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Author: Marcelo Sahagun

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Coding Information

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Title: CPA Base Engine Analysis Module (B.E.A.M) Overview

Applies To: MaxxForce Engines

CHANGE LOG

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

06/02/2017 - Initial Article Release

DESCRIPTION:

This document describes the process for utilizing the Cylinder Performance Analyzer Base Engine Analysis Module (CPA BEAM) Tests

CPA BEAM Tests Apply To:

Engine Platform	Emission Year	Engine Model
V8	2007-2016	MaxxForce7
MED	2007-2009	MaxxForce DT/9/10
MED	2010-2013	MaxxForce DT/9/10
MED	2014-2017	N9/ N10
BB	2010-2012	MaxxForce 11/13L
BB	2013-2016	N13

Software Release:

Software Version	Description	Release Date
7.8.8.67	13L Full Load Blow By Launch	1/28/2016
7.1.8.88	Base Engine Analysis Module (BEAM)	12/14/2015

Note: Software must always be current. Refer to the [CPA Resource Article](#)

SYMPTOM(s)/ FAULT CODE(s):

For proper diagnostics follow the appropriate engine diagnostic manual for step by step instructions

Symptom
High Blow-By
Low Compression
Hard Start
Engine Knock
Bent Rod
Oil Carry-Over at Road Draft
Low Power
Oil Consumption

DPF Failures

SPECIAL TOOL(s) / SOFTWARE:

- Tools required for component removal: Refer to the appropriate engine service manual
- To perform CPA BEAM Tests properly, the following tools are required:

Tool Description		Tool Number	Comments
EZ-Tech			Navistar Engine Diagnostics and CPA software must be installed
RP1210 Communication Device			NavCom or Nexiq
CPA Module		OE-11178/ 12-999-01-01	
Pressure Plus Module		12-999-05-01	
Pressure Plus Module Kit (HEAVY Duty)		12-999-05	Includes Air Compressor Block-Off plate (12-999-05-11) and 4 Bolts (12-999-05-12)
Pressure Plus Module Kit (MEDIUM Duty)		12-999-05M	
MaxxFace 7 Cap Adapter		12-999-05-03	
i6 Cap Adapter		12-999-05-04	
Big Bore Cap Adapter		12-999-05-05	
Blow-By Tube		12-999-05-06	

			
Pressure Relief Valve Assembly		12-999-05-02	
PPM Power Cord		12-999-05-07	
Breather Cap		12-999-05-10	
1" Rubber Cap		09-889-02-30	
Oring Kit		12-999-05-09	

[Tools Resource Center](#)

CPA BEAM DESCRIPTION:

CPA BEAM is a family of tests that accurately measures base engine performance

BEAM Test	Description	Engine Platform Application	Notes
IDLE Test	Measures injector firing contributions	V8	
CrankCase Pressure (CCP) Test	Measures crankcase pressure	V8	
Relative Compression Test (RCT)	Measures compression per individual cylinder	V8/ MED/ BB	Can be used in place of Servicemaxx/ Navistar Engine Diagnostics RCT
Relative Compression Tets Plus (RCT+)	Measures crankcase pressure per individual cylinder while correlating w/ compression per individual cylinder	V8/ MED/ BB	
Blow-By Test (BBT)	Measures overall engine crankcase pressure	V8/ MED/ BB	
Full Load Blow-By Test (FL-BBT)	Measures overall crankcase pressure during a full load test	BB	Refer to IK1201329

MORE CPA BEAM TEST DESCRIPTIONS AVAILABLE IN [IK1201325](#)

WARRANTY INFORMATION:

CPA Module	WAC can be issued for components listed	Navistar Engine Model	Example WAC	Related Articles
Base Engine Analysis Module (BEAM)				

	• 1 or 2 or 6 Power Cylinders • Anti-Polishing Ring (APR) Kit	• 2007-2016 MF7 • 2010-2016 MFDT • 2010-2016 MF11/13L	• XXXX_XX_X • XXXX_XX	• MED Power Cylinder Re • BB APR Kit: IK1201157 • BB APR Kit: IK1201260
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All Component Replacement Requirements are temporarily covered under policy letter: [WPL2800126](#)

Reference the Warranty Resource Center for the most recent iApproval/ Warranty Authorization Code (WAC) requirements letter

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes

Standard Repair Time(s):

Description	SRT Link
12 - CYLINDER PERFORMANCE ANALYZER (CPA) TOOL, DIAGNOSIS	CPA Diagnostics

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

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