

BROADCAST AND TELEVISION EQUIPMENT



Instructions

RADIO CORPORATION OF AMERICA, Industrial Electronic Products

Focus Current Regulator

IB-36250-3

EQUIPMENT LOST OR DAMAGED IN TRANSIT

When delivering the equipment to you, the truck driver or carrier's agent will present a receipt for your signature. Do not sign it until you have (a) inspected the containers for visible signs of damage and (b) counted the containers and compared with the amount shown on the shipping papers. If a shortage or if evidence of damage is noted, insist that notation to that effect be made on the shipping papers before you sign them.

Further, after receiving the equipment, unpack it and inspect thoroughly for concealed damage. If concealed damage is discovered, immediately notify the carrier, confirming the notification in writing, and secure an inspection report. This item should be unpacked and inspected for damage WITHIN 15 DAYS after receipt.

Report all shortages and damages to RCA, Broadcast and Television Department, Camden 2, N. J.

Radio Corporation of America will file all claims for loss and damage on this equipment so long as the inspection report is obtained. Disposition of the damaged item will be furnished by RCA.

REPLACEMENT PARTS AND ENGINEERING SERVICE

RCA field engineering service is available at current rates. Requests for field engineering service may be addressed to your RCA Broadcast Field Representative or the RCA Service Company, Inc., Broadcast Service Division, Camden, N. J. Telephone: WOODLAWN 3-8000.

When ordering replacement parts, please give symbol, description, and stock number of each item ordered.

The part which will be supplied against an order for a replacement item may not be an exact duplicate of the original part. However, it will be a satisfactory replacement differing only in minor mechanical or electrical characteristics. Such differences will in no way impair the operation of the equipment. Parts with no stock numbers are standard components. They are not stocked by RCA and should be obtained from your local electronic parts distributor.

The following tabulations list service parts and electron tube ordering instructions according to your geographical location.

SERVICE PARTS

LOCATION	ORDER SERVICE PARTS FROM:
Continental United States, including Alaska and Hawaii	RCA Electron Tube Division, Parts and Equipment, P.O. Box 654, Camden, New Jersey or through your nearest RCA Regional Office. Emergency orders may be telephoned, telegraphed, or teletyped to RCA Emergency Service, Bldg. 60, Camden, N. J. (Telephone: WO 3-8000).
Dominion of Canada	RCA Victor Company Limited, 1001 Lenoir Street, Montreal, Quebec or through your local Sales Representative or his office.
Outside of Continental United States, Alaska, Hawaii and the Dominion of Canada	RCA International Division, Clark, N. J., U.S.A. or through your local Sales Representative.

ELECTRON TUBES

LOCATION	ORDER ELECTRON TUBES FROM:
Continental United States, including Alaska and Hawaii	Local RCA Tube Distributor.
Dominion of Canada	RCA Victor Company Limited, 1001 Lenoir Street, Montreal, Quebec or through your local Sales Representative or his office.
Outside of Continental United States, Alaska, Hawaii and the Dominion of Canada	Local RCA Tube Distributor or from: Tube Department RCA International Division 30 Rockefeller Plaza New York 20, New York, U.S.A.

RETURN OF ELECTRON TUBES

If for any reason, it is desired to return tubes, please return them through your local RCA tube distributor, RCA Victor Co. Ltd., or RCA International Div., depending on your location.

PLEASE DO NOT RETURN TUBES DIRECTLY TO RCA WITHOUT AUTHORIZATION AND SHIPPING INSTRUCTIONS.

It is important that complete information regarding each tube (including type, serial number, hours of service and reason for its return) be given.

When tubes are returned, they should be shipped to the address specified on the Return Authorization form. A copy of the Return Authorization and also a Service Report for each tube should be packed with the tubes.

LIST OF RCA REGIONAL OFFICES

<p><i>Atlanta 3, Georgia</i> 1121 Rhodes-Haverty Bldg. 134 Peachtree St. N.W. Jackson 4-7703</p>	<p><i>Boston 16, Mass.</i> Room 2301, John Hancock Bldg. 200 Berkley St. Hubbard 2-1700</p>	<p><i>Chicago 54, Ill.</i> 1186 Merchandise Mart Plaza DElaware 7-0700</p>	<p><i>Cleveland 15, Ohio</i> 1600 Keith Bldg. CHerry 1-3450</p>
<p><i>Dallas 35, Texas</i> 7901 Empire Freeway FLeeewood 2-3911</p>	<p><i>Hollywood 28, Calif.</i> RCA Bldg., 1560 N. Vine St. HOLlywood 9-2154</p>	<p><i>Kansas City 6, Missouri</i> 340 Home Savings Bldg. HARRison 1-6480</p>	<p><i>New York 20, New York</i> 36 W. 49th St. JUdson 6-3800</p>
<p><i>Branch—San Francisco 2, Calif.</i> 420 Taylor St. ORdway 3-8027</p>		<p><i>Seattle, Washington</i> 2250 First Ave., S. MAIn 2-8350</p>	

BROADCAST AND TELEVISION EQUIPMENT

INSTRUCTIONS

Focus Current Regulator MI-40524-A

RADIO CORPORATION OF AMERICA
INDUSTRIAL ELECTRONIC PRODUCTS, CAMDEN, N. J.

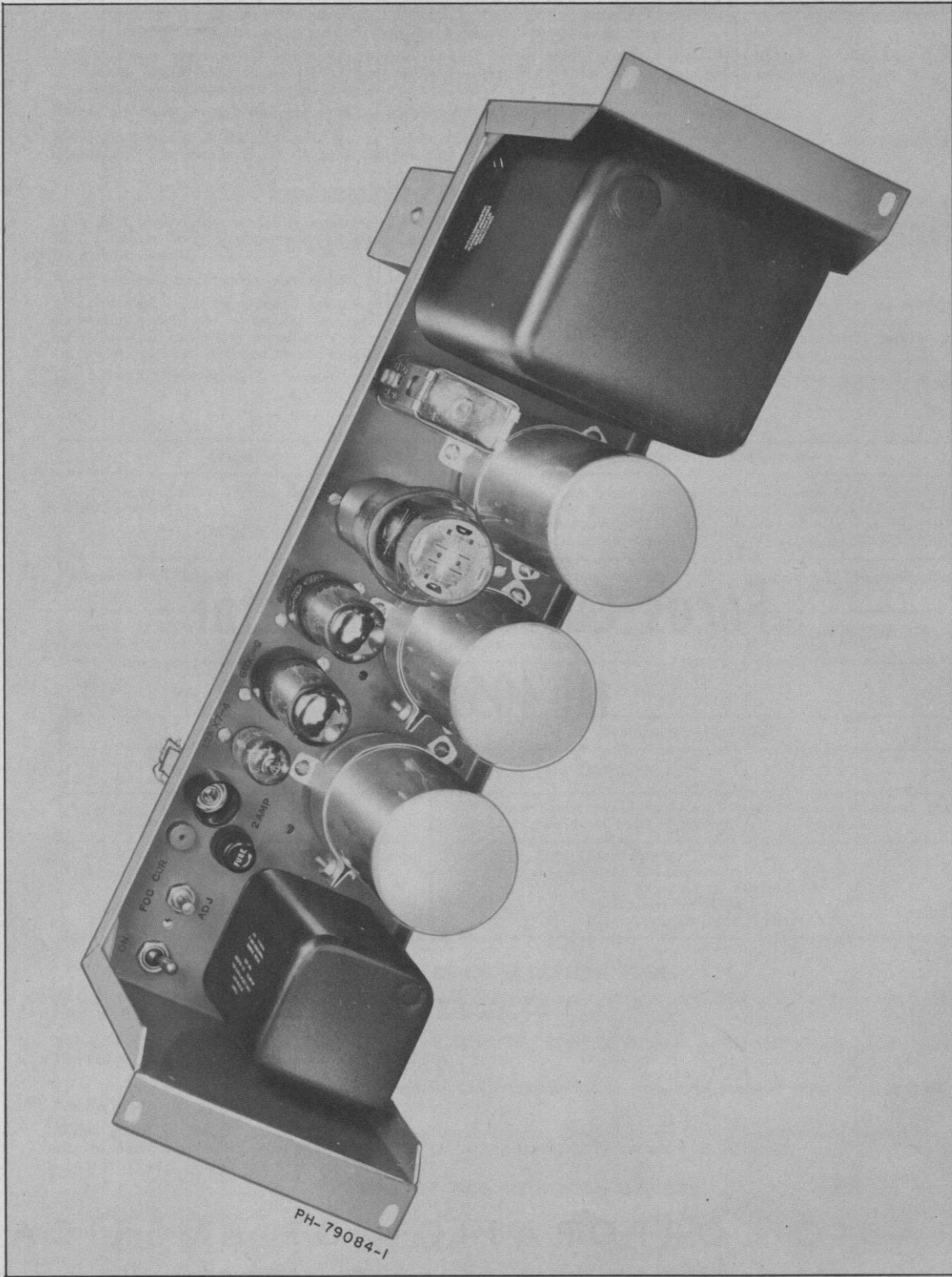


Figure 1 — Focus Current Regulator

TECHNICAL SUMMARY

ELECTRICAL SPECIFICATIONS

Power Input 109 to 125 volts ac, 60 cycles, 100 watts
 280 volts dc, regulated, 12 ma (from RCA Type WP-15 or
 equivalent power supply).

Output 78 milliamperes, regulated, to focus and alignment coils

MECHANICAL SPECIFICATIONS

Width Standard 19 inch relay rack
 Height 5-1/4 inches (rack space)
 Depth 9-3/8 inches
 Weight 22 pounds

TUBE COMPLEMENT

1 RCA Type 5R4-GY
 1 RCA Type 12AX7
 2 RCA Type 6BX7

RECOMMENDED TEST EQUIPMENT

The following items will facilitate adjustment and maintenance of the Focus Current Regulator.

Vacuum Tube voltmeter, RCA Type WV-97A
 Plate Current Meter, RCA Type MI-21200-C1

EQUIPMENT LIST

The following items are included with the RCA MI-40524-A Focus Current Regulator:

<i>Item</i>	<i>Description</i>
1	Focus Current Regulator including tubes in place
2	Instruction Book IB-36250-3
3	Packing List MI-40524-A

DESCRIPTION

The RCA MI-40524-A Focus Current Regulator shown in Figure 1, is intended to provide constant current for the image orthicon focus and alignment coils in the MI-40500-B Color Camera. This unit provides a normal current output of 78 milliamperes through three sets of series-connected focus and alignment coils.

INSTALLATION

Mount the MI-40524-A regulator in a convenient location in a standard relay rack. Referring to the Schematic Diagram, Figure 4, make the required power connections to jack J1. The 280 volt, regulated d-c reference voltage should be obtained from power supply which supplies the +B regulated voltage to the camera.

Measure the voltage of the a-c power line at terminals 1 and 2 of jack J1, then adjust the position of the primary tap lead on transformer T1 to the nearest corresponding position.

Figure 3 illustrates typical connections to the camera focus and alignment coil circuits.

Check the electrical connections then turn the power switch to ON and allow the equipment to warm up for a few minutes.

Measure the current in the focus coil circuits by plugging an RCA type MI-21200-C1 plate current meter into jack J3. This meter will indicate directly the current value in milliamperes. Alternatively, an RCA VoltOhmyst adjusted to indicate 78 volts d-c, may be connected between jack J2 and the chassis

ground. The voltage indicated will correspond to the current value in milliamperes.

Adjust the DC ADJUST control, R16, until 78 milliamperes flow in the output circuit. This control provides an adjustment range of approximately ± 4.0 milliamperes.

OPERATION

Operation of this unit will require only setting the POWER ON-OFF switch to the appropriate position. The value of current flowing in the output circuit should be checked regularly with a VoltOhmyst or Plate Current Meter as described under INSTALLATION. Readjust the DC ADJUST control as required.

MAINTENANCE

With ordinary care, a minimum of service will be required to keep this equipment in satisfactory operation. To avoid interruption during operation due to equipment failure, a regular schedule of inspection should be established.

Keep the chassis and external surfaces clean and free of dust, and periodically check power cable connections for good contact.

Check all tubes at regular intervals in a tube tester, replacing weak tubes to prevent

possible failure during operation. Trouble due to failure of circuit components may be isolated and corrected by referring to the Schematic Diagram, Figure 4, and the Table of Typical Operating Voltages. Circuit components may be located by referring to Figure 2.

The Typical Output Connection Diagram, Figure 3, also shows typical voltages at various points in the output circuit.

TYPICAL VOLTAGES AT J1

Pin	Voltage
1	117 v ac
2	117 v ac
3	270 v dc
4	-380 v dc
5	78 v dc
6	-194 v dc
7	-
8	+280 v dc (regulated reference voltage)
9	-
10	-194 v dc
11	0 (ground)
12	0 (ground)

TYPICAL TUBE SOCKET VOLTAGES

(CONDITIONS: Alignment coil pots (3) in center position.)

Symbol	Tube		Grid		Plate		Cathode	
	Type	Function	Pin	Volts	Pin	Volts	Pin	Volts
V1	5R4-GY	Rectifier	-	-	4,6	-	2,8	455
V2	6BX7	Regulator	1,4	260	2,5	442	3,6	272
V3	6BX7	Regulator	1,4	260	2,5	442	3,6	272
V4	12AX7	DC Amplifier	2	171	1	260	3	172

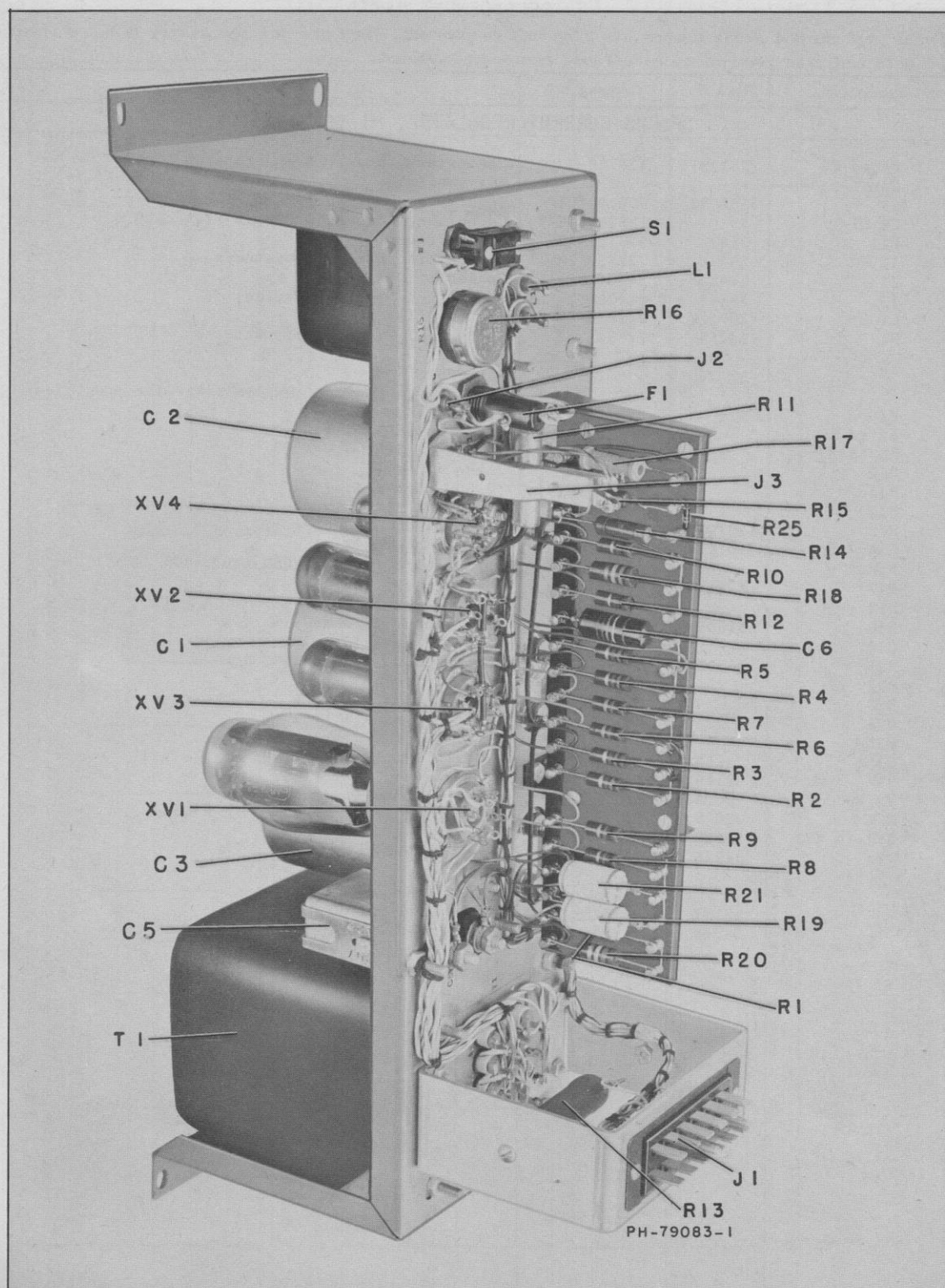


Figure 2 — Focus Current Regulator, Rear View

REPLACEMENT PARTS

Parts with no RCA stock number are standard components. They are not stocked by RCA and should be obtained from your local electronic parts distributor.

Symbol No.	Stock No.	Drawing No.	Description
FOCUS CURRENT REGULATOR, MI-40524-A			
C1 to C3	207231	426750-3	Capacitor: paper, 5 μ f +20 -10%, 1000 v
C4			Not used
C5	207229	990192-24	Capacitor: paper, 1.0 μ f \pm 10%, 1000 v
C6, C7		735715-267	Capacitor: paper, 0.022 μ f \pm 10%, 600 v
F1	3883	990157-10	Fuse: 2 amp
J1	55998	727969-17	Connector: male, 12 contacts
J2	54409	845648-2	Connector: tip jack, red
J3	18466	844080-2	Connector: jack (metering)
L1	207228	949836-1	Choke: filter
P1	54254	727969-18	Connector: female, 12 contacts
<i>RESISTORS:</i>			
<i>Fixed, composition - Unless otherwise specified</i>			
R1		99126-91	270,000 ohms \pm 10%, 2 w
R2 to R5		90496-55	270 ohms \pm 10%, 1 w
R6 to R9		90496-50	100 ohms \pm 10%, 1 w
R10		90496-98	1 meg ohm \pm 10%, 1 w
R11		99126-193	27,000 ohms \pm 5%, 2 w
R12		90496-98	1 meg ohm \pm 10%, 1 w
R13	207227	8868325-1	wire wound, 1000 ohms \pm 1%, 25 w
R14, R15	207032	990187-501	100,000 ohms \pm 1%, 1 w
R16	205064	433196-6	variable, carbon, 10,000 ohms \pm 10%, 2 w
R17	221156	990187-487	78,700 ohms \pm 1%, 1 w
R18		99126-189	18,000 ohms \pm 5%, 2 w
R19	51596	99317-5	wire wound, 50 ohms \pm 1%, 1 w
R20		99126-91	270,000 ohms \pm 10%, 2 w
R21	51598	99317-4	wire wound, 10 ohms \pm 1%, 1 w
R22		82283-159	1000 ohms \pm 5%, $\frac{1}{2}$ w
R23		90496-223	470,000 ohms \pm 5%, 1 w
R24		99126-227	680,000 ohms \pm 5%, 2 w
R25			16,000 ohms \pm 5%, 1 w
S1	93263	95559-5	Switch: toggle, D.P.D.T.
T1	221155	8447089-1	Transformer:
V2, V3	206863		Tube: vacuum
XF1	99218	8811145-1	Holder: fuse
XV1 to XV3	68590	99100-4	Socket: tube
XV4	94926	737870-14	Socket: tube
<i>Miscellaneous</i>			
	56177	399979-1	Cup: insulating, J3
	30075	712336-507	Knob: black, R16

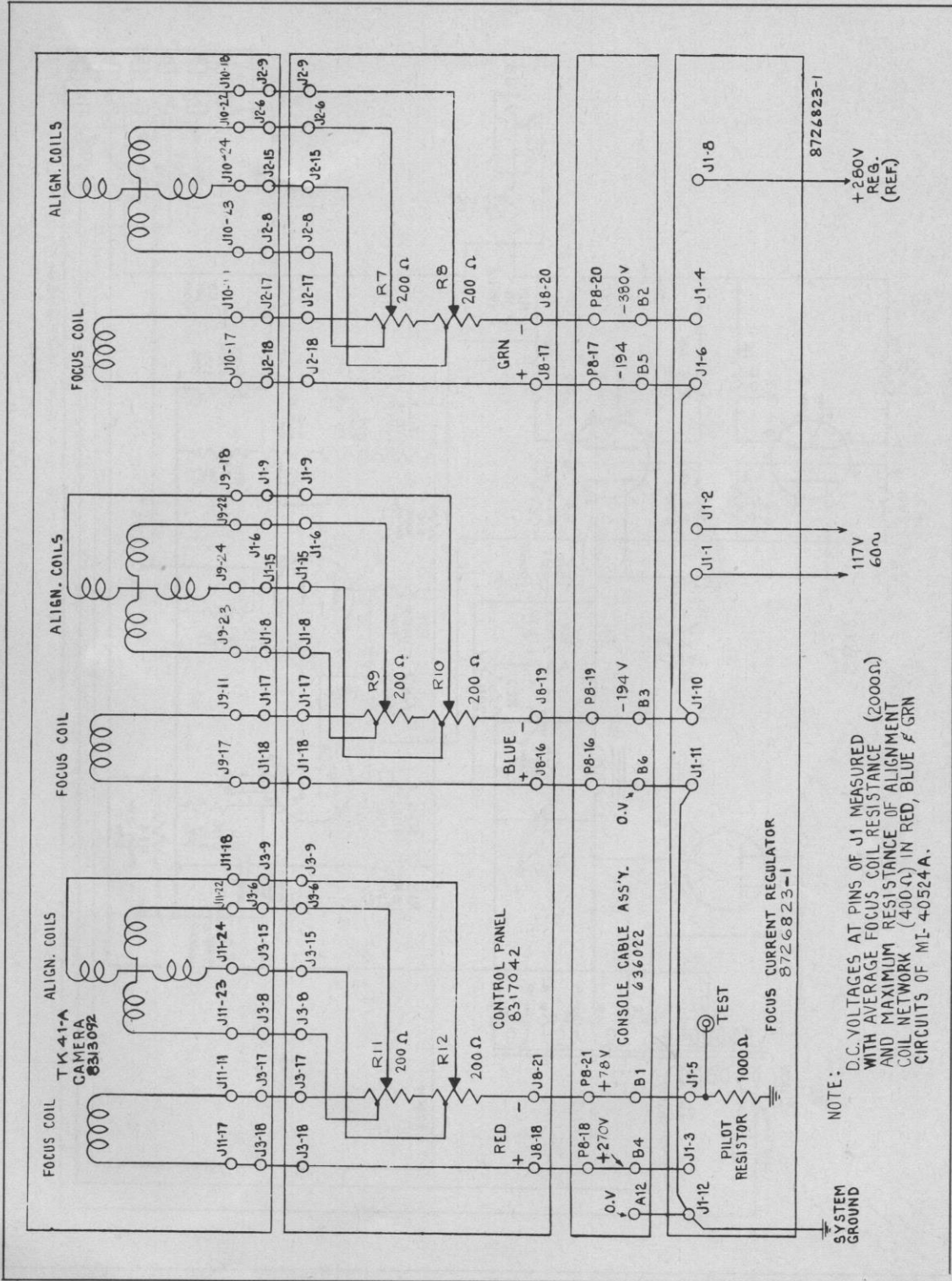


Figure 3 — Typical Output Connections

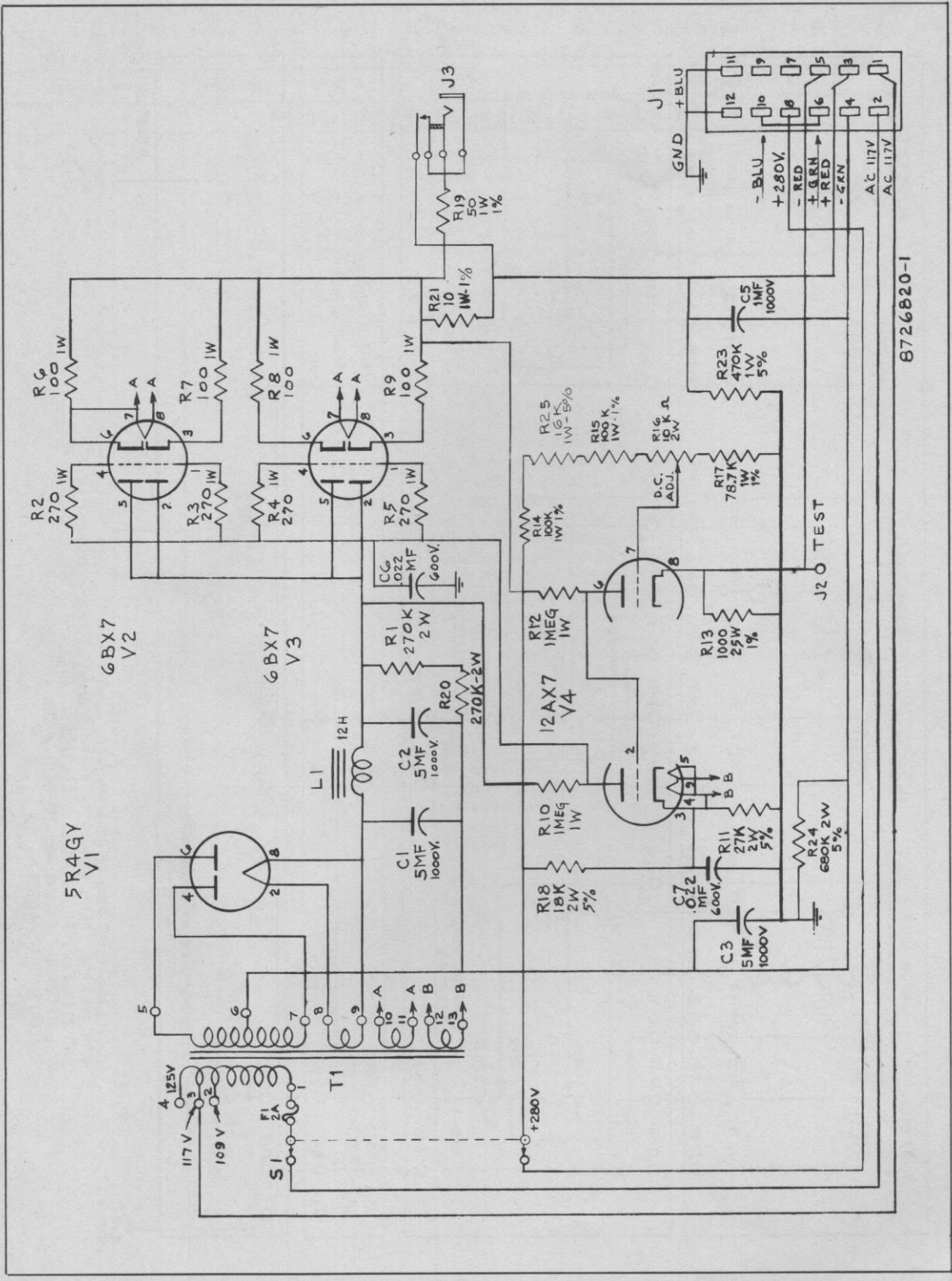


Figure 4 — Schematic Diagram, Focus Current Regulator



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