

SERVICE BULLETIN



M-1105

August 10, 2000

IDLE SPEED ADJUSTMENTS FOR ALL MAGNETTI-MARELLI EFI EQUIPPED VEHICLES WITH “STOCK” ECM CALIBRATIONS

General

Recent investigation of idle speed setting procedures for the FLTRSEI (Service Bulletin M-1101) has led us to recommend a new cold/warm-slow idle speed setting procedure for all Magnetti-Marelli EFI equipped vehicles with “stock” ECM calibrations. The new procedure ensures proper cold and hot idle speeds, while also simplifying the procedure for the technician.

NOTE

Vehicles with performance modifications require cold idle speed to be set at 1400-1500 RPM with engine hot as in the past.

Cold Idle Speed Adjustment

NOTE

All sensors and actuators must be in proper working order and the engine must be in good condition in order for this procedure to have correct and consistent results.

1. Remove right side saddlebag. See SADDLEBAG, REMOVAL, in the appropriate FLT Models Service Manual.
2. Gently pull side cover from frame downtubes (no tools required).
3. Remove rubber plug from open end of Data Link connector and plug in Scanalyzer (HD-41325).
4. With the Engine Stop/Run Switch in the RUN position, turn the Ignition Light/Key Switch to ON.
5. While observing TP voltage under the Data Monitor Menu of the Scanalyzer, turn the Ignition Light/Key Switch back to the OFF position. Note that the TP voltage drops, increases and then stops just before electrical power is interrupted.

If the Scanalyzer display stops within the voltage range listed in Table 1, then the cold idle speed does **not** need to be adjusted. Proceed directly to WARM-SLOW IDLE SPEED ADJUSTMENT on page 2.

Table 1. Cold Idle TP Voltage Settings

| Model | Volts |
|-------------------|--------------|
| 1340 Domestic/HDI | 0.61 to 0.64 |
| 1450 Domestic/HDI | 0.64 to 0.68 |

6. If the TP voltage is out of range, proceed as follows:

- a. Remove air cleaner and backplate assembly. See AIR CLEANER, REMOVAL, in the appropriate FLT Models Service Manual.
- b. With the Engine Stop/Run Switch in the RUN position, turn the Ignition Light/Key Switch to ON and then back to the OFF position. The idle speed control actuator retracts, and then moves out to the parked position.
- c. Unplug the wire harness connector from the idle speed control actuator. See Figure 1.
- d. With the Engine Stop/Run Switch in the RUN position, turn the Ignition Light/Key Switch to ON.
- e. While observing TP voltage under the Data Monitor Menu of the Scanalyzer (or Breakout Box and DVOM), use a T10 TORX drive head to adjust the cold idle speed set screw until reading is within the voltage range listed in Table 1. Be sure not to move the idle speed lever while turning the screw.

NOTE

*Gently open the throttle to better access the cold idle speed set screw. After making the adjustment, gently roll the throttle closed and recheck the TP voltage reading. **DO NOT** allow throttle to “snap shut” or the idle speed control actuator may move (resulting in an unwanted voltage change that requires the adjustment procedure be restarted).*

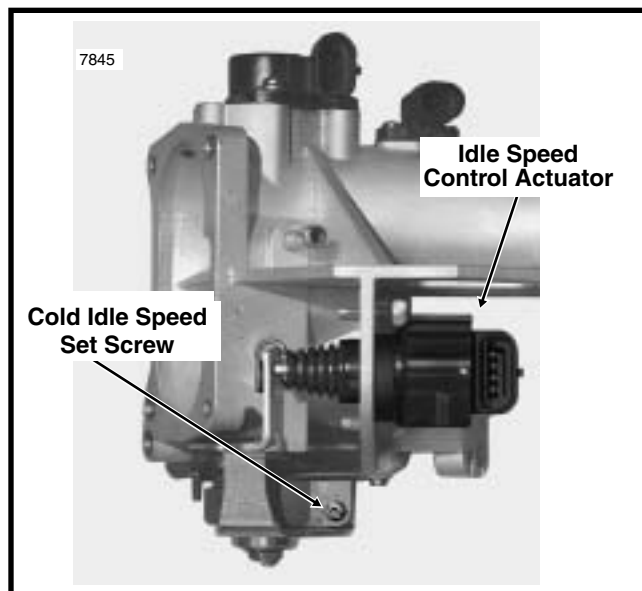


Figure 1. Induction Module (Top View)

Warm-Slow Idle Speed Adjustment

NOTE

For proper adjustment, always check/set cold idle speed adjustment before proceeding. See COLD IDLE SPEED ADJUSTMENT on page 1.

- 1. If cold idle speed was adjusted, install air cleaner backplate. See AIR CLEANER, INSTALLATION, in the appropriate FLT Models Service Manual.

If cold idle speed adjustment was not necessary, remove air cleaner cover and filter. See AIR CLEANER, REMOVAL, in the appropriate FLT Models Service Manual.
- 2. Start vehicle and run until both engine and primary oil reach operating temperature (fully warm). Using the Scanalyzer, verify that engine temperature is at or above the temperatures listed in Table 2. This step is very important or adjustment will be incorrect.

Table 2. Operating Temperature (Fully Warm)

| Model | Temperature |
|-------------|------------------|
| Evolution | 284°F. (140° C.) |
| Twin Cam 88 | 250°F. (121° C.) |

CAUTION

To ensure proper charging at idle, maintain an idle speed of approximately 950-1050 RPM. Insufficient idle speed may drain the battery in excessive idle situations, resulting in insufficient voltage to the ECM, ignition coil and fuel pump (which can result in a variety of operating problems).

- 3. To adjust the warm-slow idle speed, locate the set screw through the hole in the air cleaner backplate (lower right corner of the intake air inlet). See Figure 2.

NOTE

For best results, use the Scanalyzer (HD-41325) or an external tachometer with an inductive pickup.

- 4. Using a T10 TORX drive head, set idle speed at 950-1050 RPM. Turn the set screw clockwise to increase OR counter-clockwise to decrease idle speed.
- 5. When idle speed is set, turn the Ignition/Light Key Switch to OFF.
- 6. Complete air cleaner installation. See AIR CLEANER, INSTALLATION, in the appropriate FLT Models Service Manual.

NOTE

Installation of air cleaner cover may affect idle speed.

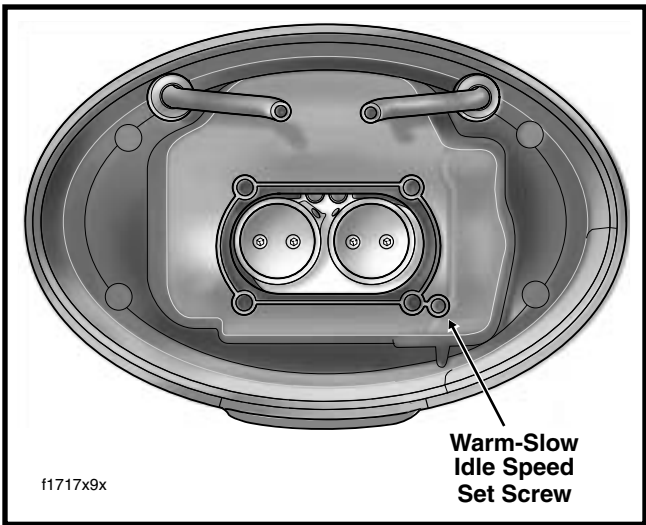


Figure 2. Air Cleaner Backplate

- 7. Verify correct idle speed after assembling air cleaner. Repeat adjustment procedure if necessary.

Following the final idle speed adjustment, remove both 5 amp and 15 amp fuses (ECM power and fuel pump) for at least one minute. See FUSES, REMOVAL, in the appropriate FLT Models Service Manual. This step is necessary to clear the ECM memory of the previously learned minimum throttle position.
- 8. Reinstall both 5 amp and 15 amp fuses. See FUSES, INSTALLATION, in the appropriate FLT Models Service Manual.
- 9. With the Engine Stop/Run Switch in the RUN position, turn the Ignition Light/Key Switch to ON, and wait until the CHECK ENGINE LAMP goes out.
- 10. Turn the Ignition Light/Key Switch to OFF and wait approximately 10 seconds for the ECM relay to disconnect. The idle speed control actuator stops in the extended position, and the Scanalyzer screen displays "No Response."
- 11. Start engine and run until both engine and primary oil are fully warm. Verify that engine temperature is at or above the temperatures listed in Table 2. Check that hot idle speed is 950-1050 RPM.
- 12. Turn the Ignition/Light key Switch to OFF. Unplug the Scanalyzer and install rubber plug into open end of Data Link Connector.
- 13. Align barbed studs in side cover with grommets in frame downtubes and push firmly into place (no tools required).
- 14. Install right side saddlebag. See SADDLEBAG, INSTALLATION, in the appropriate FLT Models Service Manual.

| ROUTING | SERVICE MANAGER | SALES MANAGER | PARTS MANAGER | LEAD TECHNICIAN | TECHNICIAN NO. 1 | TECHNICIAN NO. 2 | TECHNICIAN NO. 3 | TECHNICIAN NO. 4 | RETURN THIS TO: |
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| INITIAL HERE | | | | | | | | | |