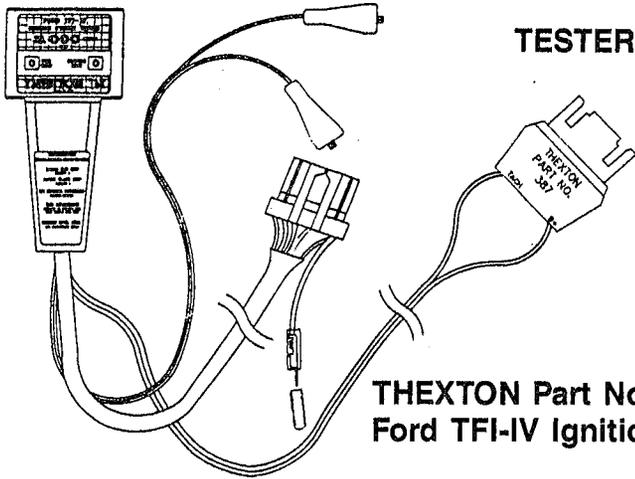


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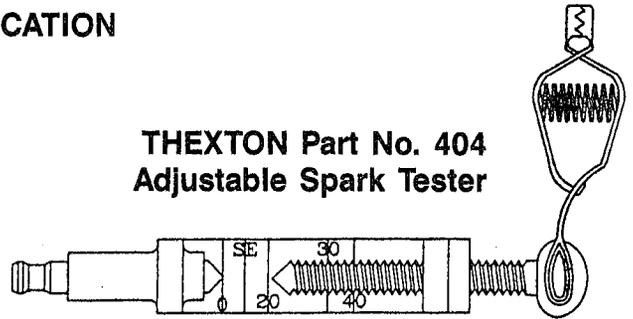
INSTRUCTIONS FOR THEXTON Part No. 128 FORD TFI-IV IGNITION SYSTEM TESTER

For use will all Fords with Thick Film IV Ignition Systems and EEC-IV Computers 1983 and up
Tests the PIP Signal (Hall Switch) Module Trigger Circuits
Triggers the Module and Ignition Coil



TESTER IDENTIFICATION

**THEXTON Part No. 128
Ford TFI-IV Ignition System Tester**



**THEXTON Part No. 404
Adjustable Spark Tester**

TYPICAL ABBREVIATIONS

- TFI —** Thick Film Ignition
The type of circuit design used in the Ford module.
- PIP —** Profile Ignition Pickup
Identified as the Hall Switch or Stator. Tells the computer and the module the piston position and engine speed.
- SPOUT —** Spark Output
A signal from the computer to the module that changes the ignition timing.
- IDM —** Ignition Diagnostic Monitor
Is the circuit from the negative side of the coil to the ignition module, this circuit is also monitored by the ECA for diagnostic purposes.

THEXTON'S 128 FORD TFI-IV IGNITION SYSTEM TESTER

The THEXTON 128 TFI-IV Ignition System Tester is designed to check the switching action of the hall switch, (PIP) and the module. The tester also has the capability of triggering the ignition module and the ignition coil. The tester is designed to eliminate the vehicle wiring harness (except closed bowl distributor systems) and components.

THEXTON #128 CONNECTOR IDENTIFICATION

- RED BOOT Tester battery positive lead
- BLACK BOOT Tester battery negative lead
- RED CONNECTOR Ignition coil connector
- GRAY CONNECTOR Ignition module connector
- BLUE PIG TAIL Closed bowl adapter lead

The THEXTON 128 TFI-IV Ignition System Tester is equipped with three LED'S. One LED indicates the operation of the hall switch (PIP), one LED indicates the switching action of the module, and the other LED (WAIT) indicates an overload of the trigger circuit in the tester. If the yellow LED comes on during the module trigger test, wait for approximately one minute to allow the circuit to cool before proceeding with the test.

The tester is equipped with two switches. One switch is used to trigger the ignition module and the other is for triggering the ignition coil.

The following instructions will lead you step by step through a diagnostic routine to isolate the problem. These tests "MUST" be done in the sequence listed or an improper diagnosis could occur.

BEFORE CONNECTING THE TESTER

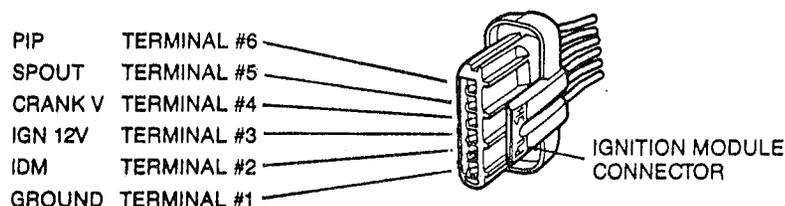
1. First do a visual inspection for: dirty or loose connections, check wires for chafing, check the coil wire for excessive resistance, etc. Also crank the engine and verify distributor rotation.

2. Next, isolate whether you have an ignition system or a fuel system problem. Disconnect the coil wire from the distributor cap, adjust the THEXTON #404 (supplied with this kit) Spark Tester to the 30KV position, connect the coil wire to the tester, and the alligator clip to a good ground. Crank the engine, if you have consistent spark, check the fuel system and/or the mechanical condition of the engine. If not, proceed to step 3.

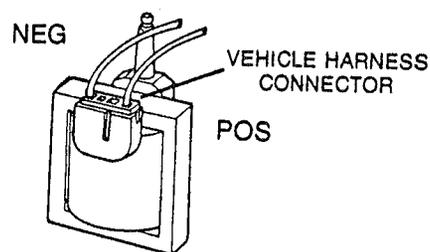
NOTE: Vehicles equipped with Electronic Fuel Injection may not have an injector pulse due to an ignition system failure. The following steps are designed to isolate the ignition system from the electronic portion of the fuel injection system.

3. Turn the ignition switch to the "off" position, disconnect the module and coil vehicle harness connectors. Turn the ignition switch to the "on" position and check for voltage at the vehicle harness connector that was connected to the positive side of the ignition coil. Voltage should be within 90% of battery voltage. Next, check the voltage at terminal #3 of the module vehicle harness connector. (see illustration) This reading must also be within 90% of battery voltage. If not, repair the circuit from the ignition switch.

PIN IDENTIFICATION



COIL IDENTIFICATION



NOTE: Voltage at terminal 3 and the positive side of the ignition coil must be within 90% of battery voltage (with the ignition switch on).

CONNECTING THE TESTER TO THE VEHICLE

(closed bowl distributors have separate instructions)

With the ignition switch turned "off", disconnect the connector from the ignition module. Connect the gray connector from tester to the ignition module. Connect the tester lead with the red boot to the battery positive terminal and the tester lead with the black boot to the battery negative terminal. DO NOT connect the red connector to the ignition coil at this time.

CLOSED BOWL DISTRIBUTOR

In the closed bowl distributor system the Thick Film Module has been mounted on a heat sink and is mounted independent of the distributor. The distributor contains the hall switch (PIP). Because of this, the hook up is different and an additional vehicle wiring harness test must be performed.

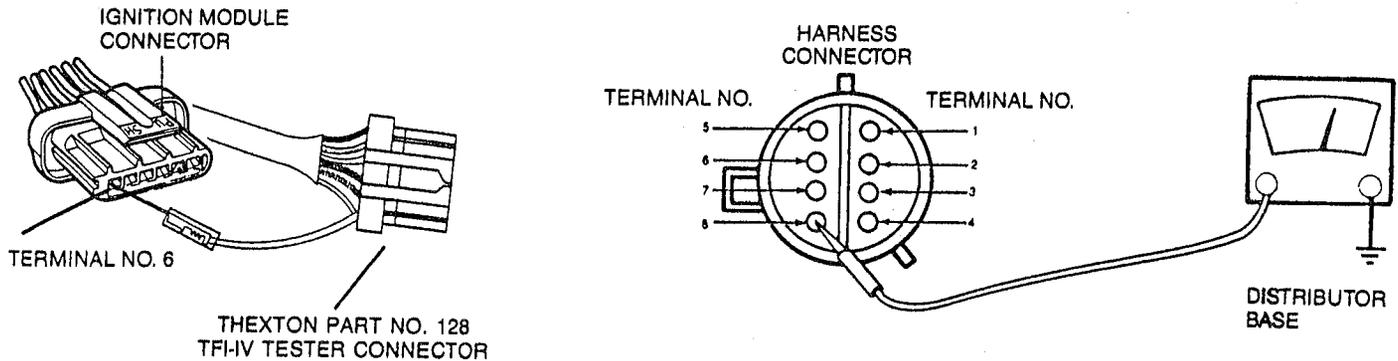
Check for voltage at terminal #8 of the distributor vehicle harness connector. (see illustration) The voltage reading should be within 90% of battery voltage. If not, repair the circuit to the ignition switch.

When performing the hall switch tests, if the hall switch light doesn't flash, an ohmmeter test of the wiring harness in between the distributor and the module must be performed before replacing the hall switch.

TO CONNECT THE TESTER:

1. Connect the tester lead with the red boot to the battery positive terminal and the tester lead with the black boot to the battery negative terminal.
2. Disconnect the vehicle harness connector from the module and connect the gray connector from the tester to the module.
3. Remove the cap from the blue pigtail, (near the gray module connector) connect this single lead to terminal number 6 (see illustration of the vehicle harness connector)

Refer to hall switch and module tests starting with step 1 and follow routine.



TESTING THE HALL SWITCH (PIP) AND THE MODULE SWITCHING CIRCUITS

1. The hall switch (PIP) light has been programmed to come on every fifth time the shutter wheel interrupts the signal. This has been done to give the technician a distinctive light while cranking the engine. If the shutter blade stops in the hall switch, the hall light should stay on as long as the shutter blade stays there.
2. The module light blinks every time the shutter blade interrupts the signal. On a good module, the light will stay on only momentarily if the shutter blade stops in the hall switch. This function is controlled by the ignition module.
3. Crank the engine and observe the hall switch light, the light should flash. If the light doesn't flash, (remains on or off while cranking) go to module trigger test.
4. Crank the engine and observe the module light. It should also flash. If the light doesn't come on or flash, the module is open, replace the module. If the module light is on steady, the module is shorted, replace it. If the module light does flash, proceed to the ignition coil test.

MODULE AND COIL TRIGGER TESTS

MODULE TEST

With the tester still connected as in the previous test, press and release the module trigger switch. The module light should come on momentarily and go off. If the light fails to come on and stays on, the module is shorted and must be replaced.

IGNITION COIL TEST

Disconnect the gray connector from the ignition module. Disconnect the ignition coil wire from the distributor cap, adjust the THEXTON #404 to 30 KV position, connect the coil wire to the #404 tester and connect the alligator clip to a good ground. Disconnect the primary coil connector and plug the red tester connector into the ignition coil.

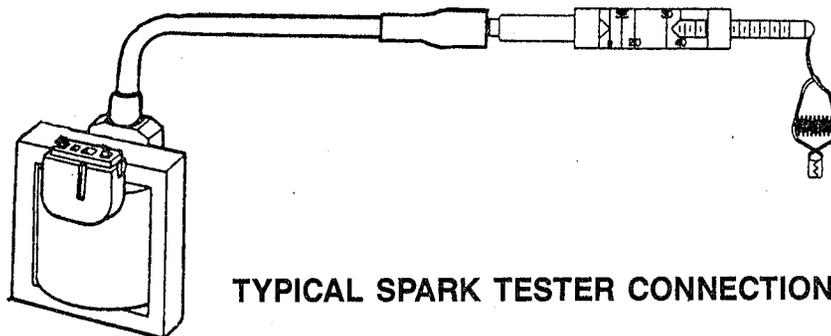
Press and release the ignition coil trigger switch. Secondary voltage should jump the 30KV gap on the spark tester. If not, replace the ignition coil.

If all ignition systems check O.K. the problem is either in the wiring, ECA, fuel system, or a mechanical problem in the engine. Remember the PIP signal tells the ECA when to start the injector pulse, the length of the pulse is determined by inputs and the ECA. Injector pulse may be checked with a noid light or by connecting a test light between the terminals on the injector harness connector. Fuel pressure must be as specified by the manufacturer. If fuel pressure is low or volume is inadequate, the vehicle may not start.

THEXTON 404 SPARK TESTER ADJUSTABLE IGNITION SPARK TESTER

The THEXTON #404 is an adjustable spark tester designed for no start conditions on anything from lawn mowers to high energy ignition systems. The label on the tester is marked 0, SE, 20, 30, and 40. SE is the position for small engines, such as lawn mowers, chain saws, etc. The 20, 30, and 40 numbers indicate the approximate voltage requirement in thousands to jump the adjusted gap. EXAMPLE: the tester adjusted to the 30 position means that approximately 30,000 volts are required to jump the gap. This would be a nominal requirement for a Ford TFI-IV Ignition System. The numbers on the tester indicate 20KV, 30KV, and 40KV. These numbers will change, however, depending on the humidity, temperature, and other factors beyond our control. Because of this, the numbers on the tester are approximate calculations. The numbers listed here are suggested minimum settings for no start diagnosis.

Application	Adjust To
Lawn Mowers, Tillers, Snowmobiles, etc.	SE
Vehicles with conventional (point type) ignition	17-20
Ford SSI, Duraspark I, II, III	28-32
Ford Thick Film IV	30-34
GM High Energy Ignition	30-34
Chrysler Electronic	20-24
Chrysler 85 and Up	28-32
*Distributorless Ignition Systems	36-40



INSTRUCTIONS FOR VEHICLES WITH NON-INTEGRAL COILS

TO CONNECT THE TESTER TO THE VEHICLE:

1. Disconnect the coil wire and check resistance of the wire.
2. Adjust the tester to the appropriate setting.
3. Reconnect the coil wire to the coil, connect the coil wire to the tester and connect the alligator clip to a good ground.
4. Crank the engine, you should see good spark intensity, if not refer to the shop manual for correct diagnostic procedures.

INSTRUCTIONS FOR VEHICLES WITH INTEGRAL COILS

On vehicles with integral coils, use a spark plug wire instead of the coil wire. We suggest to check more than one wire.

*ON DISTRIBUTORLESS IGNITION SYSTEMS:

1. Remove plug wire and check resistance of the wire.
2. Adjust the spark tester to the 36KV position.
3. Install the spark tester at the spark plug end of the wire with the alligator clip connected to a good ground.
4. Crank the engine, you should see good spark intensity, if not refer to the shop manual for correct diagnostic procedures.