

# Sequence III Surveillance Panel Meeting

Teleconference

Thursday August 3, 2017 09:00 – 10:30 CST

WebEx sent separately

## Agenda

**As the host, I have not in the past and will not in the future record any ASTM meeting and there are no “authorized persons” that may record an ASTM meeting. As a reminder to everyone the recording of ASTM meetings is prohibited.**

### 1.0) Attendance

### 2.0) Chairman Comments

### 3.0) Approval of minutes

3.1) Minutes from 07/20/2017 WebEx Conference Meeting

### 4.0) IIIH Action Items

4.1) Lab Severity Task Force Report – **Bowden**

**Increased ring gaps, reduced oil additions or initial oil charge, extended test length, increasing bore size, and/or change piston design on a new batch of hardware. The current batch code 4 hardware will likely be depleted by 1Q 2018. This batch of hardware was originally estimated to be depleted in 2 years based on historic usage rates of the IIIH test.**

4.2) IIIF to IIIH correlation update – **Schweitzer / Stockwell**

IAR has graciously agreed to repeat the two tests using batch 4 hardware and FCA engines.

#### **ACTION ITEM:**

**SwRI and IAR to report the IIIF/IIIH correlation matrix data set severity adjusted. Rich will include both corrected and uncorrected data in the database by including data in the comments section.**

4.3) Cylinder head reuse guideline modification proposal - **Schweitzer**



Seq IIIF-G Cyl Head  
20170731.pdf

#### **MOTION:**

**IAR recommends to the Sequence III Surveillance Panel that the IIIF/G EAM be modified to allow the use of 30° grinding stones to dress valve seats to bring them into valve seat width specifications (Intake Valve Seat Width = 0.060” – 0.080”, Exhaust Valve Seat Width = 0.090” – 0.110”). These heads would be considered by the Sequence III Surveillance Panel for testing provided that the cylinder heads meet a maximum valve recession of 0.010” and Valve Seat Width Specifications (Intake Valve Seat Width = 0.060” – 0.080”, Exhaust Valve Seat Width = 0.090” – 0.110”). The effective date of this motion is 8/3/2017.**

**16 For  
None Against**

## 1 Waive

4.4) ASTM Procedure (seems like a few of our updates from earlier this year did not make it into the balloted procedure)

**Rich will work to on an information letter to update the test method to capture changes required to PVIS, including the transform, correcting intermediate precision, blow-by information and to ensure earlier changes have been incorporated. Robert and Amol offered to help.**

### 5.0) Old Business

?

### 6.0) New Business

Two proposed new motions:

#### Motion:

Inventory numbers of all critical test parts supplied by the IIIH CPDs will be reported to the Surveillance Panel on a quarterly basis. **(Ed Altman)**

**Seconded by Addison Schweitzer**

**16 For**

**None Against**

**3 Waive**

#### Motion:

The IIIH CPDs will consider input from the Surveillance Panel to help determine new batch order quantities of critical parts. **(Ed Altman)**

**Seconded by Addison Schweitzer**

**17 For**

**None Against**

**2Waive**

### 7.0) Review / Update Scope and Objectives

### 8.0) Next Meeting

**Thursday August 24<sup>th</sup> 2017 9:00 – 11:00 AM CDT**

### 9.0) Meeting Adjourned

ASTM Sequence III Surveillance Panel (22 Voting members)

date: 8-3-2017

Name/Address Phone/Fax/Email Signature *R. Sadevall*

16-0-3  
17-0-2

Name/Address	16-0-3	17-0-2	Phone/Fax/Email	Voting Member	Present
✓ Jorge Agudelo			jorge.agudelo@bp.com	Voting Member	Present
✓ Ed Altman	Y	Y	ed.altman@aftonchemical.com	Voting Member	Present
✓ Jeff Betz			jeff.betz@fcagroup.com	Voting Member	Present
✓ Jason Bowden	Y	W	jbowden@ohtech.com	Voting Member	Present
✓ Richard Grundza	W	W	reg@astmtmc.cmu.edu	Voting Member	Present
✓ Jeff Hsu, PE	Y	Y	j.hsu@shell.com	Voting Member	Present
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✓ Prasad Tumati	Y	Y	ptumati@jhaltermann.com	Voting Member	Present

*led add*

*heads rework 15-0-1  
critical parts # quantity  
parts orders*

## ASTM Sequence III Surveillance Panel (22 Voting members)

date:

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ASTM Sequence III Surveillance Panel (22 Voting members)

date:

Name/Address	Phone/Fax/Email	Signature	
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Angela Willis	<a href="mailto:angela.p.willis@gm.com">angela.p.willis@gm.com</a>	N-V Member	Present_____
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Updated 20170602

**SEQ. IIIF/G CYLINDER HEAD RE-USE**

**Part Number: 24502260S**





## PROPOSAL FOR CYLINDER HEAD RE-USE

Valve recession specification increased to 0.005" → 0.010" during the Seq. III SP Meeting on 11/20/2015 so long as valve seat width criteria was met.

Factory Valve Seat Width Specifications:

Intake Valve Seat Width = 0.060" – 0.080"

Exhaust Valve Seat Width = 0.090" – 0.110"

At current industry inventory levels, Seq. III cylinder heads (PN: 24502260S) will require additional uses to extend the end of the life of the Seq. IIIF/G.

IAR recommends the following revisions to the IIIF/G EAM to prolong cylinder head usage:

*If required, use a 30° grinding stone to dress the valve seat to bring into width specifications.*

Lap valves using a water based valve grinding compound. Use Permatex Valve Grinding Compound, water mixed, item #80036.





			<b>Description of Operation</b>	
			<p>When reusing cylinder head part number 240502260S, Clean cylinder head by automated parts washer or ultrasound bath and spray with 50/50 solution of EF-411 and degreasing solvent. Remove excess solution using compressed air. Do not use sandpaper, scotchbrite pads or other abrasives to clean heads.</p> <p>Visually inspect seats for wear. Measure Valve recession using procedure in 5a, sheet 1.</p> <p>Reject any heads where valve recession exceeds 0.010"</p> <p>Measure valve guide clearances at top and bottom of guides. Reject any heads which do not meet clearance of 0.0015 to 0.0032 inch.</p>	
			<b>Specification</b>	
<b>REV</b>	<b>Date</b>	<b>Revision History</b>	<b>View</b>	
1	12/03/15	Revised valve recession limit from 0.005" to 0.010"	<b>Initial Prep, reusing Head 24052260S</b>	
<b>Head Assembly</b>			<b>Sequence III G</b>	
			<b>Section</b>	<b>Sheet</b>
			5a	2

If required, use a 30° grinding stone to dress the valve seat to bring into width specifications.



			Description of Operation	
			<p>Lap valves using a water based valve grinding compound. Use Permatex Valve Grinding Compound, water mixed, item #80036.</p> <p>Thoroughly clean lapping compound from valves and seats using water and a lint free rag. Be sure all lapping compound is removed. After cleaning lapping compound, spray entire head with degreasing solvent. Spray with, with 50-50 mixture of degreasing solvent and EF411 then blow dry with compressed air.</p> <p>Apply bluing to each valve and install. Visually inspect for proper seating. The bluing ring should be a consistent width around the entire valve circumference and be positioned toward the middle of the face. If valves show proper seating appearance, repeat "Pre Test Measurement Procedure". If Valve seat wear does not exceed 0.010" and meets factory valve seat width specifications (Intake Valve Seat Width = 0.060" – 0.080", Exhaust Valve Seat Width = 0.090" – 0.110"), heads are acceptable for re-use.</p>	
			Specification	
			View	
			Head Preparations (continued)	
<b>Head Assembly</b>		<b>Sequence III G</b>	<b>Section</b>	<b>Sheet</b>
			5a	4



3 <sup>rd</sup> Run EOT Cylinder Head Exhaust Valve Seat Width (in)		
Measurement Time	Measurement	Specification
Before 30° Valve Grinding Stone	>0.110"	0.090" – 0.110"
After 30° Valve Grinding Stone	0.105"	0.090" – 0.110"

3 <sup>rd</sup> Run EOT Cylinder Head Exhaust Valve Recession (in)		
Measurement Time	Measurement	Specification
Baseline Valve Recession	0.000"	0.010"
Before 30° Valve Grinding Stone	0.005"	0.010"
After 30° Valve Grinding Stone	0.006"	0.010"

3 <sup>rd</sup> Run EOT Cylinder Head Valve to Guide Clearance (in)		
Measurement Location	Measurement	Specification
Exhaust	0.0025"	0.0015" – 0.0032"
Intake	0.0023"	0.0015" – 0.0032"
Exhaust	0.0026"	0.0015" – 0.0032"
Intake	0.0023"	0.0015" – 0.0032"
Exhaust	0.0028"	0.0015" – 0.0032"
Intake	0.0023"	0.0015" – 0.0032"

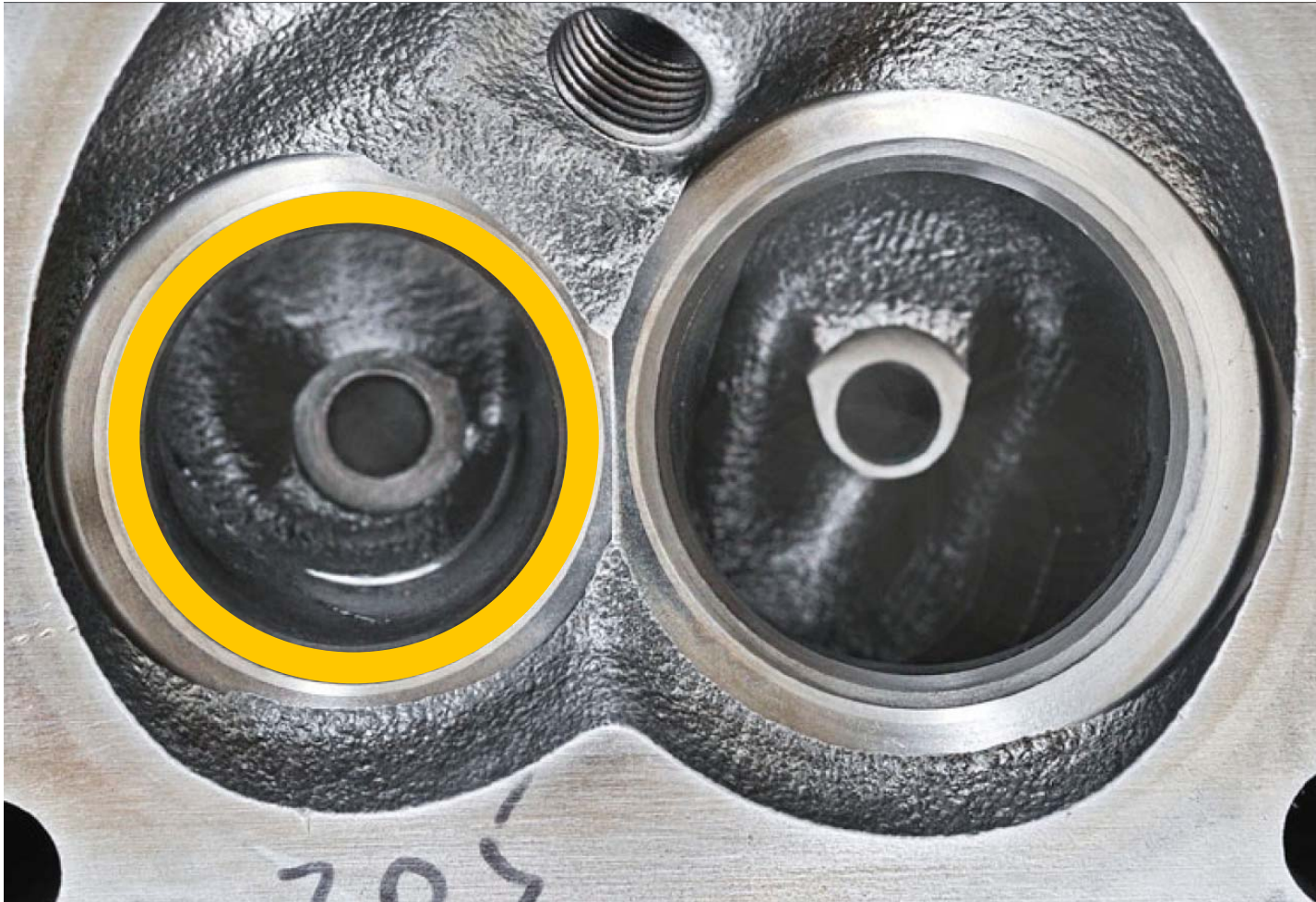
## 3<sup>RD</sup> RUN EOT CYLINDER HEAD BEFORE



## 30° PORTION OF EXHAUST VALVE SEAT



## 45° PORTION OF EXHAUST VALVE SEAT (SEALING AREA)



# 3<sup>RD</sup> RUN EOT CYLINDER AFTER LAPPING AND 30° GRINDING STONE



## RECOMMENDATION



### MOTION:

IAR recommends to the Sequence III Surveillance Panel that the IIF/G EAM be modified to allow the use of 30° grinding stones to dress valve seats to bring the into width specifications (Intake Valve Seat Width = 0.060" – 0.080", Exhaust Valve Seat Width = 0.090" – 0.110"). These heads would be considered by the Sequence III Surveillance Panel for non-reference testing provided that the cylinder heads meet a maximum valve recession of 0.010" and Valve Seat Width Specifications (Intake Valve Seat Width = 0.060" – 0.080", Exhaust Valve Seat Width = 0.090" – 0.110"). The effective date of this motion is 8/3/2017.



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