KILOWATT ISOTOPE POWER SYSTEM

COMPONENT TEST REPORT FOR THE GROUND DEMONSTRATION SYSTEM ALTERNATOR STATOR

MASTER

KIPS

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ENGINEERING REPORT

ACCEPTANCE TEST REPORT OF THE SUNDSTRAND ALTERNATOR STATOR, P/N 719134, S/N 003, FOR THE KILOWATT ISOTOPE POWER SYSTEM MODEL NUMBER ORC1A3A01

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1.0 PURPOSE

The purpose of this test was to demonstrate that the Alternator Stator has satisfactorily completed sufficient testing to satisfy the requirements set forth within the Kilowatt Isotope Power System (KIPS) Component Test Specification for the GDS Alternator Stator (TS 2538).

This report, one of a series, presents the results of the Acceptance Tests conducted on the Alternator Stator, S/N 003.

2.0 CONCLUSIONS

The Alternator Stator, S/N 003 , for the Kilowatt Isotope Power System has satisfactorily completed the testing set forth within Sundstrand Test Specification 2538. Test requirements of TS 2538 were extracted from the Kilowatt Isotope Power System Phase I Test Plan.

3.0 TEST DESCRIPTION

The Alternator Stator, Sundstrand P/N 719134, S/N 003, was subjected to the testing outlined within Paragraph 4.0 of this document.

3.1 Applicable Documents

All referenced documents used in the performance of the testing were to the latest approved versions:

AER 1342	Kilowatt Isotope Power System Ground Demonstration Test Plan
719134	Sundstrand Drawing Number of The Alternator Stator
CP14.57-1	General Precision Cleaning (KIPS) Procedure and Requirements
M-005	Sundstrand Aviation Instrument Calibration Frequency Schedule
Document 8.01	Quality Assurance - Instrumentation Calibration Procedure
QA5-107335	Sundstrand Quality Assurance Program Plan, Applicable to KIPS
MIL-L-23699	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

3.2 Facilities

3.2.1 Instrumentation

The instrumentation used in the performance of the tests is listed in Table I, page 1 of Appendix I.

3.2.2 Test Equipment

Test equipment utilized during testing was as shown in Table II, page 3 of Appendix I.

None of the test equipment was considered as being under any test requirement.

4.0 TEST PROCEDURE

The test procedure was as shown within TS 2538, which is reproduced as Appendix II of this document.

5.0 TEST RESULTS

5.1 Open Circuit Saturation Curve

Testing was completed without any out of specification conditions recorded.

Test data sheets are reproduced as pages 17 through 22 of Appendix II. The open circuit saturation curve is presented as Figure 3 of Appendix I. The slight variation between the three line-to-line voltages at high saturation levels is due to the allowable 1% speed variation.

5.2 Phase Balance

The three line phase balance, as determined from the testing conducted in Paragraph 5.1, and from the Open Circuit Saturation Curve (Figure 3 of Appendix I), was within specified limits. Data sheets are shown as pages 17 through 22 of Appendix II.

5.3 Short Circuit Test

This test was completed without incident. Test data sheet is reproduced as page 23 of Appendix II.

5.4 Load and Efficiency Tests - Separately Excited

Testing was conducted with the following load conditions:

seven no-load and seven 1500 watt loads, alternately;
seven no-load and seven 500 watt loads, alternately;
seven no-load and seven 1000 watt loads, alternately;

followed by seven no-load and seven 2200 watt loads, alternately. Testing was completed without incident.

Test data sheets are shown as pages 24 through 79 of Appendix II.

5.5 Load and Efficiency - With Controller

This test sequence was similar to Paragraph 5.4 testing: seven no-load and seven 1300 watt loads; seven no-load and seven 500 watt loads, seven no-load and seven 900 watt loads followed by seven no-load and seven 2000 watt loads.

Test data sheets are reproduced as pages 80 through 135 of Appendix II. A graph showing efficiency of the alternator with and without the controller is reproduced as Figure 4 of Appendix I.

5.6 Dielectric Test

The Dielectric Test of the phase leads and field leads to the frame was satisfactorily completed.

Test data sheet is reproduced as page 136 of Appendix II.

5.7 Insulation Resistance

This test was also satisfactorily concluded. Test data is presented on page 136 of Appendix II.

APPENDIX I

TABLES AND FIGURES

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INSTRUMENTATION

TYPE	PURPOSE	MANUFACTURER	MODEL, S/N, P/N	RANGE	ACCURACY	CALIBRATION	
						LAST	DUE
Torque Table	Measure Torque, Sensor	Lebow	Model 2528-102	0-100 IN-LB.	Calibrated to 0.01% as system	9/9/77	2/1/78
Torque Readout	Display Torque Measured	Daytronic	Model 300D S/N BAT6C331	0-100 IN-LB.	±2% of reading	9/9/77	2/1/78
Counter	Count Frequency	Anadex	Model CF-601R S/N K-199	0-9999 Hz	Within 9 counts	8/24/77	12/7/77
Flowmeter	Measure Hydraulic Oil Flow	Cox	Model ANC16	0-60 GPM	±½% of reading	8/31/77	12/21/77
Counter	Oil Flow	Hewlett Packard	Model 521A	0-9999 counts	Within 9 counts	10/20/76	12/7/77
Meter	Measure RMS Volts, RMS Amps, AC Power	Yokogawa Electric Works, Ltd.	Type 2503, S/B VAW-1	Volts Amps Watts	±0.25% F.S. ±0.25% F.S. ±0.25% F.S.	5/26/77	12/28/77
Meter (with external shunt)	DC Ammeter	Weston	Model 901, S/N AE-7	0-15 Amps	±0.25% F.S.	8/4/77	3/15/78
Meter	DC Ammeter	Weston	Model 931 S/N AE-609	0-10 Amps	±0.25% F.S.	5/11/77	12/14/77
Meter	DC Voltmeter	Weston	Model 901 S/N VE-538	0-30 Volts	±0.25% F.S.	9/6/77	4/5/78
Meter	DC Voltmeter	Weston	Model 901 S/N VE-714	0-50 Volts	±0.25% F.S.	9/12/77	4/12/78

TABLE I

INSTRUMENTATION

TYPE	PURPOSE	MANUFACTURER	MODEL, S/N, P/N	RANGE	ACCURACY	CALIBRATION	
						LAST	DUE
Gauge	Measure Alternator Oil Pressure	Acragage	S/N P-2154	0-200 PSIG	±1% F.S.	2/1/77	12/21/77
Gauge	Measure Alternator Vacuum/ Pressure during Fill	Supergage	S/N PG-175	-30 IN.HG. 0-30 PSIG	±1% F.S.	2/24/77	12/21/77
Current Transformer (3)	Measure Alternator AC Current	Weston	Model 461 S/N 19361 S/N 20146 S/N 26193	15 Amp Capacity at 25-500 Hz	±0.2% F.S.	N/A	N/A
Temperature Readout	Monitor Alternator Temps.	Doric Trendicator 400	Type K/°F S/N T-146	0-400°F	±2°F F.S.	10/10/77	12/21/77

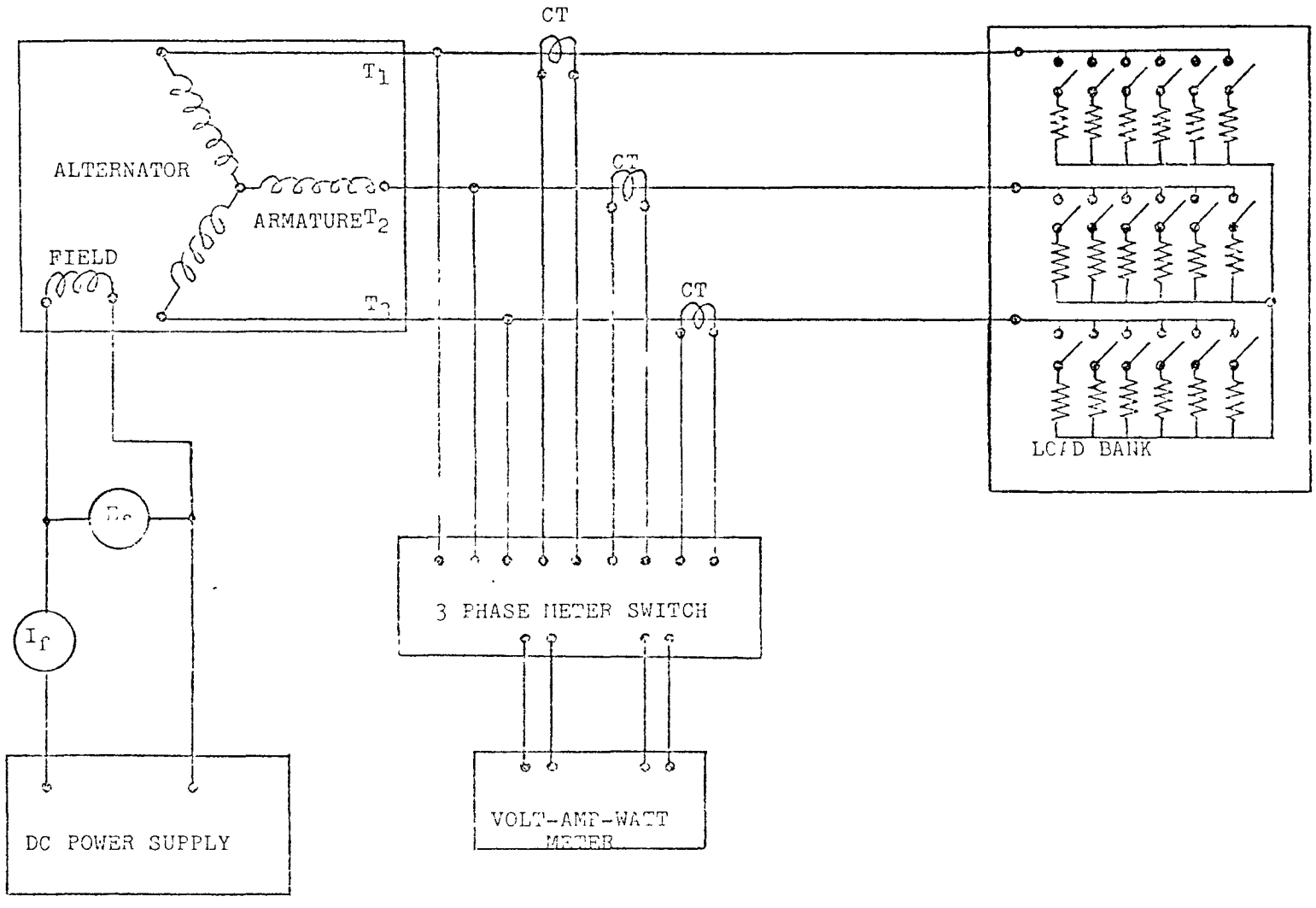
TABLE I (Continued)

100372

TEST EQUIPMENT

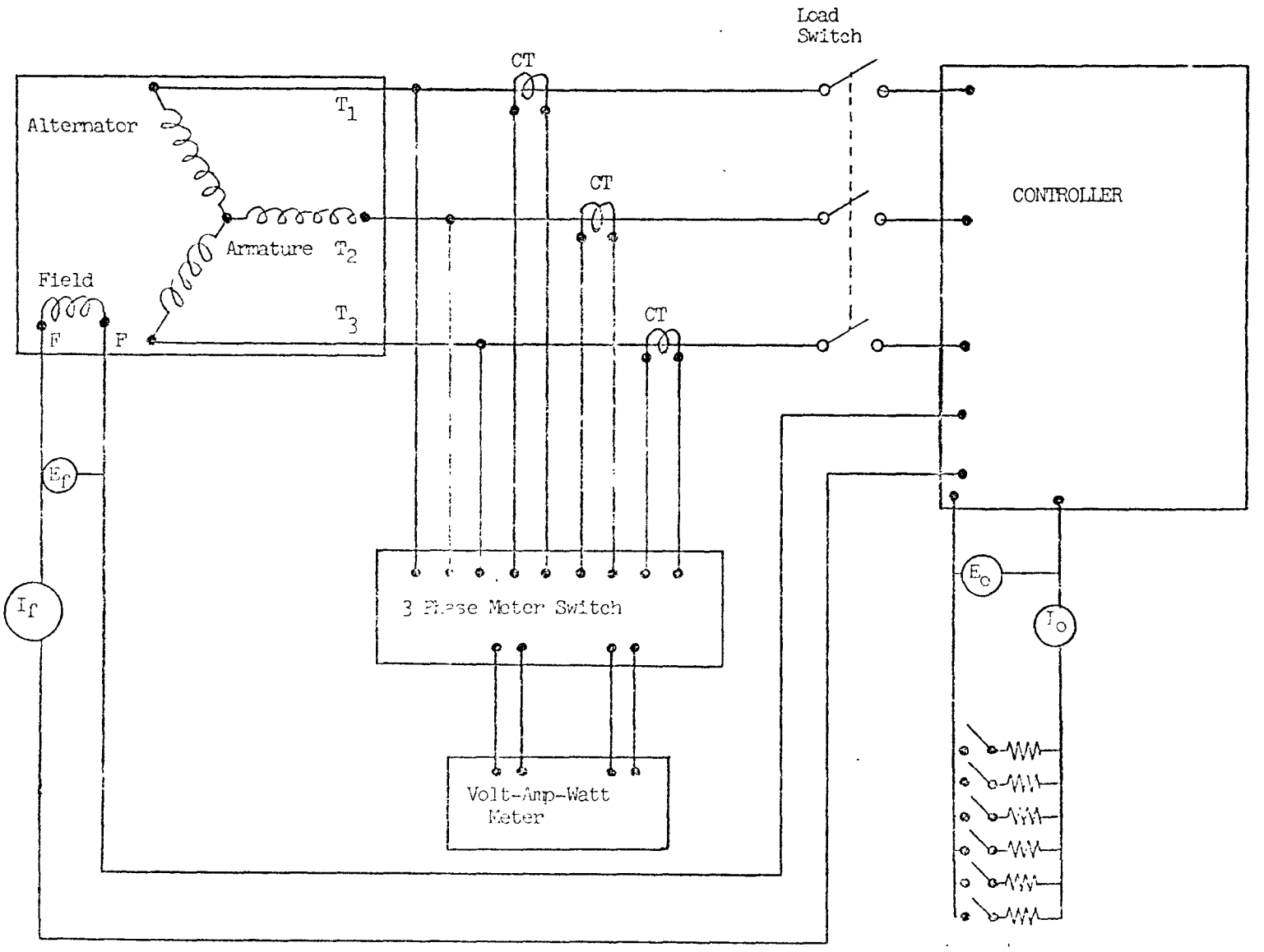
ITEM	PURPOSE	MANUFACTURER	MODEL, S/N, P/N	RANGE, CAPACITY, RESPONSE, ACCURACY
Air Motor	Drive Alternator	Barbour-Stockwell	S/N 1571-2	5 Hp, 100,000 RPM
Load Bank	AC Loads	Sundstrand	- - -	- - -
Load Bank	DC Loads	Sundstrand	- - -	- - -
DC Power Supply	Supply Alternator Excitation	Trygon Electronics	Model HR40-5B	0-40 VDC, 5 Amps
Hydraulic Lube Rack	Heat/Cool Alternator Oil	Sundstrand	- - -	- - -

TABLE II



ELECTRICAL SCHEMATIC
FOR SEPARATE EXCITATION

FIGURE 1



ELECTRICAL SCHEMATIC WITH CONTROLLER

FIGURE 2

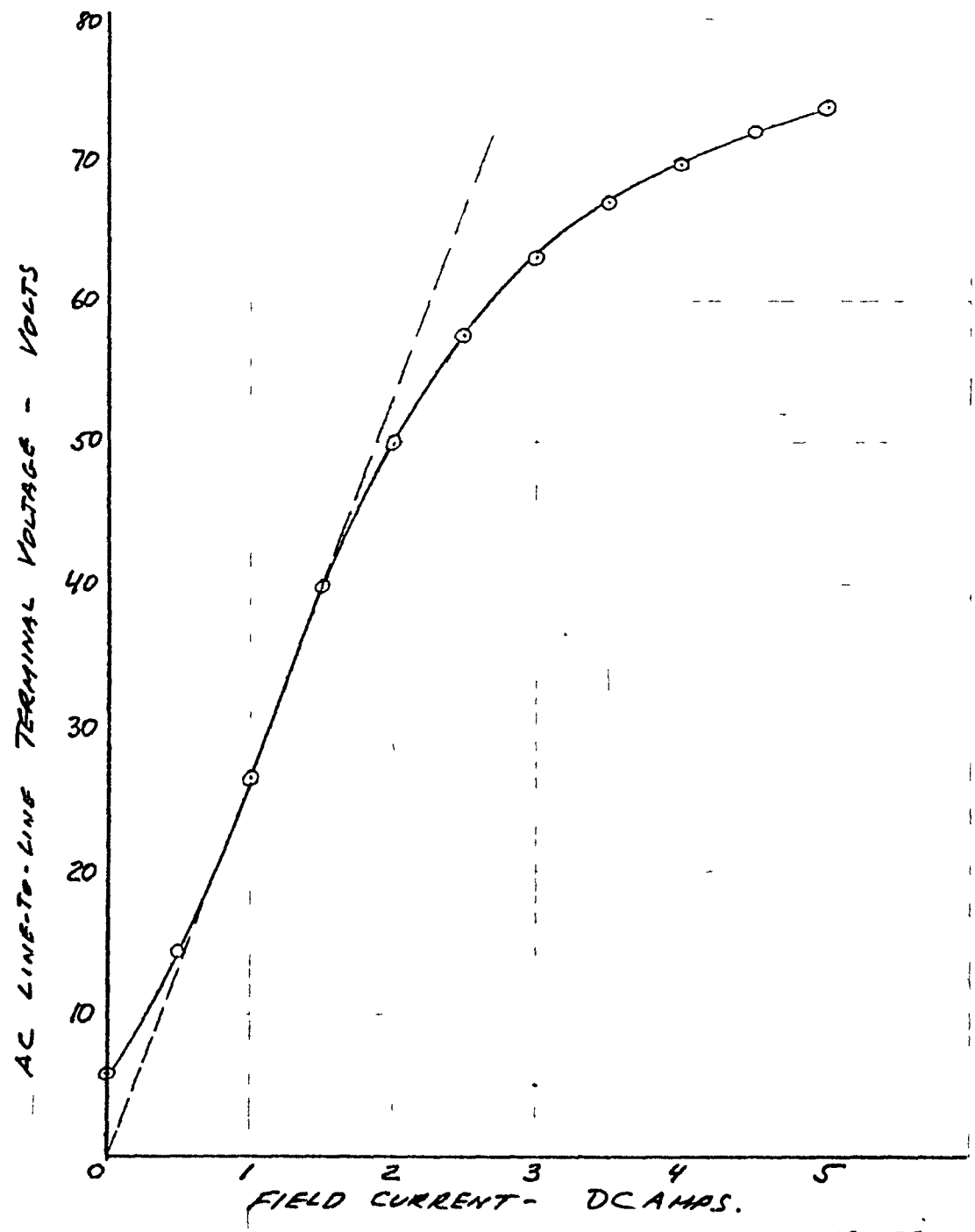


FIGURE 3

12-1-77
AK

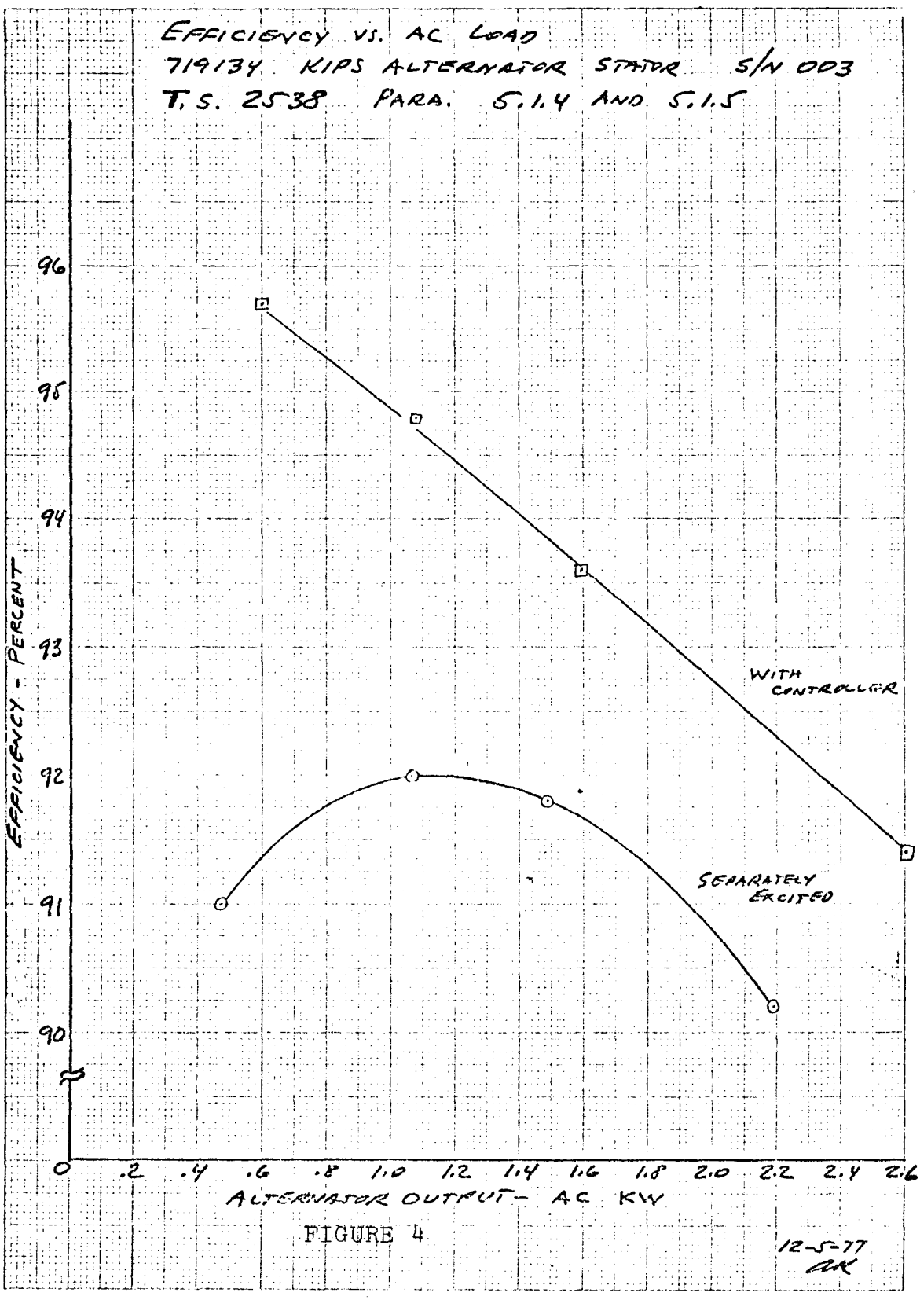

EFFICIENCY VS. AC LOAD
719134 KIPS ALTERNATOR STATOR S/N 003
T.S. 2538 PARA. 5.1.4 AND 5.1.5
EFFICIENCY - PERCENT
96
95
94
93
92
91
90
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
ALTERNATOR OUTPUT - AC KW
WITH CONTROLLER
SEPARATELY EXCITED
12-5-77
AK

FIGURE 4

APPENDIX II

TS 2538 WITH TEST DATA SHEETS

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TITLE:

TEST PROCEDURE AND TEST DATA SHEETS FOR ACCEPTANCE TEST OF SUNDSTRAND ALTERNATOR STATOR P/N 719134, MODEL NUMBER ORC1A3A01

APPROVALS		
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Robert Nonnemann Rel Engr 7-15-77	QUALITY ASSURANCE	ENGINEERING

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KIPS TEST PROCEDURE

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TEST PROCEDURE AND TEST DATA SHEETS FOR ACCEPTANCE TEST OF SUNDSTRAND ALTERNATOR STATOR P/N 719134, MODEL NUMBER ORC1A3A01

1.0 GENERAL

1.1 Purpose

The intent of this document is to formulate test procedures to ensure that the Alternator Stator, P/N 719134, satisfies the requirements set forth within the KIPS Phase I Program Plan.

2.0 REFERENCED DOCUMENTS

All referenced documents used in the performance of the tests specified herein shall be to their latest approved revision.

	KIPS Phase I Program Plan
CP14.57-01	General Precision Cleaning, KIPS
M-005	Sundstrand Aviation Instrument Calibration Frequency Schedule
MIL-L-23699	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

A

3.0 ASSOCIATED EQUIPMENT

1) Test Stand - "T" table plus necessary air supply and controls for operation of air motor, cooling oil recirculating system and vacuum pump(s) for evactuating the Alternator housing.

2) Air Motor - Barbour Stockwell S/N 1571-2, 5 HP, 100,000 RPM or equivalent

3) Instrument Console - Sundstrand S/N EP5161-691-09-01, which contains phase meter switching, temperature readout, overspeed protection, fuses, etc.

4) Alternator Test Rig Assembly - Sundstrand P/N EP2605-8000.

5) Breadboard Controller - Sundstrand P/N EP2605-0000.

6) DC Power Supply - Mid Eastern Industries P/N HW40-5A (40 volts - 5 amps) or equivalent.

7) AC Load Bank - Three (3) phase, resistive, Wye-connected, each phase individually adjustable.

8) DC Load Bank - Sundstrand P/N EP5161-336-1, variable loads.

4.0 INSTRUMENTATION

1) Torque Table - Lebow Model 2528-102, range 0-100 IN-LB.

2) Torque Readout - Daytronic Type 91 Strain Gage Transducer Input Module with a Model 300D Transducer Amplifier Indicator

4.0 INSTRUMENTATION (Continued)

3) Frequency Counter - Anadex Model CF601R, Accuracy ±9 PPM, ±1 count or equivalent

4) Temperature Readout - Love Controls Corp. Model 100, Electronic Indicator (0-400°F), Accuracy ±2°F of F.S.

5) Current Transformers - Weston Model 461, Type II, 400 Hz or equivalent, Accuracy ±0.2% of F.S.

6) AC Power Meter (Volts-Amps-Watts) - Yokogawa Electric Works, Ltd, Type 2503, Digital AC Power Meter, Accuracy ± 0.5% of F.S.

7) DC Voltmeter - Weston Model 901, Range 0-30 VDC, Accuracy ±0.25% of F.S.

8) DC Voltmeter - Weston Model 901, Range 0-50 VDC, Accuracy ±0.25% of F.S.

9) DC Ammeter - Weston Model 931, Range 0-10 Amps, Accuracy ±0.25% of F.S.

10) DC Ammeter - Weston Model 931, Range 0-75 Amps, Accuracy ±0.25% of F.S.

11) Shunt - Weston, 75 Amps, 50 Millivolts.

12) High Resistance Meter - Hewlett Packard Model 4329A.

13) Flow Meter, Cox 0-60 GPM, 1% of full reading.

5.0 TEST PROCEDURE

NOTE: ALL INSTRUMENTATION SHALL BE LOCATED A MINIMUM OF FOUR (4) FEET FROM THE ALTERNATOR.

5.1 Operating Tests

Unless otherwise specified, the following conditions shall apply when operating the Alternator:

1) Input Speed - 33,700 ± 300 RPM

2) Alternator Housing Internal Pressure - 21 in. Hg. vacuum minimum

3) Rotation - Counter Clockwise (CCW) when viewed from the drive end.

4) Cooling - MIL-L-23699 oil at 50 ± 5 PSI inlet pressure and inlet oil temperature at 190±40°F. A

5) Nominal Voltage Rating - 22.5 ± 0.5 VAC, L-L.
6) Bearing Lube (Dowtherm) Flow - .035 ± .005 GPM. A

5.1.1 Open Circuit Saturation Curve

Connect the Alternator per Figure 1, page 15.
Using the variable DC power supply, excite the Alternator in increments of 0.5 amps to a maximum of 5 amps. CAUTION: Set desired value of field current by adjusting upward from a lower value; never by adjusting downward from a higher value. If desired value of field current is accidentally exceeded, reduce to zero and carefully adjust upward until desired value is reached. The following shall be recorded on the appropriate data sheet for each 0.5 amp increment:

1) Line to line AC volts between T_1-T_2, T_1-T_3 and T_3-T_2.

2) DC field current

3) DC field voltage

4) Speed (RPM)

5) Stator Winding Temperature (°F)

6) Cooling Oil Flow (GPM)

7) Cooling Oil temperature (°F)

8) Cooling Oil Out Temperature (°F) A

5.1.1 Open Circuit Saturation Curve (Continued)

With the rated voltage of 22.5 VAC, the field current shall be a maximum of 1.0 amps.

With the maximum field excitation of 5.0 amps, the terminal voltage shall be 70 VAC minimum.

Remove the field excitation. Record residual output voltage at T_1-T_2, T_1-T_3 and T_3-T_2

5.1.2 Phase Balance

From the data recorded in Paragraph 5.1.1, determine the terminal voltage balance at 22.5 VAC

The three line to line voltage shall be 22.5 $\pm$ 0.2 VAC. A

5.1.3 Short Circuit Test

NOTE: TEST DURATION SHALL NOT EXCEED 5 MINUTES.

Connect a three phase short circuit on the load side of the current transformers.

Excite the Alternator with 5.0 amps DC. Record the following on the appropriate data sheet:

1) Short Circuit Currents* (AMPS)

2) Field Current (AMPS)

3) Field Voltage (VDC)

4) Speed (RPM)

5) Winding Temperatures (^{o}F)

*Short Circuit Current shall be 120 amps minimum.

5.1.3 Short Circuit Test (Continued)

Remove the excitation input. Record residual short circuit current. Remove the three phase short circuit connections from the current transformers.

5.1.4 Load and Efficiency Tests - Separately Excited

5.1.4.1 Rated Load Efficiency (1500 Watts)

Connect the Alternator as shown in Figure 1, page Operate the Alternator per Paragraph 5.1.

Apply a three phase balanced load of 22.5 VAC, 38.5 amps and 1500 watts at 1.0 power factor (P.F.) Operate until winding temperature has stabilized. (Stabilization is defined as a temperature change of less than 2°F in a 5 minute period.)

Remove Alternator load, de-excite and stop rotation. Maintain the internal pressure of the Alternator housing and the cooling oil flow.

Using deadweights, calibrate the torque table and readout system.

Test A

Operate the Alternator at no load and de-excited. Record the following:

1) Residual voltage (VAC)

2) Speed (RPM)

3) Torque (IN-LBS)

4) Alternator housing internal pressure (In. Hg)

5) Winding Temperature (°F)

6) Cooling Oil Flow (GPM)

7) Cooling Oil Temperature (°F)

8) Cooling Oil Out Temperature (°F) A

5.1.4.1 Rated Load Efficiency (1500 Watts) (Continued)

Test B

Apply a balanced three phase load of 22.5 volts, 38.5 amps and 1500 watts at 1.0 P.F. and record the following:

1) AC Volts
2) AC Amps
3) AC Watts
4) DC Field Volts
5) DC Field Amps
6) Speed (RPM)
7) Torque (IN.LBS)
8) Alternator Housing Internal Pressure (In.Hg)
9) Winding Temperatures (^{o}F)
10) Cooling Oil Flow (GPM)
11) Cooling Oil Inlet Temperature (^{o}F)
12) Cooling Oil Out Temperature (^{o}F) A

Remove load and de-excite Alternator. Record Tests A and B six additional times.

For each of the load tests above, compute the efficiency of the Alternator as follows:

$$\% \text{ EFF.} = \frac{(W_1 + W_3)\ 100}{\dfrac{\left[T_{FL} - \dfrac{(T_{NL1} + T_{NL2})}{2}\right] \text{RPM } (746)}{63000} + E_f I_f}$$

T_{NL1} = No Load Torque from Test immediately preceding Load Test.

T_{NL2} = No Load Torque from Test immediately following Load Test.

T_{NL1}, T_{NL2}, T_{FL} = INCH-LBS.

5.1.4.1 Rated Load Efficiency (1500 Watts) (Continued)

The field current at rated load shall be 1.90 amps maximum.

5.1.4.2 500 Watt Load Test

Repeat the test procedure of Paragraph 5.1.4.1 except the Alternator load shall be 22.5 VAC, 12.8 Amps and 500 watts at 1.0 P.F.

With a 500 watt load, the field current shall be a maximum of 1.10 amps.

5.1.4.3 1000 Watt Load Test

Repeat the test procedure of Paragraph 5.1.4.1 except the Alternator load shall be 22.5 VAC, 25.7 amps and 1000 watts at 1.0 P.F.

With a 1000 watt load, the field current shall be a maximum of 1.45 amps.

5.1.4.4 2200 Watt Load Test

Repeat the test procedure of Paragraph 5.1.4.1 except the Alternator load shall be 22.5 VAC, 56.5 amps and 2200 watts at 1.0 P.F.

With a 2200 watt load, the field current shall be a maximum of 2.6 amps.

5.1.5 Load and Efficiency Tests - With Controller

5.1.5.1 Rated Load Efficiency - 1300 Watts

Connect the Alternator and Controller as shown in Figure 2. Operate per Paragraph 5.1. The PLR is to be disconnected and the speed manually controlled during efficiency tests.

Apply a DC load of 46.4 amps at 28 volts DC to the Alternator-Controller System and allow the winding temperature to stabilize.

Remove load, de-excite and stop rotation.

5.1.5.1 Rated Load Efficiency - 1300 Watts (Continued)

Maintain the Alternator internal pressure and the cooling oil flow.

Using deadweights, calibrate the torque table and readout system.

Test A

Operate the Alternator at no load and de-excited. Record the following parameters:

1) Residual Voltage (VAC)

2) Speed (RPM)

3) Torque (in.lbs.)

4) Winding Temperatures (^{o}F)

5) Alternator Housing Internal Pressure (In.Hg)

6) Cooling Oil Flow (GPM)

7) Cooling Oil In Temperature (^{o}F)

8) Cooling Oil Out Temperature (^{o}F) A

Test B

Apply a DC load of 46.4 amps to the Alternator and record the following:

1) DC Volts

2) DC Amps

3) AC Volts

4) AC Amps

5) AC Watts

6) DC Field Volts

7) DC Field Amps

5.1.5.1 Rated Load Efficiency - 1300 Watts (Continued)

Test B (Continued)

8) Torque (in.lbs.)

9) Speed (RPM)

10) Winding Tempertures (^{o}F)

11) Alternator Housing Internal Pressure (In.Hg.)

12) Cooling Oil Flow (GPM)

13) Cooling Oil Inlet Temperature (^{o}F)

14) Cooling Oil Out Temperature (^{o}F) A

Remove load and de-excite alternator. Repeat Tests A and B six additional times.

For each of the above tests, compute the efficiency as in Paragraph 5.1.4.1.

The field current at rated load shall be 1.6 amps maximum. A

5.1.5.2 500 Watt Load Test

Repeat the test procedure of Paragraph 5.1.5.1 except the Alternator load shall be 17.9 amps DC, at 28 VDC.

With a load of 500 watts, the field current shall be 0.7 amps maximum. A

5.1.5.3 900 Watt Load Test

Repeat the test procedure of Paragraph 5.1.5.1 except the Alternator load shall be 32.1 amps DC at 28 VDC.

With a load of 900 watts, the field current shall be 1.2 amps maximum. A

5.1.5.4 2000 Watt Load Test

Repeat the test procedure of Paragraph 5.1.5.1 except the Alternator load shall be 71.4 amps DC at 28 VDC.

With a load of 2000 watts, the field current shall be 2.5 amps maximum. A

5.1.6 Dielectric Test

This test shall be performed while the Alternator is still hot as a result of the preceding tests.

1. Disconnect the Alternator power and field leads. Disconnect all test equipment and instrumentation.

2. Connect the three phase leads together. Apply 600 volts, 60 Hz, for a one second period, between the phase leads and the alternator frame.

3. Connect the two field leads together. Apply 600 volts, 60 Hz, for a one second period, between the field leads and the alternator frame.

There shall be no indication of insulation breakdown. Maximum allowable leakage current shall be 15 milliamps.

5.1.7 Insulation Resistance Test

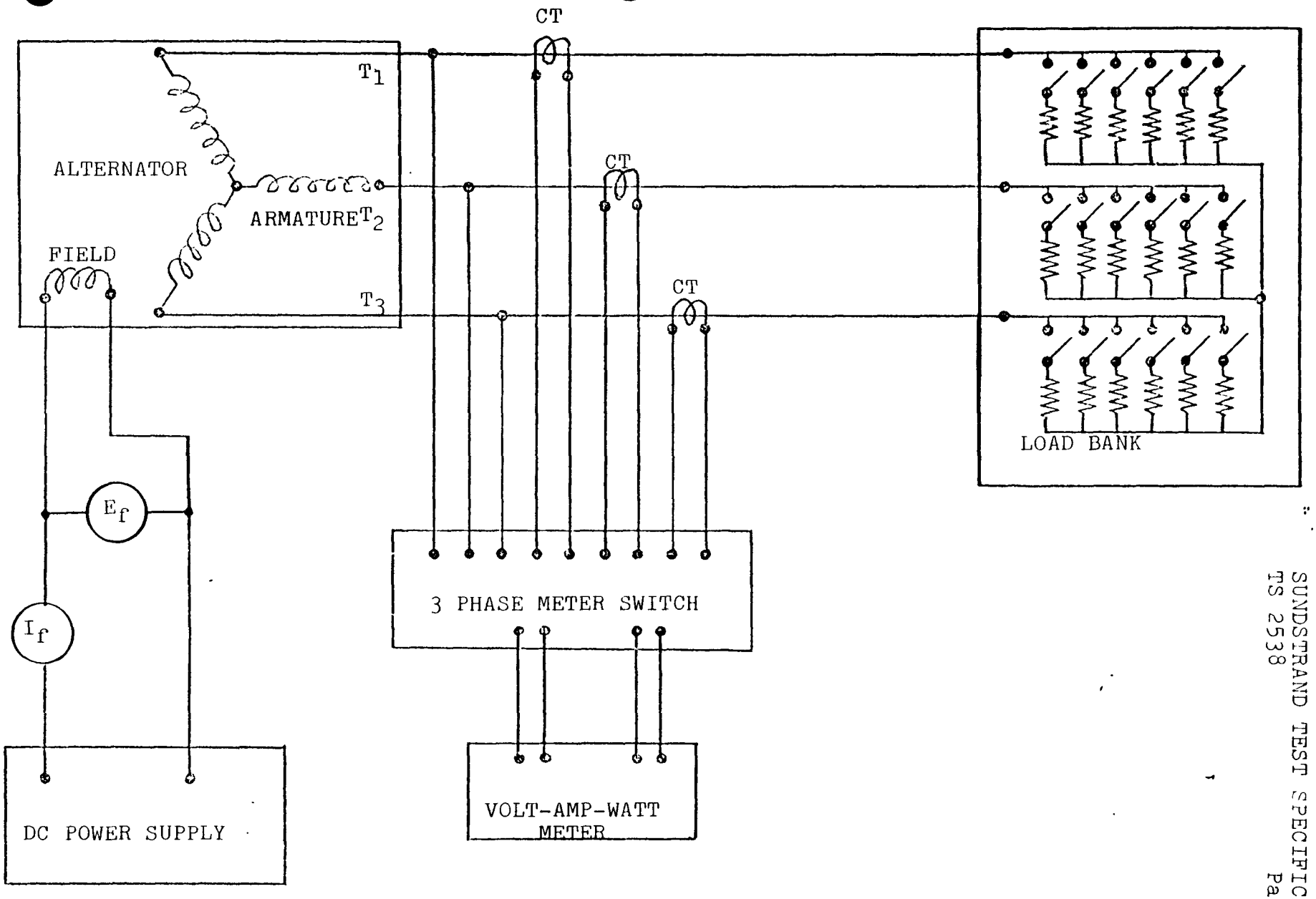
This test shall be conducted after the Alternator has stabilized at room temperature.

1. Connect the three phase leads together. Measure and record the armature insulation resistance at test voltages of 25, 50, 100, 250, and 500 VDC.

2. Connect the two field leads together. Measure and record the field coil insulation resistance at test voltages of 25, 50, 100, 250, and 500 VDC.

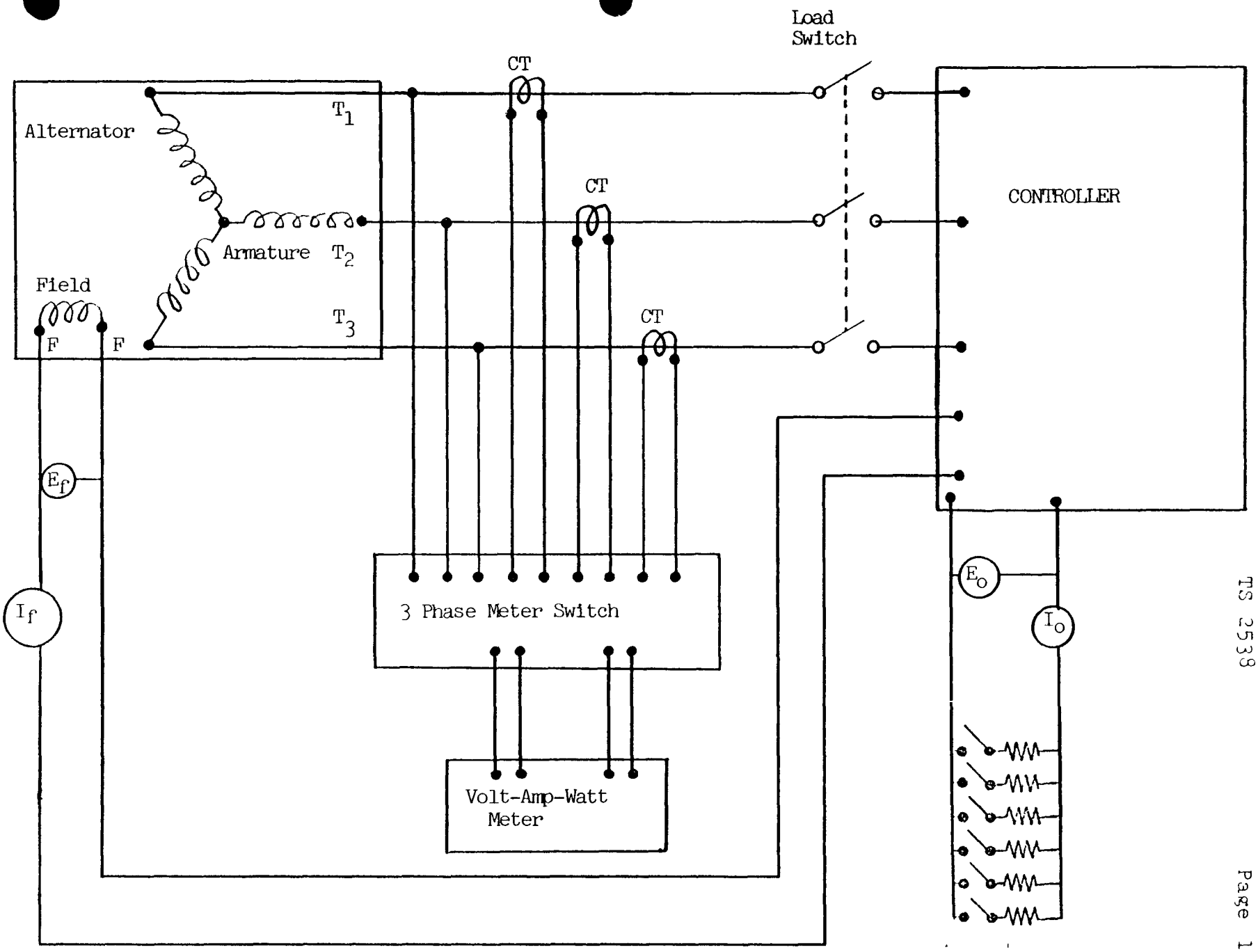
Insulation resistance shall be 10 Meg-ohms minimum. A

(Insulation resistance shall be measured with a Hewlett Packard Model 4329A, High Resistance Meter, or equivalent instrumentation.)



ELECTRICAL SCHEMATIC
FOR SEPARATE EXCITATION

FIGURE 1



ELECTRICAL SCHEMATIC WITH CONTROLLER

FIGURE 2

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TEST PROCEDURE TITLE

TEST PROCEDURE AND TEST DATA SHEETS FOR
ACCEPTANCE TEST OF SUNDSTRAND ALTERNATOR
STATOR P/N 719134, MODEL NUMBER ORC1A3A01

MODEL NO:	SERIAL NO:	OPERATOR:	INSPECTOR:	DATE
ORC1A3A01	003	1593	Doug Brunner	12-1-77

TAPE IDENT.	VERSION

REMARKS:

QUALITY ASSURANCE APPROVAL

PROCEDURE PARA. NO.	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.1	Open Circuit Saturation				
	0.5 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	14.4
	T_1-T_3	---	---	VAC	14.4
	T_3-T_2	---	---	VAC	14.4
	Field Current	---	---	Amps	0.50
	Field Voltage	---	---	VDC	2.30
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperatures				
	TC_1	---	275	°F	203
	TC_2	---	275	°F	208
	TC_3	---	275	°F	204
	TC_4	---	275	°F	205
	Cooling Oil Flow	---	---	GPM	(268) .73
	Cooling Oil Temperature	150	230	°F	203
	Cooling Oil Out Temperature	---	---	°F	199

A

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MODEL NO. ORV1A3A01 SERIAL NO. 003 DATE 11-28-77 DATA SHEET 2 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.1	Open Circuit Saturation				
	1.0 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	26.5
	T_1-T_3	---	---	VAC	26.5
	T_3-T_2	---	---	VAC	26.5
	Field Current	---	---	Amps	1.0
	Field Voltage	---	---	VDC	4.6
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperature				
	TC_1	---	275	°F	204
	TC_2	---	275	°F	209
	TC_3	---	275	°F	205
	TC_4	---	275	°F	206
	Cooling Oil Flow	---	---	GPM	(253) .69
	Cooling Oil Temperature	150	230	°F	198
	Cooling Oil Out Temperature	---	---	°F	195 A
	1.5 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	39.8
	T_1-T_3	---	---	VAC	39.8
	T_3-T_2	---	---	VAC	39.8
	Field Current	---	---	Amps	1.5
	Field Voltage	---	---	VDC	7.3
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperature				
	TC_1	---	275	°F	205
	TC_2	---	275	°F	212
	TC_3	---	275	°F	207
	TC_4	---	275	°F	207
	Cooling Oil Flow	---	---	GPM	(269) .73
	Cooling Oil Temperature	150	230	°F	203
	Cooling Oil Out Temperature	---	---	°F	200 A

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MODEL NO. ORV1A3A01 SERIAL NO. 003 DATE 11-28-77 DATA SHEET 3 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.1	Open Circuit Saturation				
	2.0 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	49.9
	T_1-T_3	---	---	VAC	49.9
	T_3-T_2	---	---	VAC	49.9
	Field Current	---	---	Amps	2.0
	Field Voltage	---	---	VDC	9.8
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperature				
	TC_1	---	275	°F	208
	TC_2	---	275	°F	214
	TC_3	---	275	°F	210
	TC_4	---	275	°F	210
	Cooling Oil Flow	---	---	GPM	(256) .70
	Cooling Oil Temperature	150	230	°F	200
	Cooling Oil Out Temperature	---	---	°F	197 A
	2.5 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	57.5
	T_1-T_3	---	---	VAC	57.5
	T_3-T_2	---	---	VAC	57.5
	Field Current	---	---	Amps	2.5
	Field Voltage	---	---	VDC	12.2
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperature				
	TC_1	---	275	°F	211
	TC_2	---	275	°F	217
	TC_3	---	275	°F	212
	TC_4	---	275	°F	212
	Cooling Oil Flow	---	---	GPM	(251) .69
	Cooling Oil Temperature	150	230	°F	198
	Cooling Oil Out Temperature	---	---	°F	195 A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.1	Open Circuit Saturation					
	3.0 DC Amps					
	Line to Line AC volts between:					
	T_1-T_2	---	---	VAC	63.1	
	T_1-T_3	---	---	VAC	63.1	
	T_3-T_2	---	---	VAC	63.1	
	Field Current	---	---	Amps	3.0	
	Field Voltage	---	---	VDC	14.7	
	Alternator Speed	33,400	34,000	RPM	33700	
	Stator Winding Temperature					
	TC_1	---	275	°F	218	
	TC_2	---	275	°F	225	
	TC_3	---	275	°F	220	
	TC_4	---	275	°F	220	
	Cooling Oil Flow	---	---	GPM	(255) .70	
	Cooling Oil Temperature	150	230	°F	198	
	Cooling Oil Out Temperature	---	---	°F	197	A
	3.5 DC Amps					
	Line to Line AC volts between:					
	T_1-T_2	---	---	VAC	~~219~~ 67.1	
	T_1-T_3	---	---	VAC	~~209~~ 67.1	
	T_3-T_2	---	---	VAC	~~[illegible]~~ 67.1	
	Field Current	---	---	Amps	3.5	
	Field Voltage	---	---	VDC	17.6	
	Alternator Speed	33,400	34,000	RPM	33700	
	Stator Winding Temperature					
	TC_1	---	275	°F	219	
	TC_2	---	275	°F	227	
	TC_3	---	275	°F	221	
	TC_4	---	275	°F	221	
	Cooling Oil Flow	---	---	GPM	(253) .69	
	Cooling Oil Temperature	150	230	°F	191	
	Cooling Oil Out Temperature	---	---	°F	191	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.1	Open Circuit Saturation					
	4.0 DC Amps					
	Line to Line AC volts between:					
	T_1-T_2	---	---	VAC	69.8	
	T_1-T_3	---	---	VAC	69.7	
	T_3-T_2	---	---	VAC	69.6	
	Field Current	---	---	Amps	4.0	
	Field Voltage	---	---	VDC	20.2	
	Alternator Speed	33,400	34,000	RPM	33700	
	Stator Winding Temperature					
	TC_1	---	275	°F	221	
	TC_2	---	275	°F	229	
	TC_3	---	275	°F	223	
	TC_4	---	275	°F	223	
	Cooling Oil Flow	---	---	GPM	(266) .73	
	Cooling Oil Temperature	150	230	°F	218	
	Cooling Oil Out Temperature	---	---	°F	212	A
	4.5 DC Amps					
	Line to Line AC volts between:					
	T_1-T_2	---	---	VAC	72.1	
	T_1-T_3	---	---	VAC	72.0	
	T_3-T_2	---	---	VAC	71.9	
	Field Current	---	---	Amps	4.5	
	Field Voltage	---	---	VDC	23.4	
	Alternator Speed	33,400	34,000	RPM	33700	
	Stator Winding Temperature					
	TC_1	---	275	°F	229	
	TC_2	---	275	°F	237	
	TC_3	---	275	°F	231	
	TC_4	---	275	°F	230	
	Cooling Oil Flow	---	---	GPM	(256) .70	
	Cooling Oil Temperature	150	230	°F	198	
	Cooling Oil Out Temperature	---	---	°F	199	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.1	Open Circuit Saturation				
	5.0 DC Amps				
	Line to Line AC volts between:				
	T_1-T_2	---	---	VAC	73.8
	T_1-T_3	---	---	VAC	73.7
	T_3-T_2	---	---	VAC	73.6
	Field Current	---	---	Amps	5.0
	Field Voltage	---	---	VDC	26.3
	Alternator Speed	33,400	34,000	RPM	33700
	Stator Winding Temperatures				
	TC_1	---	275	°F	230
	TC_2	---	275	°F	238
	TC_3	---	275	°F	233
	TC_4	---	275	°F	232
	Cooling Oil Flow	---	---	GPM	(253) .69
	Cooling Oil Temperature	150	230	°F	195
	Cooling Oil Out Temperature	---	---	°F	197 A
	Residual Voltage:				
	T_1-T_2	---	---	VAC	5.75
	T_1-T_3	---	---	VAC	5.75
	T_3-T_2	---	---	VAC	5.75
5.1.2	Phase Balance				
	Terminal Voltages - Total (From paragraph 5.1.1)				
	T_1-T_2	22.3	22.7	VAC	22.5
	T_1-T_3	22.3	22.7	VAC	22.5
	T_3-T_2	22.3	22.7	VAC	22.5

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.3	Short Circuit Test				
	Short Circuit Current				
	I_1	120	---	Amps	127.4
	I_2	120	---	Amps	127.6
	I_3	120	---	Amps	127.2
	Field Current	---	---	Amps	5.0
	Field Voltage	---	---	VDC	24.7
	Alternator Speed	33,400	34,000	RPM	33700
	Winding Temperatures				
	TC_1	---	275	°F	242
	TC_2	---	275	°F	241
	TC_3	---	275	°F	241
	TC_4	---	275	°F	244
	Residual Current -				
	I_1	---	---	Amps	5.60
	I_2	---	---	Amps	5.60
	I_3	---	---	Amps	5.60

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.94	
	T_1-T_3	---	---	VAC	4.94	
	T_3-T_2	---	---	VAC	4.93	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.75	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	195	A
	TC_2	180	275	°F	200	A
	TC_3	180	275	°F	196	A
	TC_4	180	275	°F	197	A
	6) Cooling Oil Flow	---	---	GPM	(267) .73	
	7) Cooling Oil Temperature	150	230	°F	211	
	8) Cooling Oil Out Temperature	---	---	°F	205	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#1	TEST "B" (1500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	21.9	
	T_1-T_3	21.5	23.5	VAC	22.0	
	T_3-T_2	21.5	23.5	VAC	21.9	
	2) Three Phase Amps (AC)					
	Phase 1	35.6	41.5	Amps	39.6	
	Phase 2	35.6	41.5	Amps	39.9	
	Phase 3	35.6	41.5	Amps	39.7	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	822	
	W_3	---	---	Watts	672	
	$W_1 + W_3$	1450	1550	Watts	1494	
	4) Field Voltage	---	---	VDC	8.1	
	5) Field Current	---	1.90	Amps	1.70	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	4.8	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	206	A
	10) Cooling Oil Flow	---	---	GPM	(252).69	
	11) Cooling Oil Temperature	150	230	°F	210	
	12) Cooling Oil Out Temperature	---	---	°F	202	A

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TEST SPEC: 2538 REV. A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.52	
	T_1-T_3	---	---	VAC	5.56	
	T_3-T_2	---	---	VAC	5.56	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.75	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	205	A
	6) Cooling Oil Flow	---	---	GPM	(269) .73	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#2	TEST "B" (1500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	21.8	
	T_1-T_3	21.5	23.5	VAC	22.0	
	T_3-T_2	21.5	23.5	VAC	21.8	
	2) Three Phase Amps (AC)					
	Phase 1	35.6	41.5	Amps	39.4	
	Phase 2	35.6	41.5	Amps	39.2	
	Phase 3	35.6	41.5	Amps	39.5	
	3) Three Phase Watts (AC) W_1	---	---	Watts	816	
	W_3	---	---	Watts	665	
	$W_1 + W_3$	1450	1550	Watts	1481	
	4) Field Voltage	---	---	VDC	8.2	
	5) Field Current	---	1.90	Amps	1.70	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	4.75	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	209	A
	TC_2	180	275	°F	213	A
	TC_3	180	275	°F	209	A
	TC_4	180	275	°F	210	A
	10) Cooling Oil Flow	---	---	GPM	(2r3) .69	
	11) Cooling Oil Temperature	150	230	°F	218	
	12) Cooling Oil Out Temperature	---	---	°F	210	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---		IN-LBS.	.70	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	207	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(261) .72	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	196	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 13 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.4.1	Load and Efficiency-Separately Excited-				
#3	TEST "B" (1500 Watts)				
	1) Three Phase Voltage				
	T_1-T_2	21.5	23.5	VAC	21.8
	T_1-T_3	21.5	23.5	VAC	22.0
	T_3-T_2	21.5	23.5	VAC	21.8
	2) Three Phase Amps (AC)				
	Phase 1	35.6	41.5	Amps	39.4
	Phase 2	35.6	41.5	Amps	39.7
	Phase 3	35.6	41.5	Amps	39.5
	3) Three Phase Watts (AC) W_1	---	---	Watts	815
	W_3	---	---	Watts	666
	$W_1 + W_3$	1450	1550	Watts	1481
	4) Field Voltage	---	---	VDC	8.2
	5) Field Current	---	1.90	Amps	1.70
	6) Alternator Speed	33,400	34,000	RPM	33700
	7) Torque	---	---	IN.LBS.	4.68
	8) Housing Pressure	21	---	In.Hg.	23.5
	9) Winding Temperatures				
	TC_1	180	275	°F	210 A
	TC_2	180	275	°F	215 A
	TC_3	180	275	°F	211 A
	TC_4	180	275	°F	211 A
	10) Cooling Oil Flow	---	---	GPM	(255) .70
	11) Cooling Oil Temperature	150	230	°F	206
	12) Cooling Oil Out Temperature	---	---	°F	202 A

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TEST RECORD-CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 14 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.68	
	4) Housing Pressure	21	---	In.Hg.	23.7	
	5) Winding Temperatures					
	TC_1	180	275	°F	209	A
	TC_2	180	275	°F	214	A
	TC_3	180	275	°F	210	A
	TC_4	180	275	°F	210	A
	6) Cooling Oil Flow	---	---	GPM	(256) .70	
	7) Cooling Oil Temperature	150	230	°F	200	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 15 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#4	TEST "B" (1500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	21.7	
	T_1-T_3	21.5	23.5	VAC	21.9	
	T_3-T_2	21.5	23.5	VAC	21.7	
	2) Three Phase Amps (AC)					
	Phase 1	35.6	41.5	Amps	39.2	
	Phase 2	35.6	41.5	Amps	39.5	
	Phase 3	35.6	41.5	Amps	39.4	
	3) Three Phase Watts (AC) W_1	---	---	Watts	809	
	W_3	---	---	Watts	659	
	$W_1 + W_3$	1450	1550	Watts	1468	
	4) Field Voltage	---	---	VDC	8.2	
	5) Field Current	---	1.90	Amps	1.70	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	4.62	
	8) Housing Pressure	21	---	In.Hg.	23.6	
	9) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	211	A
	10) Cooling Oil Flow	---	---	GPM	(247) .73	
	11) Cooling Oil Temperature	150	230	°F	214	
	12) Cooling Oil Out Temperature	---	---	°F	209	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 16 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.60	
	4) Housing Pressure	21	---	In.Hg.	23.6	
	5) Winding Temperatures					
	TC_1	180	275	°F	209	A
	TC_2	180	275	°F	214	A
	TC_3	180	275	°F	209	A
	TC_4	180	275	°F	210	A
	6) Cooling Oil Flow	---	---	GPM	(254) .69	
	7) Cooling Oil Temperature	150	230	°F	274	
	8) Cooling Oil Out Temperature	---	---	°F	206	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 17 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#5	TEST "B" (1500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	21.9	
	T_1-T_3	21.5	23.5	VAC	22.1	
	T_3-T_2	21.5	23.5	VAC	21.9	
	2) Three Phase Amps (AC)					
	Phase 1	35.6	41.5	Amps	39.5	
	Phase 2	35.6	41.5	Amps	39.9	
	Phase 3	35.6	41.5	Amps	39.7	
	3) Three Phase Watts (AC) W_1	---	---	Watts	822	
	W_3	---	---	Watts	672	
	$W_1 + W_3$	1450	1550	Watts	1494	
	4) Field Voltage	---	---	VDC	8.3	
	5) Field Current	---	1.90	Amps	1.70	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	4.62	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	214	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	201	
	12) Cooling Oil Out Temperature	---	---	°F	199	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.60	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	212	A
	TC_4	180	275	°F	212	A
	6) Cooling Oil Flow	---	---	GPM	(252) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	195	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 19 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#6	TEST "B" (1500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.0	
	T_1-T_3	21.5	23.5	VAC	22.1	
	T_3-T_2	21.5	23.5	VAC	22.0	
	2) Three Phase Amps (AC)					
	Phase 1	35.6	41.5	Amps	39.6	
	Phase 2	35.6	41.5	Amps	39.8	
	Phase 3	35.6	41.5	Amps	39.7	
	3) Three Phase Watts (AC) W_1	---	---	Watts	821	
	W_3	---	---	Watts	672	
	W_1 +W_3	1450	1550	Watts	1493	
	4) Field Voltage	---	---	VDC	8.2	
	5) Field Current	---	1.90	Amps	1.70	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	4.62	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	130	275	°F	212	A
	TC_2	180	275	°F	218	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	214	A
	10) Cooling Oil Flow	---	---	GPM	(270) .73	
	11) Cooling Oil Temperature	150	230	°F	203	
	12) Cooling Oil Out Temperature	---	---	°F	200	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 20 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.1	Load and Efficiency-Separately Excited-					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.55	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	211	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	212	A
	6) Cooling Oil Flow	---	---	GPM	(254) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	195	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 21 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.4.1	Load and Efficiency-Separately Excited-				
#7	TEST "B" (1500 Watts)				
	1) Three Phase Voltage				
	T_1-T_2	21.5	23.5	VAC	21.9
	T_1-T_3	21.5	23.5	VAC	22.1
	T_3-T_2	21.5	23.5	VAC	21.9
	2) Three Phase Amps (AC)				
	Phase 1	35.6	41.5	Amps	39.3
	Phase 2	35.6	41.5	Amps	39.6
	Phase 3	35.6	41.5	Amps	39.4
	3) Three Phase Watts (AC) W_1	---	---	Watts	815
	W_3	---	---	Watts	667
	$W_1 + W_3$	1450	1550	Watts	1482
	4) Field Voltage	---	---	VDC	8.3
	5) Field Current	---	1.90	Amps	1.70
	6) Alternator Speed	33,400	34,000	RPM	33700
	7) Torque	---	---	IN.LBS.	4.55
	8) Housing Pressure	21	---	In.Hg.	23.5
	9) Winding Temperatures				
	TC_1	180	275	°F	214 A
	TC_2	180	275	°F	219 A
	TC_3	180	275	°F	214 A
	TC_4	180	275	°F	215 A
	10) Cooling Oil Flow	---	---	GPM	(257) .70
	11) Cooling Oil Temperature	150	230	°F	206
	12) Cooling Oil Out Temperature	---	---	°F	200 A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 22 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.50	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	211	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	6) Cooling Oil Flow	---	---	GPM	(253).69	
	7) Cooling Oil Temperature	150	230	°F	202	
	8) Cooling Oil Out Temperature	---	---	°F	199	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 23 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#1	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.3	
	T_1-T_3	21.5	23.5	VAC	22.3	
	T_3-T_2	21.5	23.5	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.2	
	Phase 2	11.3	13.4	Amps	12.2	
	Phase 3	11.3	13.4	Amps	12.2	
	3) Three Phase Watts (AC) W_1	---	---	Watts	243	
	W_3	---	---	Watts	228	
	$W_1 + W_3$	460	500	Watts	471	
	4) Field Voltage	---	---	VDC	4.3	
	5) Field Current	---	1.10	Amps	.91	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.76	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	215	
	12) Cooling Oil Out Temperature	---	---	°F	206	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 24 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	~~5.1~~ 5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.48	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	201	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 25 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#2	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.0	
	T_1-T_3	21.5	23.5	VAC	22.0	
	T_3-T_2	21.5	23.5	VAC	22.0	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.1	
	Phase 2	11.3	13.4	Amps	12.1	
	Phase 3	11.3	13.4	Amps	12.1	
	3) Three Phase Watts (AC) W_1	---	---	Watts	242	
	W_3	---	---	Watts	224	
	$W_1 + W_3$	460	500	Watts	466	
	4) Field Voltage	---	---	VDC	4.3	
	5) Field Current	---	1.10	Amps	.92	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.75	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	10) Cooling Oil Flow	---	---	GPM	(.28) .73	
	11) Cooling Oil Temperature	150	230	°F	217	
	12) Cooling Oil Out Temperature	---	---	°F	209	A

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 26 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.45	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(262) .72	
	7) Cooling Oil Temperature	150	230	°F	202	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 27 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#3	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.4	
	T_1-T_3	21.5	23.5	VAC	22.4	
	T_3-T_2	21.5	23.5	VAC	22.4	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.3	
	Phase 2	11.3	13.4	Amps	12.3	
	Phase 3	11.3	13.4	Amps	12.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	248	
	W_3	---	---	Watts	230	
	$W_1 + W_3$	450	500	Watts	478	
	4) Field Voltage	---	---	VDC	4.4	
	5) Field Current	---	1.10	Amps	.94	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.75	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	208	A
	10) Cooling Oil Flow	---	---	GPM	(252) .69	
	11) Cooling Oil Temperature	150	230	°F	196	
	12) Cooling Oil Out Temperature	---	---	°F	194	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 28 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.45	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(261) .72	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 29 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#4	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.5	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.4	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.3	
	Phase 2	11.3	13.4	Amps	12.3	
	Phase 3	11.3	13.4	Amps	12.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	250	
	W_3	---	---	Watts	232	
	$W_1 + W_3$	460	500	Watts	482	
	4) Field Voltage	---	---	VDC	4.4	
	5) Field Current	---	1.10	Amps	.94	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.75	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	207	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	204	
	12) Cooling Oil Out Temperature	---	---	°F	198	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.40	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(267) .73	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	199	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 31 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.4.2	Load and Efficiency-Separately Excited-				
#5	TEST "B" (500 Watts)				
	1) Three Phase Voltage				
	T_1-T_2	21.5	23.5	VAC	22.3
	T_1-T_3	21.5	23.5	VAC	22.3
	T_3-T_2	21.5	23.5	VAC	22.2
	2) Three Phase Amps (AC)				
	Phase 1	11.3	13.4	Amps	12.3
	Phase 2	11.3	13.4	Amps	12.2
	Phase 3	11.3	13.4	Amps	12.2
	3) Three Phase Watts (AC) W_1	---	---	Watts	248
	W_3	---	---	Watts	230
	$W_1 + W_3$	460	500	Watts	478
	4) Field Voltage	---	---	VDC	4.4
	5) Field Current	---	1.10	Amps	.93
	6) Alternator Speed	33,400	34,000	RPM	33700
	7) Torque	---	---	IN.LBS.	1.70
	8) Housing Pressure	21	---	In.Hg.	23.5
	9) Winding Temperatures				
	TC_1	180	275	°F	207 A
	TC_2	180	275	°F	212 A
	TC_3	180	275	°F	208 A
	TC_4	180	275	°F	208 A
	10) Cooling Oil Flow	---	---	GPM	(253) .69
	11) Cooling Oil Temperature	150	230	°F	199
	12) Cooling Oil Out Temperature	---	---	°F	195 A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34.000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.38	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	6) Cooling Oil Flow	---	---	GPM	(266) .73	
	7) Cooling Oil Temperature	150	230	°F	208	
	8) Cooling Oil Out Temperature	---	---	°F	204	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 33 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#6	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.4	
	T_1-T_3	21.5	23.5	VAC	22.4	
	T_3-T_2	21.5	23.5	VAC	22.3	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.3	
	Phase 2	11.3	13.4	Amps	12.3	
	Phase 3	11.3	13.4	Amps	12.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	248	
	W_3	---	---	Watts	231	
	$W_1 + W_3$	460	500	Watts	479	
	4) Field Voltage	---	---	VDC	4.4	
	5) Field Current	---	1.10	Amps	.93	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.70	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	130	275	°F	207	A
	TC_2	130	275	°F	213	A
	TC_3	130	275	°F	208	A
	TC_4	130	275	°F	208	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	197	
	12) Cooling Oil Out Temperature	---	---	°F	194	A

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MODEL NO. ORC1A3A01 SERIAL NO. 007 DATE 11-29-77 DATA SHEET 34 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.38	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(257) .70	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 35 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.2	Load and Efficiency-Separately Excited-					
#7	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.5	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	11.3	13.4	Amps	12.4	
	Phase 2	11.3	13.4	Amps	12.4	
	Phase 3	11.3	13.4	Amps	12.4	
	3) Three Phase Watts (AC) W_1	---	---	Watts	252	
	W_3	---	---	Watts	231	
	$W_1 + W_3$	460	500	Watts	487	
	4) Field Voltage	---	---	VDC	4.4	
	5) Field Current	---	1.10	Amps	.93	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	1.70	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	207	A
	TC_2	180	275	°F	213	A
	TC_3	130	275	°F	208	A
	TC_4	180	275	°F	209	A
	10) Cooling Oil Flow	---	---	GPM	(254) .69	
	11) Cooling Oil Temperature	150	230	°F	198	
	12) Cooling Oil Out Temperature	---	---	°F	195	A

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TEST SPEC: 2538 REV. A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.3	
	T_1-T_3	---	---	VAC	5.3	
	T_3-T_2	---	---	VAC	5.3	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.35	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	207	A
	TC_2	180	275	°F	213	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	209	A
	6) Cooling Oil Flow	---	---	GPM	(268) .73	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#1	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.3	
	T_1-T_3	21.5	23.5	VAC	22.4	
	T_3-T_2	21.5	23.5	VAC	22.3	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.1	
	Phase 2	25.3	29.3	Amps	27.2	
	Phase 3	25.3	29.3	Amps	27.1	
	3) Three Phase Watts (AC) W_1	---	---	Watts	560	
	W_3	---	---	Watts	485	
	$W_1 + W_3$	1030	1090	Watts	1045	
	4) Field Voltage	---	---	VDC	6.3	
	5) Field Current	---	1.45	Amps	1.31	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.20	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	211	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	219	
	12) Cooling Oil Out Temperature	---	---	°F	212	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.34	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	209	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	210	A
	TC_4	180	275	°F	211	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	200	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 39 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#2	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.4	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.2	
	Phase 2	25.3	29.3	Amps	27.3	
	Phase 3	25.3	29.3	Amps	27.2	
	3) Three Phase Watts (AC) W_1	---	---	Watts	567	
	W_3	---	---	Watts	492	
	$W_1 + W_3$	1030	1090	Watts	1059	
	4) Field Voltage	---	---	VDC	6.3	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.18	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	211	A
	10) Cooling Oil Flow	---	---	GPM	(252) .69	
	11) Cooling Oil Temperature	150	230	°F	215	
	12) Cooling Oil Out Temperature	---	---	°F	207	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 40 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.32	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	211	A
	6) Cooling Oil Flow	---	---	GPM	(261) .72	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 41 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#3	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.6	
	T_1-T_3	21.5	23.5	VAC	22.7	
	T_3-T_2	21.5	23.5	VAC	22.6	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.3	
	Phase 2	25.3	29.3	Amps	27.5	
	Phase 3	25.3	29.3	Amps	27.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	575	
	W_3	---	---	Watts	498	
	$W_1 + W_3$	1030	1090	Watts	1073	
	4) Field Voltage	---	---	VDC	6.4	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.20	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	211	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	212	A
	TC_4	180	275	°F	212	A
	10) Cooling Oil Flow	---	---	GPM	(254) .69	
	11) Cooling Oil Temperature	150	230	°F	196	
	12) Cooling Oil Out Temperature	---	---	°F	194	A

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 42 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.32	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	211	A
	TC_4	180	275	°F	211	A
	6) Cooling Oil Flow	---	---	GPM	(266) .73	
	7) Cooling Oil Temperature	150	230	°F	219	
	8) Cooling Oil Out Temperature	---	---	°F	211	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 43 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#4	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.5	
	T_1-T_3	21.5	23.5	VAC	22.6	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.2	
	Phase 2	25.3	29.3	Amps	27.2	
	Phase 3	25.3	29.3	Amps	27.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	566	
	W_3	---	---	Watts	490	
	$W_1 + W_3$	1030	1090	Watts	1056	
	4) Field Voltage	---	---	VDC	6.4	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.20	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	218	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	10) Cooling Oil Flow	---	---	GPM	(257) .70	
	11) Cooling Oil Temperature	150	230	°F	200	
	12) Cooling Oil Out Temperature	---	---	°F	197	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 44 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.34	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	211	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	212	A
	TC_4	180	275	°F	212	A
	6) Cooling Oil Flow	---	---	GPM	(252) .69	
	7) Cooling Oil Temperature	150	230	°F	196	
	8) Cooling Oil Out Temperature	---	---	°F	194	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 45 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#5	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.4	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.4	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.1	
	Phase 2	25.3	29.3	Amps	27.3	
	Phase 3	25.3	29.3	Amps	27.2	
	3) Three Phase Watts (AC) W_1	---	---	Watts	566	
	W_3	---	---	Watts	492	
	$W_1 + W_3$	1030	1090	Watts	1058	
	4) Field Voltage	---	---	VDC	6.4	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.15	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	203	
	12) Cooling Oil Out Temperature	---	---	°F	201	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 46 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.32	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	6) Cooling Oil Flow	---	---	GPM	(256) .70	
	7) Cooling Oil Temperature	150	230	°F	200	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 47 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#6	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.4	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.4	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.1	
	Phase 2	25.3	29.3	Amps	27.3	
	Phase 3	25.3	29.3	Amps	27.2	
	3) Three Phase Watts (AC) W_1	---	---	Watts	567	
	W_3	---	---	Watts	492	
	$W_1 + W_3$	1030	1090	Watts	1059	
	4) Field Voltage	---	---	VDC	6.4	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.20	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	10) Cooling Oil Flow	---	---	GPM	(252) .69	
	11) Cooling Oil Temperature	150	230	°F	211	
	12) Cooling Oil Out Temperature	---	---	°F	204	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 48 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.32	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	211	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	212	A
	TC_4	180	275	°F	212	A
	6) Cooling Oil Flow	---	---	GPM	(269) .73	
	7) Cooling Oil Temperature	150	230	°F	207	
	8) Cooling Oil Out Temperature	---	---	°F	204	A

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TEST RECORD–CONTINUATION

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 49 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.3	Load and Efficiency-Separately Excited-					
#7	TEST "B" (1000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.8	
	T_1-T_3	21.5	23.5	VAC	22.9	
	T_3-T_2	21.5	23.5	VAC	22.8	
	2) Three Phase Amps (AC)					
	Phase 1	25.3	29.3	Amps	27.5	
	Phase 2	25.3	29.3	Amps	27.7	
	Phase 3	25.3	29.3	Amps	27.6	
	3) Three Phase Watts (AC) W_1	---	---	Watts	584	
	W_3	---	---	Watts	507	
	$W_1 + W_3$	1030	1090	Watts	1091	
	4) Field Voltage	---	---	VDC	6.4	
	5) Field Current	---	1.45	Amps	1.32	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.30	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	213	A
	TC_2	180	275	°F	218	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	214	A
	10) Cooling Oil Flow	---	---	GPM	(2SB) .70	
	11) Cooling Oil Temperature	150	230	°F	196	
	12) Cooling Oil Out Temperature	---	---	°F	195	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 50 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.8	
	T_1-T_3	---	---	VAC	4.8	
	T_3-T_2	---	---	VAC	4.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.68	
	4) Housing Pressure	21	---	In.Hg.	23.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	194	A
	TC_2	180	275	°F	197	A
	TC_3	180	275	°F	195	A
	TC_4	180	275	°F	195	A
	6) Cooling Oil Flow	---	---	GPM	(255) .70	
	7) Cooling Oil Temperature	150	230	°F	219	
	8) Cooling Oil Out Temperature	---	---	°F	210	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#1	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.6	
	T_1-T_3	21.5	23.5	VAC	22.8	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	57.1	
	Phase 2	52.0	61.0	Amps	57.4	
	Phase 3	52.0	61.0	Amps	57.1	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1253	
	W_3	---	---	Watts	949	
	$W_1 + W_3$	2120	2280	Watts	2202	
	4) Field Voltage	---	---	VDC	11.4	
	5) Field Current	---	2.60	Amps	2.35	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.8	
	8) Housing Pressure	21	---	In.Hg.	23.7	
	9) Winding Temperatures					
	TC_1	180	275	°F	208	A
	TC_2	180	275	°F	212	A
	TC_3	180	275	°F	210	A
	TC_4	180	275	°F	210	A
	10) Cooling Oil Flow	---	---	GPM	(255) .70	
	11) Cooling Oil Temperature	150	230	°F	198	
	12) Cooling Oil Out Temperature	---	---	°F	191	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 52 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.80	
	4) Housing Pressure	21	---	In.Hg.	23.7	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	211	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	6) Cooling Oil Flow	---	---	GPM	(263) .72	
	7) Cooling Oil Temperature	150	230	°F	208	
	8) Cooling Oil Out Temperature	---	---	°F	204	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 53 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#2	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.5	
	T_1-T_3	21.5	23.5	VAC	22.8	
	T_3-T_2	21.5	23.5	VAC	22.4	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	56.8	
	Phase 2	52.0	61.0	Amps	57.5	
	Phase 3	52.0	61.0	Amps	57.2	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1235	
	W_3	---	---	Watts	939	
	$W_1 + W_3$	2120	2280	Watts	2174	
	4) Field Voltage	---	---	VDC	11.4	
	5) Field Current	---	2.60	Amps	2.39	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.80	
	8) Housing Pressure	21	---	In.Hg.	23.7	
	9) Winding Temperatures					
	TC_1	180	275	°F	218	A
	TC_2	180	275	°F	222	A
	TC_3	180	275	°F	219	A
	TC_4	180	275	°F	219	A
	10) Cooling Oil Flow	---	---	GPM	(256) .70	
	11) Cooling Oil Temperature	150	230	°F	218	
	12) Cooling Oil Out Temperature	---	---	°F	211	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 54 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.85	
	4) Housing Pressure	21	---	In.Hg.	23.9	
	5) Winding Temperatures					
	TC_1	180	275	°F	215	A
	TC_2	180	275	°F	220	A
	TC_3	180	275	°F	216	A
	TC_4	180	275	°F	216	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	201	
	8) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 55 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#3	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.6	
	T_1-T_3	21.5	23.5	VAC	22.8	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	56.9	
	Phase 2	52.0	61.0	Amps	57.4	
	Phase 3	52.0	61.0	Amps	57.1	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1241	
	W_3	---	---	Watts	943	
	$W_1 + W_3$	2120	2280	Watts	2184	
	4) Field Voltage	---	---	VDC	11.8	
	5) Field Current	---	2.60	Amps	2.38	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.80	
	8) Housing Pressure	21	---	In.Hg.	23.8	
	9) Winding Temperatures					
	TC_1	180	275	°F	221	A
	TC_2	180	275	°F	225	A
	TC_3	180	275	°F	222	A
	TC_4	180	275	°F	222	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	219	
	12) Cooling Oil Out Temperature	---	---	°F	212	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 56 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.8	
	T_1-T_3	---	---	VAC	4.8	
	T_3-T_2	---	---	VAC	4.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.80	
	4) Housing Pressure	21	---	In.Hg.	23.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	217	A
	TC_2	180	275	°F	222	A
	TC_3	180	275	°F	218	A
	TC_4	180	275	°F	219	A
	6) Cooling Oil Flow	---	---	GPM	(259) .71	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	201	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 57 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#4	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.5	
	T_1-T_3	21.5	23.5	VAC	22.8	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	56.6	
	Phase 2	52.0	61.0	Amps	57.3	
	Phase 3	52.0	61.0	Amps	57.1	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1236	
	W_3	---	---	Watts	940	
	$W_1 + W_3$	2120	2280	Watts	2176	
	4) Field Voltage	---	---	VDC	11.8	
	5) Field Current	---	2.60	Amps	2.38	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.78	
	8) Housing Pressure	21	---	In.Hg.	23.8	
	9) Winding Temperatures					
	TC_1	180	275	°F	223	A
	TC_2	180	275	°F	227	A
	TC_3	180	275	°F	224	A
	TC_4	180	275	°F	224	A
	10) Cooling Oil Flow	---	---	GPM	(255) .70	
	11) Cooling Oil Temperature	150	230	°F	215	
	12) Cooling Oil Out Temperature	---	---	°F	210	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 58 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.8	
	T_1-T_3	---	---	VAC	4.8	
	T_3-T_2	---	---	VAC	4.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.75	
	4) Housing Pressure	21	---	In.Hg.	23.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	220	A
	TC_2	180	275	°F	224	A
	TC_3	180	275	°F	221	A
	TC_4	180	275	°F	221	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	202	
	8) Cooling Oil Out Temperature	---	---	°F	201	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#5	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.3	
	T_1-T_3	21.5	23.5	VAC	22.7	
	T_3-T_2	21.5	23.5	VAC	22.5	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	56.6	
	Phase 2	52.0	61.0	Amps	57.2	
	Phase 3	52.0	61.0	Amps	56.9	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1230	
	W_3	---	---	Watts	936	
	$W_1 + W_3$	2120	2280	Watts	2166	
	4) Field Voltage	---	---	VDC	11.8	
	5) Field Current	---	2.60	Amps	2.38	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.80	
	8) Housing Pressure	21	---	In.Hg.	23.8	
	9) Winding Temperatures					
	TC_1	180	275	°F	223	A
	TC_2	180	275	°F	227	A
	TC_3	180	275	°F	224	A
	TC_4	180	275	°F	224	A
	10) Cooling Oil Flow	---	---	GPM	(255) .70	
	11) Cooling Oil Temperature	150	230	°F	214	
	12) Cooling Oil Out Temperature	---	---	°F	208	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.8	
	T_1-T_3	---	---	VAC	4.8	
	T_3-T_2	---	---	VAC	4.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.74	
	4) Housing Pressure	21	---	In.Hg.	23.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	219	A
	TC_2	180	275	°F	224	A
	TC_3	180	275	°F	220	A
	TC_4	180	275	°F	221	A
	6) Cooling Oil Flow	---	---	GPM	(269) .73	
	7) Cooling Oil Temperature	150	230	°F	205	
	8) Cooling Oil Out Temperature	---	---	°F	203	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 61 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#6	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.6	
	T_1-T_3	21.5	23.5	VAC	22.5	
	T_3-T_2	21.5	23.5	VAC	22.6	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	57.0	
	Phase 2	52.0	61.0	Amps	57.6	
	Phase 3	52.0	61.0	Amps	57.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1252	
	W_3	---	---	Watts	952	
	$W_1 + W_3$	2120	2280	Watts	2204	
	4) Field Voltage	---	---	VDC	11.8	
	5) Field Current	---	2.60	Amps	2.40	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.78	
	8) Housing Pressure	21	---	In.Hg.	23.8	
	9) Winding Temperatures					
	TC_1	180	275	°F	226	A
	TC_2	180	275	°F	230	A
	TC_3	180	275	°F	227	A
	TC_4	180	275	°F	227	A
	10) Cooling Oil Flow	---	---	GPM	(257) .70	
	11) Cooling Oil Temperature	150	230	°F	205	
	12) Cooling Oil Out Temperature	---	---	°F	203	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.8	
	T_1-T_3	---	---	VAC	4.8	
	T_3-T_2	---	---	VAC	4.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.78	
	4) Housing Pressure	21	---	In.Hg.	23.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	220	A
	TC_2	180	275	°F	225	A
	TC_3	180	275	°F	221	A
	TC_4	180	275	°F	222	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	200	
	8) Cooling Oil Out Temperature	---	---	°F	199	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 63 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.4.4	Load and Efficiency-Separately Excited-					
#7	TEST "B" (2200 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	21.5	23.5	VAC	22.8	
	T_1-T_3	21.5	23.5	VAC	23.0	
	T_3-T_2	21.5	23.5	VAC	22.7	
	2) Three Phase Amps (AC)					
	Phase 1	52.0	61.0	Amps	57.2	
	Phase 2	52.0	61.0	Amps	57.7	
	Phase 3	52.0	61.0	Amps	57.3	
	3) Three Phase Watts (AC) W_1	---	---	Watts	1258	
	W_3	---	---	Watts	957	
	$W_1 + W_3$	2120	2280	Watts	2215	
	4) Field Voltage	---	---	VDC	11.9	
	5) Field Current	---	2.60	Amps	2.40	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	6.80	
	8) Housing Pressure	21	---	In.Hg.	23.8	
	9) Winding Temperatures					
	TC_1	180	275	°F	224	A
	TC_2	180	275	°F	228	A
	TC_3	180	275	°F	225	A
	TC_4	180	275	°F	225	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	205	
	12) Cooling Oil Out Temperature	---	---	°F	204	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 64 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.1	
	T_1-T_3	---	---	VAC	5.1	
	T_3-T_2	---	---	VAC	5.1	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.60	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	191	A
	TC_2	180	275	°F	195	A
	TC_3	180	275	°F	192	A
	TC_4	180	275	°F	193	A
	6) Cooling Oil Flow	---	---	GPM	(251) .69	
	7) Cooling Oil Temperature	150	230	°F	217	
	8) Cooling Oil Out Temperature	---	---	°F	207	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller		--			
#1	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	41.9	
	Phase 2	---	---	Amps	42.0	
	Phase 3	---	---	Amps	41.9	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	658	
	W_3	---	---	Watts	939	
	4) Field Voltage	---	---	VDC	6.5	
	5) Field Current	---	1.60	Amps	1.38	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	203	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	205	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	200	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.5	
	14) Cooling Oil Out Temperature	---	---	°F	197	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.90	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	205	A
	6) Cooling Oil Flow	---	---	GPM	(252) .69	
	7) Cooling Oil Temperature	150	230	°F	212	
	8) Cooling Oil Out Temperature	---	---	°F	204	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller		--			
#2	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	41.8	
	Phase 2	---	---	Amps	41.8	
	Phase 3	---	---	Amps	41.7	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	654	
	W_3	---	---	Watts	935	
	4) Field Voltage	---	---	VDC	6.6	
	5) Field Current	---	1.60	Amps	1.38	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	130	275	°F	210	A
	TC_2	130	275	°F	216	A
	TC_3	130	275	°F	212	A
	TC_4	130	275	°F	212	A
	10) Cooling Oil Flow	---	---	GPM	(268) .73	
	11) Cooling Oil Temperature	150	230	°F	202	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.6	
	14) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-27-77 DATA SHEET 68 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.90	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	210	A
	TC_2	180	275	°F	214	A
	TC_3	180	275	°F	210	A
	TC_4	180	275	°F	211	A
	6) Cooling Oil Flow	---	---	GPM	(253) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	196	A

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 69 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller		-			
#3	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	41.5	
	Phase 2	---	---	Amps	41.8	
	Phase 3	---	---	Amps	41.6	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	656	
	W_3	---	---	Watts	938	
	4) Field Voltage	---	---	VDC	6.7	
	5) Field Current	---	1.60	Amps	1.38	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	219	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.4	
	14) Cooling Oil Out Temperature	---	---	°F	211	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 70 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.85	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	213	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 71 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#4	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	42.0	
	Phase 2	---	---	Amps	41.9	
	Phase 3	---	---	Amps	41.8	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	657	
	W_3	---	---	Watts	941	
	4) Field Voltage	---	1.60	VDC	6.7	A
	5) Field Current	---	---	Amps	1.38	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.15	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	215	A
	TC_2	180	275	°F	219	A
	TC_3	180	275	°F	216	A
	TC_4	180	275	°F	216	A
	10) Cooling Oil Flow	---	---	GPM	(254) .69	
	11) Cooling Oil Temperature	150	230	°F	~~194~~ 196	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.4	
	14) Cooling Oil Out Temperature	---	---	°F	195	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 72 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.85	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	213	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	214	A
	6) Cooling Oil Flow	---	---	GPM	(266) .73	
	7) Cooling Oil Temperature	150	230	°F	219	
	8) Cooling Oil Out Temperature	---	---	°F	212	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 73 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller		--			
#5	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	41.8	
	Phase 2	---	---	Amps	42.0	
	Phase 3	---	---	Amps	41.9	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	659	
	W_3	---	---	Watts	938	
	4) Field Voltage	---	---	VDC	6.6	
	5) Field Current	---	1.60	Amps	1.38	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	215	A
	TC_2	180	275	°F	220	A
	TC_3	180	275	°F	217	A
	TC_4	180	275	°F	217	A
	10) Cooling Oil Flow	---	---	GPM	(260) .72	
	11) Cooling Oil Temperature	150	230	°F	201	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.4	
	14) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 74 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33200	
	3) Torque	---	---	IN-LBS.	.88	
	4) Housing Pressure	21	---	In.Hg.	23.5	
	5) Winding Temperatures					
	TC_1	180	275	°F	214	A
	TC_2	180	275	°F	219	A
	TC_3	180	275	°F	215	A
	TC_4	180	275	°F	215	A
	6) Cooling Oil Flow	---	---	GPM	(253) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	196	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 75 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#6	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.0	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	41.8	
	Phase 2	---	---	Amps	41.9	
	Phase 3	---	---	Amps	41.7	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	653	
	W_3	---	---	Watts	933	
	4) Field Voltage	---	---	VDC	6.8	
	5) Field Current	---	1.60	Amps	1.39	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.5	
	9) Winding Temperatures					
	TC_1	180	275	°F	215	A
	TC_2	180	275	°F	220	A
	TC_3	180	275	°F	216	A
	TC_4	180	275	°F	216	A
	10) Cooling Oil Flow	---	---	GPM	(250) .69	
	11) Cooling Oil Temperature	150	230	°F	218	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.4	
	14) Cooling Oil Out Temperature	---	---	°F	272	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 16 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	517	
	T_1-T_3	---	---	VAC	517	
	T_3-T_2	---	---	VAC	517	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.90	
	4) Housing Pressure	21	---	In.Hg.	~~23.1~~ 22.8	
	5) Winding Temperatures					
	TC_1	180	275	°F	213	A
	TC_2	180	275	°F	214	A
	TC_3	180	275	°F	210	A
	TC_4	180	275	°F	210	A
	6) Cooling Oil Flow	---	---	GPM	(257) .70	
	7) Cooling Oil Temperature	150	230	°F	197	
	8) Cooling Oil Out Temperature	---	---	°F	196	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-29-77 DATA SHEET 77 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.1	Load and Efficiency- With Controller		--			
#7	TEST "B" (1300 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	23.0	
	T_1-T_3	---	---	VAC	23.1	
	T_3-T_2	---	---	VAC	23.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	42.1	
	Phase 2	---	---	Amps	42.0	
	Phase 3	---	---	Amps	41.8	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	663	
	W_3	---	---	Watts	947	
	4) Field Voltage	---	---	VDC	6.6	
	5) Field Current	---	1.60	Amps	1.38	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	5.10	
	8) Housing Pressure	21	---	In.Hg.	23.2	
	9) Winding Temperatures					
	TC_1	180	275	°F	215	A
	TC_2	180	275	°F	217	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	217	A
	10) Cooling Oil Flow	---	---	GPM	(267) .73	
	11) Cooling Oil Temperature	150	230	°F	204	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	45.5	47.5	Amps	46.4	
	14) Cooling Oil Out Temperature	---	---	°F	203	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 78 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.5	
	T_1-T_3	---	---	VAC	5.5	
	T_3-T_2	---	---	VAC	5.5	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.62	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	199	A
	TC_2	180	275	°F	203	A
	TC_3	180	275	°F	200	A
	TC_4	180	275	°F	201	A
	6) Cooling Oil Flow	---	---	GPM	(2 ea) .70	
	7) Cooling Oil Temperature	150	230	°F	219	
	8) Cooling Oil Out Temperature	---	---	°F	210	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 79 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#1	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.2	
	T_1-T_3	---	---	VAC	21.1	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.2	
	Phase 2	---	---	Amps	22.2	
	Phase 3	---	---	Amps	22.2	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	141	
	W_3	---	---	Watts	463	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.22	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	201	A
	TC_2	180	275	°F	206	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	203	A
	10) Cooling Oil Flow	---	---	GPM	(25%) .71	
	11) Cooling Oil Temperature	150	230	°F	201	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	197	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 80 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.5	
	T_1-T_3	---	---	VAC	5.5	
	T_3-T_2	---	---	VAC	5.5	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.60	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	200	A
	TC_2	180	275	°F	204	A
	TC_3	180	275	°F	201	A
	TC_4	180	275	°F	202	A
	6) Cooling Oil Flow	---	---	GPM	(258) .71	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	194	A

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TEST RECORD–CONTINUATION

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TEST SPEC: 2538 REV A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 81 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller		--			
#2	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.2	
	T_1-T_3	---	---	VAC	21.1	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	21.9	
	Phase 2	---	---	Amps	22.1	
	Phase 3	---	---	Amps	22.2	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	142	
	W_3	---	---	Watts	464	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.18	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	201	A
	TC_2	180	275	°F	206	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	203	A
	10) Cooling Oil Flow	---	---	GPM	(265) .73	
	11) Cooling Oil Temperature	150	230	°F	203	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	17.3	18.5	Amps	18.1	
	14) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.61	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	130	275	°F	201	A
	TC_2	130	275	°F	205	A
	TC_3	130	275	°F	202	A
	TC_4	130	275	°F	202	A
	6) Cooling Oil Flow	---	---	GPM	(253) .69	
	7) Cooling Oil Temperature	150	230	°F	197	
	8) Cooling Oil Out Temperature	---	---	°F	193	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#3	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.1	
	T_1-T_3	---	---	VAC	21.0	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.1	
	Phase 2	---	---	Amps	22.1	
	Phase 3	---	---	Amps	22.0	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	139	
	W_3	---	---	Watts	458	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.12	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	202	A
	TC_2	180	275	°F	206	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	204	A
	10) Cooling Oil Flow	---	---	GPM	(208) .73	
	11) Cooling Oil Temperature	150	230	°F	203	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

TEST SPEC. 2538 REV. A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.58	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	201	A
	TC_2	180	275	°F	205	A
	TC_3	180	275	°F	202	A
	TC_4	180	275	°F	203	A
	6) Cooling Oil Flow	---	---	GPM	(254) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	194	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#4	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.1	
	T_1-T_3	---	---	VAC	21.0	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.0	
	Phase 2	---	---	Amps	22.2	
	Phase 3	---	---	Amps	22.1	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	141	
	W_3	---	---	Watts	461	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.10	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	201	A
	TC_2	180	275	°F	206	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	203	A
	10) Cooling Oil Flow	---	---	GPM	(251) .69	
	11) Cooling Oil Temperature	150	230	°F	209	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	209	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.55	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	201	A
	TC_2	180	275	°F	205	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	203	A
	6) Cooling Oil Flow	---	---	GPM	(257) .71	
	7) Cooling Oil Temperature	150	230	°F	201	
	8) Cooling Oil Out Temperature	---	---	°F	198	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller		--			
#5	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.2	
	T_1-T_3	---	---	VAC	21.1	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.2	
	Phase 2	---	---	Amps	22.2	
	Phase 3	---	---	Amps	22.2	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	140	
	W_3	---	---	Watts	459	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.10	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	202	A
	TC_2	180	275	°F	206	A
	TC_3	180	275	°F	203	A
	TC_4	180	275	°F	203	A
	10) Cooling Oil Flow	---	---	GPM	(253) .69	
	11) Cooling Oil Temperature	150	230	°F	209	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	202	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.48	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	200	A
	TC_2	180	275	°F	205	A
	TC_3	180	275	°F	202	A
	TC_4	180	275	°F	202	A
	6) Cooling Oil Flow	---	---	GPM	(269) .73	
	7) Cooling Oil Temperature	150	230	°F	204	
	8) Cooling Oil Out Temperature	---	---	°F	200	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#6	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.1	
	T_1-T_3	---	---	VAC	21.1	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.2	
	Phase 2	---	---	Amps	22.4	
	Phase 3	---	---	Amps	22.2	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	139	
	W_3	---	---	Watts	457	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.08	
	8) Housing Pressure	21	---	In.Hg.	23.4	
	9) Winding Temperatures					
	TC_1	180	275	°F	202	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	204	A
	TC_4	180	275	°F	204	A
	10) Cooling Oil Flow	---	---	GPM	(256) .70	
	11) Cooling Oil Temperature	150	230	°F	199	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	196	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.50	
	4) Housing Pressure	21	---	In.Hg.	23.4	
	5) Winding Temperatures					
	TC_1	180	275	°F	200	A
	TC_2	180	275	°F	205	A
	TC_3	180	275	°F	202	A
	TC_4	180	275	°F	202	A
	6) Cooling Oil Flow	---	---	GPM	(261) .72	
	7) Cooling Oil Temperature	150	230	°F	215	
	8) Cooling Oil Out Temperature	---	---	°F	206	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.2	Load and Efficiency- With Controller		--			
#7	TEST "B" (500 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	21.1	
	T_1-T_3	---	---	VAC	21.0	
	T_3-T_2	---	---	VAC	21.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	22.3	
	Phase 2	---	---	Amps	22.4	
	Phase 3	---	---	Amps	22.2	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	139	
	W_3	---	---	Watts	463	
	4) Field Voltage	---	---	VDC	2.2	
	5) Field Current	---	0.7	Amps	.47	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	2.08	
	8) Housing Pressure	21	---	In.Hg.	23.4	
	9) Winding Temperatures					
	TC_1	180	275	°F	202	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	204	A
	TC_4	180	275	°F	205	A
	10) Cooling Oil Flow	---	---	GPM	(268) .73	
	11) Cooling Oil Temperature	150	230	°F	201	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	17.3	18.5	Amps	18.0	
	14) Cooling Oil Out Temperature	---	---	°F	198	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.48	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	200	A
	TC_2	180	275	°F	205	A
	TC_3	180	275	°F	201	A
	TC_4	180	275	°F	202	A
	6) Cooling Oil Flow	---	---	GPM	(259) .71	
	7) Cooling Oil Temperature	150	230	°F	214	
	8) Cooling Oil Out Temperature	---	---	°F	205	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#1	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.0	
	T_1-T_3	---	---	VAC	22.0	
	T_3-T_2	---	---	VAC	22.1	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.1	
	Phase 2	---	---	Amps	31.0	
	Phase 3	---	---	Amps	31.0	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	377	
	W_3	---	---	Watts	687	
	4) Field Voltage	---	---	VDC	4.1	
	5) Field Current	---	1.2	Amps	.89	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.28	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	130	275	°F	204	A
	TC_2	130	275	°F	209	A
	TC_3	130	275	°F	206	A
	TC_4	130	275	°F	206	A
	10) Cooling Oil Flow	---	---	GPM	(2R) .70	
	11) Cooling Oil Temperature	150	230	°F	197	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	31.3	33.0	Amps	32.2	
	14) Cooling Oil Out Temperature	---	---	°F	194	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.48	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	202	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	204	A
	TC_4	180	275	°F	204	A
	6) Cooling Oil Flow	---	---	GPM	(266) .73	
	7) Cooling Oil Temperature	150	230	°F	219	
	8) Cooling Oil Out Temperature	---	---	°F	210	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#2	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.0	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.4	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.3	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	381	
	W_3	---	---	Watts	694	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.95	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.28	
	8) Housing Pressure	21	---	In.Hg.	23.4	
	9) Winding Temperatures					
	TC_1	180	275	°F	205	A
	TC_2	180	275	°F	210	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	10) Cooling Oil Flow	---	---	GPM	(258) .71	
	11) Cooling Oil Temperature	150	230	°F	199	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	31.3	33.0	Amps	32.3	
	14) Cooling Oil Out Temperature	---	---	°F	196	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-71 DATA SHEET 96 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#3	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.42	
	4) Housing Pressure	21	---	In.Hg.	23.4	
	5) Winding Temperatures					
	TC_1	130	275	°F	204	A
	TC_2	130	275	°F	208	A
	TC_3	130	275	°F	205	A
	TC_4	130	275	°F	205	A
	6) Cooling Oil Flow	---	---	GPM	(25) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	195	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 97 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#3	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.0	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.3	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.3	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	383	
	W_3	---	---	Watts	696	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.95	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.22	
	8) Housing Pressure	21	---	In.Hg.	23.4	
	9) Winding Temperatures					
	TC_1	180	275	°F	205	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	206	A
	TC_4	180	275	°F	207	A
	10) Cooling Oil Flow	---	---	GPM	(268) .73	
	11) Cooling Oil Temperature	150	230	°F	203	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	31.3	33.0	Amps	32.2	
	14) Cooling Oil Out Temperature	---	---	°F	199	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 98 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.8	
	T_1-T_3	---	---	VAC	5.8	
	T_3-T_2	---	---	VAC	5.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.38	
	4) Housing Pressure	21	---	In.Hg.	23.4	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	208	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	206	A
	6) Cooling Oil Flow	---	---	GPM	(254) .69	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	195	A

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MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 99 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#4	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.0	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.4	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.3	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	384	
	W_3	---	---	Watts	696	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.93	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.25	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	209	A
	TC_3	180	275	°F	206	A
	TC_4	180	275	°F	206	A
	10) Cooling Oil Flow	---	---	GPM	(250) .69	
	11) Cooling Oil Temperature	150	230	°F	219	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	31.3	33.0	Amps	32.3	
	14) Cooling Oil Out Temperature	---	---	°F	210	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#5	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.35	
	4) Housing Pressure	21	---	In.Hg.	23.4	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	208	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	206	A
	6) Cooling Oil Flow	---	---	GPM	(259) .71	
	7) Cooling Oil Temperature	150	230	°F	203	
	8) Cooling Oil Out Temperature	---	---	°F	199	A

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TEST RECORD–CONTINUATION

TEST SPEC: 2538 REV. A

MODEL NO. ORC1A3A01 SERIAL NO. 003 DATE 11-30-77 DATA SHEET 101 OF 120

PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#5	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.1	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.4	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.4	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	384	
	W_3	---	---	Watts	699	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.95	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.22	
	8) Housing Pressure	21	---	In.Hg.	23.4	
	9) Winding Temperatures					
	TC_1	180	275	°F	205	A
	TC_2	180	275	°F	210	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	207	A
	10) Cooling Oil Flow	---	---	GPM	(255) .70	
	11) Cooling Oil Temperature	150	230	°F	198	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	31.3	33.0	Amps	32.3	
	14) Cooling Oil Out Temperature	---	---	°F	195	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.34	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	203	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	205	A
	6) Cooling Oil Flow	---	---	GPM	(257) .70	
	7) Cooling Oil Temperature	150	230	°F	218	
	8) Cooling Oil Out Temperature	---	---	°F	210	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#6	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.1	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.3	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.3	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	382	
	W_3	---	---	Watts	696	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.95	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.20	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	210	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	10) Cooling Oil Flow	---	---	GPM	(258) .71	
	11) Cooling Oil Temperature	150	230	°F	201	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	31.3	33.0	Amps	32.2	
	14) Cooling Oil Out Temperature	---	---	°F	198	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.7	
	T_1-T_3	---	---	VAC	5.7	
	T_3-T_2	---	---	VAC	5.7	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.38	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	208	A
	TC_3	180	275	°F	206	A
	TC_4	180	275	°F	206	A
	6) Cooling Oil Flow	---	---	GPM	(253) .69	
	7) Cooling Oil Temperature	150	230	°F	197	
	8) Cooling Oil Out Temperature	---	---	°F	194	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.3	Load and Efficiency- With Controller		--			
#7	TEST "B" (900 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	22.1	
	T_1-T_3	---	---	VAC	22.1	
	T_3-T_2	---	---	VAC	22.2	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	31.2	
	Phase 2	---	---	Amps	31.5	
	Phase 3	---	---	Amps	31.4	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	382	
	W_3	---	---	Watts	696	
	4) Field Voltage	---	---	VDC	4.5	
	5) Field Current	---	1.2	Amps	.95	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	3.18	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	205	A
	TC_2	180	275	°F	210	A
	TC_3	180	275	°F	208	A
	TC_4	180	275	°F	208	A
	10) Cooling Oil Flow	---	---	GPM	(262) .72	
	11) Cooling Oil Temperature	150	230	°F	204	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	31.3	33.0	Amps	32.2	
	14) Cooling Oil Out Temperature	---	---	°F	200	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#1	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	4.9	
	T_1-T_3	---	---	VAC	4.9	
	T_3-T_2	---	---	VAC	4.9	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.65	
	4) Housing Pressure	21	---	In.Hg.	23.2	
	5) Winding Temperatures					
	TC_1	180	275	°F	189	A
	TC_2	180	275	°F	192	A
	TC_3	180	275	°F	190	A
	TC_4	180	275	°F	191	A
	6) Cooling Oil Flow	---	---	GPM	(262) .72	
	7) Cooling Oil Temperature	150	230	°F	194	
	8) Cooling Oil Out Temperature	---	---	°F	190	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#1	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.8	
	T_1-T_3	---	---	VAC	24.9	
	T_3-T_2	---	---	VAC	25.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.3	
	Phase 2	---	---	Amps	61.7	
	Phase 3	---	---	Amps	61.6	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1175	
	W_3	---	---	Watts	1433	
	4) Field Voltage	---	---	VDC	10.6	
	5) Field Current	---	2.5	Amps	2.20	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.75	
	8) Housing Pressure	21	---	In.Hg.	23.2	
	9) Winding Temperatures					
	TC_1	180	275	°F	208	A
	TC_2	180	275	°F	211	A
	TC_3	180	275	°F	209	A
	TC_4	180	275	°F	210	A
	10) Cooling Oil Flow	---	---	GPM	(264) .72	
	11) Cooling Oil Temperature	150	230	°F	196	
	12) DC Volts	27.5	28.5	Volts	28.1	
	13) DC Amps	70.2	72.8	Amps	71.0	
	14) Cooling Oil Out Temperature	---	---	°F	193	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#2	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.62	
	4) Housing Pressure	21	---	In.Hg.	23.2	
	5) Winding Temperatures					
	TC_1	180	275	°F	204	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	205	A
	TC_4	180	275	°F	205	A
	6) Cooling Oil Flow	---	---	GPM	(249) .68	
	7) Cooling Oil Temperature	150	230	°F	212	
	8) Cooling Oil Out Temperature	---	---	°F	204	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller		--			
#2	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.7	
	T_1-T_3	---	---	VAC	24.9	
	T_3-T_2	---	---	VAC	25.0	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.4	
	Phase 2	---	---	Amps	61.6	
	Phase 3	---	---	Amps	61.5	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1180	
	W_3	---	---	Watts	1434	
	4) Field Voltage	---	---	VDC	10.7	
	5) Field Current	---	2.5	Amps	2.2	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.70	
	8) Housing Pressure	21	---	In.Hg.	23.2	
	9) Winding Temperatures					
	TC_1	180	275	°F	212	A
	TC_2	180	275	°F	215	A
	TC_3	180	275	°F	213	A
	TC_4	180	275	°F	214	A
	10) Cooling Oil Flow	---	---	GPM	(264) .72	
	11) Cooling Oil Temperature	150	230	°F	197	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	70.2	72.8	Amps	71.1	
	14) Cooling Oil Out Temperature	---	---	°F	195	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.5.4	Load and Efficiency- With Controller				
#3	TEST "A" (No Load)				
	1) Residual Voltage				
	T_1-T_2	---	---	VAC	5.6
	T_1-T_3	---	---	VAC	5.6
	T_3-T_2	---	---	VAC	5.6
	2) Alternator Speed	33,400	34,000	RPM	33700
	3) Torque	---	---	IN-LBS.	.62
	4) Housing Pressure	21	---	In.Hg.	23.3
	5) Winding Temperatures				
	TC_1	180	275	°F	207
	TC_2	180	275	°F	210
	TC_3	180	275	°F	208
	TC_4	180	275	°F	209
	6) Cooling Oil Flow	---	---	GPM	(250) .69
	7) Cooling Oil Temperature	150	230	°F	193
	8) Cooling Oil Cut Temperature	---	---	°F	191

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller		--			
#3	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.8	
	T_1-T_3	---	---	VAC	24.9	
	T_3-T_2	---	---	VAC	25.1	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.3	
	Phase 2	---	---	Amps	61.9	
	Phase 3	---	---	Amps	61.8	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1175	
	W_3	---	---	Watts	1431	
	4) Field Voltage	---	---	VDC	10.8	
	5) Field Current	---	2.5	Amps	2.2	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.68	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	213	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	215	A
	10) Cooling Oil Flow	---	---	GPM	(264) .72	
	11) Cooling Oil Temperature	150	230	°F	200	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	70.2	72.8	Amps	71.2	
	14) Cooling Oil Out Temperature	---	---	°F	197	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#4	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.2	
	T_1-T_3	---	---	VAC	5.2	
	T_3-T_2	---	---	VAC	5.2	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.60	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	203	A
	TC_2	180	275	°F	207	A
	TC_3	180	275	°F	204	A
	TC_4	180	275	°F	204	A
	6) Cooling Oil Flow	---	---	GPM	(253) .69	
	7) Cooling Oil Temperature	150	230	°F	210	
	8) Cooling Oil Out Temperature	---	---	°F	202	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller		--			
#4	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.7	
	T_1-T_3	---	---	VAC	24.8	
	T_3-T_2	---	---	VAC	24.9	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.5	
	Phase 2	---	---	Amps	61.8	
	Phase 3	---	---	Amps	61.7	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1180	
	W_3	---	---	Watts	1431	
	4) Field Voltage	---	---	VDC	10.8	
	5) Field Current	---	2.5	Amps	2.2	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.68	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	211	A
	TC_2	180	275	°F	214	A
	TC_3	180	275	°F	212	A
	TC_4	180	275	°F	213	A
	10) Cooling Oil Flow	---	---	GPM	(266) .73	
	11) Cooling Oil Temperature	150	230	°F	200	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	70.2	72.8	Amps	71.3	
	14) Cooling Oil Out Temperature	---	---	°F	196	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.5.4	Load and Efficiency- With Controller				
#5	TEST "A" (No Load)				
	1) Residual Voltage				
	T_1-T_2	---	---	VAC	5.6
	T_1-T_3	---	---	VAC	5.6
	T_3-T_2	---	---	VAC	5.6
	2) Alternator Speed	33,400	34,000	RPM	33700
	3) Torque	---	---	IN-LBS.	.58
	4) Housing Pressure	21	---	In.Hg.	23.2
	5) Winding Temperatures				
	TC_1	180	275	°F	205 A
	TC_2	180	275	°F	208 A
	TC_3	180	275	°F	206 A
	TC_4	180	275	°F	206 A
	6) Cooling Oil Flow	---	---	GPM	(252) .69
	7) Cooling Oil Temperature	150	230	°F	193
	8) Cooling Oil Out Temperature	---	---	°F	191

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller		--			
#5	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.9	
	T_1-T_3	---	---	VAC	25.0	
	T_3-T_2	---	---	VAC	25.1	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.3	
	Phase 2	---	---	Amps	61.8	
	Phase 3	---	---	Amps	61.7	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1175	
	W_3	---	---	Watts	1429	
	4) Field Voltage	---	---	VDC	10.8	
	5) Field Current	---	2.5	Amps	2.22	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.62	
	8) Housing Pressure	21	---	In.Hg.	23.2	
	9) Winding Temperatures					
	TC_1	130	275	°F	214	A
	TC_2	130	275	°F	217	A
	TC_3	130	275	°F	215	A
	TC_4	130	275	°F	216	A
	10) Cooling Oil Flow	---	---	GPM	(264) .72	
	11) Cooling Oil Temperature	150	230	°F	199	
	12) DC Volts	27.5	28.5	Volts	28.0	
	13) DC Amps	70.2	72.8	Amps	71.3	
	14) Cooling Oil Out Temperature	---	---	°F	196	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#6	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.6	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.55	
	4) Housing Pressure	21	---	In.Hg.	23.3	
	5) Winding Temperatures					
	TC_1	180	275	°F	206	A
	TC_2	180	275	°F	210	A
	TC_3	180	275	°F	207	A
	TC_4	180	275	°F	208	A
	6) Cooling Oil Flow	---	---	GPM	(252) .69	
	7) Cooling Oil Temperature	150	230	°F	194	
	8) Cooling Oil Out Temperature	---	---	°F	191	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#6	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.9	
	T_1-T_3	---	---	VAC	25.0	
	T_3-T_2	---	---	VAC	25.1	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.0	
	Phase 2	---	---	Amps	61.7	
	Phase 3	---	---	Amps	61.5	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1169	
	W_3	---	---	Watts	1429	
	4) Field Voltage	---	---	VDC	10.8	
	5) Field Current	---	2.5	Amps	2.2	A
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.60	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	219	A
	TC_2	180	275	°F	223	A
	TC_3	180	275	°F	221	A
	TC_4	180	275	°F	221	A
	10) Cooling Oil Flow	---	---	GPM	(264) .72	
	11) Cooling Oil Temperature	150	230	°F	202	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	70.2	72.8	Amps	71.2	
	14) Cooling Oil Out Temperature	---	---	°F	200	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller					
#7	TEST "A" (No Load)					
	1) Residual Voltage					
	T_1-T_2	---	---	VAC	5.6	
	T_1-T_3	---	---	VAC	5.6	
	T_3-T_2	---	---	VAC	5.8	
	2) Alternator Speed	33,400	34,000	RPM	33700	
	3) Torque	---	---	IN-LBS.	.52	
	4) Housing Pressure	21	---	In.Hg.	23.2	
	5) Winding Temperatures					
	TC_1	180	275	°F	213	A
	TC_2	180	275	°F	216	A
	TC_3	180	275	°F	214	A
	TC_4	180	275	°F	214	A
	6) Cooling Oil Flow	---	---	GPM	(257) .70	
	7) Cooling Oil Temperature	150	230	°F	198	
	8) Cooling Oil Out Temperature	---	---	°F	196	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING	
5.1.5.4	Load and Efficiency- With Controller		--			
#7	TEST "B" (2000 Watts)					
	1) Three Phase Voltage					
	T_1-T_2	---	---	VAC	24.7	
	T_1-T_3	---	---	VAC	24.8	
	T_3-T_2	---	---	VAC	24.9	
	2) Three Phase Amps (AC)					
	Phase 1	---	---	Amps	61.1	
	Phase 2	---	---	Amps	61.7	
	Phase 3	---	---	Amps	61.8	
	3) Three Phase Watts (AC)					
	W_1	---	---	Watts	1168	
	W_3	---	---	Watts	1421	
	4) Field Voltage	---	---	VDC	10.8	
	5) Field Current	---		Amps	2.2	
	6) Alternator Speed	33,400	34,000	RPM	33700	
	7) Torque	---	---	IN.LBS.	7.58	
	8) Housing Pressure	21	---	In.Hg.	23.3	
	9) Winding Temperatures					
	TC_1	180	275	°F	217	A
	TC_2	180	275	°F	219	A
	TC_3	180	275	°F	218	A
	TC_4	180	275	°F	218	A
	10) Cooling Oil Flow	---	---	GPM	(252) .69	
	11) Cooling Oil Temperature	150	230	°F	210	
	12) DC Volts	27.5	28.5	Volts	27.9	
	13) DC Amps	70.2	72.8	Amps	71.2	
	14) Cooling Oil Out Temperature	---	---	°F	203	A

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PROCEDURE PARAGRAPH NUMBER	PARAMETER DESCRIPTION	REQUIREMENT MINIMUM	REQUIREMENT MAXIMUM	UNITS	ACTUAL READING
5.1.6	Dielectric Test				
	1) Phase leads to frame	---	15	ma	0.525
	2) Field leads to frame	---	15	ma	0.25
5.1.7	Insulation Resistance				
	1) Phase leads - 25 VDC	10	---	Megohms	1.25×10^{5}
	2) Phase leads - 50 VDC	10	---	Megohms	$.7 \times 10^{5}$
	3) Phase leads - 100 VDC	10	---	Megohms	1.7×10^{5}
	4) Phase leads - 250 VDC	10	---	Megohms	1.5×10^{5}
	5) Phase leads - 500 VDC	10	---	Megohms	1.8×10^{5}
	1) Field leads - 25 VDC	10	---	Megohms	7×10^{4}
	2) Field leads - 50 VDC	10	---	Megohms	6×10^{4}
	3) Field leads - 100 VDC	10	---	Megohms	5×10^{4}
	4) Field leads - 250 VDC	10	---	Megohms	5×10^{4}
	5) Field leads - 500 VDC	10	---	Megohms	6×10^{4}

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