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Availability: ISIS, Bus ISIS, Fleet ISIS, Body Builder

Revision: 5

Major System: ENGINES

Created: 6/5/2013

Current Language: English

Last Modified: 7/13/2015

Other Languages: NONE

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Coding Information

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Title: Crankcase Oil Breather Separator Test

Applies To: 2010 Emissions MaxxForce DT, 9 & 10 Engines

CHANGE LOG

2015/07/13 - Updated breather speeds
 2015/04/22 - Author updated for feedback purposes
 2014/08/28 - Added SRT's and warranty noun coding.

DESCRIPTION

The purpose of this test is to ensure that the engine mounted crankcase breather is operating at the correct speeds. A poorly operating breather system can lead to excessive oil carryover into the air intake system which can eventually lead to coking of the turbos.

See [IK1200656 Turbo Coking: How to Clean](#) for cleaning directions

TOOLS REQUIRED

Tools	Qty.
Digital Multimeter (DMM) - Hz Setting	1
CMP Sensor - P/N 1828345C91 (Dealer Sourced Item)	1
CMP Breakout Harness - ZTSE4951	1

Diagnostics

1. Locate the provision on top of the engine mounted crankcase breather (*Figure 1*).



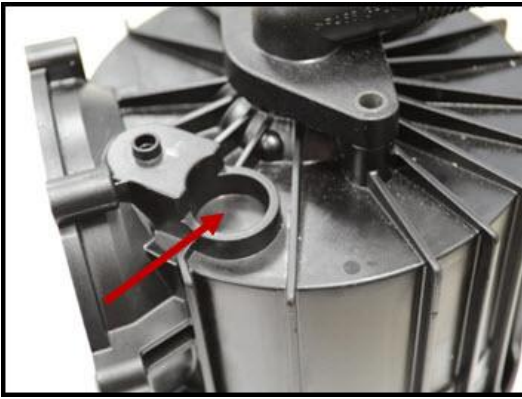


Figure 1: Breather Removed for Clarity

CMP sensor is to be installed into the breather housing. Provision is about 6mm deep. Do not modify housing for any reason.

2. Insert CMP in to the provision (See *Figure, 1, 2 and 3*).



Figure 2: CMP Sensor with electrical tape installed

CMP sensor is to be installed into the breather housing. Provision is about 6mm deep. Do not modify housing for any reason.

Note: The black electric tape (Figure 2) has been wrapped around the CMP sensor to ensure a snug fit.



Figure 3: CMP Sensor with electrical tape installed

3. Connect each multimeter lead to each pin on CMP (*Figure 4*).





Figure 4: Digital Multimeter Hookup

4. Finally set multimeter to measure Hz (Hertz).
5. Warm engine to operating temperature 176°F before collecting data. Take meter reading and then multiply it by 30 to get breather RPM.

Engine RPM	Hz Reading	Minimum Breather RPM Spec
Idle	150	4,500
High Idle	267	8,000

Note: Oil viscosity, temperature, pressure and age (miles and hours) can affect breather operational speeds

6. If breather speed exceeds (spins faster) than minimal RPM Specs, then **do not** replace the breather.

See [IK1200535 Diagnosing Turbocharger Oil Discharge](#)

7. If breather speed fails to meet any of the minimum RPM specs (spins slow), continue with Steps 8 and 9 before replacing the breather assembly.
8. Verify engine oil level, condition, miles and hours are within specification, per vehicle application.
9. Verify engine oil pressure is meeting performance specification (see diagnostics manual)
10. If oil inspection and pressure is in spec per steps 8 and 9 and breather speed is not met then replace the breather.

WARRANTY INFORMATION

Standard Repair Times:

Description	Chassis	Engine	SRT Link	Hours
CRANKCASE BREATHER ENGINE MOUNTED, REPLACE	4300 4400	MAXXFORCE DT/9/10	K12-9215T	1.3
CRANKCASE BREATHER ENGINE MOUNTED, REPLACE	7300, 7400, 7500	MAXXFORCE DT/9/10	M12-9215T	1.3

Warranty Coding:

Group	Noun	Noun Description
1200	776	Breather Element

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