



Test Monitoring Center

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Sequence VG Information Letter 13-2
Sequence No. 37
October 1, 2013

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence VG Mailing List

SUBJECT: 1. Fuel Batch AK2821NX10-1 Correction Factors
2. Additional Crankshaft
3. Changes to Calibration Periods

1. During the September 12, 2013 Sequence VG Surveillance Panel conference call, the panel agreed to the application of correction factors for AES, RAC, AEV and OSCR for tests run using fuel batch AK2821NX10-1. Sections 13.2.1.1, 13.2.2.2, 13.3.2.2 and 13.4.1.3 of Test Method D 6593 have been revised and are attached. These changes are to be applied to tests completing on or after September 25, 2013.
2. Also, during the September 12, 2013 Sequence VG Surveillance Panel conference call, the panel agreed to allow the use of a later model crankshaft. This crankshaft, part number 2C5E-6303-B13A, is essentially identical to the current crankshaft. Table A5.1 of Test Method D 6593 has been revised to show both crankshaft part numbers. This change is effective September 12, 2013.
3. Finally, during the September 12, 2013 Sequence VG Surveillance Panel conference call, the panel agreed to reduced the calibration period from 180 days and 15 tests to 120 days and 10 tests. Section 11.1.1 has been revised to address this change. In addition, changes made via Information Letter 10-1 which has not been incorporated into Test Method D6593 have also been included. The revised section pertaining to reduced calibration periods is effective with reference oil tests completing on or after September 25, 2013. The section pertaining to test terminated prior to 50 hours of test time is effective June 16, 2010.

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Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencev/procedure_and_ils/vgil13-2-37.pdf

Distribution: Email

(Revises Test Method D6593-13a, as amended by Information Letter 13-1)

11.1.1 Verify the calibration of test stands with reference oils supplied by the TMC. Stand calibration tests are normally conducted upon expiration of either the 120 day calibration time period or after completing 10 non-reference oil tests. However, calibration time periods may be adjusted by the TMC. Additionally, any test terminated with 50 test hours or less will not be counted towards the 10 allowed runs. Any non-reference oil test started within 120 days of the previous calibration test is considered within the calibration period, provided the 10 allowed non-reference oil tests that have been completed since the previous calibration test in the stand is not exceeded.

13.2.1.1 If the test was run using Haltermann fuel, Batch AK2821NX10-1 average the two RAC sludge ratings to obtain the original RAC result. If the uncorrected RAC result is less than or equal to 7.93, use 6.56 as the corrected result. Do not adjust uncorrected RAC results greater than or equal to 9.24. For uncorrected results greater than 7.93 and less than 9.24, adjust the RAC result by the following;

$$RAC_{corrected} = \frac{RAC - 4.71}{0.49}$$

Add the corrected result and the lab severity adjustment to obtain the final RAC sludge result.

(1) If the test was run using Haltermann fuel batch XC2721NX10, average the two RAC sludge ratings to obtain the original RAC result. Add the original result and the laboratory severity adjustment to obtain the final RAC sludge result.

(2) If the test was run using Haltermann fuel, Batch TF2221LS20, average the two RAC sludge ratings to obtain the original RAC result. Correct the original result by adding 0.23, the industry correction factor. Add the corrected result and the lab severity adjustment to obtain the final RAC sludge result.

13.2.2.2 If the test was run using Haltermann fuel, Batch AK2821NX10-1, correct the original AES merit rating by the following;

$$AES_{corrected} = AES + \frac{e^{[(AES-5)(9.70-AES)]}}{351}$$

Add the corrected result and the laboratory severity adjustment to obtain the final AES result.

(1) If the test was run using Haltermann fuel batch SC2721NX10, add the original AES result and the laboratory severity adjustment to obtain the final AES result.

(2) If the test was run using Haltermann fuel, Batch TF2221LS20, correct the original AES merit rating by adding 0.42, the industry correction factor. Add the corrected result and the lab severity adjustment to obtain the final AES result.

13.3.2.2 Determine original varnish ratings of all parts by comparison of the deposit on the rating location using the ASTM Rust/Varnish/Lacquer Rating Scale for non-rubbing parts from ASTM Rating Manual 20. If the test was run using Haltermann fuel, Batch AK2821NX10-1, use fixed industry correction factor of 0.18 for AEV. Add the original result, the industry correction factor, and lab severity adjustment to obtain the final result.

(1) If the test was run using Haltermann fuel batch XC2721NX10 and completed before Oct. 1, 2009, correct APV by adding 1.325 and dividing by 1.207. Correct AEV by adding 3.011 and dividing by 1.356. If the test was run using Haltermann fuel batch XC2721NX10 and completed on or after Oct. 1, 2009, correct APV by subtracting 0.24. Correct AEV by subtracting 0.12. For both APV and AEV, add the corrected results and the lab severity adjustments to obtain the final results.

(2) If the test was run using Haltermann fuel, Batch TF2221LS20, use fixed industry correction factors of 0.39 for APV and 0.12 for AEV. For both APV and AEV, add the original results, the industry correction factors, and lab severity adjustments to obtain the final results.

13.4.1.3 Determine the percentage of the total screen opening that is obstructed with debris. Determine the percentage of the total screen opening that is obstructed with sludge. Transform the oil screen sludge results by taking the natural log (ln) of the oil screen sludge rating plus one; that is, ln (oil screen clogging + one). Round the transformed value to four decimal places. Report both transformed and original result on the appropriate form(s). If the test was run using Haltermann fuel, Batch AK2821NX10-1, adjust the transformed oil screen result by subtracting -0.757. Where laboratory bias is determined to be significant, adjust the results for severity in accordance with the Lubricant Test Monitoring System.²¹³ Round this adjusted result to four decimal places and convert to original units by subtracting one from the antilog (e^x) of the adjusted result in transformed units. Record this value as the final result in original units on the appropriate form(s). Label as sludge all matter present on the oil screen that is not immediately recognizable as debris. Label all matter of indeterminate composition as sludge.

TABLE A5.1 Engine Parts Kit

	Part Number			Description	Quantity
	Prefix	Base	Suffix		
1	OG	804	AA	Engine Assembly	2
2	D8ZE	6A666	A2B	PCV Valve (EV-98)	4
3	E5TE	9601	AB	Air Filter Element	4
4	AGSF	32P	PF4	Spark Plug Assembly	32
5	F1AE	6065	BB	Bolt M11X1.5 21035 Hex	80
6	F1AE	6345	AD	Main Bolt	36
7	F1AE	6K258	AD	Main Bolt w/Stud Pickup	4
8	Q3U1L	6K109	AA	Oversize Piston, 0.125 mm	8
9	Q3U1L	6K109	AA	Oversize Piston Ring Set, 0.125 mm	8
10	Q3U1L	6K109	AA	Oversize Piston, 0.25 mm	8
11	Q3U1L	6K109	AA	Oversize Piston Ring Set, 0.25 mm	8
12	Q3U1L	6K109	AA	Oversize Piston, 0.375 mm	8
13	Q3U1L	6K109	AA	Oversize Piston Ring Set, 0.375 mm	8
14	Q3U1L	6K109	AA	Oversize Piston, 0.5 mm	8
15	Q3U1L	6K109	AA	Oversize Piston Ring Set, 0.5 mm	8
16	1W7E	6C315	AA	Crank Sensor Assembly	4
17	1W7E	6B288	AA	Cam Position Sensor	4
18	F65E	6251	B8A	Truck Camshaft-LH ^A	4
19	F65E	6C255	A8A	Truck Camshaft-RH ^A	4
20	YU1L	6622	AA	Screen and Cover Assembly	4
21	F6TE	6529	AB	Roller Follower	64
22	F65E	6C501	AA	Valve Tappet	64
23	F5AE	6507	AA	Intake Valve ^B	24
24	F1AE	6505	CC	Exhaust Valve ^B	24
25	F1AZ	6571	A	Valve Seal ^B	48
26	F5AE	6268	AA	Timing Chain	8
27	F81E	6M269	AA	Timing Chain Tensioner – LH	4
28	F81E	6L266	AA	Timing Chain Tensioner – RH	4
29	F3AE	6K297	AA	Timing Chain Guide – LH	4
30	F3AE	6K297	BA	Timing Chain Guide – RH	4
31	1L2E	6L253	AA	Tensioner Arm – LH	4
32	1L2E	6L253	BA	Tensioner Arm – RH	4
33	XL3E	6306	BA	Crankshaft Sprocket	4
34	F9ZE	6333	AA	Main Crankshaft Bearing	20

¹ Available from ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA 15206.

35	F9ZE	6A338	AA	Main Crankshaft Bearing	16
36	F9ZE	6A339	AA	Thrust Bearing	4
37	F9ZE	6A341	AA	Thrust Washer	20
38	F9ZE	6211	AA	Connecting Rod Bearing Set	64
39	F8AE	6621	AA	Oil Pump Assembly	4
40		N806435	S	Oil Gallery Plug	8
41	VG	LT	01	Cylinder Head Assembly ^B	2
42	VG	FA3		Cam Bearing Set	8
43	F65E	6303	BC	Crankshaft or	1
44	2C5E	6303	B13A	Crankshaft	1

^A Camshafts to be polished by supplier in X2.1.11.

^B Cylinder heads are obtained from supplier in X2.1.21 and are received assembled. Quantities listed are for an additional 3 builds.