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Service Information Bulletin

SUBJECT	DATE
Description and Operation of the Two-Stage Valve - Two-Filter System	May 2013

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0082	DD Platform	Description and Operation of the Two Stage Valve - Two-Filter System	Updating pressures.

13400 Outer Drive, West, Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.demanddetroit.com

2 Description and Operation of the Two Stage Valve - Two-Filter System

Internal to the high pressure fuel pump is a two-stage valve. The excess fuel from the quantity control valve and high pressure fuel pump is routed past the two-stage valve. The two-stage valve has a number of tasks:

- It is closed at pressures in the low pressure circuit below 3 bar (43 psi) for KM59 GEN1 or below 5 bar (72 psi) for KM63 GEN2, relative to the high pressure pump backflow pressure. This will ensure best filling for the pumping elements under cranking speed where low pressure pump flow is low.
- It guarantees lubrication of the high pressure fuel pump components if the pressure in the low pressure circuit is above 3 bar (43 psi) for KM59 GEN1 or above 5 bar (72 psi) for KM63 GEN2, relative to high pressure pump backflow pressure.
- It ensures that in overrun conditions the pressure at the inlet to the high pressure pump is limited by opening of the backflow path. This function avoids pressures above burst pressure level of the filter module. If the pressure at the high pressure pump inlet exceeds 4.7 bar (68 psi) for KM59 GEN1 or exceeds 7.25 bar (105 psi) for KM63 GEN2, relative to backpressure, excess fuel is routed to the return path.

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Figure 1. Two-Stage Valve

