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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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February 23, 2009

Reply to:

Rick Graziano

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ASTM D02.B0.03 L-60-1 Surveillance Panel

Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the February 11, 2009
L-60-1 Surveillance Panel meetings held at the PRI Headquarters in Warrendale, PA. Please direct
any corrections or comments to my attention.

Sincerely,

Rick Graziano

Chairman

L-60-1 Surveillance Panel

Attachments

Report of Meeting
L-60-1 Surveillance Panel
PRI Headquarters, Apollo Room, Warrendale, Pa.
February 11, 2009

Sign-in/Review of Membership: The meeting was called to order at 11:00 a.m. The sign-in sheet is included as **Attachment # 1**. A review of membership was performed. Mike Haire contact information was updated to Chevron Global Lubricants

Review of Meeting Agenda

The meeting agenda is included as **attachment # 2**.

Approval of minutes

- November 12, 2008 L-60-1 Surveillance Panel Meeting

Motion 1 ⇒ Motion by Mr. Haire/Second Mr. Koehler, minutes approved as written unanimously with no abstentions.

Summary of Meeting Discussions

Rating experiment planned for winter workshop

- See PowerPoint attachment for details as **attachment # 3**. TMC (Mr. Lind) updated panel on recent Winter Rating Workshop comparison data.
- Raters performed the ratings by rating the current way first. Later on in the workshop, the raters rated using the new procedure. We are looking for improvements in repeatability and reproducibility.
- See attachment table **attachment # 4**.
- Concern with current rating technique is getting more variable.
- Rater 22 was the most variable rater.
- Overall, saw some go the opposite direction, there was some improvement, likes this method, able to confirm that by moving the gear can influence almost a whole merit difference. The light also makes a difference. 10 inches vs. 12 inches is important to keep in mind in our attempt to improve the rating process in regards to distance. Need to keep working with the new procedures and future workshops to further evaluate.
- Mr. Bartlett – labs have cooperated and donated some gears to TMC. There are about 20 gears to further evaluate over time if the C/V changes over time. A great experiment to further validate over the next several workshops.
- Mr. Koehler – concerns that there may be a severity shift. Need to know which oils the gears were run on to track to see if there is a severity shift.
- Mr. Lind – labs were asked to please encourage the raters to talk, take the time to discuss at the workshops, work together as a group.
- Using the same set of gears, it is hard to get a good representation from sludge comparisons because the gears change over time/use.
- Sludge delta is less or close to .25, which is desirable.
- With respect to a calibration (calibrating themselves) before starting. Re-rates come at the very end of the workshop. TMC picks out parts to address the areas of spread. Time to rerate takes about ½ of a day. The raters are asking to delete the rerates because TMC has the hardware and can compare statistically, except on the L-33. Raters have asked to drop this because of time and costs. Or consider doing the rerates only on the L-33.
- Consensus to the question was . . . continue with the rerates and let the TMC use technical judgment based on the participants ratings at each workshop.

- With respect to continuation of the rating experiment –
Motion 2 ⇒ -Mr. Gropp/Second Mr. Koehler – ask the TMC to continue to perform/repeat the C/V experiment until the data has satisfactorily reviewed the data. Comments – many felt that the raters should each have a chance to repeat/have rated the gears both ways twice. Vote: 5-0-1

D5704, Figure A2.1 in Section 6.1.15 assembly drawing

See PowerPoint attachment for details as **attachment # 3**. Chairman Graziano will be working within Lubrizol to update the drawings. This could be a point of discussion at the next Surveillance Panel meeting May 13th.

New Business

None

Motion 3 ⇒ Motion for meeting adjournment by Mr. Haire/Second Ms. Thelma Marougy. The meeting was adjourned at 11:40a.m.

Respectfully submitted,



Rick Graziano
L-60-1 Surveillance Panel Chairman

ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	Anderson, Greg	Non-voting	Falex Corporation 1020 Airpark Drive Sugar Grove, Illinois 60554-9585	Phone: 630-556-3669 Fax: 630-556-3679 E-Mail:
	Agusti, Rachel	Voting	AMSTRD-TAR-D/210 6501 E. 11 Mile Rd Warren, MI 48397-5000	Phone: 586-574-4222 Fax: 586-574-4244 E-Mail: rachel.jackman@us.army.mil
<i>DB</i>	Bartlett, Don	Non-voting	The Lubrizol Corporation 2940 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2388 Fax: 440-347-2878 E-Mail: dtb@lubrizol.com
<i>DB</i>	Bell, Don	Non-voting	Afton Chemical Corporation 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-6332 Fax: 804-788-6342 E-Mail: Don.Bell@afonchemical.com
	Bryson, Tom	Voting	Mack Trucks 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: 301-790-5454 Fax: 301-790-6744 E-Mail: tom.bryson@macktrucks.com
	Chambers, Harold	Non-voting	43945 Merrill Rd. Sterling Hts., MI 48314	Phone: (586) 770-4694 Fax: E-Mail: haroldchambers@gmail.com

* Initial to indicate attendance at subject meeting

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	Comfort, Allen	Non-voting	AMSTA-TR-D/210 (Allen Comfort) U S Army Tank, Automotive, and Armament Command Warren, Michigan 48397-5000	Phone: 586-574-4225 Fax: 586-574-4244 E-Mail: comfota@cc.tacom.army.mil
	Quickstein, Ron	Non-voting	Parc Technical Services Inc. 100 William Pitt Way Pittsburgh, Pennsylvania 15238	Phone: 412-826-5115 Fax: 412-826-5443 E-Mail: rhd@usaor.net
RWZ	Eliot, Stephen W.	Non-Voting	Commercial Vehicle Lubricants ExxonMobil Lubricants & Specialties Leesburg, Virginia	Phone: 703-669-9916 Fax: 703-669-9917 E-Mail: stephen.w.eliot@exxonmobil.com
	Farber, Frank	Non-voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: 412-365-1030 Fax: 412-365-1047 E-Mail: fmf@astmtmc.cmu.edu
	Fett, Gregory	Voting	DANA, P.O. Box 955 Toledo, Ohio 43697 3939 Technology Drive Maumee, Ohio 43537	Phone: (419) 887-3296 Fax: E-Mail: greg.fett@dana.com
	Graziano, Rick	Voting	The Lubrizol Corporation 2940 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2058 Fax: 440-347-2878 E-Mail: ricki.graziano@lubrizol.com

* Initial to indicate attendance at subject meeting

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009




Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
GHV	Greene, Galen	Non-voting	The Lubrizol Corporation 2940 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2394 Fax: 440-347-2878 E-Mail: galen.greene@lubrizol.com
gpp	Gropp, Jerry	Non-voting	The Lubrizol Corporation 2940 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-1223 Fax: 440-347-1555 E-Mail: jerrold.gropp@lubrizol.com
	Guzzkowski, Joe	Non-voting	DANA P.O. Box 955 Toledo, Ohio 43697 3939 Technology Drive Maumee, Ohio 43537	Phone: 419-887-3425 Fax: E-Mail: joe.guzzkowski@dana.com
ghh	Haire, Mike	Voting	Cherxon Global Lubricants 100 Chevron Way Richmond, California, 94802	Phone: 510-242-2740 Fax: 894-788-0358 510 242-3758 E-Mail: mhaire@chevron.com
	Higuchi, Sam	Non-voting	Afton Chemical Corporation 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-5375 Fax: 804-788-6358 E-Mail: samuael.higuchi@afonchemical.com
	Huron, John	Non-voting	Cherxon Oronite 4502 Centerview Drive, Suite 210 San Antonio, Texas 78228	Phone: 210-731-5609 Fax: 210-731-5699 E-Mail: HURO@ChevronTexaco.com

* Initial to indicate attendance at subject meeting

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	Kanga, Percy R.	Non-Voting	Commercial Vehicle, Marine & Gas Engine Lubricants ExxonMobil Research & Engineering 600 Billingsport Road Pauisboro, NJ, 08066	Phone: 856-224-2094 Fax: 856-224-3613 E-Mail: percy.r.kanga@exxonmobil.com
	Koehler, Brian	Voting	Southwest Research Institute 6220 Culebra San Antonio, TX 78238-5166	Phone: (210) 522-3588 Fax: (210) 684-7523 E-Mail: bkoehler@swri.org
	Koglin, Cory	Voting	Afton Chemical Corporation 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-5305 Fax: 804-788-6358 E-Mail: cory.koglin@aftonchemical.com
	Lind, Don	Voting	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, Pennsylvania 15206	Phone: 412-365-1034 Fax: 412-365-1047 E-Mail: dml@astmtmc.cmu.edu
	Marougy, Thelma	Voting	Eaton Corporation 26201 Northwestern Highway Southfield, Michigan 48037	Phone: 248-354-6985 Fax: 248-354-2739 E-Mail: thelmaemarougy@eaton.com
	Marty, Steve	Non-voting	Southwest Research Institute 6220 Culebra Road San Antonio, Texas 78238	Phone: 210-522-5929 Fax: 210-680-1777 E-Mail: smarty@swri.edu

* Initial to indicate attendance at subject meeting

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	McClone, Bruce	Voting	ArvinMeritor 2135 West Maple Troy, Michigan 48084	Phone: 248-435-9929 Fax: 248-435-1411 E-Mail: mcglonbfr@meritorauto.com
	Rettmann, Kevin	Non-voting	PerkinElmer Fluid Sciences 5404 Bandera Road San Antonio, Texas 78238	Phone: 210-706-1546 Fax: 210-523-4614 E-Mail: Kevin.Rettmann@perkinelmer.com
	Shah, Rajesh	Non-voting	Koehler Instrument Company 1595 Sycamore Avenue Bohemia, New York 11716	Phone: 516-589-3800 Fax: 516-589-3815 E-Mail:
	Smith, Dale	Non-voting	<i>Infertek HRC</i> Park Technical Services Inc. 100 William Pitt Way Pittsburgh, Pennsylvania 15238	Phone: 412-423-1120 X 403 Fax: 412-826-5444 E-Mail: Dale.Smith@intertek.com
	Sullivan, Bill	Non-voting	WTSullivan, Inc. 5 Scheiber Drive Brck, New Jersey 08723	Phone: 908-930-3512 Fax: 267-220-7750 E-Mail: wtsullivan@comcast.net
	Ved, Shintan	Non-voting	Ford- Trans & Driveline Lubrication 35500 Plymouth Rd. Livonia, MI 48150	Phone: 313-805-9695 Fax: 267-220-7750 E-Mail: cved@ford.com

* Initial to indicate attendance at subject meeting

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ASTM L-60-1 Surveillance Panel Membership/Mailing List

Meeting Date: February 11, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone & Fax & E-Mail
	Vettel, Paula	Voting	D. A. Stuart Company 4580 Weaver Parkway Warrenville, Illinois 60555	Phone: 630-393-8859 Fax: 630-393-8577 E-Mail: pvettel@daestuet.net <i>primagy.com</i>
	Villahermosa, Luis	Non-voting	AMSTA-TR-D/210 (Luis Villahermosa) U S Army Tank, Automotive, and Armament Command Warren, Michigan 48397-5000	Phone: 586-574-4207 Fax: 586-574-4123 E-Mail: villahel@cc.tacom.army.mil
	Whitton, Claire	Non-voting	Ethyl Research Center 500 Spring Street P. O. Box 2158 Richmond, Virginia 23218-2158	Phone: 804-788-5052 Fax: 804-788-6243 E-Mail: Claire_Whitton@ethyl.com
	Zakarian, Jack	Non-voting	Chevron Products Company 100 Chevron Way Richmond, California 94802-0627	Phone: 510-242-3595 Fax: 510-242-3758 E-Mail: jaza@chevron.com

ESAC FD Approved W-V Lubrizol

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* Initial to indicate attendance at subject meeting

L-60-1 Surveillance Panel

February 11, 2009
11:00 a.m. – 12:00 p.m.
PRI Apollo Room – Warrendale, PA

Agenda

- I. Call to order
- II. Membership and agenda review
- III. Approval of meeting minutes
 - November 12, 2008
- IV. Rating experiment planned for winter rating workshop
 - TMC to update panel on recent Winter Rating Workshop comparison data
- V. Updating figure A2.1 of the D5704
 - RPG working within LZ to update figure A2.1
- VI. New Business
- VII. Adjournment

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Lubrizol

L-60-1 Surveillance Panel Meeting

February 11, 2009

11:00 a.m. – 12:00 p.m.

PRI Apollo Room – Warrendale, PA



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Lubrizol

L-60-1 Surveillance Panel

February 11, 2009

11:00 a.m. – 12:00 p.m.

PRI Apollo Room – Warrendale, PA

Agenda

- I. Call to Order
- II. Agenda and Membership Review
- III. Approval of Meeting Minutes
 - November 12, 2008
- IV. Rating Experiment - Winter Rating Workshop
 - TMC to update panel on recent comparison data
- V. Updating figure A2.1 of the D5704
- VI. New Business
- VII. Adjournment

Attachment 3

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L-60-1 Surveillance Panel Voting Members

Rick Graziano	The Lubrizol Corporation (Chairman)
Rachel Agusti	AMSTA-TR-D/210 US Army
Tom Bryson	Volvo Power Train Corporation
Greg Fett	Dana Corporation
Mike Haire	Chevron Oronite Company
Brian Koehler	Southwest Research Institute
Cory Koglin	Afton Chemical Company
Don Lind	ASTM Test Monitoring Center
Thelma Marougy	Eaton Corporation
Bruce McGlone	ArvinMeritor Materials Engineering
Paula Vettel	D.A. Stuart Company

Total 11 Voting Members



Rating Experiment Planned for Winter Rating Workshop

- Purpose of experiment is to test a refinement to the L-60-1 ACV rating procedure
- The process was initially developed at the summer workshop
- Surveillance Panel approved a motion on 8/13/08 to conduct a round robin type evaluation by cycling reference gears from lab to lab
- All raters are encouraged to participate but only the values generated by the high volume raters will be used to gauge the effectiveness

Attachment 3

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Rating Experiment Planned for Winter Rating Workshop

- Lubrizol drafted the rating procedure and a 9/25/08 SP teleconference was held to discuss details
- The major improvement involves orienting the gear at a fixed position relative to the light making any adjustments from a horizontal position while rating (see next slide)
- Teleconference Attendees:
 - TMC - Don Lind
 - PARC - Ralph Kozlowski
 - SwRI - Art Sanchez, Jesse Rodriguez, Frank Lopez
 - Afton - Pat Adams, Cory Koglin, Wes Stocks
 - Lubrizol - Don Bartlett, Pete Radomich, Rick Graziano, Galen Greene, Chris Schenkenberger
- For the purpose of making sure the experiment is run properly, it was decided to conduct the work at the winter rating workshop

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Rating Experiment Planned for Winter Rating Workshop

L-60 Rating Procedure

1. Handle the gears at the gear teeth lands to avoid any contact of the rated area.
2. Use a cool white type fluorescent 4500 K color temperature light with a minimum illumination level of 200 foot-candles for rating gears.
3. Place one white 8 1/2" X 11" U.S. letter size paper on the base of the rating surface.
4. Wipe a 3/4 inch wide area across the diameter of the face of the gear along the keyway. Wipe the gear five times in the same direction.
5. Place the gear on the clear plastic holder with the keyway vertical, front side up. Do not tilt or adjust the gear from the flat orientation while rating.
6. Position the light 8 ± 0.5 inches level above the gear with the near edge of the light projecting downward directly over the center-bore of the gear.
7. Rate the bottom half of the gear looking directly down on the gear, from above the near edge of the light. Do not rate the gear teeth or the spacer bushing contact area.
8. Rotate the gear 180 degrees and rate the other half of the gear.
9. Turn the gear over and repeat the rating procedure for the back side.
10. Use any of the three Rating Scales (A, B or C) for Non-Rubbing Parts in CRC Manual No. 20 to determine the varnish rating.
11. Do not use new test parts, such as a gear or the washer nut area of the test gear as a 10.0 rating reference point.
12. Repeat both large and small gear with the same procedure.

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Attachment 3

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Reference L-60-1

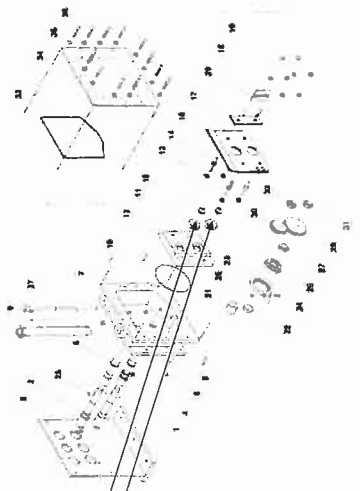
3-11-09



D5704, Figure A2.1 – Exploded View of Gear Case

- A2.1 UNZ CRAWLER, REAR CASE FIG. A2.1C**
- A2 EXPLODED VIEW OF GEAR CASE ASSEMBLY**
- 1. Upper Gear Case (A2.10)
 - 2. Lower Gear Case (A2.11)
 - 3. Gear Case Flange (A2.12)
 - 4. Gear Case Flange Gasket (A2.13)
 - 5. Gear Case Flange Seal (A2.14)
 - 6. Gear Case Flange Seal Gasket (A2.15)
 - 7. Gear Case Flange Seal Seal (A2.16)
 - 8. Gear Case Flange Seal Seal Gasket (A2.17)
 - 9. Gear Case Flange Seal Seal Seal (A2.18)
 - 10. Gear Case Flange Seal Seal Seal Gasket (A2.19)
 - 11. Gear Case Flange Seal Seal Seal Seal (A2.20)
 - 12. Gear Case Flange Seal Seal Seal Seal Gasket (A2.21)
 - 13. Gear Case Flange Seal Seal Seal Seal Seal (A2.22)
 - 14. Gear Case Flange Seal Seal Seal Seal Seal Gasket (A2.23)
 - 15. Gear Case Flange Seal Seal Seal Seal Seal Seal (A2.24)
 - 16. Gear Case Flange Seal Seal Seal Seal Seal Seal Gasket (A2.25)
 - 17. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal (A2.26)
 - 18. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Gasket (A2.27)
 - 19. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal (A2.28)
 - 20. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.29)
 - 21. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.30)
 - 22. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.31)
 - 23. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.32)
 - 24. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.33)
 - 25. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.34)
 - 26. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.35)
 - 27. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.36)
 - 28. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.37)
 - 29. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.38)
 - 30. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.39)
 - 31. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.40)
 - 32. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.41)
 - 33. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.42)
 - 34. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.43)
 - 35. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.44)
 - 36. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.45)
 - 37. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.46)
 - 38. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.47)
 - 39. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.48)
 - 40. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Gasket (A2.49)
 - 41. Gear Case Flange Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal Seal (A2.50)

• V-ring location...



Attachment 3

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ASTM Gear Calibration Workshop

San Antonio, TX January 20, 21, 22 & 23, 2009

L-60 GEARS Varnish (Large Gear Only)

SET #	4	6	7	10	11	16	22	25	27	29	30	33	MAX	MIN	AVG	Std Dev
1 (Current)				8.85	8.58	9.20	7.95		8.52				9.20	7.95	8.62	0.461
1 (New)				8.99	8.56	8.6	8.95		9.08				9.08	8.56	8.84	0.239
2 (Current)				7.90	7.91	8.10	7.75		7.35				8.10	7.35	7.80	0.282
2 (New)				7.55	7.92	7.95	8.78		8.48				8.78	7.55	8.14	0.489
3 (Current)				9.20	9.56	9.40	8.85		9.20				9.56	8.85	9.24	0.266
3 (New)				9.3	9.55	9.3	9.5		9.45				9.55	9.30	9.42	0.115
4 (Current)				4.72	5.00	5.80	5.76		4.91				5.80	4.72	5.24	0.505
4 (New)				5.93	4.48	5.94	6.04		5.1				6.04	4.48	5.50	0.684
5 (Current)				8.10	8.13	7.96	7.65		7.40				8.13	7.40	7.85	0.314
5 (New)				7.89	7.85	7.90	8.00		7.55				8.00	7.55	7.84	0.170
6 (Current)				4.78	4.50	5.63	5.40		5.02				5.63	4.50	5.07	0.457
6 (New)				5.00	5.50	6.25	7.50		4.88				7.50	4.88	5.83	1.080
7 (Current)				9.00	8.92	9.00	7.80		9.10				9.10	7.80	8.76	0.543
7 (New)				9.05	8.00	8.40	9.00		9.35				9.35	8.00	8.76	0.547
8 (Current)				9.20	9.08	9.10	7.80		8.75				9.20	7.80	8.79	0.577
8 (New)				8.99	8.60	8.30	9.50		9.15				9.50	8.30	8.91	0.469
9 (Current)				9.45	9.50	9.20	8.70		9.40				9.50	8.70	9.25	0.328
9 (New)				9.45	9.30	9.50	9.80		9.60				9.80	9.30	9.53	0.186
10 (Current)				8.00	8.35	8.10	7.55		8.00				8.35	7.55	8.00	0.289
10 (New)				7.75	8.30	8.00	8.50		8.05				8.50	7.75	8.12	0.289

Attachment 4
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 Reference L-60-1
2-11-09