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Major System:	ENGINES	Created:	1/8/2014
Current Language:	English	Last Modified:	2/16/2014
Other Languages:	NONE	Author:	Jay Weston
Viewed:	3409		

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Coding Information

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Title: 190-0 Engine Overspeed Vehicle Event Fault

Applies To: 2010 MaxxForce 11,13,15, N13

CAUTION:To prevent engine damage, do not attempt to start the engine until a full engine analysis and all diagnostic steps have been completed.

Fault Overview

Fault can be set when the vehicle is in motion and engine speed reaches 2600 rpm with no fuel being requested by the Engine Control Module (ECM) illuminating a Red Stop Engine Light and Malfunction Indicator Lamp. Once the vehicle is at 0 mph the ECM will initiate a protection strategy. The Engine Throttle Valve (ETV) and Exhaust Gas Recirculation (EGR) valve will close and the fuel injectors will be disabled. The Fuel Pressure Control Valve (FPCV) will open to relieve fuel rail pressure in case of injector tip damage. A complete full engine analysis needs to be completed to assess damage due to excessive engine speed before the engine can be started.

Condition / Description	Setting Criteria	Enable Conditions / Values	Time Required
Detection of engine overspeed and set a fault when the engine speed is above a threshold for a calibratable amount of time	Engine Speed Exceeds 2600 rpm with no fuel being requested	<ul style="list-style-type: none"> • Key Switch ON • Engine Speed > 2600 rpm for 1 sec. for MIL Reaction. 10 sec. for Red Stop Engine light reaction. 	1 Event

Malfunction Indicator Lamp (MIL) Reaction

The Malfunction Indicator Lamp and Red Stop Lamp will illuminate when the fault is detected.

Note: Before beginning diagnostics:

- **Submit Health Report – Do Not update the calibration at this time**
- **Take pictures of all damage for failure evidence**
- **Do not replace any parts until complete inspection has been completed**
- **Make sure the calibration is up to date at the end of the repair.**

Related fault codes:

NOTE: In the event of other fault codes logged the 190-0 Engine Overspeed Most Severe Level should be diagnosed FIRST.

Code	Description	Action
731 - 18	Knock Detected: Unexpected Fueling without Demand	Continue with 190-0 diagnostics
731 - 16	Knock Detected: Cylinder Acceleration above Normal	Continue with 190-0 diagnostics

Diagnostic Steps below:

Step	Action	Decision
1	Visual inspection of Turbo Outlet Pipe <ul style="list-style-type: none"> • Remove turbo outlet pipe • Remove CAC outlet pipe Is there excessive oil coming from the High Pressure Turbo?	Yes: Proceed to <u>Step 2.</u>
		No: Interview driver <ul style="list-style-type: none"> • When did the fault occur • How was the truck operating when the fault occurred • Save Freeze Frame Data from 190-0 fault code • Save Vehicle Trip Report • Submit Case File to Big Bore Tech Support and attach the Vehicle Trip Report, Freeze Frame Data, and the answers above.
2	Visually inspect external engine block for damage Has block damage occurred?	Yes: Document Damage with Pictures. Open an iApprove for Complete Engine, Block or Crankshaft Replacement. iApprove is located on the Vehicle Information Page, iApprove Tab. Attach Freeze Frame Data and Pictures to case file
		No: Proceed to <u>Step 3.</u>

3	<p>Connect to ECM using Engine Service Tool (EST)</p> <ul style="list-style-type: none"> • Open Vehicle Trip report Located under Sessions/Vehicle Trip Report /Trip Data in ServiceMaxx • Reference PID 58071 Trip Maximum Engine Speed. 	For RPM's ranging 2600 to 3200 Proceed to Step 4.
		For RPM above 3200 proceed to Step 5.
4	<p>For RPM 2600 to 3200: What is the RPM recorded?</p> <ul style="list-style-type: none"> • Drain oil and remove oil pan. • Inspect Block and Liners for signs of damage. <p>Has block damage occurred?</p> <p>Note: When removing oil pan Debris can be seen due to the failure of the turbo.</p>	<p>Yes: Document Damage with Pictures. Open an iApprove for Complete Engine, Block or Crankshaft Replacement. iApprove is located on the Vehicle Information Page, iApprove Tab. Attach Freeze Frame Data and Pictures to case file</p>
		<p>No: <u>NOTE: THE FOLLOWING REPAIRS DO NOT NEED APPROVAL FROM TECH SERVICES</u></p> <ul style="list-style-type: none"> • Verify that oil has not reached the DOC. If it has the DOC and DPF need to be removed to drain. (Refer to Open TSI's and Service Manual and for procedure). iApprove will need to be started if damage has occurred. Location of the iApprove on the Vehicle Information Page, iApprove Tab • Reinstall oil pan and refill (Refer to Open TSI's and Service Manual and for procedure). • Replace all 6 injectors (Refer to Open TSI's and Service Manual and for procedure). • Replace Turbo Center Section (Refer to TSI 13-12-05R1 for procedure). • Clean CAC (Refer to TSI-13-12-17R1) • Proceed to Step 6.
5	<p>For RPM above 3200</p> <ul style="list-style-type: none"> • Drain oil and remove oil pan. • Inspect Block and Liners for signs of damage. <p>Has block damage occurred?</p> <p>Note: When removing oil pan Debris can be seen</p>	<p>Yes: Document Damage with Pictures. Open an iApprove for Complete Engine, Block or Crankshaft Replacement. iApprove is located on the Vehicle Information Page, iApprove Tab. Attach Freeze Frame Data and Pictures to case file</p>

	<p>due to the failure of the turbo.</p>	<p>No: <u>NOTE: THE FOLLOWING REPAIRS DO NOT NEED APPROVAL FROM TECH SERVICES</u></p> <ul style="list-style-type: none"> • Verify that oil has not reached the DOC. If it has the DOC and DPF need to be removed to drain. (Refer to Open TSI's and Service Manual and for procedure). iApprove will need to be started if damage has occurred. Location of the iApprove on the Vehicle Information Page, iApprove Tab • Reinstall oil pan and refill (Refer to Open TSI's and Service Manual and for procedure). • Replace all 6 injectors (Refer to Open TSI's and Service Manual and for procedure). • Replace Turbo Center Section (Refer to TSI 13-12-05R1 for procedure). • Replace Water Pump (Refer to Open TSI's and Service Manual and for procedure). • Clean CAC (Refer to TSI-13-12-17R1) • Proceed to Step 6.
6	<p>Check Calibration Level</p> <ul style="list-style-type: none"> • Reference the Health Report/Connection tab in ISIS on the Vehicle Information page. 	<p>Yes :Diagnostics Complete</p> <hr/> <p>No: Update Calibration</p>

Is the calibration up to date?

NOTE: IF THE DIAGNOSTIC STEPS PROVIDED DO NOT ASSIST IN TROUBLE SHOOTING A 190-0 FAULT CODE PLEASE SUBMIT A CASE FILE TO TECH SERVICES EXPLAINING THE ISSUE THAT YOU HAVING.

Possible Part Numbers Needed

Part Number	Part Description	Quantity
3012753Cx	TUBE HI PRESS RAIL TO INJCTR 1	1
3006042Cx	TUBE HI PRESS RAIL TO INJCTR 2	1
3005678Cx	TUBE HI PRESS RAIL TO INJCTR 3	1
3005679Cx	TUBE HI PRESS RAIL TO INJCTR 4	1
3012757Cx	TUBE HI PRESS RAIL TO INJCTR 5	1
3012758Cx	TUBE HI PRESS RAIL TO INJCTR 6	1
3005763C9x	Tube HI PRESS PUMP TO RAIL	1
3007640C9x	KIT FUEL INJECTOR	6
2511792C9x	KIT, HP TURBO CARTRIDGE	1

3005741C9x	TUBE ASM, OIL SUPPLY TURBOCHARGER	1
1820907Cx (If needed)	RING, "O" #118 .862" X .965"	1
3007644C9x	KIT WATER PUMP ASSY	1
2604051C9x	GASKET TAPE EXHAUST 3/4"X36YDS	1

Standard Repair Times (SRT)

Description	Model	SRT Link	SRT
Visual inspection	Prostar	R12-2117U	0.3 hr.
	Workstar	N12-2117U	0.3 hr.
	Paystar 5000	T12-2007U	0.3 hr.
	Transtar 8600	Q12-2117U	0.3 hr.
Check Freeze Frame Data for Max RPM recorded	Prostar	R12-2119U	0.1 hr.
	Workstar	N12-2015L	0.1 hr.
	Paystar 5000	T12-2009U	0.1 hr.
	Transtar 8600	Q12-2119U	0.1 hr.
RR oil pan	Prostar	R12-4591U	2.0 hr.
	Workstar	N12-4591U	2.0 hr.
	Paystar 5000	T12-4591U	2.0 hr.
	Transtar 8600	Q12-4591U	2.0 hr.
RR injectors	Prostar With Engine Brake add	R12-7563U-1	0.5 hr.
	Workstar With Engine Brake add	N12-7563U-1	0.5 hr.
	Paystar 5000 With Engine Brake add	T12-7563U-1	0.5 hr.
	Transtar 8600 With Engine Brake add	Q12-7563U-1	0.5 hr.
	Prostar	R12-7563U-15	4.6 hr.
	Workstar	N12-7563U-15	4.3 hr.
	Paystar 5000	T12-7563U-15	4.3 hr.
	Transtar 8600	Q12-7563U-15	4.3 hr.
RR turbo center section	Prostar	R12-6135U-21	2.3 hr.

	Workstar	N12-6135U-21	2.3 hr.
	Paystar 5000	T12-6135U-21	2.3 hr.
	Transtar 8600	Q12-6135U-21	2.3 hr.
RR Water Pump	Prostar	R12-3374A	1.4 hr.
	Workstar	N12-3774A	1.4 hr.
	Paystar 5000	T12-3774A	1.4 hr.
	Transtar 8600	Q12-3774A	1.4 hr.
CAC Cleaning	ALL MODELS	A09-3925A	1.1 hr.
Update Calibration (If Needed)	ALL MODELS	A12-3510A-20	0.2 hr.
DOC/DPF Removal and inspect	Horizontal Mount Under Frame	A12-4901	0.9 hr.
	Vertical Mount	A12-4903	1.0 hr.
CAC R&R	Prostar	R09-3925U-20	1.0 hr.
	Workstar	N09-3925U-21	3.0 hr.
	Paystar 5000	"T" time	3.0 hr.
	Transtar 8600	Q09-3925U-20	1.0 hr.
Engine Assembly Remove and Reinstall	Prostar	R12-1051U	14.2hr.
	Workstar	N12-1051U	14.8 hr.
	Paystar 5000	T12-1051U	13.8Hr.
	Transtar 8600	Q12-1051U	13.8hr.

Warranty Coding

Group	Noun
12000	135

Description should go as follows:

Set 190-0, Failed HP Turbo, Step (x), RPM (x), and Repaired as instructed by trouble shooting

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Feedback Information

Viewed: 3408

Helpful: 23

Not Helpful: 0

Staff ID	Client ID	Comments	Created Date
	DY30824	You received the following feedback From: DY30824 - Troy Stinson Email Address: tstinson@rwcgroup.com Job Classification: AD003, Warranty Administrator Dealer: RWC INTERNATIONAL, LTD. Feedback: There is no SRT listed for removing the CAC which is required prior to cleaning.	2/18/2014 8:18:23 AM
	U00VJD2	You received the following feedback From: U00VJD2 - Victor Doran Email Address: Anthony.Balkonis@Navistar.com Job Classification: SE003, Service Manager Dealer: Field Personnel Feedback: Jay - Can you please add the SRT's for Complete Engine Replacement, this came up in our Dealer Advisory Board today. Thanks!	2/19/2014 2:17:11 PM

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