

**VIE Clean Team**  
**06.22.2016**

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Scope

The ASTM Sequence VI Surveillance Panel requested a Team be formed to determine if the VIE engine could be Ultra Sonic cleaned to run more tests. The Team will review the cleaning and rebuild procedure, and review data run on the test engines.

Objective

Develop a cleaning method and determine engine life after cleaning.

The agenda for this meeting is shown below.

1.0 Leader Comments

- Adrian Alfonso will be secretary for this task force
- SwRI has an engine with 970 hours that has been disassembled and cleaned per proposed procedure. This engine did not run 0W-16s.
- The engine is installed and will complete a short shakedown to include running BL1.
- The engine/stand will be available to start the first reference test by tomorrow. It was suggested to complete a BLB and BLA analysis on the data generated with this engine.
- SwRI has a new engine that will run 542-2, then candidates and could be available for experimentation by August.

2.0 Roll Call

3.0 Items to discuss

3.1 Comments on Procedure.

- Dan will complete a parts list to be included in the procedure

- A draft of the procedure was distributed, please review and submit comments/changes.

### 3.2 Find and clean and build engine with reference oil history.

- There was a suggestion to proceed with the engine SwRI has ready to run and review its performance using assigned reference oil.
- Adrian will search IAR's inventory of used engines to see if there is an engine with ~1300 hours or less that can be utilized for cleaning, reassemble and testing.
- There was a suggestion to explore replacing piston rings and engine bearings with the VID part numbers. OHT will provide a list with the measurements of components that were measured during the VID development.
- Inspection of the cleaned VIE engine parts did not show significant concerns. There was carbon deposit on pistons top but was removed with ultrasonic cleaning. The ultrasonic cleaning time was changed in the procedure to 120 minutes. The change was completed after observing that it might take that long to remove carbon deposits from pistons.
- SwRI will request the Stats Group to provide oils to run and order. IAR has data on 1010 using new VIE engines while SwRI has data on 542-2 using new VIE engines. It was suggested that there might be more value in re-running 1010 on the cleaned engine since the VIE PM shows that 1010 struggled the most on FEI 2.

### 4.0 Action Items

- Adrian will check IAR's inventory of used VIE ~1300 hrs. or less engine.
- Dan will complete a parts list to be included in the procedure
- OHT will provide a list of measurements from VID development
- Independent labs to compare measurements to new short blocks.

### 5.0 Next meeting to be determined.

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