

INSTRUCTION MANUAL

XENON POWER SUPPLY

Type 61001

Rev. November 2001



STRONG INTERNATIONAL

a division of Ballantyne of Omaha, Inc.

4350 McKinley Street

Omaha, Nebraska 68112 USA

Tel 402/453-4444 • Fax 402/453-7238

NOTICE

This Instruction Manual is supplied by Strong International as reference material *only*, and contains many Part Numbers which are **obsolete**. No commitment to supply any or all of the parts illustrated in this Manual is implied by Strong International or its suppliers and/or dealers.

PREFACE

THIS STRONG POWER SUPPLY is a single phase, full wave silicon bridge type transformer power supply for use with the 1600-2000 watt xenon lamphouse.

THE POWER SUPPLY is designed to operate from a 208/230 (195-250) volt AC source, draws 27.5 amperes from a 208 volt line, and is rated for continuous duty. A stepdown transformer (T2) is provided to reduce the line voltage to 115 V.AC for the lamphouse and power supply control circuits. This transformer has a low voltage tap (H2, brown) that must be connected if the measured AC supply line voltage is below 220 volts. The AC supply line must be protected by a 30 ampere fuse or circuit breaker for 1600 watt, 75 ampere operation, and a 35 ampere fuse or circuit breaker for 2000 watt, 80 ampere operation. The AC supply line may be #10 AWG for 1600 watt operation and must be #8 AWG for 2000 watt operation.

TAPS on the primary side of the T1 transformer are provided to compensate for variations in the AC line input voltage. The rating on the taps are 190, 208 and 230 volts. The DC current to the bulb is adjustable by means of fine taps or a dial switch, position (1) being the lowest output. NOTE: the highest position on later-model dial switches is sometimes disconnected; see the INSTALLATION section of this manual for instructions. The DC output range is from 55-80 amperes at 22-28 volts.

THE POWER SUPPLY is equipped with a cooling fan to maintain a safe operating temperature. Thermal switches, located on the heat sinks, interrupt operation of the power supply and protect the silicon diodes if the temperature at either heat sink exceeds 190° Fahrenheit (88° Celsius)

A CHOKE and capacitors in the DC circuit reduce the ripple to a minimum, consistent with the requirements of xenon bulbs for a long life.

A NEON GLOW LAMP is connected across the AC supply to indicate when the AC circuit to the power supply and from the power supply to the lamphouse is energized.

CIRCUIT BREAKERS are installed in the AC control circuit to protect components in the event of a malfunction.

AN MS CONNECTOR is wired into the AC control and DC circuit on some models of this power supply. This permits direct connection to those lamphouses equipped with the mating connector. This model, generally supplied with follow spotlights, also includes a 12 foot long #10 AWG, three conductor cord with a 30 ampere, 230 volt twistlock cord cap for connection to an AC supply receptacle.

INSTALLATION - OPERATION

THE POWER SUPPLY equipped standard with an AC lead cord may be connected to any 30 ampere, three wire grounded 230 volt single phase outlet. This model includes an MS connector keyed for a similar connector wired to a lamphouse interconnect cable and is generally used in a follow spotlight application.

POWER SUPPLIES without the AC lead cord must be wired with #10 AWG and protected with a 30 ampere fuse or circuit breaker when used with the 1600 watt bulb, or #8 AWG with a 35 ampere fuse or circuit breaker when used with the 2000 watt bulb. Connect the AC input leads to positions L1 and L2 on the six terminal barrier strip TB4. Connect a ground wire to the terminal stud mounted to the power supply cabinet.

WITH EITHER SYSTEM the AC supply line should be switched between the AC source and the power supply to permit turning the unit on or off. The switch must be in a location easily accessible by the equipment operator.

THE POWER SUPPLY has coarse AC line taps on the primary side of the T1 transformer. The power supply is shipped connected for a 208-230 volt line and 1600 watt operation unless the equipment order specifies another line voltage and bulb wattage. Lead T2 from the line contactor K1 should be connected to the primary tap (190, 208 or 230) nearest the **measured** line voltage and relative to the desired output wattage (1600 or 2000 watts.)

THE STEPDOWN TRANSFORMER T2 has a brown low voltage tap lead (190-220 volts). If the measured line voltage is 220 or lower, the blue lead on terminal L2 must be interchanged with the brown lead. DO NOT reposition the black tap lead on terminal L1.

ON MOST MODELS of this power supply, three taps on the secondary side of the T1 transformer (X1, X2, X3) are provided for operation of the 1600 watt and 2000 watt bulbs through their current range, with varying input voltages. Taps X1 and X2 are connected to the two-terminal barrier strip at the top of the unit. Tap X3 is not connected, but is folded back and taped. If use of this tap is required, remove X2 from the barrier strip, tape it off to prevent short circuits, and connect X3 to the vacated barrier strip terminal. Lead #55 from the bridge rectifier (CR1) must be connected to the proper secondary tap shown in the table below.

1600 Watt Operation

<u>AC Line Voltage</u>	<u>Primary Tap</u>	<u>Secondary Tap</u>	<u>T2 Stepdown Primary Tap Lead Connection</u>
190-208	190	X2	Blk (H1) & Brn (H2)
208-220	208	X2	Blk (H1) & Brn (H2)
220-230	230	X2	Blk (H1) & Blu (H2)
230-254	230	X3	Blk (H1) & Blu (H2)

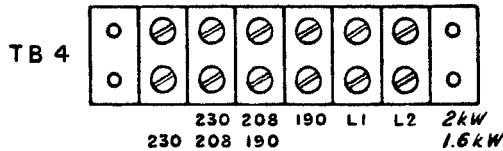
2000 Watt Operation

AC Line Voltage	Primary Tap	Secondary Tap	T2 Stepdown Primary Tap Lead Connection
190-208	190	X1	Blk (H1) & Brn (H2)
208-220	208	X1	Blk (H1) & Brn (H2)
220-230	230	X1	Blk (H1) & Blu (H2)
230-254	230	X2	Blk (H1) & Blu (H2)

LATER MODELS of the 61001-10 and -11 did not utilize the secondary taps.

AC Line Voltage	Primary (Coarse)	T2 Stepdown Connection
190-208	190	Blk & Brn
208-220	208	Blk & Brn
220-230	230	Blk & Blu
230-254	230	Blk & Blu

THE LAST MODELS of this power supply featured a fourth primary (coarse) tap.

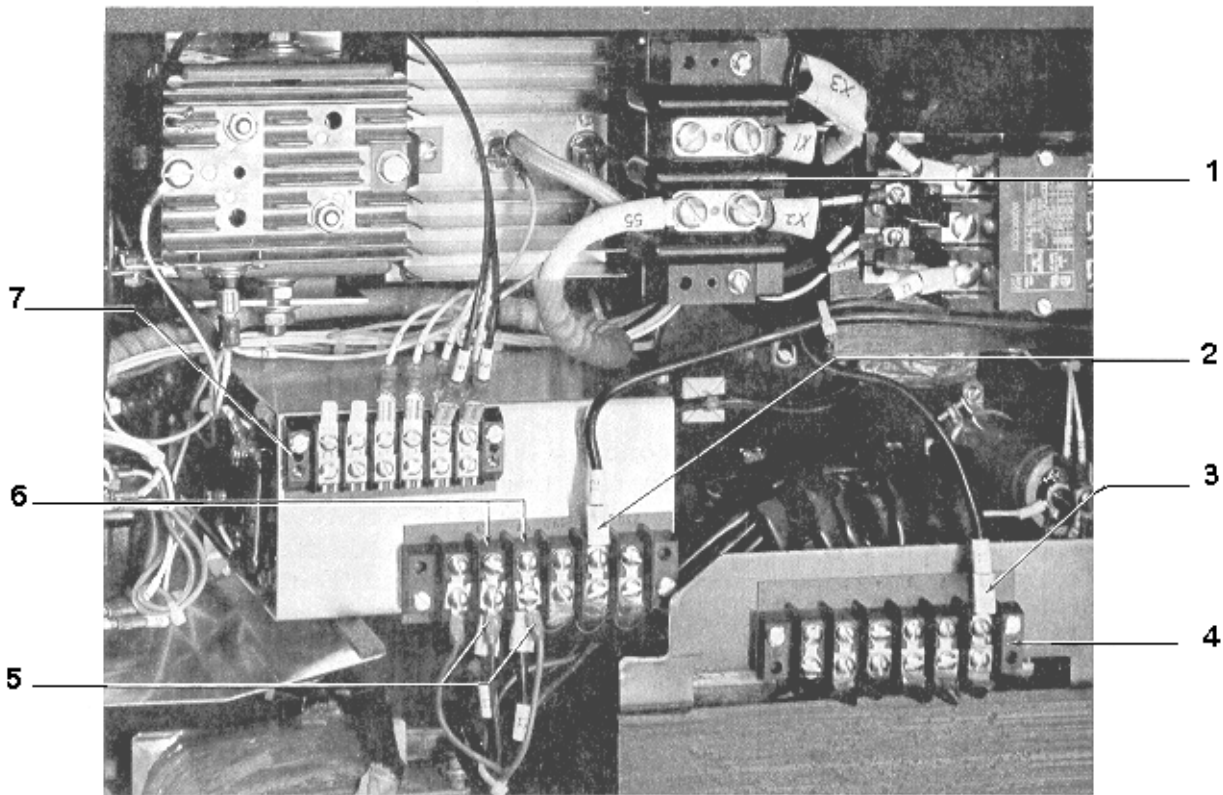


DC OUTPUT to the bulb is determined by the setting of the (8) step dial switch (61001-2,4), or the connection of lead T1 to one of the six output taps on terminal board TB2, located on the main transformer T1 (61001-10,11). An optional dial switch was available for the later models; see the Wiring Diagrams following. The numbered steps of the dial switch correspond to the fine tap terminal numbers on TB2.

START ON STEP 1 for the first ignition of the bulb. Allow a few minutes for the current to stabilize and read the lamphouse ammeter. If more current is required, extinguish the bulb and advance the tap lead or dial switch to step 2. Each step adjusts the DC output approximately four amperes. Repeat this operation as required to obtain the rated current specified by the bulb manufacturer. If the correct current cannot be reached on the highest step, extinguish the bulb and move the T2 lead to the next **lower** coarse tap, i.e. from 230 to 208. With the dial switch returned to step 1, re-ignite the bulb and increase the tap or switch setting as required to reach the desired current.

IF THE OUTPUT exceeds the rated current on step 1, move the T2 lead to the next **higher** coarse tap, i.e. from 208 to 230. Starting on switch position 1, increase the switch setting to reach the desired current.

TO PROLONG THE LIFE of dial switch S1 (where used), extinguish the bulb before increasing or decreasing the switch setting. It will be necessary to periodically increase current to compensate for decreased light because of normal bulb aging.



- | | |
|--|--|
| 1. Secondary Taps (X1, X2, X3) | 5. Stepdown Transformer Tap Leads |
| 2. Coarse Tap Lead | 6. 208/230 V.AC Input Terminals |
| 3. Fine Tap Lead (61001-10,11) | 7. Control Circuit Terminals (2,3,4,5,6) |
| 4. Fine Tap Terminal Board (61001-10,11) | |

DO NOT, AT ANY TIME, EXCEED THE MAXIMUM CURRENT SPECIFIED BY THE MANUFACTURER OF THE XENON BULB.

Operation:

WHEN THE MAIN LINE SWITCH is in the "ON" position, the neon glow lamp DS1 will be energized, indicating that one side of the K1 relay contacts are "hot" and the AC control circuit through circuit breakers CB1 and CB2 to the cooling fan B1 in the power supply is also energized. The AC power to the lamphouse is carried through circuit (2-4) to the interlock switches and to the blower in the lamphouse. The blower in the lamphouse and the fan in the power supply will operate as long as the main AC line switch to the power supply is in the "ON" position.

THE AC CONTROL CIRCUIT (2-4) is completed through the lamphouse and back to the power supply (5-6) when the LAMP switch is placed in the "ON" position and all lamphouse interlock switches are closed.

THE THERMAL SWITCHES S2 and S3 sense the temperature at the CR1 and CR3 heat sinks and will open at 190° Fahrenheit (88° Celsius) to break the circuit to the coil of contactor K1 and protect the diodes from overheating. These switches will remain open and prevent operation of the power supply until the temperature falls below 185-190° Fahrenheit.

POWER IS APPLIED to the DC circuit, the CR2 boost diode and the R1 current limiting resistor; charging the C2 boost capacitor to the peak voltage developed over the tertiary winding of the T1 transformer. Resistor R3 is the bleeder for capacitor C2. Approximately 120 V. DC is momentarily applied to the DC circuit for the xenon bulb ignition. Upon ignition, the boost circuit is reduced and 21-30 V.DC is supplied to the lamphouse to sustain operation of the xenon arc. Capacitor C3 functions as a RF bypass circuit at the time of bulb ignition to protect the CR1 rectifier bridge network. Capacitors C4 and C5, mounted to the bridge rectifier, and C6, mounted to the blocking diode, protect the diodes by suppressing the RF voltage at ignition.

THE CHOKE L1 and capacitors C1 serve as filters to reduce the DC ripple to the level required for long bulb life. Resistor R2 functions as a bleeder for the C1 capacitors. Diode CR3 is the blocking diode in the negative DC circuit to permit build-up of the high DC voltage required for bulb ignition.

MAINTENANCE

VERY LITTLE MAINTENANCE is necessary to keep this equipment in top operating condition. The frequency of cleaning the equipment depends upon dust conditions at each installation.

THE RECTIFIER (CR1) heat sink and the blocking diode (CR3) heat sink must be kept clean to permit dissipation of the heat generated by the power supply.

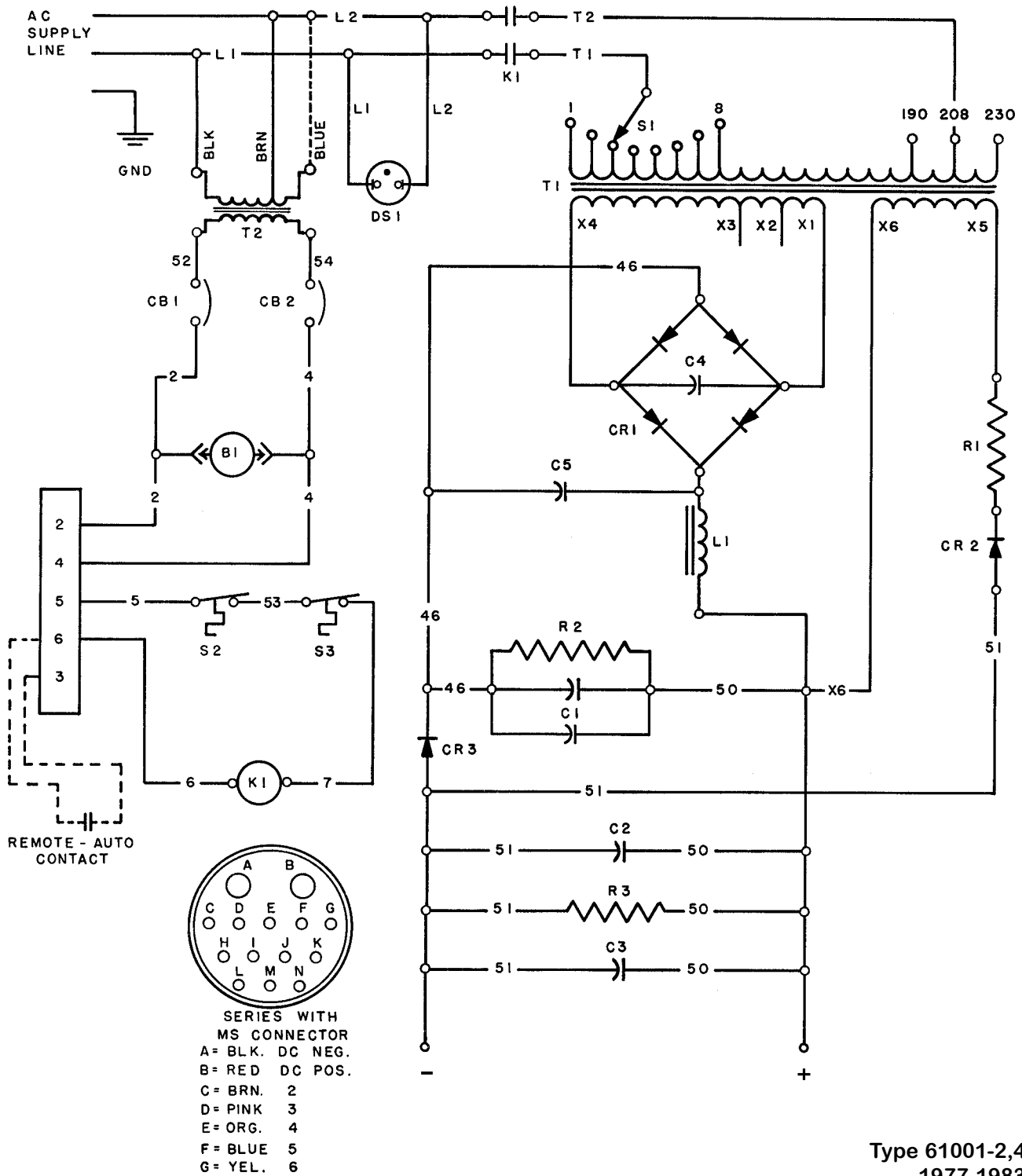
PERIODICALLY examine all electrical connections for tightness. A loose connection will cause overheating and possible intermittent operation.

IF THIS POWER SUPPLY is operated in an ambient temperature high enough to permit the internal temperature at either heat sink to reach 190° Fahrenheit, the thermal switches (S1 and S2) will stop operation of the power supply until the temperature falls below this level.

THE COOLING FAN and grill must be kept clean to allow the fan to operate at its rated R.P.M. and permit full airflow through the power supply. Intermittent operation of the power supply may be an indication of inadequate cooling due to dirt on the grill or fan blades.

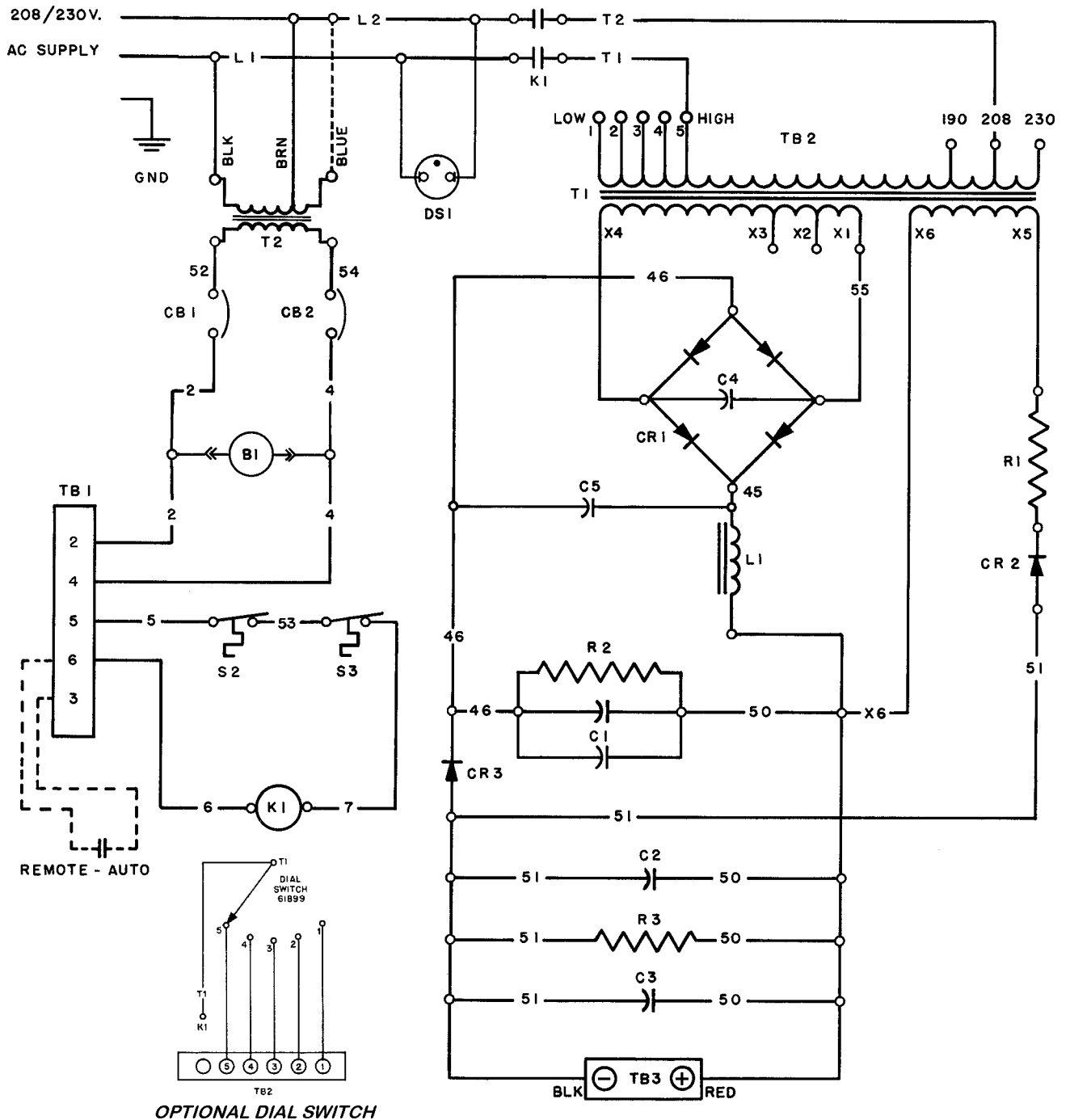
THE AIR OUTLET GRILL must be cleaned periodically from the inside of the power supply to insure proper air circulation.

WIRING DIAGRAM



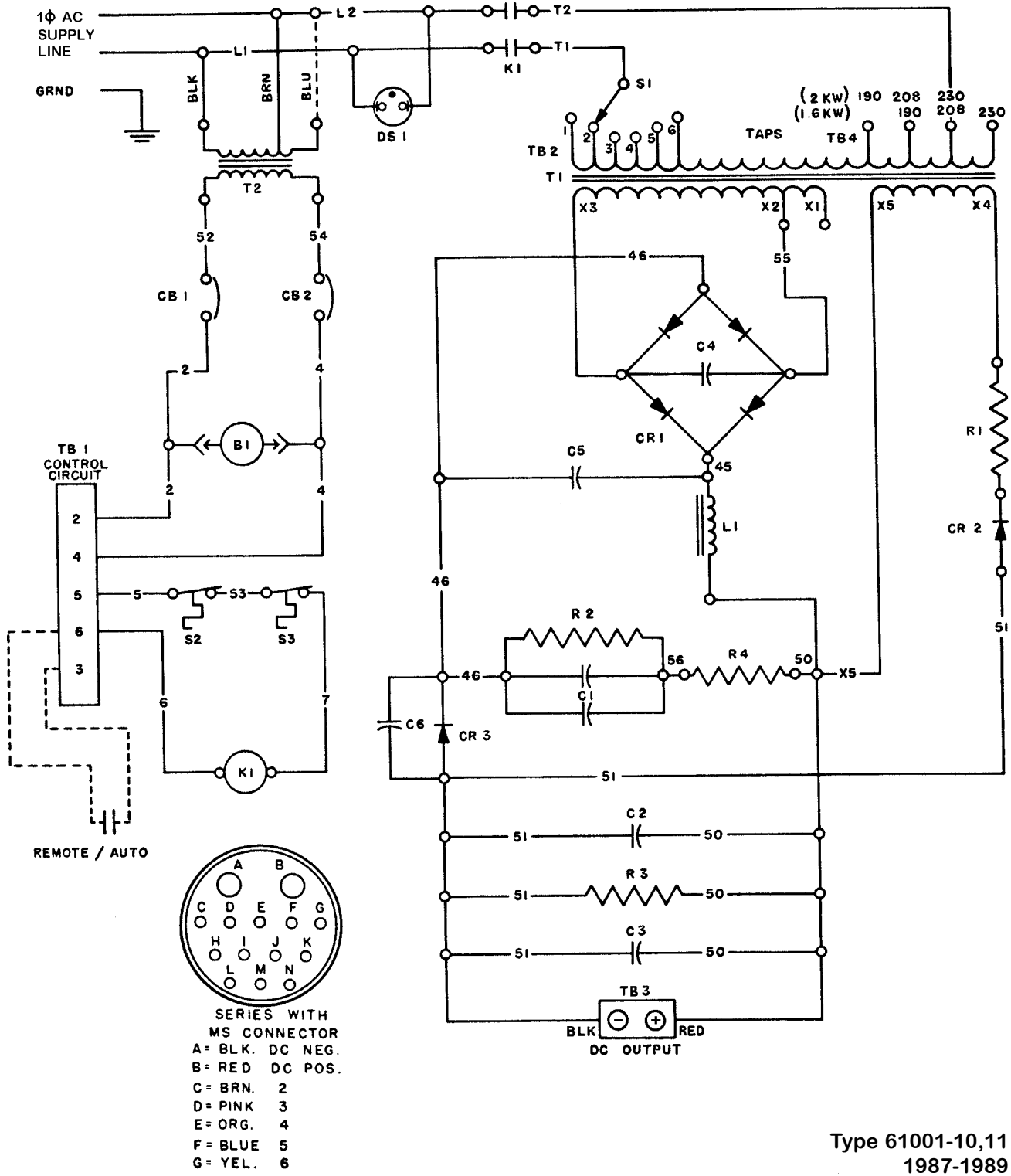
Type 61001-2,4
1977-1983

WIRING DIAGRAM



Type 61001-10,11
1983-1987

WIRING DIAGRAM



Type 61001-10,11
1987-1989

PARTS LIST
SCHEMATIC DIAGRAM

<u>Ref.</u>	<u>Part No.</u>	<u>Description</u>
B1	45227	Four-Inch Blower, 115 V.AC, 50/60 Hz. (61001-2,4)
B1	71220	Six-Inch Blower, 115 V.AC, 50/60 Hz. (61001-10,11)
C1	88233	Filter Capacitor, 37000 MFD, 75 V.DC (2 req'd)
C2	88185	Boost Capacitor, 1100 MFD, 150W VDC
C3	88981	RF Bypass Capacitor, .01 MFD, 500/1000V. (with R3)
C4	61933	RF Supression Capacitor, .01 MFD, 1000 V.DC
C5	61932	RF Supression Capacitor, .01 MFD, 1000 V.DC
C6	61902	RF Bypass Capacitor, .05 MFD, 600 V.DC
CB1,2	79107	Circuit Breaker, 5 Amp, 250 V.
CR 1	61976	Silicon Bridge Rectifier
	84112A	Foward Diode, 600 PRV, 85 A.
	61140	Reverse Diode, 600 PRV, 85 A.
CR2	85112	Boost Diode, 1000 PIV, 2.5A. (with R1)
CR3	84112A	Blocking Diode, 600 PRV, 85 A.
DS 1	61993	Neon Glow Lamp, 210/250 V.AC
K1	88116	Contactora, 115 V.AC, 50/60 Hz. Coil
L1	*	Choke (with T1 on 61001-2,4)
L1	61919	Choke (61001-10,11)
R1	88982	Current Limiting Resistor, 200 Ohm, 25 W. (with CR2)
R2	88979	Bleeder Resistor, 450 Ohm, 12 W.
R3	88981	Bleeder Resistor, 100k Ohm, ½ W. (with C3)
S1	62069	Rotary Switch (new style, 61001-10,11)
S1	15494B	Dial Switch (61001-2,4)
S2,3	88118	Thermal Switch, 190° F. (88° C.)
T1	*	Main Transformer, Banked & Wired
T2	61984	Stepdown Transformer, Control Circuit
TB1	72218	Barrier Strip, 6 Terminal (Control Circuit)
TB2	61116	Barrier Strip, 6 Terminal (Fine Taps)
TB3	61111	Barrier Strip, 2 Terminal (DC Output; Secondary Taps)
TB4	61116	Barrier Strip, 6 Terminal (Coarse Taps)

* Specify Equipment Type and Serial Number when ordering replacement parts.

TROUBLE SHOOTING

REFER TO THE INSTALLATION-OPERATION section and the schematic diagram of this manual before attempting any trouble shooting. Some models of this power supply have taps on both the primary and secondary sides of the main transformer to compensate for variations in line voltage and supply the proper current for operation of the various xenon bulbs.

IN ADDITION, the power supplies manufactured for use on a supply line of 208/230 volts AC, or higher have a stepdown transformer to reduce the AC supply voltage to 115-120 volts required for the AC control circuit in the lamphouse and power supply. This stepdown transformer has a high (blue) and low (brown) voltage tap on the primary side.

THESE TAPS, on both the main transformer and stepdown transformer, must be connected in accordance with the instructions in your manual to insure proper operation and ignition of the xenon bulb.

THESE POWER SUPPLIES have two (2) thermal switches. One is attached to the bridge rectifier heat sink and one on the blocking diode heat sink. If either switch opens, the power supply will stop operating.

CR1 Rectifier Bridge Test

Remove the rectifier bridge (CR1) #61976, from the power supply. This bridge has two forward and two reverse diodes. Connect one lead of an ohmmeter to the heat sink of the diode being tested. A functional diode will show an infinite resistance in one direction and a low (approximate 15 Ohms) in the other direction. A shorted diode will indicate low resistance in both directions.

TROUBLESHOOTING



EXERCISE EXTREME CAUTION TAKING VOLTAGE MEASUREMENTS IN A POWER “ON” CONDITION!



Line Contactor does not energize (audible “click”) when LAMP switch is turned ON (red light *not* lit):

1. Main power safety switch not turned on. Turn on; replace switch if defective.
2. Main line fuse(s) blown; circuit breaker tripped. Replace fuse; reset circuit breaker.

Line Contactor does not energize (audible “click”) when LAMP switch is turned ON (red light *lit*):

1. Contactor K1 coil burned out. Check for 115 V.AC across 5 & 6; replace contactor if correct voltage is indicated.
2. Circuit Breaker(s) CB1 or CB2 tripped. Locate and correct short circuit in lamphouse control circuit and reset breaker(s).
3. Faulty Thermal Switch(es) S2 or S3. Remove one lead at switch and test for continuity using an ohmmeter. Replace switch(es) if open. NOTE: One switch at bridge rectifier; one switch on blocking diode heat sink.
4. Defect in lamphouse control circuit. See Lamphouse manual.

Contactor closes but xenon bulb does not ignite (no bulb flash):

1. Contacts on K1 contactor burned or defective. Check for AC voltage on T1 & T2. Replace contactor if voltage is not indicated.
2. Faulty lamphouse igniter. See Lamphouse manual.
3. Shorted Blocking Diode CR3. See test under “Low No-Load DC Voltage” section following.

Repeatedly blows line fuses/trips line circuit breakers:

1. Wrong fuse/wrong rating on circuit breaker. Replace with properly rated fuse or breaker. Comply with local electrical codes.
 2. Shorted bridge rectifier CR1. Check bridge (instructions in preceding section); replace if defective.
 3. Shorted Filter Capacitor C1. Test with capacitor checker; replace if defective.
 4. Shorted Boost Capacitor C3. Test with capacitor checker; replace if defective.
 5. Shorted Stepdown Transformer T2. Disconnect T1 (main) transformer at contactor K1; disconnect T2 secondary leads 52 & 54 at CB1 & CB2. Energize AC circuit; if fuse blows (breaker trips), replace T2 transformer.
 6. Shorted T1 (main) Transformer. If fuses continue to blow (breakers continue to trip) after completing above tests, replace T1 Transformer.
-

TROUBLESHOOTING (continued)

Circuit Breakers CB1 & CB2 open repeatedly (LAMP switch *not* ON):

1. Defective B1 blower in power supply. Disconnect blower, if breakers to not trip, replace blower.
2. Defective lamphouse blower. See lamphouse troubleshooting.

Circuit Breakers CB1 & CB2 open repeatedly (LAMP switch ON):

1. Defective igniter. See Lamphouse manual.
2. Defective K1 contactor coil. Remove leads 5 & 6 from contactor; if breakers remain closed, replace contactor.

Repeatedly failed bridge diodes:

1. Defective suppression capacitors C4, C5. Test with capacitor checker; replace if defective.

Low “No-Load” (open circuit) DC voltage (less than 100 volts measured across DC output terminals in power supply):

1. Defective Filter Capacitor C1. Remove and test with capacitor checker; replace if defective.
2. Defective Boost Capacitor C2. Remove and test with capacitor checker; replace if defective.
3. If only 50-60 V.DC measured at DC output terminals, check Boost Diode CR2 with ohmmeter; should show low resistance in only one direction when reversing ohmmeter leads. If tests show low resistance in both directions, replace boost diode.
4. If less than 75 V.DC measured at DC output, check Blocking Diode CR3. Using an ohmmeter, measure continuity between the negative heat sink to the negative output lead; should show continuity in only one direction when reversing ohmmeter leads. If tests show continuity in both directions, replace blocking diode.
5. Defective Current Limiting Resistor R1. Measure resistance with ohmmeter; should read 200 Ohms ($\pm 20\%$). If defective, replace resistor & diode assembly.
6. If less than 40 V.DC measured at DC output, check CR1 Bridge Rectifier (test procedure on first page of Troubleshooting section); replace if defective.

Excessive light flicker:

1. Defective xenon bulb. See lamphouse troubleshooting.
 2. Defective Bridge Rectifier CR1 (test procedure on first page of Troubleshooting section); replace if defective.
 3. Defective Filter Capacitor C1. Remove and test with capacitor checker; replace if defective.
 4. Defective Boost Capacitor C2. Remove and test with capacitor checker; replace if defective.
 5. Projector shutter mistimed. See projector manual.
-

TROUBLESHOOTING (continued)

Reduced light output:

1. Defective xenon bulb. See lamphouse troubleshooting.
2. Defective Bridge Rectifier CR1 (test procedure on first page of Troubleshooting section); replace if defective.

Xenon bulb flashes but does not light:

1. Defective xenon bulb. See lamphouse troubleshooting.
2. Defective Blocking Diode CR3. See previous test for CR3; replace if defective.
3. Power output too low to sustain ignition. Check bulb manufacturer's recommended operating range and reset taps to increase current as required. Do not attempt to operate bulb below the manufacturer's recommended minimum current.

Bulb goes out during operation:

1. Defective B1 Blower. Replace if not operating; clean if clogged and running below speed.
 2. Faulty Thermal Switch(es) S2 or S3. Remove one lead at switch and test for continuity using an ohmmeter. Replace switch(es) if open when switches are below 190° F. (88° C.). NOTE: One switch at bridge rectifier; one switch on blocking diode heat sink.
 3. Fault detected by lamphouse control circuit. See Lamphouse manual.
 4. Fault detected by automation interlock circuit. See Automation manual.
-

FIGURE 1 (61001-2,4)

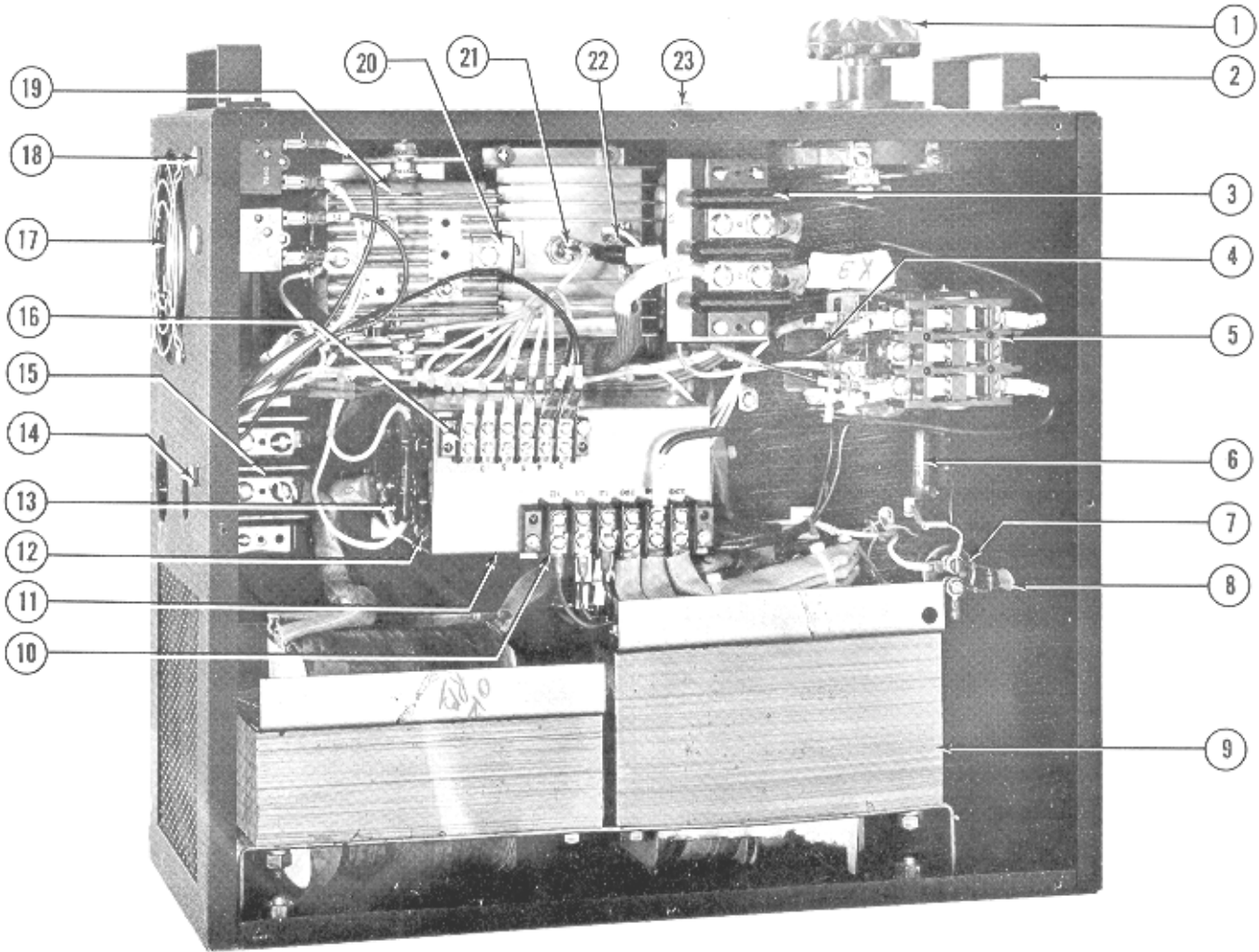


FIGURE 1 (Type 61001-2,4)
Parts List

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	15494B	Dial Switch (S1)
-	543	Screw, 1/4-20 x 3/8", Oval Hd.
2	88208	Handle
-	542	Screw, 1/4-20 x 3/4", Pan Hd.
-	805	Nut, 1/4-20 Hex
-	876	Lockwasher, 1/4"
3	61111	Barrier Strip, (2) Terminal
-	61119	Marker Strip
-	1729	Screw, 10-32 x 3/4", Pan Hd.
4	61984	Stepdown Transformer (T2)
-	1382	Screw, 10-32 x 3/16", Pan Hd.
5	88116	Contacting (K1), 115 V.AC, 50/60 Hz. Coil
-	1382	Screw, 10-32 x 3/16", Pan Hd.
6	88982	Current Limiting Resistor (R1 with CR2)
-	1579	Screw, 6-32 x 1/4", Pan Hd.
7	88185	Boost Capacitor (C2)
-	88125	Capacitor Clamp
-	1579	Screw, 6-32 x 1/4", Pan Hd.
8	88981	RF Bypass Capacitor (C3 with R3)
9	*	Transformer (T1, with L1 & S1)
-	1315	Screw, 5/16-18 x 5/8" Hex Hd.
-	807	Nut, 5/16-18 Hex
-	853	Washer, 5/16"
-	877	Lockwasher, 5/16-18
10	61116	Barrier Strip, AC Line
-	61117	Marker Strip
-	1312	Screw, 8-32 x 1/2" Pan Hd.
11	61112	Bracket
-	464	Screw, 10-32 x 1/4" Pan Hd.
12	88233	Filter Capacitor (C1)
13	88979	Bleeder Resistor Ass'y. (R2)
14	1487	Ground Bolt, 1/4-20 x 7/8" Hex Hd.
-	806A	Nut, 1/4-20 Hex
15	61111	Terminal Block, DC Output
-	61121	Marker Strip
-	1729	Screw, 10-32 x 3/4", Pan Hd.
16	61103	Terminal Strip, Control Circuit
-	61109	Marker Strip
-	1312	Screw, 8-32 x 1/2" Pan Hd.

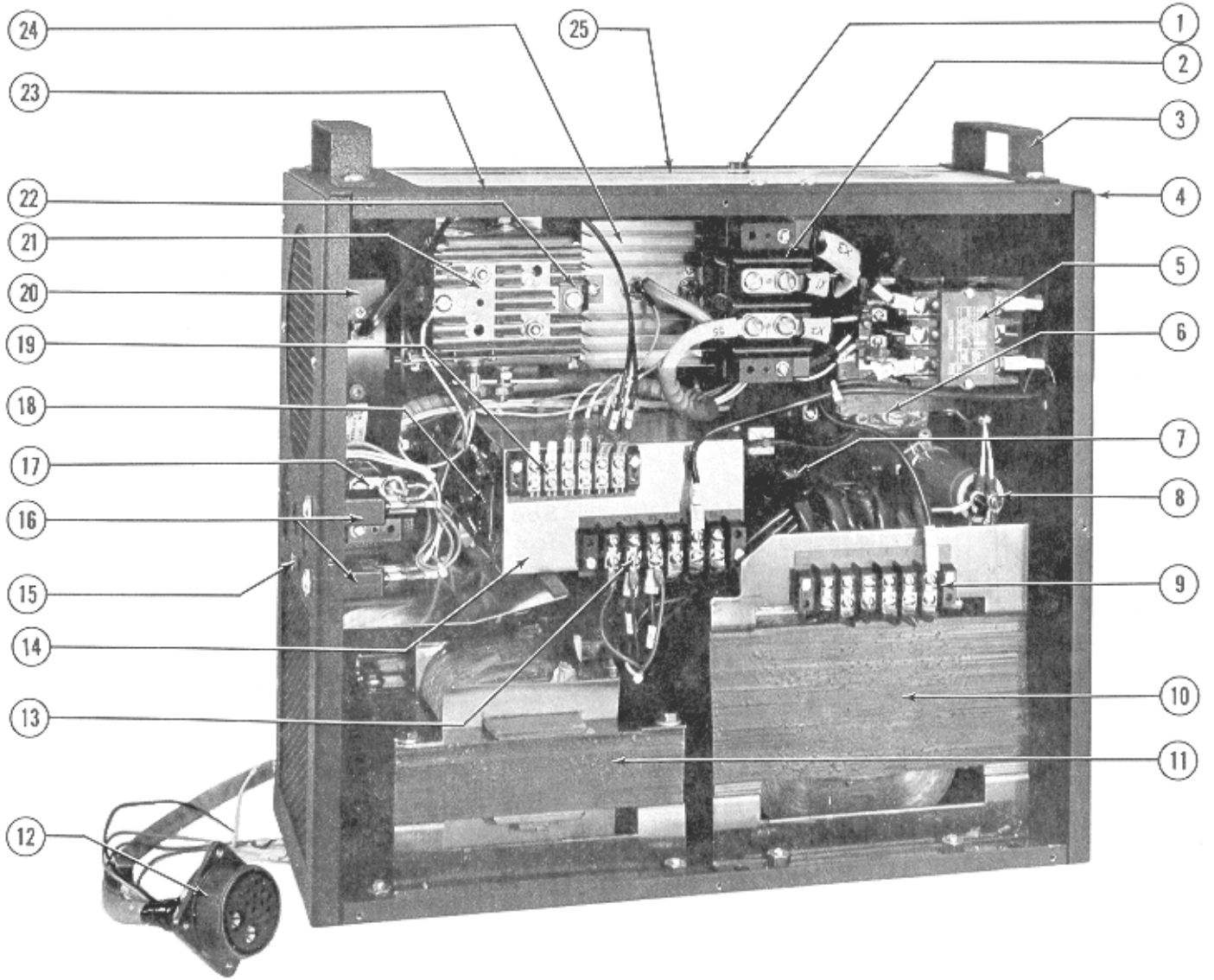
FIGURE 1 Parts List (continued)
Type 61001-2,4

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
17	45227	Blower (B1), 4 inch Square
-	61127	Mounting Clip
-	83131	Finger Guard, Plastic
-	1763	Screw, 6-32 x 1", Fil. Hd.
18	79107	Circuit Breaker (CB1,2)
19	81976	Bridge Rectifier (see Figure 2)
20	61118	Buss Bar (see Figure 2)
21	84112A	Blocking Diode (see Figure 2)
22	88118	Thermal Switch (S2,3)
23	61993	Indicator Light (DS1)

Parts not Listed Above

61987	MS Connector & Leads
61983	AC Power Cord with 61115 Plug
61115	Plug (250 V, 30 A)
61126	Strain Relief Bushing
61999	Cabinet, 61001 Power Supply
61985	Base Plate
88161	Cover

FIGURE 1 (61001-10,11)



PARTS LIST (61001-10,11)

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	61993	Neon Indicator Lamp (DSI)
2	61111	Barrier Strip, Transformer Secondary (Coarse Taps)
-	61121	Insulated Marker Strip
-	61113	Bracket
-	541	Screw, 1/4-20 x 1/2", Pan Hd.
-	805A	Hexnut, 1/4-20
-	889	Shakeproof Lockwasher, 1/4"
-	392	Screw, 10-32 x 7/8", Fil. Hd.
-	1344	Shakeproof Lockwasher, #10
3	88208	Handle
-	541	Screw, 1/4-20 x 1/2", Pan Hd.
-	805A	Hexnut, 1/4-20
-	889	Shakeproof Lockwasher, 1/4"
4	61911	Cabinet
-	61921	Base Plate, Cabinet
-	88161	Cover Plate, Cabinet
-	1794	Screw, 8-32 x 3/8", Slotted Hex Washer Hd.
5	88116	Contactora (K1)
-	1382	Screw, 8-32 x 3/16", Pan Hd.
-	88164	Bracket
-	541	Screw, 1/4-20 x 1/2", Pan Hd.
-	805A	Hexnut, 1/4-20
-	889	Shakeproof Lockwasher, 1/4"
6	61984	Control Transformer, Stepdown (T2)
-	1382	Screw, 8-32 x 3/16", Pan Hd.
7	88982	Fixed Resistor & Diode Ass'y. (R1 with CR2)
-	1412	Screw, 6-32 x 1/8", Pan Hd.
8	88185	Boost Capacitor (C2)
-	88125	Capacitor Clamp
-	1412	Screw, 6-32 x 1/8", Pan Hd.
9	61116	Barrier Strip, Fine Taps
-	61187	Insulated Marker Strip
-	1312	Screw, 8-32 x 1/2", Pan Hd.
10	61001-10BW	Transformer (T1)
-	1419	Screw, 5/16-18 x 3/4", Hex Hd.
-	807	Hexnut, 5/16-18
-	877	Split Lockwasher, 5/16"
11	61919	Choke (L1)
-	1419	Screw, 5/16-18 x 3/4", Hex Hd.
-	807	Hexnut, 5/16-18

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
12	61987	MS Connector & Leads Ass'y. (61001-11 only)
-	464	Screw, 10-32 x 1/4", Pan Hd.
13	61116	Barrier Strip, AC Line
-	61117	Insulated Marker Strip
-	1312	Screw, 8-32 x 1/2", Pan Hd.
14	61112	Capacitor Mounting Bracket
-	464	Screw, 10-32 x 1/4", Pan Hd.
-	88233	Filter Capacitor (C1), 2 req'd.
15	1487	Ground Bolt, 1/4-20 x 7/8", Hex Hd.
-	889	Shakeproof Lockwasher, 1/4"
-	805A	Hexnut, 1/4-20
-	835	Flatwasher, 1/4"
16	79107	Circuit Breaker (CB1,2) See Item 23 for Alternate Location
17	61111	Barrier Strip, DC Output (TB3; 61001-10 only)
-	61121	Insulated Marker Strip
-	392	Screw, 10-32 x 7/8", Fil. Hd.
-	1344	Shakeproof Lockwasher, #10
-	831	Flatwasher, #10
18	88979	Bleeder Resistor (R2)
19	61103	Barrier Strip, Control Circuit (TB1)
-	61109	Insulated Marker Strip
-	1312	Screw, 8-32 x 1/2", Pan Hd.
20	71220	Blower (B1)
-	61994	Power Cord, Blower
-	1795	Screw, 6-32 x 1", Self-tapping
-	61127	Tinnerman Nut, #6
21	61976	Silicon Bridge Rectifier (CR1) See Figure 2
22	61118	Buss Bar See Figure 2
23	-	Alternate Location for Circuit Breakers, Item 16
24	61977	Blocking Diode Ass'y. See Figure 2
25	61182	Nameplate
-	1639-3	Rivet, 1/8", Domed Hd.

Parts Not Listed Above

61194	Air Deflector, Blower Outlet
61983	AC Power Cord with Plug
61115	Plug, 30 Amp. 250 V.
61126	Power Cord Strain Relief Bushing
61898A	Dial Switch Ass'y. (Optional)

FIGURE 2

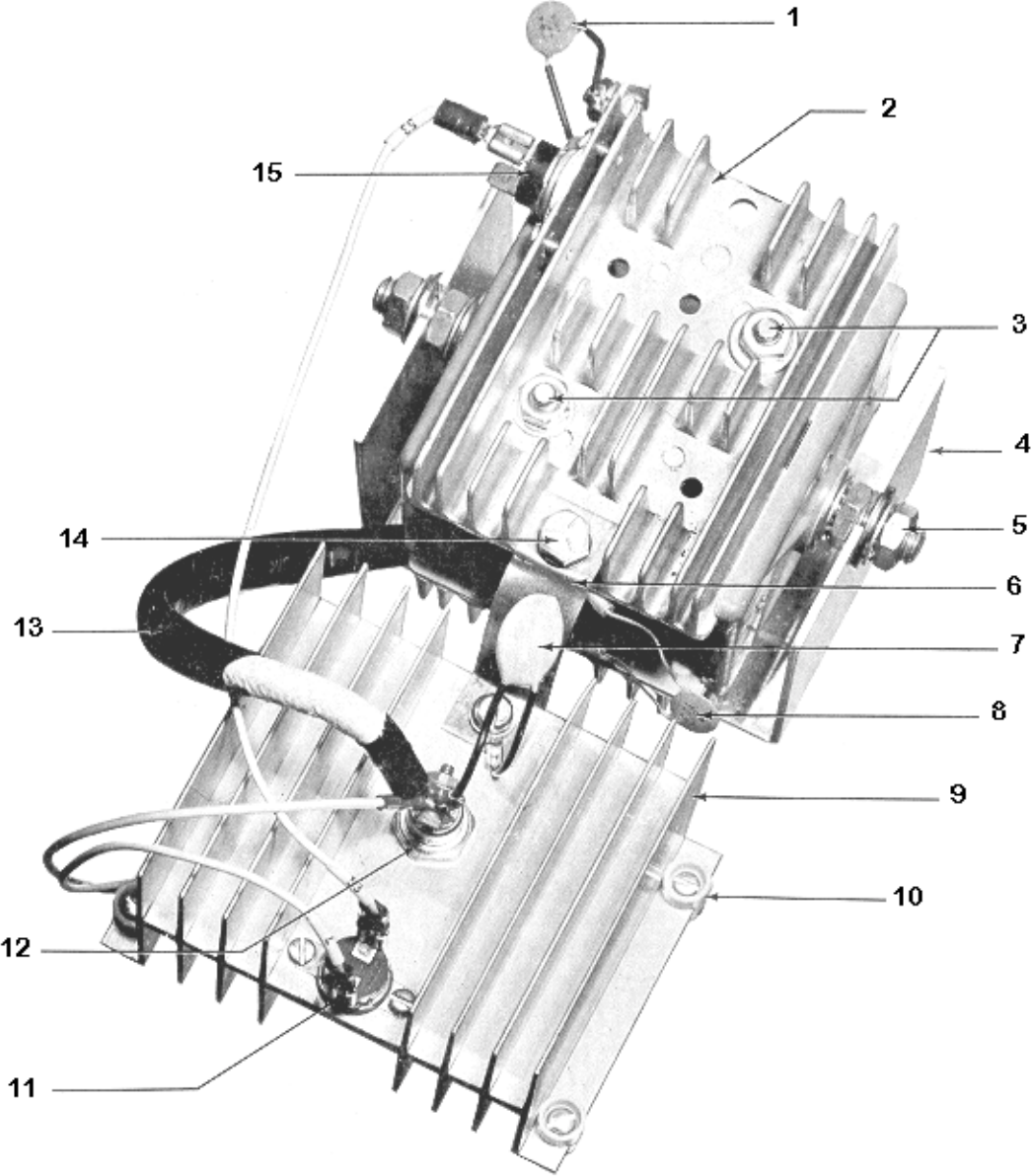
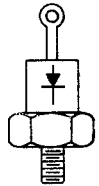


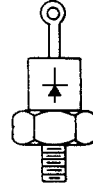
FIGURE 2
Parts List

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	61933	Capacitor Ass'y. (CR4)
2	61101	Rectipoint (with CR1 Diodes)
3	61140*	Reverse Diode
-	84112A*	Forward Diode (not shown)
4	61107	Mounting Bracket
-	1304	Screw, 8-32 x 5/16", Pan Hd.
5	-	Hardware supplied with Rectipoint, Item 2
6	61118	Buss Bar
-	1307	Screw, 10-32 x 3/8", Pan Hd.
-	1344	Lockwasher, #10
7	61902	Capacitor Ass'y. (C6)
8	61932	Capacitor Ass'y. (C5)
9	61120	Heat Sink
10	88237	Mounting Insulator
-	1473	Screw, 6-32 x 1/2", Pan Hd.
11	88118	Thermal Switch (S2)
-	1305	Screw, 6-32 x 1/4", Pan Hd.
12	84112A	Blocking Ciode (CR3)
-	1722	Screw, 6-32 x 1/2", Socket Hd.
-	793	Hexnut, 6-32
-	1494	Lockwasher, #6
13	61988A	Negative Lead Ass'y.
14	687	Screw, 1/4-20 x 1/2", Hex Hd.
-	805A	Hexnut, 1/4-20
-	852	Flatwasher, 1/4"
-	889	Lockwasher, 1/4"
15	88118	Thermal Switch (S1)
-	1305	Screw, 6-32 x 1/4", Pan Hd.

* Note marking for correct replacement:



FORWARD



REVERSE

