SERVICE MANUAL

F5
Tier 4B (final) and Stage IV
Engine

See the following page for engine model numbers

CNH INDUSTRIAL

Part number 47730922
1st edition English
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MidWestTech | New Holland F5 Tier 4B, Stage IV F5BFL413A*B001, F5BFL413A*B003, F5BFL413A*B007, F5BFL413A*B009, F5BFL413D*B002, F5BFL413D*B003, F5BFL413F*B002, F5BFL413F*B003, F5DFL463A*F007, F5DFL463A*F013, F5DFL463A*F014, F5DFL463A*F019, F5DFL463A*F020, F5DFL463B*F003, F5DFL463B*F004, F5DFL463B*F006, F5DFL463C*F001, F5DFL463C*F002, F5DFL463C*F004, F5GFL413A*B003, F5GFL413A*B004, F5GFL413A*B006, F5GFL413A*B007, F5GFL413A*B012, F5GFL413A*B013, F5HFL463A*F001, F5HFL463A*F002, F5HFL463A*F003, F5HFL463A*F004, F5HFL463A*F005, F5...
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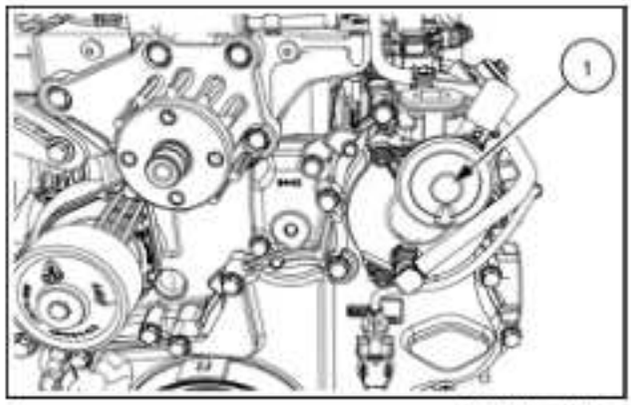
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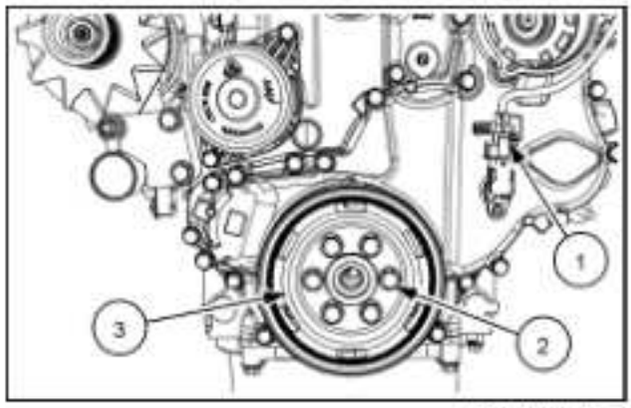
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Engine block cover Front - Remove

1. Remove the crankcase ventilation system **(1)**. Refer to **Crankcase ventilation system - Remove (10.304)** for the proper procedure.



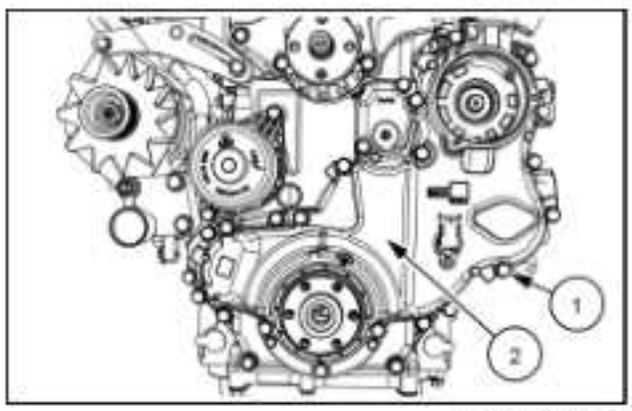
2. Remove the crankshaft pulley bolts **(2)**.
3. Remove the crankshaft pulley **(3)**.
4. Remove the connector for the camshaft sensor **(1)**.



5. Remove the cover retaining bolts **(1)**.

NOTE: *Take note of the bolt size and location.*

6. Remove the front cover **(2)**.



Next operation:
Engine block cover Front - Install (10.102)

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Engine coolant temperature sensor - Technical Data

Specifications	
Voltage	6 - 28 V
Working temperature range - Connector's side - Engine side	 -40 - 130 °C (-40 - 266 °F) -40 - 140 °C (-40 - 284 °F)

Coolant Temperature	Resistance Value
-20 °C (-4 °F)	10.5 kOhm
0 °C (32 °F)	7500 ohms
20 °C (68 °F)	4200 ohms
40 °C (104 °F)	980 ohms
60 °C (140 °F)	780 ohms
80 °C (176 °F)	500 ohms
100 °C (212 °F)	280 ohms
120 °C (248 °F)	97 ohms

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Excessive white or grey deposits

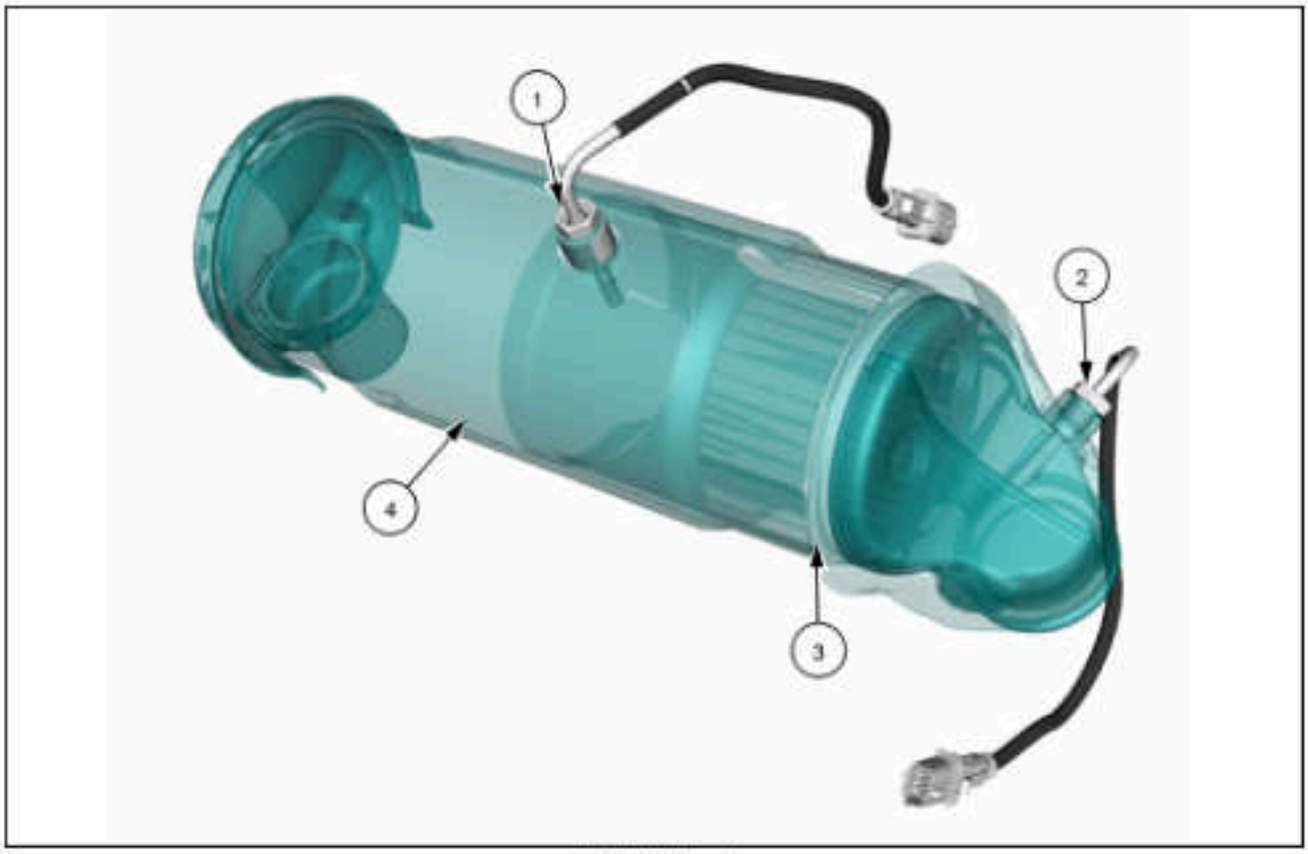
- Another common cause of premature failure of sensor probes is contamination of fuel with silicones (used in some sealing and greases) or silicates (used as corrosion inhibitors in some antifreeze). In this case, the deposits on the sensor are colored between shiny white and grainy light gray.
- Excessive deposits such as these indicate that fuel additives are being used or the engine is burning oil.
- Certain components in fuel, and oil additives can contaminate the sensor element.



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Particulate Matter (PM) catalyst - Dynamic description



NHSL1SENG0158FA 1

(1) Particulate Matter (PM) catalyst inlet temperature sensor	**(3)** Diesel Oxidation Catalyst (DOC)
(2) Diesel Oxidation Catalyst (DOC) inlet temperature sensor	**(4)** Particulate Matter (PM) catalyst

The PM-Catalyst operates on the principle of continuous passive regeneration of soot with Nitrogen dioxide (NO2). The Nitric oxide (NO) to NO2 conversion occurs over the DOC at temperatures between **220.0 - 450.0 °C** (**428.0 - 842.0 °F**). In passive regeneration the soot oxidation temperature is lowered to a level allowing for auto-regeneration during regular vehicle operation. The engine management system will be tuned (throttle valve closure, rail pressure adjustment, boost pressure adjustment etc.) in order to ensure that the temperatures are sufficiently high to sustain continuous passive regeneration. A minimum NO_x to PM ratio of 30:1, or greater will be necessary for acceptable passive regeneration. Higher NO_x/PM ratios result in higher NO2 concentrations and better filter regeneration.

See **Exhaust Gas Recirculation (EGR) exhaust treatment - Overview (10.501) for emission standards.**

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