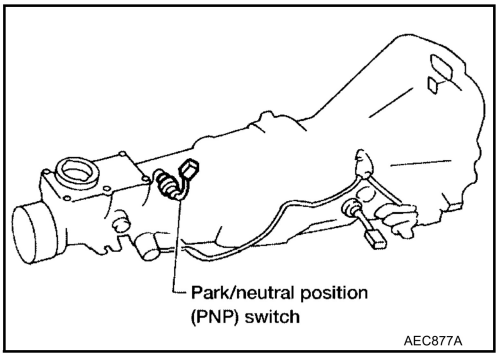
DTC P1706 PNP SWITCH

PFP:32006

Component Description

UBS008K3

When the gear position is “P” (A/T models only) or “N”, park/neutral position (PNP) switch is “ON”.
ECM detects the position because the continuity of the line (the “ON” signal) exists.
For A/T models, the park/neutral position (PNP) switch assembly also includes a transmission range switch to detect selector lever position.



CONSULT-II Reference Value in Data Monitor Mode

UBS008K4

Specification data are reference values.

MONITOR ITEM	CONDITION		SPECIFICATION
P/N POSI SW	● Ignition switch: ON	Shift lever: “P” or “N”	ON
		Except above	OFF

On Board Diagnosis Logic

UBS008K5

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1706	Park/neutral position switch	The signal of the park/neutral position (PNP) switch is not changed in the process of engine starting and driving.	● Harness or connectors [The park/neutral position (PNP) switch circuit is open or shorted.] ● Park/neutral position (PNP) switch

DTC Confirmation Procedure

UBS008K6

CAUTION:
Always drive vehicle at a safe speed.

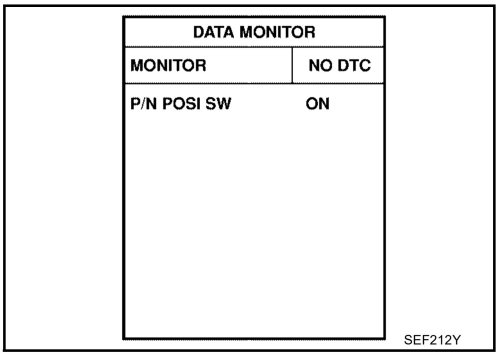
NOTE:
If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch OFF and wait at least 5 seconds before conducting the next test.

WITH CONSULT-II

1. Turn ignition switch ON.

2. Select “P/N POSI SW” in “DATA MONITOR” mode with CONSULT-II. Then check the “P/N POSI SW” signal under the following conditions.

Position (Selector lever)	Known good signal
“N” and “P” position	ON
Except the above position	OFF

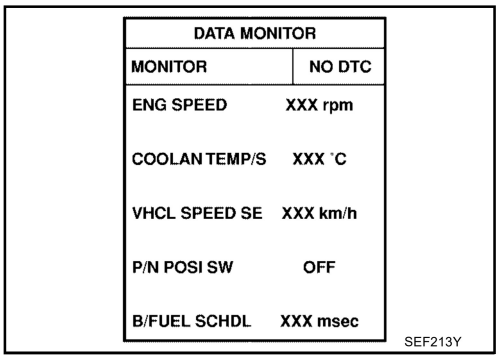


If NG, go to EC-1697, "Diagnostic Procedure" .
If OK, go to following step.

3. Select “DATA MONITOR” mode with CONSULT-II.
4. Start engine and warm it up to normal operating temperature.

5. Maintain the following conditions for at least 60 consecutive seconds.

ENG SPEED	1,400 - 2,700 rpm
COOLAN TEMP/S	More than 70°C (158°F)
B/FUEL SCHDL	2.0 - 14.0 msec
VHCL SPEED SE	More than 64 km/h (40 MPH)
Selector lever	Suitable position



6. If 1st trip DTC is detected, go to EC-1697, "Diagnostic Procedure" .

Overall Function Check

UBS008K7

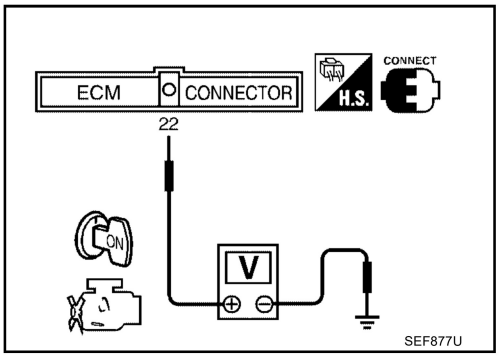
Use this procedure to check the overall function of the park/neutral position (PNP) switch circuit. During this check, a 1st trip DTC might not be confirmed.

WITH GST

1. Turn ignition switch ON.
2. Check voltage between ECM terminal 22 and body ground under the following conditions.

Condition (Gear position)	Voltage (V) (Known good data)
“P” and “N” position	Approx. 0
Except the above position	Approx. 5

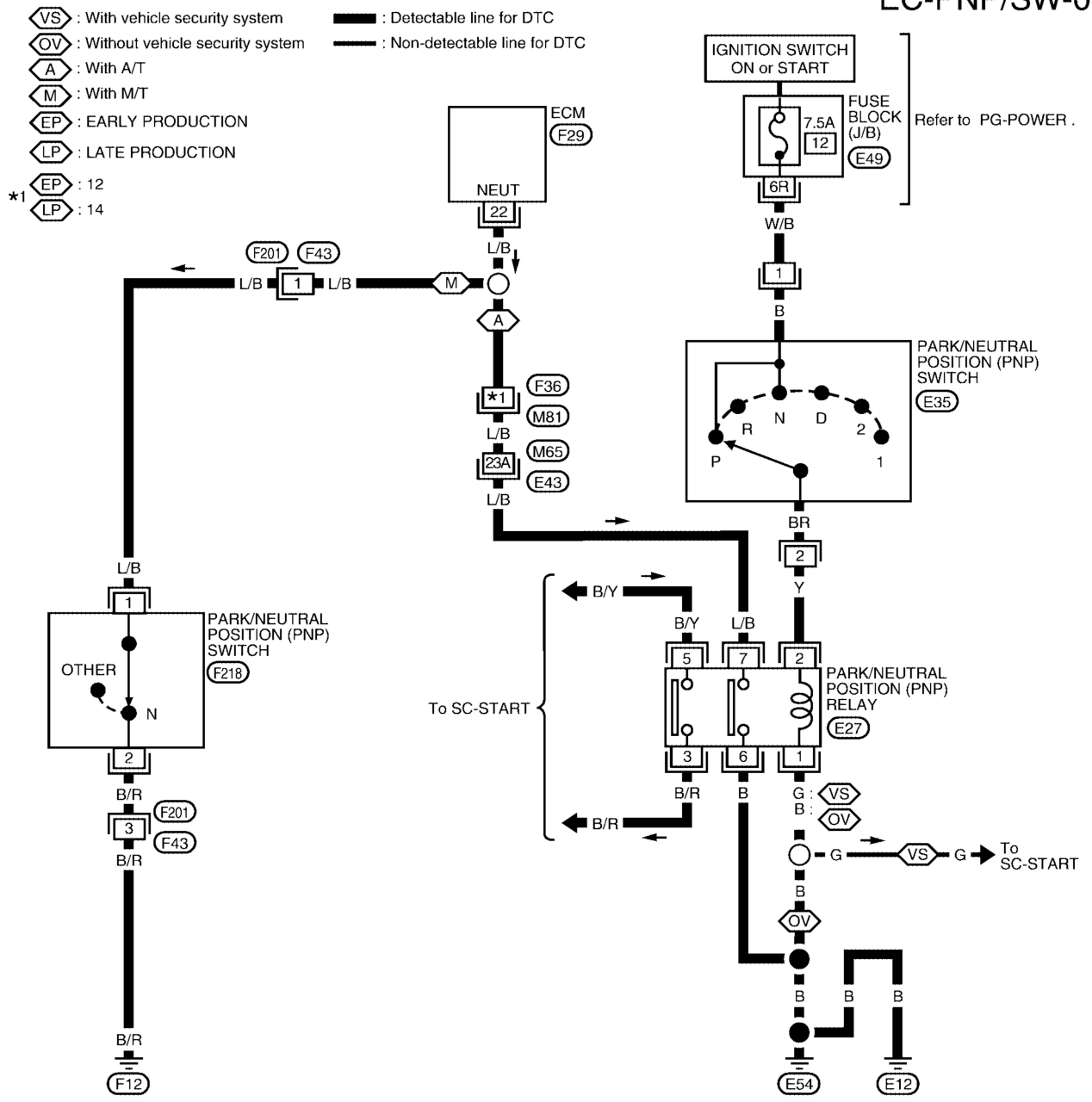
3. If NG, go to EC-1697, "Diagnostic Procedure" .

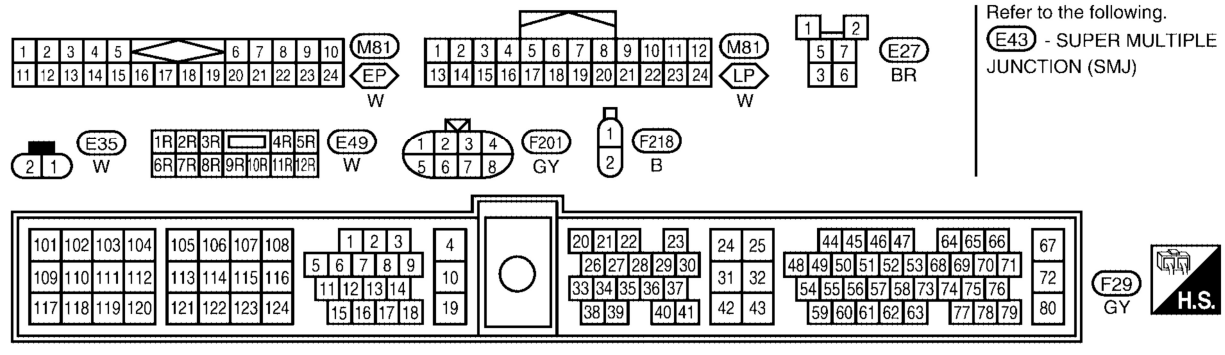


Wiring Diagram

UBS008K8

EC-PNP/SW-01





WBWA0041E

Specification data are reference values and are measured between each terminal and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than the ECM terminals, such as the ground.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
22	L/B	Park/neutral position (PNP) switch	**[Ignition switch ON]** ● Gear position is "N" or "P"	Approximately 0V
			[Ignition switch ON] ● Except the above gear position	Approximately 5V

Diagnostic Procedure

UBS008K9

FOR M/T MODELS

1. CHECK PNP SWITCH GROUND CIRCUIT FOR OPEN AND SHORT

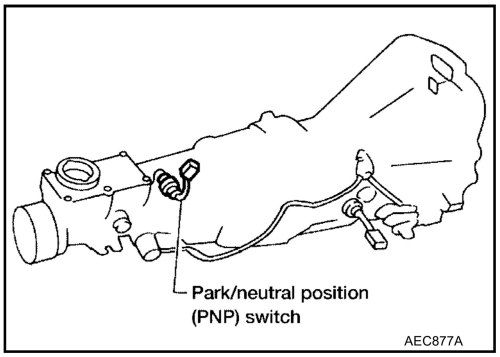
1. Turn ignition switch OFF.
2. Disconnect park/neutral position (PNP) switch harness connector.
3. Check harness continuity between PNP switch terminal 2 and engine ground. Refer to Wiring Diagram.

Continuity should exist.

4. Also check harness for short to power.

OK or NG

OK >> GO TO 3.
NG >> GO TO 2.



2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F201, F43
- Harness for open between park/neutral position (PNP) switch and engine ground

>> Repair open circuit or short to power in harness or connectors.

3. CHECK PNP SWITCH INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 22 and PNP switch terminal 1. Refer to Wiring Diagram.

Continuity should exist.

3. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors F43, F201
- Harness for open or short between ECM and park/neutral position (PNP) switch

>> Repair open circuit or short to ground or short to power in harness or connectors.

5. CHECK PARK/NEUTRAL POSITION (PNP) SWITCH

Refer to MT-46, "Position Switch Check" .

OK or NG

OK >> GO TO 6.
NG >> Replace park/neutral position (PNP) switch.

6. CHECK INTERMITTENT INCIDENT

Refer to EC-1287, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

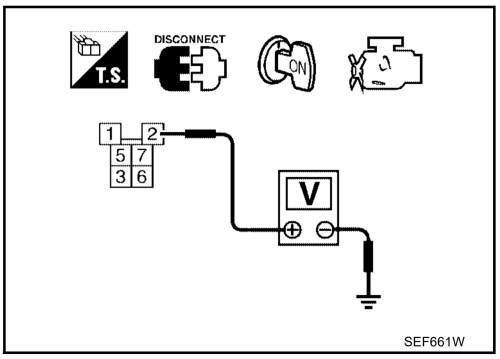
>> **INSPECTION END**.

FOR A/T MODELS

1. CHECK PNP SWITCH POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect park/neutral position (PNP) relay.
3. Turn ignition switch ON.
4. Shift selector lever to “P” or “N” position.
5. Check voltage between PNP relay terminal 2 and ground with CONSULT-II or tester.

Voltage : Battery voltage



OK or NG

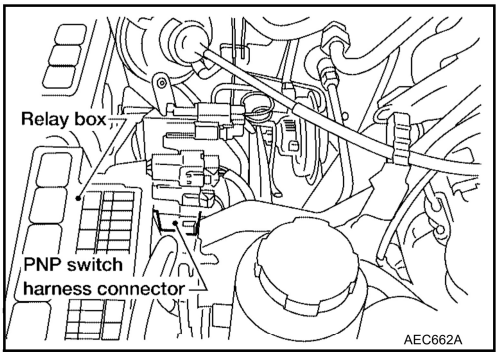
OK >> GO TO 6.
NG >> GO TO 2.

2. CHECK PNP SWITCH POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect park/neutral position (PNP) switch harness connector.
3. Check harness continuity between PNP switch terminal 2 and PNP relay terminal 2. Refer to Wiring Diagram.

Continuity should exist.

4. Also check harness for short to ground and short to power.



OK or NG

OK >> GO TO 3.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

3. CHECK PNP SWITCH POWER SUPPLY CIRCUIT-III

1. Turn ignition switch ON.
2. Check voltage between PNP switch terminal 1 and ground with CONSULT-II or tester. Refer to Wiring Diagram.

Voltage : Battery voltage

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.

- Fuse block (J/B) connector E49
- 7.5A fuse
- Harness for open or short between PNP switch and fuse

>> Repair open circuit or short to ground or short to power in harness or connectors.

5. CHECK PARK/NEUTRAL POSITION (PNP) SWITCH

Refer to AT-103, "PNP SWITCH" .

OK or NG

OK >> GO TO 11.
NG >> Replace park/neutral position (PNP) switch.

6. CHECK PNP RELAY GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check harness continuity between PNP relay terminals 1, 6 and body ground. Refer to Wiring Diagram.

Continuity should exist.

3. Also check harness for short to power.

OK or NG

OK >> GO TO 8.
NG (With vehicle security system)>>GO TO 7
NG (Without vehicle security system)>>Repair open circuit or short to power in harness or connectors.

7. DETECT MALFUNCTIONING PART

Check the circuit between PNP relay and body ground.
Refer to SC-9, "STARTING SYSTEM" .

OK or NG

OK >> GO TO 11.
NG >> Repair or replace.

8. CHECK PNP RELAY INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 22 and PNP relay terminal 7. Refer to Wiring Diagram.

Continuity should exist.

3. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 10.
NG >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

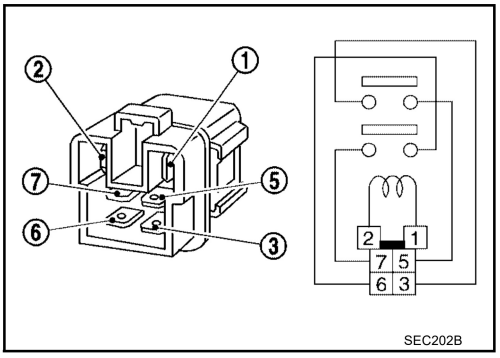
- Harness connectors F36, M81
- Harness connectors M65, E43
- Harness for open or short between ECM and park/neutral position (PNP) relay

>> Repair open circuit or short to ground or short to power in harness or connectors.

10. CHECK PARK/NEUTRAL POSITION (PNP) RELAY

1. Apply 12V direct current between park/neutral position (PNP) relay terminals 1 and 2.
2. Check continuity between park/neutral position (PNP) relay terminals 3 and 5, 6 and 7.

12V (1 and 2) applied	**: Continuity should exist.**
No voltage applied	**: Continuity should not exist.**



OK or NG

OK >> GO TO 11.
NG >> Replace park/neutral position (PNP) relay.

11. CHECK INTERMITTENT INCIDENT

Refer to EC-1287, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**.