

DTC**P0617****Starter Relay Circuit High****MONITOR DESCRIPTION**

While the engine is being cranked, the positive battery voltage is applied to terminal STA of the ECM. If the ECM detects the Starter Control (STA) signal while the vehicle is being driven, it determines that there is a malfunction in the STA circuit. The ECM then illuminates the MIL and sets the DTC.

This monitor runs when the vehicle is driven at 12.4 mph (20 km/h) for over 20 seconds.

DTC No.	DTC Detection Conditions	Trouble Areas
P0617	When conditions (a), (b) and (c) are met when positive (+B) battery voltage of 10.5 V or more is applied to ECM for 20 seconds (1 trip detection logic): (a) Vehicle speed more than 12.4 mph (20 km/h) (b) Engine speed more than 1,000 rpm (c) STA signal ON	• Park/Neutral Position (PNP) switch (A/T*) • Clutch start switch (M/T*) • Starter relay circuit • Ignition switch • ECM

*: A/T denotes Automatic Transaxle models and M/T denotes Manual Transaxle models.

MONITOR STRATEGY

Related DTCs	P0617: Starter signal
Required Sensors/Components (Main)	STARTER relay, Park/Neutral position switch, Clutch start switch and Ignition switch
Required Sensors/Components (Related)	Vehicle Speed Sensor (VSS), Crankshaft Position (CKP) sensor
Frequency of Operation	Continuous
Duration	20 seconds
MIL Operation	Immediate
Sequence of Operation	None

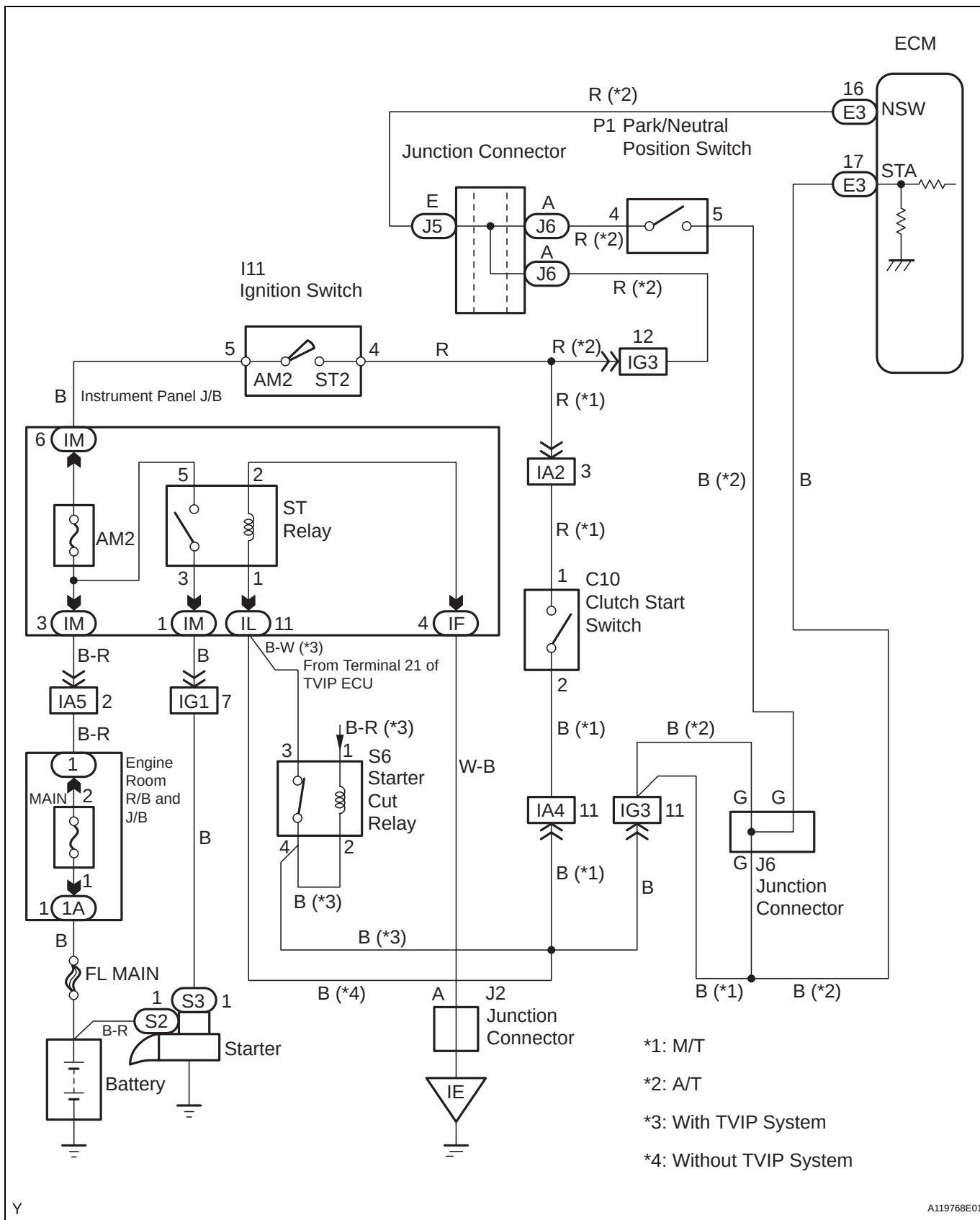
TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	None
Battery voltage	10.5 V or more
Vehicle speed	12.4 mph (20 km/h) or more
Engine speed	1,000 rpm or more

TYPICAL MALFUNCTION THRESHOLDS

Starter signal	ON
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WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- The following troubleshooting flowchart is based on the premise that the engine is cranked normally. If the engine will not crank, proceed to the problem symptoms table (See page ES-21).
- Read freeze frame data using an intelligent tester or OBD II scan tool. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can be helpful in determining whether the vehicle was running or stopped, whether the engine was warmed up or not, whether the air/fuel ratio was lean or rich, as well as other data recorded at the time of a malfunction.

When using intelligent tester:

ES 1 READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

- Connect an intelligent tester to the DLC3.
- Turn the ignition switch to ON and turn the tester ON.
- On the tester, select the following menu items:
DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.
- Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

OK

Ignition Switch Positions	ON	START
STARTER SIG	OFF	ON

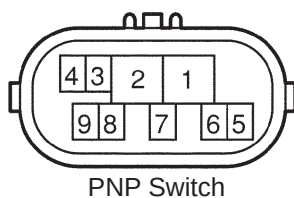
OK

REPLACE ECM

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2 INSPECT PARK / NEUTRAL POSITION SWITCH OR CLUTCH START SWITCH

Component Side:



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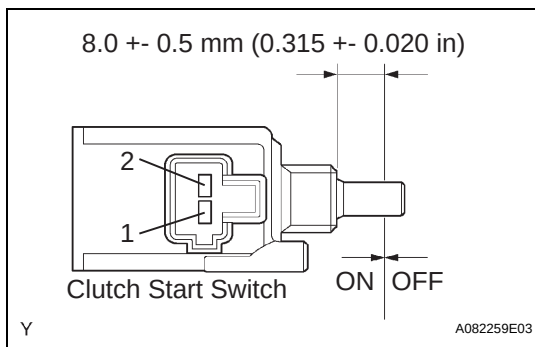
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- Inspect the Park / Neutral Position (PNP) switch. (For A/T models)
 - Disconnect the P1 PNP switch connector.
 - Check the resistance when the transmission gear selector lever is moved to each position.

Standard resistance

Gear Selector Lever Positions	Tester Connections	Specified Conditions
P	2 - 6, 4 - 5	Below 1 Ω
R	1 - 2	Below 1 Ω
N	2 - 9, 4 - 5	Below 1 Ω
D	2 - 7	Below 1 Ω
2	2 - 3	Below 1 Ω
L	2 - 8	Below 1 Ω

- Reconnect the PNP switch connector.



- (b) Inspect the clutch start switch. (For M/T models)
- (1) Disconnect the C10 clutch start switch connector.
 - (2) Check the resistance when the clutch start switch is ON and OFF.

Standard resistance

Ignition Switch Positions	Tester Connections	Specified Conditions
ON (pushed)	1 - 2	Below 1 Ω
OFF (free)	1 - 2	10 k Ω or higher

- (3) Reconnect the clutch start switch connector.

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REPLACE PARK / NEUTRAL POSITION SWITCH OR CLUTCH START SWITCH (GO TO STEP 3 AFTER REPLACEMENT)

ES

OK

3

READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON and turn the tester ON.
- (c) On the tester, select the following menu items:
DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.
- (d) Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

OK

Ignition Switch Positions	ON	START
STARTER SIG	OFF	ON

OK

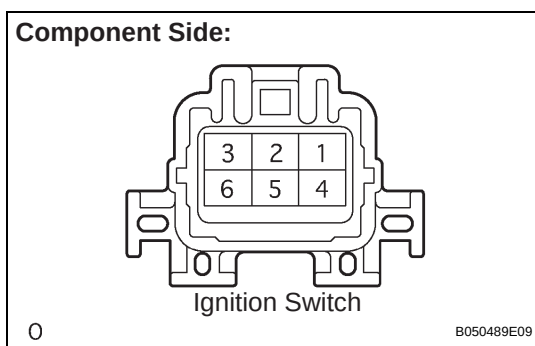
SYSTEM IS OK

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INSPECT IGNITION OR STARTER SWITCH ASSEMBLY

Component Side:



- (a) Disconnect the I11 ignition switch connector.
- (b) Check the resistance.

Standard resistance

Ignition Switch Positions	Tester Connections	Specified Conditions
LOCK	All Terminals	10 k Ω or higher
ACC	1-3	Below 1 Ω
ON	1-2, 1-3, 2-3, 5-6	Below 1 Ω
START	1-2, 4-5, 4-6, 5-6	Below 1 Ω

- (c) Reconnect the ignition switch connector.

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REPLACE IGNITION OR STARTER SWITCH ASSEMBLY (GO TO STEP 5 AFTER REPLACEMENT)

OK

5 READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON and turn the tester ON.
- (c) On the tester, select the following menu items:
DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.
- (d) Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

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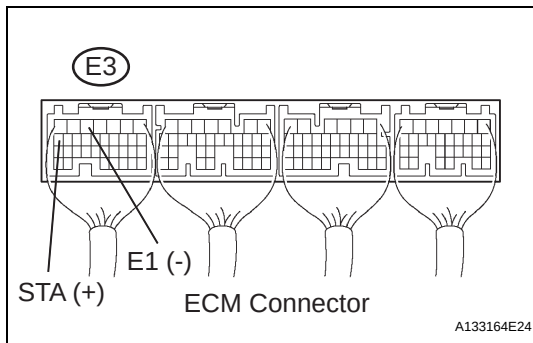
OK

Ignition Switch Positions	ON	START
STARTER SIG	OFF	ON

OK

SYSTEM IS OK

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REPAIR OR REPLACE HARNESS AND CONNECTOR**When Using OBD II Scan Tool:****1 INSPECT ECM (STA VOLTAGE)**

- (a) Turn the ignition switch to ON.
- (b) Measure the voltage between the terminals of the E3 ECM connector.

Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	0 V

- (c) Measure the voltage between the terminals of the E3 ECM connector when the engine is cranked.

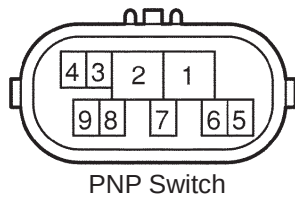
Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	5.5 V or more

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REPLACE ECM

OK

2**INSPECT PARK / NEUTRAL POSITION SWITCH OR CLUTCH START SWITCH****Component Side:**

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- (a) Inspect the Park / Neutral Position (PNP) switch. (For A/T models)

- (1) Disconnect the P1 PNP switch connector.
- (2) Check the resistance when the transmission gear selector lever is moved to each position.

Standard resistance

Gear Selector Lever Positions	Tester Connections	Specified Conditions
P	2 - 6, 4 - 5	Below 1 Ω
R	1 - 2	Below 1 Ω
N	2 - 9, 4 - 5	Below 1 Ω
D	2 - 7	Below 1 Ω
2	2 - 3	Below 1 Ω
L	2 - 8	Below 1 Ω

- (3) Reconnect the PNP switch connector.

- (b) Inspect the clutch start switch. (For M/T models)

- (1) Disconnect the C10 clutch start switch connector.
- (2) Check the resistance when the clutch start switch is ON and OFF.

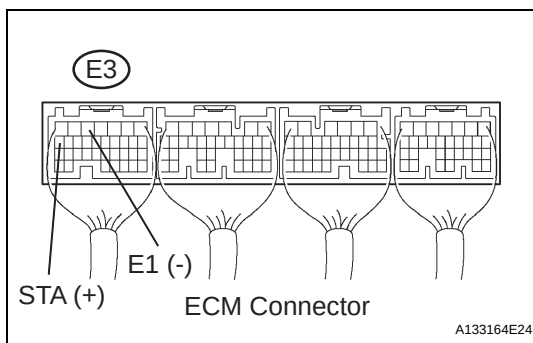
Standard resistance

Ignition Switch Positions	Tester Connections	Specified Conditions
ON (pushed)	1 - 2	Below 1 Ω
OFF (free)	1 - 2	10 kΩ or higher

- (3) Reconnect the clutch start switch connector.

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REPLACE PARK / NEUTRAL POSITION SWITCH OR CLUTCH START SWITCH (GO TO STEP 3 AFTER REPLACEMENT)

OK**3****INSPECT ECM (STA VOLTAGE)**

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- (a) Turn the ignition switch to ON.

- (b) Measure the voltage between the terminals of the E3 ECM connector.

Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	0 V

- (c) Measure the voltage between the terminals of the E3 ECM connector when the engine is cranked.

Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	5.5 V or more

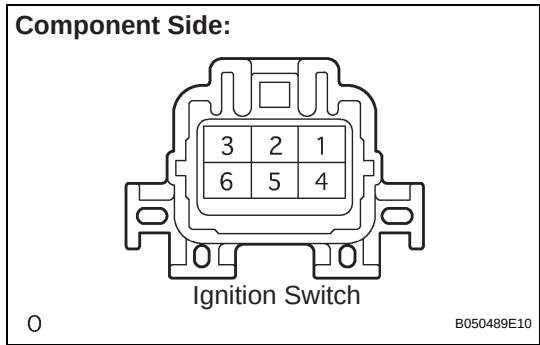
OK**SYSTEM IS OK**

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4INSPECT IGNITION OR STARTER SWITCH ASSEMBLY



- (a) Disconnect the I11 ignition switch connector.
(b) Check the resistance.

Standard resistance

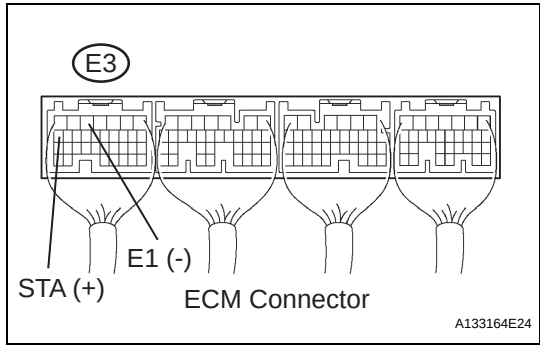
Ignition Switch Positions	Tester Connections	Specified Conditions
LOCK	All Terminals	10 kΩ or higher
ACC	1-3	Below 1 Ω
ON	1-2, 1-3, 2-3, 5-6	Below 1 Ω
START	1-2, 4-5, 4-6, 5-6	Below 1 Ω

- (c) Reconnect the ignition switch connector.

NGREPLACE IGNITION OR STARTER SWITCH ASSEMBLY (GO TO STEP 5 AFTER REPLACEMENT)

OK

5INSPECT ECM (STA VOLTAGE)



- (a) Turn the ignition switch to ON.
(b) Measure the voltage between the terminals of the E3 ECM connector.

Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	0 V

- (c) Measure the voltage between the terminals of the E3 ECM connector when the engine is cranked.

Standard voltage

Tester Connections	Specified Conditions
STA (E3-17) - E1 (E3-5)	5.5 V or more

OKSYSTEM IS OK

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REPAIR OR REPLACE HARNESS OR CONNECTOR