

This Field Service Bulletin replaces, "FSB 221-010_V, Diagnostic Trouble Codes (DTCs), Low Oil Pressure", (USA71223) dated (08/2015).

Diagnostic Trouble Codes (DTCs), Low Oil Pressure
 VAH, VHD, VN
 D11H, D11J

FSB 221-010, Diagnostic Trouble Codes (DTCs), Low Oil Pressure

(May 2015)

Information

During long hard pull conditions, diagnostic trouble codes (DTC) SPN 100 FMI 1 or P052400 can log on certain VOLVO VAH, VHD and VN vehicles built between January 1, 2010 and March 30, 2015 with D11 engines. These DTC may occur during the conditions described in this bulletin, with or without an engine shut down lamp.

If there are no obvious signs of oil dilution, replace the pressure reduction valve, the oil cooler and the piston cooling jets using the procedure below. Also reprogram the engine control module if required based on the table below.

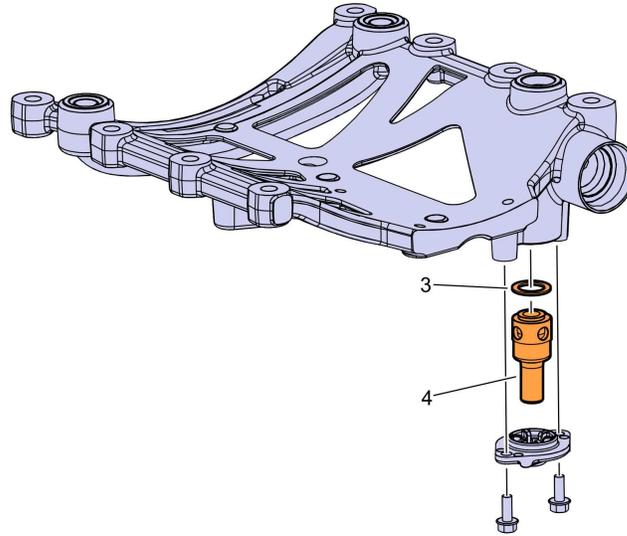
Note: Drain all engine oil into a clean container for reuse. Do not reuse engine oil if it is not reusable or the engine is due for normal oil change service.

Note: Check chassis repair history to determine if the repairs outlined in this bulletin have been previously done or not. If the updates outlined in this bulletin have not been done, continue with the repairs outlined in this bulletin. If all updates have been done and the engine is still faulting for low oil pressure, open an eService case to report the issue.

Service personnel: Please circulate, read and initial

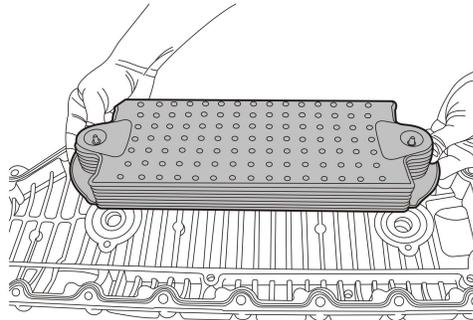
Service Manager	Warranty Administrator	Workshop Foreman	Service Technicians						

Required Parts



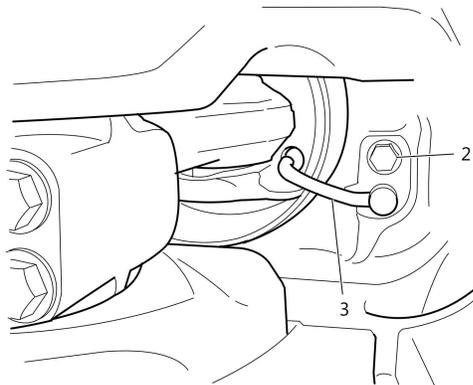
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Required Parts			
Item	Part Number	Description	Quantity
3	469846	O-Ring, Internal	1
4	22416685	Pressure Reduction (Relief) Valve, Purple	1



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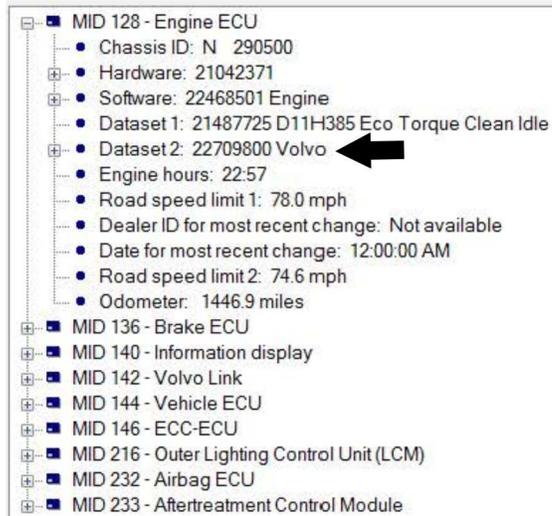
Part Number	Description	Quantity
85125094	Oil Cooler Kit	1
993664	O-Ring (substitute for 40471626 in oil cooler kit)	1
85116577	Turbocharger Installation Kit	1
85124530	EGR Cooler Kit	1



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Item Number	Part Number	Description	Quantity
2	994445	M8*16 Piston Cooling Nozzle Screws	6
3	22577447	Piston Cooling Nozzle	6

Check Engine Control Module Software Level



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US2010 and US2010 + 6 Control Unit Information

Data Set 2	US2010, January 1, 2010 to May 8, 2011	22494236 OR LESS	Proceed with software update
		22709800 OR HIGHER	No programming necessary
	US2010 + 6, May 9, 2011 to December 31, 2012	22488255 OR LESS	Proceed with software update
		22711498 OR HIGHER	No programming necessary

Control Unit	Product Data	Central Data	Hardware	Sub hardware	Software
Aftertreatment Control Module (ACM)	✓	✓	✓	✓	✓
Engine Control Module (EMS)	✓	✓	✓	✓	✓
Climate Unit (MID 146)	✓	✓	✓	✓	✓
Airbag ECU (MID 232)	✓	✓	✓	✓	✓
Vehicle ECU (MID 144)	✓	✓	✓	✓	✓
Outer Lighting Control Unit (LCM) (MID 216)	✓	✓	✓	✓	✓

Details (Engine Control Module (EMS))

Software		
	Product Data	Central Data
MSW Part No.	22578179	22578179
Data Part No.	22548964	22548964
Data Part No.	22549032	22549032
Data Part No.	22578183	22578183

W2103596

OBD 2013, US2014 (GHG) and OBD2015 Control Unit Information

Main Software Part Number	Period	22578179 OR LESS	Proceed with software update
		OBDD2013, January 1, 2013 to December 31, 2013	22672845 OR HIGHER
US2014 (GHG), January 1, 2014 to December 31, 2014	22572317 OR LESS	Proceed with software update	
	22665159 OR HIGHER	No programming necessary	
OBDD2015, January 1, 2015 to March 30, 2015	22616341 OR LESS	Proceed with software update	
	22644015 OR HIGHER	No programming necessary	

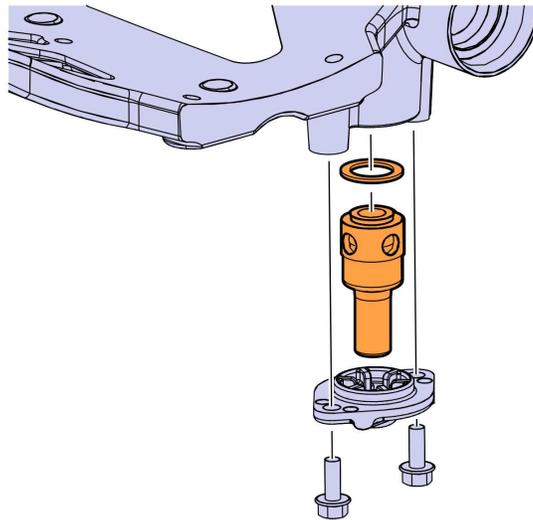
Procedure

You must read and understand the precautions and guidelines in Service Information, Function Group 20, "Engine Safety Practices" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

DANGER

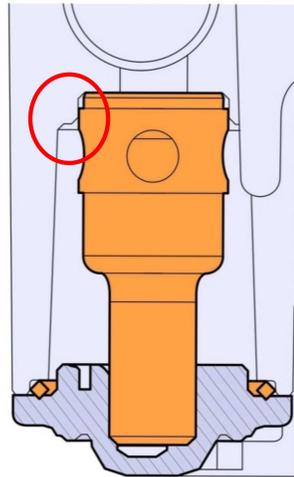
Do not attempt to repair or service this vehicle without having sufficient training, the correct service literature and the proper tools. Failure to follow this could make the vehicle unsafe and lead to serious personal injury or death.

- 1 Secure the vehicle for service by parking it on a flat level surface, applying the parking brake, chocking the rear wheels, and placing the transmission in neutral or park.
- 2 Disconnect all battery cables from the negative (ground) battery terminals to prevent personal injury from electrical shock and prevent damage to electrical components.
- 3 Remove the oil pan. Refer to Function Group 21.
- 4 Remove and replace the pressure reduction (relief) valve in the oil valve body and replace the internal O-ring. Tighten cover fasteners to 10 ± 2 Nm (88 ± 17 in-lbs).



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Note: Make sure the valve is fully seated and the cover close to the valve housing prior to threading in the retaining screws. Otherwise the valve can make contact with the edge just ahead of the seating surface and damage the valve. Do not use power tools to install this valve. Do **NOT** disturb the pressure reduction valve located in the oil filter housing.



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- 5 Remove and replace the piston cooling nozzles. Refer to Function Group 22. Replace the single use screws. Tighten the new piston cooling nozzle screws to 24 ± 3 Nm (18 ± 2 ft-lb).
- 6 Remove and replace the oil cooler. Refer to Function Group 22.
- 7 Install the oil pan. Refer to Function Group 21.
- 8 Refill the engine oil to the proper level.
- 9 Reconnect all previously removed cables to the negative (ground) battery terminals.
- 10 Reprogram the engine control module if required based on the reference table. Refer to Function Group 28
- 11 Start engine, check for leaks and proper operation. Clear any DTC.

Reimbursement

This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.

VOLVO Trucks North America engages in a comprehensive program of testing and evaluating to provide the best possible product. VOLVO Trucks North America however, is not committed to, or liable for updating existing vehicles.