GENERAL ELECTRIC

2 7 8 A 3 0 6 6
CONT ON SHEET 2 SH NO. 1

REV NO.	TITLE
2 7 8 A 3 0 6 6 CONT ON SHEET 2 SH NO. 1	TEST SPECIFICATIONS FIRST MADE FOR 44C372689-G01

REVISIONS

STANDING INSTRUCTIONS

For

AUTO REGULATOR

PRINTED CIRCUIT BOARD

For

GENERREX SYSTEM

44C372689-G01

Dist:

1 QC Test
1 QC Engr
1 Engr

3EL1
4QA3
1RA2
4EK1
DL13

PRINTS TO

MADE BY	APPROVALS	DIV OR DEPT.	
R.K.Gerlitz 790605	wdl	Drive System	2 7 8 A 3 0 6 6
ISSUED 6/7/79		LOCATION Salem,Va.	CONT ON SHEET 2 SH NO. 1

CODE IDENT NO.

FF-803 WF (11-77)
PRINTED IN U.S.A.

REVISIONS

I. Test Equipment Required

A. Printed Circuit Board Test Setup - 44C931365
B. Adaptor - Amp. Mod. II 30 pin
C. Power Supply Cable
D. Patchboard PB-8
E. Drawings 44C308257 Elementary Rev. 0
44C372689 Assembly
44C931365 Elementary of Test Table

II. Connection

A. Connect the adaptor cable to "PL1" on the Universal Tester (U.T.).

B. Connect the Amp. Mod. II Power Supply cable to "PL1" on Universal Power Tester (U.T.) and to Power Supplies per marking.

C. Insert Patchboard PB-8 in carrier of Universal Tester and close.

D. Connect a DC digital voltmeter to "BJ-1". Red (+) and black (-).

E. Connect a DC digital voltmeter to "BJ-11". Red (+) and black (-).

III. Wire Check

Pin	To	Test Point	Resistance (Ohms)
15		9 TP	9.5K to 10.5K
16		9 TP	9.5K to 10.5K
12		9 TP	31.3 to 34.7

Visual Check

	Resistance (Ohms)
41R	5.6K
48R	15K
52R	100K
42R	51K
44R	51K
46R	51K
50R	5.6K
53R	5.1K
54R	5.1K
55R	91K
56R	2.7K
57R	6.8K

Adjust 1P	CCW
2P	CCW
3P	CCW
6P	CCW
7P	CCW
8P	CCW

1) BU941NX DGJ 830308

3EL1
4QA3
1RA2
4EK1
DL13

PRINTS TO

IV. Setup SEE SECTION 3 PRESET POTS

A. Turn all switches to OFF or NORMAL on both the UT and UPS.

B. Turn all power supplies to zero on the UT.

C. Apply power to test stand.

D. Insert board under test (B.U.T.) into test adaptor.

V. Electrical Test

A. Close "SW-1". Depress "LPB-1" and adjust power supply #1 (PS-1) to 24 ± 0.2 VDC at "BJ-1". (READ DC PWR AT TABS 8 TO 10 24V
Note: Should it become necessary to remove all power, open "SW-1". → CONNECTS +15 ON PATCH BOARD TO CARD BEING TESTED (IGNORE)

B. Close "SW-10", depress "LPB-2" and adjust PS-2 to 15 ± 0.005 VDC at "BJ-1". Measure the D.C. voltage 1VR pin 2 (+) to 0TP (-) = 10 ± 0.5 VDC. ← TABS 2&4 METER FOR +15V

C. Depress "LPB-3" and adjust PS-3 to 15 ± 0.005 VDC at "BJ-1". 1TP (+) to 0TP (-) = 2.85 ± 0.2 VDC. TAB 6 TO 4 → METER FOR -15
Measure the D.C. voltage 0TP (+) to anode 3ZD (-) = 10 ± 0.5 VDC.

D. Adjust 2P CW.
1TP (+) to 0TP (-) = 6.33 to 7.00 VDC. 6.64

E. Close "SW-29". CONNECT PIN 29 TO PIN 5
Adjust 2P for 3.75 ± 0.005 VDC, 1TP (+) to 0TP (-).
2TP = Neg saturation (< -12VDC). -12.78
Close "SW-2" CLOSES 2RL RELAY SHEET 9A (CONNECTS PS 5 TO SWITCH CIRCUIT

F. Open "SW-29" OPEN 29 TO 5.
Place "RS2" to position 2 METER IS HOOKED + TO PIN 30 - TO PIN 3
Close "SW-9". ~~(PS-5 negative to pin 29).~~ ① PS5 - TO PIN 29 PS5 + TO PIN 3
Increase PS-5 until 1TP to 0TP = 1 ± 0.005 VDC
"BJ-11" = 61.4 ± 3.0VDC -57.5 (-58.1)

G. Return PS-5 to zero.
Open "SW-9" REMOVE DC FROM PIN 30 + PIN 3
Close "SW-29" CONNECT PIN 29 TO PIN 5
Place "RS2" to position 1 METER PIN 20 TO ① PIN 3
Close "SW-19". ~~(Connect PS4 positive to pin 19).~~ PS4 + TO PIN 19 - TO PIN 3
Increase PS4 until 1TP = 7.5 ± 0.005 VDC
PIN 20 "BJ-11" = 37.5 ± 0.5 VDC 37.6 38.5
Open "SW-19" REMOVE PS-4 FROM 19 +3
Place "SW-25" down. Place "RS2" to position 10. PS4 - TO 25 + TO 3 METER PIN 26
"BJ-11" = ②37.5 ± 0.5 VDC. -37.6 (-38.5)
1TP = 1.87 ± 0.1 VDC. 1.873 (1.724)

REVISIONS
2. ECR860409-CD02 RV - 5/20/86
1. BU116030P ML800627
3EL1
4QA3 6
1RA2
4EK1
DL13 3
PRINTS TO

H. Return PS-4 to zero.
Open "SW-25" REMOVE PS4 FROM 25 & 3
Place "SW-19" down. (Connects PS-4 negative to pin 21) PS4 - TO PIN 21 + TO 3
Place "RS2" to position 6 METER PIN 22 + PIN 3
Increase PS4 until 2TP to OTP = 0 to 0.005 VDC.
"BJ-11" = -37.5 ± 0.5 VDC -37.94 (-37.0)

I. Increase PS4 until 2TP (+) to OTP (-) = 5 ± 0.005 VDC
"BJ-11" = 42.5 ± 0.5 VDC -43.1 (-42.8)
Return PS4 to zero.
2TP (+) to OTP (-) = Neg. saturation (< -12VDC) -12.79

J. Open "SW-19" REMOVE PS4 - FROM PIN 21
Close "SW-3". (Connects pin 27 to +15V) PIN 27 TO +15V (PIN 1)
2TP (+) to OTP (-) = 12.5 ± 0.5 VDC 12.45 (11.42)
Place "SW-23" down. (Connects PS4 negative to pin 23) PS4 - TO PIN 23 + TO 3
Place "RS2" to position 7 METER PIN 24 TO PIN 3
Increase PS4 until 2TP (+) to OTP (-) = 10 ± 0.005 VDC
"BJ-11" = -10 ± 0.1 VDC -10.00
3TP (+) to OTP (-) = 10 ± 0.1 VDC +10.00

K. Return PS4 to zero
Open "SW-23" REMOVE - PS4 FROM PIN 23
Open "SW-3" REMOVE PIN 27 FROM PIN 1
Adjust 2P full clockwise BIAS ADJ
Open "SW-29" REMOVE PIN 23 TO 10 AND PIN 29 TO PIN 10 THRU 2.6K RESISTOR
1TP (+) to OTP (-) = 6.33 to 7.00 VDC 6.67 (6.64)

L. Close "SW-27" + PS4 TO PIN 27 - TO PIN 3
Place "RS2" to position 8 METER PIN 28 TO PIN 3
Adjust PS4 for 10 ± 0.005 VDC at "BJ-11"

Adjust 3P	1TP (+) to OTP (-) VDC	
CW	-11 ± 0.3	-10.98 (-11.2)
CCW	-9 ± 0.3	-9.09 (-9.16)
Set	-10 ± 0.05	-10.00 SET

M. Place "SW-27" down - PS4 TO PIN 27 + TO PIN 3
1TP (+) to OTP (-) = 6.33 to 7.00 VDC 6.67v (6.64v)
Return PS4 to zero
Open "SW-27" REMOVE PS4 FROM 27 & 3

N. Place "SW-13" down + PS4 TO PIN 3 - PS4 TO PIN 13
Place "RS2" to position 4 METER PIN 14 TO PIN 3
Increase PS4 until 3TP (+) to OTP (-) = 0 ± 0.1 VDC
"BJ-11" = -7.5 ± 0.15 VDC -7.51v (-7.55)

REVISIONS
1. ECR860409-CD02
RV - 5/20/86

3EL1
4QA3 6
1RA2
4EK1
DL13 3

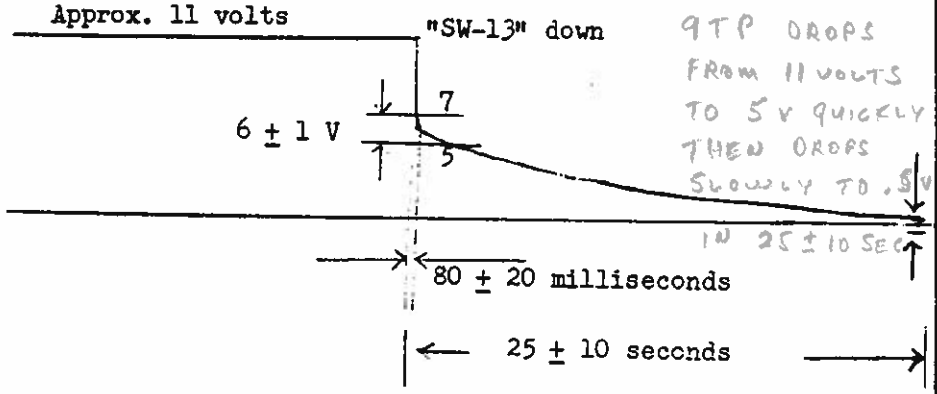
PRINTS TO

O. Adjust PS4 until 3TP (+) to OTP (-) = -2 ± 0.005 VDC
"BJ-11" = -7.4 ± 0.15 VDC -7.31 (-7.3V)
Adjust 4P 4TP (+) to OTP (-) VDC GAIN CONTROL
CCW -.2 ± 0.05 -.202 (-.20S)
Set -1.0 ± 0.005 VDC -1.000
5P MUST BE CCW With 6P fully CCW, 7TP should be +.19 ± .01V. .195
With 6P fully CW, 7TP should be +5.00 ± .02V. 5.05 CREEPS UP TO THIS
Then adjust 6P back fully CCW.
Adjust 5P for .5 ± 0.005 VDC 5TP (+) to OTP (-). LEAD CONTROL
If oscillations appear at 6TP adjust 6P slightly CW until oscillations disappear.

P. Adjust PS4 until 6TP (+) to OTP (-) = 2.5 ± 0.05 VDC
"BJ-11" = -7.3 ± 0.15 VDC. -7.31
8TP (+) to OTP (-) = -5 ± 0.1 VDC -4.86
9TP (+) to OTP (-) = 10 ± 0.3 VDC 9.7

Q. Adjust PS4 for 3TP (+) to OTP (-) = 0 ± 0.01 VDC
Connect an oscilloscope to 9TP to OTP
Open "SW-13" REMOVE PS4 FROM PIN 13 9TP GOES TO 11V
Adjust 6P fully CW

R. Place "SW-13" down - PS4 TO PIN 13
Allow trace to stabilize then open "SW-13"
Wave form shall appear as follows:



VOLTAGE AT 9TP DROPS FROM 11 VOLTS TO 5 V QUICKLY THEN DROPS SLOWLY TO .5V IN 25 ± 10 SEC

S. Place "SW-13" down - PS4 TO PIN 13
Increase PS4 to -10 ± 0.005 VDC at "BJ-11" PIN 14
Adjust 7P for 9TP (+) to OTP (-) = -4.85 ± 0.2 VDC -4.85
Open "SW-13"
Adjust 8P for 9TP (+) to OTP (-) = 7.9 ± 0.2 VDC 7.90

REVISIONS
1. ECR860409-CD02 RV - 5/20/86

3EL1
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PRINTS TO

T. Place "SW-13" down ~PS 4 TO PIN 3
Adjust PS4 for 0 ± 0.05 VDC 9 TP to OTP
Adjust 6P fully CCW then turn slightly CW.
(Note this will cease oscillations at 9TP if they exist).

U. Close "SW-21." +PS5 TO PIN 17, -PS5 TO PIN 3
Place "RS2" to position 9 METER PIN 18 TO PIN 3
Increase PS5 until 9TP (+) to OTP (-) = +2.5 ± 0.005 VDC above the 9TP reading in step "T".
"BJ-11" = +0.3 ± 0.1 VDC .305
Adjust 6P midpoint.

V. Open "SW-1," then open or return to Normal all remaining switches. Turn all power supplies to zero.