D - ADJUSTMENTS

1992 Infiniti G20

1992 ENGINE PERFORMANCE
Infiniti On-Vehicle Adjustments

G20, M30, Q45

ENGINE MECHANICAL

Before performing any on-vehicle adjustments to fuel or ignition systems, ensure engine mechanical condition is okay.

VALVE CLEARANCE

NOTE: All models use hydraulic lifters. No adjustments are required.

IGNITION TIMING

4-CYLINDER IGNITION TIMING

G20
1) Start engine, and warm it to normal operating temperature (needle is in middle of coolant gauge). Operate engine for 2 minutes at 2000 RPM. Perform self-diagnostic procedure, and check for smooth engine operation. See G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section.
2) Turn engine off. Disconnect throttle position sensor connector, and restart engine. Increase engine speed to 2000 RPM, 2 or 3 times, and then allow engine to return to idle.
3) Connect timing light to cylinder No. 1 spark plug cable. Check ignition timing. See IGNITION TIMING table. If necessary, adjust timing by loosening distributor mounting bolts and turning distributor. With ignition timing correctly set, check idle speed and mixture. See IDLE SPEED & MIXTURE. Reconnect throttle position sensor connector.

V6 IGNITION TIMING

M30
1) Start engine, and warm it to normal operating temperature (needle is in middle of coolant gauge). Operate engine for 2 minutes at 2000 RPM. Perform self-diagnostic procedure, and check for smooth engine operation. See G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section.
2) Increase engine speed to 2000 RPM, 2 or 3 times, and then allow engine to return to idle. Connect timing light to cylinder No. 1 spark plug cable. Check ignition timing. See IGNITION TIMING table. If ignition timing is incorrect, loosen crank angle sensor mounting bolts. Adjust timing by turning sensor. With ignition timing correctly set, check idle speed and mixture. See IDLE SPEED & MIXTURE.

V8 IGNITION TIMING

Q45
1) Connect tachometer to check connector. Check connector is located on right rear corner of engine compartment, near automatic transmission dipstick. Remove No. 1 ignition coil. Connect No. 1 ignition coil and No. 1 spark plug with a high tension wire. Connect

timing light to high tension wire. Start and warm engine to normal operating temperature (needle is in middle of coolant gauge).

2) Operate engine at 2000 RPM for 2 minutes. Perform self-diagnostic procedure, and check for smooth engine operation. See G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section. Increase engine speed to 2000 RPM, 2 or 3 times, then allow engine to return to idle.

3) Check ignition timing. See IGNITION TIMING table. If ignition timing is incorrect, loosen crank angle sensor mounting bolts. Adjust timing by turning crank angle sensor. With ignition timing correctly set, check idle speed and mixture. See IDLE SPEED & MIXTURE. Reinstall removed components.

IGNITION TIMING TABLE (Degrees BTDC @ RPM) (1)

Application	Specification
G20	13-17 @ 700-800
M30	13-17 @ 750-850
Q45	13-17 @ 600-700

(1) - With transmission in Neutral and no load on engine.

IDLE SPEED & MIXTURE

V8 COLD (FAST) IDLE

Q45 (Fast Idle Cam)

1) Remove throttle body from engine. Wait at least 3 hours to bring temperature of thermo element to room temperature. Record room temperature, and measure length (L) of thermo element plunger. See Fig. 1. Check temperature and element plunger length against chart.

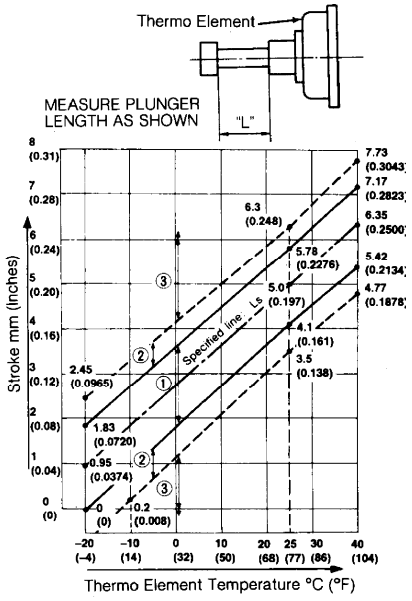

Fig. 1: Fast Idle Cam Thermo Element Adjustment Chart (Q45)
Courtesy of Nissan Motor Co., U.S.A.

2) If plunger length is in area 1, no adjustment is needed. If plunger length is in area 2, go to next step. If plunger length is

in area 3, replace thermo element. Ensure new thermo element plunger length is as specified.

3) Align holes "A" and "B" by turning adjusting screw (S1). See Fig. 2. Insert pin through alignment hole to hold position. Adjust clearance (C) between throttle stopper and throttle adjusting screw to .0244-.0291" (.62-.74 mm) by turning adjusting screw (S2).

4) Remove aligning pin from holes "A" and "B". Adjust clearance (D) to .150" (3.8 mm) by turning adjusting screw (S1).

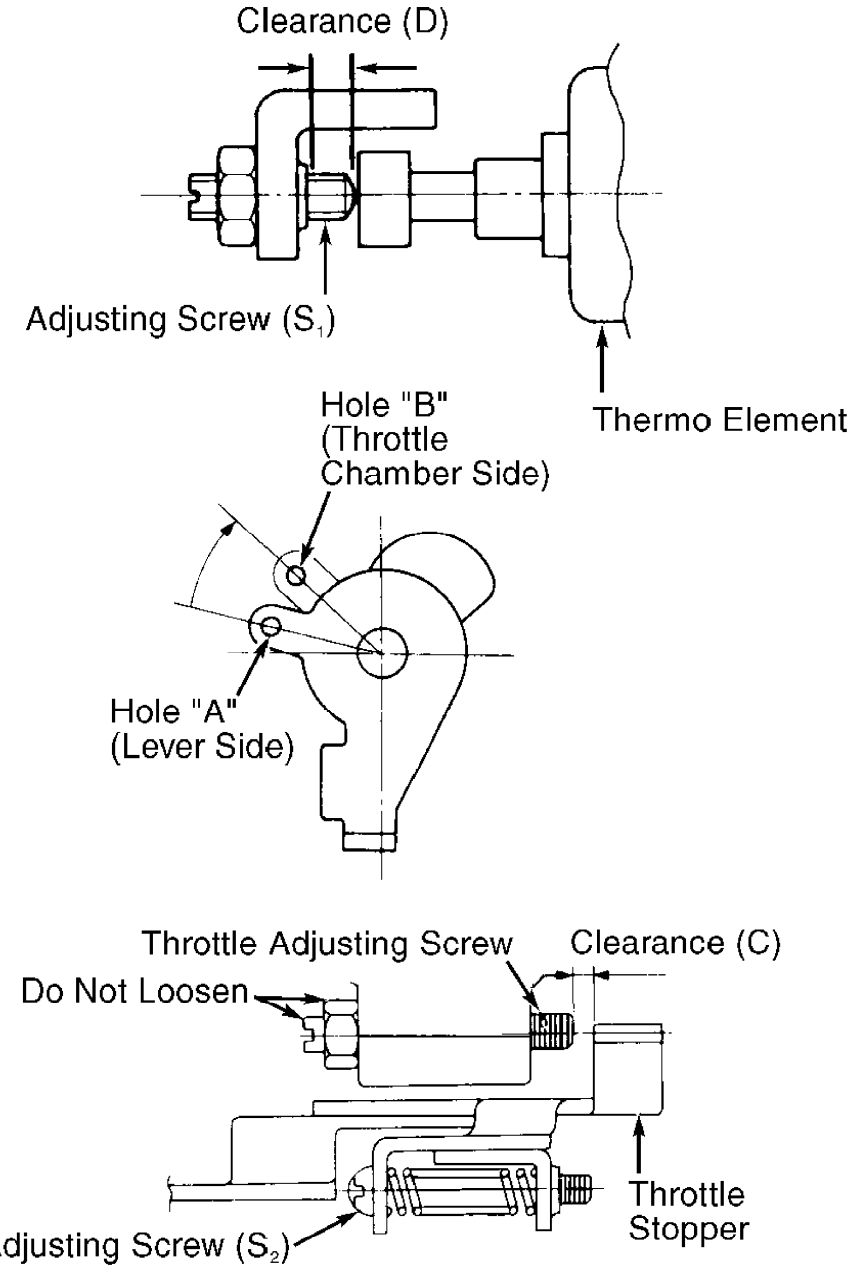

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Fig. 2: Adjusting Fast Idle Cam
Courtesy of Nissan Motor Co., U.S.A.

4-CYLINDER IDLE SPEED

1) Warm engine to normal operating temperature (needle in middle of coolant gauge). Check and adjust ignition timing (if necessary). See IGNITION TIMING.

2) Turn engine off. Disconnect throttle position sensor connector and restart engine. Check idle speed. If idle speed is not within specification, turn idle speed screw on airflow meter. See IDLE SPEED & CO LEVEL table.

3) Turn engine off. Reconnect throttle position sensor connector and restart engine. Run engine at 2000 RPM for about 2 minutes under no load, and then return it to idle. Idle speed should be as specified.

V6 & V8 IDLE SPEED

1) Warm engine to normal operating temperature (needle in middle of coolant gauge). Check and adjust ignition timing (if necessary). See IGNITION TIMING.

2) Check idle speed. If idle speed is not within specification, disconnect Auxiliary Air Control (AAC) valve harness connector. Turn idle speed screw on AAC valve. See IDLE SPEED & CO LEVEL table.

3) Reconnect AAC valve harness connector. Run engine at 2000 RPM for about 2 minutes under no load and then return to idle. Idle speed should be as specified.

IDLE SPEED & CO LEVEL TABLE

Application	(1) Idle RPM	CO Level
G20		
TPS Connected	750-850	(2) Less Than 10.0%
TPS Disconnected	700-800	(2) Less Than 10.0%
M30		
AAC Connected	750-850	0.2-8.0%
AAC Disconnected	700	0.2-8.0%
Q45		
AAC Connected	600-700	0.2-8.0%
AAC Disconnected	575-625	0.2-8.0%

(1) - Under no load and automatic transmission in Neutral.
(2) - With Air Induction Valve (AIV) disconnected.

IDLE MIXTURE

NOTE: Idle mixture is computer controlled; adjustment is not normally necessary. See I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section for testing of fuel feedback system.

1) On G20, disconnect Air Induction Valve (AIV). On all models, disconnect engine temperature sensor harness connector. Connect a 2500-ohm resistor between engine temperature sensor harness connector terminals.

2) Start engine, and warm it to normal operating temperature (needle in middle of coolant gauge). Run engine for about 2 minutes under no load at 3000-4000 RPM, and then return it to idle. Check idle mixture (CO% level). See IDLE SPEED & CO LEVEL table.

3) After checking idle mixture, disconnect resistor from engine temperature sensor harness connector terminals. Reconnect AIV and engine temperature sensor harness connector.

THROTTLE POSITION SENSOR (TPS)

4-CYLINDER & V6 THROTTLE POSITION SENSOR

G20 & M30

Install TPS, leaving mounting bolts slightly loose. Start engine and bring to full operating temperature. Using a voltmeter, measure sensor output voltage. See Fig. 3. Rotate sensor body so that output voltage reads 0.45-0.55 volt (0.4-0.5 volt on M30). Tighten mounting bolts, and recheck voltage reading. Disconnect TPS connector for a few seconds, and then reconnect it.

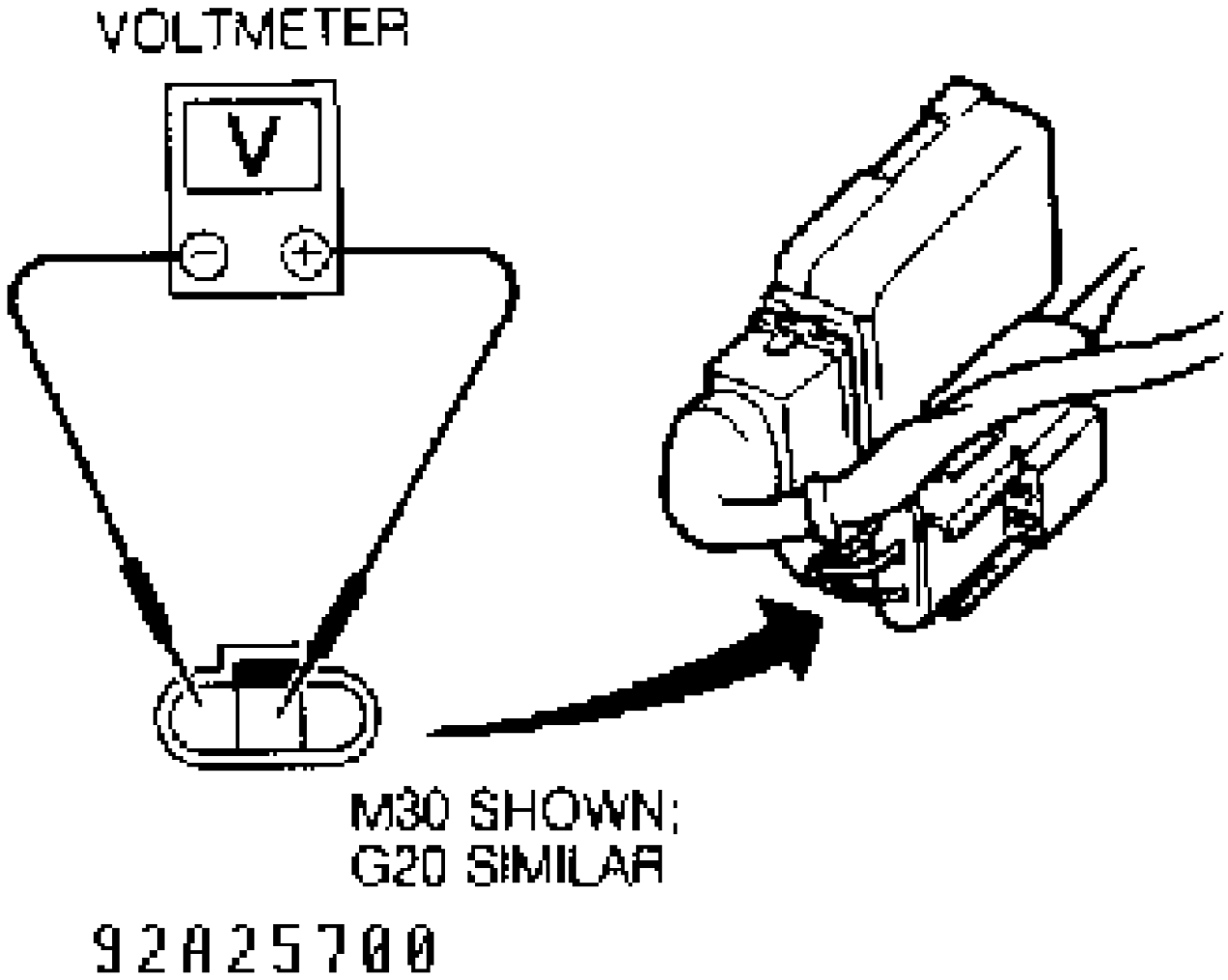

Fig. 3: Measuring Throttle Position Sensor Voltage (G20 & M30)
Courtesy of Nissan Motor Co., U.S.A.

V8 THROTTLE POSITION SENSOR & IDLE SWITCH

Q45 (Idle Switch & Primary TPS)

Install TPS, leaving mounting bolts slightly loose. Start engine, and bring it to full operating temperature. Disconnect idle switch harness connector. Using an ohmmeter, check idle switch off-to-on speed while closing throttle valve by hand. See Fig. 4. Idle switch should indicate continuity at 660-960 RPM with transmission in

Neutral.

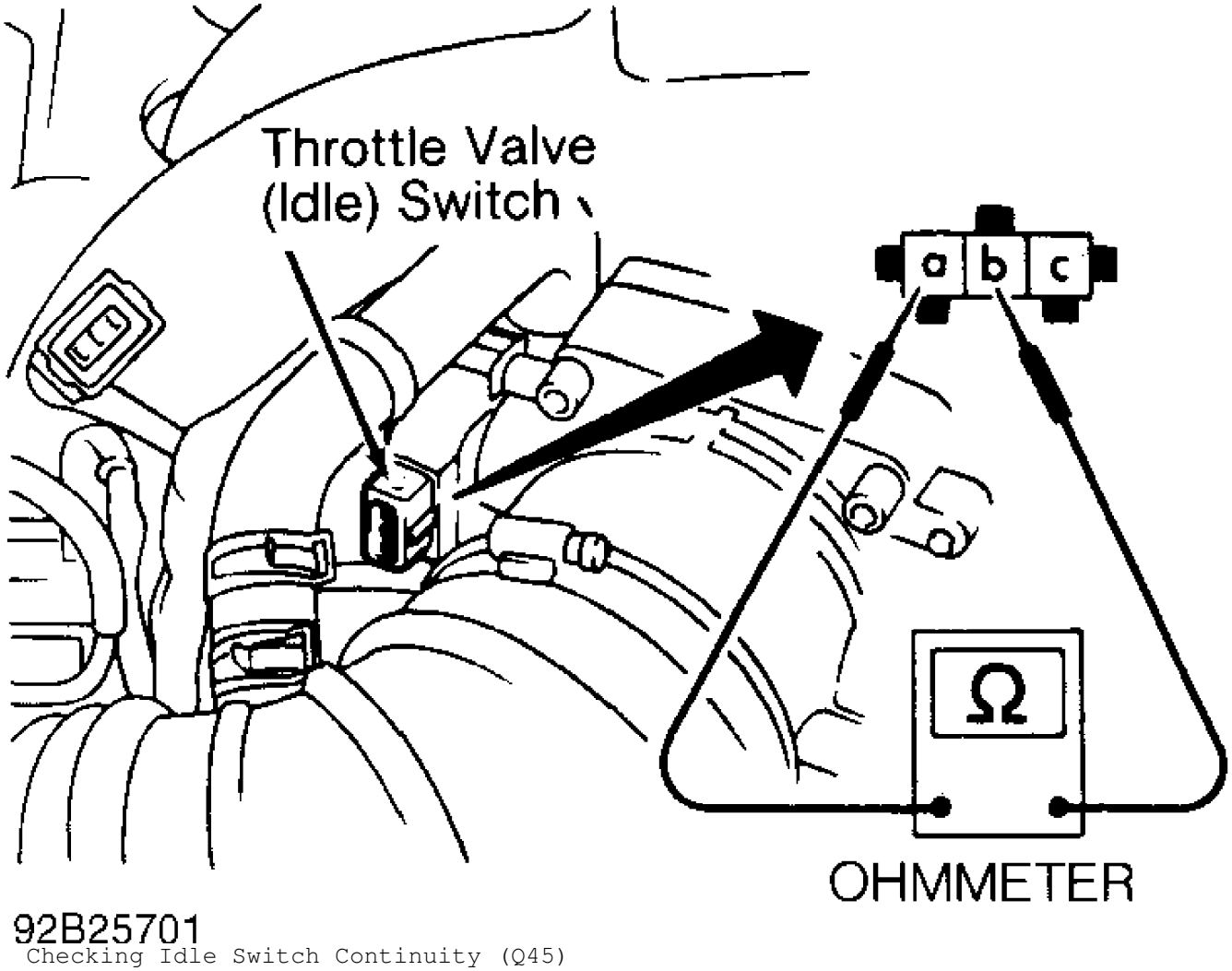

Fig. 4: Checking Idle Switch Continuity (Q45)
Courtesy of Nissan Motor Co., U.S.A.

Q45 (Secondary TPS)

1) Turn ignition off. Disconnect secondary TPS harness connector. Ensure resistance between terminals "B" and "C" changes as secondary throttle valve is closed by hand. See Fig. 5. See SECONDARY TPS SPECIFICATIONS table.

2) Disconnect rubber air duct. Install TPS, leaving mounting bolts slightly loose. Disconnect throttle motor harness connector. Connect secondary TPS harness connector. Turn ignition on. Using a voltmeter, check TPS voltage between ground and TPS terminal "B" while closing secondary throttle valve by hand.

SECONDARY TPS SPECIFICATIONS TABLE

Secondary Throttle Valve Position	Ohms	Volts
Fully Open	3000-5800	4.4-4.6
Partially Open	8-5800	0.4-4.6
Fully Close	About 800	At Least 0.4

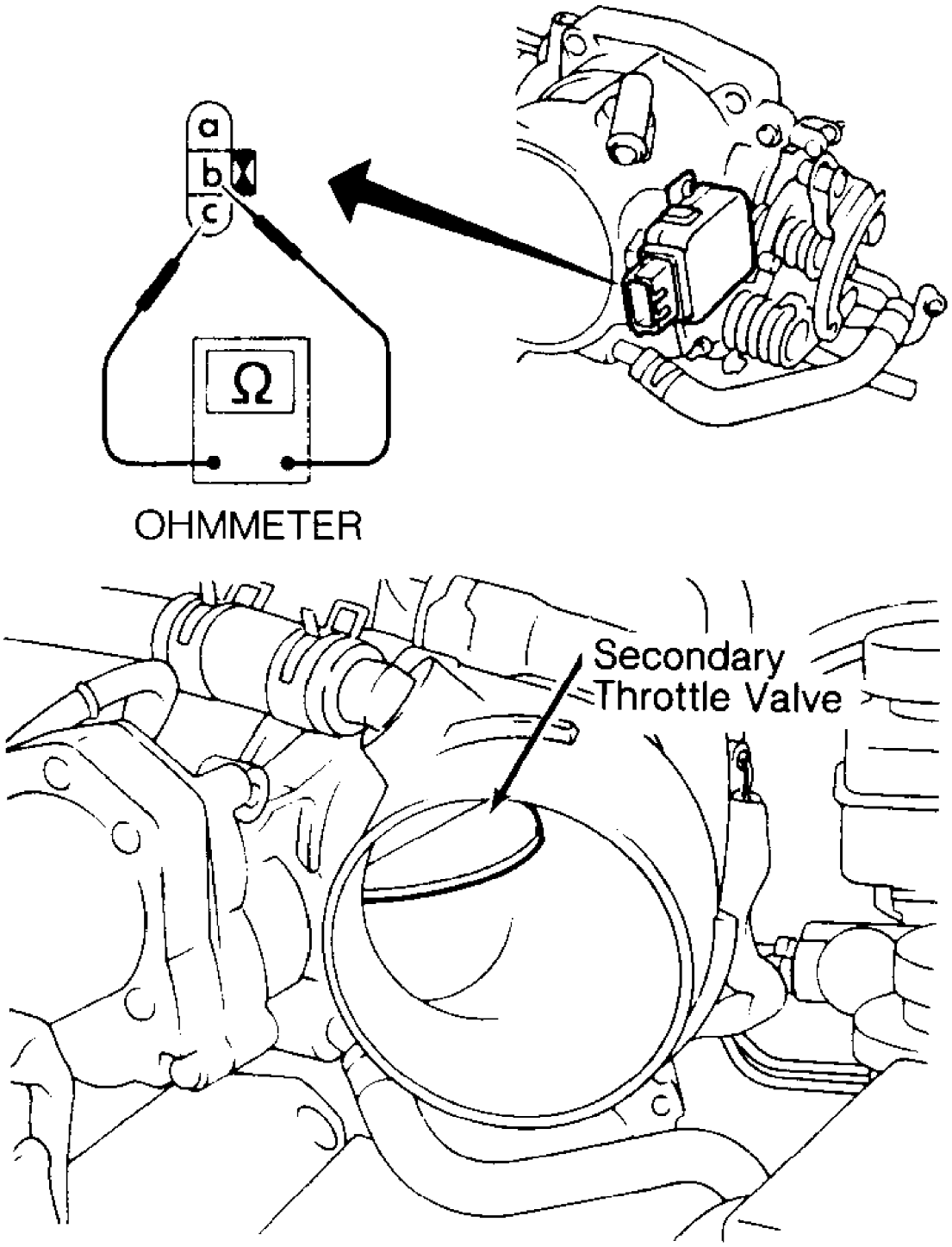

Fig. 5: Checking Secondary TPS Continuity (Q45)
Courtesy of Nissan Motor Co., U.S.A.