

Sequence X Procedure Review Task Force Teleconference 8th August 2018

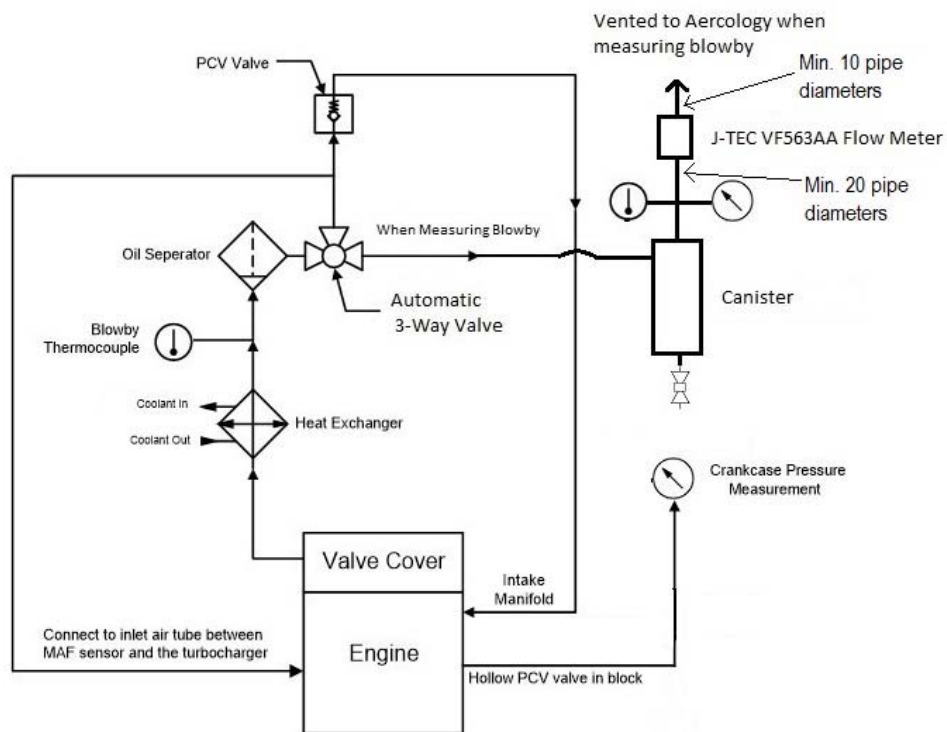
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Old Business

1. PCM order is done, FCS will send all units to Ron for calibration flash..
2. FCS will be issuing a solicitation for pistons and rings with the coming weeks.
3. Meeting with Terry Bates for procedure review pending updates of blowby apparatus and chain preparation sections.

New Business

1. Demetrius of Lubrizol updated the J-tech blowby schematic. Shown below. Some corrections were made and dimensions added. The drawing will be added to the procedure in conjunction with the original drawing that uses the blowby cart. Jason to update the document and sent to Terry.



2. The J-Tech meter cleaning procedure from the Sequence IIIH was reviewed for adoption to the Chain Wear Test. The IIIH method is below in Appendix 1.
 - a. In the discussion of the cleaning method the group realized that the orientation of the meter and purge canister needed to be specified. In general we adopted the configuration that Lubrizol was using. With the understanding that the meter would be plumbed vertically as long as the minimum line lengths were met. Amol pointed out that the IIIH meter is vertical but flowing downward for better drainage. Demetrius pointed out that there is near zero accumulation of fluid in the purge canister, so it was not necessary to flow downward. We agreed to copy vertical upward flow as seen in the drawing.
 - b. Ron requested that we establish a line length from the engine to the purge canister.
 - c. Photos of the apparatus will be studied from LZ and Afton.
 - d. Another observation of the IIIH method was the electrical detail. Demetrius was tasked to check his system and compare the signal conditioning to the IIIH requirement. (Voltage and impedance) Once he reports back we can adopt the description or change it as necessary.
3. Demetrius presented a revised version of section 8.20. He made some improvements to the chain handling that we all approved. The section is included below in Appendix 2 with the changes highlighted in yellow. This section needs to be updated in the procedure.

Appendix 1 (IIIH J-tech Cleaning procedure)

A4. SETUP AND MAINTENANCE OF THE J-TEC MODEL VF563AA BLOWBY FLOW METER

A4.1 General Installation Instructions

A4.1.1 Install the flow meter as shown in [Fig. A4.1](#) with a minimum straight-pipe length of 20-pipe diameters upstream and 10-pipe diameters downstream from the flow meter. For example, a 2 cm diameter tube or hose should have 40 cm of straight length immediately before the flow meter inlet tube. This condition provides a more symmetrical flow profile, which is necessary to obtain accurate and repeatable results.

A4.1.2 A typical connection to the flow meter is made by attaching flexible hose onto the outside of the inlet tube and outlet tube.

A4.1.3 Install the flow meter vertically with flow into the top and out the bottom to encourage liquids to drain out of the flow meter.

A4.1.4 As shown in [Fig. A4.1](#), install a J-TEC VF563AA

P/N CCV600033,10 filter canister in the pipe between the crankcase and the flow meter. This canister minimizes the effect of pulsating flows, and collects oil and water droplets to keep the flow meter cleaner.

A4.2 Electrical Installation

A4.2.1 Fig. A4.2 shows the recommended electrical connections for the flow meter.

A4.2.1.1 Provide a filtered dc power supply to the blowby flow meter of at least 35 mA at +12 V to +24 V.

A4.2.1.2 Provide a dc analog output signal of 0 V to 5 V, proportional to the flow range. (Output impedance is 100 Ω .)

A4.2.1.3 Make electrical connections to the flow meter with a four-conductor cable with each cable made of 26 to 22 AWG.

A4.2.1.4 Connect to the flow meter head using a Conxall cable connector P/N 6282-5SG-3XX37,10 (available as P/N DRJ0720 from J-TEC.33,10 The contact pins of the connector are identified in Fig. A4.2.

A4.3 Cleaning and Maintenance

A4.3.1 To ensure the inside of the flow tube and strut remain in a clean condition, carry out the following cleaning procedure prior to every test start.

A4.3.1.1 Gently brush the strut and the inside of the tube with a soft brush or cotton swab. A solvent cleaner, such as a brake parts cleaner that degreases and leaves no residue, may be used to loosen deposits. Ensure the solvent is compatible with aluminum, fluorelastomers, and PTFE.

A4.3.1.2 DO NOT use wire brushes or use high-pressure liquids which may damage to the transducers.

Appendix 2 (Chain cleaning and measurement)

8.20.7 Chain Measurement Procedure:

Note: The reference chain should be measured immediately before measuring the test chain.

8.20.7.X Clean and lube the reference chain and test chain per section X.

8.20.7.X Wipe off excess oil and hang chains for a minimum of 30 minutes to allow any excess oil to drain.

8.20.7.X Allow chains to acclimate to the temperature of the room in where they will be measured. A laser thermometer may be used to verify that the chains have reached the desired temperature.

8.20.7.X Zero the dial indicator using the zeroing bar.

8.20.7.1 Orient the sprockets of the measurement apparatus so that they are aligned with their alignment orientation marks.

8.20.7.2 Install the chain on the measurement apparatus with the “key” link in the standard (aligned) location.

8.20.7.X Energize the drive motor on the chain measurement apparatus and run until a minimum of 30 chain lengths worth of readings have been captured (207 sprocket revolutions) to seat the chain on the sprockets. Do not record any data during this run.

8.20.7.3 Ensure that the USB digital interface cable between the indicator and the computer is connected and that the first cell of the spreadsheet is selected into which the data will begin being entered.

8.20.7.4 Energize the drive motor on the chain measurement apparatus and run until a minimum of 30 chain lengths worth of readings have been captured (207 sprocket revolutions).

8.20.7.5 When complete, examine the averages for the three measurement ranges and verify that the total range does not exceed ± 0.008 mm (± 0.0003 in.); if it does, repeat the measurement by overwriting the data.