

# P0335 CKP SENSOR (POS)

< COMPONENT DIAGNOSIS >

[HR16DE]

## P0335 CKP SENSOR (POS)

### Description

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The crankshaft position sensor (POS) is located on the oil pan facing the gear teeth (cogs) of the signal plate. It detects the fluctuation of the engine revolution.

The sensor consists of a permanent magnet and Hall IC.

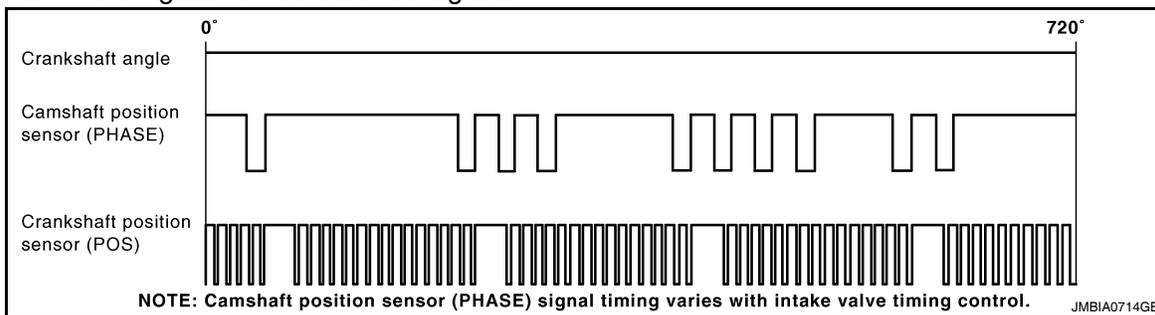
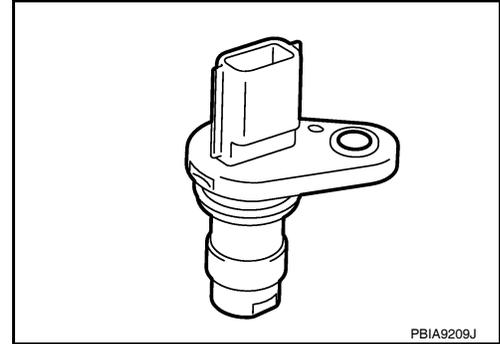
When the engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.

The ECM receives the voltage signal and detects the fluctuation of the engine revolution.

ECM receives the signals as shown in the figure.



### DTC Logic

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#### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0335	Crankshaft position sensor (POS) circuit	<ul style="list-style-type: none"> <li>The crankshaft position sensor (POS) signal is not detected by the ECM during the first few seconds of engine cranking.</li> <li>The proper pulse signal from the crankshaft position sensor (POS) is not sent to ECM while the engine is running.</li> <li>The crankshaft position sensor (POS) signal is not in the normal pattern during engine running.</li> </ul>	<ul style="list-style-type: none"> <li>Harness or connectors [Crankshaft position sensor (POS) circuit is open or shorted.] (Refrigerant pressure sensor circuit is shorted.) (Accelerator pedal position sensor circuit is shorted.) (EVAP control system pressure sensor circuit is shorted.)</li> <li>Crankshaft position sensor (POS)</li> <li>Refrigerant pressure sensor</li> <li>Accelerator pedal position sensor</li> <li>EVAP control system pressure sensor</li> <li>Signal plate</li> </ul>

#### DTC CONFIRMATION PROCEDURE

##### 1. PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

##### TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and let it idle for at least 5 seconds.

# P0335 CKP SENSOR (POS)

[HR16DE]

## < COMPONENT DIAGNOSIS >

If engine does not start, crank engine for at least 2 seconds.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Go to [EC-265, "Diagnosis Procedure"](#).

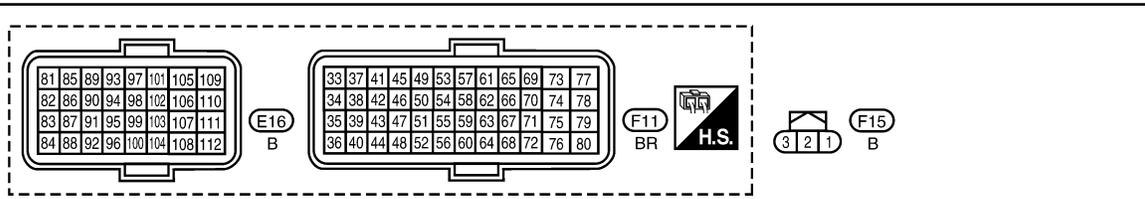
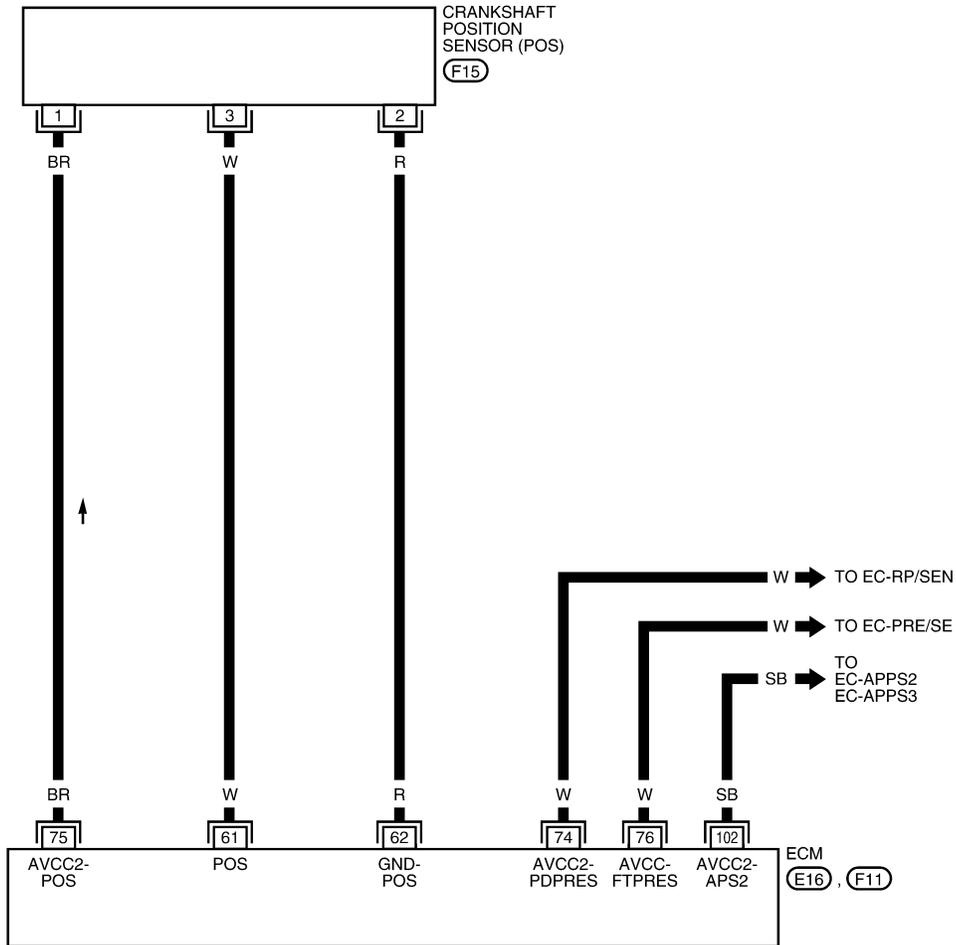
NO >> INSPECTION END

## Wiring Diagram

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### EC-POS-01

— : DETECTABLE LINE FOR DTC  
 - - - : NON-DETECTABLE LINE FOR DTC



BBWA3071E

# P0335 CKP SENSOR (POS)

[HR16DE]

< COMPONENT DIAGNOSIS >

INFOID:000000004780160

## Diagnosis Procedure

### 1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections E15, E24. Refer to [EC-125. "Ground Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 2.  
 NO >> Repair or replace ground connection.

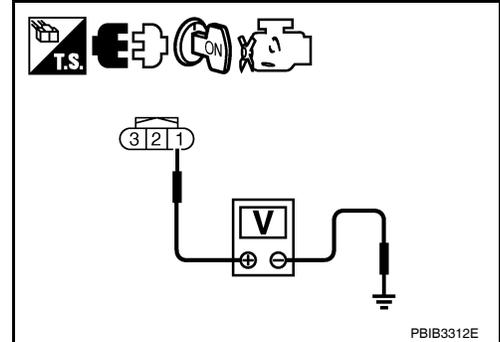
### 2. CHECK CRANKSHAFT POSITION (CKP) SENSOR (POS) POWER SUPPLY CIRCUIT-I

1. Disconnect crankshaft position (CKP) sensor (POS) harness connector.
2. Turn ignition switch ON.
3. Check the voltage between CKP sensor (POS) harness connector and ground.

CKP sensor (POS)		Ground	Voltage
Connector	Terminal		
F15	1	Ground	Approx. 5 V

Is the inspection result normal?

- YES >> GO TO 8.  
 NO >> GO TO 3.



### 3. CHECK CKP SENSOR (POS) POWER SUPPLY CIRCUIT-II

1. Turn ignition switch ON.
2. Disconnect ECM harness connector.
3. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F15	1	F11	75	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
 NO >> Repair open circuit.

### 4. CHECK CKP SENSOR POWER SUPPLY CIRCUIT

Check harness for short to power and short to ground, between the following terminals.

ECM		Sensor		
Connector	Terminal	Name	Connector	Terminal
F11	74	Refrigerant pressure sensor	E17	3
	75	CKP sensor (POS)	F15	1
	76	EVAP control system pressure sensor	B104	3
E16	102	APP sensor	E12	5

Is the inspection result normal?

- YES >> GO TO 5.  
 NO >> Repair short to ground or short to power in harness or connectors.

### 5. CHECK COMPONENTS

Check the following.

- Refrigerant pressure sensor (Refer to [EC-458. "Diagnosis Procedure"](#).)
- EVAP control system pressure sensor (Refer to [EC-314. "Component Inspection"](#).)

Is the inspection result normal?

< COMPONENT DIAGNOSIS >

- YES >> GO TO 6.
- NO >> Replace malfunctioning components.

## 6. CHECK APP SENSOR

Refer to [EC-402. "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 12.
- NO >> GO TO 7.

## 7. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Replace accelerator pedal assembly.
2. Perform [EC-402. "Special Repair Requirement"](#).

>> INSPECTION END

## 8. CHECK CKP SENSOR (POS) GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F15	2	F11	62	Existed

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

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> Repair open circuit or short to ground or short to power in harness or connectors.

## 9. CHECK CKP SENSOR (POS) INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F15	3	F11	61	Existed

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

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Repair open circuit or short to ground or short to power in harness or connectors.

## 10. CHECK CRANKSHAFT POSITION SENSOR (POS)

Refer to [EC-267. "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 11.
- NO >> Replace crankshaft position sensor (POS).

## 11. CHECK GEAR TOOTH

Visually check for chipping signal plate gear tooth.

Is the inspection result normal?

- YES >> GO TO 12.
- NO >> Replace the signal plate.

## 12. CHECK INTERMITTENT INCIDENT

Refer to [EC-120. "Diagnosis Procedure"](#).

# P0335 CKP SENSOR (POS)

[HR16DE]

< COMPONENT DIAGNOSIS >

>> INSPECTION END

## Component Inspection

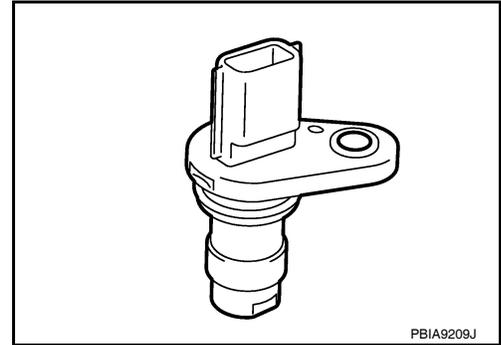
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### 1. CHECK CRANKSHAFT POSITION SENSOR (POS)-I

1. Turn ignition switch OFF.
2. Loosen the fixing bolt of the sensor.
3. Disconnect crankshaft position sensor (POS) harness connector.
4. Remove the sensor.
5. Visually check the sensor for chipping.

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace crankshaft position sensor (POS).



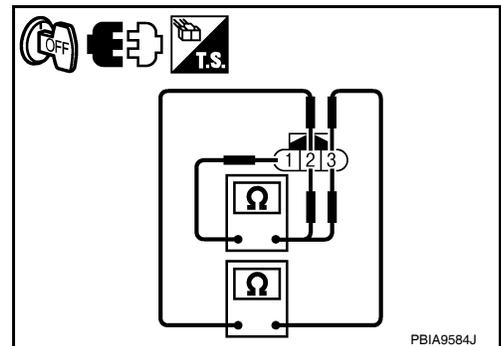
### 2. CHECK CRANKSHAFT POSITION SENSOR (POS)-II

Check resistance between crankshaft position sensor (POS) terminals as per the following.

Terminals (Polarity)	Resistance [ $\Omega$ at 25°C (77°F)]
1 (+) - 2 (-)	Except 0 or $\infty$
1 (+) - 3 (-)	
2 (+) - 3 (-)	

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace crankshaft position sensor (POS).



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