

Sequence X OH Task Force

Teleconference Minutes

01/23/24 @ 12:00-13:00 CST

1. Attendance:

Christopher Tostad (Infineum)	Christine Eickstead (SWRI)
Dan Lanctot (TEI)	George Szappanos (Lubrizol)
Jason Lekavich (Afton)	Na Tyrer (GM)
Jason Bowden (OHT)	Dave Passmore (IMTS)
Tony Catanese (Lubrizol)	Ricardo Affinito (Chevron)
Joe Gleason (Lubrizol)	Michael Deegan (Ford)
Al Lopez (Intertek)	Jeff Hsu (Shell)
Pat Lang (SWRI)	Sid Clark (IMTS)
Rich Grundza (TMC)	Jason Soto (Intertek)
Ed Hennessy (Haltermann)	
Khaled Zreik (GM)	
Mike Kunselman (CQA)	

2. Agenda:

- Overview of Ford 2016 hardware vs 2018 hardware purchase differences. (Jason S.)
- Blowby re-work averages. (George S.)
- Ford 2.0L engine rebuild. (Sid Clark)

3. Minutes:

Al Lopez: We should survey all the labs at the next panel meeting for BC piston quantities.

Mike Deegan: Will investigate why the crankshaft balancer was replaced with a new design.

Jason Soto: Only the cast iron tensioner has been approved. Intertek is willing to provide labs with tensioners while we decide on how to introduce the aluminum tensioners.

George Szappanos: Highlighted that the procedure does not specify whether the pre or post blowby should be used to calculate the 120hr blowby average. This will continue to be discussed at the next meeting.

Sid Clark: Confirmed that Intertek had shipped 4 retired engines to IMTS for inspection. IMTS plans to offer the ability to rebuild retired Ford 2.0L engines.

The Appendix includes the presentation that was reviewed during this meeting. The comments in RED are the conclusions reached during this meeting.

4. **Next Meeting:** TBD

5. **Appendix:**



SEQUENCE X HARDWARE AND OPERATIONAL LOG

By: Jason Soto

05/21/2018

01/23/2024 V2

Pistons



Only AC2, BB and BC pistons are currently approved for Sequence X testing.

- 2016 engines came with a mix of BC and BB pistons.
- BC pistons are used for CW and BB pistons for FLSPI.
- 2018 engines came with CA and AA pistons.
- BC, CA, and AA pistons all use the same piston rings.
- BB pistons use different rings. A limited lifetime purchase was made.

Pistons cont.



- BB and BC pistons have a cast top. AC and AA pistons have a machined top.



- BB and BC pistons have four smoke holes. AC and AA pistons have six smoke holes.

Timing Chain Tensioner



Only the steel tensioners pictured on the right are approved for Sequence X testing. The aluminum tensioners are expected to be approved in the future.

- 2018 tensioner on the left and 2016 on the right.
- The timing chain tensioner is a critical batched component for the chain wear test. Only the 2016 style batched tensioners should be used for CW.

Crankshaft Balancer



Only the 2016 crankshaft balancer pictured on the right has been approved for Sequence X testing.

- 2018 on the left and 2016 on the right.
- We will continue to use the 2016 style balancer. 2018 balancers will not be used.
- 2016 style balancers can be reused or purchased from the dealership.

Crankshaft Timing Gear



Both gears have been approved for Sequence X testing. The 2018 gear on the left must be introduced on a reference test at each lab.

- 2018 timing gear on the left and 2016 on the right.
- The 2018 gear does not use a diamond washer.
- The crankshaft timing gear is a critical batched component for the chain wear test.

Oil Filter Housing



- 2018 oil filter housing on the left and 2016 on the right.
- The 2018 oil filter housing does not accept an oil cooler.
- **Only the 2016 style oil filter housing should be used for CW and FLSP.**

Balanced Shaft Assembly



- 2016 balanced shaft assembly on the left and the 2018 on the right.
- The shaft assembly is not used in the CW test.
- **Only the 2016 style assembly should be used for FLSPI.**

Spark Plugs



8.21.10 *Spark Plugs:*
8.21.10.1 Install new Motorcraft CYFS-12-Y2 spark plugs.³² These come pre-gapped.
8.21.10.2 Torque the spark plugs to 9 N-m to 12 N-m.
8.21.10.3 Do not use anti-seize compounds on spark-plug threads.

- Old part number (in procedure): CYC12Y2
- Current available part numbers: CYFS-12Y-PCT and CYFS-12Y-PCTX
- **New part numbers need to be included in the procedure.**

Valve Seals



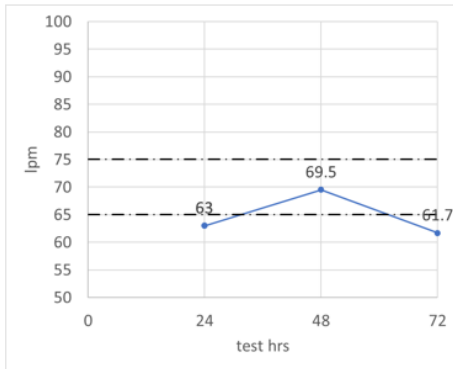
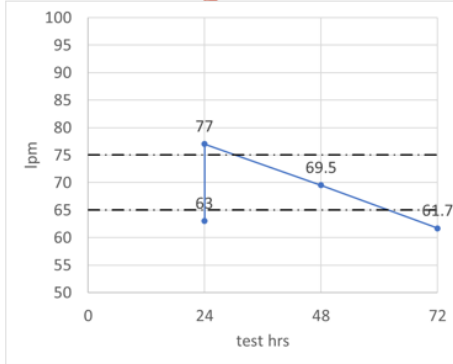
- New valve seals (pictured) are a darker color than in the past. No other visible differences.
- This was brought up in the 2023 build workshop at Lubrizol.
- **The darker colored valve seals can be used. Ford is looking into any potential differences.**

Rear Main Seal



- Older rear main seal is pictured on top and new rear main seal is pictured on bottom.
- There does not appear to be any dimensional differences between both seals. Only difference is color.
- **Both rear main seals are acceptable for Sequence X testing.**

Blowby re-work average



Test hour	post re-gap	pre re-gap
24hr	77	63
28hr	69.5	69.5
72 hr	61.7	61.7
0-72hr avg	69.40	64.73

8.17.1.3 To achieve an average blowby of 65 L/min to 75 L/min, an adjustment may be necessary immediately before or after the 24 h measurement.

8.17.1.4 A 24 h blowby value of at least 70 L/min is recommended. The 24 h to 120 h blowby average shall fall within 65 L/min to 75 L/min.

8.17.1.5 Ring gap adjustments are not allowed once the test has resumed after the 24 h blowby reading.

TABLE 10 2nd Stage Recommended Blowby Readings

Test Hours	Recommended Average Blowby Reading, L/min
3.5 to 3.75	70
23.5 to 23.75	65 to 75
47.5 to 47.75	65 to 75
71.5 to 71.75	65 to 75
95.5 to 95.75	65 to 75
119.5 to 119.75	65 to 75
143.5 to 143.75	65 to 75
167.5 to 167.75	65 to 75
191.5 to 191.75	65 to 75
215.5 to 215.75	65 to 75

Pending resolution.

