATTERN**

Purpose of the driving pattern.

- (a) To simulate diag. code detecting condition after diag. code is recorded.
- (b) To check that the malfunction is corrected when the repair is completed confirming that diag. code is no longer detected.

Malfunction: Open or Short in Main Oxygen Sensor

FI6465

- ① Initiate test mode (See page [TR-12](#)).
- ② Start engine and warm up.
- ③ After engine is warmed up, let it idle for 3 min.
- ④ Perform quick racing to 4,000 rpm three times by accelerator pedal.
- ⑤ After performing the racing in (4), perform racing at 2,000 rpm for 90 sec.

HINT: If a malfunction exists, the "CHECK" engine warning light will light up after 90 sec. from the start of racing.

NOTICE: If the conditions in this test are not strictly followed, detection of the malfunction will not be possible.

CIRCUIT DESCRIPTION (Cont'd)

DIAGNOSIS CODE DETECTION DRIVING PATTERN

Purpose of the driving pattern.

- (a) To simulate diag. code detecting condition after diag. code is recorded.
- (b) To check that the malfunction is corrected when the repair is completed confirming that diag. code is no longer detected.

Malfunction: Open or Short in Injector circuit, Injector Leak or Blockage, Loose E/G Earth Bolt.

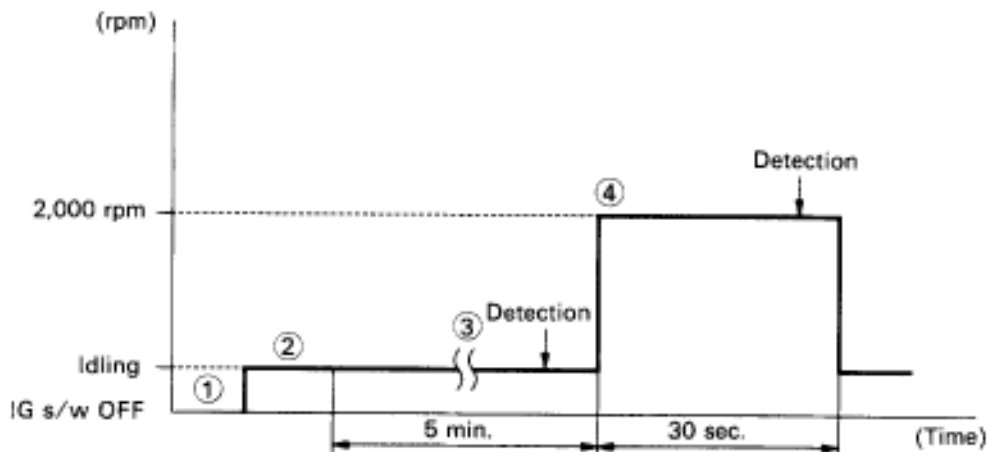
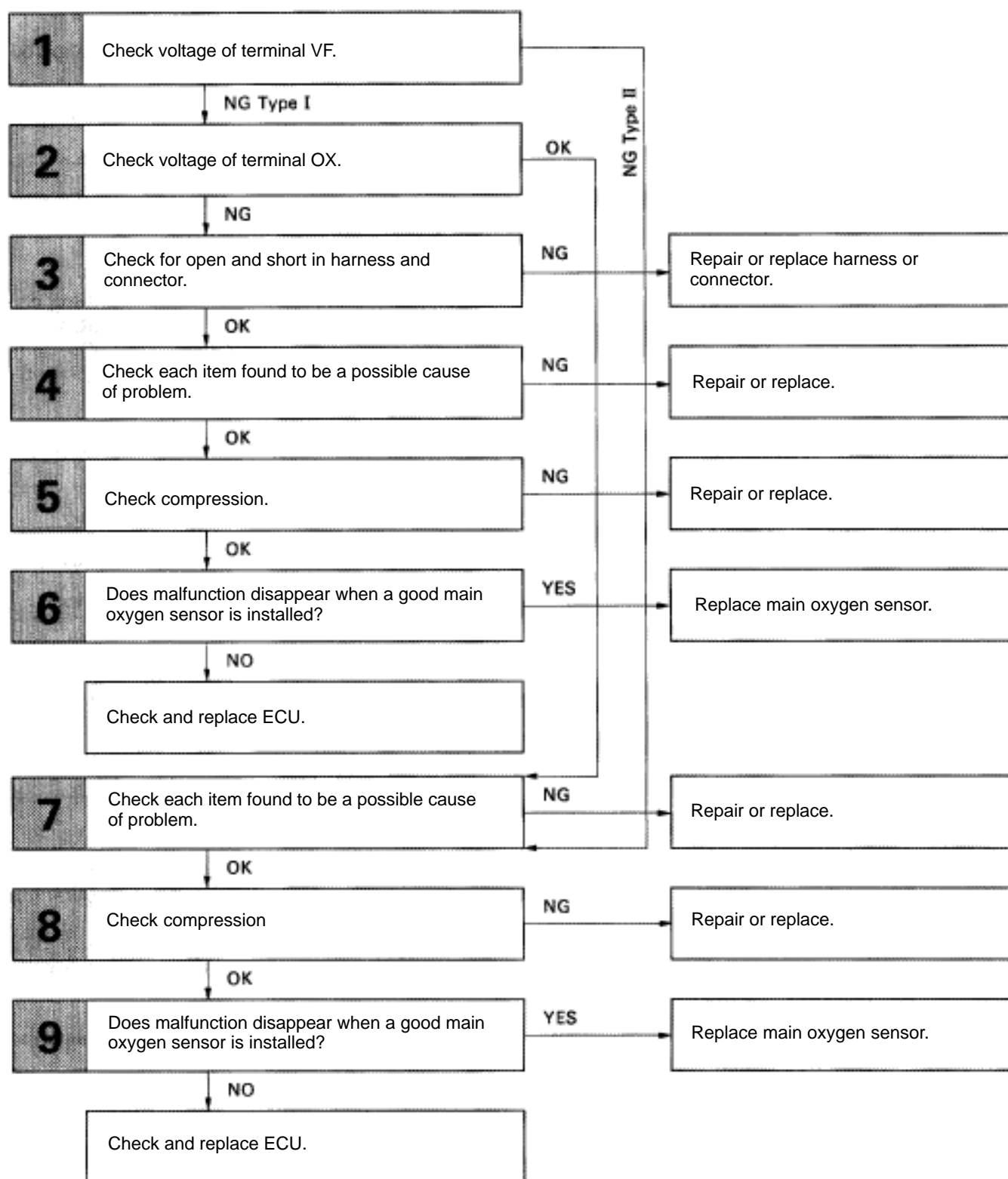


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- ① Initiate test mode (See page [TR-12](#)).
- ② Start engine and warm up.
- ③ After engine is warmed up, let it idle for 5 min.
(After the engine is started, do not depress the accelerator pedal.)
- ④ If the malfunction is not detected during idling, perform racing without any load at approx. 2,000 rpm for 30 sec.

HINT: If a malfunction exists, the "CHECK" engine warning light will light up during the 5 min. idling period or within 30 sec. of starting racing.

NOTICE: If the conditions in this test are not strictly followed, detection of the malfunction will not be possible.

DIAGNOSTIC CHART**WIRING DIAGRAM**

Refer to page [TR-64](#) for the WIRING DIAGRAM.

INSPECTION PROCEDURE

1 Check voltage between terminals VF1, VF2 and E1 of check connector.

Left Bank



Right Bank

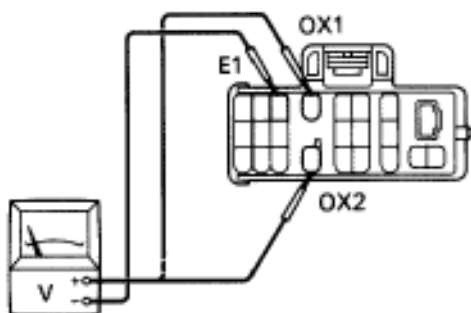
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- P** (2) Warm up engine at normal operating temperature.
 (2) Connect terminals TE1 and E1 of check connector.
 (2) Connect positive probe to terminal VF1, VF2 and negative probe to terminal E1 of check connector.

- C** (2) Warm up the oxygen sensor by running engine at 2,500 rpm for about 2 minutes.
 (2) Then, maintaining engine at 2,500 rpm, count how many times needle of voltmeter fluctuates between 0 and 5 V

Result:

Result	
Needle fluctuates of 8 times for every ten seconds	OK
Continue at 0 V	NG Type I
Continue at 5 V	NG Type II

NG
Type ING
Type II Go to step [7].**2** Check voltage between terminals OX1, OX2 and E1 of check connector.

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- P** Warm up engine at normal operating temperature.
- C** Measure voltage between terminals OX1, OX2 and E1 of check connector when engine is suddenly raced to full throttle.
- OK** The Voltage should be 0.5 V or higher at least once.
- Hint** Perform inspection within 1 second

NG

OK Go to step [7].

3

Check for open and short in harness and connector between engine & ECT ECU and main oxygen sensor, engine & ECT ECU and check connector (See page [IN-27](#)).

OK**NG**

Repair or replace harness or connector.

4

Check each item found to be a possible cause of problem.

Check each circuit found to be a possible cause of trouble according to the results of the check in 1 or 2. The numbers in the table below show the order in which the checks should be preformed.

Main oxygen sensor signal from either side continues at 0 V.	Main oxygen sensor signals from both sides continue at 0 V.	Possible Cause	See page
1		Faulty sensor installation.	—
3		Injector circuit	TR-132
2	3	Misfire	TR-6
4		Valve timing	TR-51
	1	Air leakage	TR-13
	2	Fuel system	TR-114
	6	Characteristics deviation in air flow meter.	TR-88
	4	Characteristics deviation in water temp. sensor.	TR-68
	5	Characteristics deviation in intake air temp. sensor.	TR-72

OK**NG**

Repair or replace.

5

Check comparession (See page [EM-30](#)).

OK**NG**

Repair or replace.

6

Does malfunction disappear when a good main oxygen sensor is installed?

NO**YES**

Replace main oxygen sensor.

check and replace engine & ECT ECU.

7 Check each item found to be a possible cause of problem.

Check each circuit found to be a possible cause of trouble according to the results of the check in 1. The numbers in the table below show the order in which the checks should be performed.

Main oxygen sensor signal from either side continues at 5.0 V.	Main oxygen sensor signals from both sides continue at 5.0 V.	Main oxygen sensor signals from both sides are normal.	Possible Cause	See page
1		7	Injector circuit	TR-132
		3	Misfire	TR-6
2		4	Valve timing	TR-51
		1	Air leakage	TR-13
	1	2	Fuel system	TR-114
3	4		Cold start injector circuit	TR-88
	5	8	Characteristics deviation in air flow meter.	TR-68
	2	5	Characteristics deviation in water temp. sensor.	TR-72
	3	6	Characteristics deviation in intake air temp. sensor.	TR-72

OK

NG

Repair or replace.

8 Check compression (See page [EM-30](#)).

OK

NG

Repair or replace.

9 Does malfunction disappear when a good main oxygen sensor is installed?

NO

YES

Replace main oxygen sensor.

Check and replace engine & ECT ECU.

—MEMO—