

Leisure Marine and Small Engine Lubricants Section

ASTM D 4858 Yamaha Preignition Test

SPECIFICATIONS

ASTM TC: Sequence III

OBJECTIVE

The objective of this test is to evaluate the effect of a lubricant on preignition caused by combustion chamber deposits.

FIELD SERVICE SIMULATED

Field service simulated is typical of two-cycle air-cooled engines operated at full power.

TEST FIXTURE

A Yamaha CE50S single-cylinder, air-cooled, two-stroke cycle, spark-ignition engine is set up on a test bed and coupled to a high-speed 10 HP dynamometer. External cooling air is supplied to the engine by a variable delivery fan.

TEST PARAMETERS

The test is run under the following steady-state conditions for 50 hours:

Engine, rpm	4000
Load	WOT
Spark plug gasket temperature, °F	392 (200°C)
Fuel/oil ratio	20:1

TEST PARTS EVALUATED

General engine condition is determined.

USED LUBRICANT ANALYSIS

None.

TEST PARTS EVALUATED

No more than one major preignition is allowed.

