

Mack / Volvo Surveillance Panel Meeting

April 8, 2024

David Brass (chair)

Agenda

- Volvo T-13 Oil Consumption Testing
- Volvo T-13 Parts Analysis
- New Reference Oil Matrix
- AOB

SP Mailing List

Company	Colleagues
Afton	Brent Calcut, Bob Campbell, Joe Hoehn, Cory Koglin, Christian Porter
Chevron Phillips Chemical	Jonathan Van Scoyoc
Detroit	Suzanne Neal
ExxonMobil	Michael Alessi, Steve Jetter, Paul Rubas, Cliff Salvesen
Ford	Mike Deegan, Dean Wingert
Infineum	David Brass, Todd Dvorak, Jacob Goodale, Elisa Santos, Andy Ritchie
Intertek	Martin Chadwick, Khaled Elnagi, Pablo Ramirez, Andrew Smith, Juan Vega, Josh Ward, Garrett White
John Deere	Ashu Gupta
Lubrizol	Austin Brininger, Alex, Ebner, Phil Scinto, Justin Wolfe
Oronite	David Lee, Jo Martinez
PSL Services	Chris Taylor
SwRI	Travis Kostan, Isaac Leer, Mike Lochte, Jose Starling, Bob Warden
TEI	Derek Grosch, Dan Lanctot
TMC	Jeff Clark, Rich Grundza, Sean Moyer
Volvo	Patrick Holmes

Each active company is able to supply 1 vote per motion

823-1 Results – Sorted by Oil Consumption

CMIR	Stand	FTIR Peak Height	Delta KV40 (300-360)	Oil Consumption (48-192)	Oil Consumption (48-96)
179973	A2	115.9	64.2	21	21.6
177777	B3	124.3	78.2	22.9	23.1
177774	G1	103.3	61.2	25.3	29.4
177776	A4	102.6	52.8	28.8	31
180631	G2	95.2	57.7	28.9	34.3
177775	D2	104.9	59.6	32.9	37.5
185298	D1	121.6	68.8	33.3	38.9
179972	A8	113	63.5	31.2	40.1
Target		109.3	$(8.139)^2 = 66.2$		

Intertek Oil Consumption Scoping Runs


	Reference Test	Run 1	Run 2	Run 3
Pistons	Kit 866	Kit 939	Kit 939	Kit 939
Rings	Kit 866	Kit 939	Kit 866	Kit 939
Liners	Kit 866	Kit 939	Kit 939	Kit 939
Oil Consumption (48-96 hr, g/hr)	29.4	44.4	26.9	36.2
Oil Consumption (48-192 hrs, g/hr)	25.3			

- Rings appear to be affecting Oil Consumption


Oil Consumption with Piston Dates

CMIR	Stand	Oil Consumption (48-192 hr)	Oil Consumption (48-96 hr)	Kit #	Piston Date 1	Piston Date 2	Piston Date 3	Piston Date 4	Piston Date 5	Piston Date 6
172877	A2	19.9	18.1	853	0522 1218	0522 1328	0522 1324	0522 1330	0522 1224	0522 1335
179973	A2	21.0	21.6	917	0822 2311	0922 1307	0822 2306	0822 2309	0821 1500	0722 0623
177777	B3	22.9	23.1	795	0421 1644	0421 0819	0521 0015	0521 0016	0521 2355	0521 2354
	G		26.9	939/866						
177774	G1	25.3	29.4	866	0822 1829	0822 1814	0822 0316	0822 0043	0822 1859	0822 1814
177776	A4	28.8	31	860	0522 1331	0522 1338	0522 1337	0522 1337	0522 1339	0522 1330
180631	G2	28.9	34.3	907	0822 0013	0922 0509	0922 0501	0922 0837	0922 1117	0922 1307
177775	D2	32.9	37.5	856	0522 1331	0522 1341	0522 1341	0522 1321	0522 1307	0522 1325
185298	D1	33.3	38.9	929	0223 0635	0223 0637	1022 0413	1022 0432	1222 1008	1022 0411
179972	A8	31.2	40.1	887	0922 0844	0922 0921	0922 2212	0922 0841	0922 0822	0922 2228
	G		44.4 36.2 repeat	939	0123 1218	0123 1304	0123 1305	0123 1322	0123 1302	0123 1302

 < 30

 $30 \leq x < 35$

 $35 \leq x$

 0922 and later

- Pistons after a certain date appear to be affecting Oil Consumption

Piston/Ring Analysis

- External Slides from Lubrizol

	Low OC Test	High OC Test
Piston Date Code	0521	0922
Oil Consumption (48-96 hr, g/hr)	22.3	40.6
Oil Consumption (48-192 hrs, g/hr)	19.9	27.8

Parts Batching

- If possible to coordinate, recommendation is to batch the Pistons, Rings, Liners for the Volvo T-13.
 - The process of getting these parts will take some time.
- In the meantime, it would be worth determining how to screen out both the Pistons and Rings.

Volvo T-13 Reference Oil Matrix Testing

Lab A / Stand 1	Lab B / Stand 1	Lab D / Stand 1	Lab G / Stand 1
New Reference Oil	New Reference Oil	New Reference Oil	New Reference Oil
New Reference Oil	New Reference Oil	New Reference Oil	New Reference Oil

Both tests must be conducted in the same stand and run consecutively (no candidates in between)

Current Reference Status

All labs have stands that recently came off calibration status.

Lab	Stand	Date Reference Expires
A	2	4/18/25
A	4	3/23/24
A	8	6/17/24
B	3	3/23/24
D	1	1/3/25
D	2	3/23/24
G	1	3/23/24
G	2	5/22/24
G	3	8/16/23