

As the engine speed increases, the pistons go faster. The spark plugs have to ignite the fuel even sooner if it is to be completely ignited when the piston reaches TDC.

## INSPECTION & ADJUSTMENT

The "Vehicle Emission Control Information" label is attached in the engine compartment. Follow all instructions on the label. However, if the label is missing or defaced making it unreadable, use the following procedures:

➔ **Make timing adjustment with engine at normal operating temperature and the air conditioning system, if so equipped, turned off.**

Set the parking brake and block the drive wheels. The vehicle should be in Neutral or Park.

Check the Service Engine soon light. It should not be lit.

Disconnect the spout at the in-line connector to disable the advance system.

With the ignition off, connect an inductive type timing light to the number one spark plug lead. Find the timing marks on the front of the engine just above and slightly to the side of the crankshaft pulley. Make sure this is clean and readable. If necessary, mark the timing mark at 10° BTDC with a dot of white paint or White Out®. There is a mark on the crankshaft pulley that should be dabbed with a spot of paint to ease in setting the timing.

Start the engine and aim the timing light at the timing mark. The line of the balancer or pulley will line up at the timing mark. If a change is necessary, loosen the distributor hold-down clamp bolt at the base of the distributor slightly. While observing the mark with the timing light, slightly rotate the distributor until the line indicates the correct timing. Tighten the hold-down bolt to 25 ft. lbs. (34 Nm)

Turn off the engine and remove the timing light.

On the 4.6L engine, the base ignition timing is set from the factory at 10 degrees BTDC and is not adjustable.

## Valve Lash

### ADJUSTMENT

Adjustment of the hydraulic lash adjusters or hydraulic lifters is neither possible nor necessary.

## Idle Speed and Mixture Adjustments

### ADJUSTMENT

#### 1988 Continental

1. Apply the parking brake, block the drive wheels and place the vehicle in **P** (AT) or **N** (MT).
2. Start the engine and let it run until it reaches

normal operating temperature, then turn the engine **OFF**.

3. Connect an inductive tachometer, then start the engine and run it at 2,500 rpm for 30 seconds.

4. Allow the engine idle to stabilize, then place the automatic transaxle in **P** or the manual transaxle in neutral.

5. Adjust the engine idle rpm to the specification shown on the vehicle emission calibration label by turning the throttle stop screw.

6. After the idle speed is within specification, repeat Steps 3–6 to ensure that the adjustment is correct.

7. Turn the engine **OFF**, then disconnect the test equipment and unblock the wheels.

#### 1989–90 Continental

##### ➔ See Figure 100

1. Apply the parking brake, block the drive wheels, and place the vehicle in **P**.

2. Start the engine and let it run until it reaches normal operating temperature, then turn the engine **OFF**.

3. Back the throttle plate stop screw clear off the throttle lever pad.

4. Place a 0.010 in. (0.25mm) feeler gauge between the throttle plate stop screw and the throttle lever pad. Turn the screw in until contact is made, then turn it and additional 1½ turns. Remove the feeler gauge.

5. Start the engine and let the idle stabilize for 2 minutes. Lightly depress and release the accelerator, then let the engine idle.

#### 1991–94 Continental

##### ➔ See Figure 99

1. Hook-up the appropriate scan tool (Super star tester or equivalent). Initiate Key On Engine Off (KOEO) test. Repair any hard faults that are recorded.

2. Activate the engine running tests.

3. After the DTC (Diagnostic Trouble Code) slow codes output is completed, unlatch and

within 4 seconds latch the STI (Self-Test-Input) button.

4. A single pulse code indicates the entry mode, then observe the Self-Test Output (STO) of the STAR Tester.

5. A constant tone, solid light or "STO LO" readout means the base idle rpm is within range. To exit the test, unlatch the STI button, then wait four seconds for reinitialization (after 10 minutes it will exit by itself).

6. A beeping tone, flashing light, or "STO LO" readout at (8Hz) indicates the TP sensor is out of range due to over adjustment; some adjustment may be required.

7. A beeping tone, flashing light, or "STO LO" readout at (4Hz) indicates the base idle rpm is too fast, adjustment is required.

8. A beeping tone, flashing light, or "STO LO" readout at (1Hz) indicates the base idle rpm is too slow, adjustment will be required.

9. If the rpm is out of specification, turn the air trim screw until conditions for "base idle is within range" are met.

➔ **A sealant/coating covers the throttle bore and throttle plate which makes the throttle body airflow tolerant to engine intake sludge accumulation. These throttle body assemblies must not be cleaned and have a yellow/black attention decal advising not to clean.**

#### 4.6L Engines

The traditional idle air adjustment procedure is not used on 4.6L engine applications.

During idle, the throttle body assembly provides a set amount of air flow to the engine through the idle air trim screw passage or throttle plate idle air orifice and the PCV valve. The IAC valve assembly provides additional air when commanded by the Powertrain Control Module (PCM) to maintain the proper engine idle speed under varying conditions. The IAC valve assembly mounts directly to the throttle body assembly in most applications. Idle speed is controlled by the PCM and cannot be adjusted.

#### 5.0L Engines

1. Apply the parking brake, block the drive wheels, and place the vehicle in **P**.

2. Start the engine and let it run until it reaches normal operating temperature, then turn the engine **OFF**.

3. Back the throttle plate stop screw clear off the throttle lever pad.

4. Place a 0.010 in. (0.25mm) feeler gauge between the throttle plate stop screw and the throttle lever pad. Turn the screw in until contact is made, then turn it and additional 1½ turns for the 5.0L Hi Output engine, and 1¼ for the base engine. Remove the feeler gauge.

5. Shut the engine off and disconnect battery for 5 minutes.

6. Start the engine and let the idle stabilize for 2 minutes. Lightly depress and release the accelerator, then let the engine idle.

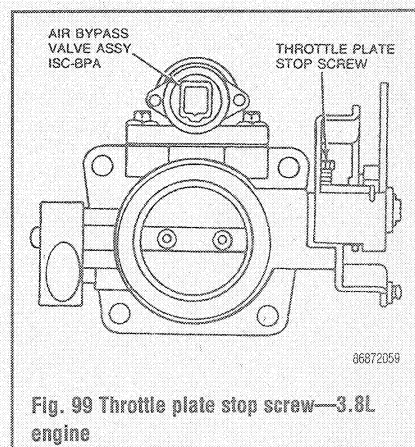


Fig. 99 Throttle plate stop screw—3.8L engine