MODELS
751A, 1001A, 1751

Power Sources

Instruction Manual

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November 1974 Document No. 907-007-90

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Elgar Electronics Corporation (hereinafter referred to as Elgar) warrants its products to be free from defects in material and workmanship. This warranty is effective for two years from the date of shipment of the product to the original purchaser. Liability of Elgar under this warranty shall exist provided that:

- the Buyer exposes the product to normal use and service and provides normal maintenance on the product;
- Elgar is promptly notified of defects by the Buyer and that notification occurs within the warranty period;
- the Buyer receives a Return Material Authorization (RMA) number from Elgar's Repair Department prior to the return of the product to Elgar for repair, phone 800-73-ELGAR (800-733-5427), ext. 2295;
- the Buyer returns the defective product in the original, or equivalent, shipping container;
- if, upon examination of such product by Elgar it is disclosed that, in fact, a defect in materials and/or workmanship does exist, that the defect in the product was not caused by improper conditions, misuse, or negligence; and,
- that Elgar QA seal and nameplates have not been altered or removed and the equipment has not been repaired or modified by anyone other than Elgar authorized personnel.

This warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, implied warranties of merchantability and fitness of the product to a particular purpose. Elgar, its agents, or representatives shall in no circumstance be liable for any direct, indirect, special, penal, or consequential loss or damage of any nature resulting from the malfunction of the product. Remedies under this warranty are expressly limited to repair or replacement of the product.

CONDITIONS OF WARRANTY

- To return a defective product, contact an Elgar representative or the Elgar factory for an RMA number. Unauthorized returns will not be accepted and will be returned at the shipper's expense.
- For Elgar products found to be defective within thirty days of receipt by the original purchaser, Elgar will absorb all ground freight charges for the repair. Products found defective within the warranty period, but beyond the initial thirty-day period, should be returned prepaid to Elgar for repair. Elgar will repair the unit and return it by ground freight pre-paid.
- Normal warranty service is performed at Elgar during the weekday hours of 7:30 am to 4:30 pm Pacific time. Warranty repair work requested to be accomplished outside of normal working hours will be subject to Elgar non-warranty service rates.
- Warranty field service is available on an emergency basis. Travel expenses (travel time, per diem expense, and related air fare) are the responsibility of the Buyer. A Buyer purchase order is required by Elgar prior to scheduling.
- A returned product found, upon inspection by Elgar, to be in specification is subject to an inspection fee and applicable freight charges.
- Equipment purchased in the United States carries only a United States warranty for which repair must be accomplished at the Elgar factory.

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SECTION I
INTRODUCTION AND GENERAL DESCRIPTION

1-1. SCOPE OF MANUAL

This manual describes the Models 751A, 1001A, and 1751 Power Sources manufactured by Elgar Corporation. It provides operating, maintenance, and adjustment instructions; circuit descriptions; schematic diagrams; and parts lists.

1-2. INTRODUCTION

The Elgar Power Sources described in this manual provide AC power at precise frequencies for testing, motor operation, and frequency conversion. The basic power amplifier consists of two DC supplies and a direct coupled amplifier driving a tapped output transformer. Nominal output voltages of the three units are; 1001A, 0-65, 0-130, 0-260 VAC; 751A and 1751, 0-32, 0-130 and 0-260 VAC. Total available output power for the three units respectively is, 1000VA, 750VA and 1750VA at full rated output voltage. Output power at less than full rated voltage is derated as illustrated in Figure 1-1. Figure 1-2 illustrates a typical harmonic distortion curve. Input power for the Model 1751 is 115/200V three phase 47-63 Hz or 230V delta. The Models 1001A and 751A may be wired for either 115 or 230V input power, 47-63 Hz single phase.

Output power frequency is established by a plug-in oscillator. Output frequency range for these units is 45 Hz to 5 KHz. A variety of plug-in oscillators is available, with frequency accuracies up to .0001%.

These Elgar Power Sources facilitate equipment tests to meet military-specification operating requirements over the frequency range of 47 to 63 Hz or 47 to 425 Hz. The basic power source output is single phase, however, multi-phase power may be obtained by stacking two or three power sources, all driven by one multi-phase plug-in oscillator.

1-3. GENERAL DESCRIPTION

These Elgar Power Sources are contained in standard rack mount enclosures. A meter for output voltage monitoring, a power on indicator lamp, a voltage amplitude control and a power circuit breaker that applies line power to the unit are located on the front panel. Cooling air for the power amplifier is drawn through a front panel grill and exhausted at the rear of the enclosure.

The enclosure contains heatsink assemblies which comprise a two section power amplifier. Control circuitry is mounted on a plug-in circuit board with test points and adjustment controls available at the top of the board. Output power is available at a rear panel terminal block and at front-panel binding posts.

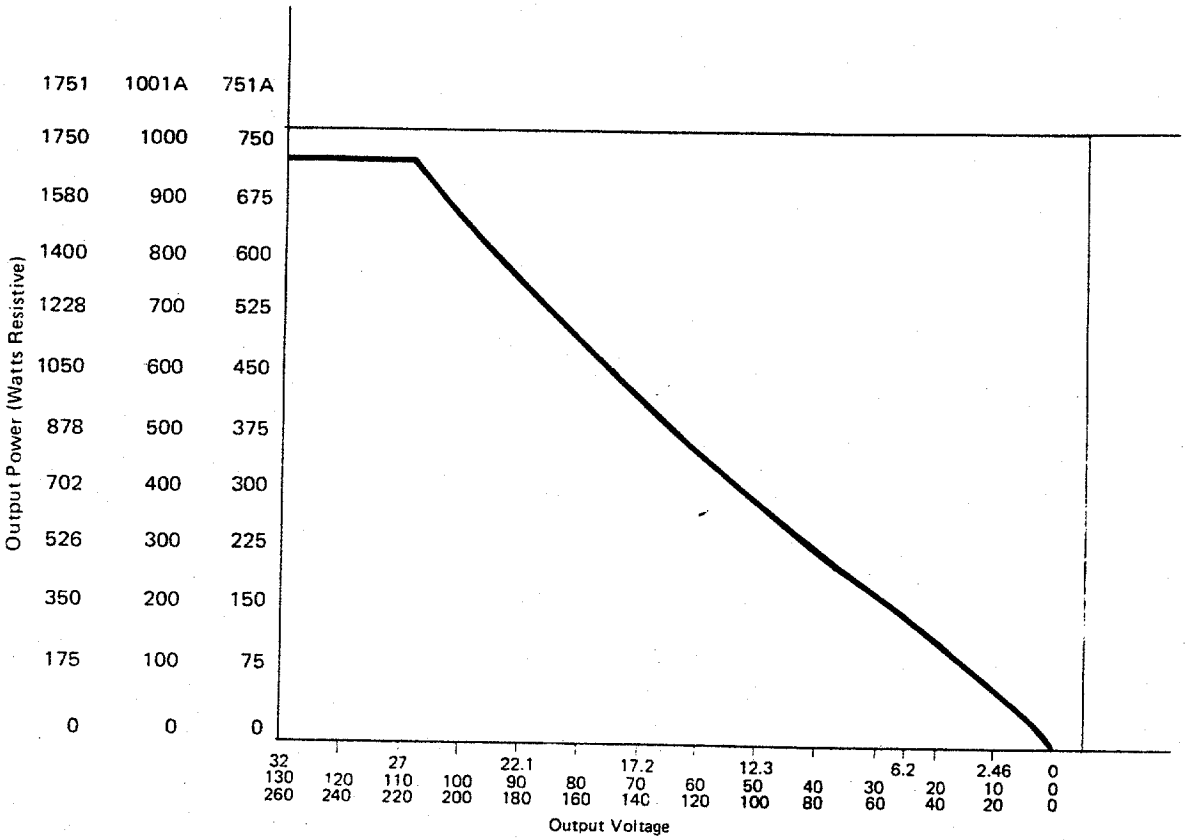


Figure 1-1. Power Output Derating

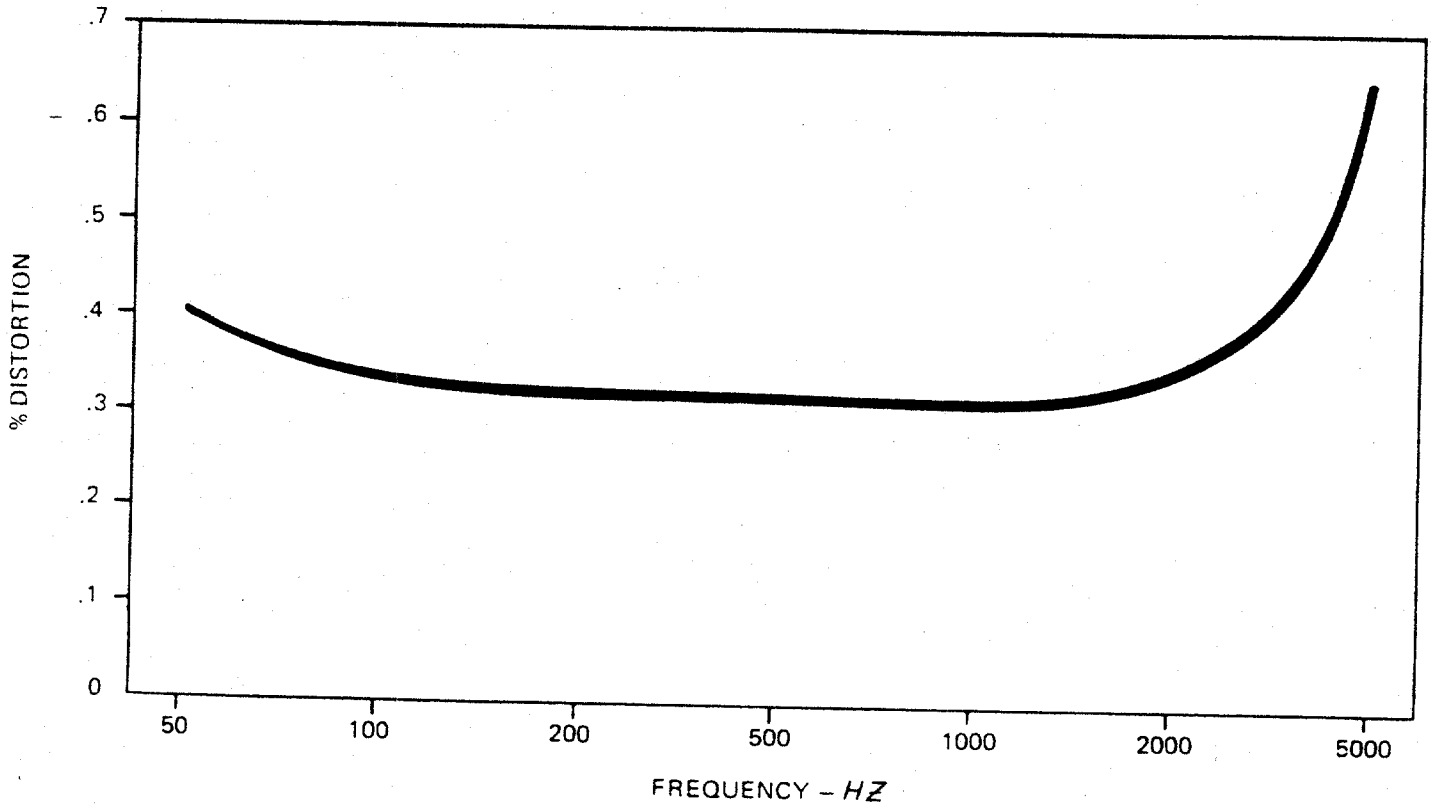


Figure 1-2. Typical Harmonic Distortion at Rated Power

SECTION II
SPECIFICATIONS

	751A	1001A	1751
Output Power	0-750VA	0-1000VA	0-1750VA
Power Factor		Unity to ±.7	
Output Voltage (adjustable)	0-32 0-130 0-260	0-65 0-130 0-260	0-32 0-130 0-260
Output Frequency Range		45 Hz – 5 KHz	
Output Distortion		Less than .9% 45 Hz – 5 KHz Less than .5% 100 Hz – 1 KHz	
Output Noise		70 Db below full output	
Load Regulation		±1%, No load to full load over frequency range, adjustable to zero for specific load and frequency	
Line Regulation		±.25% for 10% input line change	
Output Protection		Overload and short circuit protected, output recovers immediately when overload or short is removed.	
Input Power	One Phase, 115 or 230VAC. 47-63 Hz		3 phase, 230 L-L, L-N, 208-L-L
Temperature Range		0 – 50°C	
Dimensions	7" x 9" x 20" deep	12¼" x 19" x 20" deep	14" x 19" x 20" deep
Approximate Weights	120 lbs	190 lbs	225 lbs

SECTION III
OPERATION

3-1. INSPECTION

The Elgar Power Source has been aligned and tested prior to shipment. The instrument is therefore ready for immediate use upon receipt. The following checks should be made, however, to assure that the instrument has suffered no damage during shipment.

1. Inspect the shipping container before accepting it from the carrier. If damage to the container is evident, remove the instrument from the container and visually inspect for damage to the instrument parts.

2. If any damage to the instrument or container is evident, a description of the damage should be noted on the carrier's receipt, and signed by the driver or carrier agent. Save all shipping containers and filler material for inspection.

3. Forward a report of any damage to the Elgar Repair Department, 9250 Brown Deer Road, San Diego, CA 92121-2294 1-800-733-5427. Elgar will provide instructions for repair or replacement of the instrument.

3-2. INSTALLATION AND OPERATION

1. The Elgar Power Source is designed for installation in a standard electrical equipment rack. Install the power source so that the flow of cooling air into the front panel grill and out the rear panel grill is unobstructed.

2. Insert the plug-in oscillator.

3. Connect the load to the appropriate terminal of the rear panel power output terminal block (See Figure 3-1). For bench mounted applications, the front panel binding posts may be used for 115 or 230V output on all Models.

4. Connect an input power cord on the rear panel to an appropriate source of single phase power,* 751A and 1001A, three phase power for the 1751.

5. Turn front panel power switch on. The pilot lamp illuminates indicating power is applied to the unit.

6. Adjust front panel AMPLITUDE control for the desired output voltage as indicated on the front panel voltmeter.

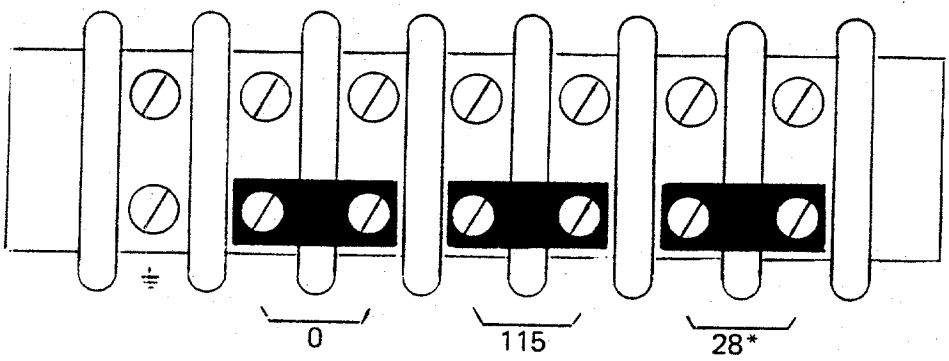
*See main schematic for 115V or 230V input connections

NOTE

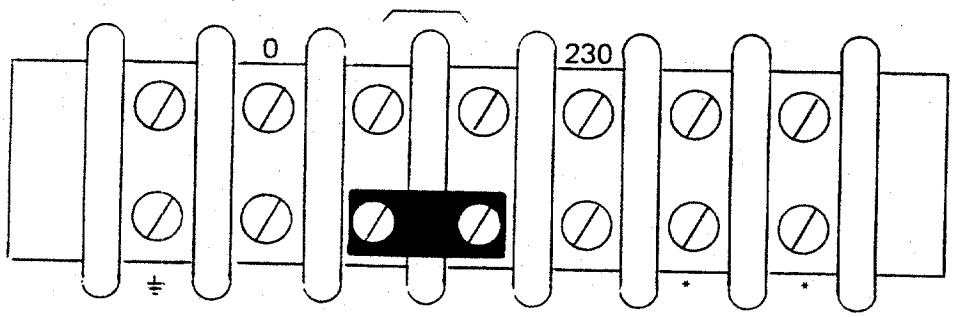
Certain Elgar plug-in oscillators do not require the use of the front panel AMPLITUDE control. Others are remotely programmed. Consult the oscillator instruction manual.

The front panel voltmeter is connected across a 0-130 VAC winding of the output transformer. For the 0-260 VAC connection, the meter indicates one half of the output voltage. When using the 0-30 VAC output connection; 28V corresponds to a reading of approximately 115V on the front panel meter.

The output of these units is floating with respect to ground. They may be operated in this mode, or with either output terminal grounded. In either case, the low side of the output should not be operated off ground in excess of 300V.



PARALLEL JUMPER CONNECTIONS FOR 0, 28, and 115 VAC OPERATION



SERIES JUMPER CONNECTIONS FOR 230 VAC OPERATION

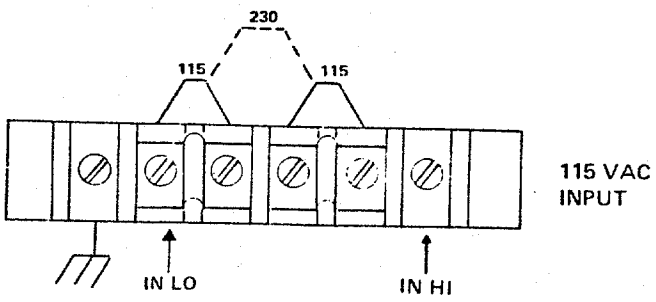
* THESE CONNECTIONS NOT ON 1001A, SEE PAGE 4-4

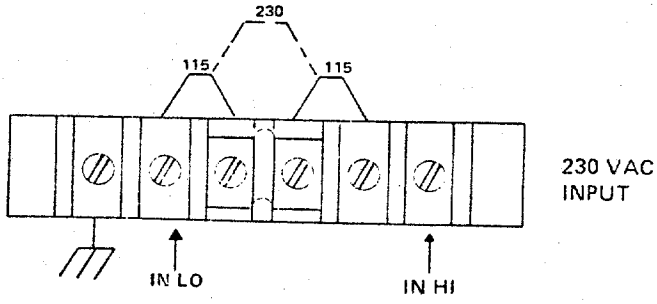
Figure 3-1. Rear Panel Terminal Strip Connections

INPUT POWER RECONNECTIONS

A. To reconnect 751A for other input voltages — 115 or 230 ACV single phase available.

Model 751A has input reconnection available on the rear of the unit. (See Schematic.)





B. To reconnect 1001A for other input voltages — 115, 208, 230 ACV single phase available.

Model 1001A has input reconnection available inside the unit. (See Schematic.)

Remove top cover (refer to Figure 5-1) for location of TB2, the reconnection point. Rejumper per chart on schematic.

C. To reconnect Model 1751 for other input voltages (115V L-L, 115V L-N, 230V L-L and 230V L-N three phase available.)

Model 1751 has input reconnection available inside the unit. (See Schematic.)

Remove top cover (refer to Figure 5-2) for location of TB1, the reconnection point. Facing the left side of the unit, TB1 is designated 1 through 12, right to left. Rejumper per chart on schematic.

Figure 3-2. Input Power Reconnections

SECTION IV
THEORY OF OPERATION

4-1. CIRCUIT DESCRIPTION

The input signal, approximately 3V RMS is normally supplied by an Elgar plug-in oscillator, however an external signal source may be used. For most oscillators, the input signal amplitude to the amplifier is controlled by front panel amplitude control R1. The oscillator signal is applied to the first amplifier stage consisting of differential amplifier Q101 and Q102. The differential amplifier receives feedback from the output amplifier thereby maintaining approximately zero DC offset to the output transformer. The emitter currents are supplied by R106 from the +12V supply, regulated by CR101. The output of Q102 provides base drive for Q103, operating as a class A amplifier. Q103 supplies base drive for common emitter driver Q107 and emitter follower Q106. Diodes CR102-CR104 provide a small amount of forward bias to the output amplifier to minimize crossover distortion. Q106 and Q107 are drivers for emitter followers Q1 and Q2. These devices are located in the wind tunnel to provide the necessary cooling.

The power amplifier consists of a number of power transistors mounted on heatsink assemblies in the wind tunnel. The .22 ohm resistors in the emitter of each device are to ensure equal current sharing. The preamplifier and output stage are operated from nominal plus and minus 42 VDC supplies. Thermal switch S1 shown on heatsink No. 1 removes drive signal from the power amplifier in the event the amplifier overheats from excessive load or restricted airflow through the wind tunnel.

The power amplifier is also protected against overloads or short circuits on the output by current limit transistors Q104 and Q105. The current in the upper half of the power amplifier is sampled across R201 and applied to upper current limit adjustment potentiometer R126. The current signal is then applied to the base of Q104 through resistor R118. When the current signal at the base of Q104 reaches Q104's conduction threshold (approximately 0.6V), drive signal is diverted from Q106, preventing a further increase in output current delivered by the upper half of the power amplifier. Simultaneously the current in the lower half of the power amplifier is sampled across R7 and applied to the lower current limit adjustment potentiometer. This signal is then applied to the base of Q105 through resistor R119. When the current signal at the base of Q105 reaches Q105's conduction threshold, drive signal is diverted from the base of Q107, preventing a further increase in output current of the lower half of the power amplifier.

The amplifier output (TP-2) is connected to output transformer T2, which steps up the amplifier voltage (approximately 20V RMS) to the required output level. Negative AC feedback is taken from the amplifier output to the base of Q101 through resistor R109. Capacitor C105 across R109 helps stabilize the amplifier against high frequency instabilities.

Output load regulation is accomplished by passing the wire from the amplifier output through current transformer T3 to the output transformer. As load

is applied to the output of the unit a positive feedback signal is developed at the secondary of T3 and applied across shunt resistor R125 and regulation adjustment potentiometer R124. This signal is then applied to the input of the differential amplifier through R103. Capacitor C102 and resistor R102 comprise a boost network to increase the positive feedback at the higher output frequency ranges to maintain regulation.

4-2. POWER SUPPLIES

Plus and minus 42V DC for the amplifier is developed by full wave bridge rectification at the secondary of T1. Filter capacitors and supply bleeder resistors are connected across the output of the bridge.

4-3. INTERCONNECTIONS FOR MULTIPHASE OPERATION

Two or three power sources may be interconnected to generate two or three phase AC power. Two or three phase signals are developed by a multiphase oscillator installed in the A phase power amplifier. Signals from the oscillator are routed to the B phase and/or C phase power amplifiers through a signal interconnect cable. These signals are then applied to the front panel amplitude control on each amplifier by the signal routing plug-in which must be installed in the unit(s). Upon initial calibration of the system the voltage of the A phase unit is adjusted to some value (i.e.) 115 VAC. The other phase amplifier(s) output voltages is then adjusted by means of their front panel amplitude controls to equal the output voltage of A phase. After this initial calibration has been accomplished, the voltage control on the A phase amplifier is used to vary the output voltage of all phases simultaneously and equally.

Two phase operation requires two power sources. Three phase operation may be accomplished with three power sources, two power sources in open delta configuration, or two power sources in phantom wye configuration. Refer to Figure 4-1 for output interconnect information for the various systems.

OUTPUT CONFIGURATION FOR MODELS 751A & 1751

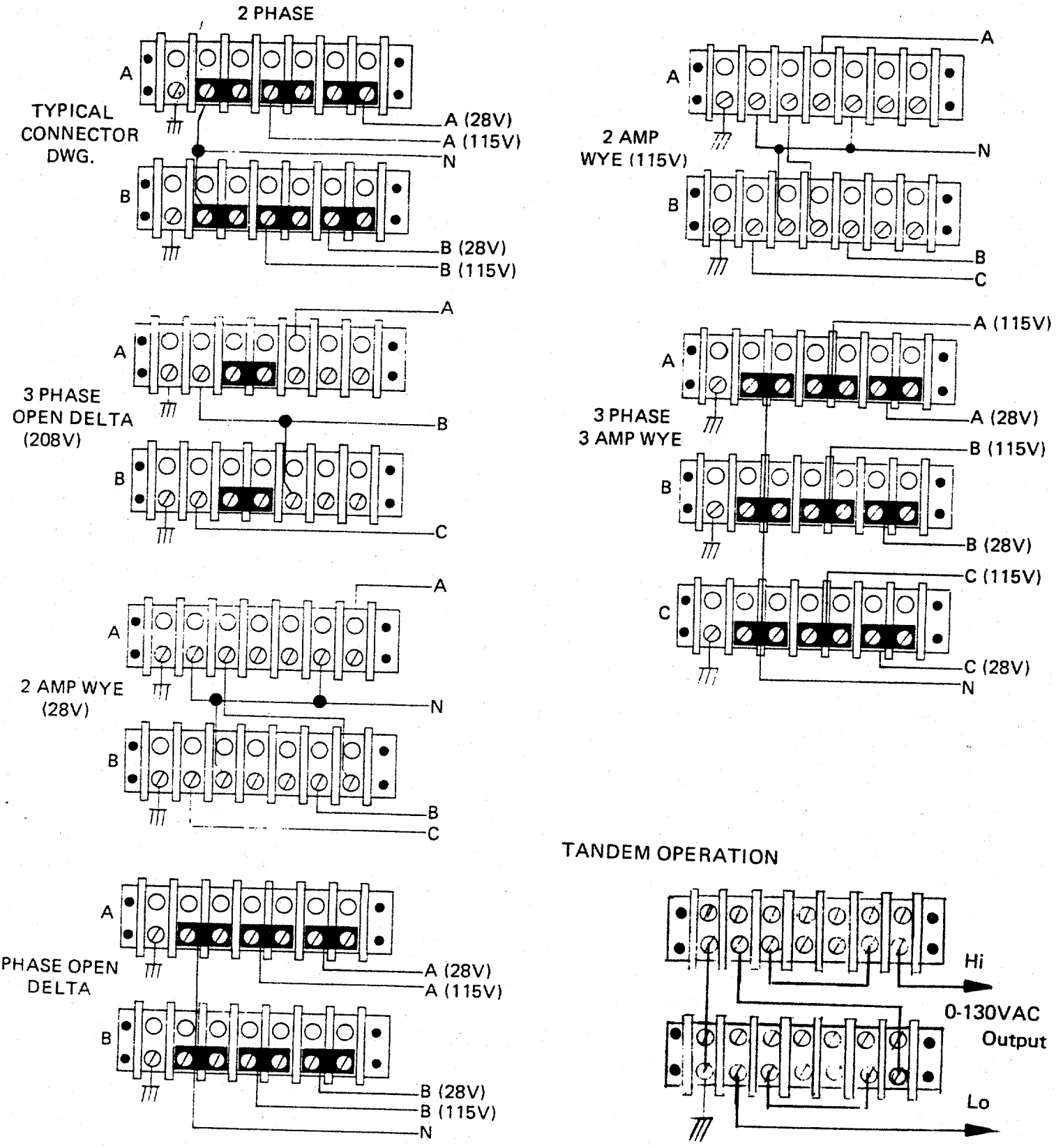
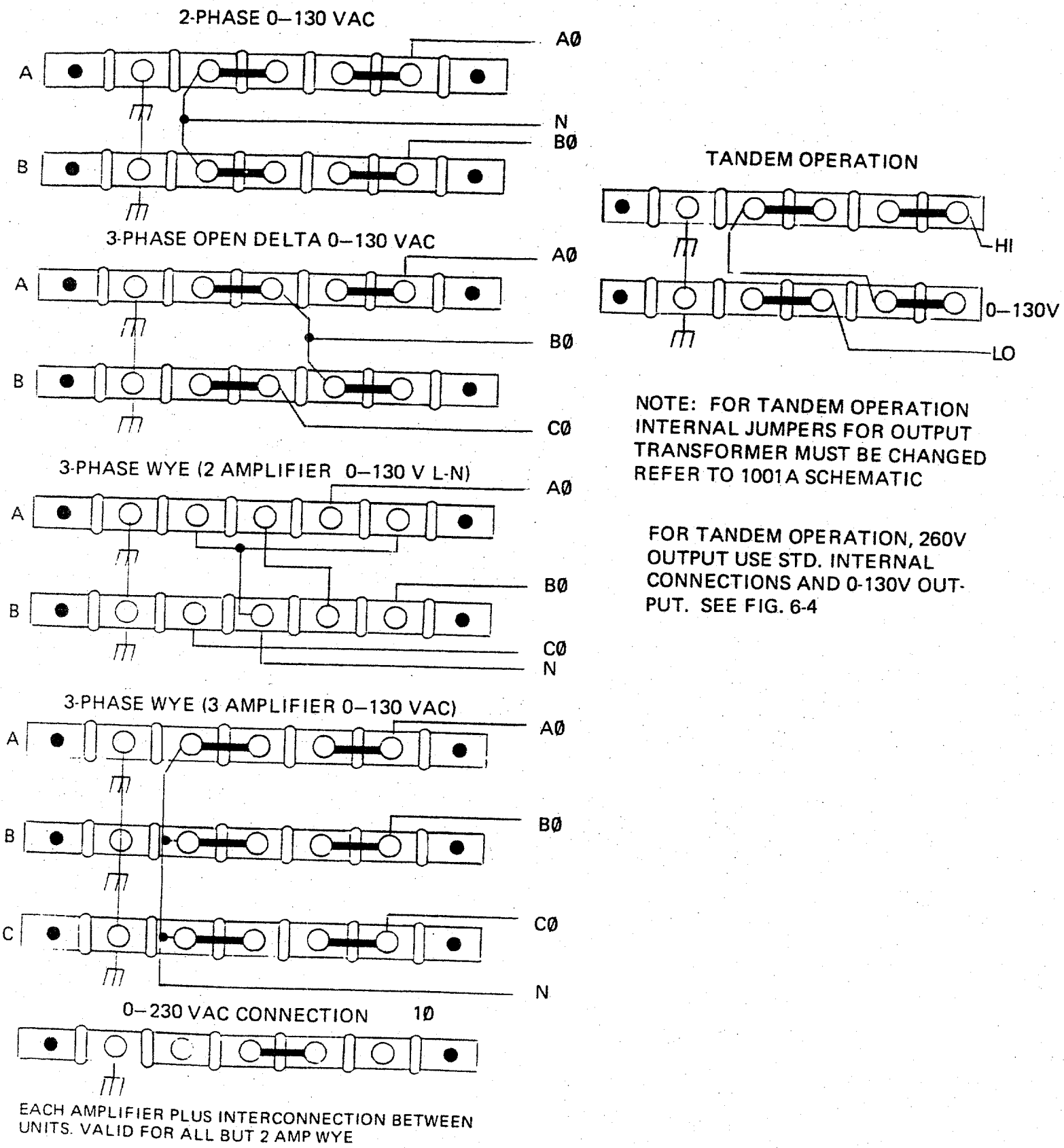


Figure 4-1. Interconnections for Multiphase Operation

OUTPUT CONFIGURATIONS FOR MODEL 1001A



EACH AMPLIFIER PLUS INTERCONNECTION BETWEEN UNITS. VALID FOR ALL BUT 2 AMP WYE

NOTE: FOR TANDEM OPERATION INTERNAL JUMPERS FOR OUTPUT TRANSFORMER MUST BE CHANGED REFER TO 1001A SCHEMATIC

FOR TANDEM OPERATION, 260V OUTPUT USE STD. INTERNAL CONNECTIONS AND 0-130V OUTPUT. SEE FIG. 6-4

Figure 4-1. Interconnections for Multiphase Operation

4-3. Continued

In the open delta configuration two power amplifiers of equal VA rating are driven by a standard three phase oscillator having 120° phase angle between ØA, ØB and ØC. An open delta requires that the two amplifiers have a 60° phase angle between them and this is accomplished by inverting the second amplifier.

In these systems the amplifier containing the plug-in oscillator is referred to as the master or A phase source. The second amplifier is referred to as the slave or B phase source.

The open delta hook-up shown in Figure 4-1 page 4-3 is shown below as a vector diagram in Figure 4-2.

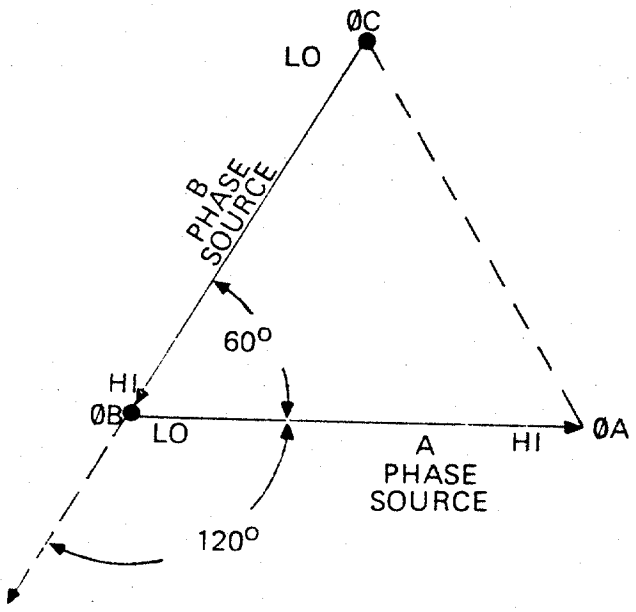


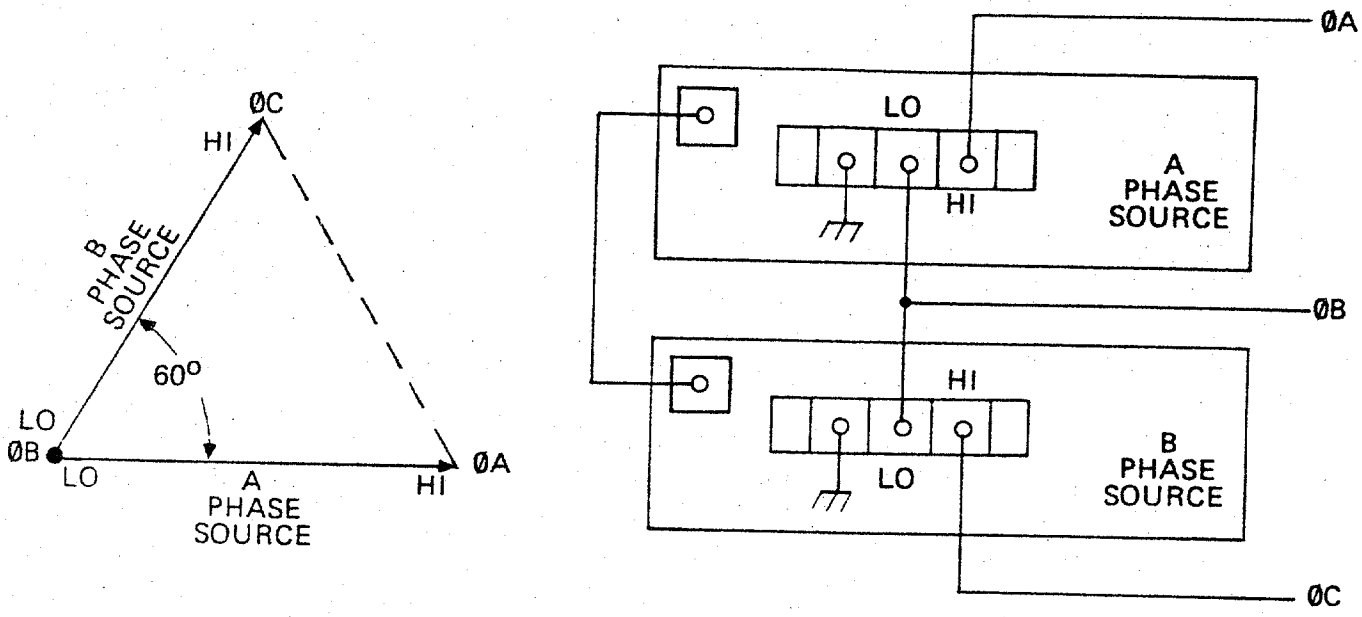
Figure 4-2

4-3. Continued

Certain specialized oscillators such as the Super-Stable (SS) series and the Quasi-Square wave series are designed only for open delta configurations using two amplifiers and have the phase angle between the ØA and ØB drive signals at 60°.

When using the SS series or quasi-square wave systems the inter-connections would be per Figure 4-3.

QUASI-SQUARE WAVE SUCH AS 443-1-111



SUPER STABLE SUCH AS 443-.01SS

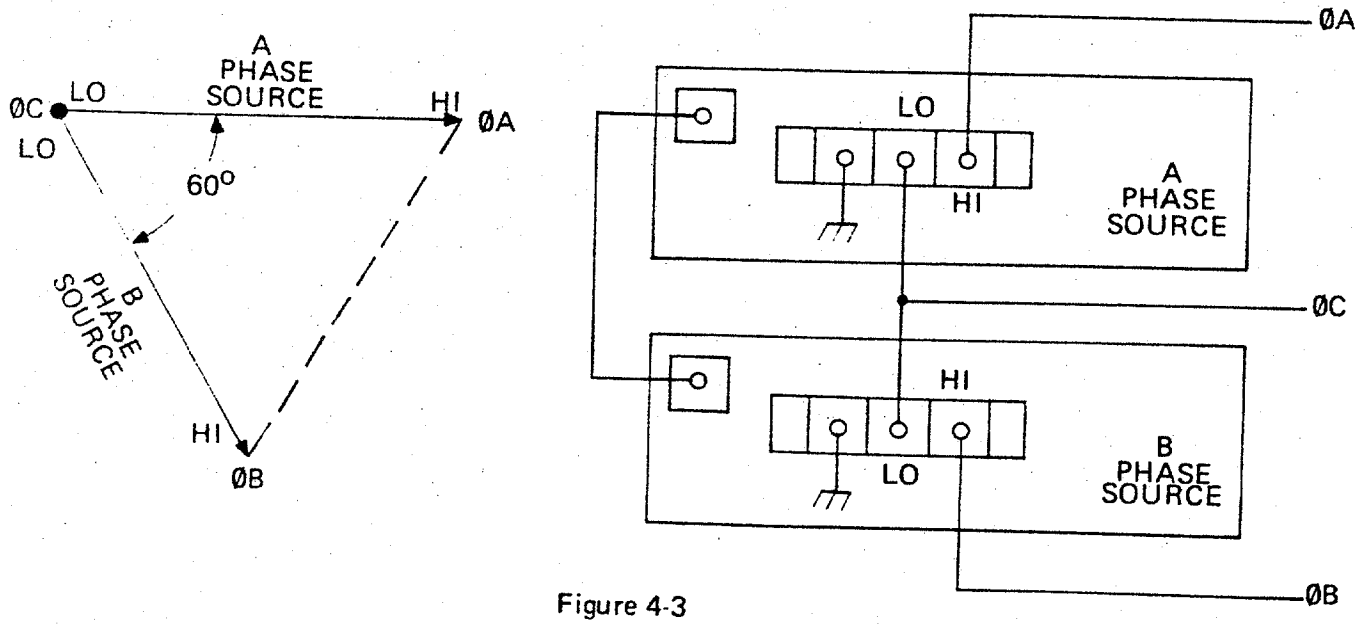


Figure 4-3

SECTION V
MAINTENANCE AND ADJUSTMENT

5-1. SERVICE INFORMATION

Questions concerning the operation or repair of this instrument should be directed to the Elgar Repair Department, 9250 Brown Deer Road, San Diego, CA 92121-2294. Include the model number and serial number in any correspondence concerning this instrument.

5-2. FACTORY REPAIR

Should it be necessary to return an instrument to the factory for repair, please contact the Elgar Corporation Service Department for authorization to make shipment. DO NOT return the unit without authorization.

5-3. TEST POINTS

Test points and adjustment controls are conveniently provided at the top of the amplifier circuit board, accessible by removing the top cover of the instrument (see Figure 5-1). The test points are as follows:

TP1 – Circuit common – Turret terminal
TP2 – Amplifier output – Red
TP3 – Oscillator signal – Orange

5-4. OUTPUT REGULATION ADJUSTMENT

The regulation adjustment, R124, is set at the factory to give ±1% load regulation over the full frequency range of the power source. The regulation may require re-adjustment if the load is highly reactive or if zero regulation is desired for a specific load and frequency. To make this adjustment, disconnect the load and read the output voltage. Connect the load and adjust R124 until the same reading is obtained.

NOTE

If the load is heavy enough to cause current limit transistors Q104 and Q105 to conduct, the output voltage will be reduced, giving an indication of poor load regulation. Load voltage fall-off due to current limiting action should not be compensated by the regulation adjustment.

5-5. CURRENT LIMIT ADJUSTMENT

The current limits have been preset at the factory such that the unit will deliver full rated power at rated output voltage. Re-adjustment of the limits should not be performed unless a malfunction has occurred in the unit, parts have been replaced and re-adjustment of the limits is indicated.

Current limit adjustment may be checked by observing the waveform at TP-2 with an oscilloscope.

(1) Set scope sensitivity to 10 v/cm.

(2) Turn unit on and adjust output for 110 VAC as indicated on the front panel meter.

(3) Connect 16.2 ohm load to output terminals of 751, 12.1 ohm on the 1001A, 8.1 ohm for the Model 1751.

(4) Adjust current limit pots CW until clipping is observed at TP-2. Adjust limit pots CCW until clipping just disappears.

5-6. PERIODIC MAINTENANCE

The only periodic maintenance required by the power source is occasional cleaning of the heat sinks. The heat sinks may be inspected through the front panel air grill. If enough dust and dirt have accumulated to restrict the air flow, an air jet should be directed through the front panel grill while the instrument is operating. If this does not dislodge the dirt, the heat sink must be removed to be cleaned.

5-7. TROUBLESHOOTING

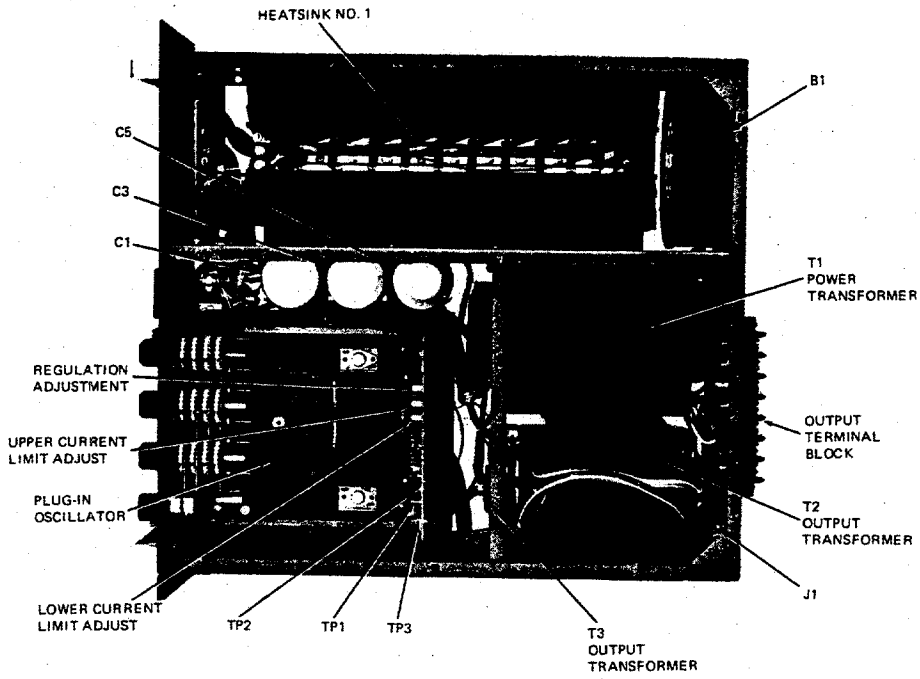
5-8. CIRCUIT BREAKER TRIPS. If the circuit breaker trips at no load, a fault in either the power transistors or power rectifiers is indicated. Unplug both heat sinks and try the circuit breaker. If it does not trip, look for a shorted power transistor, (power transistors can be tested with an ohmmeter). If the circuit breaker still trips, look for a shorted rectifier bridge. If all diodes and filter capacitors are good, a fault in the power transformer or wiring harness is indicated.

5-9 OUTPUT DISTORTION. Output distortion may be caused by overloading. Check the load current waveform with an oscilloscope since some high crest factor loads may draw considerably more peak current than is indicated by a load ammeter.

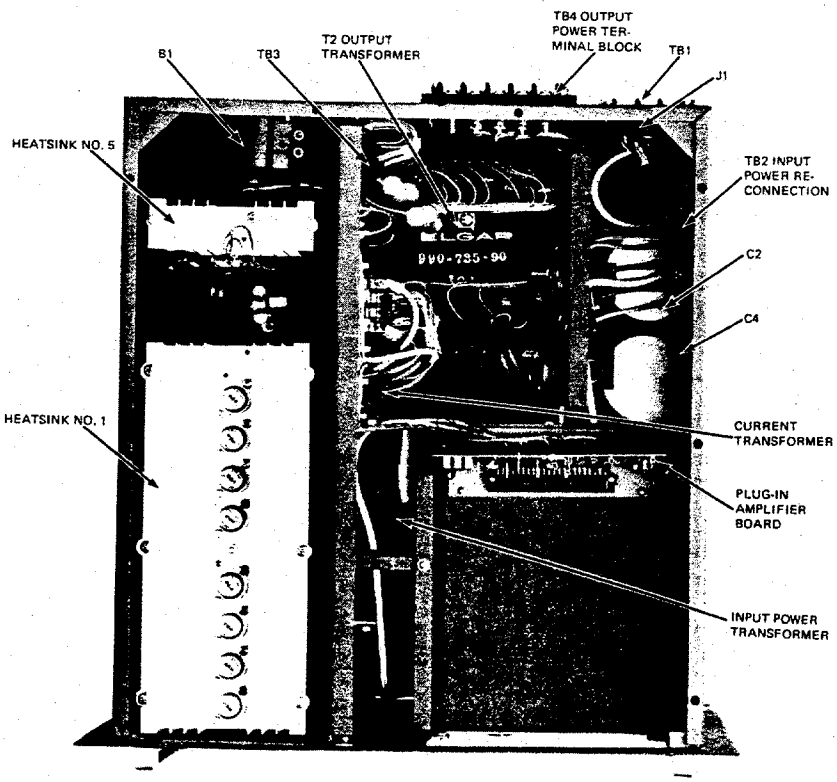
5-10. OVERHEATING. If overheating causes thermostat S1 to close, the output voltage will fall to zero. Overheating may be caused by restricted air flow or excessive environmental temperature (greater than 50°C).

TEST EQUIPMENT REQUIRED

Differential Voltmeter (Fluke Model 931AB)
Distortion Analyzer (Hewlett-Packard 333A)
Power Variac, capable of at least 30 amps
Oscilloscope (Tektronix)
AC Voltmeter (Weston 1240)
AC Ammeter (Weston 433)
Resistive Load (States Co. No. 33525)
Multimeter (Simpson 260)
Variable capacitive load
Variable inductive load
Capacitive substitution box
Resistive substitution box

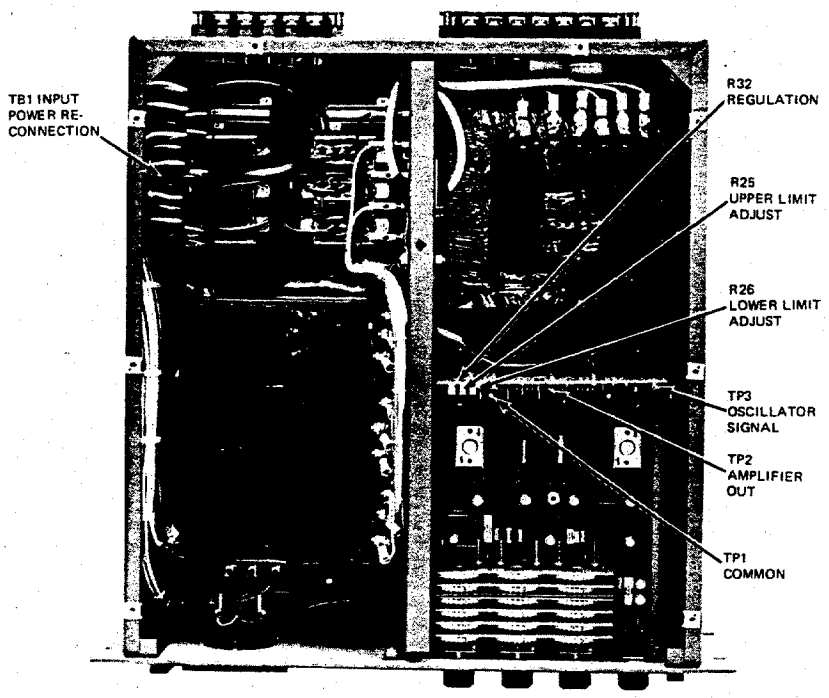


Model 751A Top View



Model 1001A Top View

Figure 5-1. Top View



Model 1751 Top View

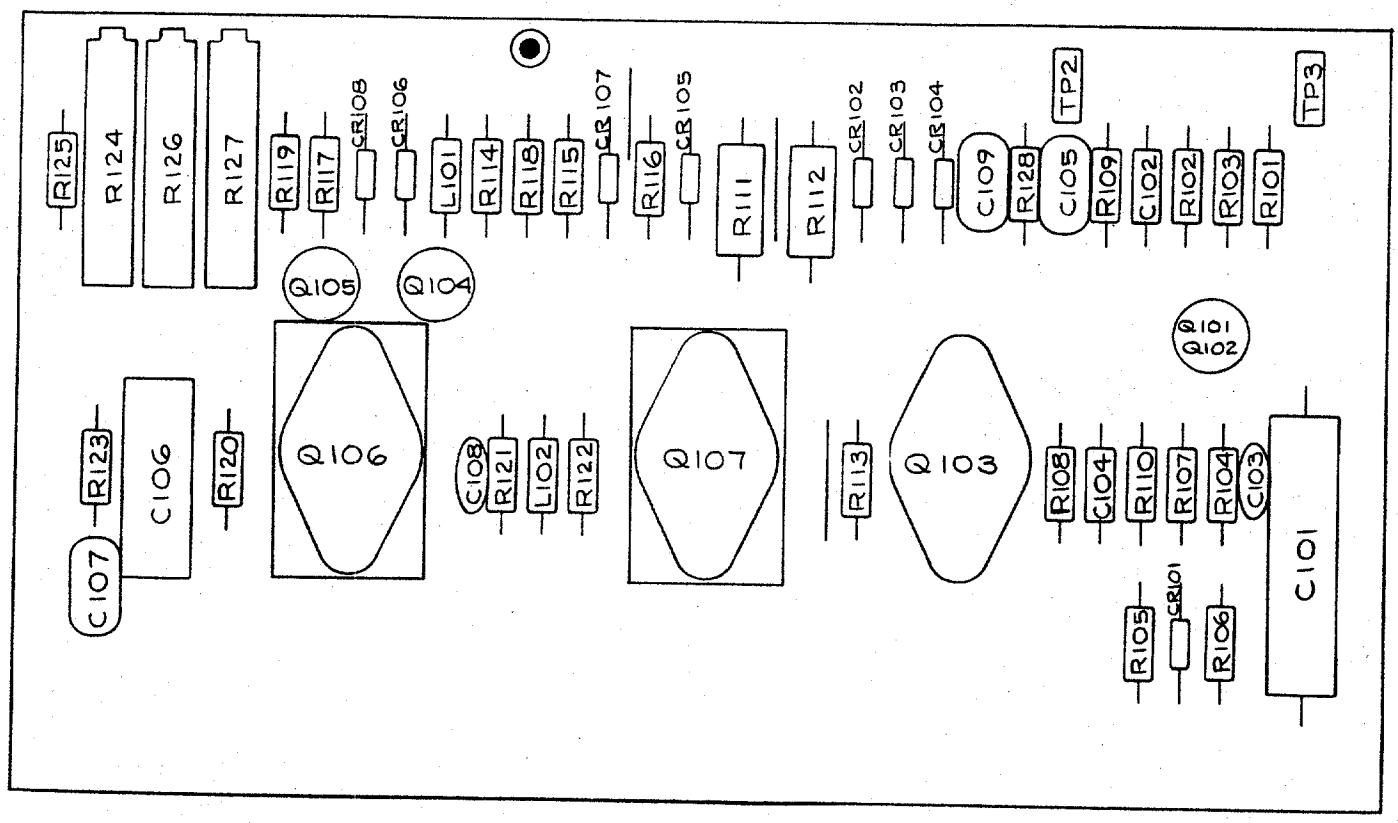


Figure 5-2. Circuit Board Layout

SECTION VI
PARTS LIST AND DIAGRAMS

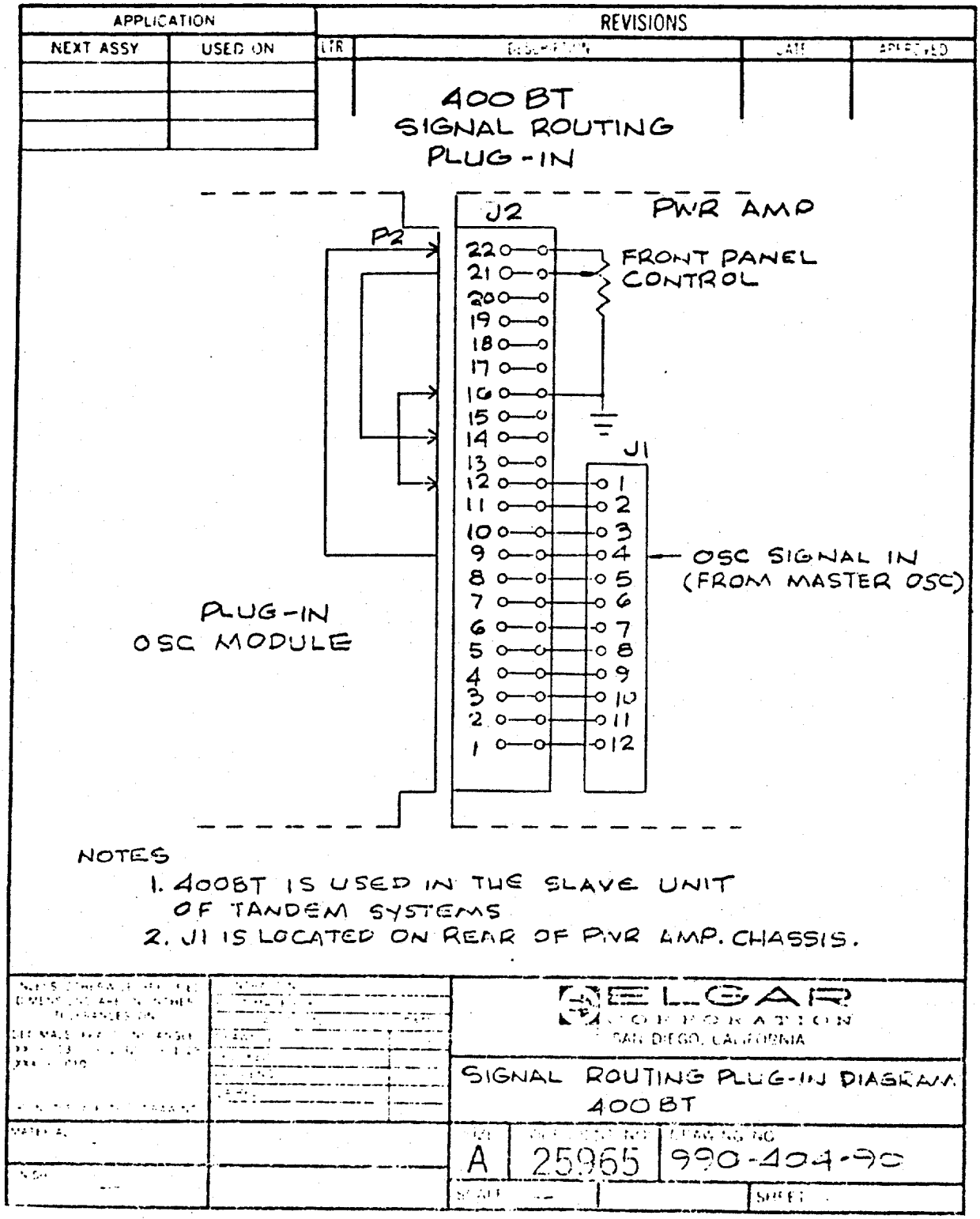


Figure 6-1. Typical Blank Panel Signal Routing Plug-Ins

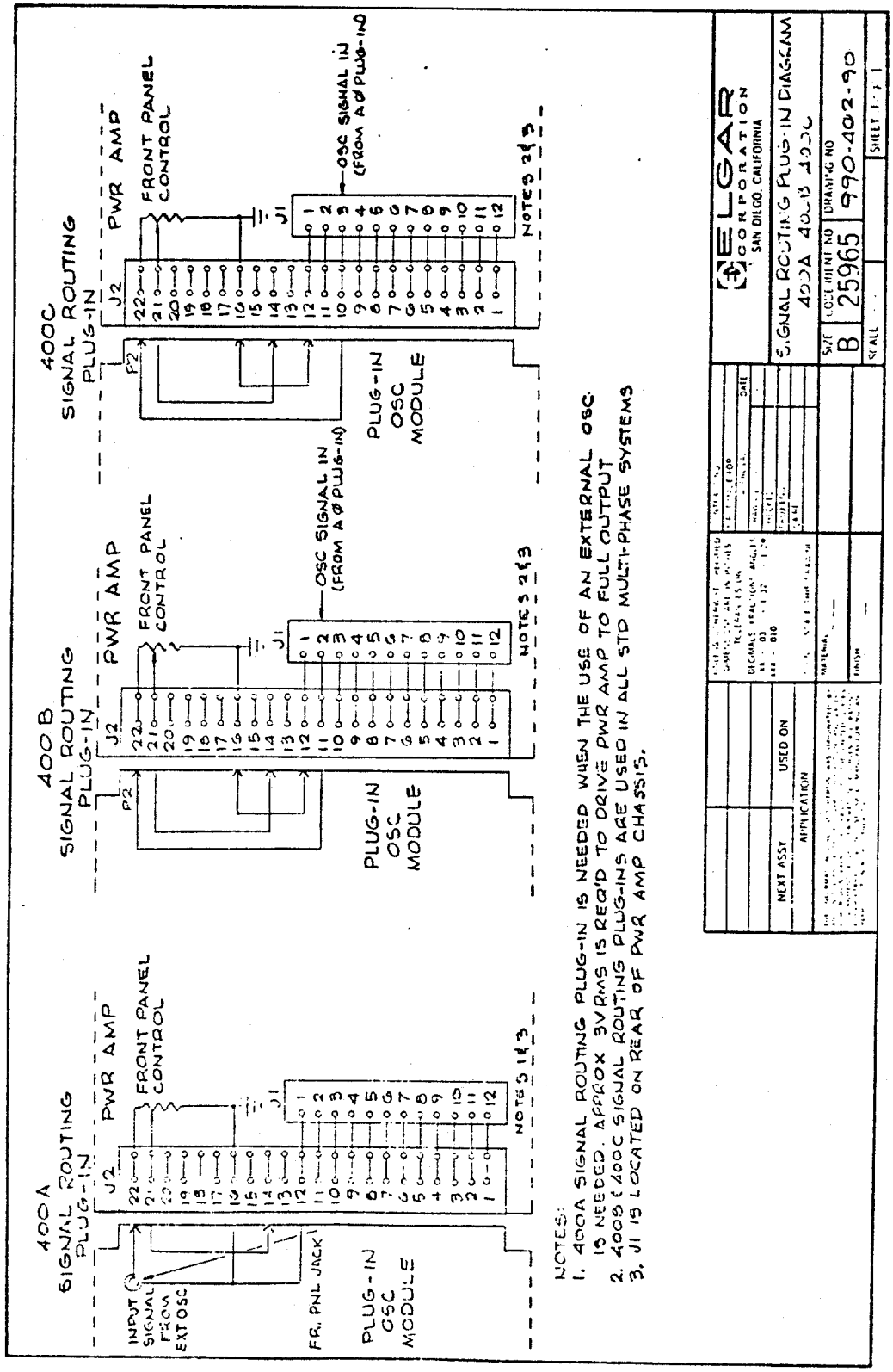


Figure 6-2. Typical Blank Panel Signal Routing Plug-Ins

AMPLIFIER BOARD 608-107-4X

SCHEMATIC DESIGNATION	VALUE	DESCRIPTION OR TYPE	RATING	MANUFACTURER		ELGAR PART NUMBER
				NAME	PART NUMBER	
C101	10 uF	Capacitor	200V	IMB	JA2A106K	822-106-10
C102,104	FSV					
C103	220 pF	Capacitor	500V	ARCO	DM15-221J	820-221-05
C105	200 pF	Capacitor	500V	ARCO	DM15-201J	820-201-05
C106	50 uF	Capacitor	50V	Sprague	500D506G050DD7	824-506-71
C107	220 uF	Capacitor	10V	Sprague	196D227X0010MA3	823-227-61
C108	.0022 uF	Capacitor	500V	Erie	811-000-X5F0-222K	821-222-00
C109	300 pF	Capacitor	500V	ARCO	DM15-301J	820-301-05
CR101		Zener	12V	Motorola	1N5242	843-524-2X
CR102-108		Rectifier	200V	Motorola	1N4003	845-400-3X
Q101,102		Diff. Amp.		National	2N3810	842-381-3X
Q103		Transistor		RCA	2N3583	839-358-3X
Q104		Transistor		Fairchild	2N3567	835-356-7X
Q105		Transistor		Fairchild	2N3638	834-363-8X
Q106		Transistor		Motorola	2N4912	839-491-2X
Q107		Transistor		Motorola	2N4900	838-490-0X
L101	150 uH	Choke		Nytronics	SWD150	851-150-01
L102	470 uH	Choke		Nytronics	SWD470	851-470-01
R101	3.32K	Resistor	1/8W, 1%	Dale	RN60C3321F	813-332-1F
R102,108,114	FSV	Resistor	½W, 5%			
R103	4.75K	Resistor	1/8W, 1%	Dale	RN60C4751F	813-475-1F
R104,123	4.7K	Resistor	½W, 5%	Speer	RC20GF472J	802-472-05
R105,106	6.2K	Resistor	½W, 5%	Speer	RC20GF622J	802-622-05
R107	1.2K	Resistor	½W, 5%	Speer	RC20GF122J	802-122-05
R109	33.2K	Resistor	1/8W, 1%	Dale	RN60C3322F	813-332-2F
R110,115,117	10K	Resistor	½W, 5%	Speer	RC20GF103J	802-103-05
R111,112	2.2K	Resistor	1W, 5%	Speer	RC32GF222J	803-222-05
R113,128	33 ohm	Resistor	½W, 5%	Speer	RC20GF330J	802-330-05
R116	1.8K	Resistor	½W, 5%	Speer	RC20GF182J	802-182-05
R118,119	68 ohm	Resistor	½W, 5%	Speer	RC20GF680J	802-680-05
R120,122	100 ohm	Resistor	½W, 5%	Speer	RC20GF101J	802-101-05
R121,125	15 ohm	Resistor	½W, 5%	Speer	RC20GF150J	802-150-05
R124	1K	Potentiometer		Bourns	3059Y	819-102-30
R126,127	10 ohm	Potentiometer		Bourns	3059Y	819-100-30

751A CHASSIS ASSEMBLY

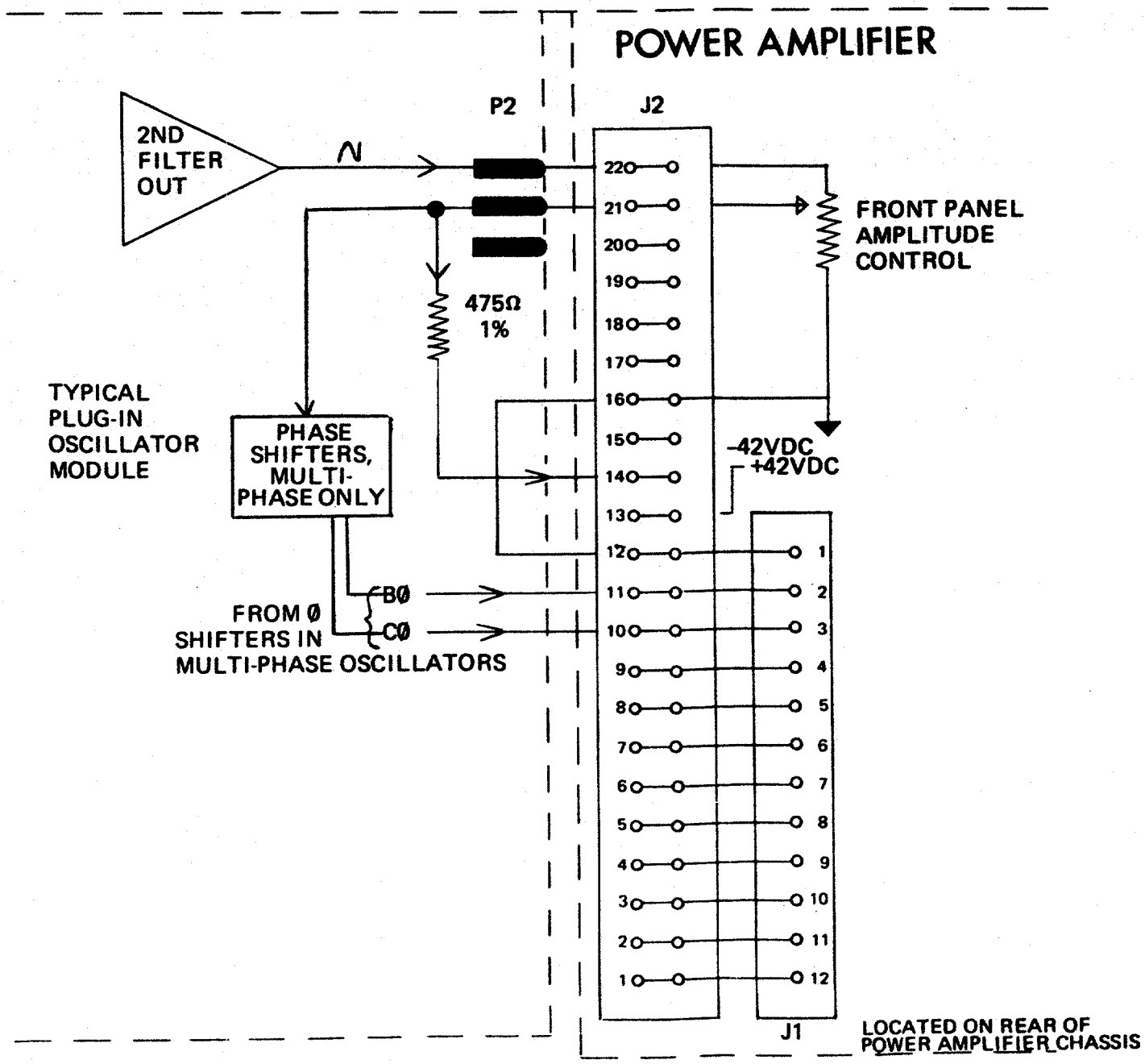
SCHEMATIC DESIGNATION	VALUE	DESCRIPTION OR TYPE	RATING	MANUFACTURER		ELGAR PART NUMBER
				NAME	PART NUMBER	
C1-6	23,200 uF	Capacitor	50V	G.E.	86F170M1	826-239-12
C7,8	.05 uF	Capacitor	600V	Sprague	6PS-S50	822-503-06
CR1-3		Diode		I.R.	70H20A	845-702-0A
CR2,4		Diode		I.R.	70HR20A	845-702-0R
CR5		Diode		I.R.	1N1186A	845-118-6A
CR6		Diode		I.R.	1N1186RA	845-118-6R
B1		Fan		Rotron		853-MA2-B4
DS1		Lamp		Eldema	BG02-RCS-AIC-68K	854-68K-22
M1	0-150V	Meter		Jewell	MS1T	857-150-1T
R1	10K	Potentiometer		Spectrol	534-9561-10	819-103-53
R2,3	1K	Resistor	10W, 5%	Dale	CW10-1K	808-102-05
R4	4.7 ohm	Resistor	½W, 5%	Speer	RC20GF4R7J	802-4R7-05
R5	.015 ohm	Resistor	50W, 5%	Dale	RH50	810-R02-05
CB1		Ckt. Breaker	25a	Airpax	UPL1-1-6-1-253	852-253-32
T1		Transformer		Elgar		990-159-90
T2		Transformer		Elgar		990-246-90
T3		Transformer		Elgar		990-137-90
		HEATSINKS				
C201,301	.015 uF	Capacitor	200V	Sprague	192P15392	822-153-05
Q201-211,301-311		Transistor		RCA	2N6259	822-153-05
R201,202,301,302	5.6 ohm	Resistor	5W, 5%	Dale	CW5-5.6	807-5R6-05
R203-212,303-312	.22 ohm	Resistor	5W, 5%	Dale	CW5-.22	807-R22-05
S101		Thermostat		Elmwood	2450-21-272	861-340-0X

1001A CHASSIS ASSEMBLY

SCHEMATIC DESIGNATION	VALUE	DESCRIPTION OR TYPE	RATING	MANUFACTURER		ELGAR PART NUMBER
				NAME	PART NUMBER	
B1,2		Fan		Rotron		853-MA2-B4
C1-4	22,000 uF	Capacitor	50V	Sprague	36D223G050DCZA	826-239-12
C5-10	.05 uF	Capacitor	600V	Spragеu	6PS-S50	822-503-06
CB1		Ckt. Breaker	50A	Airpax	UPL1-1-6-1-503	852-503-52
CR1,3		Diode		I.R.	70H20A	845-702-0A
CR2,4		Diode		I.R.	70HR20A	845-702-0R
DS1		Lamp		Eldema	BG02-RCS-AIC-68K	854-68K-22
M1		Meter		Jewell	MS2T	857-150-2T
Q1,2		Transistor		RCA	2N4348	851-434-8X
R1	10K	Potentiometer		Spectrol	534-9561-10	819-103-53
R2,3	1K	Resistor	10W, 5%	Dale	CW10-1K	808-102-05
R4	4.7 ohm	Resistor	½W, 5%	Speer	RC20GF4R7J	802-4R7-05
R5,6	5.6 ohm	Resistor	5W, 5%	Dale	CW5-5.6	807-5R6-05
R7	.025 ohm	Resistor	50W, 5%	Dale	RH50	810-R02-05
T1		Pwr. Xfmr		Elgar		990-070-90
T2		Output Xfmr.		Elgar		990-407-90
T3		Current Xfmr.		Elgar		990-191-90
C12	.22 uF	Capacitor	600V	Sprague	6PS-P22	822-224-06
		HEATSINKS				
CR201,301,401,501		Diode		Westinghse.	368D	845-368-DX
Q201-208,301-308, 401-408,501-508		Transistor		RCA	2N4348	841-434-8X
R201-208,301-308, 401-408,501-508	.22 ohm	Resistor	5W, 5%	Dale	CW5-.22	807-R22-05
S101		Thermostat		Elmwood	2450-21-272	861-340-0X

1751 CHASSIS ASSEMBLY

SCHEMATIC DESIGNATION	VALUE	DESCRIPTION OR TYPE	RATING	MANUFACTURER		ELGAR PART NUMBER
				NAME	PART NUMBER	
C1-4	20,000 uF	Capacitor	50V	C.B.	FAHM-203-50-B6	826-213-11
C5,6	.22 uF	Capacitor 6	600V	Sprague	6PS-P22	822-224-06
B1,2		Fan		Rotron		853-MA2-B4
CB1		Ckt. Breaker	15A	Airpax	UPG111-6-1-153	852-153-54
CR1-6		Diode		I.R.	1N1186A	845-118-6A
CR7-12		Diode		I.R.	1N1186AR	845-118-6R
DS1		Lamp		Eldema	BG02-RCS-AIC-68K	854-68K-22
M1		Meter		Jewell	MS2T	857-150-2T
R1	10K	Potentiometer		Spectrol	534-9561-10	819-103-53
R2,3	10K	Resistor	2W, 5%	Speer	RC42GF103J	804-103-05
R4,5	5.6 ohm	Resistor	5W, 5%	Dale	CW5	807-5R6-05
R6,7	.025 ohm	Resistor	50W, 5%	Dale	RH50	810-R02-05
R8	4.7 ohm	Resistor	½W, 5%	Speer	RC20GF4R7J	802-4R7-05
Q1,2		Transistor		RCA	2N6259	841-625-9X
T1		Power Xfmr		Elgar		990-497-90
T2		Output Xfmr		Elgar		990-244-90
T3		Current Xfmr		Elgar		990-137-90
		HEATSINKS				
CR201,301,401,501, 601,701		Diode		Westinghse.	368D	854-368-DX
Q201-208,301-308, 401-408,501-508, 601-608,701-708		Transistor		RCA	2N6259	841-625-9X
R201-208,301-308, 401-408,501-508, 601-608,701-708	.22 ohm	Resistor	5W, 5%	Dale	CW5	807-R22-05
S101		Thermostat		Elmwood	2450-21-272	861-340-0X



Typical Plug-in Oscillator Power Amplifier Interconnection

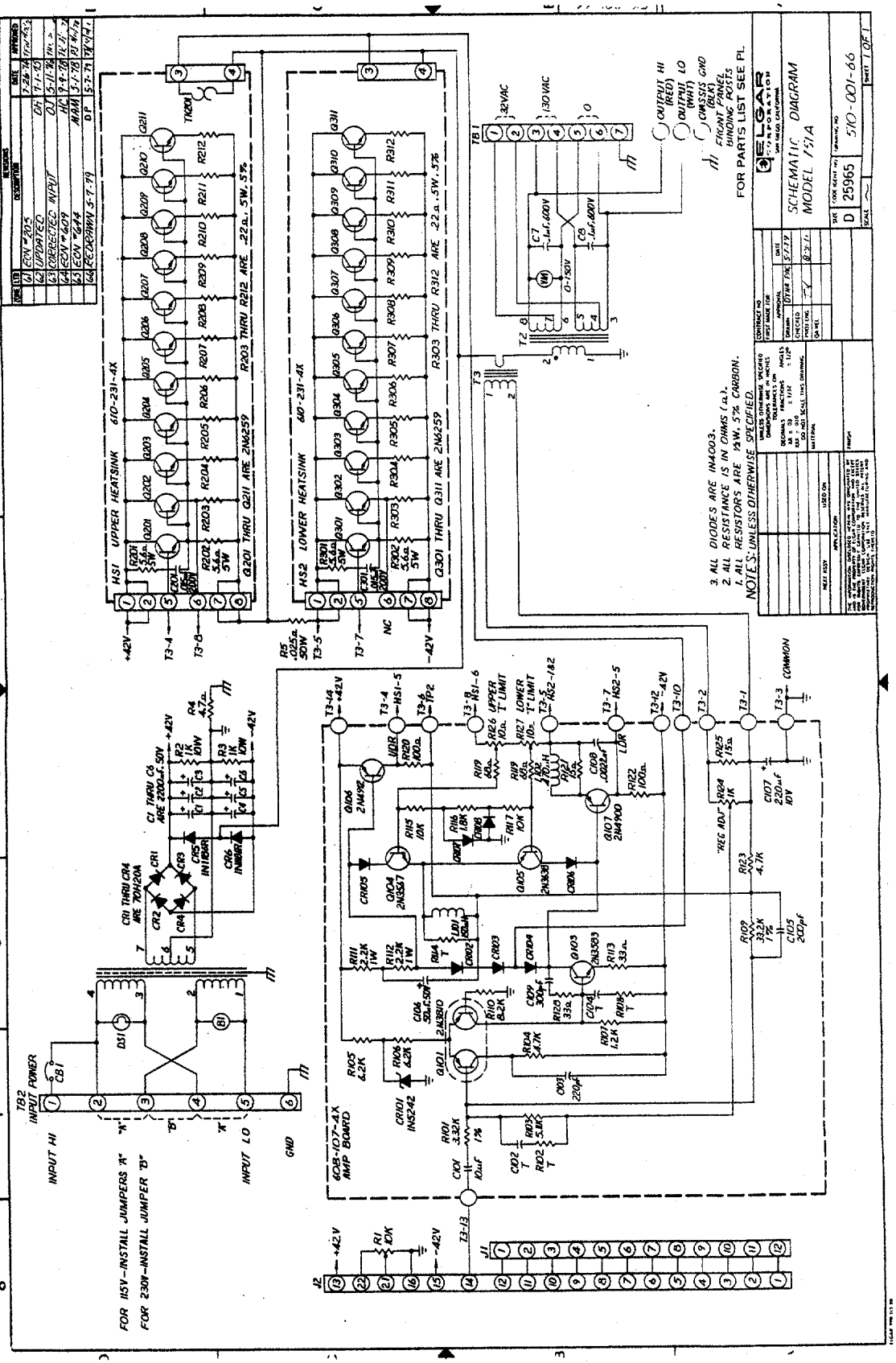


Figure 6-3. Schematic Diagram Model 751A

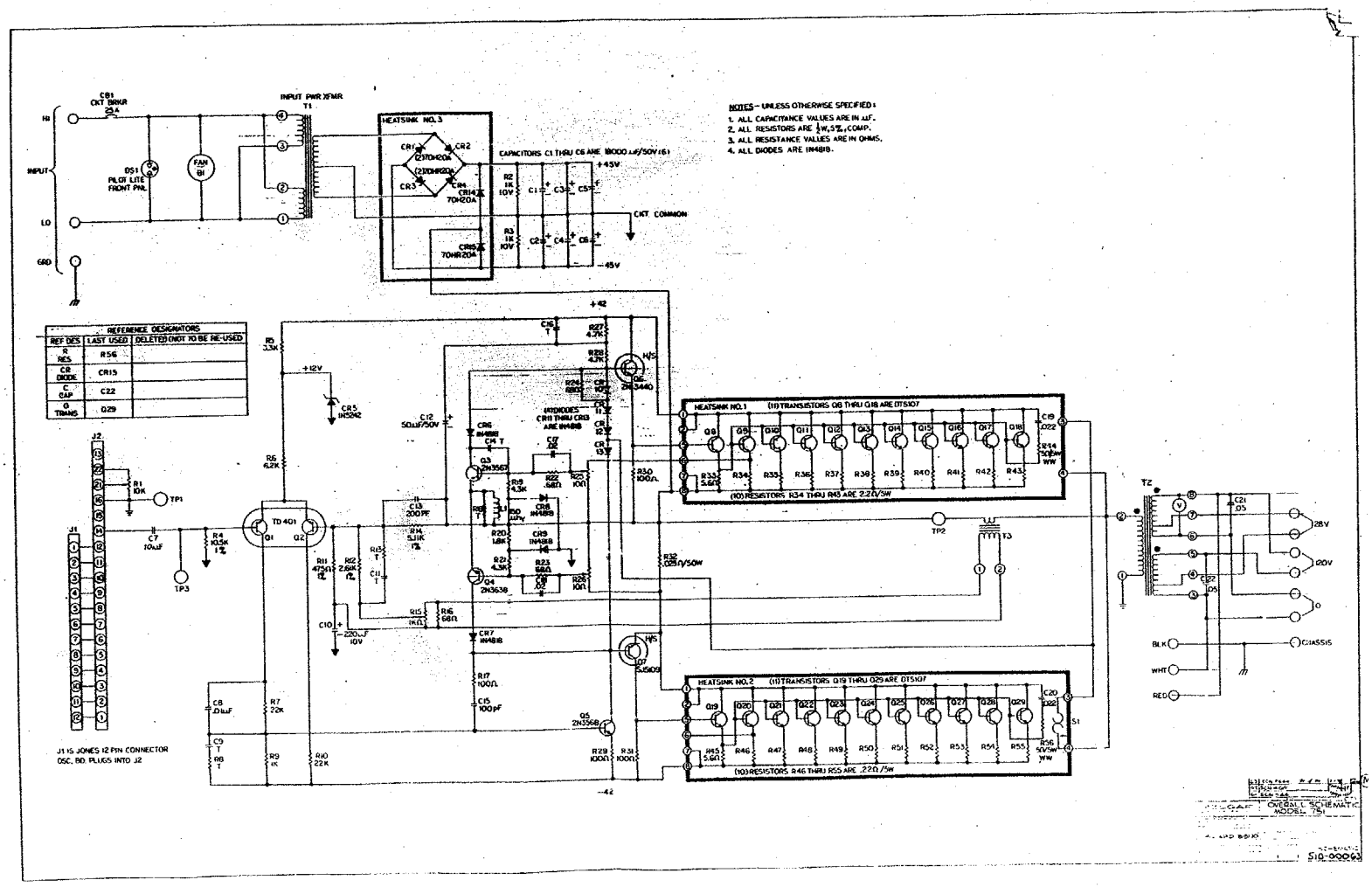


Figure 6-2. Schematic Diagram

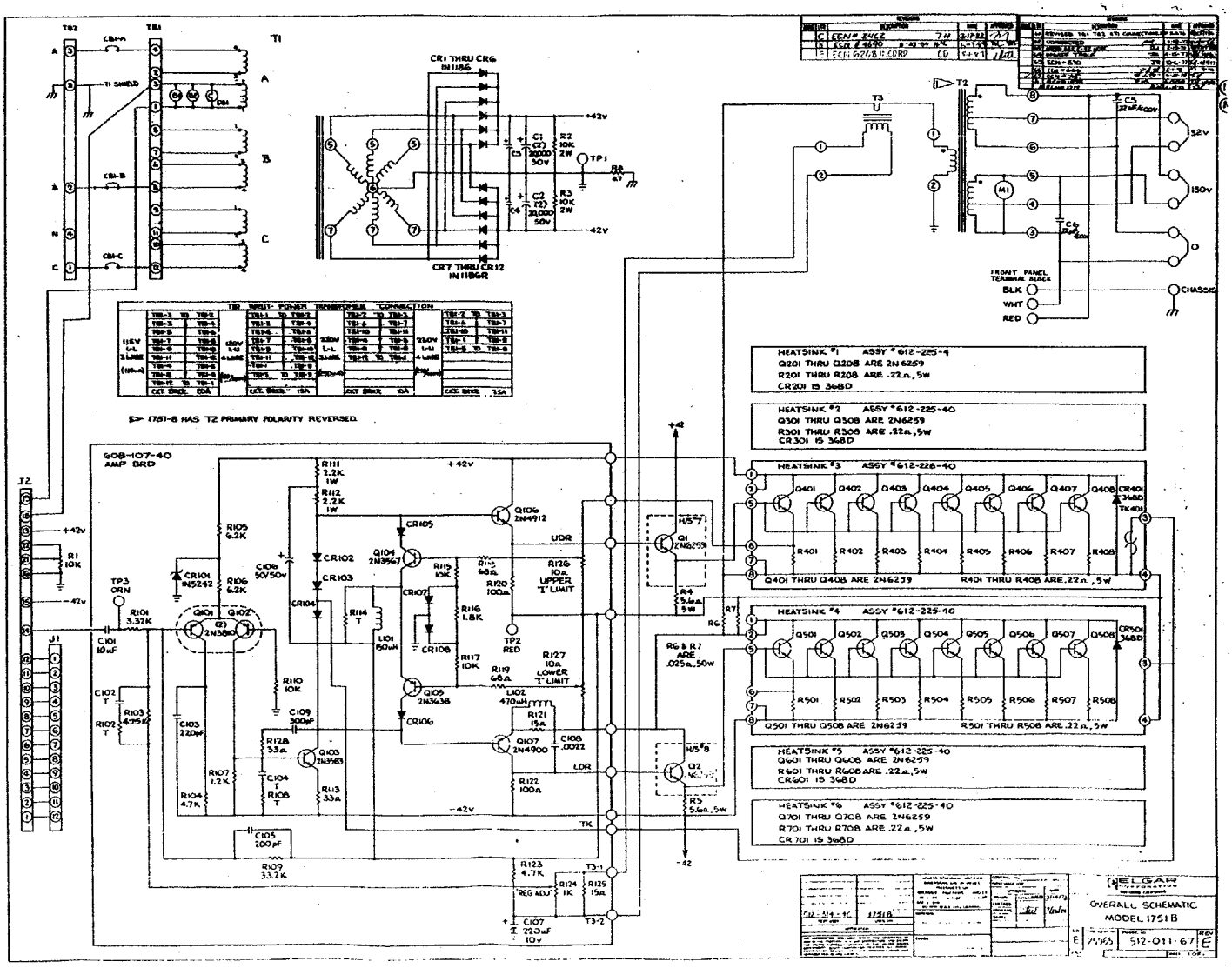


Figure 6-5. Schematic Diagram Model 1751