

VOLVO CARS
SERVICE AND PARTS BUSINESS



Technical Journal

TITLE:

Improved fault tracing for fuel distribution system (PEM)

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FUNC GROUP:
2340

FUNC DESC:
Fuel tank, fuel lines, evaporator system

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“Right first time in Time”

Attachment

Vehicle Type

| Type | Eng | Eng Desc | Sales | Body | Gear | Steer | Model Year | Plant | Chassis range | Struc Week Range |
|------|-----|----------|-------|------|------|-------|------------|-------|-----------------|------------------|
| 5XX | 38 | | | | | | 2004-2010 | | 0000295-0514413 | 200338-201019 |
| 5XX | 39 | | | | | | 2005-2010 | | 0000295-0514301 | 200420-201019 |
| 5XX | 67 | | | | | | 2008-9999 | | 0000295-9999999 | 200720-999952 |
| 5XX | 68 | | | | | | 2004-2008 | | 0000295-0058153 | 200339-200819 |

CSC Customer Symptom Codes

| Code | Description |
|------|---|
| 1Q | Driving/Poor performance/lacks power/At take off |
| AJ | Driving/Poor performance/lacks power |
| AK | Driving/Hesitates/surges/Unsure when/at all times |
| AL | Driving/Hesitates/surges/During acceleration |
| AM | Driving/Hesitates/surges/During deceleration |
| BB | Driving/Engine stalls/Unsure when/at all times |
| AP | Idling/Engine stalls/Unsure when/at all times |
| 7A | Starting/Engine stalls |
| AA | Starting/Engine does not start/Engine turns |
| AB | Starting/Engine hard to start/cranks slowly/Unsure when/at all times |
| BJ | Starting/Engine does not start/Unsure when/at all times |
| DL | Warning lights and chimes/Malfunction Indicator Light ("Check engine" light) indication/no indication |



VST Operation Number

| VST Operation Number | Description |
|----------------------|--|
| 36001-2 | Diagnostic Trouble Codes, read / reset. DTCs in VIDA |
| 28466-3 | Engine Control Module, fault tracing DTC |
| 28411-2 | Fuel pump control module, replace |

DTC Diagnostic Trouble Codes

| Control Module | Code | Fault Type |
|----------------|------|------------|
| ECM | 2120 | Permanent |
| ECM | 2100 | Permanent |
| ECM | 291A | Permanent |
| ECM | 260A | Permanent |
| ECM | 2600 | Permanent |
| ECM | 2610 | Permanent |
| ECM | 261A | Permanent |
| ECM | 291B | Permanent |
| ECM | 291C | Permanent |
| ECM | 291D | Permanent |
| ECM | 2800 | Permanent |
| ECM | 280B | Permanent |
| ECM | 280C | Permanent |
| ECM | 280D | Permanent |
| ECM | 2900 | Permanent |
| ECM | 290B | Permanent |
| ECM | 290C | Permanent |
| ECM | 290D | Permanent |
| ECM | 962A | Permanent |
| ECM | 961A | Permanent |
| CEM | 3A04 | Permanent |
| CEM | 3A05 | Permanent |
| CEM | 3A07 | Permanent |
| CEM | 3A08 | Permanent |

Rows beginning with * are modified

Note! If using a printed copy of this Technical journal, first check for the latest online version.

Text

CSC = Customer Symptom Code

DTC = Diagnostic Trouble Code

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***NOTE! THIS DOCUMENT SUPERSEDES THE PREVIOUS TECHNICAL JOURNAL 25477 DATED 2014-03-28. Prior approval is no longer needed for PEM replacements. PLEASE UPDATE YOUR FILES.**

DESCRIPTION:

Analysis of replaced PEM's (Pump Electronic Modules) from the field have shown to have no errors. To prevent faulty replacement and repeat repair please follow this document.

For more information, please see component and function descriptions in VIDA, Design and Function section 2 Engine with mountings and equipment - > 28 Ignition and control systems -> 284 control system, fuel supply.

SERVICE:

Fault tracing steps:

Diagnostic Trouble Codes (DTCs) for fuel distribution related faults (customer complaints related to Check Engine Light (CEL) illuminated):

1. If any of following DTC's are set (after following the Vida fault tracing and checking the wiring harness, connectors and fuse/relay) the PEM may be at fault:

CEM 3A04, 3A05, 3A07, 3A08
or
ECM 2610 (B5244S4/B5244S7/B5244T7)
or
ECM 2120 (engine B5244S4/B5244S7/B5244T7)
or
ECM 291B, 291C, 291D (engine B5254T3 2004)

2. The PEM may be at fault if any other ECM DTCs, related to fuel distribution (e.g. fuel trim, fuel pressure sensor, fuel pressure control etc.), are stored.

However, all possible causes in listed VIDA instructions first have to be investigated.

If any of the following DTC's are stored, the fuel pressure sensor should be investigated first:

ECM 2600, 2600A (engine B5244S4/B5244S7/B5244T7)
or
ECM 2100 (engine B5254T3 MY2004)
or
ECM 2800, 280B, 280C, 280D (engine B5254T7/B5254T3 MY2005-)

If any of the following DTCs are stored, the fuel pump should be investigated first:

ECM 261A (engine B5244S4/B5244S7/B5244T7)
or
ECM 291A (engine B5254T3 MY2004)
or
ECM 2900, 290B, 290C, 290D (B5254T7/B5254T3 MY2005-)



Before determining that the PEM is at fault, quick test of the fuel pressure system (engine B5254T7/B5254T3) or test of fuel pump (engine B5244S4/B5244S7/B5244T7) should be performed, you can find this in VIDA Repair -> Cleaning, Inspection and Adjustment -> Section 2 Engine with mountings and equipment -> 23 Fuel system -> 238 Control system and Fuel system pressure, checking.

If wiring harness connectors and fuse/relay related faults have been dismissed and the quick test proves that there is a fault, then the PEM should be replaced.

Customer complaints related to crank-no start/long crank time and/or engine stall/hesitation:

If the customer complaint is related to crank-no start/long crank time, engine stall, or engine hesitation and if there are no DTC's set, then follow basic fault tracing based on the symptom (e.g. fuel level check, fuel pressure check, check for proper spark at the plugs, etc.) If any fuel distribution related DTC's mentioned above are stored, please follow instructions in point 1 and 2. If all diagnostic is ok PEM replacement should be the correct repair.

For all DTC's, frozen values and DTC counters first have to be investigated. Wiring harness, connectors and fuse/relay related faults need to be checked first.

In all other cases, PEM replacement is the wrong remedy and will most likely end up with repeat repair. Instead, please follow VIDA instructions to find other possible causes to solve the issue.