



100 Barr Harbor Drive ■ PO Box C700 ■ West Conshohocken, PA 19428-2959
Telephone: 610-832-9500 ■ Fax: 610-832-9555 ■ e-mail: service@astm.org ■ Website: www.astm.org

Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

Chairman: W. JAMES BOVER, ExxonMobil Biomedical Sciences Inc, 1545 Route 22 East, PO Box 971, Annandale, NJ 08801-0971, (908) 730-1048, FAX: 908-730-1197, EMail: wjbover@erenj.com
First Vice Chairman: KENNETH O. HENDERSON, Cannon Instrument Co, PO Box 16, State College, PA 16804, (814) 353-8000, Ext: 0265, FAX: 814-353-8007, EMail: kenohenderson@worldnet.att.net
Second Vice Chairman: SALVATORE J. RAND, 221 Flamingo Drive, Fort Myers, FL 33908, (941) 481-4729, FAX: 941-481-4729
Secretary: MICHAEL A. COLLIER, Petroleum Analyzer Co LP, PO Box 206, Wilmington, IL 60481, (815) 458-0216, FAX: 815-458-0217, EMail: macvarlen@aol.com
Assistant Secretary: JANET L. LANE, ExxonMobil Research and Engineering, 600 Billingsport Rd, PO Box 480, Paulsboro, NJ 08066-0480, (856) 224-3302, FAX: 856-224-3616, EMail: janet_l_lane@email.mobil.com
Staff Manager: DAVID R. BRADLEY, (610) 832-9681, EMail: dbradley@astm.org

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Reply to: Richard Grundza
ASTM Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206
Phone: 412-365-1031
Fax: 412-365-1047
Email: reg@astmtmc.cmu.edu

Unapproved Minutes of the March 18, 2014
Sequence III Surveillance Panel Conference Call.

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The call was initiated by Chairman Glaenzer at 2 PM Eastern Time.

The purpose of this call was to address the procedure to prepare Sequence III satellite heads for re-use in Sequence III test methods and as such, no formal agenda was issued.

A listing of participants is included as attachment 1. A total of fourteen voting members were in attendance on the call.

The procedure for rework of cylinder heads, developed by the task group headed by Ed Altman and Sid Clark, is included as attachment 2. Chairman Dave Glaenzer thanked both Ed and Sid for their tireless efforts in developing this procedure. Ed felt that the procedure, as written, would provide consistent results for reuse of these heads and tried to keep the tolerances for valve seat

depth, valve guide clearance, etc, as close as possible and he had a lot of confidence that the test labs using this procedure would obtain consistent results.

The panel attempted to address implementation of the this procedure and how to introduce reused heads in both the Sequence IIIF and Sequence IIIG test types. There was some discussion as to whether the use of these hardened insert heads was approved for IIIF. Pat Lang indicated he thought they were approved for both test types during a previous call, while Dave Glaenzer, Charlie Leverett and Rich Grundza were under the impression that the approval was only for the Sequence IIIG test. Rich reviewed the minutes from the previous call and they did not indicate that approval was for only the IIIG and the minutes did not reflect any specific test type approval.

Chairman Glaenzer then decided that the best approach to addressing these items was to take them one at a time and move for approval separately. The first motion was to allow referencing on the hardened insert cylinder heads for Sequence IIIF testing effective 3/18/14. These cylinder heads can be used for non reference oil tests, provided that an acceptable reference oil test has been obtained. Rich Grundza, 2nd Ed Altman. Approved 14/0/0.

The panel entertained a motion to allow the reuse of hardened seat insert heads. After some discussion, a motion was made by Ed Altman, seconded by Pat Lang, to allow the use of satellite heads for additional run(s). Additional discussions took place as to whether this would allow multiple runs on a cylinder head. Both several members, primarily test lab personnel, felt that to carry through the life of the test, it would not be necessary to conduct more than one additional run on the hardened seat heads. The motion to allow the use of the heads for an additional run was unanimous, with all fourteen members approving and no abstains or waives.

The final item was to address how to introduce the heads into the system. Ed Altman explained that very little has changed between runs and that he felt that introducing these heads may not require a reference oil test. Rich Grundza explained while the engineering review suggests little or no change, a failing result on a candidate test may leave customers wondering. Charlie Leverett acknowledged that a number of corrections have been applied to the IIIF and the introduction of these heads may impact those correction factors. Robert Stockwell noted that while we think there won't be any differences, the only way to know would be to generate the data. After some more discussions, Robert Stockwell moved to introduce the additional run on hardened seat heads with a successful reference oil test for both the IIIF and IIIG test types, with a second from Rich Grundza. Additional discussions took place regarding failed references and these tests would follow the normal LTMS protocol. Also discussed was that once both the initial run and subsequent run on the hardened seat heads had successfully referenced, these heads may be used interchangeably. Finally, the panel agreed to append the cylinder head part number with a 2, to designate the second run. The motion was approved 13/0/1, with Tracey King waiving.

Dave mentioned that he was looking at conducting a meeting in San Antonio after the Easter break to review the Sequence IIIF test stand and to review the procedure, hardware, etc. Rich Grundza also mentioned that report forms and data dictionary close beta on Thursday of this week and once correction of a couple of items identified during beta is completed, they will be available for use.

There being no further business, the meeting was adjourned at 2:41 PM.

TELECONFERENCE

ASTM Sequence III Surveillance Panel (20 Voting members)

date: 03/18/14

Name/Address	Phone/Fax/Email		Signature
Ed Altman Afton Chemical Corporation 500 Spring Street Richmond, VA 23219 USA	804-788-5279 804-788-6358 ed.altman@aftonchemical.com	Voting Member	Present <input checked="" type="checkbox"/>
Jason Bowden OH Technologies, Inc. 9300 Progress Parkway P.O. Box 5039 Mentor, OH 44061-5039 USA	440-354-7007 440-354-7080 jhbowden@ohtech.com	Voting Member	Present <input type="checkbox"/> <i>MATT BOWDEN P.M.Y.</i>
Timothy L. Caudill Ashland Oil Inc. 22 nd & Front Streets Ashland, KY 41101 USA	606-329-1960 x5708 606-329-2044 tlcaudill@ashland.com	Voting Member	Present <input checked="" type="checkbox"/>
Richard Grundza ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206 USA	412-365-1031 412-365-1047 reg@astmtmc.cmu.edu	Voting Member	Present <input checked="" type="checkbox"/> <i>Secretary today</i>
Tracey King Haltermann Solutions MI USA	947-517-4107 tking@jhaltermann.com	Voting Member	Present <input checked="" type="checkbox"/>
Teri Kowalski Toyota Motor North America, Inc. 1555 Woodridge Ann Arbor, MI 48105 USA	734-995-4032 734-995-9049 teri.kowalski@tema.toyota.com	Voting Member	Present <input type="checkbox"/>
Patrick Lang Southwest Research Institute 6220 Culebra Road P.O. Box 28510 San Antonio, TX 78228 USA	210-522-2820 210-684-7523 plang@swri.edu	Voting Member	Present <input checked="" type="checkbox"/>

ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email	Voting Member	Signature
Charlie Leverett Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238 USA	210-647-9422 210-523-4607 charlie.leverett@intertek.com	Voting Member	Present <u>✓</u>
Bruce Matthews GM Powertrain Mail Code 483-730-472 823 Jocyn Avenue Pontiac, MI 48340 USA	248-830-9197 248-857-4441 bruce.matthews@gm.com Test Sponsor Representative	Voting Member	Present <u>✓</u>
Timothy Miranda BP Castrol Lubricants USA 1500 Valley Road Wayne, NJ 07470 USA	973-305-3334 973-686-4039 Timothy.Miranda@bp.com	Voting Member	Present _____
Mark Mosher ExxonMobil Technology Co. Billingsport Road Paulsboro, NJ 08066 USA	856-224-2132 856-224-3628 mark.r.mosher@exxonmobil.com	Voting Member	Present _____
Andrew Ritchie Infineum 1900 East Linden Avenue P.O. Box 735 Linden, NJ 07036 USA	908-474-2097 908-474-3637 Andrew.Ritchie@Infineum.com	Voting Member	Present <u>✓</u>
Ron Romano Ford Motor Company Diagnostic Service Center II Room 410. 1800 Fairlane Drive Allen Park, MI 48101 USA	313-845-4068 313-32-38042 rromano@ford.com	Voting Member	Present <u>has</u> BRUCE MATTHEWS PROXY EMAIL 3/17/14 1:45pm
Greg Shank Volvo	301-790-5817 greg.shank@volvo.com	Voting Member	Present _____

ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email	Voting Member	Signature
Kaustav Sinha, Ph.D. Chevron Oronite Co., LLC 4800 Fournace Place Bellaire, TX 77401 USA	713-432-6642 713-432-3330 LFNQ@chevron.com	Voting Member	Present <input checked="" type="checkbox"/>
Thomas Smith Valvoline P.O. Box 14000 Lexington, KY 40512-1400 USA	859-357-2766 859-357-7084 trsmith@ashland.com PCEOCP Chair	Voting Member	Present <input type="checkbox"/>
Scott Stap Chevrolet Performance	scott.stap@tgidirect.com	Voting Member	Present <input checked="" type="checkbox"/>
Mark Sutherland Test Engineering, Inc. 12718 Cimarron Path San Antonio, TX 78249-3423 USA	210-867-8357 mrsutherland@tei-net.com	Voting Member	Present <input type="checkbox"/>
George Szappanos The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, OH 44092 USA	440-347-2352 440-347-4096 greg.seman@lubrizol.com	Voting Member	Present <input checked="" type="checkbox"/>
Haiying Tang Chrysler LLC	248-512-0593 ht146@chrysler.com	Voting Member	Present <input type="checkbox"/>

ZACH BISHOP
PROMY


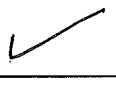
ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email		Signature
Ricardo Affinito Chevron Oronite Co. LLC	affinito@chevron.com	Non-Voting Member	Present _____
Art Andrews ExxonMobil Products Research 600 Billingsport Rd. Paulsboro, NJ 08066 USA	856-224-3013 arthur.t.andrews@exxonmobil.com	Non-Voting Member	Present _____
Zack Bishop Test Engineering, Inc. 12718 Cimarron Path San Antonio, TX 78249-3423 USA	210-877-0223 210-690-1959 zbishop@tei-net.com	Non-Voting Member	Present <input checked="" type="checkbox"/> _____
Doyle Boese Infineum 1900 E. Linden Avenue Linden, NJ 07036 USA	908-474-3176 908-474-3637 doyle.boese@infineum.com	Non-Voting Member	Present _____
Adam Bowden OH Technologies, Inc. 9300 Progress Parkway P.O. Box 5039 Mentor, OH 44061-5039 USA	440-354-7007 440-354-7080 adbowden@ohtech.com	Non-Voting Member	Present _____
Dwight H. Bowden OH Technologies, Inc. 9300 Progress Parkway P.O. Box 5039 Mentor, OH 44061-5039 USA	440-354-7007 440-354-7080 dhbowden@ohtech.com	Non-Voting Member	Present _____
Matt Bowden OH Technologies, Inc. 9300 Progress Parkway P.O. Box 5039 Mentor, OH 44061-5039 USA	440-354-7007 440-354-7080 mjbowden@ohtech.com	Non-Voting Member	Present <input checked="" type="checkbox"/> _____
Jerome A. Brys Lubrizol Corp. 29400 Lakeland Blvd. Wickliffe, Ohio 44092 USA	440 347-2631 jerome.brys@lubrizol.com	Non-Voting Member	Present <input checked="" type="checkbox"/> _____


ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email		Signature
Bill Buscher III Southwest Research Institute 6220 Culebra Road P.O. Box 28510 San Antonio, TX 78228 USA	210-522-6802 210-684-7523 william.buscher@swri.org	Non-Voting Member	Present _____
Bob Campbell Afton Chemical Corporation 500 Spring Street Richmond, VA 23219 USA	804-788-5340 804-788-6358 bob.campbell@aftonchemical.com	Non-Voting Member	Present _____
Chris Castanien	Chris.Castanien@gmail.com	Non-Voting Member	Present  _____
Martin Chadwick Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238 USA	210-706-1543 210-684-6074 martin.chadwick@intertek.com	Non-Voting Member	Present _____
Jeff Clark ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206 USA	412-365-1032 412-365-1047 jac@atc-erc.org Sequence III Secretary	Non-Voting Member	Present _____
Sid Clark Southwest Research 50481 Peggy Lane Chesterfield, MI 48047 USA	586-873-1255 sidney.l.clark@swri.org	Non-Voting Member	Present  _____
J. Michael Conrad, II The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, OH 44902-2298 USA	440-347-4594 440-347-4096 Michael.conrad@lubrizol.com	Non-Voting Member	Present _____
Todd Dvorak Afton Chemical Corporation P.O. Box 2158 Richmond, VA 23218-2158 USA	804-788- 6367 804-788- 6388 todd.dvorak@aftonchemical.com	Non-Voting Member	Present _____

ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email	Non-Voting Member	Signature
Frank Farber ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206 USA	412-365-1030 412-365-1047 fmf@astmtmc.cmu.edu	Non-Voting Member	Present _____
Gordon R. Farnsworth Infineum RR # 5 Box 211 Montrose, PA 18801 USA	570-934-2776 570-934-0141 gordon.farnsworth@infineum.com	Non-Voting Member	Present  _____
Joe Franklin Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238 USA	210-523-4671 210-523-4607 joe.franklin@intertek.com	Non-Voting Member	Present _____
David L. Glaenger Afton Chemical Corporation 500 Spring Street P.O. Box 2158 Richmond, VA 23218-2158 USA	804-788-5214 804-788-6358 dave.glaenger@aftonchemical.com Surveillance Panel Chairman	Non-Voting Member	Present _____
Karin E. Haumann Southwest Research Institute Fuels & Lubricants Res. Div.	210-522-6351 210-522-6858 karin.haumann@swri.org	Non-Voting Member	Present _____
Walter Lerche GM M/C 482-A30-C71 100 Renaissance Center Detroit, MI 48265 USA	313-667-1918 313-667-4095 walt.lerche@gm.com	Non-Voting Member	Present _____
Josephine G. Martinez Chevron Oronite Company LLC 100 Chevron Way Richmond, CA 94802 USA	510-242-5563 510-242-3173 jogm@chevrontexaco.com	Non-Voting Member	Present _____
Mike McMillan	mmcmillan123@comcast.net	Non-Voting Member	Present _____

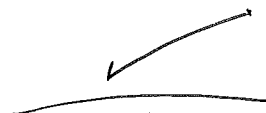
Name/Address	Phone/Fax/Email	Non-Voting Member	Signature
Siamak Moshiri Cad Railway Industries Ltd. 155 Montreal – Toronto Highway H8S 1B4 Montreal, QC CANADA	1-634-3131, ext. 412 smoshiri@cadrail.ca	Non-Voting Member	Present _____
Bob Olee 5388 Hill 23 Drive Flint, MI 48507 USA	248-689-3078 olee@netzero.net	Non-Voting Member	Present _____
Kevin O'Malley Lubrizol Corp.	kevin.omalley@lubrizol.com	Non-Voting Member	Present _____
Christian Porter Afton Chemical Corp. 500 Spring Street Richmond, VA 23219 USA	804-788-5837 804-788-6358 christian.porter@aftonchemical.com	Non-Voting Member	Present _____
Phil Rabbat BASF Corporation 500 White Plains Road Tarrytown, NY 10591-9005 USA	914-785-2217 914-785-3681 phil.rabbat@basf.com	Non-Voting Member	Present _____
Allison Rajakumar The Lubrizol Corporation Drop 152A 29400 Lakeland Blvd. Wickliffe, OH 44092 USA	440-347-4679 440-347-2014 Allison.Rajakumar@Lubrizol.com	Non-Voting Member	Present _____
Scott Rajala Idemitsu Lubricants America Corp.	srajala@ilacorp.com	Non-Voting Member	Present _____
Jim Rutherford Chevron Oronite Company LLC 100 Chevron Way Richmond, CA 94802 USA	510-242-3410 510-242-3173 jaru@chevrontexaco.com	Non-Voting Member	Present _____

ASTM Sequence III Surveillance Panel (20 Voting members)

date:

Name/Address	Phone/Fax/Email		Signature
Amol Savant Ashland Engine Lab 121 22 nd St. Ashland, KY 41101 USA	606-320-1960 x5604 acsavant@ashland.com	Non-Voting Member	Present _____
Addison Schweitzer Intertek AR		Non-Voting Member	Present _____
Philip R. Scinto The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, OH 44092 USA	440-347-2161 440-347-9031 prs@lubrizol.com	Non-Voting Member	Present _____
Don Smolenski GM	248-255-7892 donald.j.smolenski@gm.com	Non-Voting Member	Present _____
Ben O. Weber Southwest Research Institute 6220 Culebra Road P.O. Box 28510 San Antonio, TX 78228 USA	210-522-5911 210-684-7530 bweber@swri.edu Sub-Committee D02.B01 Chair	Non-Voting Member	Present _____
Tom Wingfield Chevron Phillips Chemical Co. USA	wingftm@cpchem.com	Non-Voting Member	Present _____

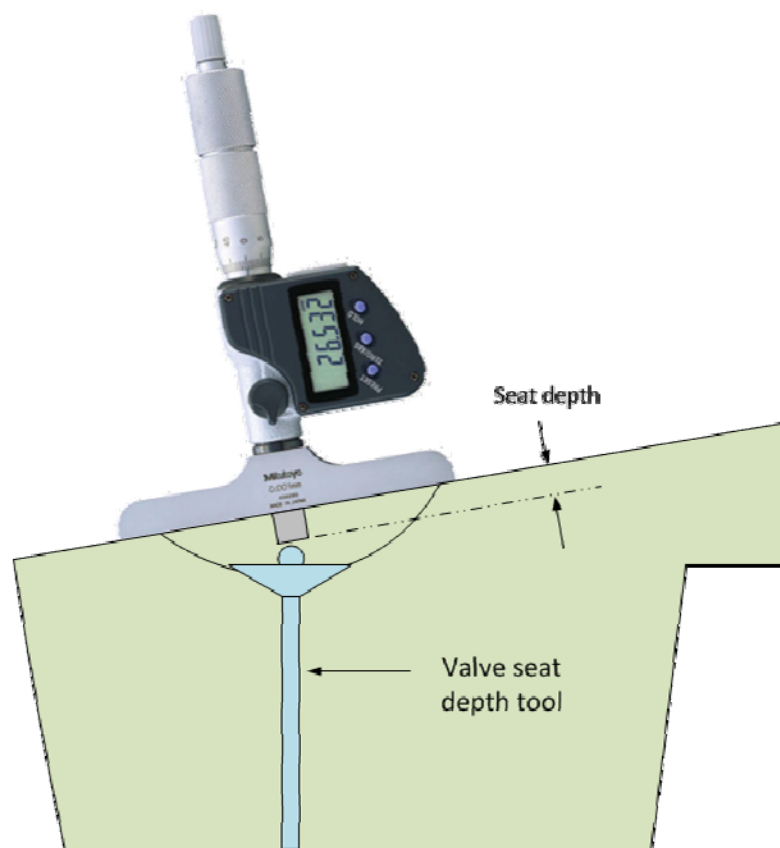
Robert Stockwell GM



Procedure for reworking Stellite seat cylinder heads:

(Pre-Test Measurement Before First Run)

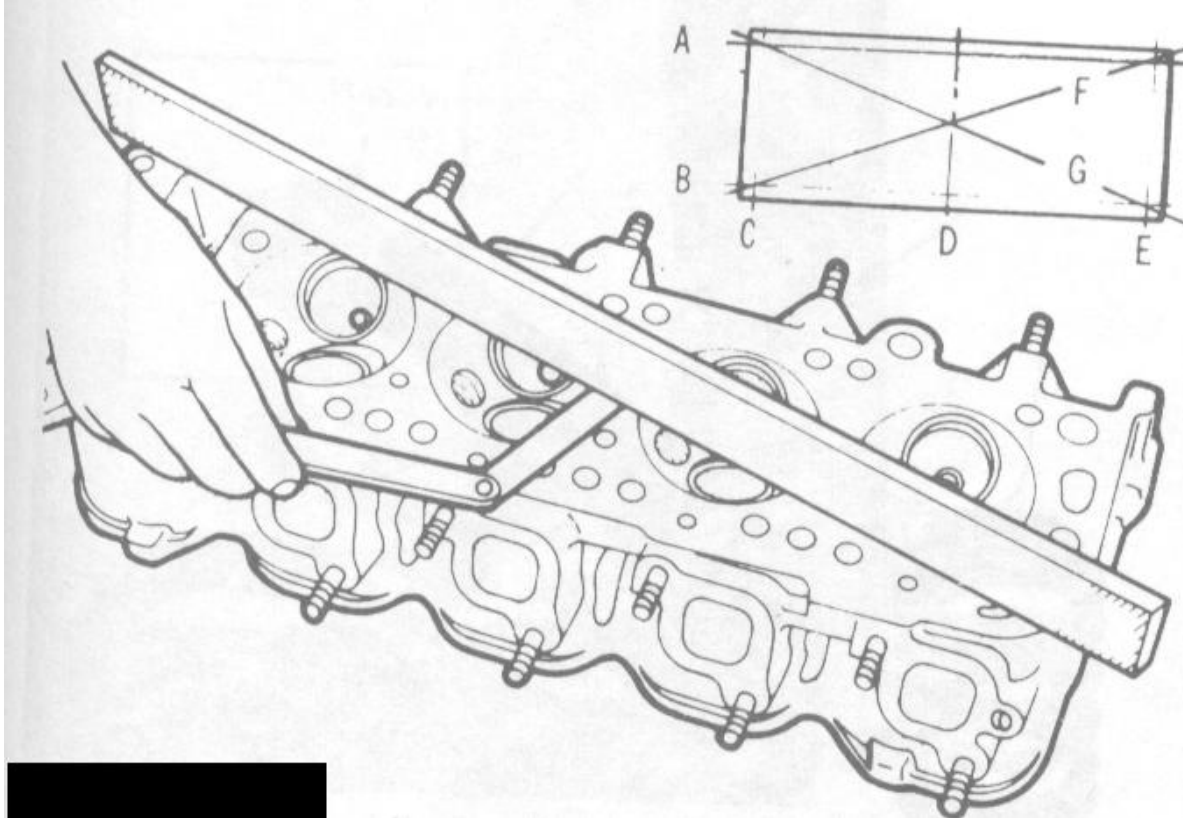
- A. Clean cylinder head, taking care that deck surface is free of nicks and scratches. No sandpaper, scotchbrite pads or other abrasives which could transfer materials to the head surface may be used.
- B. Install valve seat depth tool into valve pocket
- C. Insure that depth micrometer is properly calibrated/zeroed.
- D. Place depth micrometer on cylinder head such that both ends of micrometer rest on either side of the combustion chamber
- E. Measure the depth to the ball on the end of the valve seat depth tool
- F. Record depth value in thousands of an inch (0.xxx")



Post Test Qualification Procedure

1. Complete Disassembly of first run heads.
2. Visually inspect valve seats for unusual wear.
3. Measure clearance at the top and bottom of valve guides. Specified limits are .0015" - .0032"
4. Scrape head gasket from deck surface. No sandpaper, scotchbrite pads or other abrasives which could transfer materials to the head surface may be used.

5. Check head deck for warping.



Using a straight edge, measure the clearance between the straight edge and the head with a feeler gauge. Maximum .004"

5. Spray head with degreasing solvent and dry with compressed air.

6. Wash heads in power washer for 30 minutes, or use ultra sonic cleaner for 30 minutes to remove debris from combustion chamber and intake and exhaust ports.

7. Rinse with hot water and immediately spray with 50-50 mixture of degreasing solvent and EF411.

8. Continue cleaning with degreasing solvent only, using a brush to clean any remaining debris from surfaces. Wire brush can be used in combustion chambers and intake and exhaust ports. Do not use wire brush on deck surface.

9. Spray with 50-50 mixture of degreasing solvent and EF411, then blow dry with compressed air.

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

12. 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.

13. Spray with, with 50-50 mixture of degreasing solvent and EF411 then blow dry with compressed air.

14. 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.

15. If valves show proper seating appearance, repeat steps B through F of the "Pre Test Measurement Procedure". If Valve seat wear does not exceed .005", heads are acceptable for re-use.

16. Assemble heads according to the IIIG assembly manual section 5, sheet 1, using all new valves, springs, keepers and caps.

17. Calibrate heads according to procedure.

18. Vacuum check heads. Must be able to pull a minimum of 24 inches of mercury.