

<b>Topic:</b>	<b>COMBUSTION CHAMBER DEPOSIT EVALUATIONS</b>
<b>Point of Contact:</b>	Kevin Brunner Phone: (210) 522-3579 Fax: (210) 681-5344
<b>Test Objective:</b>	The objective of this test is to evaluate the capability of a test fuel or fuel additive to prevent CCD growth or to clean CCDs previously formed.
<b>Vehicle:</b>	Various vehicles may be used for this test procedure.
<b>Test Procedure:</b>	For CCD Thickness Measurements: Use a Fisher Permascope® thickness measurement device linked to a computer for data storage. Acrylic templates are used to improve test accuracy and precision.  For CCD Weight Measurements: Deposits are manually scraped into specially designed envelopes. Deposits are then weighed to the nearest 0.1 mg.
<b>Fuel Requirement:</b>	Various amounts of fuel may be used for this procedure.
<b>Duration:</b>	This test procedure usually requires 10,000 to 20,000 miles for deposit stabilization. The driving route should include a mix of city, suburban, and highway driving.
<b>Test Results:</b>	CCD thickness and weight measurements for the piston top and combustion chamber regions of each cylinder are determined.
<b>Note:</b>	CCD evaluations are usually incorporated into a fleet program that also includes intake valve deposit (IVD) and octane requirement increase (ORI) evaluations.

*Combustion Chamber Deposits*

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<b>Topic:</b>	<b>INTAKE SYSTEM AND COMBUSTION CHAMBER DEPOSITS SCREENING</b>
<b>Point of Contact:</b>	Kevin Brunner Phone: (210) 522-3579 Fax: (210) 681-5344
<b>Test Objective:</b>	The objective of this test is to screen gasoline additives for effects on intake valve sticking (IVS), and intake system and combustion chamber deposits.
<b>Apparatus:</b>	For this test, a two-cylinder, 6,500-watt Honda generator, fluid-cooled, modern 4-cycle engine is used.
<b>Test Procedure:</b>	<ol style="list-style-type: none"><li>1. Engine operating modes are alternated every two hours between a 1,500-watt step and a 2,500-watt step.</li><li>2. For intake valve sticking measurements, the cylinder head is cold soaked for 12 hours at -20°C.</li></ol>
<b>Fuel Requirement:</b>	For this test, 45 gallons of 86 octane ((R+M)/2) fuel are required.
<b>Duration:</b>	The duration of this test is 80 hours.
<b>Test Results:</b>	The following test results are noted: - Intake valve sticking - force required to open intake valve - Combustion chamber deposits - rating and deposits weights - Intake valve deposit - rating and deposits weights
<b>Note:</b>	For additional information, see SAE Papers No. 892121 and 940347.

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