Test Report Number 41418-09.PPC

Testing of
Pancake Alternator & PMU

PREPARED FOR:

The Perfect Parts Company
Sullivan Products
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PREPARED BY:

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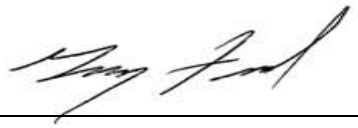
REVISION PAGE

Rev. #	Date	Page #	Para. #	Description
0	06/18/09			Complete Document

SIGNATURES

Prepared By: 
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Reviewed By: 
Mark Betts, Program Manager

Approved By: 
David Potpinka, Quality Manager

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1.0 PURPOSE

This test report describes the methods used for the Environmental and Dynamic Testing of the Sullivan Pancake Alternator tested for The Perfect Parts Company. This test program was conducted to determine the ability of the Pancake Alternator & PMU to successfully satisfy the requirements specified in the references listed in section 2.0 of this report.

1.1 Test Program Sequence

1.1.1. Receipt Inspection

Upon receipt at NTS, the Pancake Alternator & PMU was visually inspected to ensure there had been no damage due to shipping/handling, and to confirm that the test model number and serial number coincide with those on the packing list.
No discrepancies or damage was observed.

1.1.2. Functional Test

The Pancake Alternator & PMU was checked for damage, during and after testing as applicable.

1.1.3. Testing

Tests and Standard

Test	Standard
Vibration	Qualification Test Matrix for 315-025005-009 Mil-Std-810D Method 514.3
Mechanical Shock	Qualification Test Matrix for 315-025005-009 Mil-Std-810D Method 416.3 Procedure V

2.0 APPLICABLE DOCUMENTS

2.1 Purchase Order Number 10548

2.2 NTS Quotation Number 1519

2.3 NTS Corporate Quality Policy Manual
Revision 5, Dated June 13, 2008.

3.0 TEST ITEMS

3.1 Description

Qty	Item	P/N	SN#
2	Pancake Alternator	S675-400	1129 & 1115
2	PMU	REG-300V	1134 & 1135

3.2 Security Classification of Items

None

4.0 TEST DATE(S) AND EQUIPMENT

4.1 Test Date(s)

Test	Date(s)
Vibration	05/18/2009
Mechanical Shock	05/18/2009

4.2 Test Equipment

A list of the test equipment to be used is included in Appendix A of this procedure. This equipment is calibrated according to ISO 10012-1 and calibration is traceable to the National Institute of Standards and Technology (NIST). Calibration records are maintained on file at National Technical Systems.

5.0 GENERAL TEST REQUIREMENTS

5.1 Test Facility

The Pancake Alternators & PMU's were tested for The Perfect Parts Company at NTS test facilities located in Tinton Falls, NJ.

5.2 Test Sample Configuration

The test item configurations are documented in the photographs contained in this test report.

5.3 Functional Pass/Fail Criteria

Throughout the test program, there is no requirement for functional testing of the Pancake Alternator & PMU. At the completion of all testing the test items will be returned to The Perfect Parts Company. for further evaluation and functional testing.

6.0 TEST PROCEDURE

6.1 Vibration

6.1.1. Requirement

The Pancake Alternator & PMU shall be subjected to the Source Dwell Vibration test described in Mil-Std-810D Method 514.3 Figure 514.3-28.

Discrete Frequencies

Vibration 10 -2000 Hz 1 Hour Per Axis

6.1.2. Test Procedure

The Pancake Alternator & PMU was placed in the vibration fixture and tested to the above stated specifications.

6.1.3. Comments

The Pancake Alternator & PMU was tested in accordance with the Vibration Test requirements. Please reference Appendix B for test data.

6.2 Mechanical Shock

6.2.1. Requirement

The Pancake Alternator & PMU shall be capable of withstanding mechanical shock testing of Mil-Std-810D Method 514.3 Section I-3.7 Procedure V. The peak value shall be 20G's for duration of 11 milliseconds. The shock pulse shall be applied 3 times each axes. The total number of shocks shall be 9.

6.2.2. Test Procedure

The Pancake Alternator & PMU was mounted in the on the shock fixture/table and tested to the above stated specifications

6.2.3. Comments

The Pancake Alternator & PMU was tested in accordance with the Shock Test requirements. Please reference Appendix C for test data and plots.

Appendix A, Test Equipment List

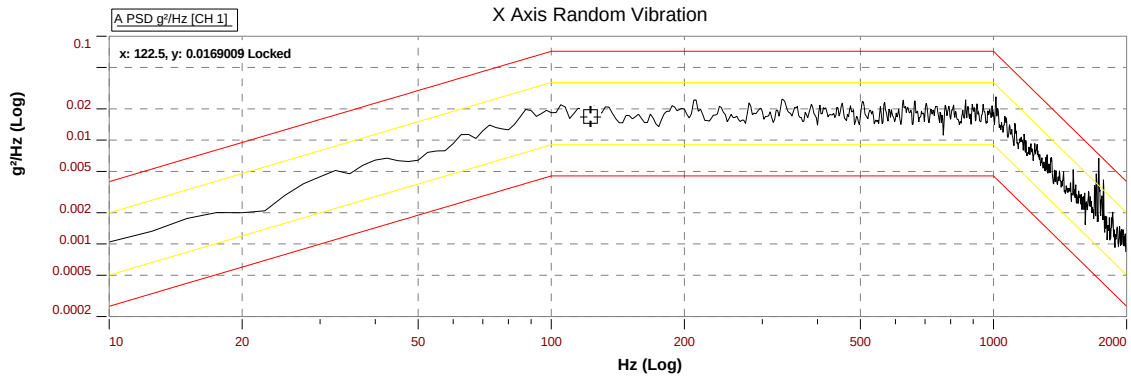
Test Equipment

Asset No.	Manufacturer	Item	Model	S/N	Cal. Date	Cal. Due
nj1532	PCB	DC Accelerometer	3711D1FA200G	1889	12/30/08	12/30/09
nj1205	Spectral Dynamics	Vibration Controller	2405-9700-1	2400-2041	11/18/08	11/18/09
nj1127	Unholtz Dickie	Shaker	T1000	476	NCR	NCR
nj1130	Unholtz Dickie	Amplifier	MA145A-130IAR	2418	NCR	NCR

Appendix B, Vibration Data

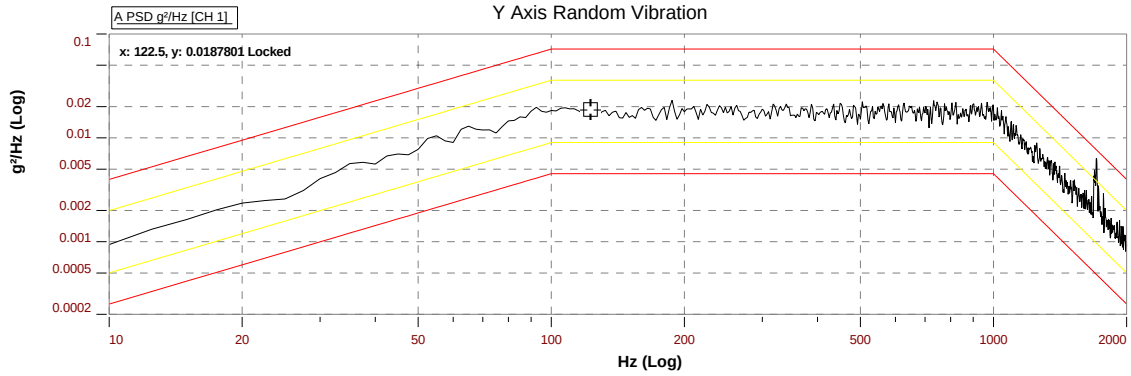
NATIONAL TECHNICAL SYSTEMS

X Axis Random Vibration



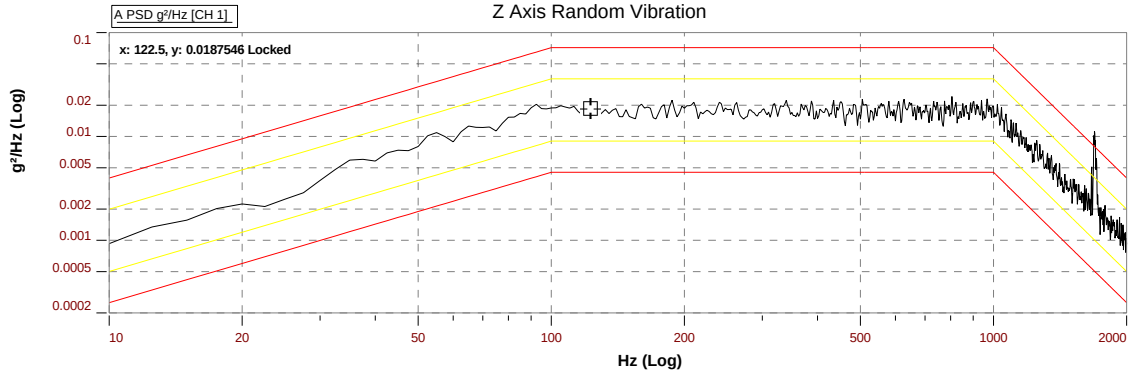
NATIONAL TECHNICAL SYSTEMS

Y Axis Random Vibration



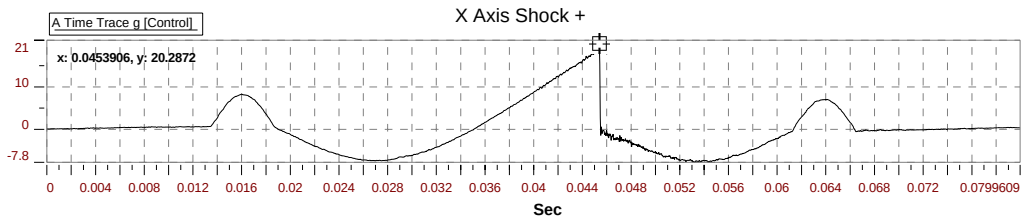
NATIONAL TECHNICAL SYSTEMS

Z Axis Random Vibration



Appendix C, Mechanical Shock Data

NATIONAL TECHNICAL SYSTEMS



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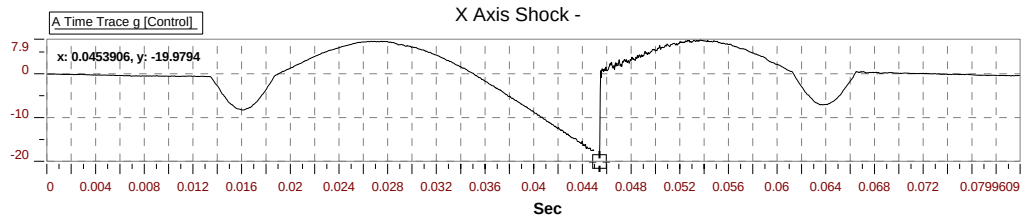

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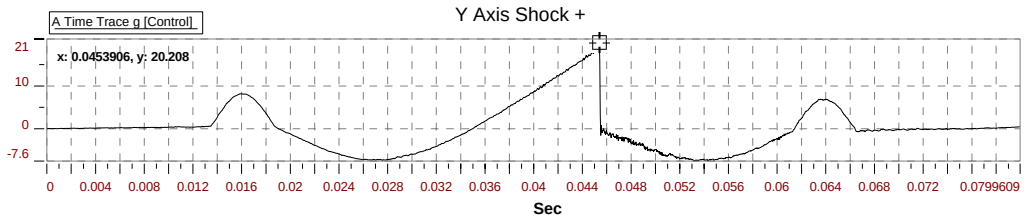

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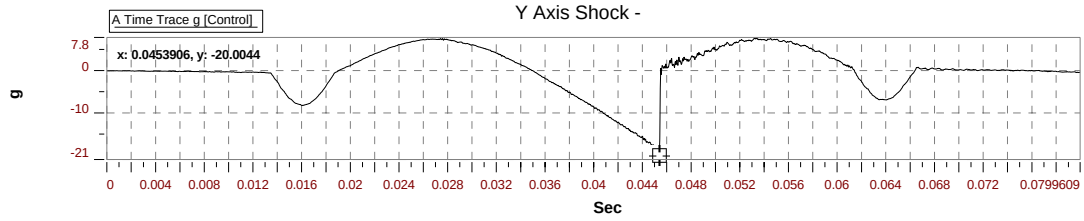

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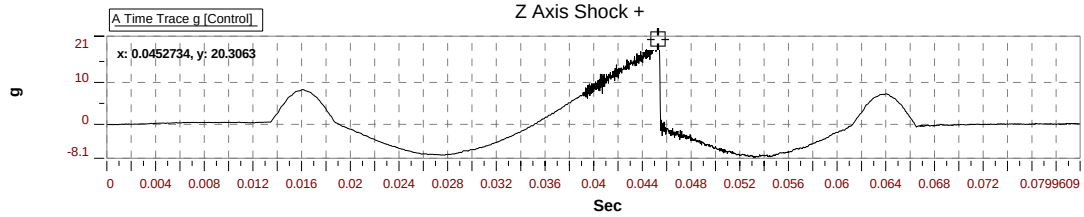

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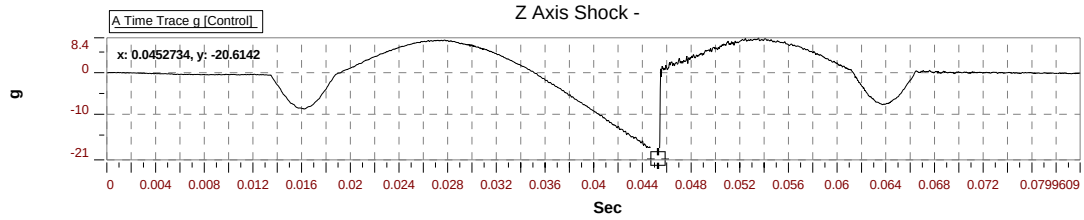

Appendix D, Photos

Vibration/Shock

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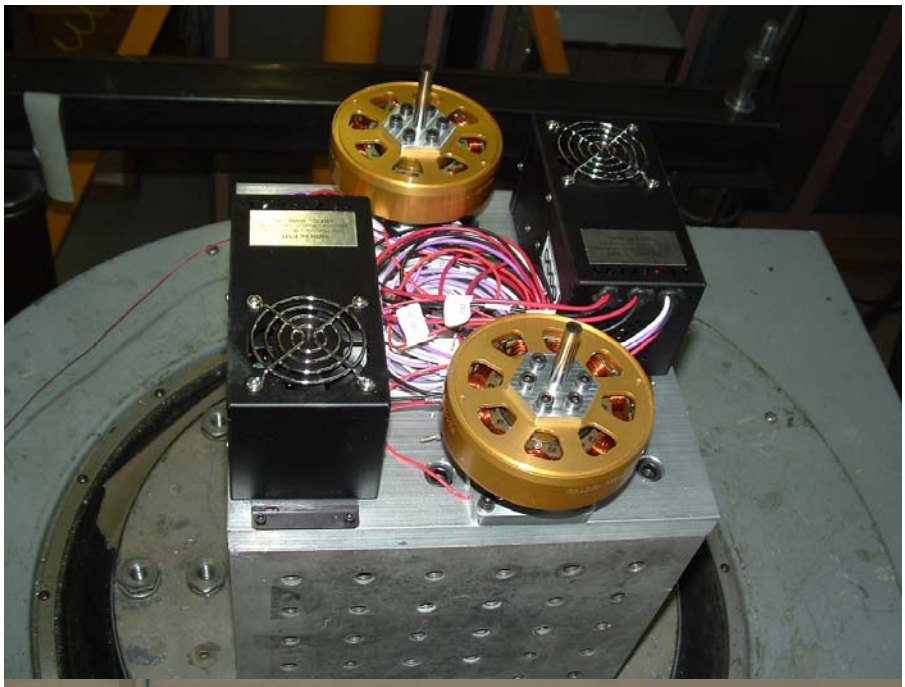


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