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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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Originally Issued: June 20, 2006

Reply to: Frank Farber
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Unapproved Minutes of the June 7, 2006
Sequence IVA Surveillance Panel Meeting
held in San Antonio, TX

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The meeting was called to order at 9:00 am by Chairman Bill Buscher. A membership list was circulated for members & guests to sign in. It's shown in Attachment 1.

Agenda Review

Pat Lang is Action & Motion recorder.

The Agenda was accepted as shown on Attachment 2.

Membership Changes

None.

Meeting Minute Status

The November 9, 2005 meeting minutes were approved by the surveillance panel.

Review of Action Items from Last Meeting

Chairman Buscher reviewed the Action Items from the November 9, 2005 meeting.

As Recorded at the Meeting by Patrick Lang:

Action Item: Panel to review RSI and TMC data in 6 months to make sure no shifts have occurred. Chairman will ask ACC to provide ACW time plot of individual data points including engine block and head runs. Report data from December 2004 through May 2006.

Incomplete. Is this still necessary, or should it be removed?

Action Item: TMC to incorporate the new hardware page, effective early January.

Done. TMC Report Packet Revision Notice IVA-20051129 issued on December 2, 2005.

Action Item: Chairman to analyze GF-3 and GF-4 test usage. Contact ILSAC regarding the inclusion of the IVA in GF-5 and see if we can get feedback on the number of test that could be potentially needed for GF-5. Inquire regarding what the new limit will be for the test to facilitate estimating parts needed for the category.

Incomplete. No feedback received from ILSAC to-date. Will report at next Surveillance Panel meeting.

Action Item: Chairman of the LTMS, Ben Weber to investigate the pros and cons of the new IIIG LTMS system and study how well it could potentially be applied to the IVA. Report back to the group by the May meeting.

Incomplete. Waiting for additional feedback. Will send request for feedback to the ACC chairman.

Action Item: Labs to consider whether or not they want to release their current inventory level of parts to chairman to be discussed at each surveillance panel meeting.

Incomplete. No feedback received from labs to-date. Will report at next Surveillance Panel meeting.

Action Item: Chairman to continue to solicit Nissan for information on future hardware supply.

Done. Update during Test Hardware Report of this meeting.

Action Item: Chairman to coordinate a metrology workshop in the first quarter of 2006 (target the end of January). SwRI has offered to be the host. The goal is to have this workshop completed before the May 2006 surveillance panel meeting. A follow-up cam measurement round-robin will be conducted after the workshop.

Done. Metrology workshop conducted at SwRI on January 24 and 25, 2006. Follow-up round-robin completed and summary will be presented in this meeting.

Motion

Recommend to the Surveillance Panel the following procedure changes as a motion:

- Remove all references to the number of tests on the block and head from the procedure and add to the Annex.
- Work with TMC to define tolerances for all thermocouples.
- Add a note similar to the VG procedure to allow a test to be valid with less than 2 hours of missing test data.
- Change the wording on Section 6.3.5.1 to: “ Maintain the fuel temperature to the fuel rail below 50 ° C.
- Section 10.4.1 Change to: “ Internally clean the engine coolant system each time a new engine is installed by a chemical flushing method
- Section 11.3.5.2 Change to: “The torque target can be adjusted to improve load control for the 2 to 1 and 1 to 2 speed ramps.
- Section 11.3.5.2 Replace the PCV valve when changing the cylinder head or engine.

Worcester/Bowden 8/0/1

The motion passed, effective date is 11/9/05

Done. Sequence IVA Information Letter No. 05-3 issued on December 13, 2005.

Fuel Supplier Report

Bob Rumford commented that there was no activity this report period. No notable fuel problems. Fuel is blended on a laboratory need basis.

TMC Report

Testing is low. Calibration per start rate is lower than in previous periods. Report is posted on TMC website.

RSI Report

Reports have been previously emailed to panel members and posted to the RSI website.

Test Hardware Report

The chairman presented Attachment 3 concerning hardware supply. There are no current shortages of test hardware. Nissan will solicit a parts request in early July of 2006. The production of the KA24E engine will stop in 2008. Labs indicated that they will purchase parts to see them through GF-5 between now and 2008.

Metrology report

The chairman reported that January's workshop was successful. Four labs attended the workshop at Southwest Research. All members worked well and learned from each other.

2006 Camshaft Wear Measurement Round Robin

Rich Grundza presented the round robin results (See Attachment 4). A variation of 3 microns was found among labs. The panel felt that this was a significant improvement compared to previous round robins.

Reference Oil 1007 Discussion

Dan Worcester presented Attachment 5. Dan noted that Intertek has had problems calibrating their stand on this oil and recommended that it be removed from the system. The panel decided to have the TMC investigate severity issues with this oil and issue a report to the panel.

Scope & Objectives

See Attachment 6.

New Business & Old Business

None.

The meeting was adjourned at 10:30 am.

Sequence IVA Action Items and Motions Recorded by Patrick Lang

Action Item: Panel to review RSI and TMC data to make sure no shifts have occurred. Chairman will ask ACC to provide ACW time plot of individual data points including engine block and head runs. Report data from December 2004 through May 2006.

Action Item: Chairman to analyze GF-3 and GF-4 test usage. Contact ILSAC regarding the inclusion of the IVA in GF-5 and see if we can get feedback on the number of test that could be potentially needed for GF-5. Inquire regarding what the new limit will be for the test to facilitate estimating parts needed for the category.





Action Item: Chairman of the LTMS, Ben Weber to investigate the pros and cons of the new IIIG LTMS system and study how well it could potentially be applied to the IVA. Ben will send a request for feedback to the ACC chairman to obtain additional feedback for this investigation.

Action Item: Labs to consider whether or not they want to release their current inventory level of parts to chairman to be discussed at each surveillance panel meeting.

Action Item: TMC to conduct analysis, by reference oil and by cam batch, of the Seq IVA LTMS database to evaluate severity trends of each reference oil.







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June 7, 2006

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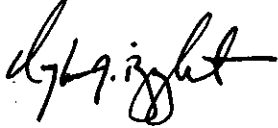
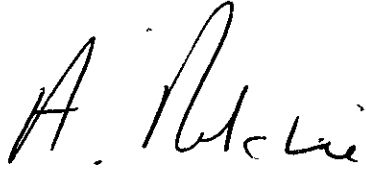
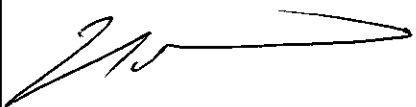
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Attachment 2

Sequence IVA Surveillance Panel
San Antonio, TX
SwRI, Building 209, Conference Room 103
June 7, 2006
9:00 a.m. - 10:30 a.m.

A G E N D A

1. Chairman comments
2. Attendance sign-in sheet distribution
3. Membership changes
4. Motion and Action recorders
5. Approval of minutes for 11/09/2005 All
6. Review action items from last meeting Buscher
7. Fuel supplier report – KA24E Green Fuel Carter
8. TMC report Grundza
- Any questions regarding semi-annual TMC report
9. RSI report Mahoney
- Any questions regarding semi-annual RSI report
10. Test hardware report Buscher
11. 2006 metrology workshop review All
12. 2006 camshaft wear measurement round-robin review All
13. Reference oil 1007 discussion Worcester
14. Review Scope & Objectives All
15. Old business
16. New business
17. Next meeting
18. Adjourn



Test Hardware Report

- Hardware Status:
 - No shortage of test hardware.
 - Industry currently using mixture of 2001, 2002, 2003 and 2004 test kits.
 - All orders have been filled for the 2005 Nissan parts order, with the exception of a quantity of 3 cylinder head assemblies (p/n A1040-40F80).
 - NNA is awaiting availability information from NML.
 - 2006 Nissan parts solicitation expected in early July 2006.



Test Hardware Report

- Received email from Scott Gehring on June 2, 2006 stating:
 - The KA24E engine will stop production in 2008. NML plans to support the program thru 2010. Each year NNA will send a letter to NML to confirm the part number population, supersessions, etc. prior to sending out the letters to the labs.



Test Hardware Report

- Participating labs have indicated they plan to purchase hardware necessary to accommodate testing through GF-5 between now and 2008.
- NNA is relocating from California to Tennessee later in 2006.
- NNA contact might be changing from Susan Douglas to Scott Gehring after the relocation.



William A. Buscher III

From: Gehring, Scott [scott.gehring@nissan-usa.com]
Sent: Friday, June 02, 2006 3:41 PM
To: Douglas, Susan
Cc: william.buscher@swri.org
Subject: RE: Questions Concerning Sequence IVA Parts

Please see my comments below at the end of each question.

Scott Gehring
Manager, AHQ Export Programs
Nissan North America, Inc.
(310) 771-5416
fax (310) 771-2024
scott.gehring@nissan-usa.com

-----Original Message-----

From: Douglas, Susan
Sent: Friday, June 02, 2006 11:16 AM
To: Gehring, Scott
Cc: William.buscher@swri.org
Subject: FW: Questions Concerning Sequence IVA Parts

FYI

Susi
Susan P. Douglas
Nissan North America, Inc.
Parts & Service Division
310.771-5912 - telephone
310.771-6233 - fax
susan.douglas@nissan-usa.com

-----Original Message-----

From: William A. Buscher III [mailto:william.buscher@swri.org]
Sent: Friday, June 02, 2006 8:16 AM
To: Douglas, Susan
Cc: Benjamin O. Weber
Subject: Questions Concerning Sequence IVA Parts

Susan,

How have you been doing? I am holding a semi-annual Sequence IVA industry meeting next week, and I would like to provide an update on the status of Sequence IVA Nissan hardware at the meeting. If possible, could you provide me with some information to answer the following questions:

1) What is the status of the Nissan parts that were ordered in the 2005 Parts Solicitation for the ASTM Sequence IVA test? Have all labs received all hardware ordered in this solicitation? **All orders have been filled with the exception of 1 part number (A1040-40F80) in question by NML. Awaiting availability information.**

2) When can we expect to receive the 2006 Parts Solicitation for the ASTM Sequence IVA test from Nissan? **This year's letters will be sent out by early July before we complete the HQ relocation**

6/7/2006

from Ca. to TN.

3) What is the current long term plan from Nissan for hardware availability for the ASTM Sequence IVA test? For how many additional years are the annual parts solicitations going to be offered? At one time we were told that the hardware would not be available after 2008. Is this still the case? If the hardware will be made available past 2008, will there be any changes (i.e. different supplier, quality changes etc.)? **The KA24e engine will stop production in 2008. NML plans to support the program thru 2010. Each year we send a letter to NML to confirm the part number population, supersessions,etc. prior to sending out the letters to the labs.**

Any information that you can provide to me would be very useful to our ASTM committee. Thanks you.

Best Regards,

William A. Buscher III
Manager - R&D
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Sequence IVA

2006 Round Robin

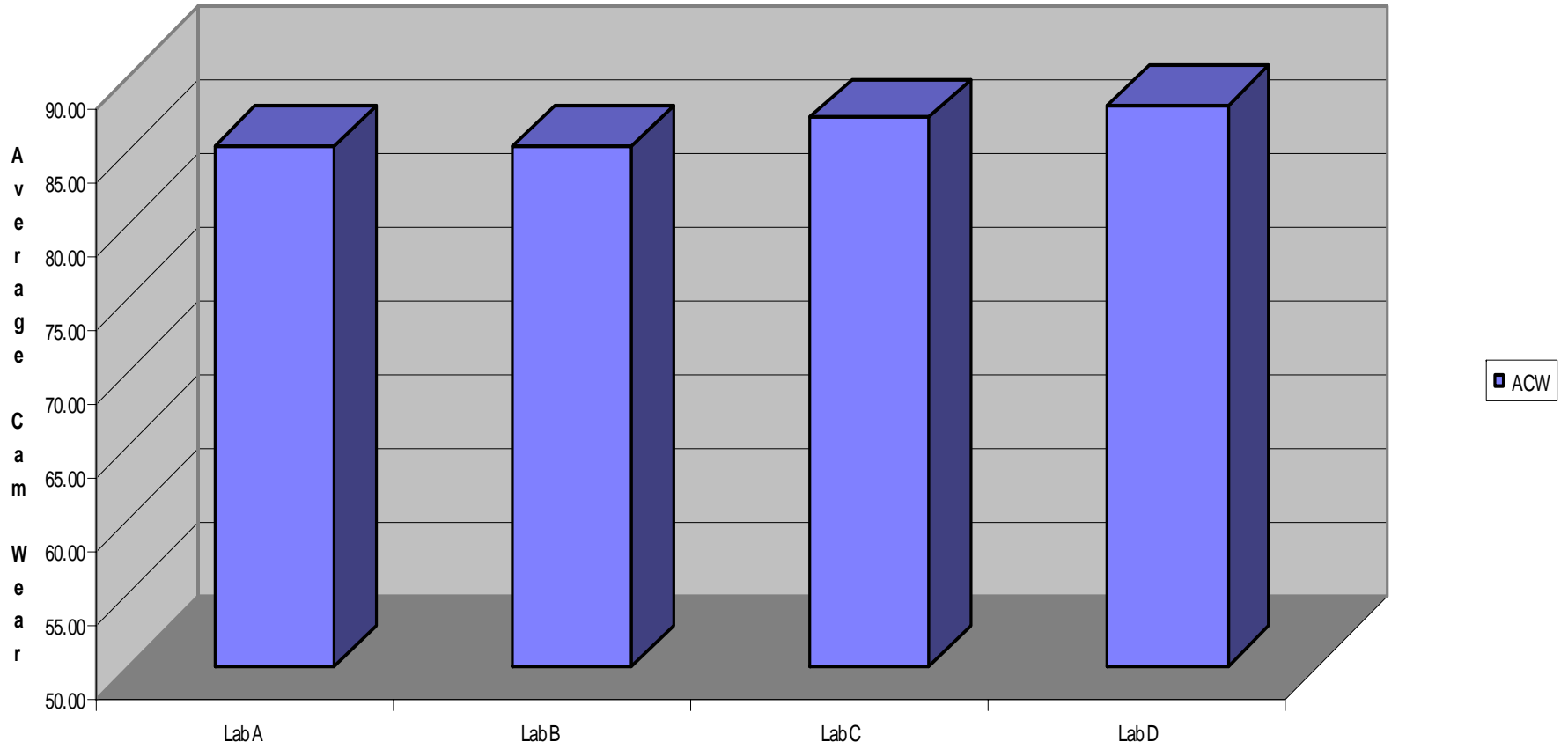
2006 Round Robin

- Results from 4 Laboratories
- One lab used degree wheel while the other three used TEI positioner
- Two labs used PDT-2-505 tracer
- One lab used PDT-6-1520 tracer
- One lab used PDT-2-544 tracer
- Two labs tracer speed of 0.50
- Two labs tracer speed of 0.75

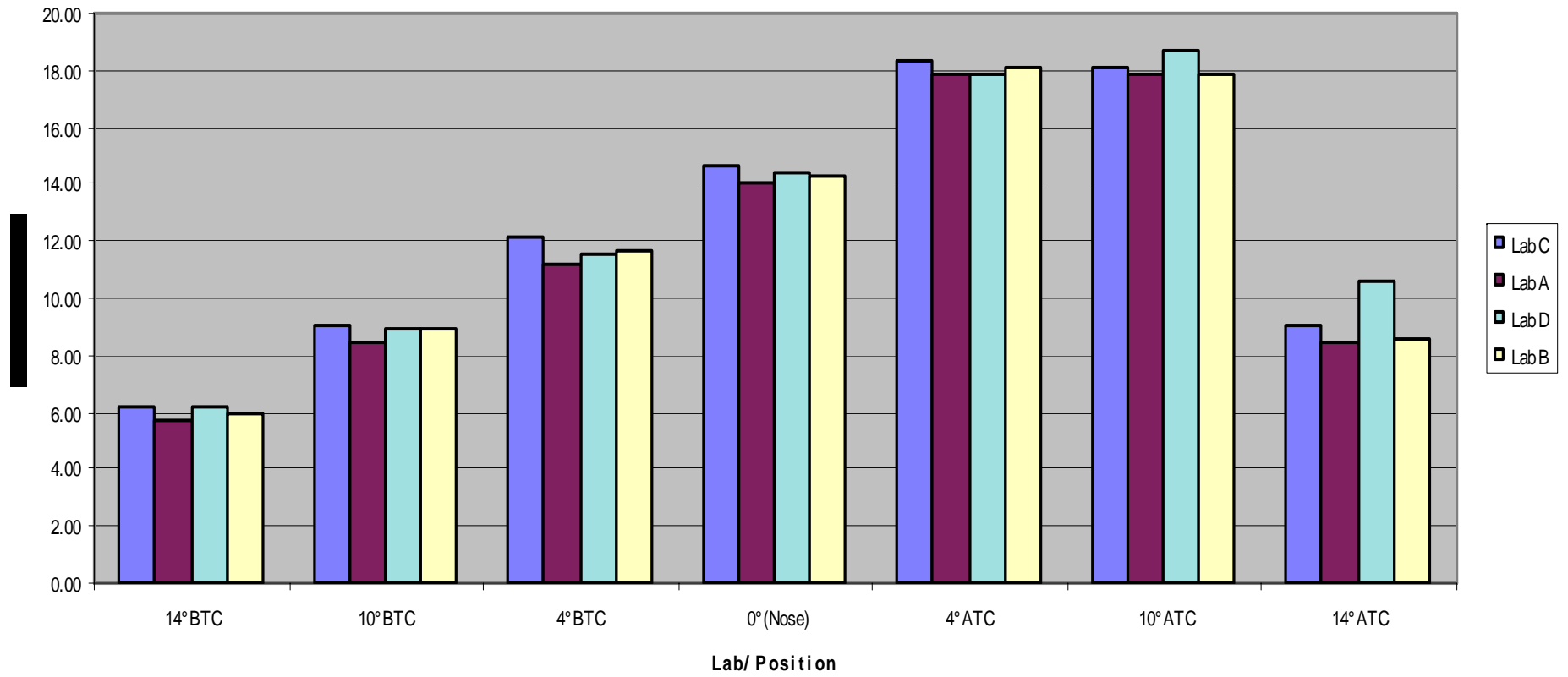
Summary of Results

		Lab A	Lab B	Lab C	Lab D
Original Unit Result	µm	85.34	85.46	87.26	88.15
Transformed Result	µm	85.34	85.46	87.26	88.15
Industry Correction Factor	µm	0.000	0.000	0.000	0.000
Corrected Transformed Result	µm	85.34	85.46	87.26	88.15
Severity Adjustment	µm	0.000	0.000	0.000	0.000
Final Transformed Result	µm	85.34	85.46	87.26	88.15
Final Original Unit Result	µm	85.34	85.46	87.26	88.15

Sequence IVA Round Robin Data
Average Cam Wear Results

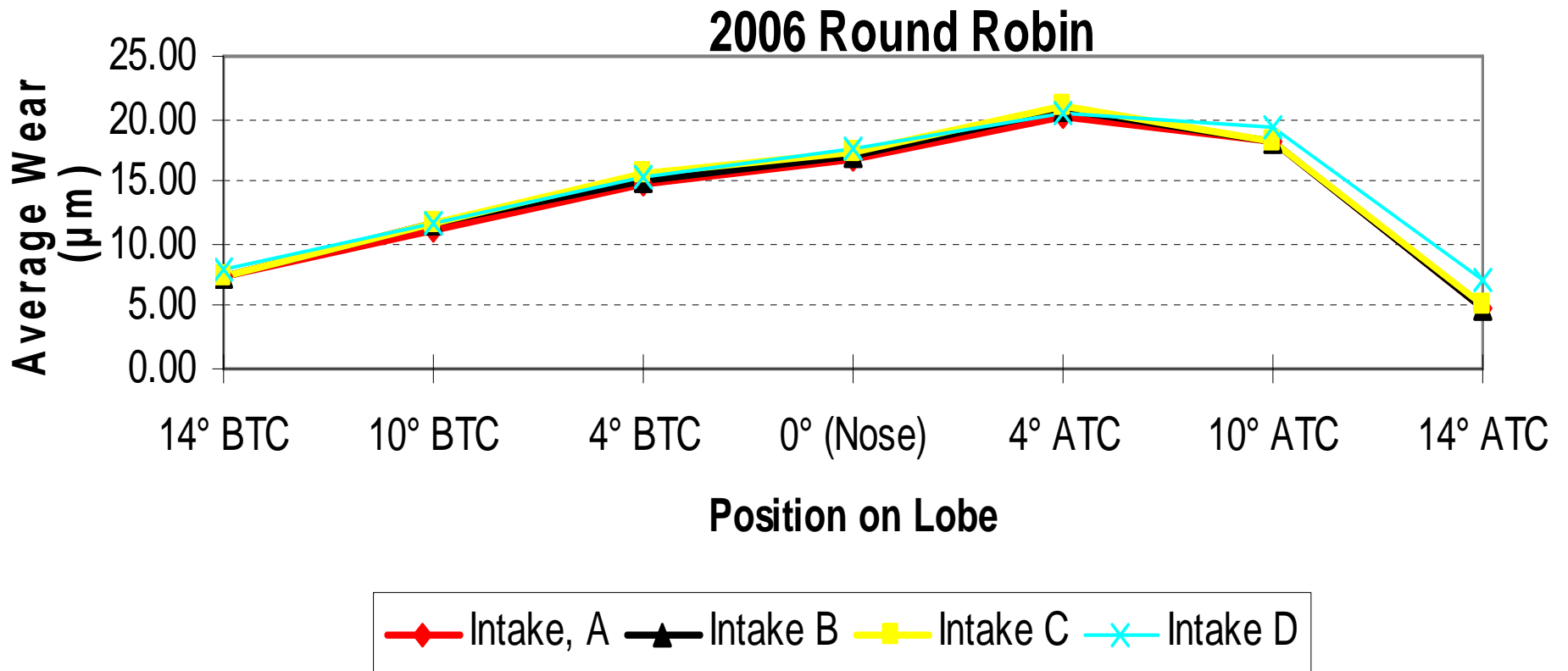


Sequence IVA Round Robin Data
Plot of Wear Average by Position



Sequence IVA: Camshaft Lobe Wear Profiles

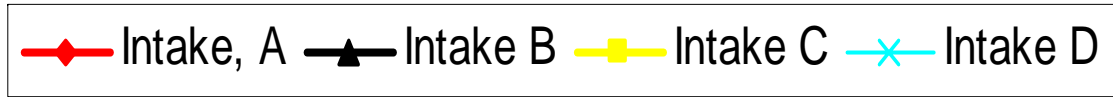
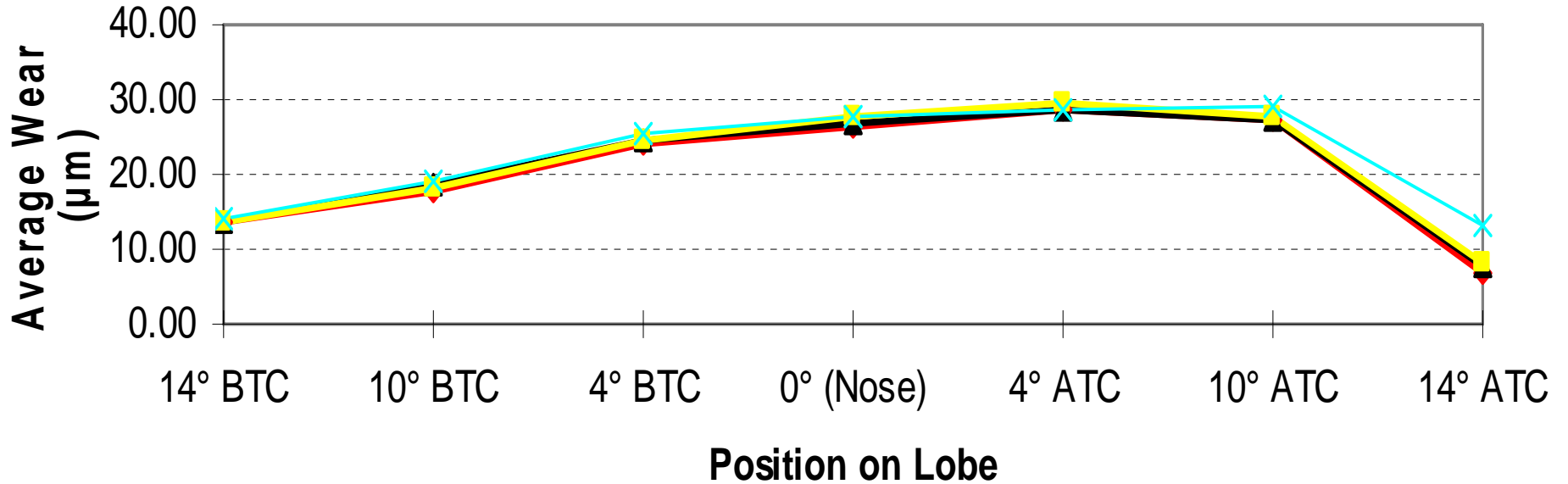
Average Intake



Sequence IVA: Camshaft Lobe Wear Profiles

Maximum Intake

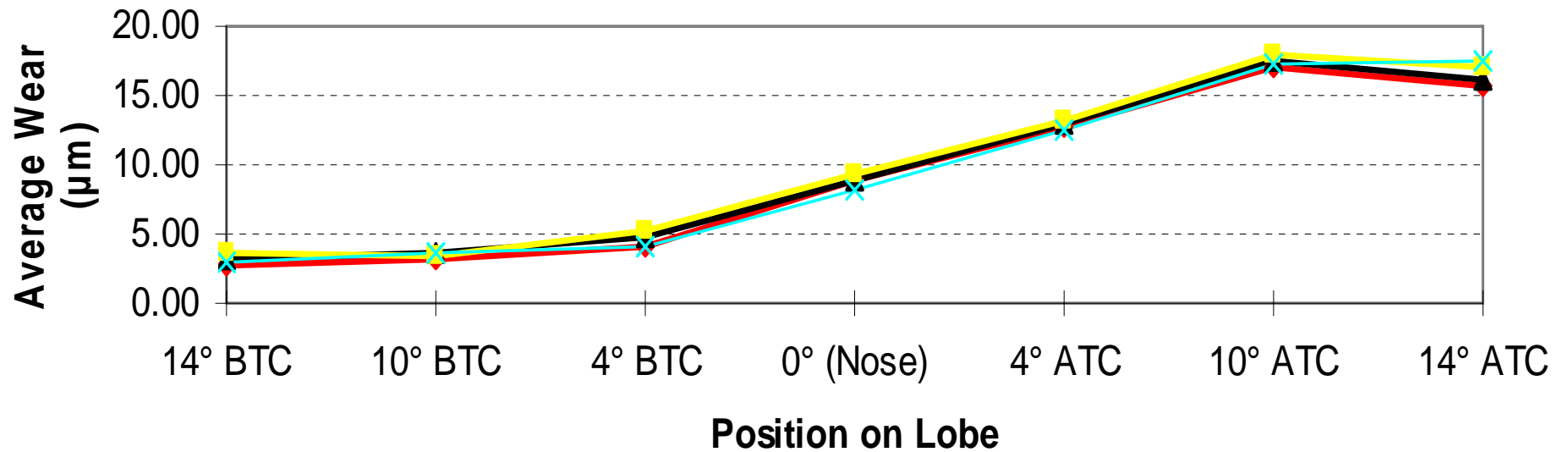
2006 Round Robin



Sequence IVA: Camshaft Lobe Wear Profiles

Average Exhaust

2006 Round Robin

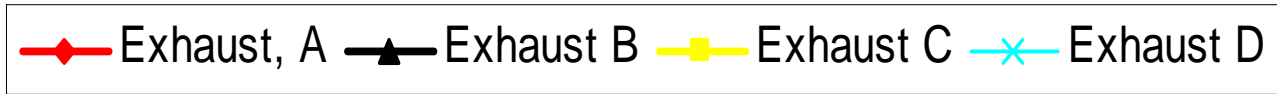
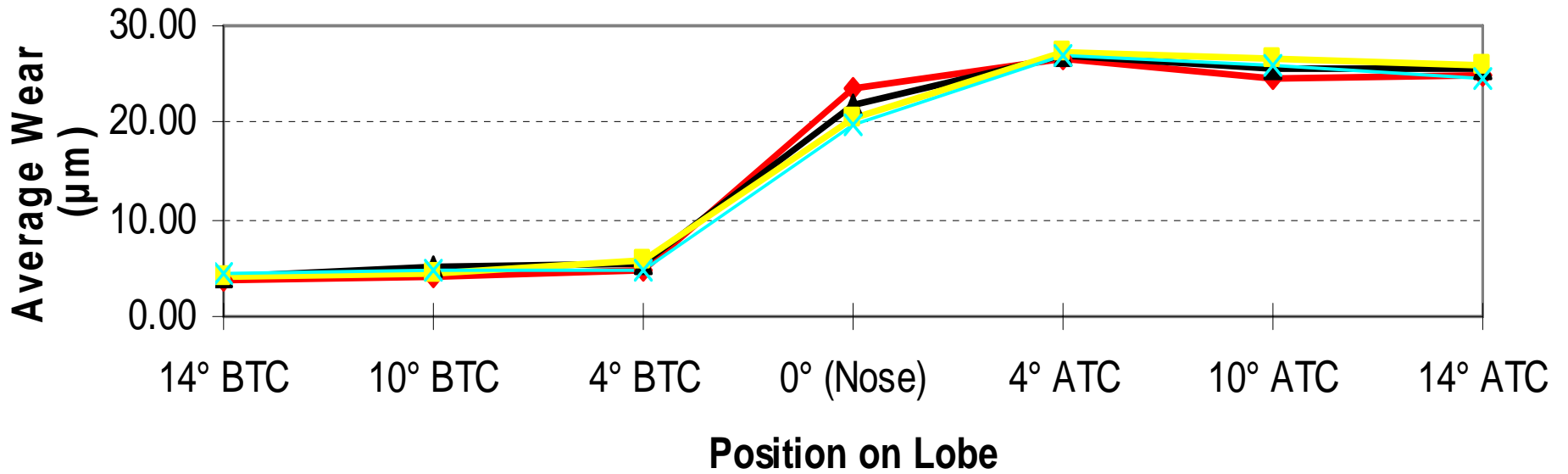


—◆— Exhaust, A —▲— Exhaust B —■— Exhaust C —×— Exhaust D

Sequence IVA: Camshaft Lobe Wear Profiles

Maximum Exhaust

2006 Round Robin

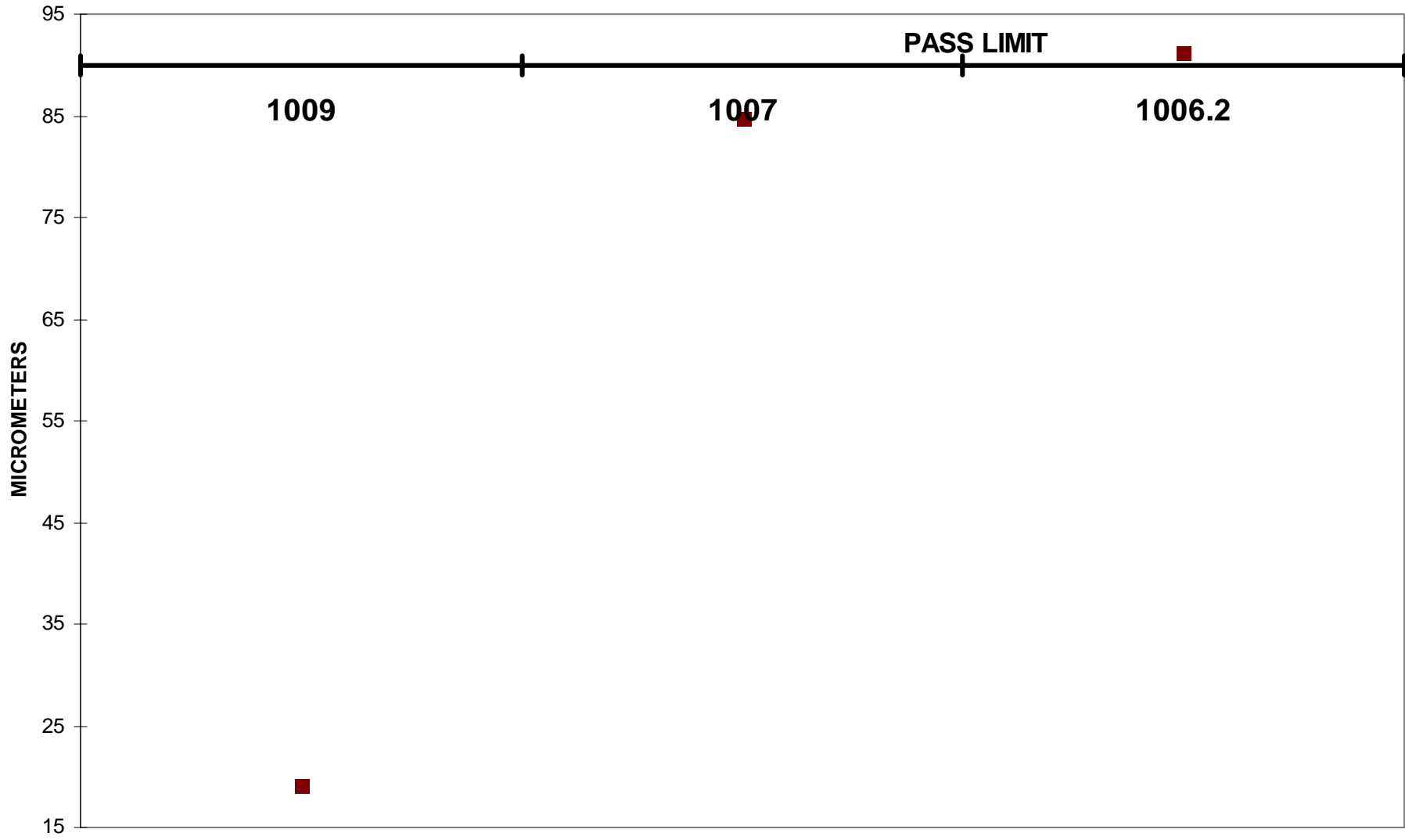


REFERENCE OIL 1007

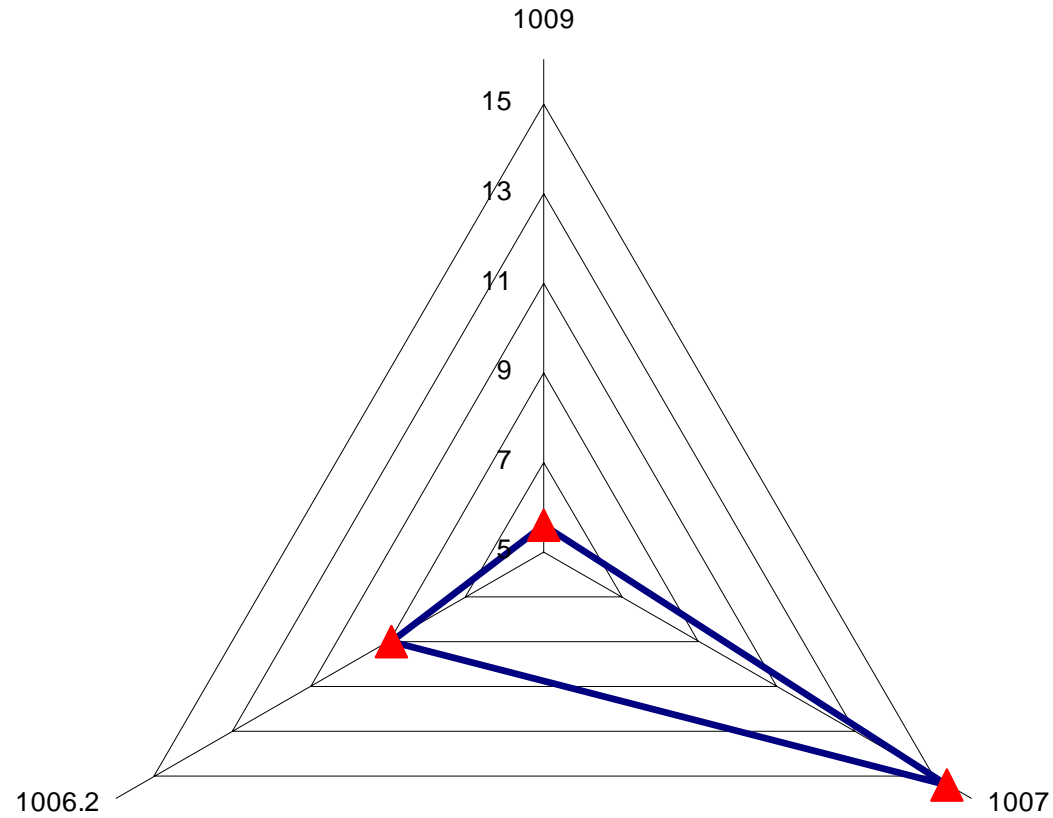
IVA Surveillance Panel

06/07/2006

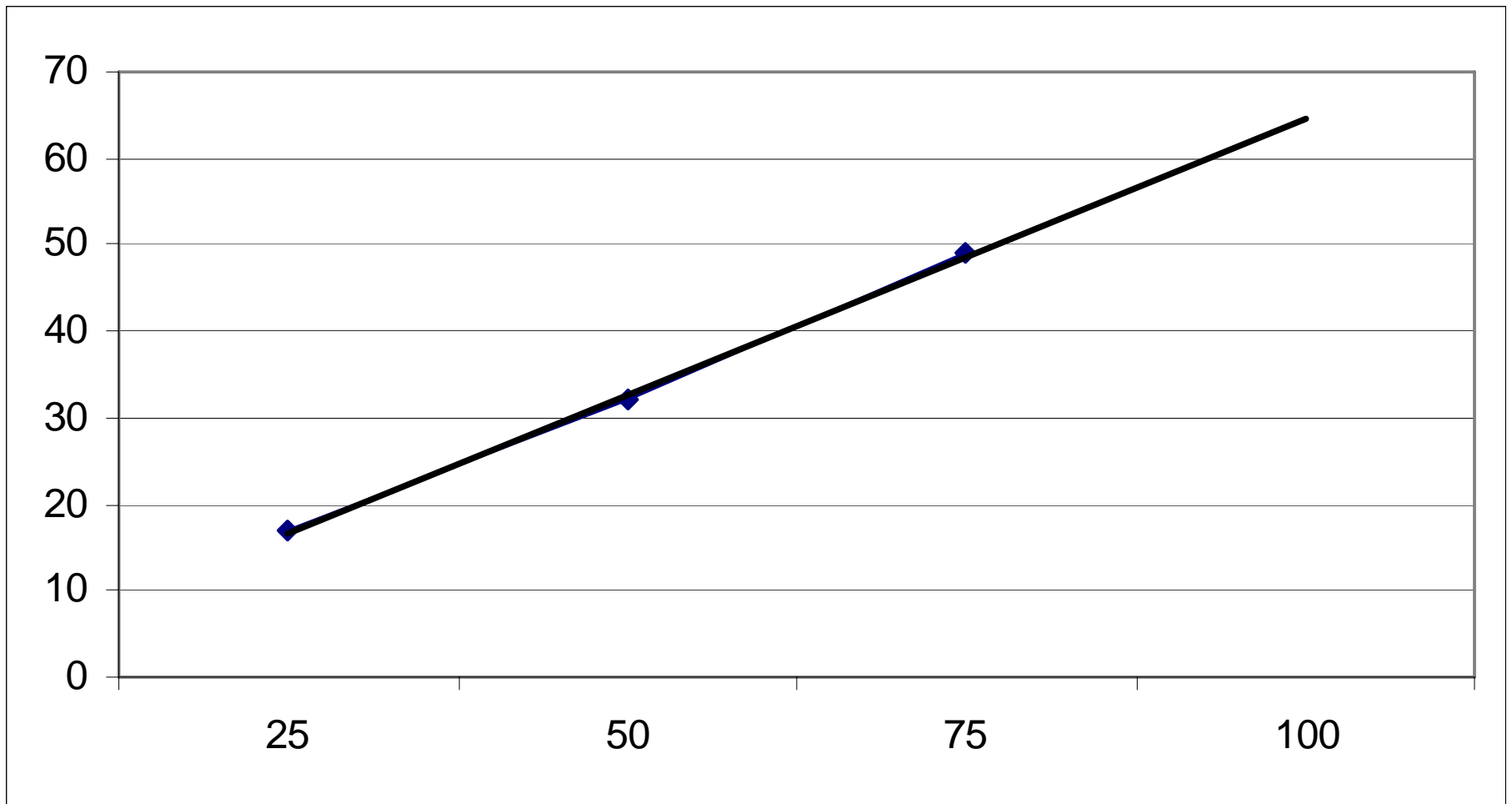
IVA REFERENCE TARGETS



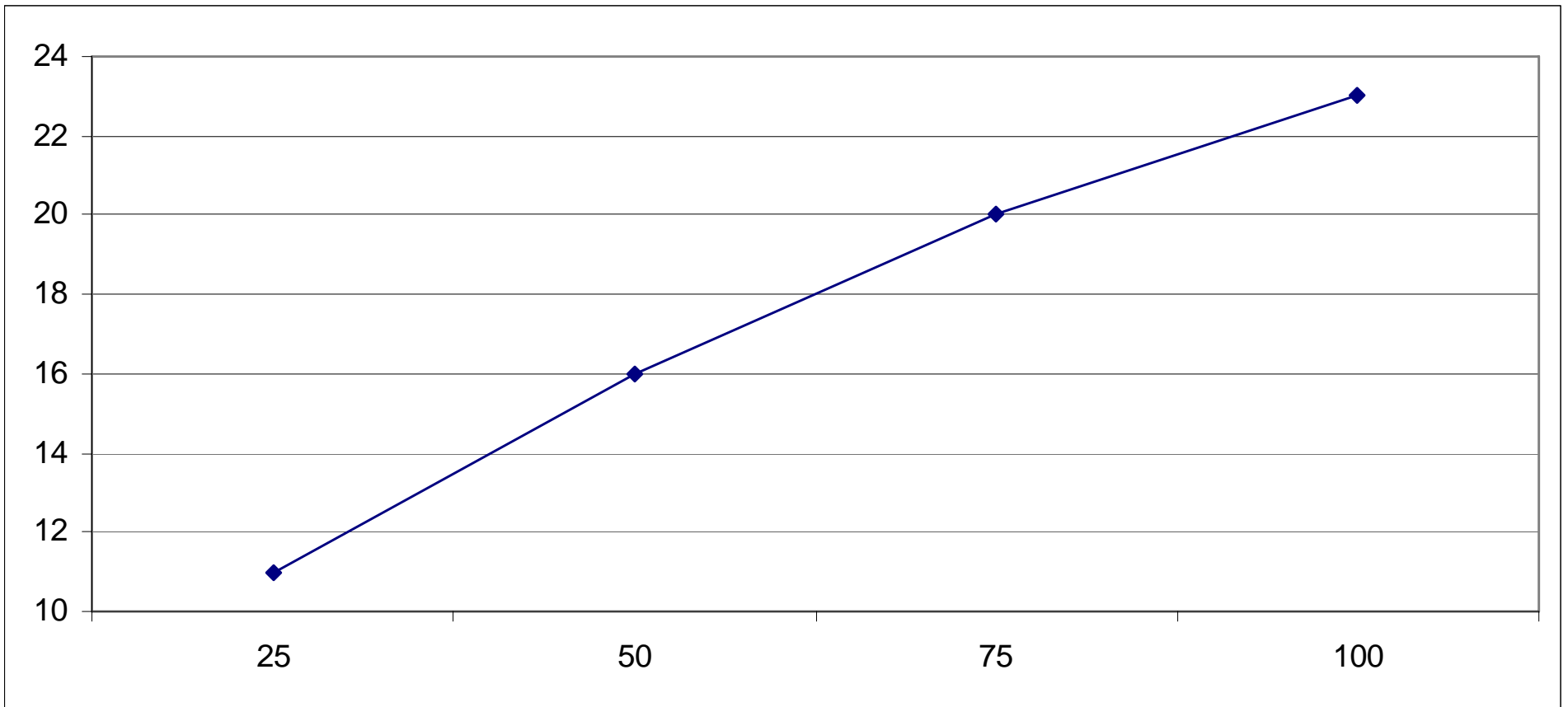
STANDARD DEVIATION



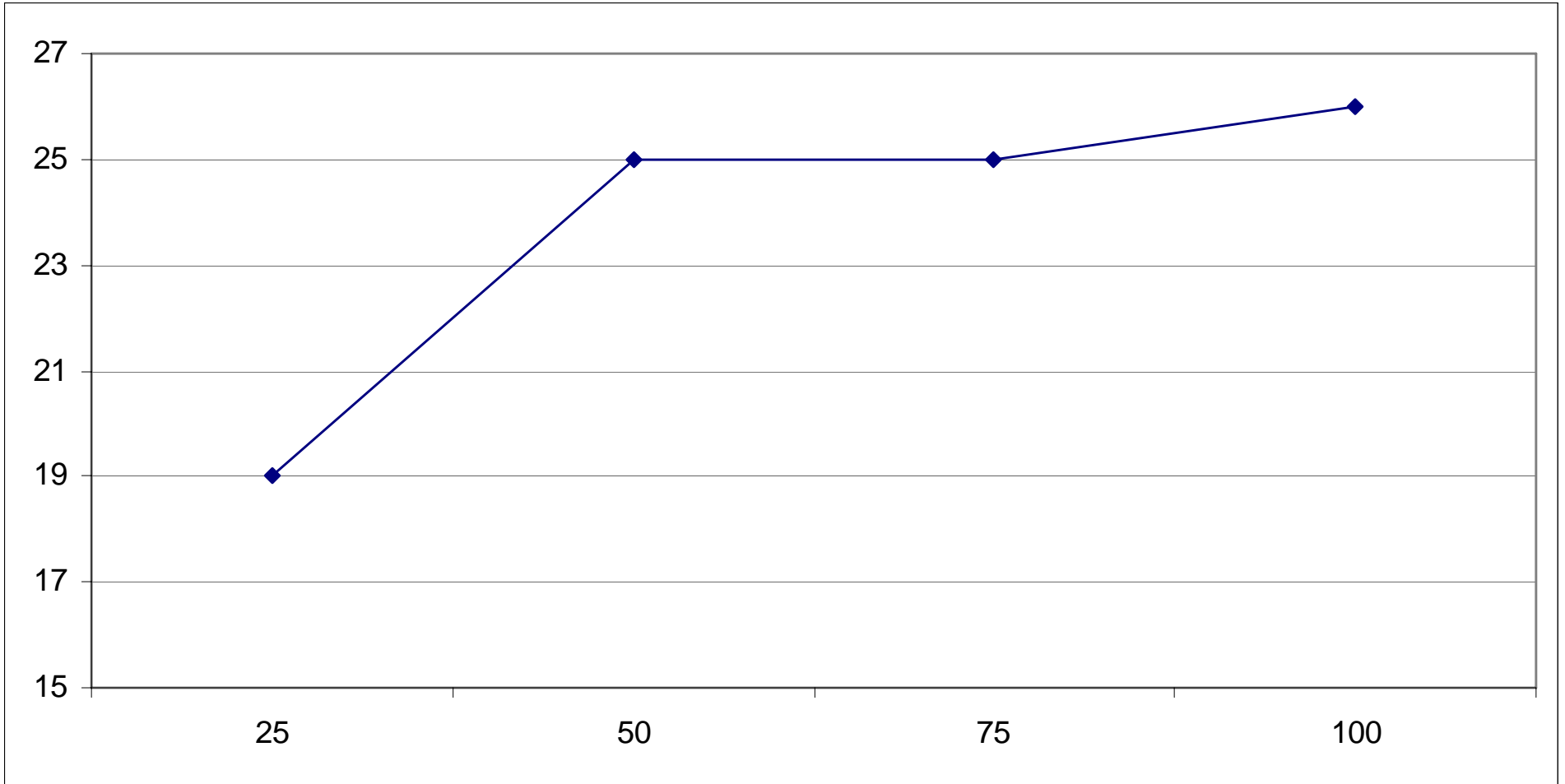
TYPICAL ICP Fe VALUES



1009 ICP Fe VALUES



1007 ICP Fe VALUES



MOTION

- RECOMMEND TO THE SURVEILLANCE PANEL THAT REFERENCE OIL 1007 NO LONGER BE ASSIGNED FOR IVA STAND CALIBRATION.

ASTM Sequence IVA Surveillance PanelScope and ObjectivesScope

The Sequence IVA Surveillance Panel is responsible for the surveillance and continued improvement of the Sequence IVA test documented in Test Method D 6891 as updated by the Information Letter system. Data on test precision and laboratory versus field correlation will be solicited and evaluated at least every six months. Improvements in wear measurement technique, test operation, test monitoring and test validation will be accomplished through continual communication with the Test Sponsor and Parts Distributor, ASTM Test Monitoring Center, ASTM Committee D02.B0.01 and the ASTM Passenger Car Engine Oil Classification Panel. Actions to improve the process will be recommended when deemed appropriate based on input from the proceeding. The Panel will review development and correlation of updated test procedures with previous test procedures. This process will provide a suitable test procedure for evaluating an automotive lubricant's effect on controlling cam lobe wear for overhead valvetrain equipped engines with sliding cam followers.

Objectives**Target Date**

- | | |
|--|-----------------|
| 1. Conduct 2008 metrology workshop | <i>May 2008</i> |
| 2. Conduct 2008 round robin | <i>May 2008</i> |
| 3. Ensure a secure supply of Nissan KA24E hardware is available to accommodate testing through GF-5, anticipating the need for additional parts solicitations from Nissan. | <i>On-going</i> |

William A. Buscher III, Chairman
Sequence IVA Surveillance Panel

Updated: June 2006