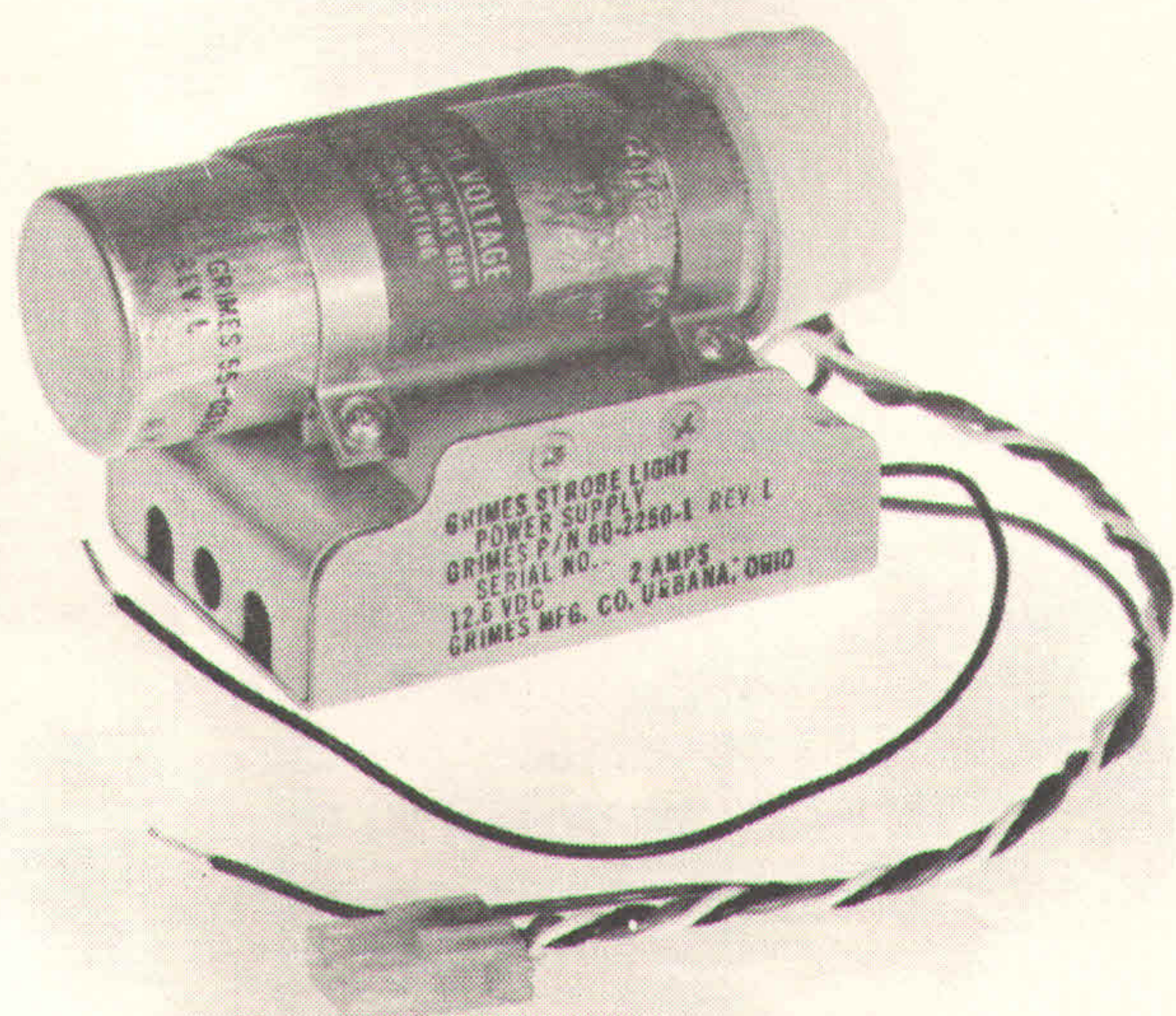


GRIMES

• • • • **REPAIR MANUAL**



STROBE POWER SUPPLY

PART NUMBER

60-2250

GRIMES MANUFACTURING COMPANY

515 NORTH RUSSEL STREET, URBANA, OHIO 43078, U.S.A. • TELEPHONE: (513)-652-1431 • TELETYPE: (810)-457-2852 • TELEX: 205 439

LIGHTING EQUIPMENT FOR THE TRANSPORTATION INDUSTRY

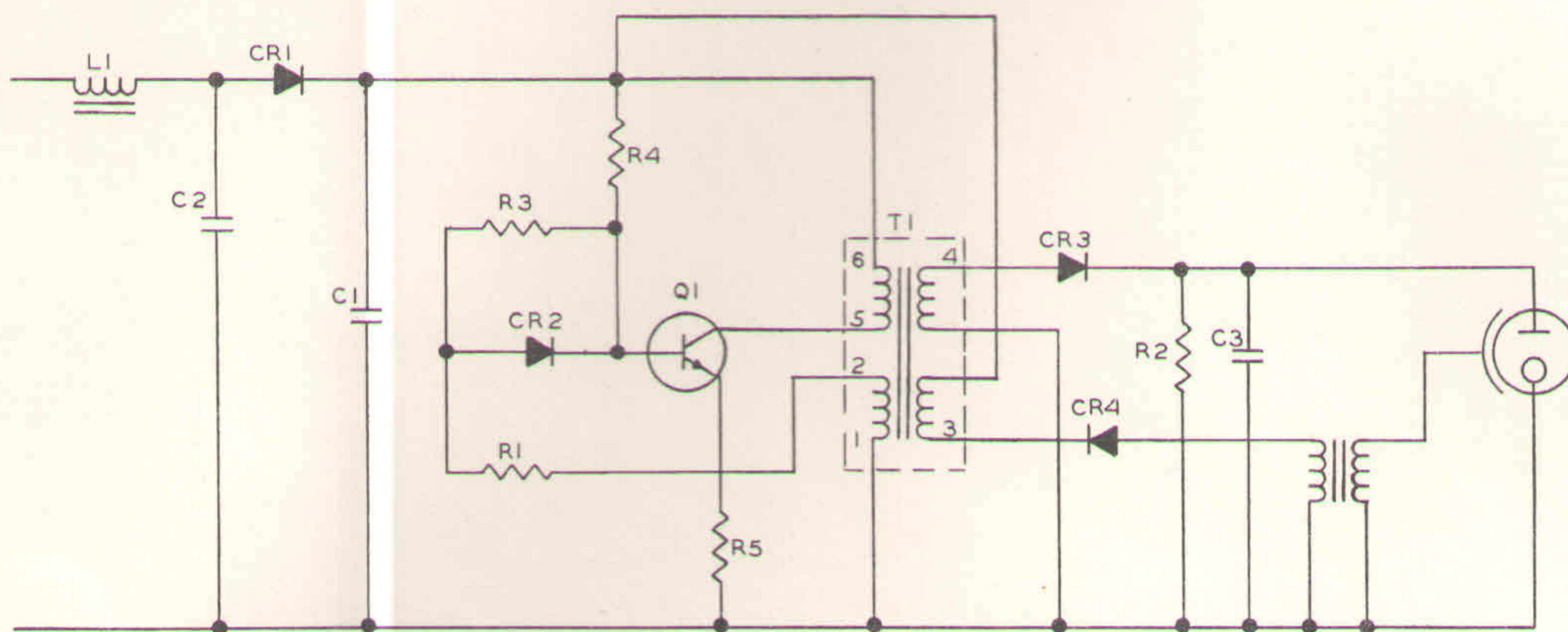
R-2250
Mar 1/75

GENERAL NOTES

1. CAUTION: A high voltage shock hazard is present across terminals of C3 capacitor in 60-2250-1 serial numbers 1 thru 2499 and C6 in serial number 2500 and subsequent, and across lamp connections.

EXTREME CAUTION should be used while working on this unit with voltage applied to input leads. Wait at least 15 minutes after unit is turned off before performing work within this unit and discharge the above capacitors (C3 or C6). When measuring unknown circuit voltages, set meter and scope functions on high range. Insure that unit is properly grounded while trouble shooting this unit.

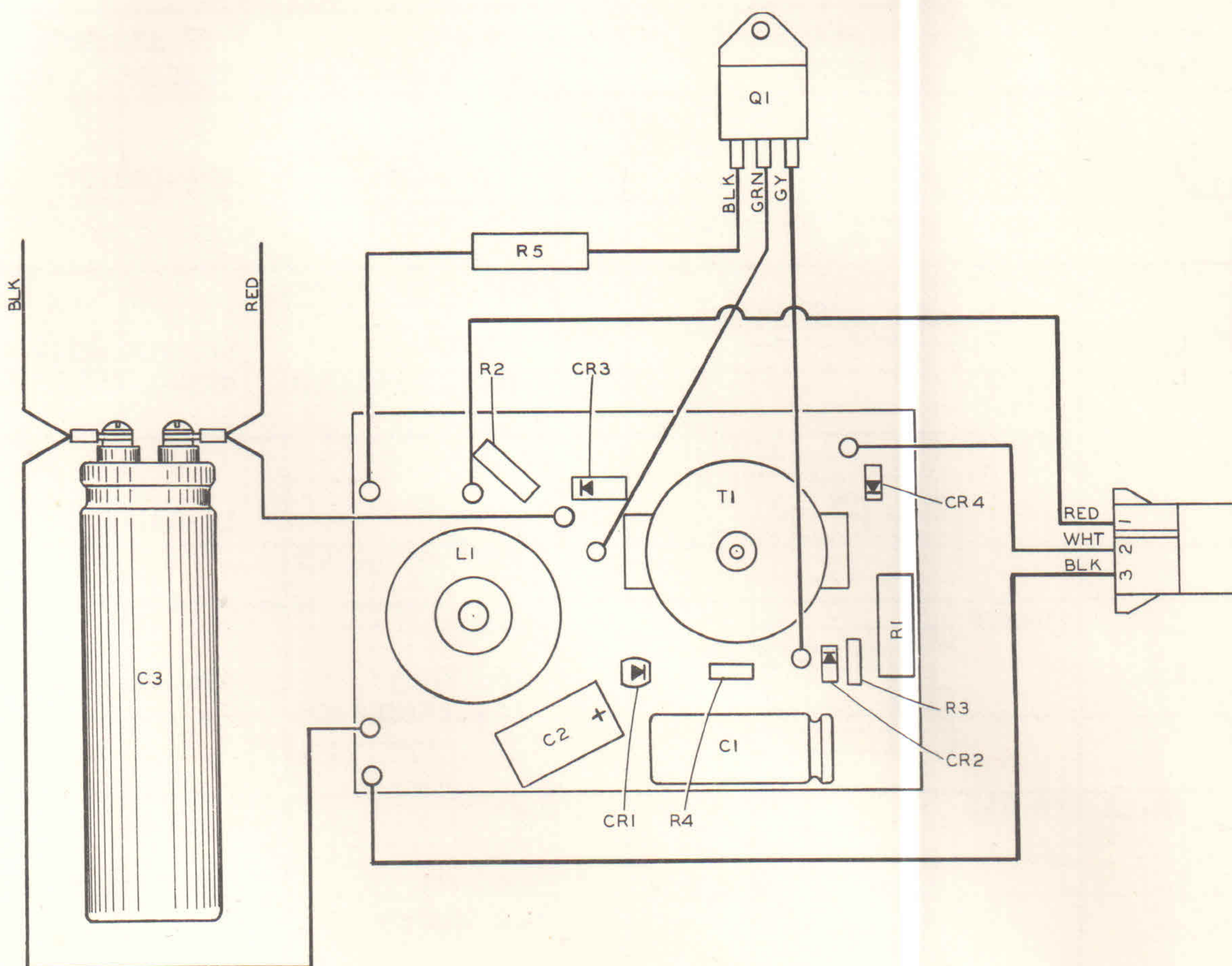
2. Unit 60-2250-1 serial numbers 1 thru 2499 can only be serviced by testing each component separately.
3. Unit 60-2250-1 serial number 2500 and subsequent can only be checked with an oscilloscope as meter responses are inadequate for voltage readings shown.
4. Polarity must be observed. The power supply will be damaged if voltage polarity is not respected, black wire is negative (-) and must be suitably grounded. Do not apply positive (+) voltage to black wire.
5. All wiring in this unit is No. 20 gauge teflon insulated, MIL-W-16878/E.
6. Unit 60-2250-1 serial number 2500 and subsequent. Potentiometer R16 is matched to capacitor C6, DO NOT attempt to change R16 setting, unless nature of failure indicates failure of capacitor C6. Calibrating instructions for capacitor C6. Measure capacitor value of new C6 capacitor and adjust voltage level to 10 Joules (Joules = $\frac{CV^2}{2}$ in watt seconds) with potentiometer R16 (Voltage range 366VDC min. to 450VDC max.).



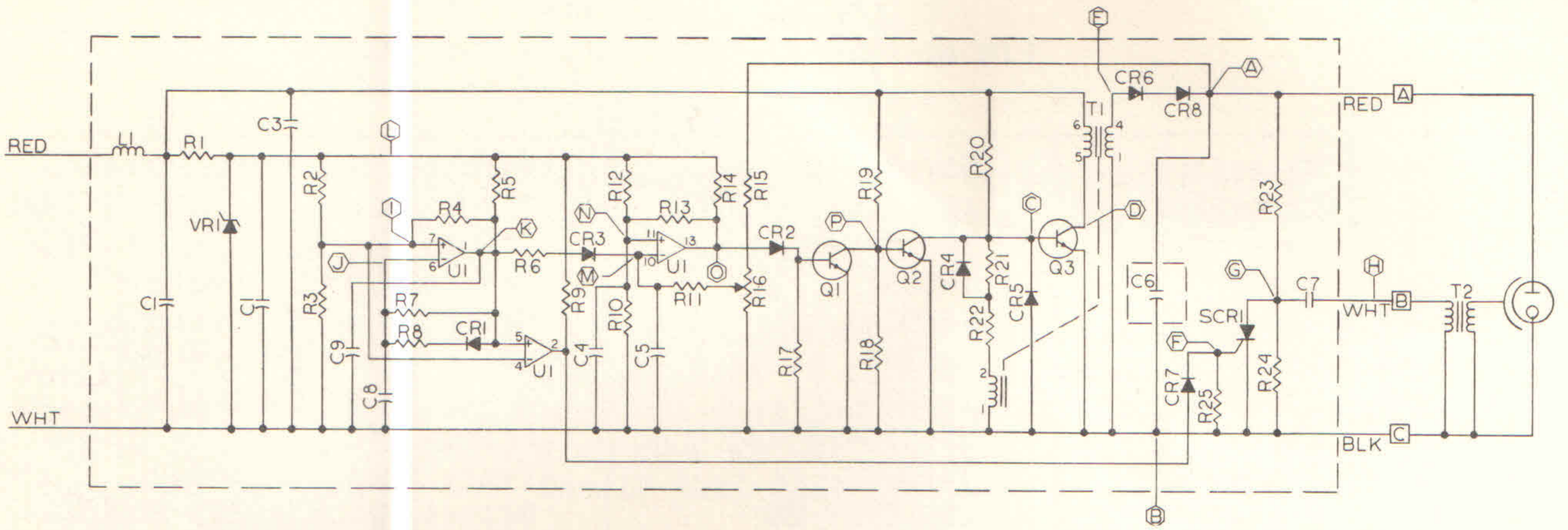
WIRING SCHEMATIC
PART NO. 60-2250-1
SERIAL NO. 1 thru 2499

ELECTRICAL COMPONENTS LIST
P/N 60-2250-1, SERIAL NO. 1 THRU 2499

C1	Capacitor	50 mfd, 50 VDC	Sprague No. 30D506G050DD2
C2	Capacitor	.22 mfd, 100 VDC	Electro Cube No. 625B1B224M
C3	Capacitor	100 mfd, 450 VDC	Grimes No. 55-0339-101J6C0
CR1	Diode	1N5552	Motorola or Equivalent
CR2	Diode	1N4004	Motorola or Equivalent
CR3	Diode	1N5399	Motorola or Equivalent
CR4	Diode	1N4004	Motorola or Equivalent
L1	Choke	55-0304-3	Grimes Mfg. Co.
Q1	Transistor	TIP33C	Texas Inst. or Equiv.
R1	Resistor	.60 OHM, 2W	Grimes No. 55-0225-R6005C
R2	Resistor	1MEG OHM, 1/2W	Grimes No. 55-0382-105IDS
R3	Resistor	220 OHM, 1/4W	Grimes No. 55-0382-2215CS
R4	Resistor	2.7K OHM, 1/4W	Grimes No. 55-0382-2721CS
R5	Resistor	.1 OHM, 2W	Grimes No. 55-0225-OR105N
T1	Transformer	55-0590-1	Grimes Mfg. Co.

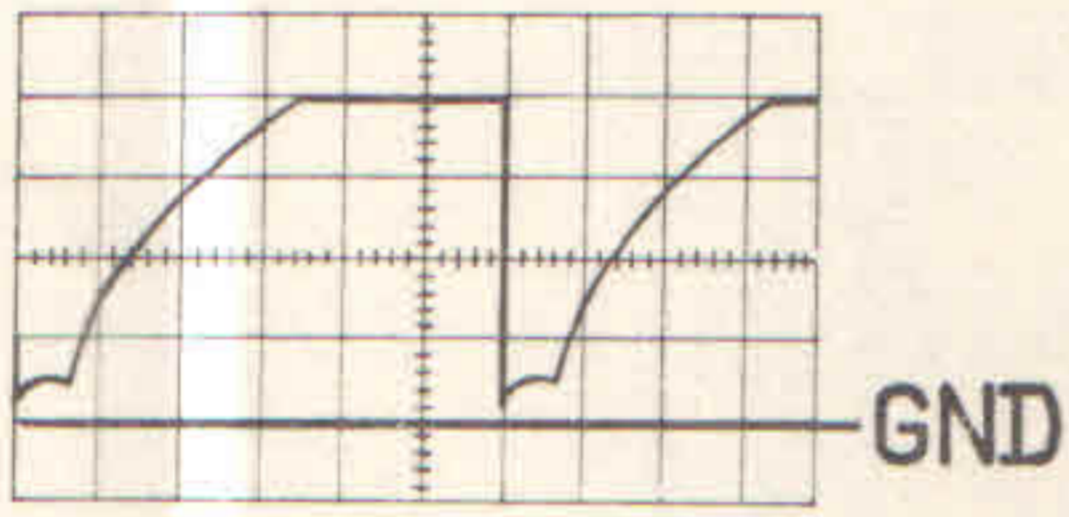
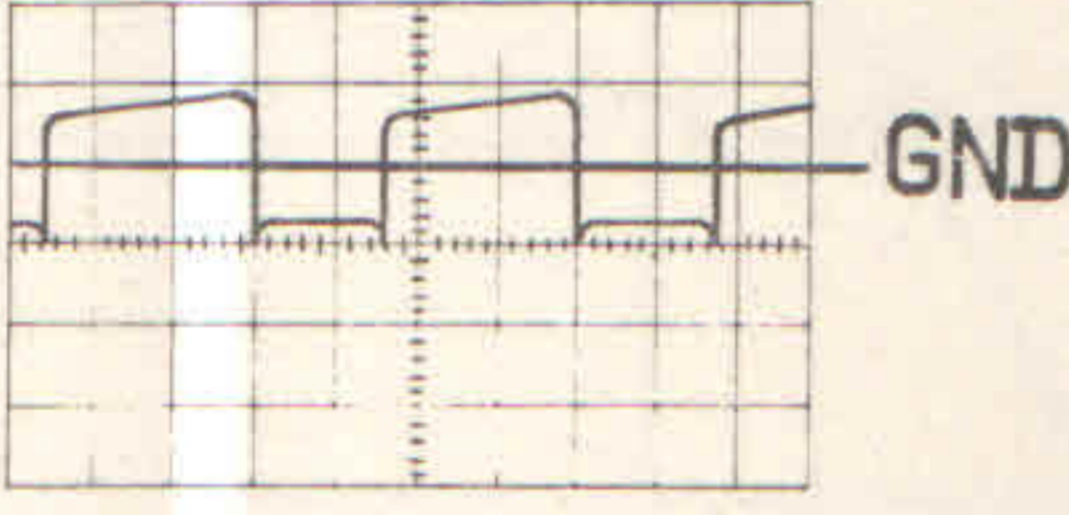
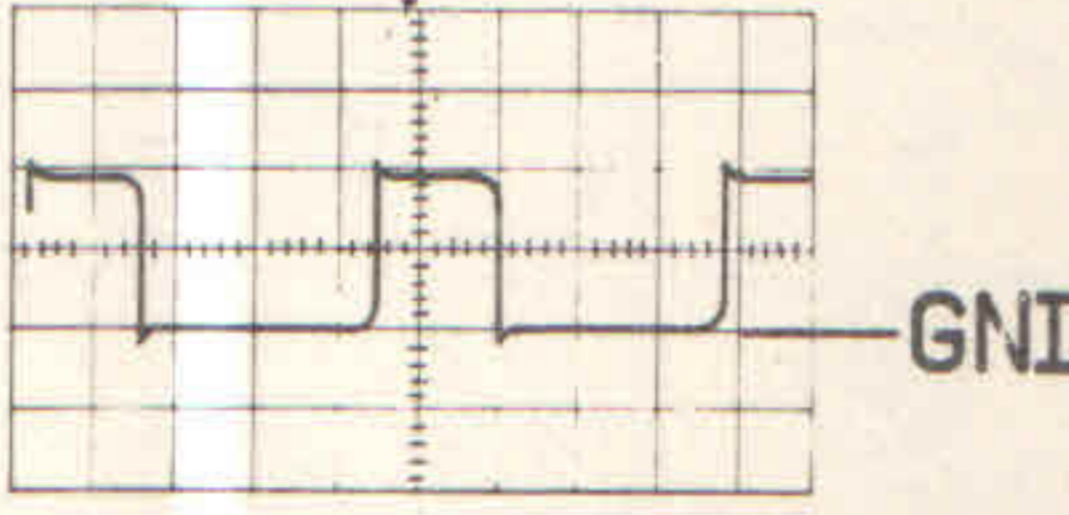
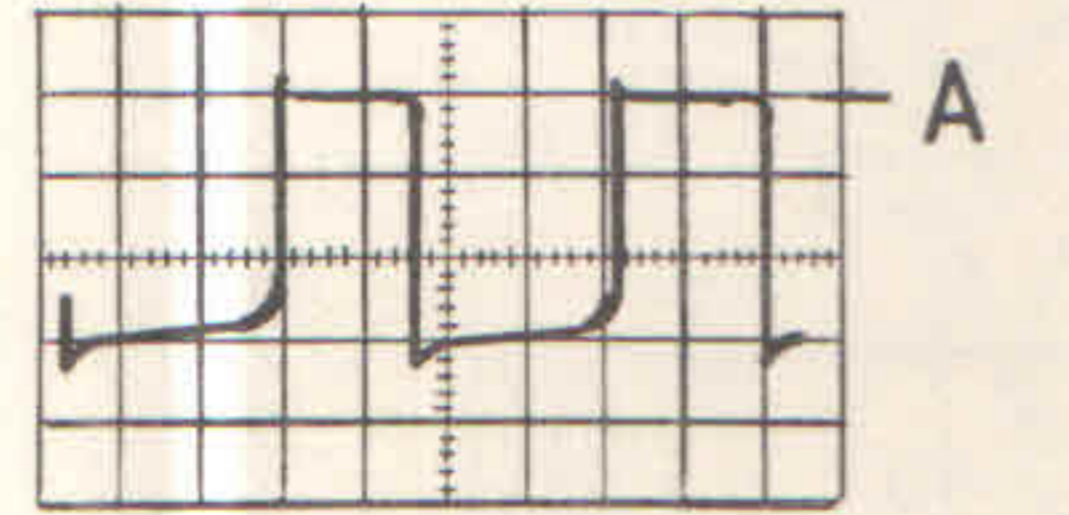
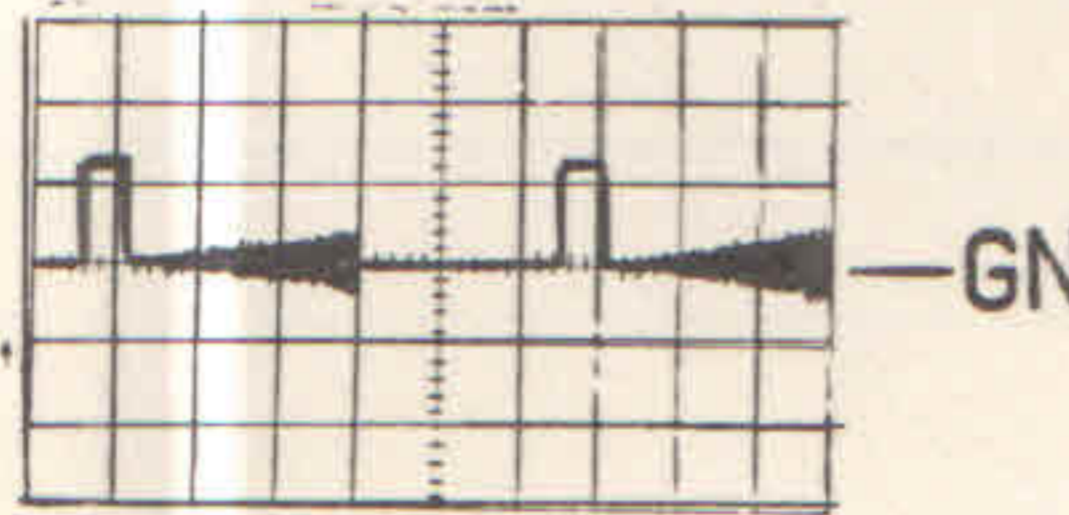


WIRING DIAGRAM



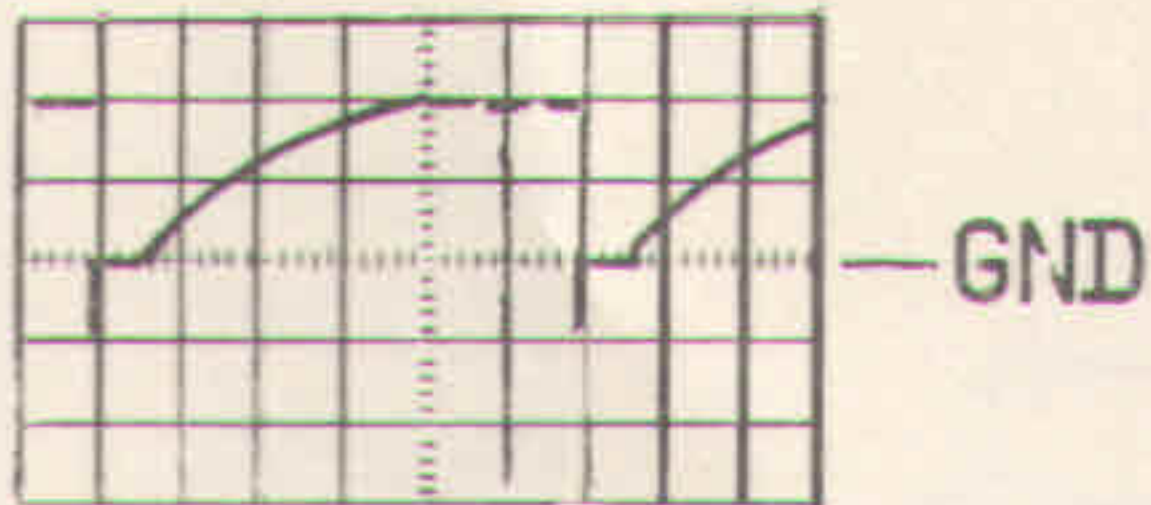
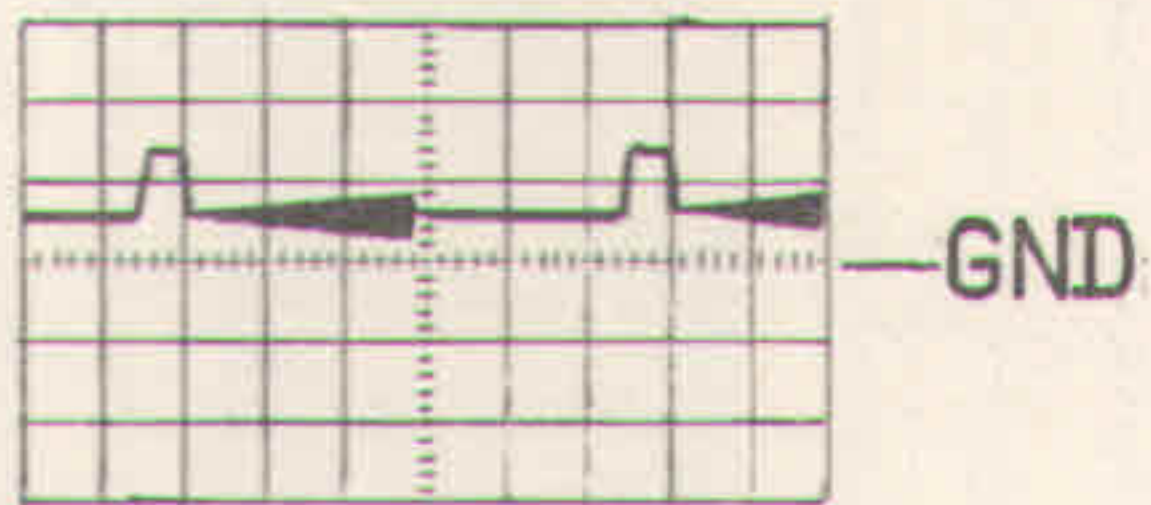
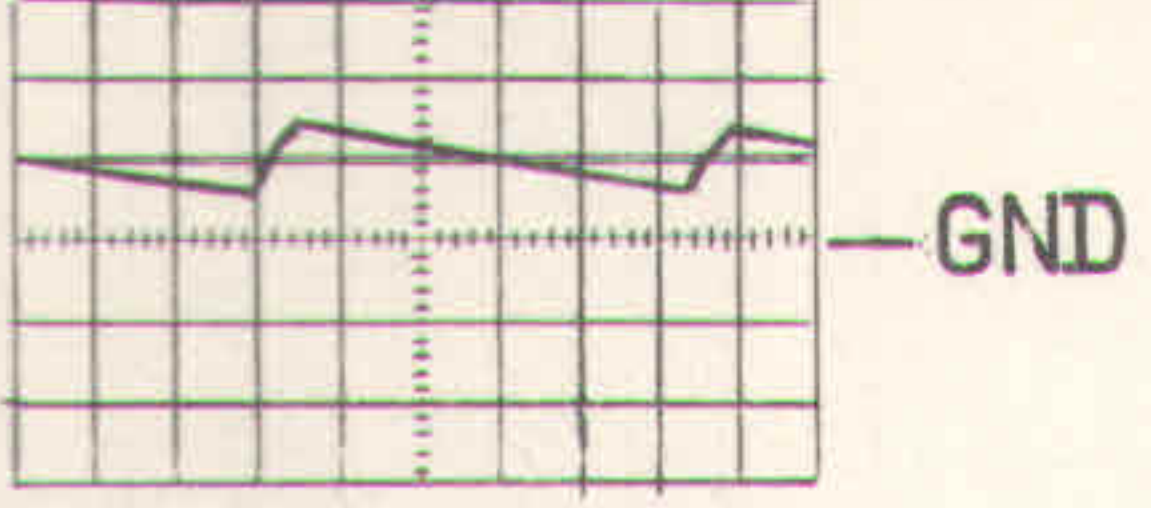
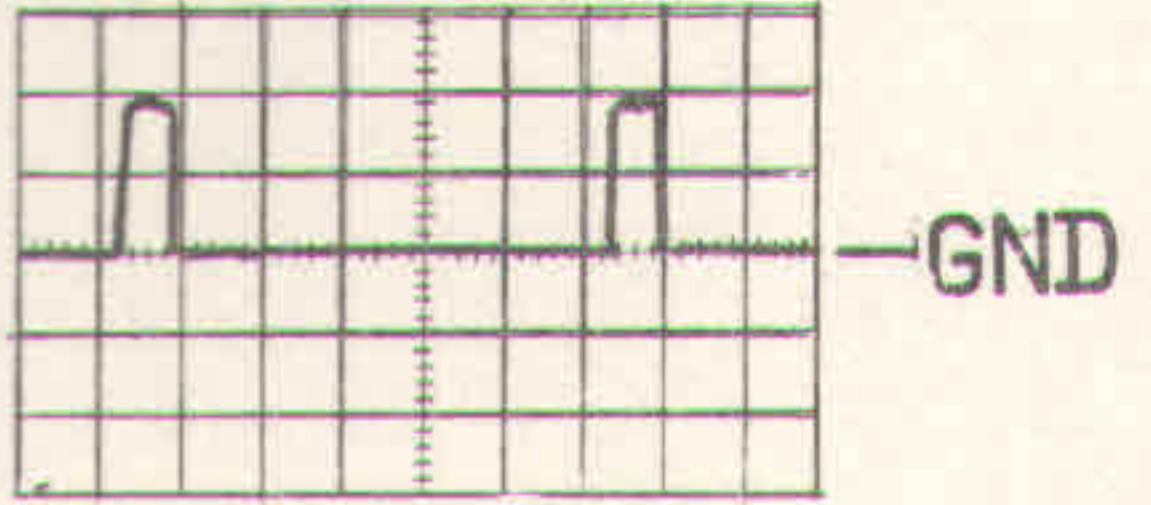
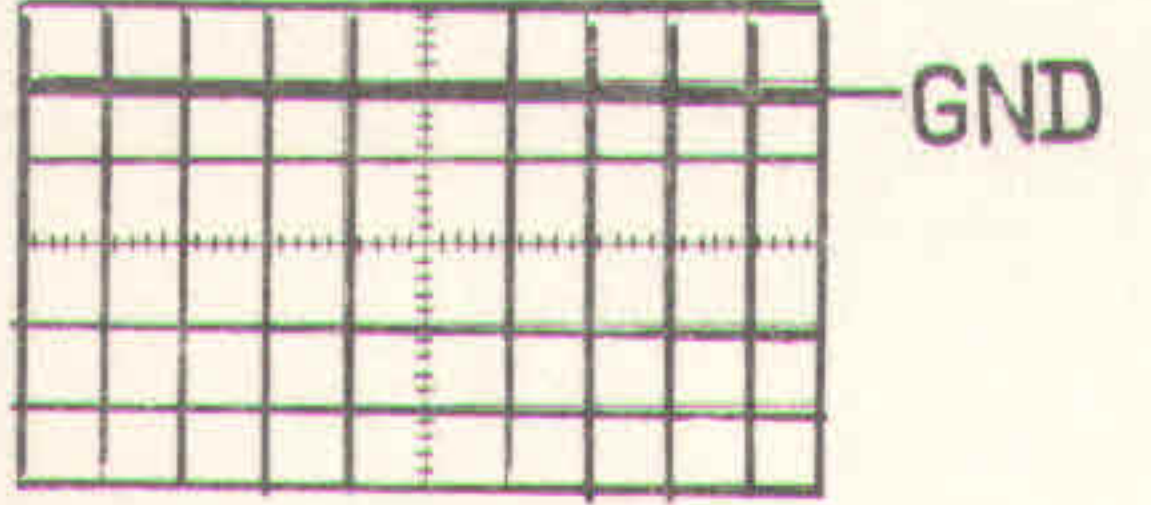
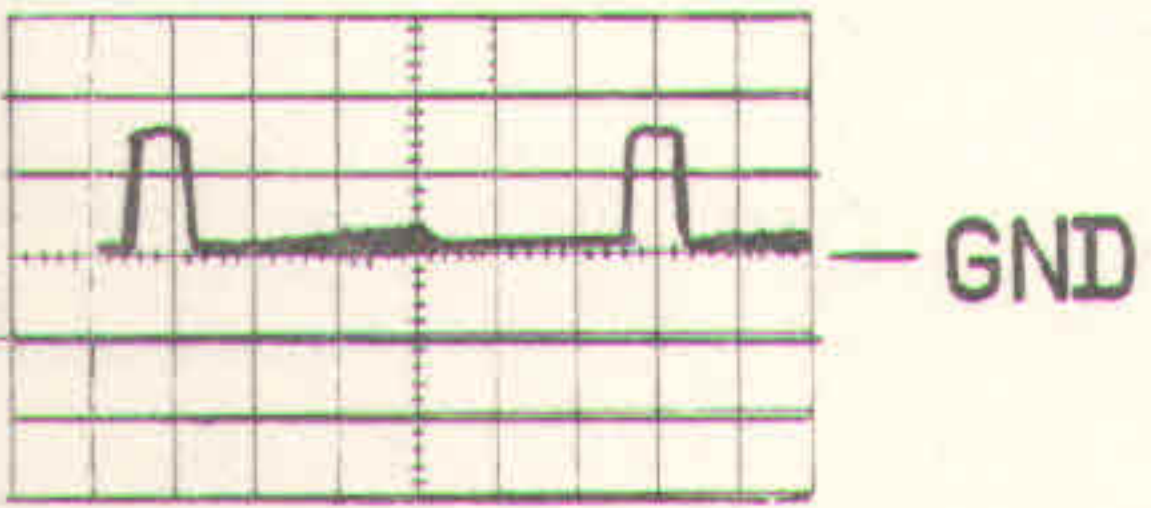
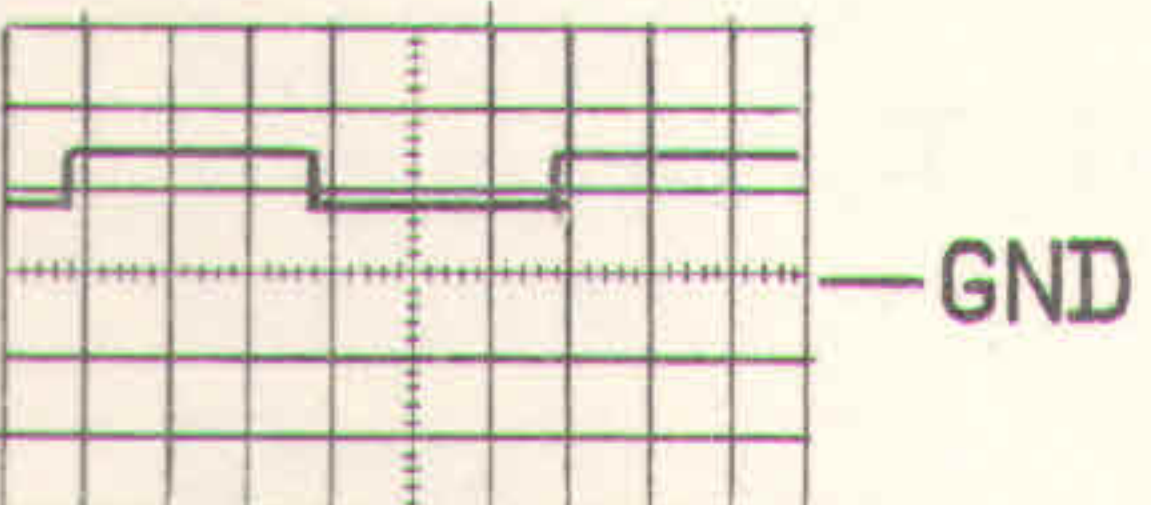
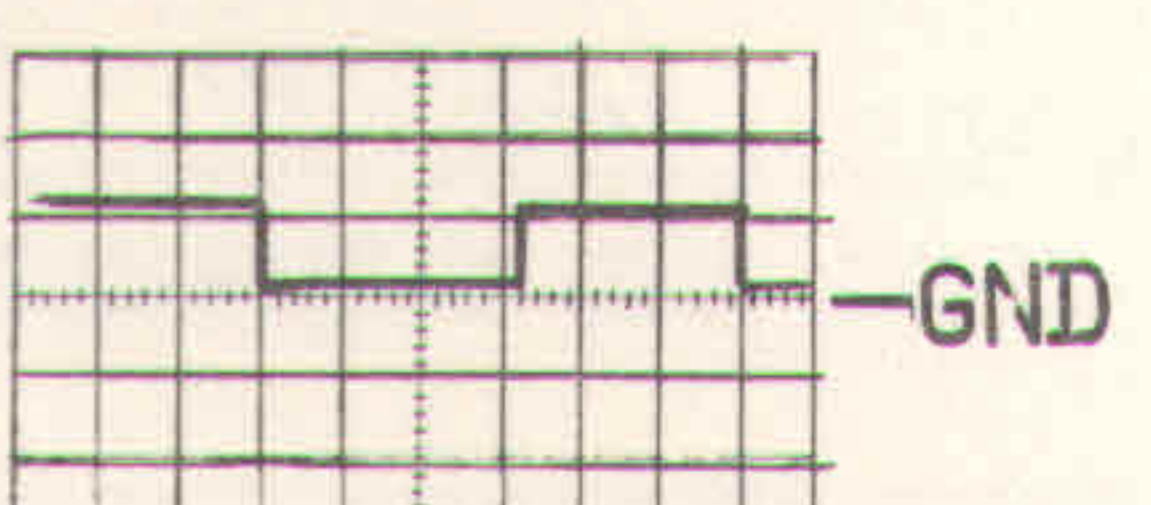
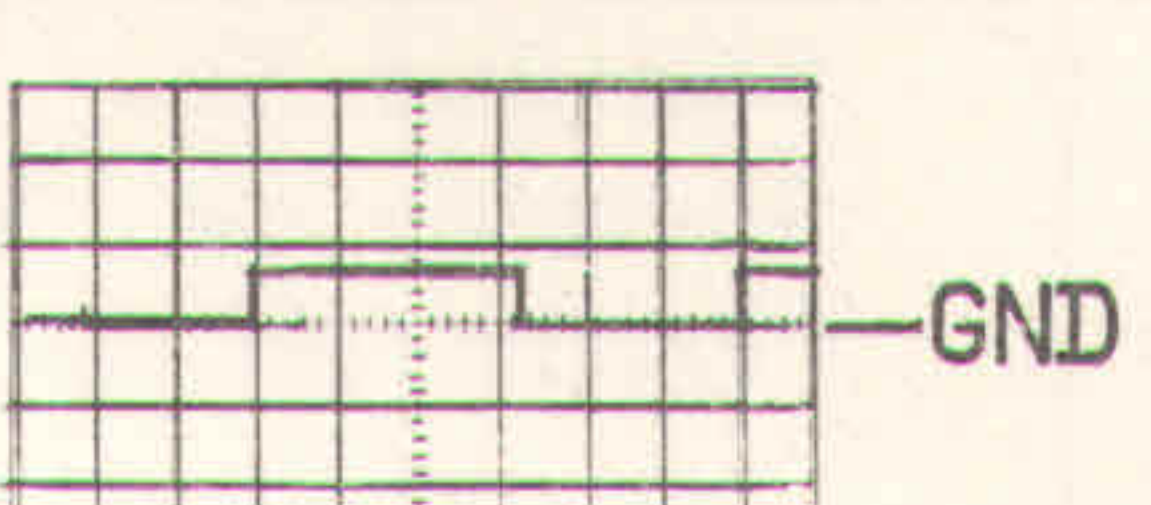
WIRING SCHEMATIC

TROUBLE SHOOTING FOR
PART NUMBER 60-2250-1
SERIAL NO. 2500 AND SUBSEQUENT

TEST POINT	NORMAL READING	SCOPE SETTING	IF ABNORMAL READING, CHECK
A		100 V/CM .2 SEC/CM	CR6, CR8, T1
C		1 V/CM 10 MICROSEC/CM	CR5, R20, R21, R22, Q3, T1
D		20V/CM 10 MICROSEC/CM	L1, Q3, T1
E		200 V/CM 10 MICROSEC/CM	CR6, CR8, T1
F		.5 V/CM .2 SEC/CM	CR7, R25, SCR1, U1

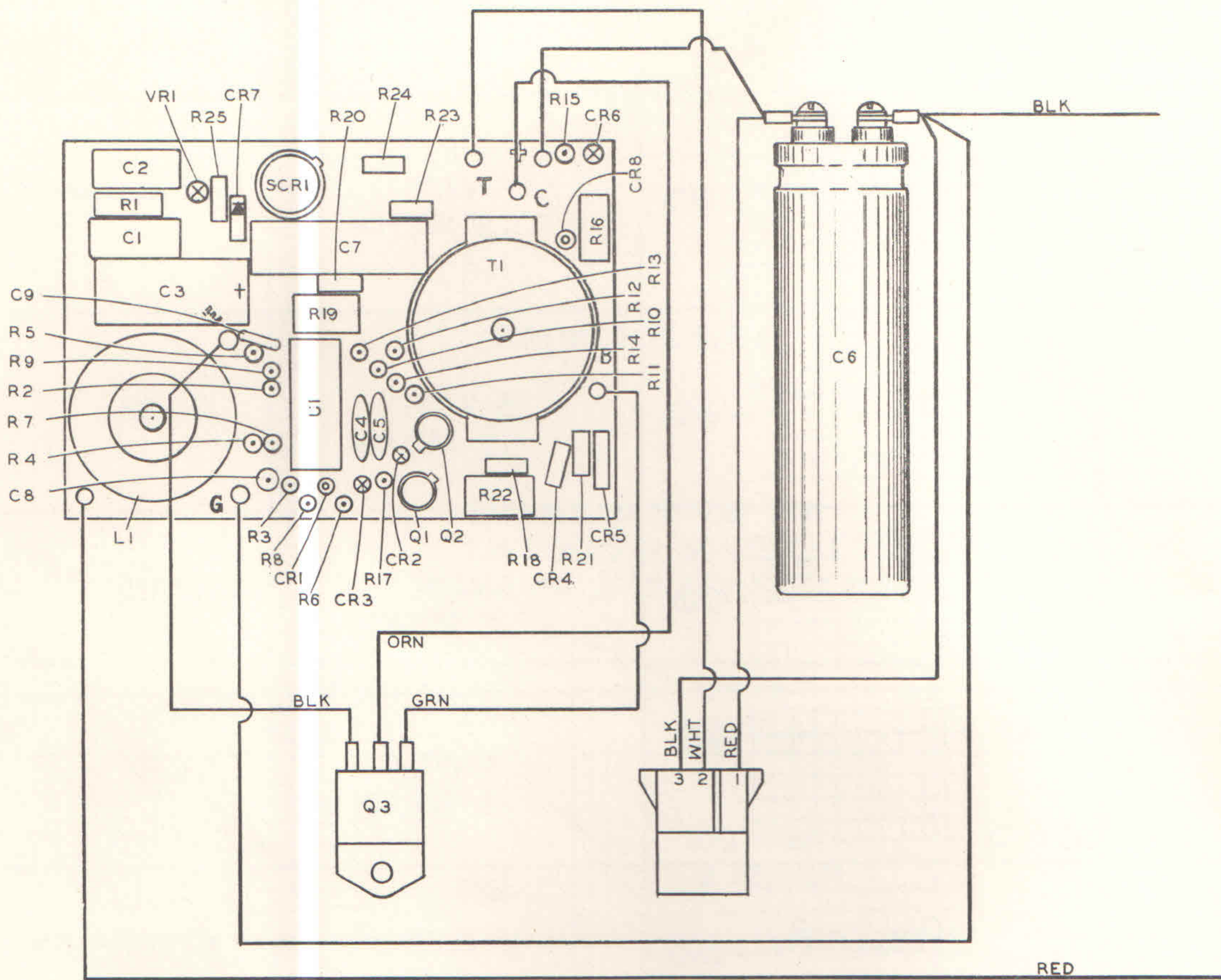
Ground reference is point **B**

TRUBLE SHOOTING (Continued)

G		100 V/CM .2 SEC/CM	R2,R3,R4,R5,U1
I		5 V/CM .2 SEC/CM	R2,R3,R4,R5,U1
J		5 V/CM .2 SEC/CM	U1,C8
K		5 V/CM .2 SEC/CM	R5,U1
L		5 V/CM .2 SEC/CM	L1,R1
M		5 V/CM .2 SEC/CM	R11,R15,R16,U1
N		1 V/CM .2 SEC/CM	R10,R12,R13,R14, U1
O		1 V/CM .2 SEC/CM	R14,U1
P		1 V/CM .2 SEC/CM	R18,R19,Q2,Q1



TYPICAL HAIRPIN CONNECTIONS



WIRING DIAGRAM

ELECTRICAL COMPONENTS LIST
P/N 60-2250-1, SERIAL NO. 2500 AND SUBSEQUENT

C1	Capacitor	.22 mfd, 100VDC	Electro Cube No. 625B1B224M
C2	Capacitor	6.8 mfd, 35VDC	Sprague No. 150D685X9035B2
C3	Capacitor	100 mfd, 25VDC	Sprague No. TE-1211
C4	Capacitor	.01 mfd, 150VDC	Centralab No. DDM 103
C5	Capacitor	.01 mfd, 150VDC	Centralab No. DDM 103
C6	Capacitor	100 mfd, 450 VDC	Grimes No. 55-0339-101J6C0
C7	Capacitor	.22 mfd, 400VDC	ERO MKT No. 1822-422/4
C8	Capacitor	1.0 mfd, 50VDC	Grimes No. 55-0679-1051AF
C9	Capacitor	.22 mfd, 50VDC	Erie No. 8131-050-651-224M
CR1	Diode	55-0018-4	Grimes Mfg. Co.
CR2	Diode	55-0018-4	Grimes Mfg. Co.

ELECTRICAL COMPONENTS LIST (Continued)

CR3	Diode	55-0018-4	Grimes Mfg. Co.
CR4	Diode	1N4004	Motorola or Equiv.
CR5	Diode	1N4004	Motorola or Equiv.
CR6	Diode	1N5399	Westinghouse or Equiv.
CR7	Diode	1N4004	Motorola or Equiv.
CR8	Diode	1N5399	Westinghouse or Equiv.
L1	Choke	55-0726-1	Grimes Mfg. Co.
Q1	Transistor	2N2222	Motorola or Equiv.
Q2	Transistor	2N2222	Motorola or Equiv.
Q3	Transistor	55-0363-1	Grimes Mfg. Co.
R1	Resistor	100 OHM, 1/2W	Grimes No. 55-0382-101IDS
R2	Resistor	100 OHM, 1/4W	Grimes No. 55-0382-104ICS
R3	Resistor	100 OHM, 1/4W	Grimes No. 55-0382-104ICS
R4	Resistor	68K OHM, 1/4W	Grimes No. 55-0382-683ICS
R5	Resistor	4.7K OHM, 1/4W	Grimes No. 55-0382-472ICS
R6	Resistor	100 OHM, 1/4W	Grimes No. 55-0382-104ICS
R7	Resistor	1.2 MEGOHM, 1/4W	Grimes No. 55-0382-1255CS
R8	Resistor	100 OHM, 1/4W	Grimes No. 55-0382-104ICS
R9	Resistor	2.2K OHM, 1/4W	Grimes No. 55-0382-222ICS
R10	Resistor	47K OHM, 1/4W	Grimes No. 55-0382-473ICS
R11	Resistor	470K OHM, 1/4W	Grimes No. 55-0382-474ICS
R12	Resistor	330K OHM, 1/4W	Grimes No. 55-0382-3345CS
R13	Resistor	100 OHM, 1/4W	Grimes No. 55-0382-104ICS
R14	Resistor	4.7K OHM, 1/4W	Grimes No. 55-0382-472ICS
R15	Resistor	2.2 MEGOHM, 1/2W	Grimes No. 55-0382-2255DS
R16	Potentiometer	10K OHM, 1/2W Adjustable	Beckman No. 72XWR10K
R17	Resistor	1K OHM, 1/4W	Grimes No. 55-0382-1025CS
R18	Resistor	1K OHM, 1/4W	Grimes No. 55-0382-1025CS
R19	Resistor	470 OHM, 2 1/4W	Grimes No. 55-0225-470005D
R20	Resistor	2.7K OHM, 1/4W	Grimes No. 55-0382-272ICS
R21	Resistor	220 OHM, 1/4W	Grimes No. 55-0382-2215CS
R22	Resistor	8.2 OHM, 2W	Grimes No. 55-0225-8R205K
R23	Resistor	1 MEGOHM, 1/4W	Grimes No. 55-0382-1055CS
SCR1	Rectifier	S400IMS3	Electronic Controls or Equiv.
T1	Transformer	55-0590-1	Grimes Mfg. Co.
U1	Quad Comparator	55-0478-14	Grimes Mfg. Co.
VR1	Zener Diode	1N758A	Motorola or Equiv.