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**WARRANTY INFORMATION LETTER**

<b>No.</b>	<b>WI21-013</b>
<b>Release</b>	05/10/2021
<b>Effective</b>	05/10/2021
<b>Subject</b>	Heavy Duty Aftertreatment Failure Guide Worksheet - Replaces ATD Checklist

❖ **Overview**

This letter supersedes Warranty Information letter 18-021R about Detroit one box /diesel particulate filter (DPF) aftertreatment device (ATD) failure modes.

In the spirit of continuous improvement, the Warranty Department is aligning to the Heavy Duty Aftertreatment (HD ATS) Failure Guide (DDC-SVC-MAN-0208) and updating what information is necessary on claims for Detroit one box failures.

❖ **Using the HD ATS Failure Guide**

The HD ATS Failure Guide streamlines procedures for diagnosing the root cause of an ATS failure and determining the primary failed part (PFP). The guide is designed to lead a technician through diagnostic activities until a PFP is identified and includes five (5) possible checklists. Technicians will not complete the entire guide for each failure. While the technician is working through the guide, the results of each section are documented on the ATS Failure Guide Worksheet (located in Section 15 Appendix A > 15.1).

The ATS Failure Guide Worksheet is used to record all of the steps performed by the technician while completing the failure guide. The worksheet also lists applicable Standard Diagnostic Times (SDTs). Checklists and SDTs are below, see page 2 of this letter for samples of a checklist and the ATS Failure Guide Worksheet.

Checklist <sup>1</sup>	SDTs
Degraded Selective Catalytic Reduction (SCR) Checklist	246-046AE
Previous Failure Checklist	246-046BE
ATS Duty Cycle Checklist	246-046CE
Upstream Failure Checklist	246-046EE
DPF Maintenance Checklist	246-046DE

<sup>1</sup> Keep on file, must be available upon request.

Note: The Detroit Tech Comm team retired the ATD Checklist. Though some legacy references remain in the service literature, the links direct users to the HD ATS Failure Guide, which replaces all other previously released documentation.

❖ **Filing Claims**

During claim creation, select the PFP based on the technician’s findings from using the HD ATS Failure Guide. Add the SDT associated with the completed checklist. Provide details about completed steps/results leading to PFP determination in the claim narrative or attach a copy of the ATS Failure Guide Worksheet to the claim.

❖ **Accessing the Guide**

Access the HD ATS Failure Guide through the Technical Literature portal on [DTNAConnect](#).

**WARRANTY INFORMATION LETTER**

Verify latest version online; access Warranty Information Letters at [DTNAConnect > Warranty Lit > Warranty Letters](#).

*DISCLAIMER: The information contained in this letter supersedes and supplements any related policies and procedures in the Warranty Manual and/or previously released letters. Failure to read or distribute this letter will not exempt addressees from compliance with the information contained herein.*

**Samples: ATS Failure Guide Worksheet and Upstream Failure Checklist**

ATS Failure Guide Worksheet		ESN: <u>2016020799</u>																																																				
Note this worksheet should be used to track your progress and not used as diagnostic steps.		Mileage: <u>607 000</u>																																																				
Were any codes of interest identified in Fault Code History (Data Mining), DiagnosticLink®, or Vehicle Technician?		Date: <u>06/20/17</u>																																																				
1. Identifying Fault Codes of Interest <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Yes</td> <td style="width: 20%; text-align: center;">No</td> </tr> <tr> <td></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>				Yes	No		<input checked="" type="checkbox"/>	<input type="checkbox"/>																																														
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List fault codes identified: <span style="font-size: x-small;">#code #short #short #short</span>																																																						
2. ATS Duty Cycle <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 60%;"></th> <th style="width: 15%;">Life to Date</th> <th style="width: 15%;">Monthly</th> <th style="width: 10%;">Trip Data</th> </tr> <tr> <td>Percentage of Driving Regenerations</td> <td style="text-align: center;">89%</td> <td style="text-align: center;">89%</td> <td style="text-align: center;">89%</td> </tr> <tr> <td>Average vehicle speed</td> <td style="text-align: center;">57</td> <td style="text-align: center;">57</td> <td style="text-align: center;">57</td> </tr> <tr> <td>Average drive load</td> <td style="text-align: center;">48%</td> <td style="text-align: center;">48%</td> <td style="text-align: center;">48%</td> </tr> <tr> <td>Idle percentage</td> <td style="text-align: center;">27%</td> <td style="text-align: center;">27%</td> <td style="text-align: center;">27%</td> </tr> <tr> <td>Percentage of operation above 30 mph (Vehicle Speed Histogram)</td> <td style="text-align: center;">86%</td> <td></td> <td></td> </tr> <tr> <td>Percentage of operation above 1,200 rpm and below 1600 RPM (Engine Speed Histogram)</td> <td style="text-align: center;">87%</td> <td></td> <td></td> </tr> <tr> <td>Percentage of operation above 1,200 rpm and below 1800 RPM (Engine Speed Histogram)</td> <td style="text-align: center;">20%</td> <td></td> <td></td> </tr> <tr> <td>Percentage of operation below 1,200 rpm (Engine Speed Histogram)</td> <td style="text-align: center;">87%</td> <td></td> <td></td> </tr> <tr> <td>Percentage of operation above 1,800 rpm (Engine Speed Histogram)</td> <td style="text-align: center;">0%</td> <td></td> <td></td> </tr> <tr> <td>Percentage of operation above 20% engine load (Engine Load Histogram)</td> <td style="text-align: center;">61%</td> <td></td> <td></td> </tr> <tr> <td>Is the ATS Duty Cycle within the optimal range?</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">No</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>				Life to Date	Monthly	Trip Data	Percentage of Driving Regenerations	89%	89%	89%	Average vehicle speed	57	57	57	Average drive load	48%	48%	48%	Idle percentage	27%	27%	27%	Percentage of operation above 30 mph (Vehicle Speed Histogram)	86%			Percentage of operation above 1,200 rpm and below 1600 RPM (Engine Speed Histogram)	87%			Percentage of operation above 1,200 rpm and below 1800 RPM (Engine Speed Histogram)	20%			Percentage of operation below 1,200 rpm (Engine Speed Histogram)	87%			Percentage of operation above 1,800 rpm (Engine Speed Histogram)	0%			Percentage of operation above 20% engine load (Engine Load Histogram)	61%			Is the ATS Duty Cycle within the optimal range?	Yes	No			<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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5. Mark the checklist completed and PFF identified <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">✓</td> <td style="width: 20%; text-align: center;">PFF</td> </tr> <tr> <td>Degraded SCR Checklist</td> <td style="text-align: center;">SDT 246-046AE</td> <td></td> </tr> <tr> <td>Previous Failure Checklist</td> <td style="text-align: center;">SDT 246-040BE</td> <td></td> </tr> <tr> <td>ATS Duty Cycle Checklist</td> <td style="text-align: center;">SDT 246-090CE</td> <td></td> </tr> <tr> <td>DPF Maintenance Checklist</td> <td style="text-align: center;">SDT 246-040DE</td> <td></td> </tr> <tr> <td>Upstream Failure Checklist</td> <td style="text-align: center;">SDQ 246-046EE</td> <td style="text-align: center;"><input checked="" type="checkbox"/> Fuel Injectors</td> </tr> </table>				✓	PFF	Degraded SCR Checklist	SDT 246-046AE		Previous Failure Checklist	SDT 246-040BE		ATS Duty Cycle Checklist	SDT 246-090CE		DPF Maintenance Checklist	SDT 246-040DE		Upstream Failure Checklist	SDQ 246-046EE	<input checked="" type="checkbox"/> Fuel Injectors																																		
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Upstream Failure Checklist	
This checklist should only be completed if the following criteria is met: <ul style="list-style-type: none"> <li>If fault codes of interest have been identified</li> <li>If ATS Duty Cycle is optimal</li> <li>If proper DPF maintenance has been followed</li> <li>If no previous related repairs have been identified</li> </ul>	
Do not complete this checklist unless directed here from another area. Prior to replacing the aftertreatment, perform the following checks to ensure no other issues are present.	
8. <input type="checkbox"/> Inspect <b>GHG17 DI In Chassis™</b> <b>EPA10/GHG17 DI Recirculation Turbocharg</b> <b>EPA10/GHG17 Cooler Wat</b>	NOTE: Complete steps in numerical order. If any of the items below have been previously inspected during this visit, do not inspect a second time. <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Inspect for a plugged or restricted air filter; refer to OEM guidelines. <i>none found</i></li> <li>2. <input type="checkbox"/> Inspect the Delta P ports for plugging (EPA10 only).</li> <li>3. <input type="checkbox"/> Allow the engine and ATS to fully cool down to ambient temperatures. At Key On, Engine Off (KOEO), compare all the temperature readings to each other to identify a drifted sensor reading. Engine temperature readings should be within 15°F (8°C) of each other. ATD temperatures readings should be within 45°F (25°C) of each other.</li> <li>4. <input type="checkbox"/> Using DiagnosticLink, check the ATS pressure sensors. At KOEO, DPF and DOC pressure sensor voltages should read between 0.44 to 0.56 volts. <i>all passed</i></li> <li>5. <input type="checkbox"/> Using DiagnosticLink, check pressure sensors.                             <ul style="list-style-type: none"> <li>Oil Pressure Sensor</li> <li>Fuel Rail Pressure Sensor</li> <li>Intake Manifold Pressure Sensor</li> <li>Low Pressure Fuel Sensor</li> <li>Fuel Compensation Pressure Sensor</li> <li>Fuel Doser line Pressure Sensor</li> <li>DOC Inlet Pressure Sensor</li> <li>DPF Pressure sensor (EPA10/GHG14)</li> </ul>                             The pressure sensors above should read within 10.3 kPa (1.5 psi) of barometric pressure; all other sensors will read zero at KOEO. <i>all passed</i> </li> <li>6. <input type="checkbox"/> Check for sticking rear engine brakes. Using DiagnosticLink, monitor fuel mass at idle. Fuel mass should be less than 40 mg/st at idle; a value greater than 40 mg/st would indicate the rear engine brakes are sticking. <i>not sticking</i></li> <li>7. <input type="checkbox"/> Visually inspect the fuel for signs of contamination at the filters, tanks and water drain bowl. <i>none found</i></li> <li>8. <input type="checkbox"/> Test the EGR cooler. <b>GHG17 DD15/16 refer to section "Testing of the DD15 and DD16 Exhaust Gas Recirculation Cooler – In Chassis™"</b></li> </ol>
9. <input type="checkbox"/> Inspect <b>101-012EE EPA10/GHG17 Actuator™</b>	
10. <input type="checkbox"/> If equipped with <b>101-012EE EPA10/GHG17 Actuator™</b>	
11. <input type="checkbox"/> Check for temperature show a temp comparing (cooler than)	
NOTE: The fuel steps one through	
12. <input type="checkbox"/> Check the <b>GHG17 ref EPA10/GHG17 EPA10/GHG17</b>	
13. <input type="checkbox"/> Check the <b>GHG17 ref EPA10/GHG17 EPA10/GHG17</b>	
14. <input type="checkbox"/> If none of the likely causes progressive damage to the ATS. In this scenario the fuel injectors should be replaced. If the fuel injectors are under warranty submit a completed copy of the ATS Failure Guide Worksheet with the fuel injector warranty claim. If replacing injectors add SRTs 102-6100E plus 102-6101E 0.4 Hrs (x5).	

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