



Countries: CANADA, UNITED STATES Document ID: IK1201279  
Availability: ISIS, Bus ISIS, FleetISIS, Body Builder Revision: 1  
Major System: ENGINES Created: 3/18/2015  
Current Language: English Last Modified: 5/20/2015  
Other Languages: NONE Author: Dan Myers  
Viewed: 194

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|           |                    | Coding Information                    |                  |       |                  |         |             |
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Title: VT365 Engines - Fault Code 327 (SPN 110 FMI 2)

Applies To: 2004 - 2006 VT365 Engines

## CHANGE LOG

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

03/18/2015 - Draft  
04/03/2015 - revise snapshots  
04/13/2015 - Initial Article Release  
04/20/2015 - Add DTC info

## DESCRIPTION

This document provides Diagnostic and Repair Procedures for Active Fault Code 327 (SPN 110 FMI 2).

## SYMPTOM(s)

| DTC/Light          | Description                                          |
|--------------------|------------------------------------------------------|
| 327 SPN 110 FMI 2  | Unlisted diagnostic fault code                       |
| 325 SPN 110 FMI 14 | Power reduced, matched to cooling system performance |

### Customer Observations or Concerns:

- EWL comes on
- EWL may cycle on/off
- Engine de-rate

## SPECIAL TOOL(s) / SOFTWARE

| Tool Description |
|------------------|
| EZ Tech          |
| ServiceMaxx      |
| Interface        |

## SERVICE PARTS INFORMATION

| Kit Description | Part Number                          | Quantity Required |
|-----------------|--------------------------------------|-------------------|
| Cooler, Oil     | See Parts Online for appropriate ESN | As Needed         |

## **DIAGNOSTIC STEP(s)**

### **Conditions to meet for Fault Code 327 (SPN 110 FMI 2) to come active**

DTC 327 (SPN 110 FMI 2) is set by the ECM when ECT or EOT exceeds 107 °C (225 °F). At this temperature, the ECM will reduce fuel to the engine to reduce heat produced. For each Celsius degree of temperature increase, fuel will be reduced 6%. As the temperature drops below 107 °C (225 °F) and the DTC will become inactive and normal engine operation is resumed.

DTC 327 (SPN 110 FMI 2) is set when EOT exceeds ECT by the allowable limit for eight seconds or more. ECT or EOT must be above 75 °C (168 °F) before this feature is active.

DTC 327 (SPN 110 FMI 2) is also set whenever the Amber Warning Light is illuminated by another fault code. It is important to the Health Report to determine if DTC 327 (SPN 110 FMI 2) has been set by an event or as a result of another fault code.

Figure A below shows typical EOT & ECT behavior

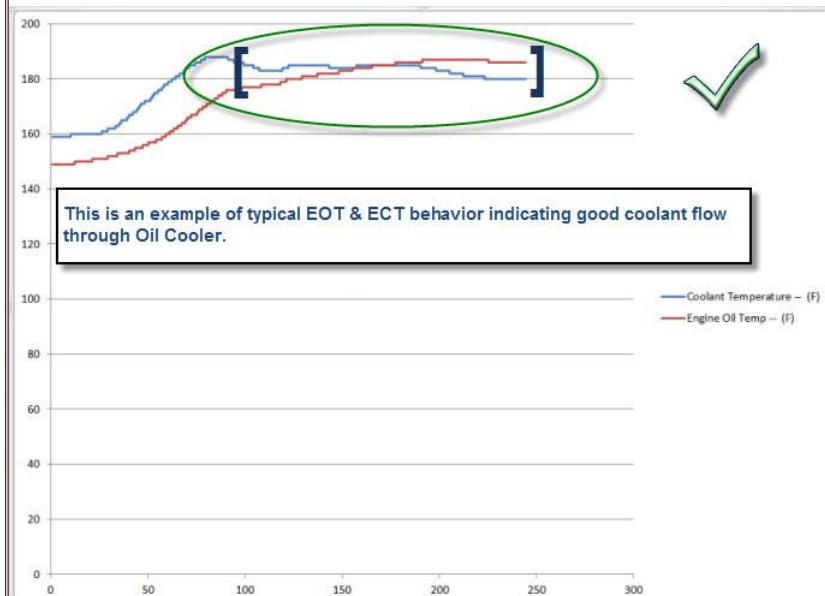
Figure B below shows EOT exceeding 107 °C (225 °F) thus triggering an Active 327 (SPN 110 FMI 2)

| Step | Action                                                                                                                                                                                                                             | Decision                                                                                                                          |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| #1   | Are any Engine codes active <u>other</u> than 327 (SPN 110 FMI 2)? <ul style="list-style-type: none"> <li>• Use ServiceMaxx to compare EOT &amp; ECT readings.</li> <li>• Use the examples below to aid in diagnostics.</li> </ul> | <b>Yes.</b> Refer to Engine Diagnostic Manual EGS-240 > Appendix B-Diagnostic Trouble Code Index > Diagnostic trouble code index. |
|      |                                                                                                                                                                                                                                    | <b>No.</b> Go to Step 2                                                                                                           |

### **Normal Engine Oil & Engine Coolant Temperatures**

| Step | Action | Decision |
|------|--------|----------|
|------|--------|----------|

Are your results similar to this example?



#2

fig A

**Yes.** Refer to Engine Diagnostic Manual EGS-240 > Engine Symptoms Diagnostics > Coolant Over-Temperature Test.

**No.** Go to Step 3

### Engine Oil Temperature Exceeds 107 °C (225 °F)

| Step | Action                                                                                                                                                                                                                                                                                                                                                          | Decision                                                                                                                                                                                                                                                                          |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #3   | <p>Are your results similar to this example?</p> <p>EOT exceeds 107 °C (225 °F) triggering DTC 327 (SPN 110 FMI 2) and reducing fuel delivery (loss of power) indicating restricted coolant flow through Oil Cooler.</p> <p>Fault code sets - Engine derates</p> <p>— Coolant Temperature -- (F)<br/>— Engine Oil Temp -- (F)<br/>— Active DTC Count -- (I)</p> | <p><b>Yes</b> Replace oil cooler following the procedure in Engine Service Manual EGES-2952 &gt; Oil Cooler and Filter Housing &gt; Removal.</p> <p><b>No.</b> Refer to Engine Diagnostic Manual EGS-240 &gt; Engine Symptoms Diagnostics &gt; Coolant Over-Temperature Test.</p> |

fig B

| Step | Action | Decision |
|------|--------|----------|
|------|--------|----------|

|    |                                                 |                                                                                                               |
|----|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| #4 | Is fault code 327 (SPN 110 FMI 2) still active? | Yes. Refer to Engine Diagnostic Manual EGS-240 > Engine Symptoms Diagnostics > Coolant Over-Temperature Test. |
|    |                                                 | No. Repair Complete.                                                                                          |

## WARRANTY INFORMATION

### Warranty Claim Coding:

|               |                   |
|---------------|-------------------|
| <b>Group:</b> | 12000 - Engines   |
| <b>Noun:</b>  | 686 - Cooler, Oil |

### Standard Repair Time(s):

| Description                  | Chassis                       | Engine | SRT        | Hours |
|------------------------------|-------------------------------|--------|------------|-------|
| Oil Cooler assembly, replace | All Models<br>(Excludes 1000) | VT365  | A12-3280   | 5.7   |
| Oil Cooler assembly, replace | 1000                          | VT365  | A12-3281   | 6.5   |
| with Air Conditioning        | All Models                    | VT365  | A12-3280-1 | 0.2   |
| with Air Compressor          | All Models                    | VT365  | A12-3280-2 | 0.2   |
| Oil Cooler, replace          | All Models                    | VT365  | A12-3280-3 | 0.3   |

## OTHER RESOURCES

[TSI 09-12-12R](#)

[VT365 Diagnostic Manual](#)

[VT365 Service Manual](#)

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