

Chrysler IIIH Task Force
Conference Call Minutes
September 26, 2014

Attendees

Chrysler: Haiying Tang, Jeff Betz

SwRI: Sid Clark, Karin Haumann, Pat Lang

Intertek: Addison Schweitzer

Lubrizol: George Szappanos, Mike Conrad

Afton: Dave Glaenzer, Raymond Smart

Ashland: Tim Caudill, Amol Savant

Oronite: Jerry Wang, Kaustav Sinha

OHT: Jason Bowden, Matt Bowden

TMC: Rich Grundza

Halterman: Tracy King

Karin opened the meeting with an update from Rich Grundza on the data dictionary. Rich reported the TMC included editorial comments Karin had made after the closing date as they were considered editorial and the effective date for the data dictionary is October 22, 2014.

Karin and George reviewed the use of the 3k Ω resistor for the dyno harness connection. The 3k Ω resistor indicates 55°C engine temperature to the ECU and allows hot restart on the dyno and closed loop operation with no effect on timing or fuel trim at test conditions.

Karin indicated the group would review the crankcase ventilation system during the lab visits October 1 & 2. Karin also indicated Sid would have the Engine Assembly Manual available for review during the same time.

Lab Updates:

IAR:

Addison started his update asking clarification on the resistance value required, asking if the labs could use the Shunt type start system. Karin reviewed the development design where the resistance value was used to adjust engine spark timing by a variable resistor inline, however, with the latest ECU control algorithm, the timing is fixed and the 3k Ω resistance value works for all test conditions.

Currently in process of building next engine for prove-out with a start date early next week. The test will run fixed phasers and proven ECU run on SwRI stand to confirm operation.

Lubrizol:

George reported Lubrizol had completed all their coolant system updates, installed the air box and started their next test.

Afton:

Ray reported they have completed the coolant system updates and were working on thermocouple installations and computer programming issues and planned a start next week.

Karin next informed the group she has been working with the facilitator and is currently waiting on input from the group during the lab visit when she plans to have a procedure review with the task force. Karin also indicated there would not be any advance copies of the Assembly Manual as Sid will be working on the document the week of September 22nd.

The group discussed plans for the lab visit and who would be attending the review next week.

REO-2 availability; there is a limited quantity of REO-2 and the desire is to have all labs run on the same batch, however, if there needs to be any re-runs there could be problems plus one lab has asked for some REO-2 for internal prove-out testing. Karin told the group that this was discussed with the development group and they decided to make a small blend of REO-2 for additional shakedown use thereby saving the initial blend for final prove-out testing.

Karin and Rich discussed the use of 434 and Karin informed everyone that the development group had decided to use 434-2 for additional work on the IIIH. Rich indicated the TMC had sent some 434-2 to SwRI for their next test. Rich also indicated he would ship additional supply to Afton, Lubrizol, and IAR. Rich indicated the oils would be cleared from the IIIG inventory list for the labs.

Karin asked if there was any comment on the ventilation systems and indicated she planned to keep this as an open item for next week's visit. Rich commented the ventilation system was similar to configurations in the VID and commented that the IIIH required the removal of the PCV internal components for testing. The group agreed this would be revisited next week. Karin informed everyone that she sent a picture of the SwRI fuel rail adaptor fitting for discussion next week. The fitting is a #4 size and reduces the mass at the inlet of the fuel rail. The group discussed inlet fuel rail connections on the OHT Fuel Rail. George asked the group if anyone had any concerns about heat soak effects on the aluminum fuel rail as the insulation properties of the plastic production rail would be quite different. Jason indicated they would look into this issue, while Karin indicated we wouldn't have much choice with the aluminum rail. Karin also asked about modifications to the left side camshaft cover and IAR and Afton indicated they were modifying the cover. Karin asked whether we should angle the OHT Fuel Rail or whether we should leave it straight.

Secretary Note:

During the time between this call and the writing of these minutes, the group decided not to continue with the design of the OHT Fuel Rail, opting to use the production fuel rail.

The group discussed honing surface finish parameters and results from the SwRI and IAR honing exercises. Addison mentioned the differences between the surface finish measurements, understanding the IAR data was converted from stand to metric units. Addison mentioned earlier comments on taper

with and without stress plates on the block and indicated their concern is that there is very minimal material for honing and suggested the labs continue to watch this parameter. Jeff Betz indicated he would like to keep surface finish parameter reviews on the Action Item list to keep a watch on lab honing capabilities. Rich asked if a 1 μ m variance between readings was within the reproducibility of the measurement device indicating he hoped all other labs provided this data for future review. The group continued discussion with input from all members with final decision the labs would continue to monitor their capabilities in honing and surface finish measurement. George indicated Lubrizol has yet to hone a block and plans to review the procedure and hone a used block for practice but without the test pistons he questioned whether honing without a target would be useful. Karin summarized the comments indicating it would take time for the technicians (honors) to familiarize themselves with the process. Rich asked what Oil Consumption differences might look like and indicated that might take some time to review.

Karin asked Jason to provide an update on OHT Hardware:

Rings – Mid October

Oil Pans are in process for October

Fixed Phasers are requested for an update on deliver

Everything else is in-stock

Karin asked about piston ring delivery being delayed about a month and Jason said he has a request in for an update. Jeff commented the rings should not be a problem as the labs could use production rings gapped at the labs. Jeff asked if Jason had pistons he could provide for George, Jason commented the pistons in inventory are for prove-out. Karin asked when we need to provide information for a larger order, Jason commented they had enough for development and would wait until test approval for additional order. Karin asked and Jason confirmed they had 100 sets for prove-out.

Afton; Ray asked about cleaning blocks with the Ultra Sonic Cleaner. Karin indicated we could discuss this next week.

Ray also asked about putting the crankcase pressure transducer on the dipstick and Karin indicated that was how SwRI had originally adapted the pressure transducer but that would change with the OHT Modified Upper Oil Pan.

Ray also asked for confirmation that the pressure on the coolant system was controlled by applying pressure to the coolant reservoir. Karin agreed that was how SwRI was controlling that parameter.

Amol asked about flow meters for the coolant system and whether the exact model was required. Karin indicated there has been a lot of discussion on this subject and the group decided the best approach was to specify all parameters. Discussion continued about certain models having the capability to provide the same data. Rich commented there was a lot of data showing the need to specify the exact flow meter for reasons he could not comment on at this time. The group discussed flow calibration and differences within same models, Rich commented that this is standardized testing.

The group moved for adjournment.

Action Items:

- 1) Need the part number for the SwRI fuel rail inlet fitting adaptor.
- 2) Jeff Betz indicated he would like to keep surface finish parameter reviews on the Action Item list to keep a watch on lab honing capabilities.

This is a compilation from notes recorded during the call, with comments from member participants during the Draft Review. Certain subjects may not necessarily be in exact order; however, they are believed to represent an accurate account of the call. If anyone feels changes or additional content may be necessary, please contact Sid Clark @ 586-873-1255 or Sidney.Clark@swri.org

Thanks, Sid