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Title: CPA BEAM RCT+, CCP and BBT tips (used with new CPA PressurePlus tool)

Applies To: MaxxFORCE 7, DT, 9, 10, 13, N9, N10, N13

**CHANGE LOG**

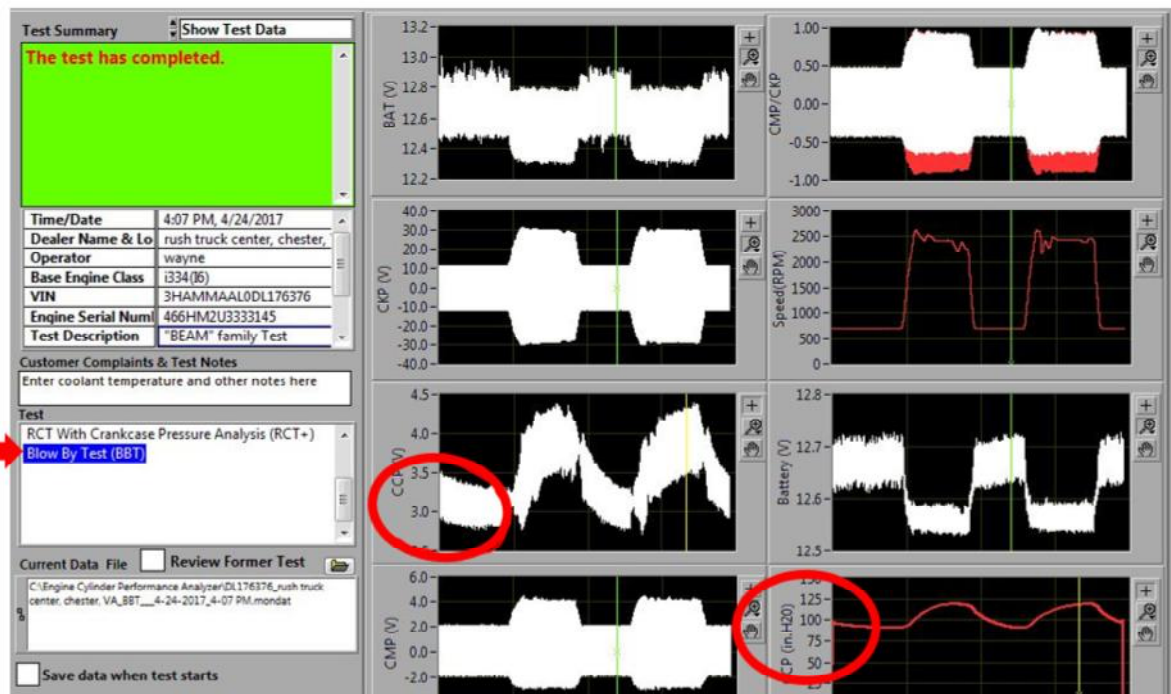
- 04/28/2017- Added common BBT error explanation
- 04/25/2017- Updated diagnostic software to Navistar Engine Diagnostics™.
- 03/09/2017- Added pressure signal diag. info
- 01/13/2017- Added additional info for "Crankcase Leak Detected" message

**RCT+ is Relative Compression Test PLUS crankcase pressure analysis**

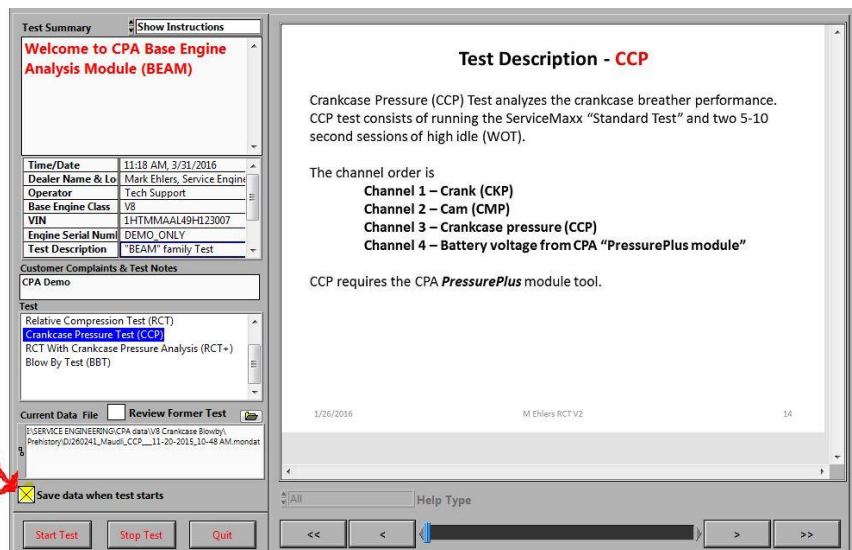
- Faster than manual compression test & more accurate than Navistar Engine Diagnostics™ RCT
- It measures approximate blow-by of each cylinder while cranking the engine
- If RCT+ can be performed then there is no need to perform RCT
- RCT+ involves three 10-15 second episodes of engine cranking (batteries must be fully charged but charger cannot be connect to the vehicle)
- The CPA software and the diagnostic manuals includes test instruction and how to interpret the RCT+ results.

**TIPS**

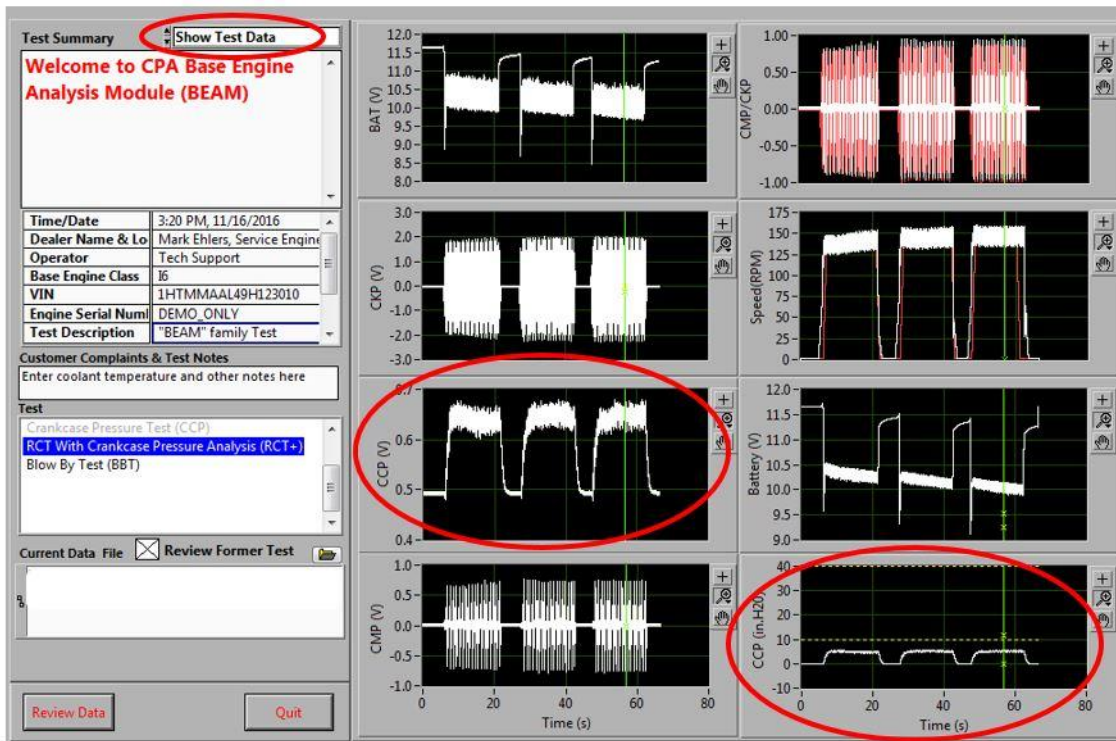
- If the batteries are not in good health on the vehicle that you are performing RCT+ on then press "Stop Test" when the CPA prompts you to start cranking for the 3rd time. The CPA will process the test and issue a conclusion
- If the engine is runnable, warm the engine before performing RCT+ (this improves the accuracy of RCT+). Even if you can only run the engine for a few seconds do this before RCT+
- BBT (blow-by test) uses the PressurePlus module and the CPA box to measure blow-by instead of a water manometer or magnahelic gauge. The orifice tool that has always been used to measure blow-by is still needed.
  - The fan must be OFF in order to achieve accurate results
  - A common mistake made is leaving the PressurePlus Module connected to the oil fill adaptor when performing BBT. For BBT the PressurePlus Module hose connects the the orifice tool (on crankcase breather outlet)
  - Swapping channels 3 and 4 is also a common mistake
    - BBT signals may look like the example below if connected incorrectly



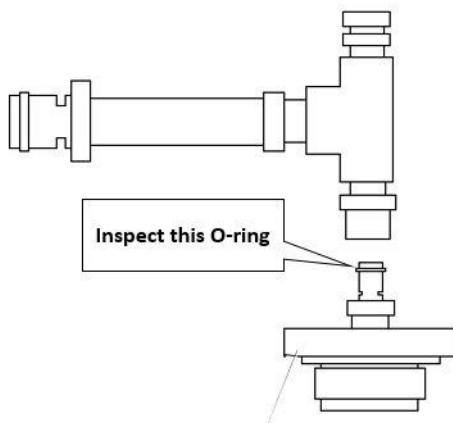
- CCP (Crankcase Pressure test- MaxxFORCE 7 ONLY) uses the PressurePlus module and the CPA box to measure crankcase pressure instead of a water manometer or magnahelic gauge. The crankcase breather is functioning normally for this test.
- If the engine cannot run the Navistar Engine Diagnostics™ Standard test (as requested in BBT and CCP test) then do the following:
  - Check this box



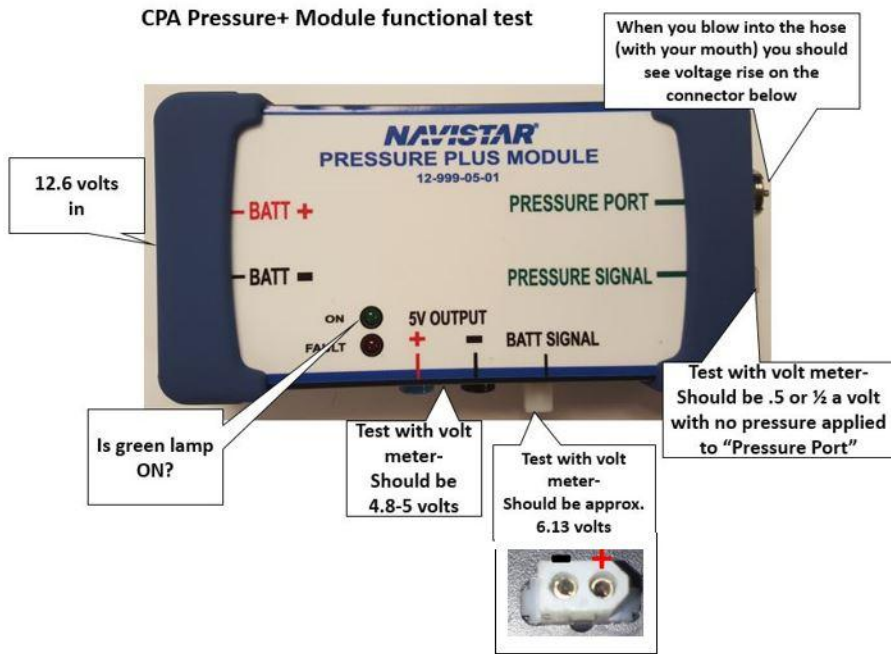
- When CPA requests the Navistar Engine Diagnostics™ test, hold the throttle wide open (WOT) for 5 seconds (fan OFF)
  - Idle for 4 seconds
  - WOT for 5 seconds (fan OFF)
  - Press "Stop Test"
  - CPA will process the test and create the Results Graph
- Crankcase Leak Detected Message
    - This message can be caused by several factors. Click [HERE](#) for more explanations.
    - If after performing RCT+ the "Crankcase Leak Detected" message appears the "Test Data" screen may look like the screen below



- Confirm that the crankcase breather outlet is properly plugged
- Confirm that the oil dipstick is seated and sealing (MF7 and 13L only)
- Confirm that the O-ring on the RCT+ oil fill cap adapter is not damaged (see image below)
- Verify all connections are correct
- Retest



- Pressure signal errors can occur at times. Click [HERE](#) for some examples
- CPA Pressure+ Module failures are rare but have occurred. Use the info below to see if the Pressure+ Module has a problem.



**RESOURCES**

- [RCT+ instructions for 13L \(MF13 and N13\)](#)
- RCT+ instructions for MaxxForce 7 (moved to CPA and inside engine diagnostic manual)
- RCT+ instructions for MaxxForce DT, 9, 10, N9, N10 (moved to CPA and inside engine diagnostic manual)
  - For EPA 07 engines use the CPA instructions that are in the EPA 2010 publication
- BBT instructions for MaxxForce 7 (moved to CPA and inside engine diagnostic manual)
- BBT instructions for MaxxForce DT, 9, 10, N9, N10 (moved to CPA and inside engine diagnostic manual)
  - For EPA 07 engines use the instructions that are in the EPA 2010 publication
- CCP instructions for MaxxForce 7 (moved to CPA and inside engine diagnostic manual)
- [RCT and Idle test](#)

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**Download the beta version of CPA here (when requested by Tech Services):**

Dropbox: [https://www.dropbox.com/s/oo1ojg6ud8milt9/CPA\\_v88181\\_UPG\\_Tool.exe?dl=1](https://www.dropbox.com/s/oo1ojg6ud8milt9/CPA_v88181_UPG_Tool.exe?dl=1)

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