

# Cummins ISM Engine Test

(ASTM D7468)

## Specifications

- API CJ-4
- Cummins CES-20081
- Mack EO-O Premium Plus

## Objective

- Evaluate the performance of an engine lubricant to control engine wear and deposits under heavy-duty operating conditions selected to accelerate soot generation, valve train wear, and deposit formation in a turbocharged, aftercooled diesel engine equipped with exhaust gas recirculation (EGR) hardware.

## Field Service Simulated

- High-load, heavy-duty diesel engine operation under high soot conditions in an EGR environment.

## Test Fixture

- Cummins ISM engine with variable geometry turbocharger, production EGR cooler, and electronically controlled EGR valve.

## Test Parameters

- The engine is operated for 200 hours using 500 ppm sulfur fuel.

## Test Parts Evaluation

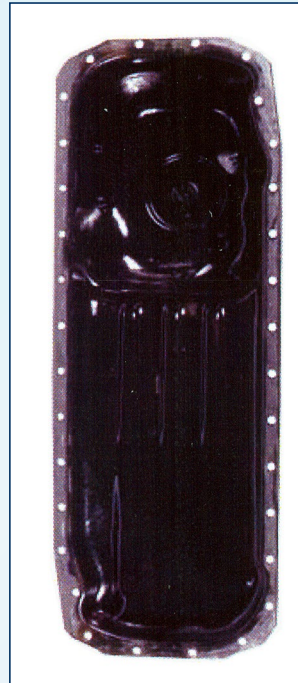
- Injector adjusting screw
- Crosshead
- Top ring wear
- Oil filter plugging
- Oil pan and valve cover sludge formation

## Used Lubricant Analysis

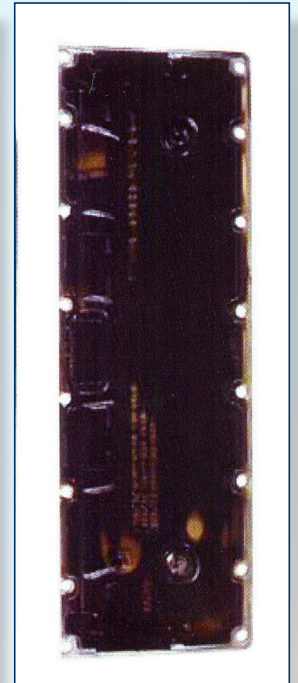
- Wear metals (ASTM D5185)
- Viscosity (ASTM D445)
- TAN (ASTM D664)
- TBN (ASTM D2896 and D4739)
- Fuel dilution (ASTM D3524)
- Soot by TGA

## Pass/Fail Criteria

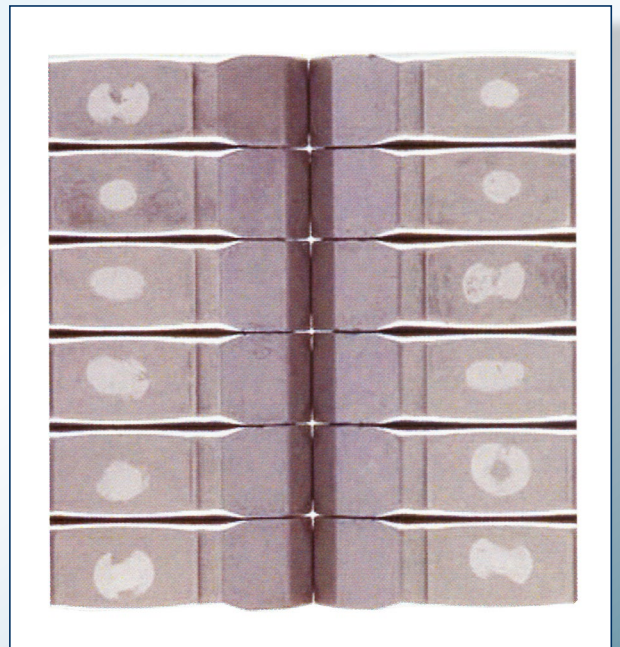
Parameter	Anchor	Merit Wt	Max	Min
XHD	5.7	350	7.1	4.3
RWL	100	0	100	0
Ofdp	13	150	19	7
IAS	27	350	49	16
Sludge	9	150	9.3	8.7
Merits	1000			



*Caption*

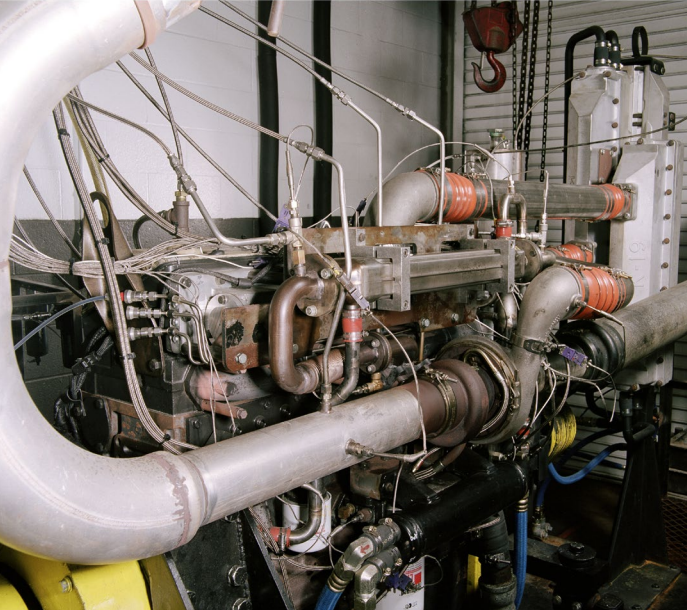


*Caption*



*Caption*





DEI 33678

◆ We welcome your inquiries.

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