

General Service Bulletin (GSB):	F150 Auto Start-Stop Operation
GSB Overview:	This bulletin supplements Workshop Manual Description and Operation for Auto Start-Stop. Technical information provided will help Technicians determine when the function is working properly.
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

Introduction: The F-150 equipped with the 2.7L EcoBoost V6 includes Auto Start-Stop. Auto Start-Stop provides the following benefits:

- Improved fuel economy
- Reduced vehicle emissions

To provide the listed benefits, the system has some new operational characteristics which may lead to questions from new owners. The Owner Manual provides a detailed overview of Auto Start-Stop. This bulletin provides technical information to assist Technicians in understanding normal operation and prevent unnecessary diagnosis for normal system operation. Diagnostic information and procedures are provided in section 303-06 of the Workshop Manual.

Overview: Auto Start-Stop was designed to provide the listed benefits with minimal impact to the driving experience. There are certain conditions that have to be present to allow Auto Start-Stop to activate and stop the engine when the vehicle is stopped. Similarly, certain conditions inhibit activation when it would otherwise negatively impact the driving experience. Understanding the Auto-Stop activation requirements and driving experience-related system controls will provide Technicians and Service Advisors with an informed understanding of the technology. This understanding can aid in Auto Start-Stop discussions with owners/drivers.

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System Visible Indicators: All Auto Start-Stop equipped F-150 vehicles have the following indicators. (Figure 1) There are also system messages in the Instrument Cluster depending on the series level of the cluster installed.



Green indication: automatic engine stop occurs.



Grey indication: automatic engine stop is not available as one of the conditions that allows the engine to automatically stop is not met.



Flashing amber indication: the instrument cluster pops up instructions to start engine manually – error state as no automatic restart available.

Figure 1 System Indicators

Under normal operation the Green system indicator illuminates when the Auto Start-Stop is active (engine stopped by the system). The Grey indicator is present when one or more conditions are not being met, inhibiting auto start-stop. A flashing amber indicator indicates a system concern is present and the driver needs to restart the truck manually. Diagnostics need to be performed when the amber indication is present.

The driver has the option to disable the Auto Start-Stop using the deactivation switch on the top of the center console. (Figure 2) It is important to note that Auto Start-Stop will re-enable after every key cycle.

NOTE: There is no owner selectable or programmable option to disable Auto Start-Stop on a permanent basis.

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Figure 2

Auto Start-Stop Enable Inputs/Conditions:

- Vehicle stationary
- Accelerator Pedal released
- Brake Applied
 - o Brake pressure in system ~70 psi or greater (482 kpa)
 - o Brake On/Off Switch activated
- Gearshift lever position in "D" or Sport Mode
- Battery temp 41F (5C) to 140F (60C)
- If AC is on, the ambient temp should be less than 95F (35C)
- Road Grade <15% (as determined by ABS)
- Driver door closed and seat belt latched
- 110v AC Inverter under 10w electrical load
- Trailer Harness not connected
- Tow/Haul mode not active
- Truck not in 4x4 High or Low
- Electronic Locking Differential (if equipped) not engaged
- In car temp at or very close to preset EATC temp (not active if driver or passenger windows are down)
- Engine Temp >115F (46C)
- Max A/C or Defrost not selected
- Blower control is steady at one speed setting

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Auto Start-Stop Enable Inputs/Conditions (cont.):

- Rear Defrost is not selected
- Battery voltage greater than 11.3v
- Electrical load less than 65A
- Steering Wheel Angle less than 90 degrees from center position
- No Steering Wheel torque applied by driver
- ABS not active
- Brake Booster vacuum present
- Hill Start Assist is active (no ABS faults?)
- Automatic Transmission Temp less than 230F (110C)
- Fuel Level >1/8 full (low fuel warning not active)
- System restarts are limited to 10 without the vehicle speed exceeding ~2.5 mph (4 kph)

Truck Condition changes that may force a restart from an Auto Stop state :

- Battery voltage drops below 11.7v
- Brake pressure in system drops to less than 70 psi (482 kpa)
- Rear Defrost switched on (Restarts after 30 seconds)
- Blower Speed changed
- EATC temperature setting changed
- Gearshift lever position moved to any gear except "P" – Moving to Park will allow the shutdown to continue
- Accelerator pedal is pressed
- 110v Inverter electrical load greater than 10W added
- Vehicle electrical load increased to >70A with engine in Auto Stop

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Before Beginning Diagnosis: The discussion of vehicle conditions with the owner/driver is critical to ensure customer satisfaction. It is essential to differentiate normal system operation from a customer concern. There are many normal conditions that will enable or disable Auto Start-Stop function. The key is that the system was designed to minimize impact to the driver experience. The system requirements and responses are centered on providing the driver with a satisfactory experience. If diagnosis is required, refer to Workshop Manual section 303-06.

Additonal References:

F150 Auto Start – Stop Video Overview

http://fordtube.dealerconnection.com/video.php?video_key=bd8ed7a6405d3562638858b674cc6c70