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SERVICE BULLETIN

Classification:	Reference:	Date:
AT97-001	NTB97-028	April 16, 1997

DIAGNOSTIC PROCEDURE FOR P0731, P0732 & P0733 (A/T SIGNALS) WITH NO DRIVEABILITY INCIDENTS

APPLIED VEHICLES:
1995 & later Maxima (A32)
1995 & later Sentra/200SX (B14); SR20 engine only
1997 & later Truck (D21)
1996 & later Pathfinder (R50)
1996 & later 240SX (S14)
1996 & later Altima (U13)
1996 & later Quest (V40)
1996 300ZX (Z32)

APPLIED TRANSMISSION: Automatic transmission with OBD-II only

SERVICE INFORMATION

If an applied vehicle has a MIL 'on' condition with P0731, P0732 or P0733 stored with **no driveability** (shift shock, slipping, etc.) incidents, use the procedure in this bulletin to diagnose and repair the incident.

These codes can be retrieved only in the ENGINE SYST section of CONSULT. These codes will not be recorded in the A/T SYST section of CONSULT.

SERVICE PROCEDURE

Confirmation

1. Connect CONSULT. Confirm the throttle position sensor (TPS) setting is correct as follows:
2. Bring the engine to normal operating temperature.
3. Select A/T, then DATA MONITOR then SELECTION FROM MENU (see Figure 1, next page).
4. Select VHCL/S SE A/T, THRTL POS SEN and ENGINE SPEED.
5. Then select CLOSED THL/SW, GEAR, THROTTLE POSI and VEHICLE SPEED. Press ENTER to save these selections.
6. Press Settings and select HI SPEED/MANU TRIG. Press START and watch the data.

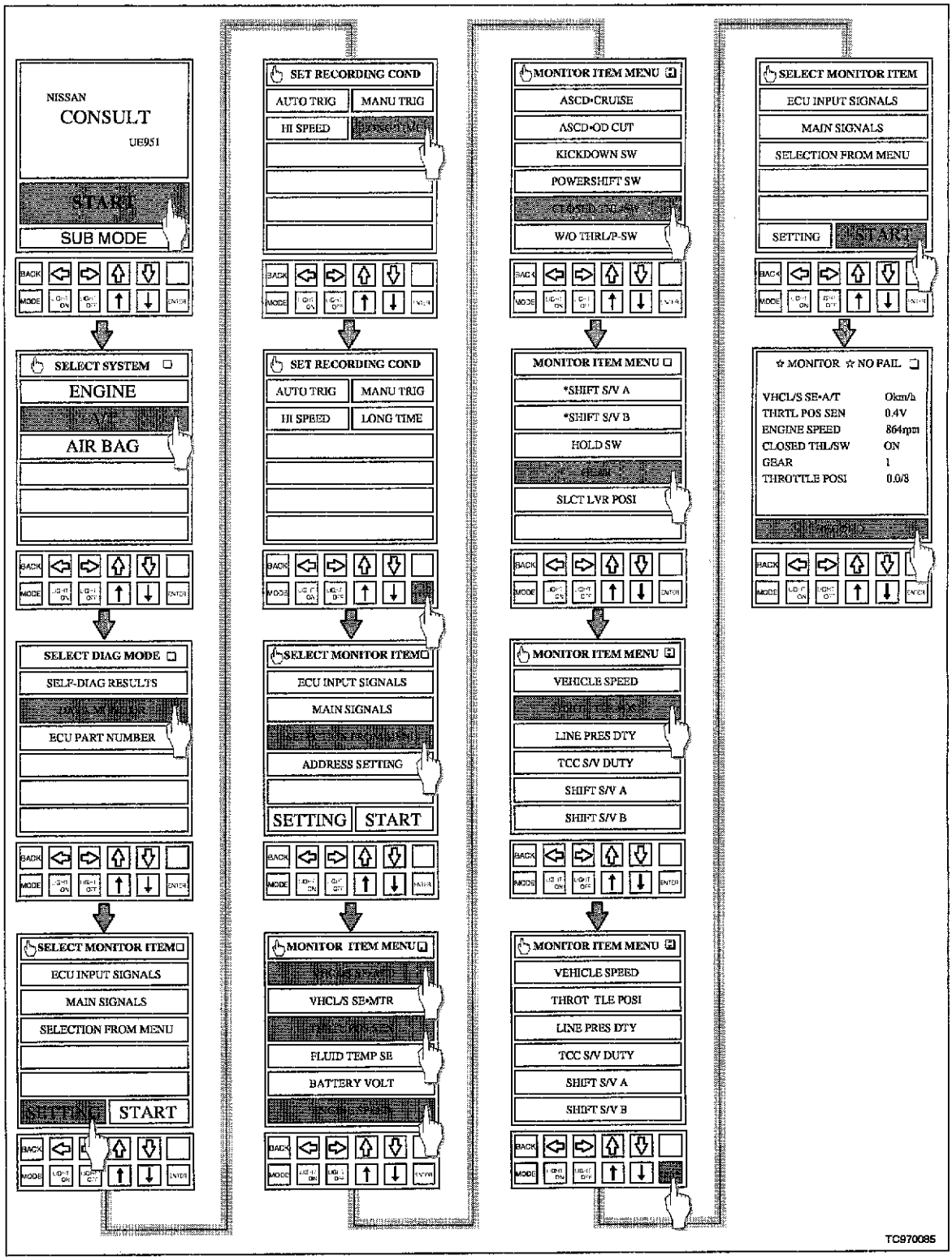
NISSAN
CONSULT
UE951
START
SUB MODE
SELECT SYSTEM
ENGINE
A/T
AIR BAG
SELECT DIAG MODE
SELF-DIAG RESULTS
ECU PART NUMBER
SELECT MONITOR ITEM
ECU INPUT SIGNALS
MAIN SIGNALS
SELECTION FROM MENU
SETTING
START
SET RECORDING COND
AUTO TRIG
MANU TRIG
HI SPEED
LONG TIME
SELECT MONITOR ITEM
ADDRESS SETTING
SETTING
START
MONITOR ITEM MENU
VHCL/S SE•MTR
FLUID TEMP SE
BATTERY VOLT
MONITOR ITEM MENU
ASCD•CRUISE
ASCD•OD CUT
KICKDOWN SW
POWERSHIFT SW
W/O THRL/P-SW
MONITOR ITEM MENU
*SHIFT S/V A
*SHIFT S/V B
HOLD SW
SLCT LVR POSI
MONITOR ITEM MENU
VEHICLE SPEED
LINE PRES DTY
TCC S/V DUTY
SHIFT S/V A
SHIFT S/V B
MONITOR ITEM MENU
VEHICLE SPEED
THROT TLE POSI
LINE PRES DTY
TCC S/V DUTY
SHIFT S/V A
SHIFT S/V B
SELECT MONITOR ITEM
ECU INPUT SIGNALS
MAIN SIGNALS
SELECTION FROM MENU
SETTING
START
☆ MONITOR ☆ NO FAIL
VHCL/S SE•A/T 0km/h
THRTL POS SEN 0.4V
ENGINE SPEED 864rpm
CLOSED THL/SW ON
GEAR 1
THROTTLE POSI 0.0/8
BACK
MODE
ENTER
TC970085

Figure 1

7. Road test the vehicle. Accelerate to approximately 40 mph. Release the throttle until the CONSULT shows the CLOSED THL/SW is in the 'ON' position.
8. Let the vehicle coast and push RECORD on CONSULT (data). When the recording is completed, display the record on CONSULT and look for a voltage increase at the TPS output.
   - The TPS voltage with close throttle switch 'ON' should be within the service manual specifications (refer to the AT section of the appropriate service manual).
   - The TPS voltage should never go above the service manual idle specification when the close throttle switch is 'ON'.

Root Cause (example — main concern is the TPS voltage)

The automatic transmission control unit (ATCU) uses the TPS voltage to monitor driving conditions (acceleration or deceleration). When the TPS voltage increases above 1.0 volts (with close throttle switch 'ON' & vehicle in deceleration) the ATCU goes into diagnostic for A/T signals. If the ATCU does not see an increase in vehicle speed within 3 seconds, an A/T signal DTC will be tripped (see Figure 2, engine speed and throttle position are not shown).

NOTE: Close throttle switch is 'ON' the entire time.

NOTES	15:14	THRTL POSI SEN (V)	CLOSE THRTL SW	GEAR	VEHICLE SPEED (mph)
	04"35	0.5	OFF	4	37
	04"12	0.5	OFF	4	37
(1)	03"89	0.5	OFF	4	37
	03"67	0.5	OFF	4	37
(2)	03"44	1.1	ON	4	36
	03"21	1.7	ON	4	36
	02"98	2.0	ON	4	36
	02"75	2.3	ON	4	36
	02"52	2.4	ON	4	36
	02"29	2.4	ON	4	36
	02"06	2.4	ON	4	36
	01"83	2.4	ON	4	36
	01"60	2.3	ON	4	36
	01"37	2.3	ON	4	36
	01"14	2.2	ON	4	35
	00"91	2.3	ON	3	35
	00"68	2.3	ON	3	35
	00"45	2.2	ON	3	35
	00"23	2.2	ON	3	35
	00"00	2.2	ON	3	35
	00"23	2.1	ON	3	35
	00"46	2.1	ON	3	35
	00"69	2.1	ON	3	35
	00"92	2.1	ON	3	35
	01"60	2.1	ON	3	34
	01"83	2.1	ON	3	34
	02"06	2.0	ON	3	34
	02"29	2.0	ON	3	34
	02"52	2.0	ON	3	34
	02"75	2.0	ON	3	34
	02"98	2.0	ON	3	34
	03"21	1.8	ON	3	34
	03"44	1.3	ON	3	34
	03"67	0.8	ON	3	34
	03"90	0.7	ON	3	33
	04"13	0.7	ON	3	33
	04"36	0.4	ON	3	33
	04"59	0.4	ON	3	33
	04"81	0.4	ON	3	33
	05"04	0.4	ON	3	32

Figure 2

NOTES:
1. Throttle is 'OFF' (close throttle switch is 'ON').
2. TPS voltage is increasing (ATCU thinks the vehicle is accelerating); but the vehicle speed is actually decreasing.

Repair

1. If you can duplicate the MIL 'on' incident with the Confirmation procedure, replace the TPS to resolve the incident.
2. You must adjust the TPS after installation. Refer to the EC section under **Basic Inspection** in the appropriate service manual.
3. After the TPS adjustment, you must re-set the idle position memory. Refer to the EC section under **Basic Inspection, RESET IDLE POSITION MEMORY** in the appropriate service manual.
4. After resetting the idle position, verify the engine RPM at idle.
5. After step 4, you must check the TPS output voltage at idle. Make sure there is no duplication of the same incident.
6. Perform the Confirmation procedure again from page 1.

PARTS INFORMATION

DESCRIPTION	PART #/PFP	QUANTITY
Throttle position sensor (R50)	22620-4P202	1
Throttle position sensor (V40) (D21) (Z32)	22620-65F11	1
Throttle position sensor (B14)	22620-64Y02	1
Throttle position sensor (U13)	22620-5E410	1
Throttle position sensor (A32) (S14)	22620-31U15	1

WARRANTY INFORMATION

When applicable, normal claims coding applies.