

Preliminary Checkout, Equipment & Notes

CHECKOUT

- Visually inspect the engine compartment to insure all vacuum hoses and spark plug wires are properly routed and securely connected.
- Examine all wiring harnesses and connectors for insulation damage, burned, overheated, loose, or broken conditions.
- Check that the TFI module is securely fastened to the distributor base.
- Be certain the battery is fully charged.
- All accessories should be Off during diagnosis.

EQUIPMENT

Obtain the following test equipment or an equivalent:

- Spark Tester, Special Service Tool D81P-6666-A. See note.
- Digital Volt-Ohmmeter, Rotunda 014-00407.
- 12 Volt Test Light.
- Small straight pin.

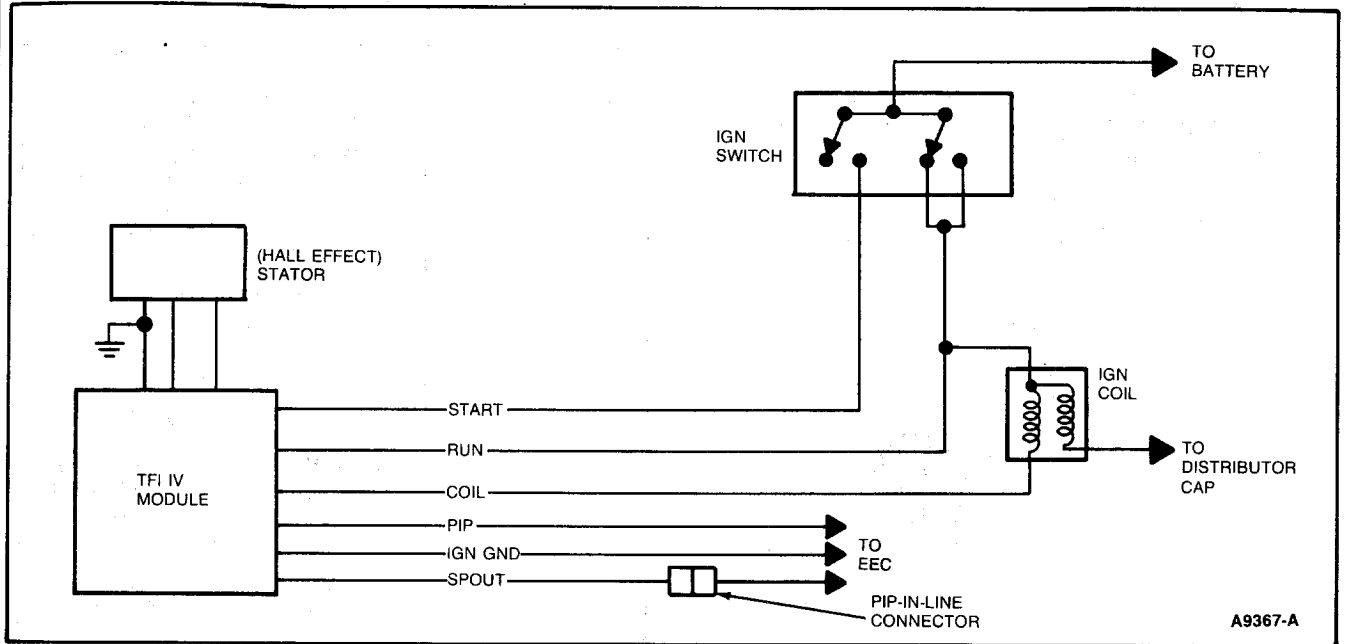
NOTES

- When instructed to inspect a wiring harness, both a visual inspection and a continuity test should be performed.
- When making measurements on a wiring harness or connector, it is good practice to wiggle the wires while measuring.
- A spark plug with a broken side electrode is not sufficient to check for spark and may lead to incorrect results.

Functional Schematic

TFI-IV

The TFI-IV system electrical schematic is shown below. For detailed information, refer to the vehicle wiring diagram.



Ignition Coil Secondary Voltage

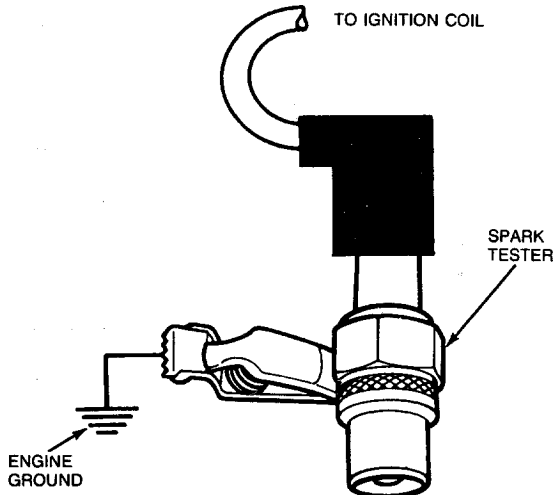
TFI-IV

Part 2
Test 1

TEST EQUIPMENT: SPARK TESTER, VOM

TEST PROCEDURE

1. Connect spark tester between ignition coil wire and engine ground.
2. Crank engine.



TEST RESULT

TEST RESOLUTION

Spark

- Test result OK.
- Inspect distributor cap, rotor for damage, carbon tracking, lack of silicone compound, if applicable.
- If engine starts, Go to Part 1, Test 2, otherwise continue to Test 5.

NO COMPOUND ON THIS SURFACE.



COAT COMPLETE SURFACE—TOP, BOTTOM, AND EDGES OF ROTOR BLADE TIP WITH SILICONE COMPOUND—1/32" THICK.

***DO NOT USE SILICONE COMPOUND ON MULTIPOINT ROTOR.**

No spark

- Measure resistance of ignition coil wire. Replace if greater than 7,000 ohms per foot.
- Inspect ignition coil for damage, carbon tracking.
- Crank engine to verify distributor rotation. Refer to Shop Manual, Group 23 and service as required.
- Go to Test 2.

Ignition Coil Primary Circuit Switching

TFI-IV

Part 2
Test 2

TEST EQUIPMENT: 12V TEST LIGHT

TEST PROCEDURE

1. Separate wiring harness connector from ignition module. Inspect for dirt, corrosion, and damage. Reconnect harness.

NOTE: PUSH connector tabs to separate.

2. Attach 12V DC test light between coil Tach terminal and engine ground.
3. Crank engine.
4. Remove test light.

TEST RESULT

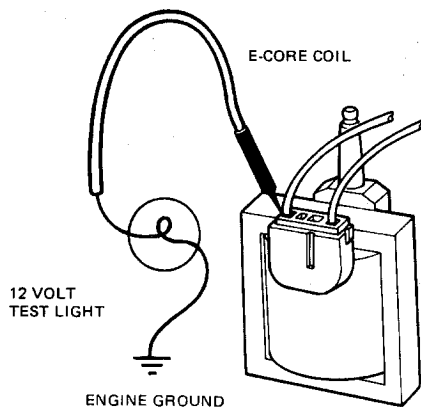
TEST RESOLUTION

Light flashes
or
Light but no
flash

- Go to Test 3.

No light or
very dim light

- Go to Test 10.



A7251-B

Ignition Coil Primary Resistance

TFI-IV

Part 2
Test 3

TEST EQUIPMENT: VOM

TEST PROCEDURE

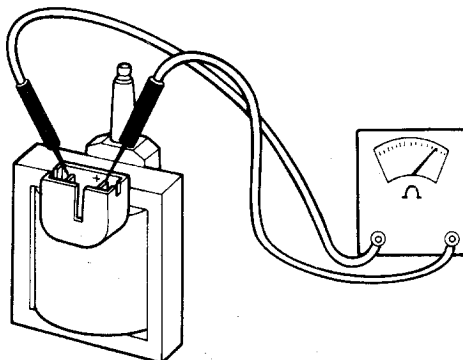
1. Turn ignition switch to Off.
2. Disconnect ignition coil connector. Inspect for dirt, corrosion, and damage.
3. Measure resistance from positive (+) to negative (—) terminal of ignition coil.

TEST RESULT

- 0.3 to 1.0 ohm
- Less than 0.3 ohm or greater than 1.0 ohm

TEST RESOLUTION

- Test result OK.
• Go to Test 4.
- Replace ignition coil.



A6385-A

Ignition Coil Secondary Resistance

TFI-IV

Part 2
Test 4

TEST EQUIPMENT: VOM

TEST PROCEDURE

1. Measure resistance from negative (-) terminal to high voltage terminal of ignition coil.
2. Reconnect ignition coil connector.

TEST RESULT

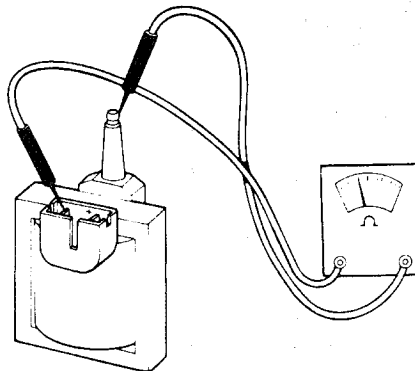
6,500 to 11,500 ohms

Less than 6,500 ohms or greater than 11,500 ohms

TEST RESOLUTION

- Test result OK.
- Go to Test 5.

- Replace ignition coil.



A6386-A

Wiring Harness

TFI-IV

Part 2
Test 5

TEST EQUIPMENT: VOM, STRAIGHT PIN

TEST PROCEDURE

1. Separate wiring harness connector from ignition module. Inspect for dirt, corrosion, and damage.

NOTE: PUSH connector tabs to separate.

2. Disconnect wire at S terminal of starter relay.
3. Attach negative (-) VOM lead to distributor base.
4. Measure battery voltage.
5. Following table below, measure connector terminal voltage by attaching VOM to small straight pin inserted into connector terminal and turning ignition switch to position shown.

CAUTION: Do not allow straight pin to contact electrical ground.

CONNECTOR TERMINAL	WIRE/CIRCUIT	IGNITION SWITCH TEST POSITION
#2	TO IGNITION COIL (-) TERMINAL	RUN
#3	RUN CIRCUIT	RUN AND START
#4	START CIRCUIT	START

6. Turn ignition switch to Off position.
7. Remove straight pin.
8. Reconnect wire to S terminal of starter relay.

TEST RESULT

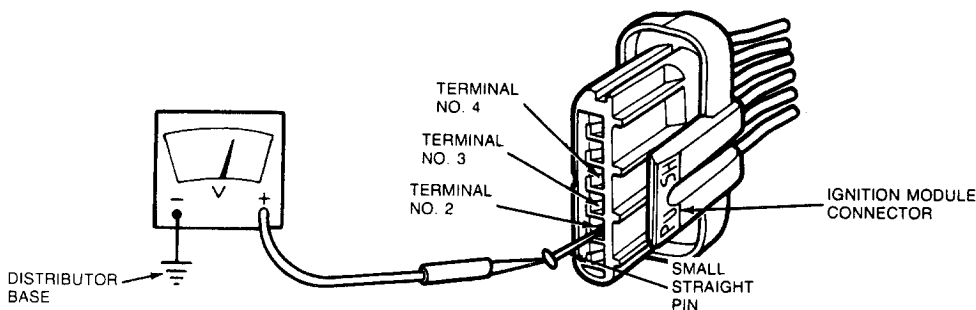
TEST RESOLUTION

90 percent of battery voltage minimum

- Test result OK.
- Go to Part 2, Test 6.

Less than 90 percent of battery voltage

- Inspect for faults in wiring harness and connectors.
- Refer to vehicle wiring diagram for appropriate circuit.
- Damaged or worn ignition switch. Refer to Shop Manual, Group 33.



A6648-C

Stator

TFI-IV

**Part 2
Test 6**

TEST EQUIPMENT: VOLT-OHMMETER

TEST PROCEDURE
<ol style="list-style-type: none"> 1. Turn ignition switch to Off position. 2. Remove coil wire and ground it. 3. Attach negative (-) VOM lead to distributor base. 4. Disconnect the pin-in-line connector near distributor and attach positive (+) VOM lead to TFI module side of connector. 5. Turn ignition switch to On position. 6. Bump the starter and measure voltage levels with the engine not moving. (Allow sufficient time for digital voltage reading to stabilize before taking measurement.) Record all values for possible use in additional tests.

TEST RESULT	TEST RESOLUTION
Highest value greater than 90 percent of battery voltage	<ul style="list-style-type: none"> ● Go to Part 2, Test 7.
Highest value less than 90 percent of battery voltage	Replace stator assembly.

Stator**TFI-IV****Part 2
Test 7****TEST EQUIPMENT: VOLT-OHMMETER****TEST PROCEDURE**

Use values obtained from Part 2, Test 6.

TEST RESULT**TEST RESOLUTION**

Lowest value
greater than
.5 volts

Remove distributor from engine. Remove TFI module from distributor and inspect stator connector terminals and TFI terminals for misalignment. Service as necessary. If OK, replace stator assembly.

Lowest value
less than .5
volts

Go to Part 2, Test 8.

Stator

TFI-IV

**Part 2
Test 8**

TEST EQUIPMENT: VOLT-OHMMETER

TEST PROCEDURE

Use values obtained from Part 2, Test 6.

TEST RESULT	TEST RESOLUTION
Values between .5 volts and 90 percent of battery voltage	Replace stator assembly.
No values between .5 volts and 90 percent of battery voltage.	Go to Part 2, Test 9.

EEC IV - TFI IV

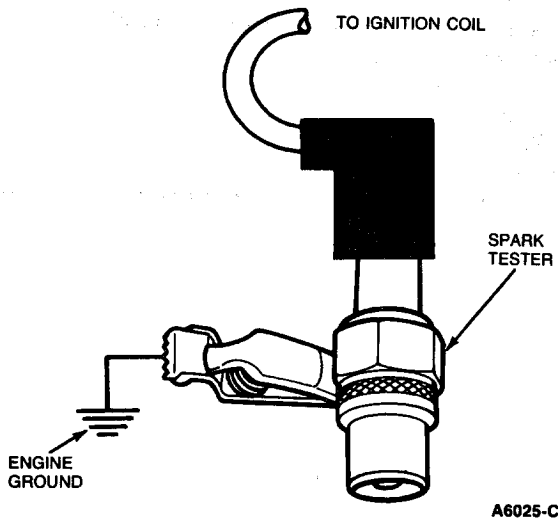
TFI-IV

**Part 2
Test 9**

TEST EQUIPMENT: SPARK TESTER, VOM

TEST PROCEDURE

1. Connect spark tester between ignition coil wire and engine ground.
2. Crank engine.



TEST RESULT

TEST RESOLUTION

Spark

Check PIP and Ignition ground wires for continuity. Repair as necessary. If OK, GO to EEC IV Diagnostics.

No spark

Replace TFI-IV module.

Primary Circuit Continuity

TFI-IV

Part 2
Test 10

TEST EQUIPMENT: VOM, STRAIGHT PIN

TEST PROCEDURE

1. Separate wiring harness connector from ignition module. Inspect for dirt, corrosion, and damage.

NOTE: PUSH connector tabs to separate.

2. Attach negative (-) VOM lead to distributor base.
3. Measure battery voltage.
4. Attach VOM to small straight pin inserted into connector terminal No. 2.

CAUTION: Do not allow straight pin to contact electrical ground.

5. Turn ignition switch to Run position and measure terminal No. 2 voltage.
6. Turn ignition switch to Off position.
7. Remove straight pin.

TEST RESULT

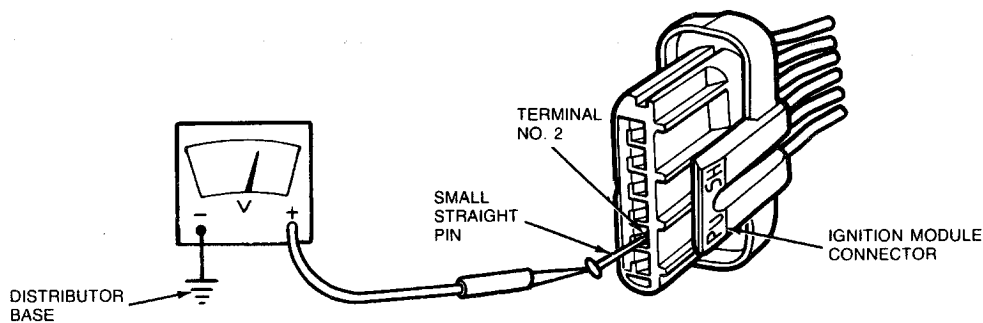
TEST RESOLUTION

90 percent of battery voltage minimum

- Go to Part 2, Test 5.

Less than 90 percent of battery voltage

- Go to Part 2, Test 11.



Ignition Coil Primary Voltage

TFI-IV

Part 2 Test 11

TEST EQUIPMENT: VOM

TEST PROCEDURE

1. Attach negative (—) VOM lead to distributor base.
2. Measure battery voltage.
3. Turn ignition switch to Run position.
4. Measure voltage at NEGATIVE (—) terminal of ignition coil.
5. Turn ignition switch to Off position.

TEST RESULT

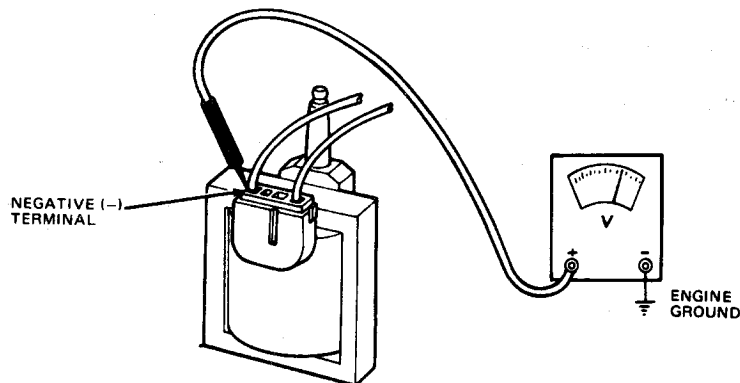
90 percent of battery voltage minimum

Less than 90 percent of battery voltage

TEST RESOLUTION

- Inspect wiring harness between ignition module and coil negative (—) terminal.

- Inspect wiring harness between ignition module and coil negative (—) terminal.
- Go to Part 2, Test 12.



A6391-A

Ignition Coil Supply Voltage

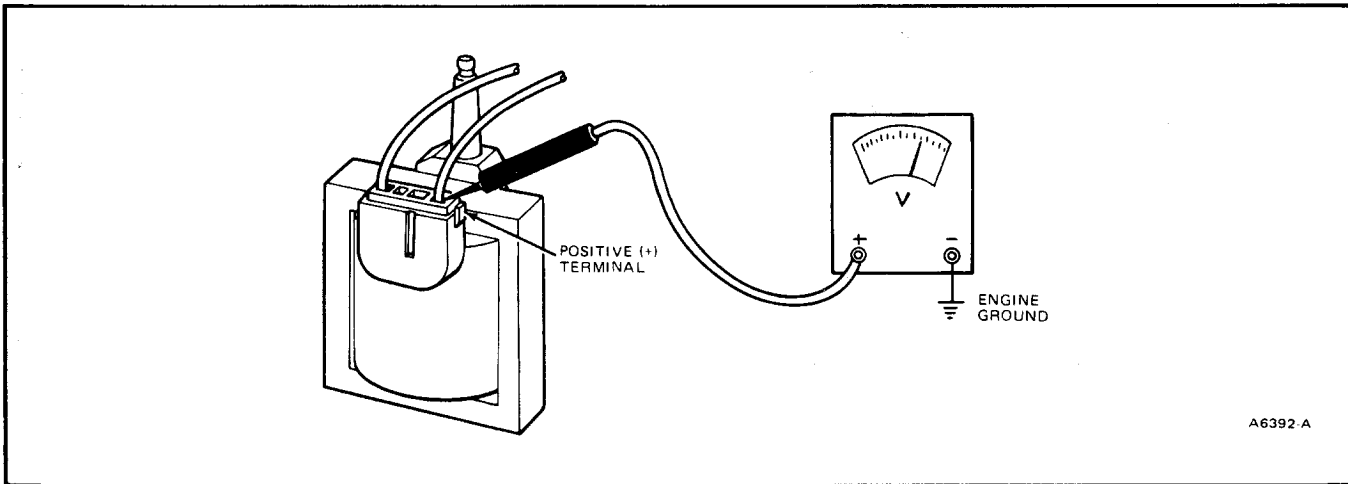
TFI-IV

Part 2
Test 12

TEST EQUIPMENT: VOM

TEST PROCEDURE
<ol style="list-style-type: none"> 1. Remove coil connector. 2. Attach negative (-) VOM lead to distributor base. 3. Measure battery voltage. 4. Turn ignition switch to Run position. 5. Measure voltage at POSITIVE (+) terminal of ignition coil. 6. Turn ignition switch to Off position. 7. Reconnect ignition module connector.

TEST RESULT	TEST RESOLUTION
90 percent of battery voltage minimum	<ul style="list-style-type: none"> ● Inspect ignition coil connector for dirt, corrosion, and damage. ● Inspect ignition coil terminals for dirt, corrosion, and damage. ● Replace ignition coil.
Less than 90 percent of battery voltage	<ul style="list-style-type: none"> ● Inspect and service wiring between ignition coil and ignition switch. Refer to vehicle wiring diagram. ● Worn or damaged ignition switch. Refer to Shop Manual, Group 33.



A6392-A