

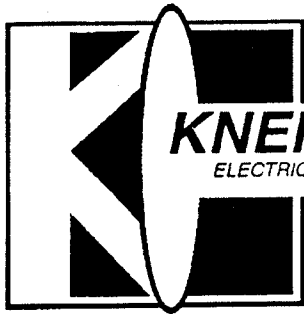
# Film-Tech

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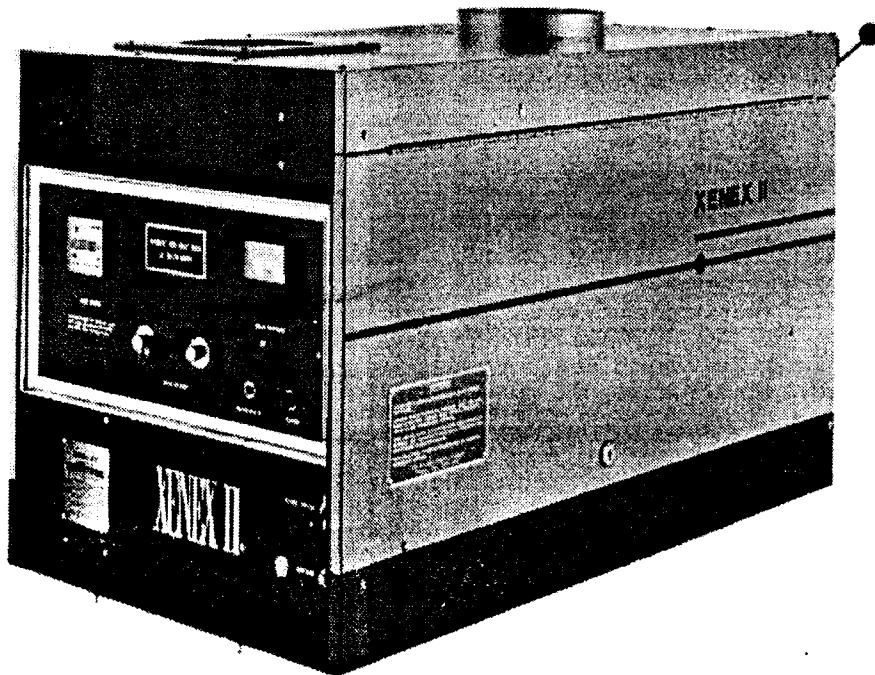
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**KNEISLEY**  
ELECTRIC COMPANY

## INSTRUCTIONAL MANUAL



# THE XENEX II<sup>®</sup> SERIES

## XENON LAMPHOUSE

1000 Watt	Screens to 32 ft wide
1600 Watt	Screens to 46 ft wide
2000 Watt	Screens to 50 ft wide
2500 Watt	Screens to 55 ft wide
3000 Watt	Screens to 62 ft wide
4000 Watt	Screens to 70 ft wide



P. O. Box 4692 • TOLEDO, OHIO 43610

PHONE: (419) 241-1219 • FAX: (419) 241-9920

*Congratulations! You are the owner of the finest lamphouse in the industry. Your Kneisley Xenex® II Lamphouse is designed and built to give you many years of dependable service. To get the most out of your lamphouse, we suggest you read this instruction manual thoroughly before installing or operating.*

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## Preface

The XENEX II is a reflector type, direct current, projection lamphouse utilizing a horizontal xenon bulb as a light source. It is designed to accept 1000, 1600, 2000, 2500, 3000 and 4000 watt Osram horizontal xenon bulbs, although other manufacturer's bulbs may be used.

The optical system consists of a 12½" diameter, dichroic coated (cold) metal reflector. Eighty percent or more of the invisible infrared (heat) rays are absorbed by the metal reflector. This results in lower film temperatures, lower bulb seal temperatures, and longer bulb life. Since an insertion type heat filter is not required, higher optical efficiency is achieved. The reflector working distance is 30½ inches with an optical speed of  $f2.16$ , permitting use of lower cost projection lenses.

A single control for bulb adjustment and focusing is located on the rear of the lamphouse. The control permits horizontal and vertical positioning, and focus control of the xenon bulb.

The lamphouse is equipped with a DC Ammeter that can be converted to read arc voltage by pressing the push button switch located beneath the meter. Voltage readings are helpful when trouble shooting the equipment, and necessary to compute bulb wattage.

The hour meter registers the number of hours the xenon bulb has been used. When a new bulb is installed in the lamphouse, the hours shown on the meter should be recorded so that bulb rotation, as recommended by the bulb manufacturer, can be accomplished at the appropriate time. Recorded hours of bulb use are also necessary in the event of a possible bulb warranty claim. For your convenience, "Xenon Bulb Record" chart is located in the back of this instruction manual.

## Preface

*(Continued)*

A push button for manual or emergency operation of the igniter is provided. A circuit breaker is also incorporated to protect the igniter.

A high volume internal blower cools the seals of the xenon bulb, contributing to long bulb life. To dissipate the heat and prevent damage or weakening of the bulb, keep the blowers in the lamphouse and upper stack blower operating for 10 minutes after switching off the bulb.

A safety interlock switch on each door will prevent operation or ignition of the xenon bulb should either door be opened. The air flow switch attached to the blower will prevent operation or ignition of the bulb if the blower fails or does not supply enough air flow. The operator's door has a viewing port to allow observation of the arc.

A manually operated dowser is provided to prevent light from entering the projector. The bulb should not be operated for extended periods of time with the dowser closed.

A six inch diameter flange at the top of the lamphouse is provided for connection to an external exhaust system.

Both access doors are equipped with a key lock for safety and to prevent unauthorized entry into the lamphouse. Door latches are provided to secure the doors in an open position during service and maintenance procedures.

If you encounter any difficulty or have any questions regarding our equipment please contact:

THE KNEISLEY ELECTRIC CO.

P.O. BOX 4692

TOLEDO, OHIO 43610

(419) 241-1219

FAX (419) 241-9920

**\*\*\* IMPORTANT NOTICE \*\*\***

The face shield supplied with this unit is designed to be used with impact - resistant safety goggles or glasses. The face shield alone is NOT adequate protection against a xenon lamp explosion.

The gloves furnished with this unit are for keeping fingerprints off the reflectors and xenon bulbs. **These gloves offer NO protection from lamp explosions when handling xenon bulbs.**

Bulb installation, replacement, and service should only be done by Qualified Service Personnel using the proper safety clothing and equipment i.e., face shield, welding jacket, and leather gloves as recommended and approved by the xenon bulb manufacturer.

## SAFETY PROCEDURES

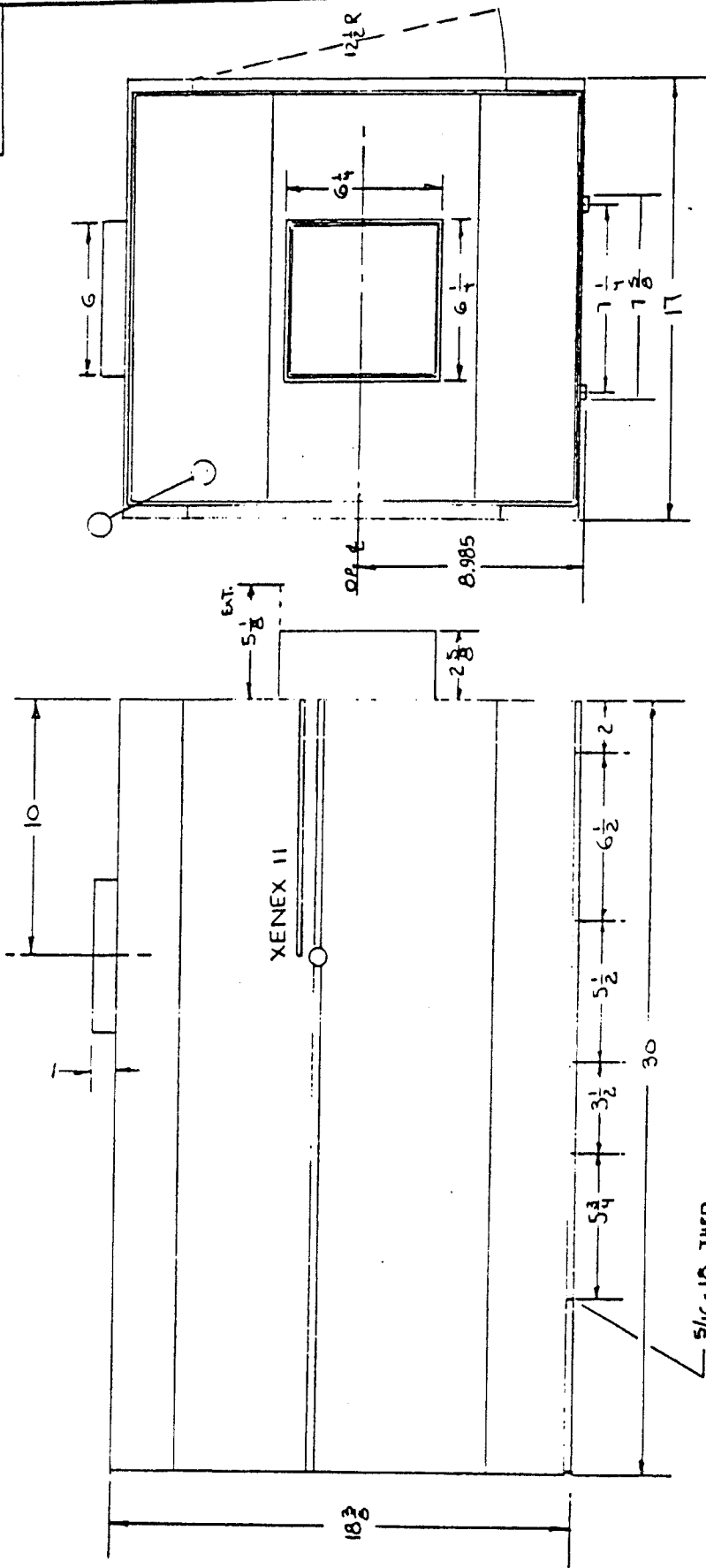
The xenon bulb is under high internal pressure even at room temperature. When ignited, the temperature rapidly rises and the pressure of the bulb increases as much as 20 to 30 times atmospheric pressure.

The following precautions should be followed when handling xenon bulbs.

1. Refer bulb replacement and service to QUALIFIED SERVICE PERSONNEL wearing protective clothing, i.e., face shield, leather gloves, welder's jacket, as recommended by bulb manufacturer.
2. Do not open the lamphouse doors until the bulb has been permitted to cool to room temperature. The lamphouse blower should be operated for at least 15 minutes after the bulb is extinguished before opening door.
3. De-energize the A.C. input to the power supply and the lamphouse before opening the lamphouse doors.
4. Enclose the bulb in it's protective cover if possible while servicing the interior of the lamphouse. When outside the lamphouse enclose the bulb in its protective cover.
5. Do not look directly at an ignited bulb. To do so **COULD CAUSE BLINDNESS OR PERMANENT EYE DAMAGE.**
6. Keep hands, clothes, and combustible material away from concentrated light beam and dowser to avoid fire or burn hazard.
7. Finger prints inadvertently left on the quartz envelope should be removed by using alcohol, distilled water, and cotton (wear protective clothing).
8. To discard a used or unwanted xenon bulb put on protective clothing and wrap the bulb several times in layers of heavy canvas or some other heavy material. Smash the bulb by placing a heavy board over the wrapped bulb and stand on it. Do not discard the bulb without first smashing it.

Please read this and facing page carefully

L-2652



TOLERANCES UNLESS OTHERWISE SPECIFIED		REVISIONS	
NO.	DATE	BY	DATE
1			
2			
3			
4			
5			

XENEX II OUTLINE		THE KNESLEY ELECTRIC COMPANY	
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CHECKED BY: [Signature]		DATE: 3-8-66	
TRACES		DRAWING NO. L-2652	



## LAMPHOUSE INSTALLATION

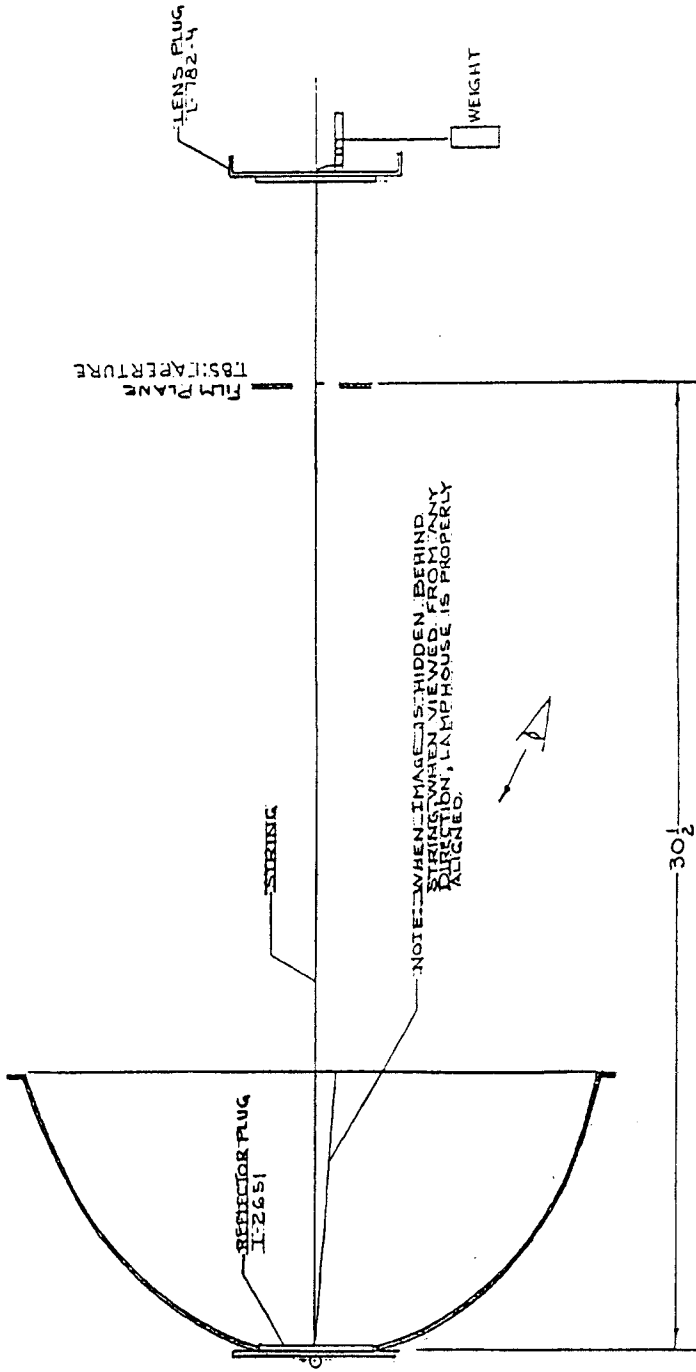
Set the XENEX II Lamphouse on the projector pedestal. Attach lamphouse to pedestal with the 5/16-18 x 1¼" hex head cap screws furnished so that it remains movable on the pedestal until the lamphouse is properly aligned.

Two round head screws and a key lock secure each door. Unlock the door locks, loosen the screws and raise the doors vertically. Two small metal latches, at top front of the lamphouse, will hold the doors in a vertical or open position.

Position the lamphouse on the projector pedestal so the small hole of the reflector is 30½ inches from the projector aperture or film plane.

An alignment kit is furnished with each pair of lamphouses. At initial installation, to secure maximum light output, you must check lamp alignment with the kit supplied. Misalignment can easily result in a 30% to 40% light loss.

L-2650



TOLERANCES		REVISIONS	
NO.	DATE	NO.	BY
1		1	
2		2	
3		3	
4		4	
5		5	

**STRING ALIGNMENT**

THE KNESLEY ELECTRIC COMPANY  
 MAKING LIGHTING EQUIPMENT

DESIGNED BY: W. J. KESLEY INITIALS: WJK  
 DRAWN BY: W. J. KESLEY INITIALS: WJK  
 DATE: 12.3.26  
 TITLE: STRING ALIGNMENT

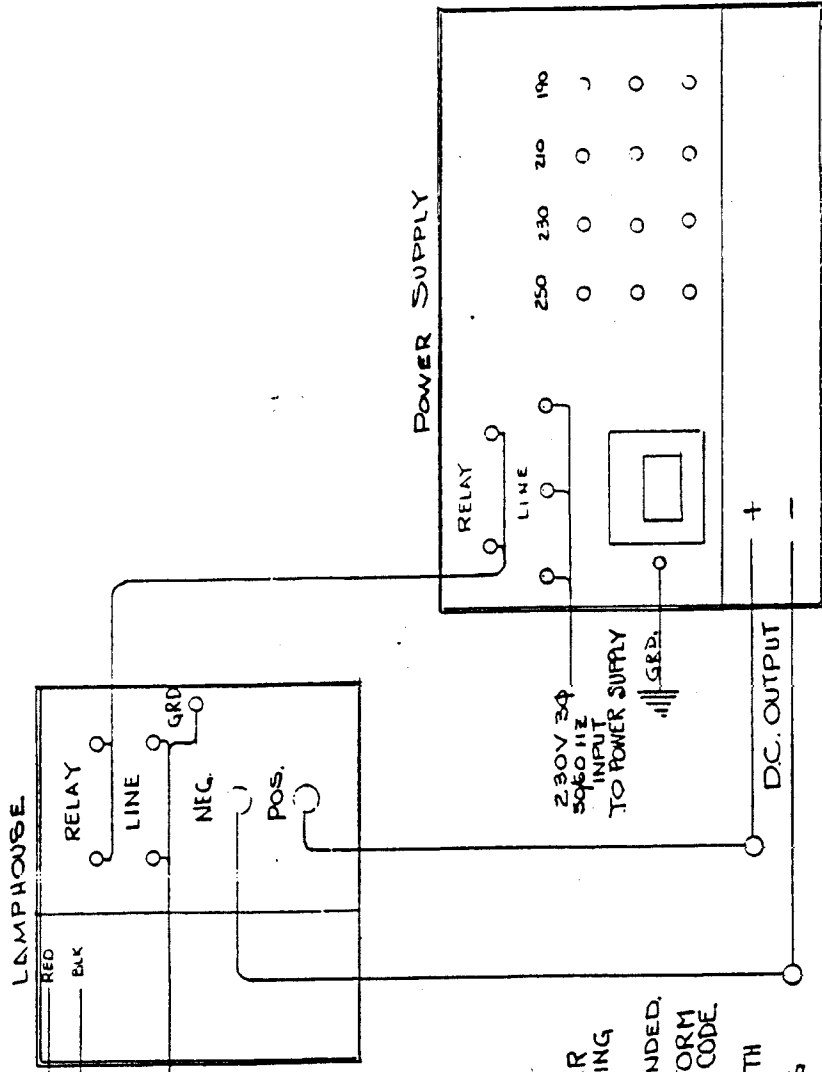
L-2650

## ALIGNMENT INSTRUCTIONS

CAUTION: *The bulkhead casting (item 27) has been factory aligned with the rails of the lamphouse. Do not attempt to loosen or adjust this casting.*

1. Thread the aligning string through the reflector aligning plug and place plug in the small hole of the reflector as shown in the alignment drawing, L-2650, page 8.
2. Prop the fire shutter open and rotate shutter to the *open* position.
3. Pass the aligning string through the projector aperture and through the dummy lens in the projector. Weight string so that aligning string is taut. View image of string in reflector. When image of string in the reflector coincides with the actual string, from all viewing positions, reflector is properly aligned to the projector lens
4. View string in aperture. String should be centered horizontally and vertically. If not, move/adjust lamphouse to correct string position in aperture. When the string is centered in the aperture and image of string in the reflector coincides with the actual string, the lamphouse is properly aligned to both the projector aperture and to the projection lens. If you see an image of the string in the reflector in addition to the actual string, the lamphouse is not properly aligned to the projector.
5. Tighten lamphouse mounting bolts, being careful not to disturb final alignment.
6. Remove all alignment tools and release projector fire shutter.
7. Refer to **INTERCONNECTION DIAGRAM** (L-2654 page 10) for wiring instructions.

L-2654



AUTOMATION CONTACT  
SAMP MAINTAINED.  
FURN. BY OTHERS.

115V 1φ  
50/60 HZ  
INPUT  
TO LAMPHOUSE

NOTE: INPUT VOLTAGE TO POWER  
SUPPLY VARIES DEPENDING  
UPON MODEL.  
SYSTEM MUST BE GROUNDED.  
ALL WIRING MUST CONFORM  
TO LOCAL ELECTRICAL CODE.  
IF RFI IS A PROBLEM WITH  
SOUND SYSTEM INSTALL  
INTERCONNECTION WIRING  
IN CONDUIT.

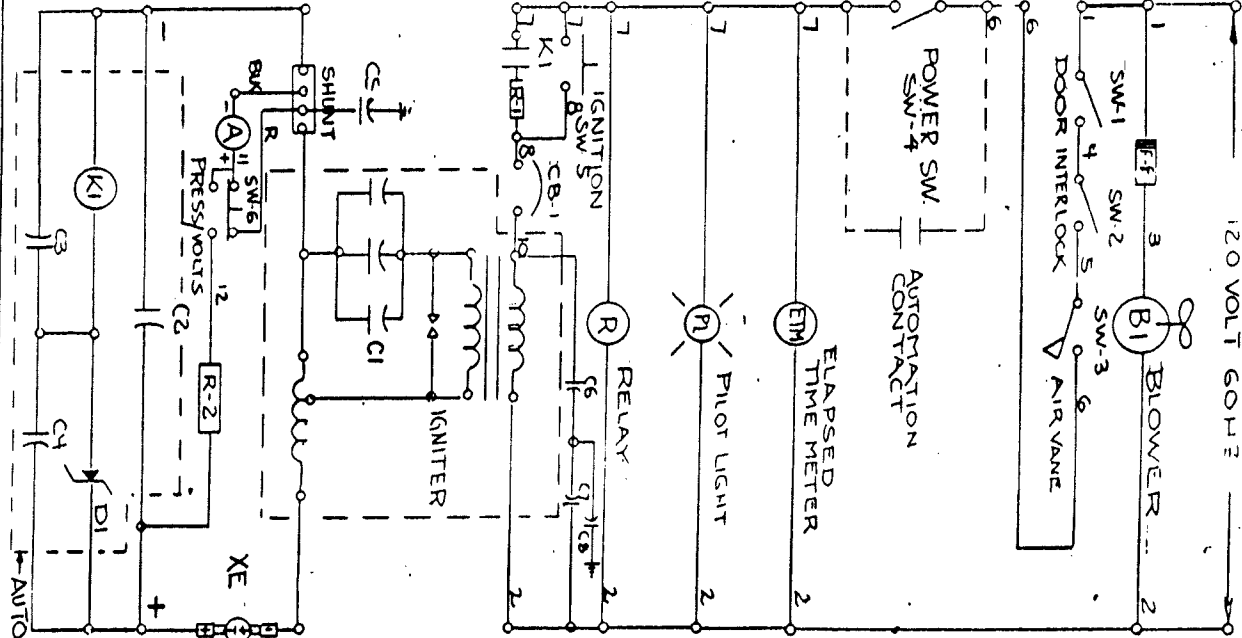
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FRACTIONAL		2	
ANGULAR		3	
		4	
		5	

DRAWN BY KSR		SCALE 1/2" = 1"	MATERIAL
CHECKED TRACER	DATE 12-5-86	APP'D	BRANDING NO. L-2654

INTERCONNECTION DIAGRAM

THE KNESELY ELECTRIC COMPANY



SYM	PART NO	DESCRIPTION	L-27109
A	L-2588	0.150AMP DC AMMETER, HOYT MOD.4025	
B1	L-2626	BLOWER, 265 CFM 115 VOLT 50/60HZ	
C1	R-1919	CAPACITOR, 500MMFD 20KV	
C2	R-2422-1	DISC CAP. .05 MFD 600V	
C3	L-1969	CAPACITOR, 100 MFD 100V	
C4	L-1178	DISC CAP. .02 MFD 1KV	
CB-1	L-2424	LAMP P43 W53XB1A4A-1	
D1	L-1179-1	GENER. D.O.D.E. 93V. SW	
ETM	L-2673	STEMCO ENGINEER 711.0011	
K1	L-1804	IMOG01ZU DPDT 10AMP 24VDC COIL	
PL	R-1679	SOLICO 125V. 1/3W RED	
R-1	L-1568	50HM 5WATT	
R-2	L-2637	3.6K 5WATT 5% RESISTOR (USE L-2978 15K 1WATT 5% 500Ω)	
SW-2	L-0177	CHEERY E13-004 15A 125/250VAC SPDT SW.	
SW-3	L-2631	AIR VANE SW. CHEERY E23-85HX 5A 125/250VAC	
SW-4	R-0511	MCGILL 90-0001 20A 125VAC SPST	
SW-5	R-0813	CH. 8442-K14 10A 12.5VAC MOM. NO. PB.	
SW-6	L-2638	GC 35416 MOM. PB. ON-ON SPDT	
SHUNT	L-2589	PAN. 50MV 150AMP #1A150A50	
F-1	L-2307	LITTLE FUSE IN LINE FUSE HOLDER 150145	
IGNITER	R-2915	FUSE, 3AG S10 BLO 31302.5 2 1/2A .250V	
IGNITER	R-2916	IGNITER (2500-4000W)	
CS	L-2921	RF SUPPRESSION .05MFD 41KV DISC CAP	
CG-1	L-2956	FILTER, RF, IGNITER (CG-1 .005, CB-01 400Ω)	

LASTNO. 12. NO 9 NOTUSED

LADDER DIAG. XENEX II

TOLERANCES			REVISIONS			DRAWING BY		SCALE		DATE	
REFER AS SHOWN			NO.	DATE	BY	NAME	SCALE	DATE	APPROVED	MATERIAL	
DECIMAL			1	11-5-86	NSF	NSF	NONE	11-5-86		L-27109	
FRACTIONAL			2								
ANGULAR			3								

THE KNEISLEY ELECTRIC COMPANY

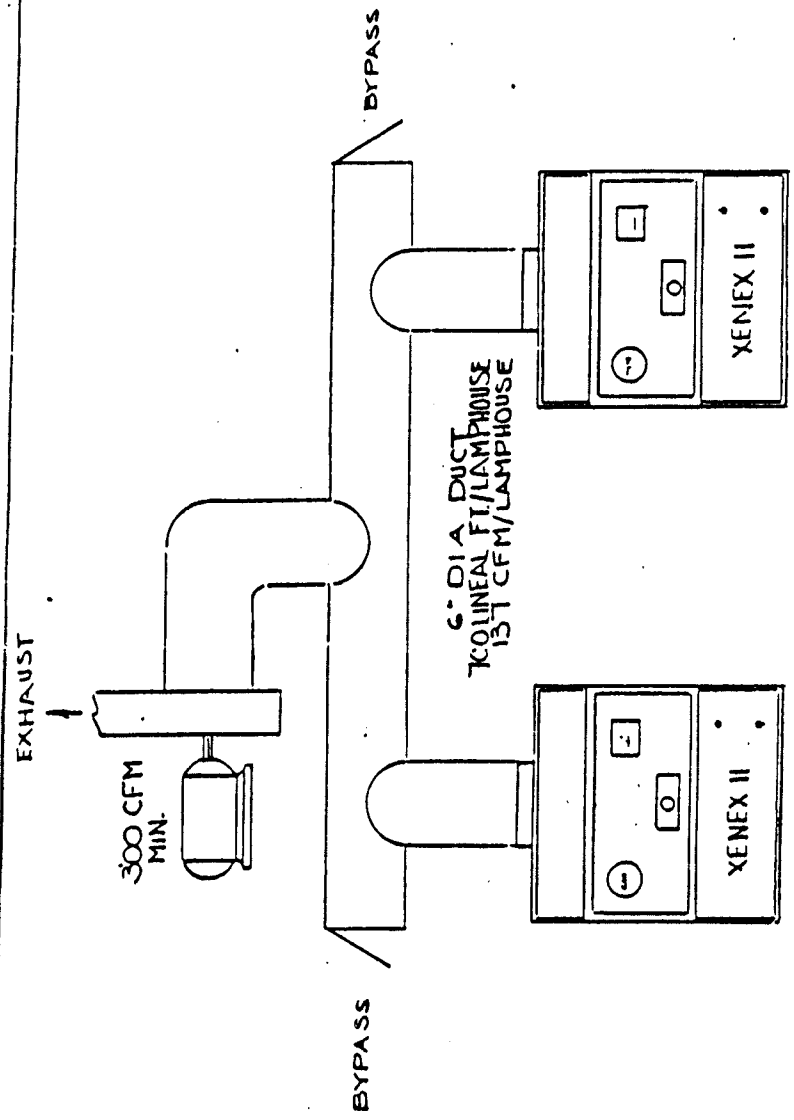
HEATING EQUIPMENT

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L-27109

L-2653



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APPROVED BY <b>...</b>		DELIVERED FOR <b>...</b>	

EXHAUST SYSTEM

THE KNEISLEY ELECTRIC COMPANY

L-2653

## EXHAUST SYSTEM INSTALLATION

Correct ventilation of lamphouse is extremely important for maximum bulb life. Refer to "Exhaust System" drawing L-2653, (page 12).

The exhaust fan must be capable of removing at least 700 lineal feet (137 CPM) of air per minute at each lamphouse regardless of size of bulb. **Not having proper air flow will void the warranties on both the bulb and the reflector.**

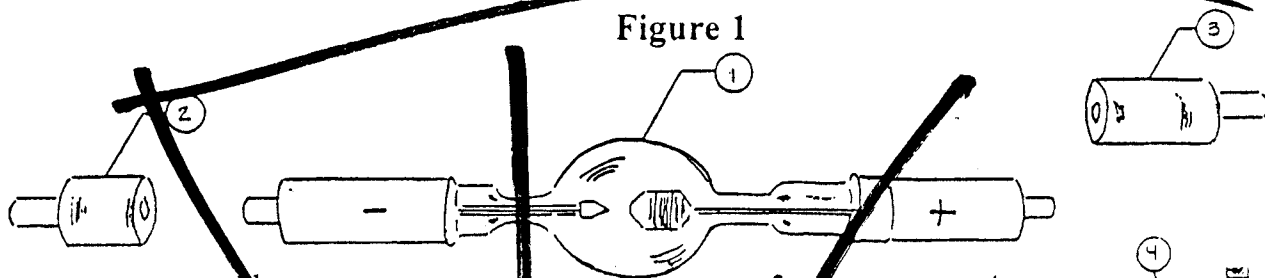
Install 6" flexible exhaust tubing to the lamphouse flue adapter and to the projection room exhaust system. Check ventilation carefully. An aluminum draft gauge (9" x 2-3/8" x .025" thick) is supplied with each lamphouse.

We suggest you remove dampers immediately above lamphouse if in existing system and rely on the bypass dampers. Turn on exhaust system. Close bypass dampers at each end of the stack. Place the draft gauge over the exhaust port on inside of lamphouse. Close lamphouse doors.

Bypass dampers should be adjusted until draft gauge is just held in place under the vent, with the lamphouse doors closed. Check both lamphouses if dual system is used.

# XENON BULB ADAPTERS

## Figure 1



OSRAM XENON BULB OR EQUIV	CATHODE ADAPTER	ANODE ADAPTER	ANODE LEAD
700 W/HS	L-2645	L-2646	L-2711
1000 W/HS	L-2645	L-2646	L-2711
1600 W/HS	L-2645	L-2646	L-2711
2000 W/HS			L-2712
2500 W/HS			L-2712
3000 W/HS			L-2712
4000 W/HS			L-2712
2000 W/H			L-2711
3000 W/H			L-2713
1000 W/HTP			L-2714
2000 W/HTP			L-2714
3000 W/HTP			L-2714
4000 W/HTP			L-2714

# CATHODE BULB SUPPORT ASSEMBLY

## Figure 2

CATHODE BULB SUPPORT ASSEMBLY	OSRAM BULB OR EQUIV	Notes
L-2701	700 W/HS	
L-2701	1000 W/HS	(2) F-1212 1/4-20 HEX NUT
L-2701	1600 W/HS	L-2639 NOTE: USE L-2881 FOR CONSOL
L-2701	2000 W/HS	(4) F-1053 4-40 x 3/8 PANHD
L-2701	2500 W/HS	(4) F-1210 #4 LOCKWASHER
L-2701	3000 W/HS	
L-2704	4000 W/HS	
L-2702	2000 W/H	
L-2703	3000 W/H	
L-2706	2000 W/HTP	
L-2705	3000 W/HTP	
L-2705	4000 W/HTP	

Not Correct



## BULB INSTALLATION

***CAUTION:*** Refer bulb installation to QUALIFIED SERVICE PERSONNEL.

*Wear protective clothing i.e., welder's jacket, leather gloves and face mask, as per bulb manufacturer's recommendations.*

Open the right hand side door (operator's side) of the lamphouse. Refer to Xenon Bulb Adapters (Figure 1 on page 14) to make certain you have proper adapters.

Attach the appropriate adapters and anode lead to the xenon bulb before removing the bulb protective cover.

Remove the plastic protective cover; grasp the bulb at the anode end and insert cathode end through small hole in reflector, inserting cathode pin into cathode adapter block. Tighten cathode block connection using  $\frac{5}{64}$ " Allen wrench furnished.

Make certain that the anode end of the xenon bulb is on the optical center line. Using a scale, check distance between surface of the lamphouse base pan and the centerline of the anode pin. This should measure 8-9/16". If not, correct by raising or lowering the anode support yoke.

Connect the anode lead to the positive terminal block.

Some bulbs are furnished with an anode lead attached. Do not remove the lead from the bulb. Connect the bulb lead to the terminal block in the lamphouse rather than using the anode lead furnished by Kneisley Electric.

Be sure all wiring connections are tight, to prevent arcing.

Close and lock door.

## LAMPHOUSE OPERATION

Install xenon bulb according to instructions in **Bulb Installation** section. Both doors should be closed, locked and secured to assure door interlock switches are made. Close lamphouse dowsers.

1. Turn on main power to power supply.
2. Energize lamphouse control circuit by plugging molded male plug into 115 volt, 60 Hz. receptacle. The lamphouse blower will start and the air flow switch will close.
3. Turn *Power Switch* on. Pilot light will light, contactor in power supply will close, making audible sound. D.C. voltage is applied to the igniter circuit and bulb. When the voltage reaches approximately 75 volts D.C. the igniter will fire and ignite the bulb. The voltage will drop across the bulb and the igniter will become inoperative.
4. With projection lens removed and a 1.85:1 aperture plate in projector (no film) start the projector and open lamphouse dowsers.
5. Turn the *focus knob* located on the rear of the lamphouse until smallest black spot is projected on the screen.
6. Loosen the knurled controls located on each side of the focus control and move the bulb horizontally and vertically until the black spot is as round as possible and the projected image of the cathode is hidden behind the anode. Tighten the knurled controls. Once more focus the bulb to obtain a sharp round projected black spot.
7. Close the lamphouse dowsers and install the projection lens in the projector. Open the lamphouse dowsers and observe the screen. Turn the focus control until an overall even light distribution is projected to the screen. **CAUTION: When performing this operation, open the lamphouse dowsers for very short periods of time i.e., (maximum of 5 seconds) as the expensive projection lens could be damaged.**

## LAMPHOUSE OPERATION

(CONTINUED)

The lamphouse is now properly aligned and focused and ready for daily operation. The above adjustments may have to be repeated when replacing the xenon bulb.

Turn lamp off by placing the "Power Switch" to the "OFF" position.

When the lamp is to be operated in an automated system, the *Power Switch* should be set to the *OFF* position. When the automation system calls for the lamphouse to turn on, the contact across terminal 6 and 7 (power switch) will close. This completes the circuit around the *Power Switch* and energizes the relay in the power supply. Automatic ignition will ignite bulb.

A manual *Push Button* ignite switch is provided on the back panel of the lamphouse and should be used only if the igniter fails to fire.

**At end of work day allow the lamphouse blower and upper stack blower to operate 10 minutes after extinguishing the bulb.** The blowers will dissipate accumulated heat to help prevent damage or weakening of the xenon bulb.

## MAINTENANCE

Always put on the safety head shield, leather gloves and welder's jacket, as recommended by bulb manufacturer, before opening the lamphouse doors, when handling the xenon bulb, or when working in an area close to the exposed xenon bulb.

Clean the interior of the lamphouse at regular intervals to remove dust and accumulation of dirt, depending upon conditions at location.

The reflector and xenon bulb should be cleaned occasionally with a clean, soft, lint-free cloth. Fingerprints and residue should be removed by using alcohol, distilled water, and cotton. Observe all safety precautions as outlined by the bulb manufacturer when working near the xenon bulb.

Periodically check all electrical connections in the lamphouse and the power supply to insure tight and secure fittings. Clean or replace fittings if corroded.

Once every four to six months lubricate the lamphouse exhaust blower with two or three drops of projector oil. Check to see that vanes in blower wheel are clean. \*

Do not operate the xenon bulb beyond its normal rated life. Quartz devitrifies with age. Continued use, after normal rated life, may result in explosion of the bulb envelope and damage to the expensive optics.

Rotate the xenon bulb periodically as recommended by the bulb manufacturer. Allow the lamphouse blower and the upper stack blower to operate 10 minutes after extinguishing the bulb. The blowers will dissipate accumulated heat and prevent damage and weakening of the xenon bulb.

Discard a used or unwanted xenon bulb, following the bulb manufacturer's instructions, by wrapping it several times in layers of heavy canvas or other heavy material. Smash the wrapped bulb by standing on a wooden board before placing it in a trash container.

**Do not discard the bulb without smashing it first. It would be hazardous! It could explode!**

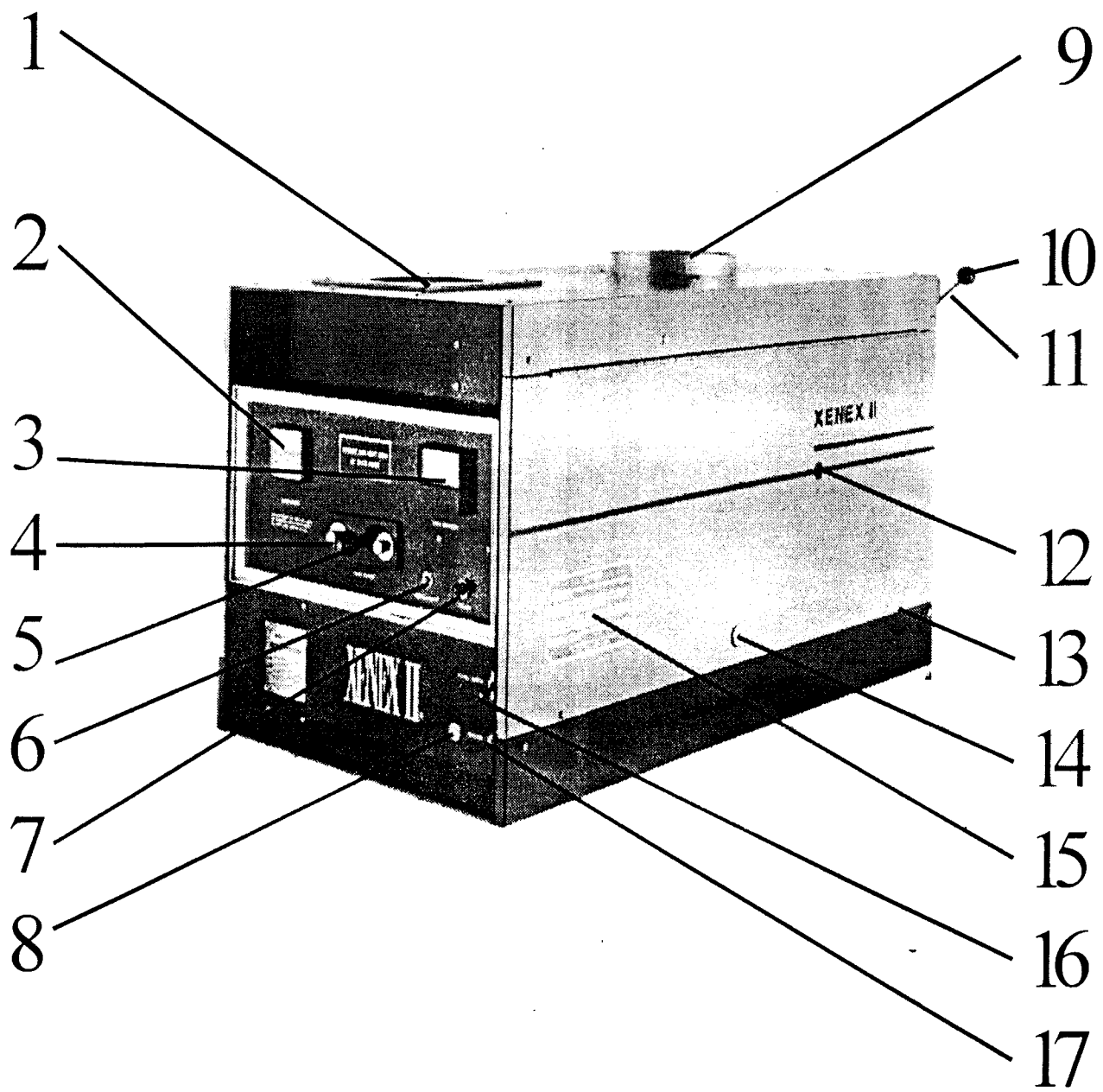
## TROUBLE CHART

**Caution:** Dangerous voltages are involved in the following procedures and trouble shooting should only be attempted by **QUALIFIED SERVICE PERSONNEL**.

TROUBLE	POSSIBLE CAUSE	REMEDY
1. Bulb fails to ignite	A.C. power not on to Lamphouse	Make sure cord from Lamphouse is plugged in and that 115 Volt 60 hz is available at receptacle.
	No A.C. power to power supply.	Turn main breaker ON feeding power supply. Check for voltage.
	Lamphouse blower not working	Check blower fuse (F-1 on W.D.) Replace with 3 AG 2.5 amp fuse.
	Air flow switch not closing or faulty door locks	Check for voltage at 4 and 2, 5 and 2, 6 and 2. Note: Door interlocks must be closed and blower is operating.
		If no voltages at any of above, replace faulty switch.
	Faulty power switch	Check for voltage at 7 and 2. If no voltage replace power switch.
	Faulty relay in power supply	Listen or observe for operation of relay when power switch is turned ON. Replace if defective.
	Defective ignition switch (manual operation)	First check CB-1. If open reset. If defective replace.

TROUBLE	POSSIBLE CAUSE	REMEDY
	Defective igniter	<p>Check to make certain CB-1 circuit breaker is closed, if open, reset.</p> <p>Press ignition switch. If bulb doesn't arc, replace switch/igniter.</p>
	Low or no D.C. voltage	<p>Press "Press/Volts" push button to read voltage. Should read in excess of 75 volts D.C. If not, re-adjust power supply taps.</p> <p>Faulty bridge rectifier or main transformer in power supply. Consult factory.</p>
	Faulty auto ignition circuit	Replace auto ignition assembly/zener diode/ relay.
	Defective xenon bulb	Replace bulb.
<b>2. Bulb goes out during operation</b>	Loss of control voltage	Check for 115 V.A.C. control volts.
	Lamphouse Blower failure	<p>Check fuse F-1 to blower.</p> <p>Check air flow switch and door interlocks as described in (1).</p>
	No D.C. voltage	Check for A.C. voltage input to power supply.
	Loose connection	Check all connections especially D.C. circuit.
	Faulty bulb	Replace.
	Incorrect magnet setting	Adjust magnet.

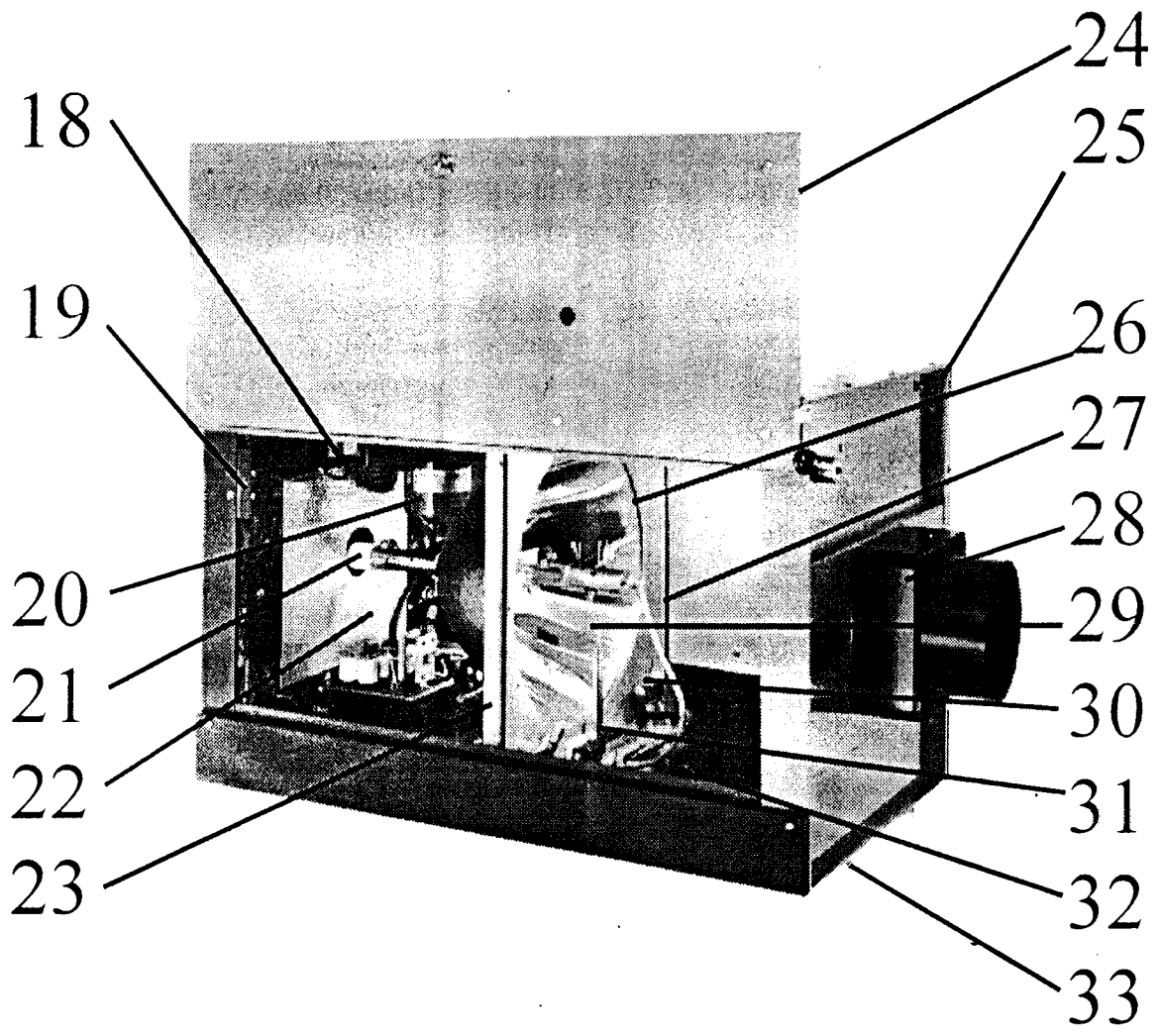
TROUBLE	POSSIBLE CAUSE	REMEDY
<b>3. Intermittent operation of xenon bulb</b>	Air flow switch not closing or faulty door interlocks	Check for proper closure of doors and operation of air flow switch. See (1).
	Loose connection	Check all connections.
<b>4. Bulb is hard to ignite</b>	Low "NO LOAD" voltage	Press "Press/Volts" push button to read voltage. Should read in excess of 75 V.D.C. If not, readjust power supply taps.
	"NO LOAD" voltage reads 40 to 50 volts	Check 3-phase for proper voltages.  Check for faulty bridge rectifier/filter capacitor.
	Operating Bulb below recommended current	Adjust current. Bulb should be operated at 85% of rated current initially...and increased to 100% during life.





## PARTS LIST

ITEM	PART NUMBER	DESCRIPTION
1	L-2649	Blower grill assembly
-	F-1119	Screw binding head 8-32 X 1/2"
2	L-2673	Elapsed time meter
3	L-2588	D. C. ammeter 0-150 amps
-	L-2589	Shunt, 150 amps, 50 M. V.
4	L-2630	Thumbscrew - knurled
-	L-2644	Washer
5	L-0128	Knob - black plastic ball
6	L-2638	SPDT - push button, red (voltage/amps)
7	R-1679	Pilot light
8	L-2424	Circuit breaker 1 amp
9	L-0849	Vent stack
10	L-0128	Knob - black plastic ball
11	L-1027	Dowser handle
-	L-0889-1	Dowser plate
-	L-0891	Dowser arm cover
-	L-0892	Dowser arm
-	L-0893	Dowser arm spring
-	L-0894	Dowser arm spring support
-	L-0897	Dowser stop pin, C.R. steel
-	L-0898	Dowser stop pin bumper
-	L-0900	Dowser detent
12	L-0888	Glass - arc port
13	F-1358	Screw round head 8-32 X 7/8"
14	R-2894	Door lock
15	L-2547	<i>Danger</i> plate
16	R-0511	Power Switch
17	R-0813	Ignition switch



# PARTS LIST

ITEM	PART NUMBER	DESCRIPTION
18	L-2631	Air vane switch assembly.
19	L-0777	Door interlock switch
20	L-2626	Blower - lamphouse house
21	L-2701 — L-2706	Cathode bulb support assembly (see page 14)
22	R-2915	Igniter Assembly (700 to 2000 W)
-	R-2916	Igniter Assembly (2500 to 4000 W)
23	L-2618-1	Air baffle, right side
-	L-2618-2	Air baffle, left side
24	L-2603	Top and side doors assembly
25	L-1264-1	Left hand door latch
-	L-0882-1	Right hand door latch
26	L-2600	Reflector, Electroform/metal, cold-coated
27	L-2601	Bulkhead casting
28	L-0845	Nosecone cone
-	L-2677	Nosecone cone extension
29	L-2616	Anode support yoke assembly
30	L-2625	Anode air duct
31	L-2617	Anode support post
32	L-2628	Terminal block
-	L-2627	Insulator terminal block
-	L-2613	Bracket - mounting
33	L-0843-2	Lamphouse rail
	L-1745-3	Automatic ignition kit, 3 phase, 220 volt

PARTS NOT SHOWN

L-1777-A	Zener diode assembly for above igniter kit.
L-1804	Relay assembly for above igniter kit.
L-2546	<i>Hazardous Light warning plate</i> on front of lamphouse.

# WARRANTY

To the purchasers of Kneisley equipment during the period of warranty coverage stated below, The Kneisley Electric Company warrants the equipment to be free of defects in materials and workmanship as stated below:

SCOPE OF COVERAGE	PERIOD OF COVERAGE	TYPE OF FAILURE COVERED
RECTIFIER STACKS and SIL-TUBES	THREE YEARS, PRORATED, FROM DATE OF FACTORY SHIPMENT	DEFECTIVE MATERIALS OR WORKMANSHIP
ALL OTHER PARTS OF KNEISLEY MANUFACTURE	ONE YEAR FROM DATE OF FACTORY SHIPMENT	DEFECTIVE MATERIALS OR WORKMANSHIP

Kneisley's obligation hereunder is limited to repair and replacement of parts which it determines to have defects in materials and/or workmanship. All warranty service and/or replacement of parts must be performed for you by The Kneisley Electric Company. Costs of shipping Equipment to and from Kneisley for such repair and/or replacement shall be paid by you. Any such warranty replacement or repair shall be subject to the terms and conditions of this warranty for the remainder of the original period of coverage.

This warranty does *not* cover items or parts not of Kneisley's manufacture, such as reflectors, projectors and xenon lamps which are covered by warranties issued by their manufacturers. This warranty does not cover any failures or operating difficulties due to accident, abuse, misuse, alteration, misapplication, improper installation or improper maintenance or service.

**THE FOREGOING WARRANTIES ARE EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, KNEISLEY HEREBY DISCLAIMS AND EXCLUDES ANY WARRANTIES, EXCEPT THOSE MADE HEREIN.**

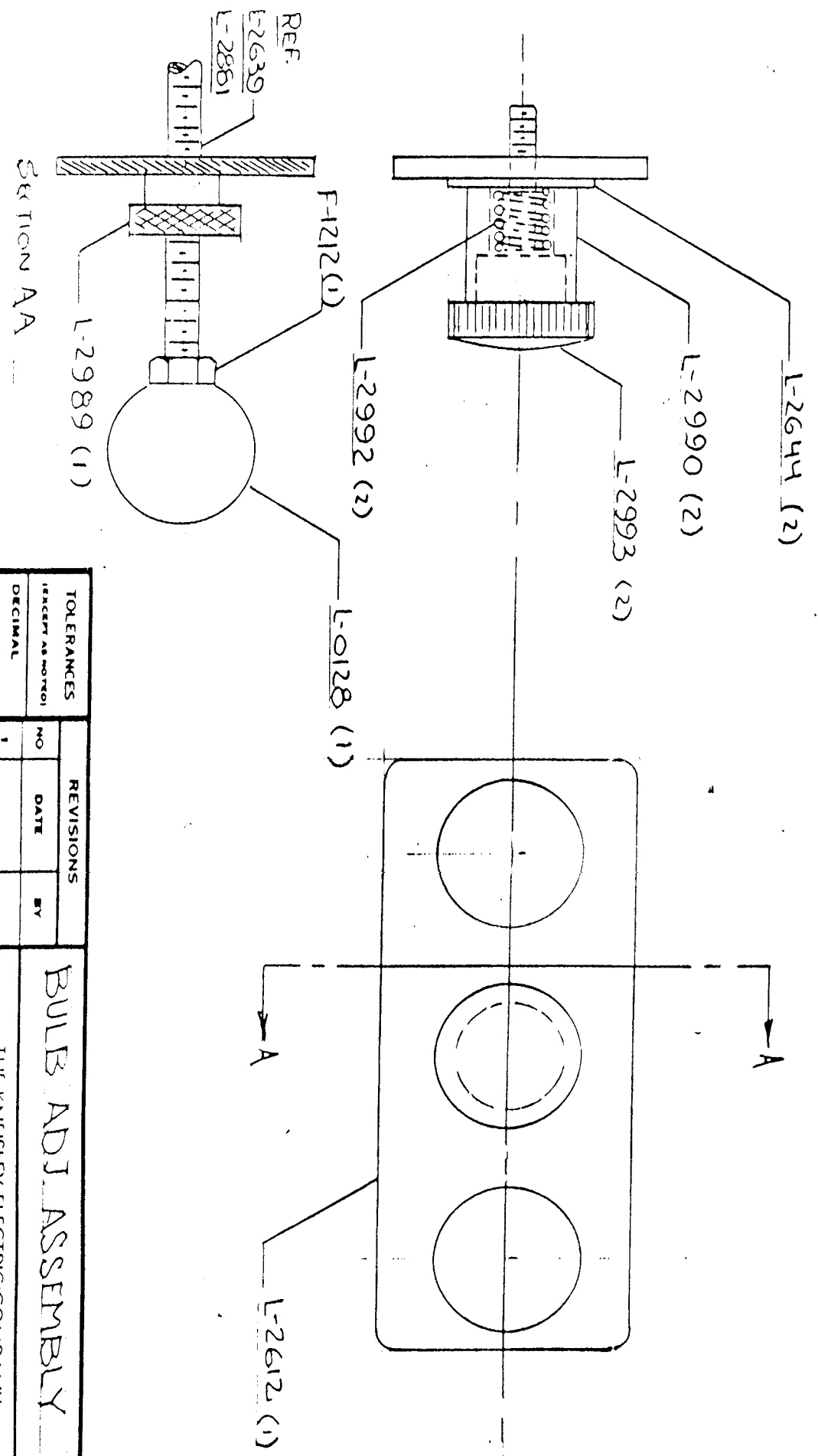
**UNDER NO CIRCUMSTANCES WILL KNEISLEY BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Kneisley does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, application engineering, installation, use, removal or replacement of its equipment, and no such representations are binding on The Kneisley Electric Company.



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L-2991

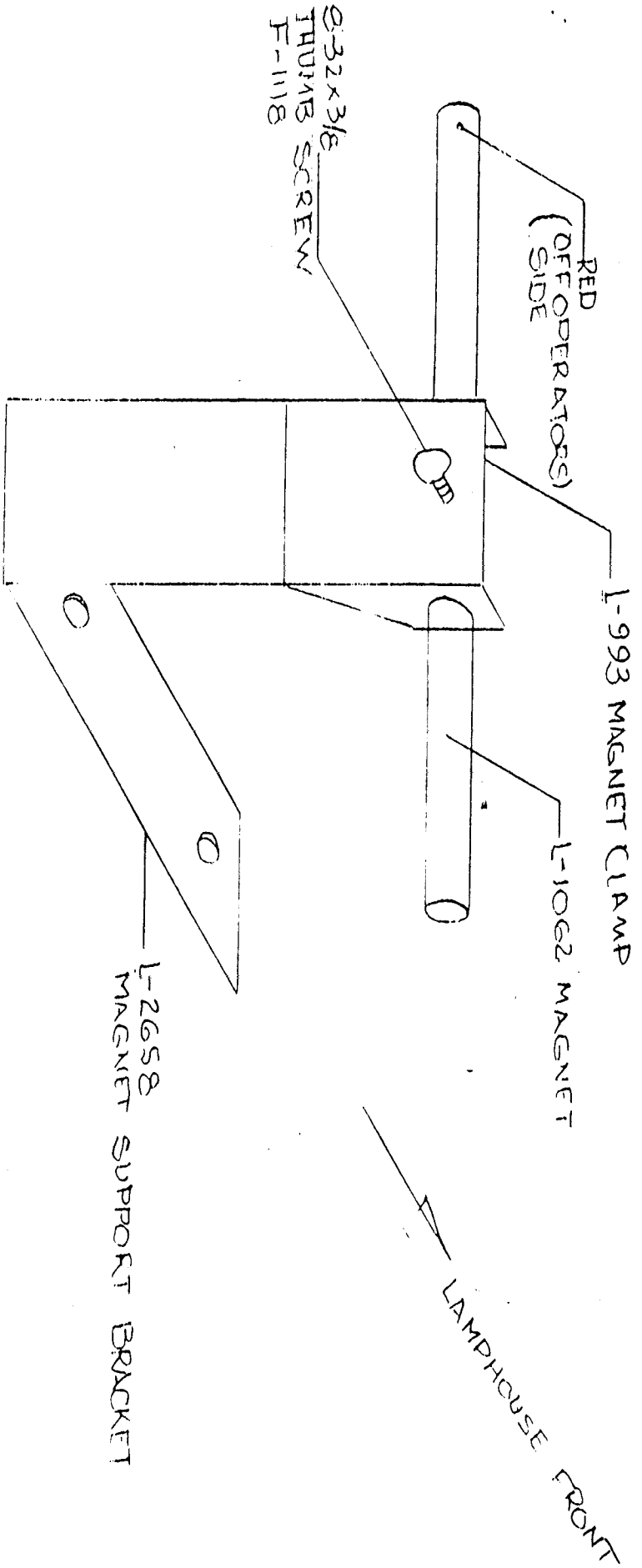


TOLERANCES		REVISIONS			DRAWN BY			SCALE		MATERIAL	
PERCENT AS NOTED		NO.	DATE	BY	F. FREMOND			FULL 1		-	
DECIMAL	±	1									
FRACTIONAL	±	2									
ANGULAR	±	3									
	+	4									
		5									

**BULB ADJ. ASSEMBLY**  
 THE KNEISLEY ELECTRIC COMPANY  
 THEATRE LIGHTING EQUIPMENT

DATE: 5/21/96  
 APP'D: [Signature]  
 DRAWING NO: 1-2991

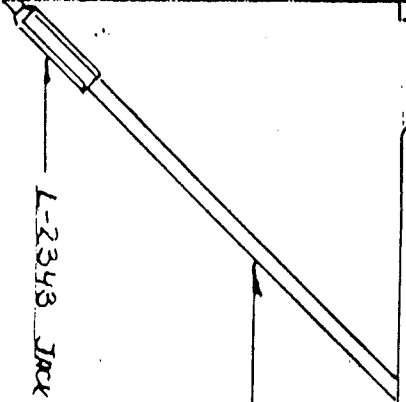
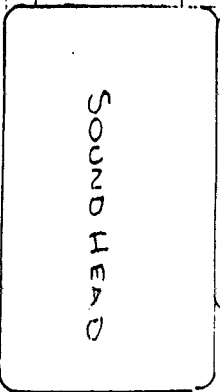
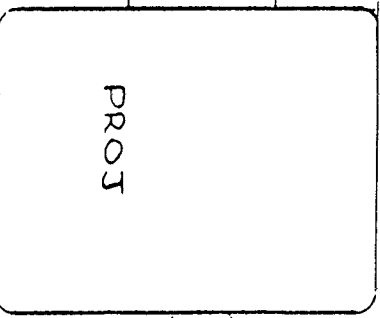
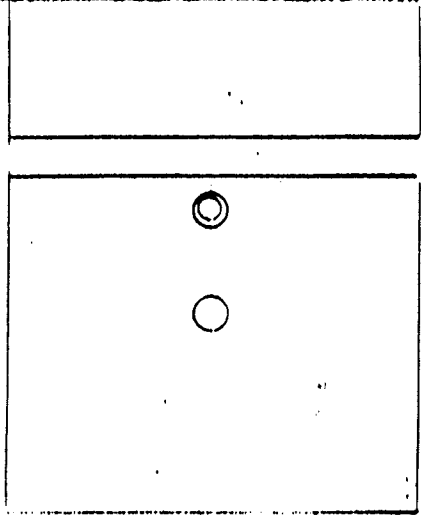
L-3003



TOLERANCES		REVISIONS			DRAWN BY <i>R. BROWN</i> CHK'D TRACED	SCALE NONE	DATE 10-14-96	MATERIAL DRAWING NO. L-3003
EXCEPT AS NOTED		NO	DATE	BY				
DECIMAL	±	1						
FRACTIONAL	±	2						
ANGULAR	±	3						
	±	4						
	±	5						

MAGNET INSTALLATION &  
 ASSEMBLY XENEX II & CONSOLE  
 THE KNESLEY ELECTRIC COMPANY  
 THEATR LIGHTING EQUIPMENT

L-3004



L-2343 JACK RAM STUD

L-2352 JACKRAM

TOLERANCES (EXCEPT AS NOTED)		REVISIONS			DRAWN BY R. RESEMAN		SCALE NONE		MATERIAL	
DECIMAL	FRACTIONAL	NO	DATE	BY	CHK'D	DATE	APPRO'D	DRAWING NO		
±	±	1				10-16-96		L-3004		
±		2								
		3								
		4								
		5								

PROJECTOR JACK RAM SUPPORT  
INSTALLATION

THE KNEISLEY ELECTRIC COMPANY

TRADE FIXING EQUIPMENT

DRAWN BY  
R. RESEMAN

CHK'D

TRACED

SCALE  
NONE

DATE  
10-16-96

APPRO'D

DRAWING NO

L-3004