

Off Road Engineering  
(949) 581 2991  
HIC1000  
Sprinter Van High Idle System  
2004-2006 2.7L Diesel Engine

## Overview

The HIC1000 is a two function high idle system. It interfaces with the vehicle's ECM to provide one preset high idle speed that can be manually engaged with the supplied "High Idle" switch, and a selectable battery charge protect mode that will monitor battery voltage and automatically engage high idle when the battery voltage drops below 13.0V for longer than 5 seconds.

If the vehicle's ECM does not have the constant rpm control feature enabled, it must be programmed by the dealer. Instructions for programming the ECM can be found on page 6 and 7.

Applying 12V to the "Manual On" terminal activates the high idle.

The battery charge protect mode is enabled when applying 12V ignition ON to the BCP terminal. If the charge protect mode is not enabled, the manual mode will still function.

The HIC1000 will sense the voltage applied at the 12V terminal when using the BCP (battery charge protect) mode. When running a dual alternator/battery system connect the 12V terminal to the battery system to be monitored.

The "Low Voltage" led will start to flash when the battery voltage is sensed below 13V, after 5 seconds the high idle will engage and the led will stay lit. The led will also come on when the high idle is turned on manually.

If the high idle was engaged automatically due to low voltage, it can be turned off with the "High Idle" switch by pressing the switch ON, and then OFF. The high idle will then turn off, but if the voltage is still sensed below 13V for a period of 5 seconds the high idle will turn back on.

If the parking brake was released during high idle, the engine rpm will return to normal. The high idle will not turn back on after re-applying the parking. The HIC1000 must be reset by simply pressing the high idle switch twice.

The following vehicle conditions must be met to enable high idle:

- Parking brake applied
- Foot off service brake
- Vehicle in PARK (automatic transmission)
- Foot off clutch (manual transmission)
- Vehicle speed is 0 mph (stationary)

## Installation

Refer to the wiring Diagram on page 8

1. Disconnect the cable from the negative battery post.
2. Mount the HIC1000 module near the ECM which is located below the left knee protection adjacent to the steering column.
3. Connect ground and 12V to the HIC1000 module. ***The 12V Ign. must be off during engine cranking.*** Connect 12V ignition ON off during engine cranking to the BCP terminal to enable the battery charge protect mode.
4. Install the “High Idle” switch in a desired location, connect the black wire to ground, red wire to 12V ignition ON off during engine cranking, and the orange wire to the “Manual ON” terminal on the HIC1000.
5. Locate the PCM below the left knee protection adjacent to the steering column. You will need to run a wire from the ECM 58-pin plug-in connector (marked F) cavity # 8, to the HIC1000 module terminal labeled “ECM”. The green wire with the crimped terminal will be inserted into the connector.

Pull the ECM down at the connection side until it releases. Pull it forward and out of the mounting bracket.

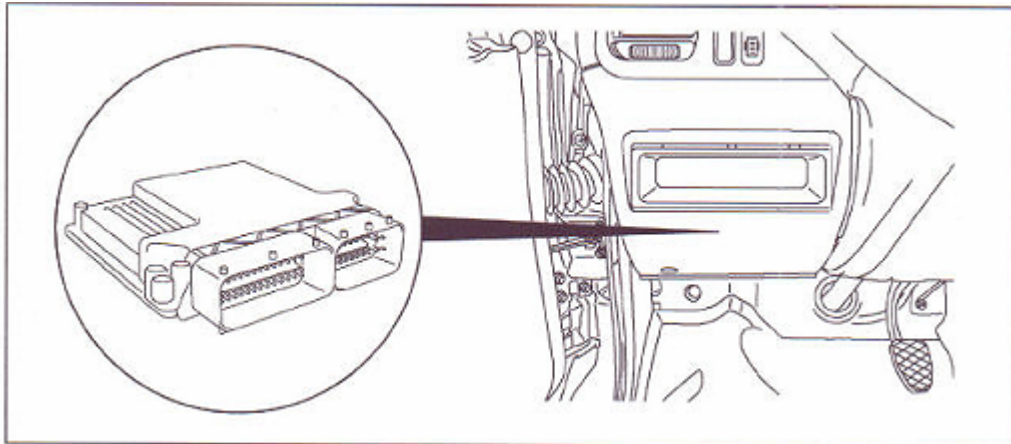


Figure 1. Location of the Engine Control Module (ECM)

6. Remove the 58-pin plug-in connector marked F from the ECM. To remove the plug-in connector, pull the slide lock sideways to the end of its travel and lift the plug-in connector.

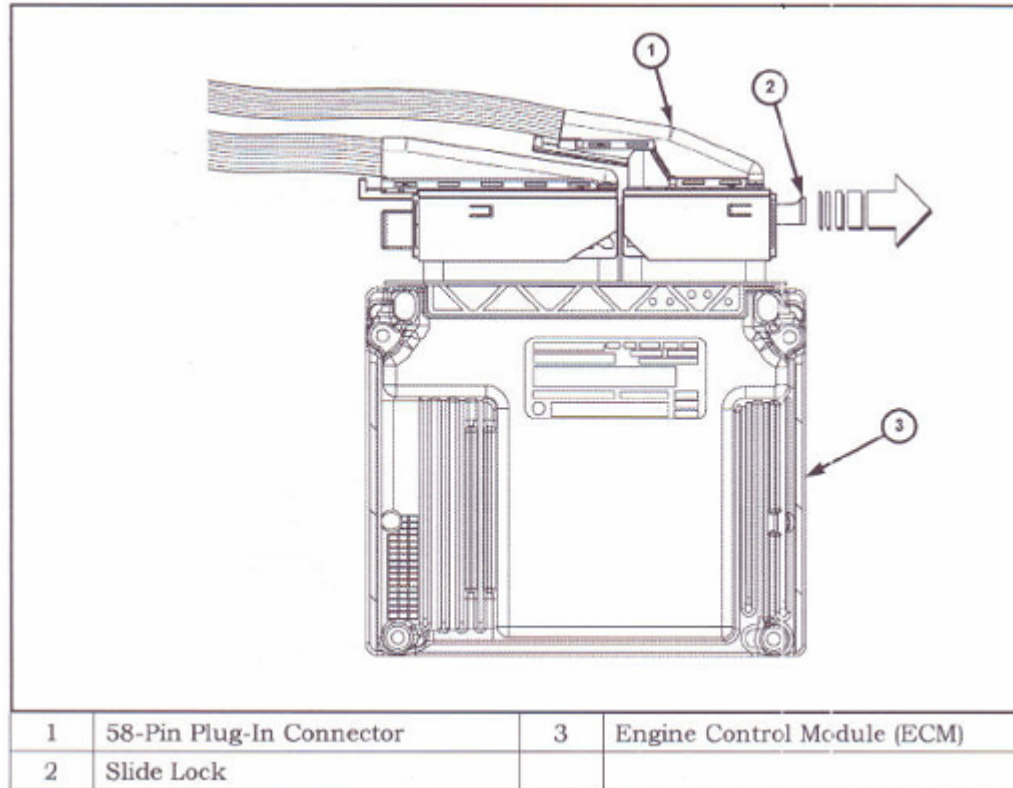


Figure 2. Vehicle Harness 58-Pin Plug-In Connector

- Carefully disassemble the plug-in connector to expose the wire insertion end of the connector. Remove the protective cap by inserting a wide blade screwdriver in the wedged area between the connector housing and protective cap (arrow). Alternating between both sides of the connector, gently twist on the screwdriver handle to separate the protective cap from the connector housing. Slide the protective cap away from the housing.

Note: If you require additional clearance for inserting the electrical wire with terminal, you may remove the electrical terminal holder. The electrical terminal holders are held in place with two locking pins. Carefully remove both locking pins with a small screwdriver and pull them out.

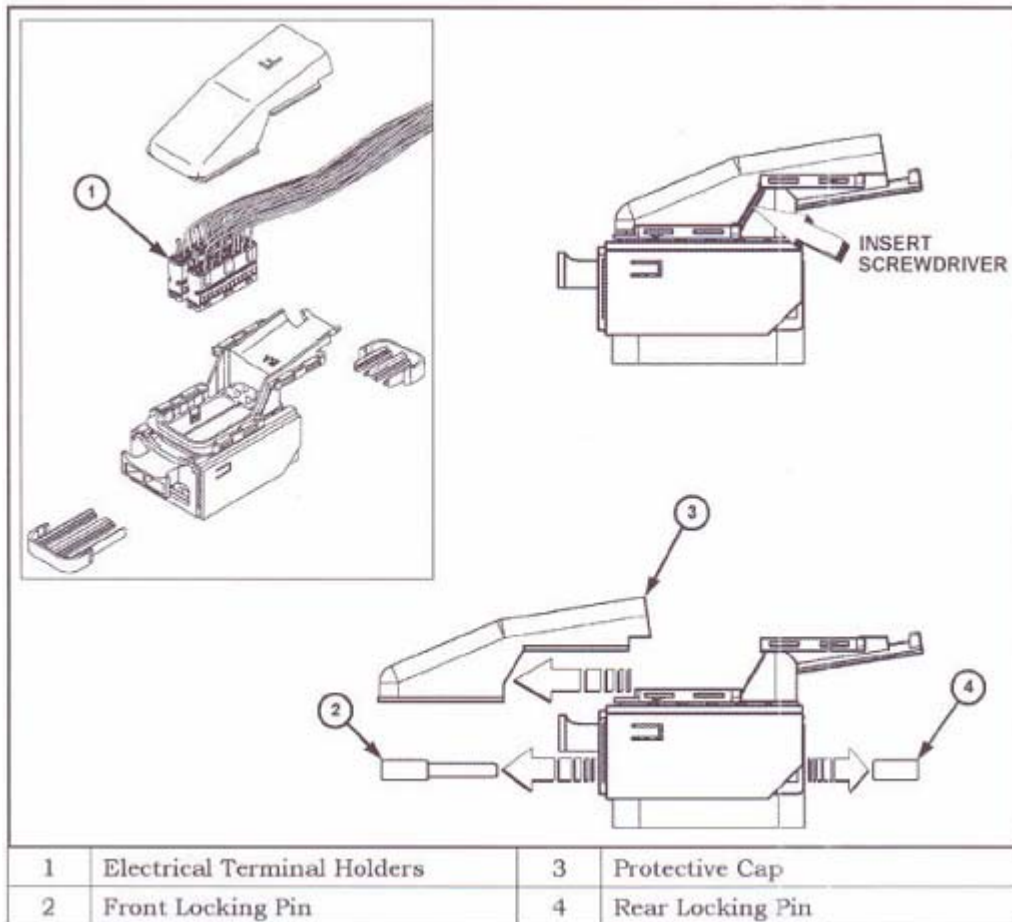


Figure 3. Vehicle Harness Connector Disassembly

8. Insert the green wire with the crimped terminal into cavity # 8 of the 58-pin connector of the ECM. Insert the wire until it clicks into place. **Gently** tug on the wire to make sure it is secure.

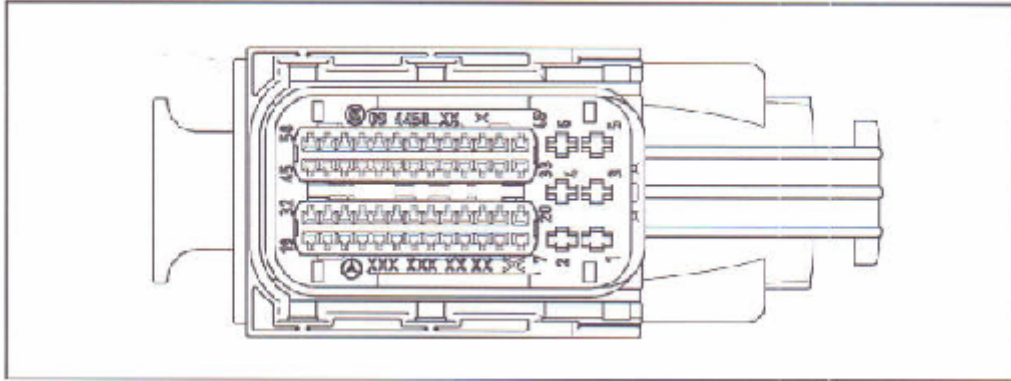
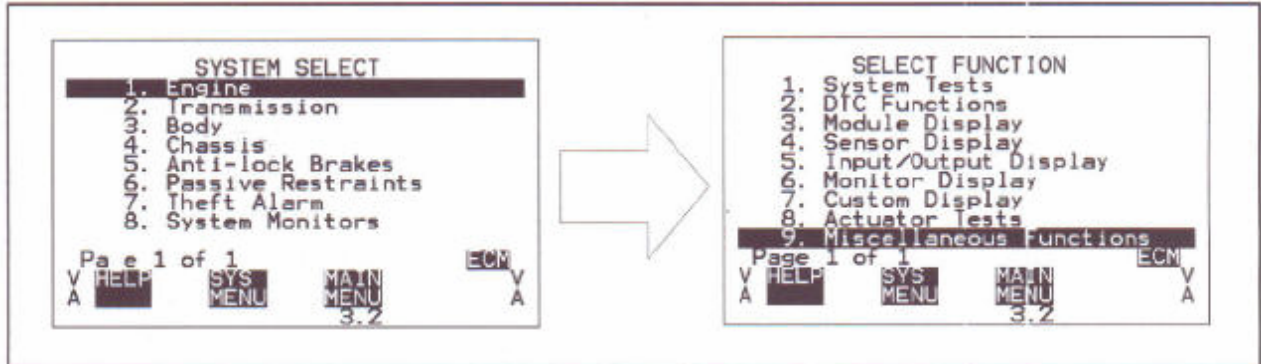


Figure 4. Vehicle Harness 58-pin Connector Front View

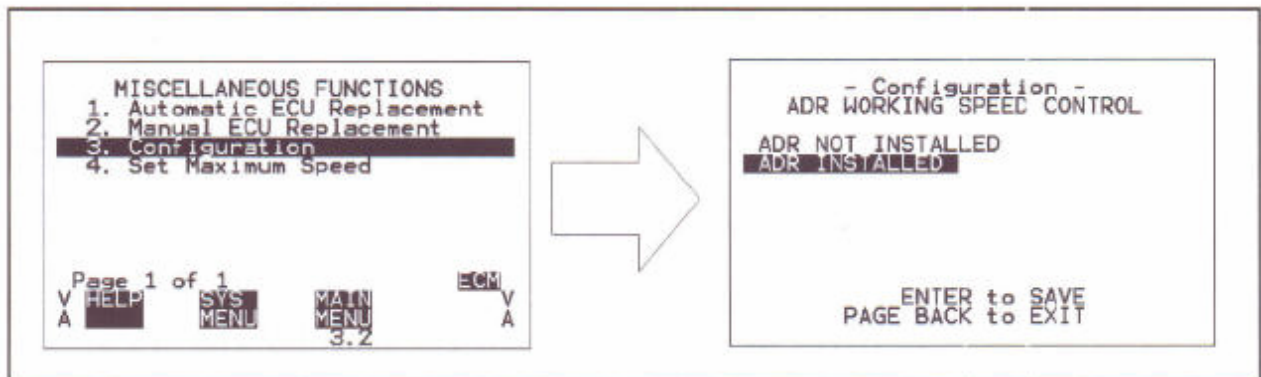
9. Reassemble the 58-pin connector. Install the connector back to the ECM and push the module back into its mounting bracket. Ensure the ECM is properly held in place by means of the tensioning spring clips.
10. Connect the other end of the green wire that was inserted into cavity # 8 of the ECM connector to the HIC1000 terminal labeled "ECM".
11. Reconnect the battery and code the radio if necessary.
12. Connect the DRB III scan tool. The following pages describe how to program the ECM to activate the constant rpm control feature.

## Programming the ECM with DRB III

1. Choose Engine in the System Select screen and Miscellaneous Functions in the Select Function Screen (figure 1).



2. Select Configuration in the Miscellaneous Functions screen. When asked, select ADR Installed (figure 2).



3. Switch the ignition OFF and wait for the progress bar to indicate the completion of the configuration process (figure 3)

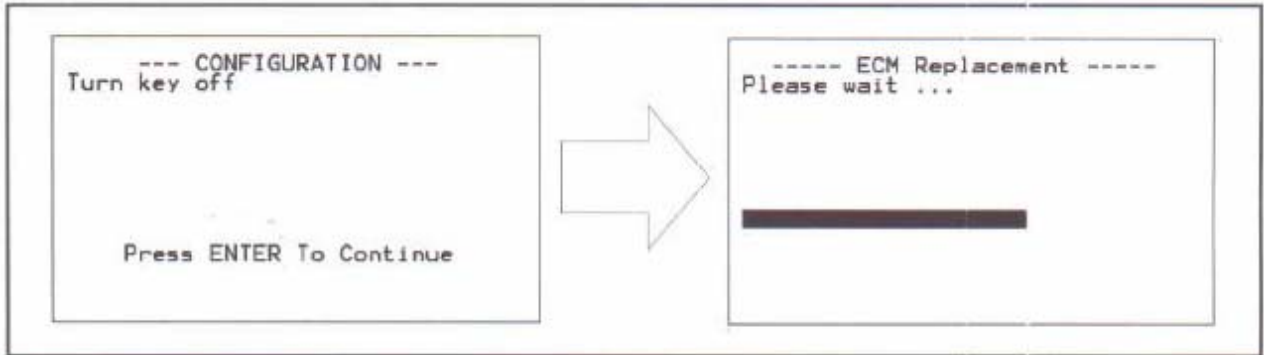


Figure 3. Key Off and Progress Bar Screens

4. Switch the ignition ON (figure 4). Verify the operation of the “High Idle” switch. Installation is now complete.

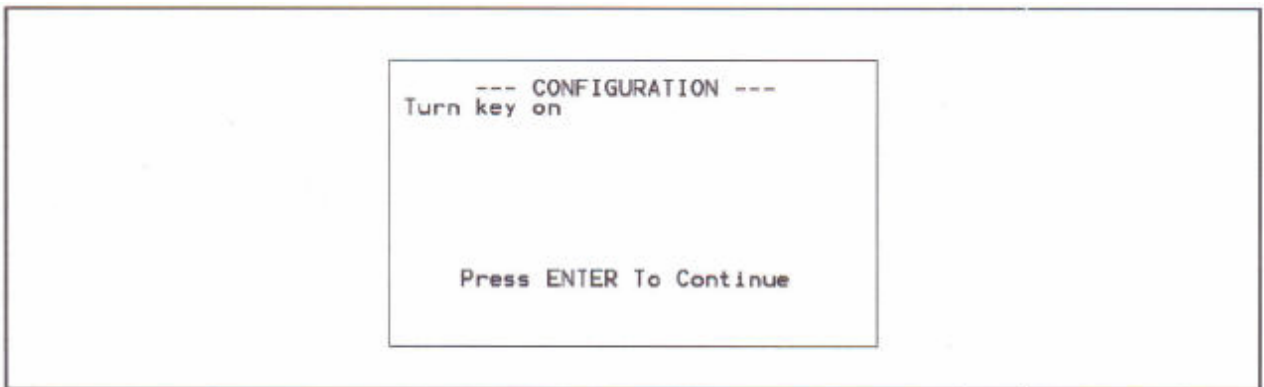


Figure 4. Key ON Screen

Note: If the engine speed does not go above 1000 rpm try the following procedure:

1. Go to Engine -> Misc functions -> Option 8 (Read ECM Coding)
2. After the engine coding data is displayed, press the PAGE BACK button.
3. Select option 4 (Speed Configurations)
4. The minimum and maximum working speed and the working speed increment should now appear. Select them to the allowed values.

Min = 1999 rpm

Max = 2000 rpm

Increment must be between 50 and 200 rpm.

# HIC1000 Wiring Diagram

