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 Current Language: English Last Modified: 1/20/2021
 Other Languages: NONE Author: Mark Ehlers
 Viewed: 191

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Coding Information

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Title: 1 channel CPA RCT test for A26 or CV 6.6L

Applies To: A26 or CV 6.6L

CHANGE LOG

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

11/26/2019 - Initial Article Release

DESCRIPTION

This article shows how to perform a simple RCT (relative compression test) using only 1 channel of the CPA box. It requires no special harnesses or breakout box.

SYMPTOM(s)

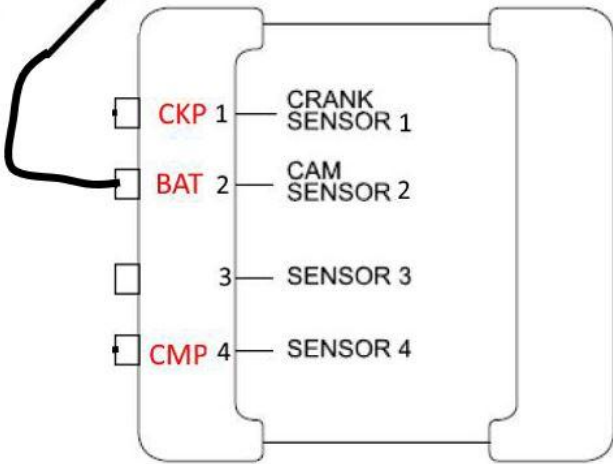
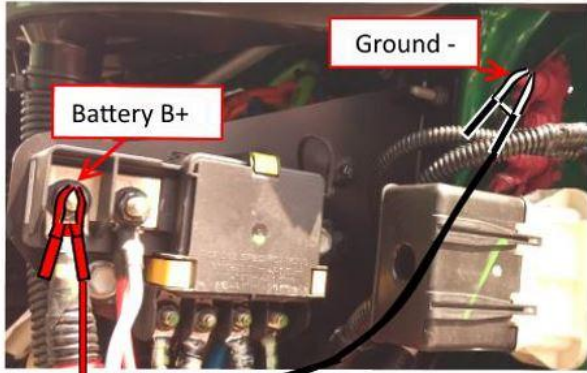
Perform this test whenever you need to quickly determine if all cylinders have about the same cranking compression.

SPECIAL TOOL(s) / SOFTWARE

CPA box and CPA cables to connect to the battery + and -

DIAGNOSTIC STEP(s)

1. Connect CPA box as shown below (A26 example shown)
2. Engine should be warm (if possible)
3. Disconnect battery charger from truck
4. Disconnect injector connector from ECM (to prevent engine from starting) or disconnect camshaft position sensor
5. Open CPA application and select BEAM & then select RCT (see below)
 1. Note that CPA can be launched without NEDs. If doing this then manually select the engine type. For CV 6.6L select a different V8 engine.
6. Start test. **Ignore any error messages** and crank the engine for about 5 seconds pause then repeat the 5 second cranking session.
7. Select **Stop Test**
8. **Ignore the error messages** and navigate to **Test Data** view
9. Focus on the "**Battery**" graph
10. Use the zoom buttons and zoom in on a segment of the last half of the recording (see below)
11. Compare the voltage pattern the the examples below
12. Repeat test if needed
13. If the pattern shows a weak cylinder then ID the cylinder (if needed)
 1. A26- Use NEDs testing or fault codes or CPA RCT with cam & crank signals added. See IK1201429
 2. CV 6.6L- Use fault codes or other GDS tests or repeat this test but add the CAM sensor to CPA and move B+ signal to "crank" channel.
 1. Open case file for assistance interpreting the results.
14. Reconnect engine connectors that were unplugged (related to this test)
15. Clear faults that were set by preventing the engine from starting



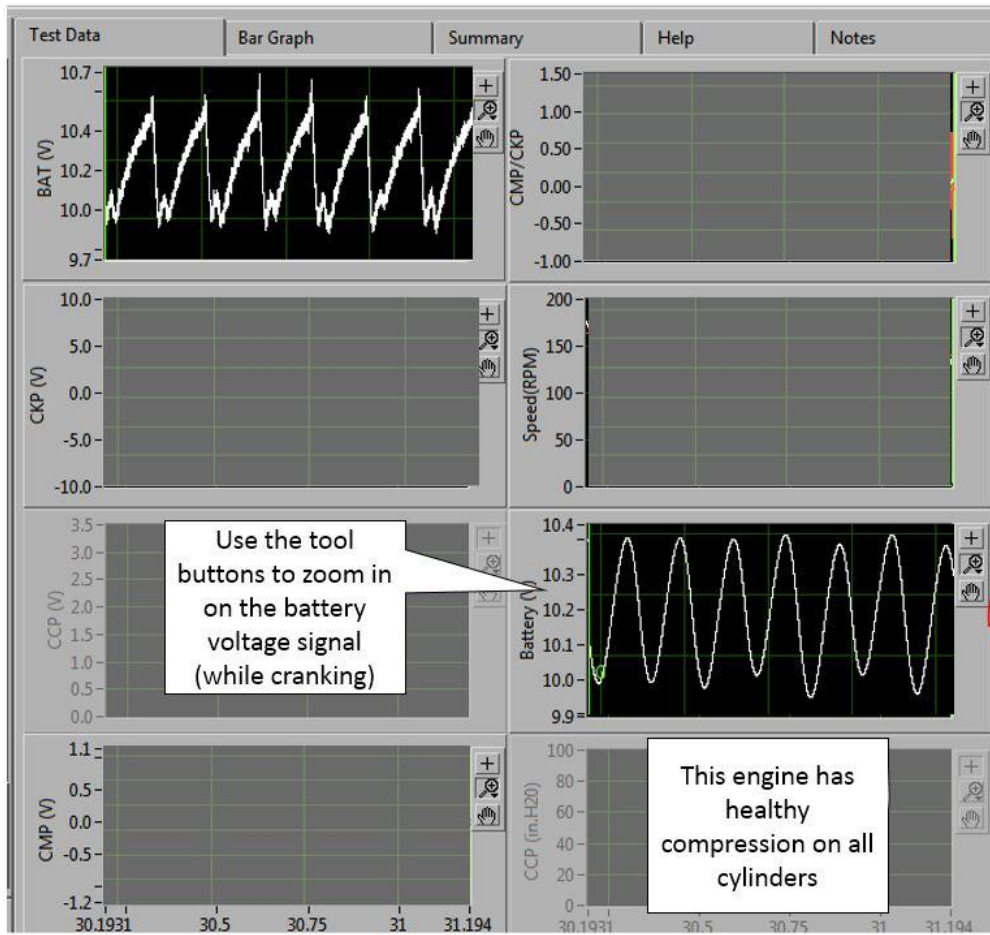
The screenshot displays the CPA Base Engine Analysis Module software interface. On the left, the 'Test Summary' section includes a 'Show Test Data' button and a table with the following information:

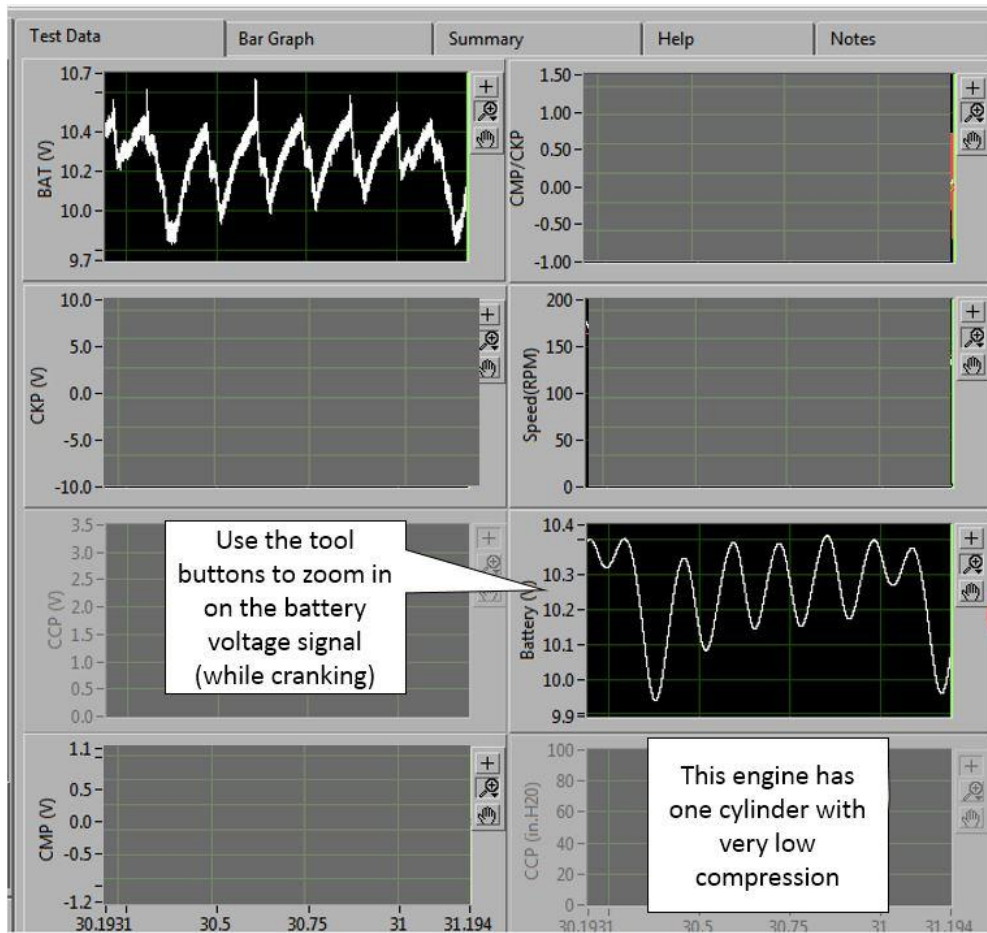
Time/Date	9:26 AM, 12/11/2018
Dealer Name & Location	Selking, Ft Wayne, IN (667006)
Operator	ehlers
Base Engine Class	b786(BB 11& 13)
VIN	3HSDWTZR6KN289244
Engine Serial Num	124KMZY4511283
Test Description	BEAM family test

Below the table, the 'Customer Complaints & Test Notes' section contains the text 'engine 65 eot but was just started'. The 'Test' section lists 'Idle Test', 'Relative Compression Test (RCT)', 'Crankcase Pressure Test (CCP)', 'RCT With Crankcase Pressure Analysis (RCT+)', and 'Blow By Test (BBT)'. A blue arrow points to the 'Relative Compression Test (RCT)' option. The 'Current Data File' section shows a file path: 'C:\Engine Cylinder Performance Analyzer\KN289244_Selking, Ft Wayne, IN (667006)_IDLE_12-11-2018_9-35 AM.mondat'. At the bottom left, there is a checked box for 'Save data when test starts' and two buttons: 'Start Test' and 'Stop Test'.

The right side of the interface features eight data plots arranged in a 4x2 grid. Each plot has a vertical green line at approximately 45 seconds on the x-axis. The plots are:

- Top-left: BAT (V) vs Time (s), y-axis from 6.5 to 7.1.
- Top-right: CMP/CKP vs Time (s), y-axis from 0.00 to 1.00.
- Second row, left: CKP (V) vs Time (s), y-axis from 0.0 to 0.1.
- Second row, right: Speed (RPM) vs Time (s), y-axis from -1 to 1.
- Third row, left: CCP (V) vs Time (s), y-axis from 0.0 to 3.5.
- Third row, right: Battery (V) vs Time (s), y-axis from 0.0 to 12.0.
- Bottom row, left: CMP (V) vs Time (s), y-axis from 0.0 to 0.1.
- Bottom row, right: CCP (in-H2O) vs Time (s), y-axis from 0 to 100.





OTHER RESOURCES

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