## **DTC P0351**

## **Circuit Description**

The enhanced ignition system uses the crankshaft position (CKP) sensor in order to provide a timing input to the control module. Ignition control (IC) spark timing for each cylinder is based on this input. The control module provides the ignition timing signal to the ignition control module (ICM) to control the ignition coil. Each timing pulse detected by the ICM allows the ICM to energize the ignition coil. A large secondary ignition voltage is induced in the secondary coil by the primary coil. This high voltage is switched to the correct spark plug by the distributor. This diagnostic trouble code (DTC) will set if the powertrain control module (PCM) detects an unusually high or low voltage on the ignition timing signal circuit.

## Conditions for Running the DTC

- · The ignition control is enabled.
- · The engine speed is less than 250 RPM.

## Conditions for Setting the DTC

The ignition control voltage is not within the specified range of 0.04-4.9 volts.

#### Action Taken When the DTC Sets

 The control module illuminates the malfunction indicator lamp (MIL) on the second consecutive ignition cycle that the diagnostic runs and fails. The control module records the operating conditions at the time the diagnostic fails. The first time the diagnostic fails, the control module stores this information in the Failure Records. If the diagnostic reports a failure on the second consecutive ignition cycle, the control module records the operating conditions at the time of the failure. The control module writes the operating conditions to the Freeze Frame and updates the Failure Records.

### Conditions for Clearing the MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
  - A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
  - A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
  - . Clear the MIL and the DTC with a scan tool.

## **Test Description**

The numbers below refer to the step numbers on the diagnostic table.

- 2. This step determines if the DTC is an intermittent.
  - This step checks if the IC timing signal from the PCM is available at the ignition control module.

#### **DTC P0351**

DTC P0351 (cont'd)

Step	Action	Values	Yes	No	
Schem	natic Reference: Engine Controls Schematics on page 6-105	e Systems. 9	on page 8:25 in Wint	TA ROSAIT O	
800	Did you perform the Diagnostic System Check-Engine	come It no to	and lete the repair	Go to Diagnostic	
1 The	Controls?  Jel ratio massions occurred.  PCM massions from the NO25 teves to	hold fortræd neitr . Clear the Mit-	Go to Step 2	System Check - Engine Controls on page 6-1089	
198	1. Clear the DTCs.	This is	Later to 2 1120 and	Language .	
2	2. Disconnect the injector hamess connector.	cwartrain Control on page 6-1328	ne PCM. Hereito I	Go to Intermitten	
	Crank the engine for 15 seconds.	6 Tutto er Stram	omplete the recisor	0	
	Does DTC P0351 set?	TO address to a	Go to Step 3	page 6-1268	
3 -	1. Turn the ignition OFF.	A 30 saconds	of mailing Lent 1710	ILIT S	
	2. Reconnect the injector harness connector.	the catalyst.	the engine.	m2 8 2m	
	3. Disconnect the ICM harness connector.	the second second second second	rate the vehicle with	1 137	
	Probe the IC timing control circuit with a DMM set to the AC scale.	the syppe on text	OTC as specified in OTC run and pass?	erti	
- 1	5. Crank the engine.	stored information	an tool, observe the	Willia s	
12.0	6. Observe the voltage.	Distriction Dates	nfo.	Caplure	
100	Does the voltage measure within the specified value?	by DTCs that you	Go to Step 4	Go to Step 6	
NO U	1. Turn OFF the ignition.		77	aecopato (	
4	<ol><li>Probe the IC ground circuit at the ICM connector with a test lamp connected to B+.</li></ol>	-		0	
973	Does the test lamp illuminate?		Go to Step 5	Go to Step 10	
	<ol> <li>Turn ON the ignition, with the engine OFF.</li> </ol>				
5	<ol><li>Probe the ignition 1 circuit at the ICM harness connector with a test lamp connected to ground.</li></ol>	-		1	
	Does the test lamp illuminate?	Lance Transport	Go to Step 14	Go to Step 13	

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Step	Action	Values	Yes	No
0.7	1. Turn OFF the ignition.			
eking	2. Disconnect the PCM connector.	tharip name of	Best marry stoll	thi beansine a
6	Probe the IC timing control circuit at the PCM connector with a test lamp connected to B+.	of (iC) space	non noting Lebu	om journes an
	Does the test lamp illuminate?	of famile primit	Go to Step 11	Go to Step 7
and South	Turn OFF the ignition.	nesing and los	scale (ICM) to con	m forters reith
7	Test for an open in the IC timing control circuit between the PCM and the ICM harness connector.	the ICM allows argo sepandary	nass detected by	primit rond I
	Did you find and correct the condition?	gondary coll by	Go to Step 16	Go to Step 8
	Reconnect the PCM connector. noulbacco	Management piet?	interference series of a	teste stance Tren
Troit	2. Turn ON the ignition, with the engine OFF.	Torings nighted	Il vall sat it the po	TC) spub eldű
8	Probe the IC timing control circuit at the ICM harness connector with a DMM set to the DC scale and connected to ground.	Nov wallowder	tects en ununually ing signal cupult.	dula (PCM) de (the grapho) tin
I U. I ISSU	Does the voltage measure more than the specified value?	01	Go to Step 12	Go to Step 9
man	Inspect for poor connections at the harness connector of		beldenn al lontno	notifical ent
9	the PCM. Refer to Testing for Intermittent and Poor Connections on page 8-26, or Connector Repairs on	250 FIRM.	narit axel al bried	The engine s
9	page 8-36 in Wiring Systems.	-	- X	
-lo	Does you find and correct the condition?	- 4	Go to Step 16	Go to Step 15
	Repair the open in the IC ground circuit. Refer to Wiring	Micses ent ninti	v ton si egallev is	ithen neiting! a
10	Repairs on page 8-28 in Wiring Systems.	_	(volts,	the old of
91110	Did you complete the repair?	Ciudh II	Go to Step 16	1 00 to Stop 2
11	Repair the short to ground in the IC timing control circuit. Refer to Wiring Repairs on page 8-28 in Wiring Systems.	ers the mattunetions	salardineli alubol	r nakst nou: s louno <del>s o</del> dT «
orla m	Did you complete the repair?	and consecutive	Go to Step 16	indicator lam
12	Repair the short to voltage in the IC timing control circuit.  Refer to Wiring Repairs on page 8-28 in Wiring Systems.	eier bne enn.s	Co to Oton 16	
	Did you complete the repair?	HOU	Go to Step 16	Turno
13	Repair the open in the ignition 1 circuit. Refer to Wiring Repairs on page 8-28 in Wiring Systems.	ola Schagnatina or	ence: Encine Cons	Schomatic Raise
tanner	Did you complete the repair?	ic System Check	Go to Step 16	uey biO
No alle	Replace the ICM. Refer to Ignition Control Module			BOILDON P
14	Replacement on page 6-1446.	<del>-</del> .		<del>-</del>
	Did you complete the replacement?		Go to Step 16	-0.
	Replace the PCM. Refer to Powertrain Control	lamicos connecto	notoemi edi tocano	2 019
15	Module (PCM) Replacement on page 6-1328.	seconds.		2 T 3. Cra
9051	Did you complete the replacement?		Go to Step 16	TO esta
	Use the scan tool in order to clear the DTCs.		the ignigon OFF.	Tun
2	Turn OFF the ignition for 30 seconds.     Start the engine.	ameze connector		
16	Operate the vehicle within the Conditions for Running	rese comuctor.	onnect the ICM had	8. Dis
	the DTC as specified in the supporting text.	Le ritiw tirento for	neo grinti di adi eg	o A Pro
	Does the DTC run and pass?		Go to Step 17	Go to Step 2
17	With a scan tool, observe the stored information,		Go to Diagnostic	D107-16-10
	Capture Info.		Trouble	8 Q 8
	Does the scan tool display any DTCs that you have not	pegloods aut uiti	Code (DTC) List	Does the
	diagnosed?		on page 6-1099	System OK

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t. Turn CV the ignition, with the engine OFF. 2. Proce the ignition I climate the ICM bemaus connector with a test lamp connected to ground.