

Sequence VIE/F Engine Rebuild Task Force

Call Agenda

August 4nd @ 8:00 AM CST

Call-in number: (800)391-9177

Conference Code: 4875645502

Scope:

The ASTM Sequence VI Surveillance Panel requested a Task Force be formed to explore the possibility of extending the life of the Sequence VIE specially built General Motors (GM) 3.6 L (LY7) engine. New engines will be built from new GM assembled short blocks and other new and used individual components.

Objective:

The Task Force will:

- Review GM's proposal of building new VIE engines from new GM assembled short blocks and new GM individual components.
- Determine total quantity of engines needed.
- Determine parts availability and acquisition for new engine build. Coordinate with OHT and GM.
- Determine which used parts from used VIE engines will be needed for new engine builds.
- Determine availability of these used parts and develop inspection and selection criteria.
- Inspect and select used parts for use in new engine builds (each lab will be responsible for this task).
- Develop and implement a standardized build procedure (engine assembly manual).
- Determine stand availability for testing lab built engines.
- Develop a test plan to prove out lab built engines.
- Report results, conclusions and recommendations to Sequence VI SP.

The agenda for this meeting is shown below, if you have any additions please send them to me and Cc this distribution.

1.0 Roll Call

Do we have any membership changes or additions?

2.0 Approval of Minutes from meeting 7/21/2016.

ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencevi/minutes/VIE_FEngine%20RebuildTaskForce20160721.pdf

Dan, Jason, Unanimous

3.0 Action Item Review

- 3.1 Engine KITs completion and shipping – **Expected by September**
- 3.2 Scott will contact GM to attempt to acquire more sort blocks – **In progress**
- 3.3 Adrian will develop a timeline for completing the scope of this TF – **Completed/can change based on Stats input on prove out recommendation.**
- 3.4 Adrian to contact stats group about prove out test design – **After consulting with our Statistician Martin Chadwick I propose to table the request to the stats group until we have an LTMS (~the week of 25 July) for the VIE. There are two main reasons for this, one to have a better idea what oils and order to use for the short blocks and second to not overload the stats group even more than what they are now.**
- 3.5 IAR will flow VID nozzles at VIE conditions - **Completed**

3.6 Parts list for the right head rebuild will be developed by Scott and will research possibility of creating a kit for the right head rebuild. [In progress](#)

3.7 OHT to research inventory of VID higher tension rings. [OHT does have inventory](#)

3.8 [Scott will send P.O. for more kits/pricing \(he will have a meeting this morning to receive approvals\)](#)

4.0 Old Business

4.1 Need to write up storage procedure for labs to follow (include cleaning procedure to remove RP).

4.2 Coordination of engine build workshop early 2016.

4.3 Review fixed phasors reuse, inspection procedure.

4.4 Should rework/repairs be allowed, follow up after rebuild workshop.

5.0 New Business

5.1 Survey results.

A total of 934 additional short blocks/kits were requested from all labs. Richard Grundza has the breakdown of the orders per lab.

Can this number of kits be acquired?

How many kits would have both heads?

Are we ready to move forward and place the orders?

[Scott is waiting on pricing for PO.](#)

5.2 VID and VIE engine piston oil nozzle pressure test

The oil nozzles from a VID engine and a VIE engine were tested at the typical engine operating pressures for all 6 states and the result was:

VIE									
Stage		1	2	3	4	5	6	Aging	
	Pressure (kPa)	325	530	310	240	530	240	305	
	Pressure (psi)	47.1	76.8	44.9	34.8	76.8	34.8	44.2	
Start Flow (PSI)									
36	Flow (LPM)	0.26	1.15	0.13	0	1.15	0	0.11	Nozzle1
34		0.81	1.4	0.71	0.01	1.4	0.01	0.63	Nozzle2
34		0.86	1.43	0.79	0.05	1.43	0.05	0.72	Nozzle3
VIE Nozzles with VID Typical Pressures per Stage									
	Pressure (kPa)	220	420	210	140	430	140	205	
	Pressure (psi)	31.9	60.91	30.45	20.3	62.36	20.3	29.73	
Start Flow (PSI)									
	Flow (LPM)	0	0.82	0	0	0.92	0	0	Nozzle1
		0	1.08	0	0	1.12	0	0	Nozzle2
		0	1.09	0	0	1.17	0	0	Nozzle3
VID									
Stage	Start Flow	1	2	3	4	5	6	Aging	
	Pressure (kPa)	220	420	210	140	430	140	205	
	Pressure (psi)	31.9	60.91	30.45	20.3	62.36	20.3	29.73	
Start Flow (PSI)									
25	Flow (LPM)	1.5	2.44	1.41	1.02	2.44	1.02	1.33	Nozzle1
28 - .05		1.72	3.83	1.59	1.27	3.83	1.26	1.57	Nozzle2
26 - .01		2.35	2.57	2.16	1.44	2.57	1.44	2.03	Nozzle3
VID Nozzles with VIE Typical Pressures per Stage									
Stage	Start Flow	1	2	3	4	5	6	Aging	
	Pressure (kPa)	325	530	310	240	530	240	305	
	Pressure (psi)	47.1	76.8	44.9	34.8	76.8	34.8	44.2	
Start Flow (PSI)									
	Flow (LPM)	1.55	2.22	1.48	1.1	2.28	1.14	1.42	Nozzle1
		1.95	2.54	1.85	1.08	2.57	1.12	1.8	Nozzle2
		1.81	2.88	1.7	1.04	2.88	1.04	1.68	Nozzle3

5.3 OHT6E-001-2 engine parts not included in the assembly

Exhaust manifold (left and right) -----Do not need
Lower Intake -----Do NEED
Upper Intake & -----Do not need
Throttle body -----~~Do NEED~~ Do not need
Lower and Upper Intake Gaskets -----Do Need
Temperature sending unit -----Do NEED [There is inventory at OHT](#)
Coil Pack ----- (6 each) -----Do NEED
Injectors & -----Do NEED [There is inventory at OHT](#)
Rail -----Do not need
Dip Stick & Tube -----Nice to have

6.0 Review of action items.

- [Compare list of parts missing to procedure required parts](#)
- [Adrian, Jerry and Jason will work on a parts list needed](#)

7.0 Schedule for next conference call.