Computers and Control Systems: Pinpoint Tests
Test JE: Integrated Ignition Coil Pack A, B or C Failure
PINPOINT TEST JE: INTEGRATED IGNITION COIL PACK A, B OR C FAILURE

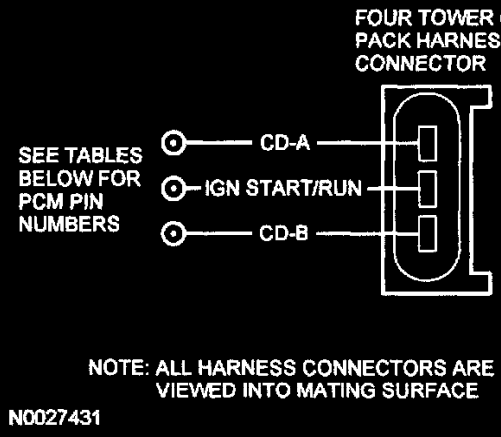
Integrated Ignition Coil Pack A, B, or C Failure	JE

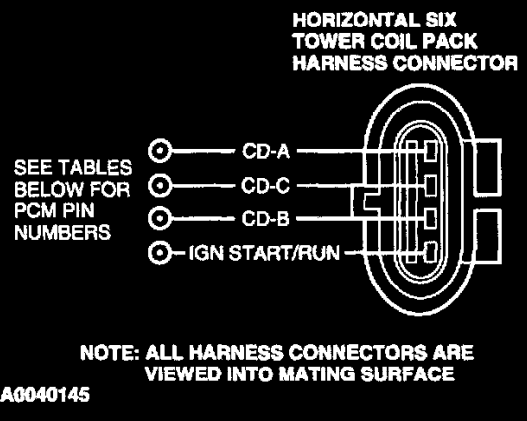
This pinpoint test is intended to diagnose the following:

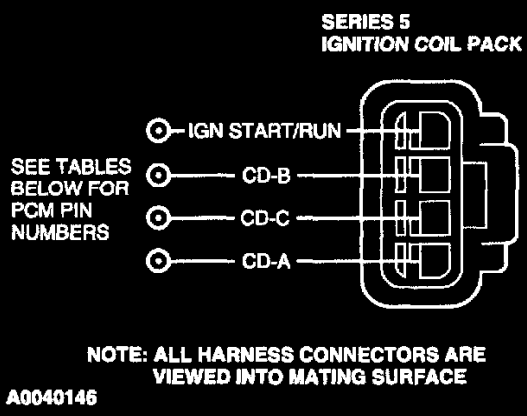
- ignition coil packs (12029)
- ignition coil harness
- IGN START/RUN circuit to coil packs
- powertrain control module (PCM) (12A650)

Pinpoint Test Schematics and Connectors

For PCM connector views or reference values, refer to Reference Values.







Schematics And Connectors

Integrated Ignition Coil Pack A, B, or C Failure

JE

IGNITION COIL TO CYLINDER CORRELATION

Vehicle	Related DTC	Cylinder Number	Ignition Coil	Coil Driver (CD)	PCM Pin
4 cylinders	P0351	1	A	A	26
	P0352	2	B	B	52
	P0352	3	B	B	52
	P0351	4	A	A	26
6 cylinders	P0351	1	A	A	26
	P0352	4	B	B	52
	P0353	2	C	C	78
	P0351	5	A	A	26
	P0352	3	B	B	52
	P0353	6	C	C	78
Explorer, Mountaineer 4.0L	P0351	1	A	A	E1
	P0352	4	B	B	E12
	P0353	2	C	C	E24
	P0351	5	A	A	E1
	P0352	3	B	B	E12
	P0353	6	C	C	E24
F-150, Mustang	P0351	1	A	A	E17
	P0352	2	B	C	E16
	P0353	3	C	B	E12
	P0351	4	A	B	E12
	P0352	5	B	A	E17
	P0353	6	C	C	E16

Test Step	Results / Action to Take
JE1 CHECK FOR DTCS	
• **Are DTCs P0350, P0351, P0352 or P0353 present?**	**Yes** GO to **JE2.** **No** For all other DTCs, GO to DTC Charts, Diagnostic Trouble Code (DTC) Charts and Descriptions.

Table And JE1

Integrated Ignition Coil Pack A, B, or C Failure

JE

Test Step		Results / Action to Take
JE2	**DETERMINE WHICH COIL IS NOT FIRING PROPERLY**	
	Note: Electronic ignition engine timing is entirely controlled by the PCM. Electronic ignition timing is NOT adjustable. Do not attempt to check base timing. You will receive false readings. • Determine which coil is not firing properly using the information from Pinpoint Test JB or a DTC and the table at the beginning of this pinpoint test. • Record the suspect cylinder, coil and PCM pin number from the table. • **Is the suspect cylinder number, coil driver and PCM pin number recorded?**	**Yes** GO to **JE3**. **No** To obtain the required information, REPEAT step JE2.
JE3	**DTC P0351, P0352, P0353: CHECK IGN START/RUN VOLTAGE TO THE COIL PACK**	
	• Disconnect the suspect coil, as determined from the table. • Key ON, engine OFF. • Measure the voltage between the IGN START/RUN circuit at the coil pack harness connector and ground. • **Is the voltage greater than 10 volts?**	**Yes** GO to **JE4**. **No** The IGN START/RUN has a circuit concern. CHECK the condition of the related fuses/fuse links. If OK, REPAIR the open circuit. If the fuse/fuse link is damaged, CHECK the IGN START/RUN circuit for a short to ground. REPAIR as necessary. CARRY OUT the misfire monitor drive cycle. REFER to Diagnostic Methods, On Board Diagnostic (OBD) Drive Cycle. CLEAR the DTCs. REPEAT the self-test.
JE4	**CHECK THE FUNCTIONALITY OF THE SUSPECT COIL DRIVER (CD) CIRCUIT**	
	• Key in OFF position. • Connect a test lamp between IGN START/RUN and the suspect CD circuit (determined from the table) at the coil pack harness connector. • Locate and activate the fuel inertia switch to disable the fuel pump. • Observe the test lamp while cranking the engine. • **Does the test lamp blink consistently?**	**Yes** GO to **JE8**. **No** GO to **JE5**.

Integrated Ignition Coil Pack A, B, or C Failure

JE

Test Step		Results / Action to Take
JE5	**CHECK THE SUSPECT CD CIRCUIT FOR AN OPEN IN THE HARNESS**	
	• Key in OFF position. • Disconnect the PCM. • Measure the resistance of the suspect CD circuit between the PCM harness connector pin (as determined from the table) and the coil pack connector. • **Is the resistance less than 5 ohms?**	**Yes** GO to **JE6**. **No** REPAIR the open circuit. CARRY OUT the misfire monitor drive cycle. REFER to Diagnostic Methods, On Board Diagnostic (OBD) Drive Cycle. CLEAR the DTCs. REPEAT the self-test.
JE6	**CHECK THE SUSPECT CD CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS**	
	• Key ON, engine OFF. • Measure the voltage between the suspect CD circuit at the PCM harness connector (as determined from the table) and ground. • **Is the voltage less than 1 volt?**	**Yes** GO to **JE7**. **No** REPAIR the short circuit. CARRY OUT the misfire monitor drive cycle. REFER to Diagnostic Methods, On Board Diagnostic (OBD) Drive Cycle. CLEAR the DTCs. REPEAT the self-test.
JE7	**CHECK THE SUSPECT CD CIRCUIT FOR A SHORT TO GROUND IN THE HARNESS**	
	• Key in OFF position. • Measure the resistance between the suspect CD circuit at the PCM harness connector (as determined from the table) and ground. • **Is the resistance greater than 10K ohms?**	**Yes** GO to **JE9**. **No** REPAIR the short circuit. CARRY OUT the misfire monitor drive cycle. REFER to Diagnostic Methods, On Board Diagnostic (OBD) Drive Cycle. CLEAR the DTCs. REPEAT the self-test.

Integrated Ignition Coil Pack A, B, or C Failure

JE

Test Step	Results / Action to Take
JE8 CHECK THE SUSPECT COIL FOR DAMAGE • Key in OFF position. • Remove the spark plug wire from the suspect coil tower (as determined from the table). • Connect the Air Gap spark tester 303-DO37 (D81P-6666-A) or its equivalent in series between the suspect coil tower and the spark plug wire. • Disable the inertia switch. • Observe the spark tester while cranking the engine. • **Is a bluish-white spark present?**	**Yes** GO to Pinpoint Test Z. **No** INSTALL a new coil pack as needed. CARRY out the misfire monitor drive cycle. REFER to Diagnostic Methods, On Board Diagnostic (OBD) Drive Cycle. CLEAR the DTCs. REPEAT the self-test.
JE9 CHECK FOR CORRECT PCM OPERATION • Disconnect all the PCM connectors. • Visually inspect for: — pushed out pins. — corrosion. • Connect all the PCM connectors and make sure they seat correctly. • Carry out the PCM self-test and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new PCM. REFER to Diagnostic Methods, Flash Electrically Erasable Programmable Read Only Memory (EEPROM). **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.