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Coding Information

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Title: DAVCO Fuel Water Separator Conversion From Fuel Heated to Coolant Heated

Applies To: LT with A26 engines ONLY

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

1/05/2018 - Initial Article Release

DESCRIPTION

This document will guide the user through converting a Davco Fuel Pro 382 from fuel heated to coolant heated.

Special Tools / Software

Tool Description	Tool Number	Notes
Navistar Coolant Management Tool	KL5007NAV	Refer to LMS training coolant management tool

SYMPTOM(s)

Loss of power while driving, potential crank no start.

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
SPN 157 FMI 1 FCAP	Engine Fuel 1 Injector Metering Rail 1 Pressure Most Severe
SPN 157 FMI 18 FCAP	Engine Fuel 1 Injector Metering Rail 1 Pressure Moderate
SPN 2798 FMI 8 FCAP	Engine Fuel 1 Injector Group 2 : Abnormal Frequency Or Pulse Width Or Period
SPN 6653 FMI 18 FCAP	Engine Fuel 1 Injector Metering Rail 1 Cold Start Pressure : Data Valid But Below

Customer Observations or Concerns:

Possible MIL light, crank no-start. Loss of power. Unit may start normally but as soon as a load is put on the engine the filter may plug and lose prime.

SERVICE PARTS INFORMATION

Description	Qty.	Parker Part#	Navistar Part#	Weatherhead	Additional Options	Sourcing	Notes
Straight adapter fitting 9/16 to 3/8	2	6-3/8 F50G-S		A6405-6-6	103426DAV	Order From Davco	2 on the FWS
90 Degree 3/8 to 5/8 hose barb	1	6AFJ6	864456R1			Order From Nav.	1 on the FWS return side
Hose 3/8	4		2643504R1			Obtain Locally	Length = 3.5 ft.
Hose 5/8	6		2643485R1			Obtain Locally	Length = 5 ft.
DAVCO fuel filter	1		FS19765			Obtain Locally	Fuel Filter
90 degree 3/8 to 3/8 hose barb	1		444821C2	W05706B-C06	664601	Order From Nav.	1 on the FWS supply side
3/8 to 3/8 straight hose barb	1		3609113C1	W05710B-106		Order From Nav.	1 on the engine supply
M18 x 1.5 to 3/8 straight adapter	1			A7455-06-18			1 on the engine supply
M14 x 1.5 to 5/8 90 degree adapter	1		3989702C1			Order From Nav.	1 on coolant return manifold
Saddle	1		3554554C1			Order From Nav.	1 on return line
Zip ties	10		386170C1			Order From Nav.	Return side - crossmember
3/8 hose clamp	2		3588172C1			Order From Nav.	Supply line
5/8 hose clamp	2		2022866C1			Order From Nav.	Return line
P clips - 3/8 line	3		3564290C1			Order From Nav.	ECM mounting
Hose insulation	9		2000310C1			Order From Nav.	Length = 8.5 ft.
Winter front	1		ZEDWF3033			Order From Nav.	

DIAGNOSTIC STEP(s)

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

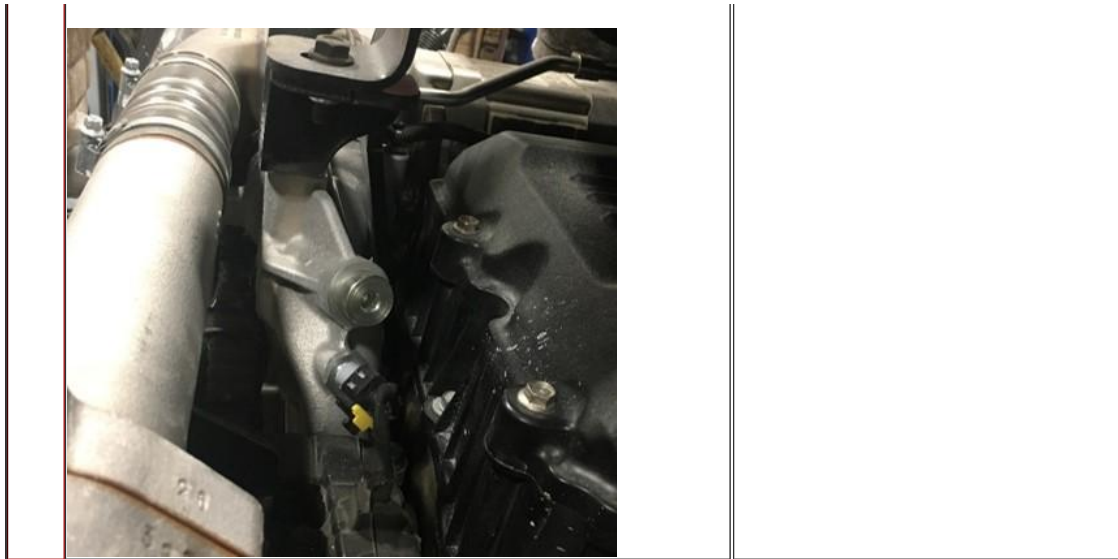
WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

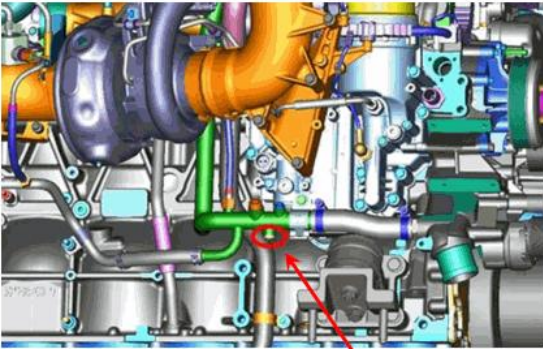
WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

Step	Supply Fitting Install	Process
1		1. Using the Coolant management tool drain coolant from the system. 2. Remove plug from engine coolant supply manifold in front of the valve cover and install 3609113C1 45 degree fitting. 3. Also shown in photo below is optional straight fitting.

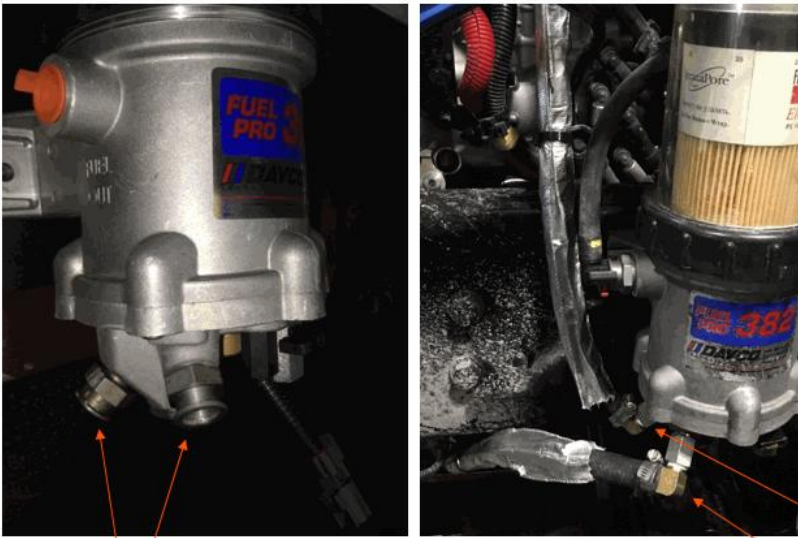


Step	Return Fitting Install	Process
2	 THIS IS THE RETURN PORT  Viewed from the top of the coolant manifold	1. Locate the bottom port on the coolant manifold located on the right side of engine. 2. Remove the plug and install 3989702C1 90 degree fitting with the hose barb orientated in the direction shown in the photo on the left.

Step	Drain and Remove Fuel Lines
3	

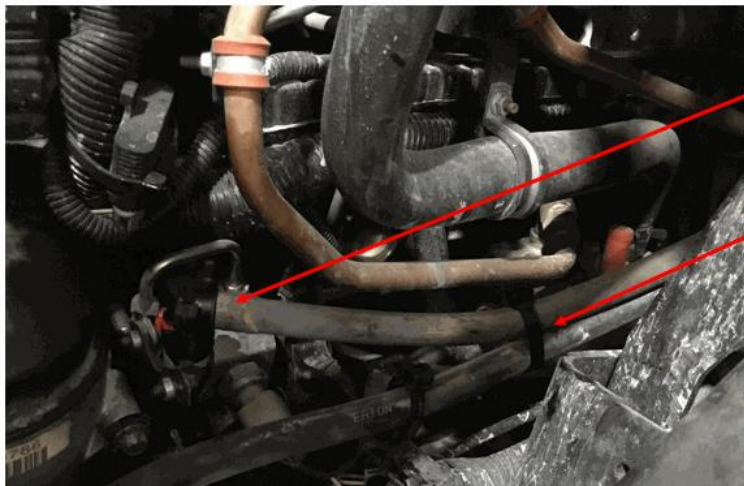
- Locate the DAVCO Fuel Pro on the drivers side of the engine. Using a drain pan to catch the fuel remove the return lines attached to the bottom of the DAVCO unit. These are Voss fittings and you will need to depress the red removal clip to remove.



Step	Remove and Install Fuel Line Fittings	
4	 Remove the STC Fittings	• Cut the return line tie straps. Remove both lines from the bottom of the DAVCO heater. • Remove the return fuel line from the engine to DAVCO and discard • Remove Voss STC Fuel Fittings. At the DAVCO flush the heater ports to ensure no fuel contamination. Use brake cleaner or water to wash out as much fuel as possible • Install the O-ring Fittings (Parker 6-3/8 F50G-S) and Barbed Fittings using thread sealant on the pipe thread • 3/8" supply fitting P/N 444821C2 needs to be installed on the frame rail side • 5/8 return fitting P/N 864456R1

Step	Fuel Line Install
5	

- The fuel return line from the DAVCO fuel filter to the fuel tank will need to be shortened and rerouted from the DAVCO to the engine fuel return port. There is a Voss quick disconnect fitting near the flywheel housing and this line can easily be removed.
- Remove the 90 degree Voss fitting from the fuel return line and cut the hose to length (Estimate hose length is 17"). Reinstall the 90 degree fitting (Reference PN 3559213C2), reinstall the line and connect it to the fuel return port on the engine.
- Install tie straps as needed to prevent rubbing



Shorten fuel return hose and connect it to the engine fuel return port

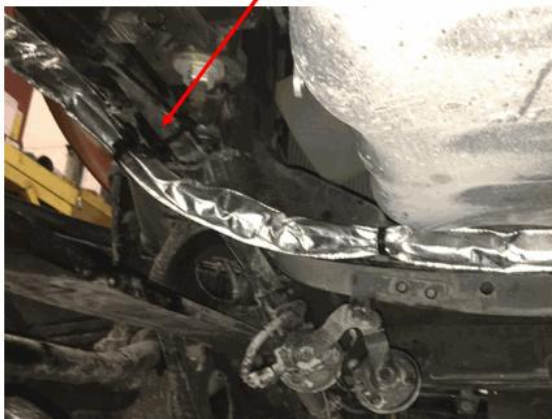
Secure with tie strap as needed

Step	Coolant Supply Line Routing
6	• You will need approximately 4' feet of bulk 3/8" heater hose • Install proper amount of hose insulation (2000310C1) over the hose • The general routing of the hose will be from the coolant supply port on top of engine, then secure it to the ECM mounting bracket – routed away from belts or other rotating components routed to the outside of the frame rail than attach to the 3/8" fitting on the fuel water separator. Use saddle clamp to secure to engine harness. • Use the 3/8" hose clamps and torque to standard torque. • Use zip ties and P clips to secure the hose and prevent rubbing (star indicates P additional clipping point).

Step	Coolant Return Line Routing

7

- Using the 5/8" bulk coolant hose you will need approximately 6 feet.
- Install insulation around hose. (2000310c1)
- Connect to the previously installed 5/8" fitting at the coolant return manifold located on the passenger side.
- Install 5/8" hose and route down underneath the engine and attach to the rear of the front engine cross member with tie straps
- After securing to the cross member route the hose between the spring and the bottom of the frame and secure the 5/8" barb at the DAVCO filter
- When routing and clipping – verify nothing will contact the hose, have any sharp bends or possible rub points.
- Using the saddle mount (3554554c1) clamp secure to the wiring harness to prevent rubbing between the two components – photo on the bottom left



Step	Finishing Steps
8	• Install a new fuel water separator filter (FS19765) and prime fuel system • Verify all parts are torqued and lines are properly routed. • Install coolant management tool and evac and fill • Top off reservoir so the reservoir is at the max cold level • Start engine and bring to operating temperature • Verify no leaks • Verify coolant reservoir is full again after initial engine operation • Re-install all previously removed components • Discuss with the driver the importance of using the following when it's extremely cold.: • Fuel additives • Switching up blends and running #1 diesel • Plugging the vehicle into 120V when parked (Engine block heater and fuel water separator are 120v heated)

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

[Voss Fuel Line Connector Repair Information](#)

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