



Countries:	CANADA, UNITED STATES	Document ID:	IK1201004
Availability:	ISIS, Bus ISIS, FleetISIS	Revision:	4
Major System:	ENGINES	Created:	10/28/2013
Current Language:	English	Last Modified:	11/21/2013
Other Languages:	NONE	Author:	Mark Ehlers
Viewed:	894		

[Less Info](#)

Hide Details

Coding Information

Copy Link	Copy Relative Link	Bookmark	Add to Favorites	Print	Provide Feedback	Helpful	Not Helpful
		 View My Bookmarks				 44	 0

Title: MaxxFace DT, 9 & 10 electric fuel pump diagnostic tips

Applies To: EPA 2010 MaxxFace DT, 9 & 10

DESCRIPTION

The EPA 2010 DT, 9 & 10 engines use a fuel module that incorporates many features, including an electric fuel pump and fuel pump strainer.

The fuel strainer can be seen when the pump is removed from the filter module. The strainer should be serviced at the filter replacement interval (30K miles / 43K Km / or 12 months). The strainer P/N is 1899335C91

-About 50% of the fuel pumps returned to Navistar are not defective ([click to see examples](#))

*Any part that is found to perform to the original manufacturer's specification is subject to chargeback of the entire claim amount

-Most low fuel pressure complaints are caused by a worn fuel pressure regulator valve & spring. A kit for this is available.

*Follow fuel system diagnostic procedure [here](#) (Hard Start and No Start Diagnostics > Special Test Procedures > Fuel System)

*The 2013 OBD version of the diagnostic manual is linked above and later in this article

-When this fuel pump fails it usually builds no pressure

The following are common causes of low fuel pressure. Each should be inspected / tested before replacing the electric fuel pump (in this order):

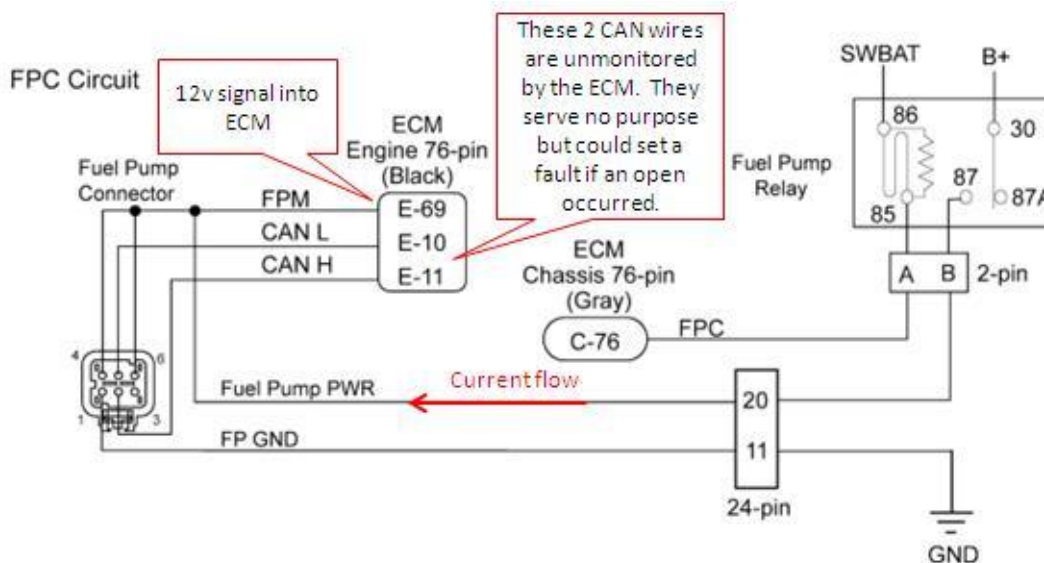
- Is the fuel filter plugged
- Is the pressure regulator valve is performing correctly- perform flow test in [diagnostic manual](#) (a kit is available from Parts to service this- the regulator for the 2010 is unique)
 - Step 14 of "fuel delivery pressure system check"
- Does the pump meet the pressure and flow specification listed in the [diagnostic manual](#)
- Is the fuel pump strainer restricted or plugged (replacement P/N 1899335C91)

- Do low fuel pressure diagnostic trouble codes exist indicating a performance issue related to fuel pressure (SPN 94)
- Is the pump is receiving 9 volts or more at pin 4 and pin 6 (see below)
- Does fuel inlet restriction exceed 8.14" Hg. / -4 psi, causing the pump to draw too much current and shut off or behave erratically (this could be cause by an intermittent fuel restriction in the fuel tank or anywhere in the line). Use ZTSE6009 adaptor to attach a vacuum gauge to the fuel inlet.

ELECTRIC FUEL PUMP OVERVIEW

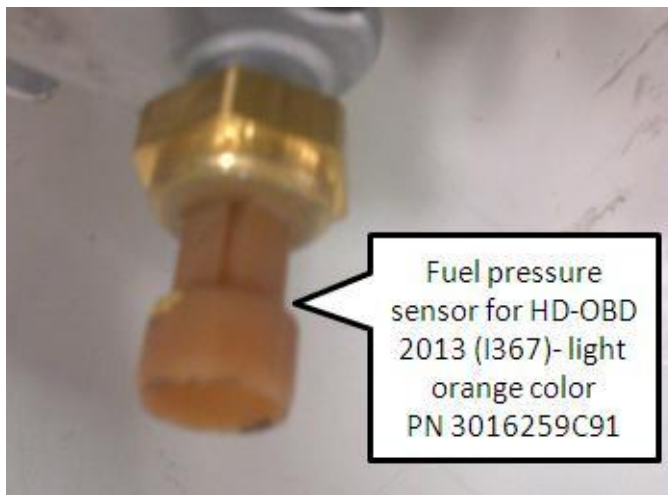
At key ON, the ECM closes the fuel pump relay (provides ground via pin [C-76](#)) and battery voltage is supplied to the pump. The pump will run for ten seconds (time varies with coolant temperature) and then shuts off. During the run time if the ECM does not detect crankshaft rotation it switches the fuel pump relay off. **The key must be OFF for at least 10 seconds and then cycled ON before the ECM will restart the fuel pump.**

The ECM receives a 12 volt signal on pin [E-69](#) that informs it that power is being provided to the fuel pump.



The pump is capable of operating from 9V to 14V and relies on a clean strainer (see image below) and a properly functioning regulator valve (serviceable) in order to maintain system pressure. The pump has internal overload protection that turns the pump off under overload (high current draw situations). High current draw can be caused by high inlet restriction or excessive fuel back pressure. When current limiting protection is triggered, the pump will cycle on and off causing the system pressure to fluctuate until the overload condition is resolved. The pump may eventually turn itself off. This situation can occur without a fault code being set. **When the ignition key is cycled OFF and ON the pump will restart.**

The ECM monitors the fuel delivery pressure sensor located on the bottom of the fuel filter housing. If the ECM determines that the pressure is low a diagnostic trouble code is set. EPA 2010 (I334) and HD-OBD 2013 (I367) use different fuel pressure sensors. **They cannot be interchanged.**



There are two fuel pressure test ports on the engine. The first port is a Compuchek and is located on the front of the filter module (unfiltered fuel pressure- see image below). The second port is a Schrader™ valve located on the front of the intake manifold (filtered fuel pressure). The Schrader port can also be used to bleed air out of the system. Note- Double check any below spec. pressure reading from this port as a poor connection can cause a low pressure reading (but fuel rail pressure could be ok).

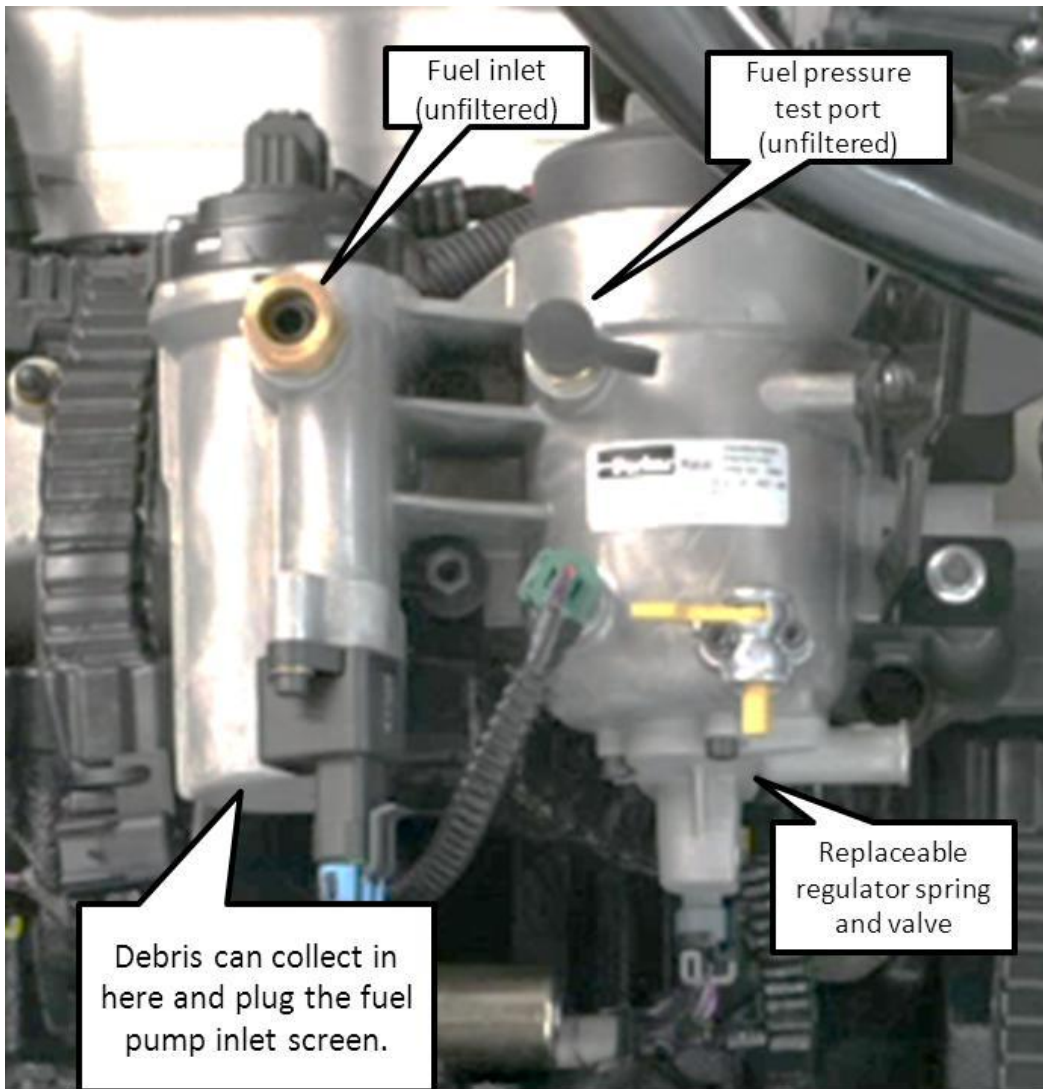
SYMPTOMS

Erratic engine performance, engine stall, hard start/ no start, low power complaints, low fuel pressure faults, aftertreatment fault codes relating to low fuel pressure

Likely causes:

- Clogged fuel pump strainer (see image below)
- Worn fuel pressure regulator valve (serviceable)
- Plugged fuel filter element
- High fuel inlet restriction caused by plugged strainer, kinked fuel line, fuel pickup tube interference with fuel tank bottom, or tank debris
- Low voltage to fuel pump

Common DTCs associated with an issue with the fuel pump are SPN 94-1 and 94-17. These codes can be caused by a variety of issues should be investigated before servicing the pump.







These vehicles need the strainers replaced

 Hide Details

Feedback Information

Viewed: 893

Helpful: 44

Not Helpful: 0

No Feedback Found

Copyright © 2013 Navistar, Inc.