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INSTRUCTIONS
FOR
"XENOLITE"
H30 AND H40 SERIES
XENON LAMPHOUSES

MF'D. UNDER U.S. PATENT 3,843,879

Manufactured by
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TABLE OF CONTENTS

		<u>PAGE</u>
I.	GENERAL DESCRIPTION	1
II.	UNPACKING	1
III.	INSTALLATION (VENTILATION REQUIREMENTS)	1 & 2
IV.	MECHANICAL ALIGNMENT	2 & 3
V.	INSTALLATION OF BULB	3 & 4
VI.	STARTING AND OPERATING	4
VII.	OPTICAL ALIGNMENT AND ADJUSTMENTS	4 & 5
VIII.	REPLACEMENT OF BULB	5
IX.	TROUBLE SHOOTING	5 & 6
X.	MAINTENANCE	6 & 7
	CLEANING OPTICAL SURFACES	8
	FIGURE A	9
	FIGURE B	10
	FIGURE C	11
	FIGURE E	12
	FIGURE F	12
	FIGURE G	12
	FIGURE H	13
	FIGURE J	13
	FIGURE K	14
	FIGURE L	14
	FIGURE M	14

I. GENERAL DESCRIPTION

This "XENOLITE" H Series of xenon lamphousings is designed to accommodate xenon compact arc lamps (bulbs) in ratings from 3000 - 4000 watts. These lamphousings utilize a highly efficient optical system to obtain maximum light output with extreme ease of operation and high reliability. This is accomplished by using a horizontally operated xenon bulb within a deep, explosion-proof reflector which has an aspheric shape to achieve maximum efficiency.

The lamphouse for motion picture projection is designed to be operated with any standard 35mm motion picture projector. It is recommended that the lamphouse be operated in conjunction with the standard Christie xenon arc-lamp power supplies for optimum performance. Both are designed to operate together as a system. The high voltage igniter (#13, Figure B) required for starting the xenon bulbs is included in the lamphouse enclosure. For the lamp (bulb) description, recommendations, and warranty, see the Christie (or equivalent) bulb instructions.

DANGER: *Possible Explosion Hazard. Due to the high internal pressure of xenon compact arc bulbs, they may explode if dropped or mishandled. Therefore, they must be handled with great care. Whenever the protective cover is removed from the bulb, protective clothing, including rubberized cotton gloves, double layer .040" acetate face shield, and quilted ballistic nylon jacket, must be worn. (These items are available from Christie Electric Corp.) The instructions regarding protective clothing are subject to change by any local or federal specifications which take precedence.*

If the bulb has been operating, wait ten minutes after shut-off before opening bulb chamber. This will allow the internal pressure of the bulb to reduce to a level permissible to use the authorized protective clothing.

NOTE: The XENOLITE lamphousings are equipped with a double latch system on the lamp access panels to eliminate inadvertent opening of the enclosure.

II. UNPACKING

1. It is recommended that the unit be moved to the installation site before uncrating.
2. Be sure the container is upright. Open the crate and remove the packing.
3. Carefully lift the unit from the crate. Thoroughly inspect the unpacked unit for possible damage that may have occurred during the shipment. Any damage discovered should be reported to the transportation company at once for inspection and filing of claim.

III. INSTALLATION (VENTILATION REQUIREMENTS)

1. Place the lamphouse on a sturdy table or base where it is intended to be operated. If it is to be installed on a motion picture projector, set the lamphouse so that the front of the snood (#14, Figure A) is the proper distance from the aperture plate or film plane. Put the four bolts (furnished with the lamphouse) through the slots of the base of the projector and screw them into the base of the lamphouse.
2. Turn the key lock latch on the safety cover and lift the safety cover. Turn the four 1/4" turn fasteners on the right side panel and remove the panel from the lamphouse.

3. Remove the safety screw and three 1/4" turn fasteners holding the rear panel closed and remove the panel. NOTE: The screw nut must be held from the inside of the lamphouse. (To remove panel from left side, the nut on the screw in the upper right of that panel must also be held from the inside of the lamphouse.) NOTE: When replacing the panels, be certain to secure all screws and fasteners.
4. Insert the two D-C cables (from the power supply) through the cable entrance in the right rear of the lamphouse. Securely bolt them to the positive (+) and negative (-) terminals of the lamphouse. (See #4 and #2, Figure B.) Be sure to observe correct polarity as marked on the terminals. With the A-C power disconnected, connect the 115 Volt A-C supply* leads through the A-C cable entrance in the left rear of the lamphouse to the A-C terminal, TB101-3 and 4 of the lamphouse terminal strip (#8, Figure B). The colored wire should be connected to Terminal 4, and the white wire should be connected to Terminal 3. A third wire should be used to ground the lamphouse (#3, Figure B). GROUNDING THE LAMPHOUSE IS AN IMPORTANT PRECAUTION. Next, connect control wires from the interlock terminals of the lamphouse (TB101-1 and -2) to the remote control terminals of the power supply (TB1-10 and -11), as shown on the schematic wiring diagram. Remove jumper wire (if furnished) from the power supply terminals. If Automation Control (Automatic Remote Control) is used, connect Terminals 5 and 6 of Terminal Board TB102 to normally open contacts of the remote control relay or switch (furnished by customer), using Size 14 or 12 Awg. wire. For manual override of the Automation Control, set the D-C Power ON-OFF Switch to ON. CAUTION: If these connections are not properly made, the lamphouse interlock will be inoperative and the bulb warranty will be void.
5. If installation is in a confined area, such as in a projection booth, it is recommended that the hot exhaust air be ducted to the outside of the building. Connect a six-inch I.D. flexible, fireproof ducting material to the exhaust duct (#13, Figure A) on top of the lamphouse. Be sure there are no obstructions in the ducting and that the air intake openings of the lamphouse are unobstructed. A blower must be installed to provide a minimum airflow of 750 ft./min. at the exhaust stack. Normally, this airflow can be obtained with a blower rated at least 300 CFM. Important: The booth must have adequate openings to provide fresh air supply for proper cooling.

IV. MECHANICAL ALIGNMENT

The H Series lamphouses are optically aligned at the factory. In order to achieve optimum screen illumination and uniformity, the optical axis must be aligned with the center of the area to be illuminated. In an installation with a motion picture projector, this area is the film aperture. This alignment is readily accomplished by using the Christie Motion Picture Projector Alignment Tools (Figure C). The procedure is as follows:

1. With the right side and rear panels off, remove the heat filter (#15, Figure A) from the inside of the lamphouse by turning the two 1/4" turn fasteners.
 2. Install the alignment tool in the rear of the heat shield (see #3, Figure C). Then, place the mirror alignment tool into the indexing holes on the front side of the mirror support casting. Make sure both tools are properly seated.
- *) or other voltage supply as specified.

3. Remove the lens from the projector and insert the $2\frac{25}{32}$ diameter aluminum slug (#6, Figure C) into the lens holder. (Use a lens adapter, if required.)
4. Insert the 1/2" alignment rod (36" long) into the aluminum slug, open the fire dowser, and run the rod through the projector to the alignment tool. If necessary, adjust the projector base so that the rod passes smoothly through the tool.
5. Open the lamphouse dowser and slide the rod through the tool. Install the alignment disc (#2, Figure C) on the end of the alignment rod. Adjust lamphouse as required to align the disc with the mirror alignment tool. Make sure that the alignment rod remains free in the alignment tool during this adjustment.
6. Tighten all adjustment screws and remove the alignment tool. Replace the heat filter. Do not replace the projector lens in the projector at this time. Check to see that the distance from the front of the snood to the aperture is the proper distance ($6\frac{3}{4} \pm \frac{1}{4}$ for 35mm - $5\frac{3}{4} \pm \frac{1}{4}$ for 35/70mm).

V. INSTALLATION OF BULB

1. Remove the right side and rear panel (see III).
2. Remove the flexible air duct (#5, Figure B) and the connecting flange from the rear bulb support.

DANGER: POSSIBLE EXPLOSION HAZARD. WEAR AUTHORIZED PROTECTIVE MASK, JACKET, AND GLOVES WHEN WORKING WITH ANY XENON BULB WHEN THE PROTECTIVE COVER IS REMOVED. DO NOT TOUCH THE QUARTZ BODY OF THE BULB WITH BARE HANDS.

3. Take the bulb out of its package LEAVING THE PROTECTIVE COVER ON. Remove the knurled nut from the negative base pin of the bulb. Remove the protective cover and slide the radiation tube over the anode end. Install the forward adapter on the anode terminal 90° from the vertical and towards the left side (see Figure J) and tighten the clamp. Insert negative threaded terminal through the hole in the center of the rear support (#1, Figure B) and rest the anode radiation shield on the top of the air tube with the two tabs inserted in the slot of the radiation shield (Figure H). Install the nut loosely on the cathode terminal and connect the high voltage lead (from the igniter to the forward adapter). After tightening the high voltage connection, check to see that the radiation shield is resting correctly on the air tube centered in the reflector, as shown in Figure H. Now, tighten firmly the knurled nut on the cathode terminal pin, using care to keep the bulb from rotating out of position and to avoid the transfer of bending or twisting stresses to the quartz body. Replace the flexible air duct and connecting flange. With the adjustment mechanism centered, measure to insure that the positive end of the bulb is centered in the reflector within 1/16".
4. Take care to insure that the polarity to the bulb is correct. Operation of the bulb with reversed polarity will permanently damage the bulb. Make sure that the positive lead from the bulb does not touch or run within 2" of any metal part inside the lamphouse. Check operation of the dowser. If the leads are too close to metal parts, it may cause arcing during the starting pulse and the bulb may not ignite.
5. If the quartz body of the bulb is accidentally touched with the bare hands or becomes dirty, remove the dirt and finger stains with clean alcohol and a clean, soft cloth. *AUTHORIZED PROTECTIVE CLOTHING MUST BE WORN.*

6. Replace the side and rear panels making sure that all fasteners are secure and the key switch is locked. (The unit is electrically interlocked and will not operate unless the safety cover is locked.)

VI. STARTING AND OPERATING

1. Before starting the bulb, check the rated bulb operating current which will be found on the bulb data sheet in the box in which the bulb is shipped.
2. For best possible bulb life, it is strongly recommended that the bulb be rotated 180° when it has been operated for approximately 1/2 of its warranted life. This can be done by simply loosening the nut on the cathode end of the bulb and the connector on the positive end of the bulb, rotating the bulb 180°, and securely re-tightening the connections at each end. Also rotate the radiation shield. Place clip over slot not being used.
3. Check to see that the DC Power ON-OFF Switch (#8, Figure A) is in the OFF position. Energize the AC power supply to the lamphouse and to the DC power supply. Set power supply ON-OFF Switch to "ON" position. (The power supply should not energize until the DC Power ON-OFF Switch on the lamphouse is switched on.) Set the Current Adjust on the power supply to its medium position. Check to insure that the lamphouse cooling is operating. The green Interlock light (#29, Figure A) should be ON. This light indicates that the Interlock circuit is closed. If the light is not on when the pilot lamp is on (#6, Figure A) check for an open switch in the Interlock circuit. (Door switch, blower switch, or exhaust stack switch.)

If Automation Control (Automatic Remote Control) is used, the ON-OFF Switch should be left in the OFF position. The operation of the bulb is then controlled by the Automation relay. If this relay malfunctions, the bulb can be lit by setting the DC Power Switch to ON.

4. Check that the dowser handle (#12, Figure A) is closed (up position). Turn the DC Power ON-OFF Switch to the ON position. The bulb will automatically ignite. If not, momentarily press the Emergency Start Button (#7, Figure A). This will strike the bulb again. Observe the ammeter to insure that the rated bulb current is not exceeded. Never allow the current to exceed the rated bulb current or drop below 40% of that value. If the current is too high or too low, adjust the power supply to the proper current. The bulb may extinguish when the power supply is switched but should restart automatically. If not, the bulb must be restarted by pressing the Emergency Start Button.
5. Check the arc image seen in the viewing screen in the side panel of the lamphouse. Note that the image seen is inverted from its actual position. Refer to Figures E, F, and G for correct arc position and any necessary adjustments to the arc deflection magnet (#18, Figure A). NOTE: In order to obtain expected bulb life, it is important that the arc be operated as shown in Figure F.
6. NEVER VIEW THE BULB DIRECTLY. Serious and permanent eye damage can be caused by the ultra-violet radiation of the bulb. Under no condition should the lamphouse be opened except as described in Paragraph VIII, below.

DANGER: FIRE HAZARD. KEEP HANDS, CLOTHES, AND COMBUSTIBLE MATERIAL AWAY FROM THE CONCENTRATED LIGHT BEAM IN FRONT OF THE SNOOD.

7. Extinguish the bulb by turning the DC Power ON-OFF Switch to the OFF position. Do NOT open the lamphouse door until at least 10 minutes after switching off the bulb. Always wear an authorized protective face mask, jacket, and gloves. Pull the AC disconnect in the AC line before entering the lamphouse of the power supply unit.

CAUTION: Do not service the power supply until at least 2 minutes after it has been turned off to allow capacitors to discharge.

VII. OPTICAL ALIGNMENT AND ADJUSTMENTS

1. After the bulb has been started and operated per the instructions of Section VI, open the dowser. A dark spot will be observed on the screen.

2. Using the Bulb Adjustment Mechanism (#10,#11,#12, Figure B), adjust the Bulb Focus (#10, Figure B) until the dark spot is clearly defined and then center it, using the Vertical and Lateral Adjustments (#11 & #12, Figure B); see Figure K.
3. Then, move the bulb forward (turn Focus Adjust counter-clockwise). The light intensity should be equal on both sides of the dark spot. If not, adjust the Vertical and/or Lateral adjustments. When the intensity on both sides of the spot is equal, move the bulb back through FOCUS and the light intensity should again be equal on both sides of the dark spot. If it is not, recheck the mechanical adjustment (Section IV) and repeat these adjustments. See Figure L.
4. Close the dowser and replace the projector lens in the projector. Again, open the dowser and make final bulb adjustments, if necessary, to obtain maximum and uniform light on the screen. See Figure M.
NOTE: There is normally no need to change any of the adjustments thereafter until the bulb is replaced.

VIII. REPLACEMENT OF BULBS

1. Be sure that the bulb has been cooled for at least 10 minutes and that an authorized protective face mask, jacket, and gloves are worn. Pull the A-C disconnect to the lamphouse and turn off the power supply. Unlock the safety door, remove the rear panel and side panel. Loosen the positive (+) and negative (-) connections, carefully remove bulb from the lamphousing, and immediately PLACE THE PROTECTIVE COVER AROUND THE BULB, taking care not to touch the quartz envelope.
2. It is recommended to replace the bulbs after a running time which exceeds the warranted lifetime by not more than 20%. The running time can be checked by the elapsed time indicator on the side of the lamphousing. Be sure to record the elapsed time reading when installing a new bulb.
3. Defective bulbs are to be returned to Christie Electric in their protective cover and original packing. The forms supplied with the bulb must be filled out completely. All portions of failed bulbs including electrodes must accompany the bulb to aid in evaluation of any warranty claim.

IX. TROUBLE SHOOTING

1. Power supply will not start:
 - A. Check electrical connections and the rear panel and airflow interlock switches in the lamphouse.
 - B. See power supply instruction manual (furnished separately).
2. Lamp cannot be ignited, check following:
 - A. D-C power supply is set to proper value, as specified.
 - B. D-C voltage at lamphouse is connected with correct polarity and should not be less than 85 volts open-circuit. If D-C voltage is low, check the power supply (see power supply instructions).
 - C. 115 volt A-C is supplied to igniter.
 - D. Wiring connections to bulb and power supply are correct and secure.

- E. When the On-Off Switch is ON, listen for the normal buzz of the igniter when the D-C voltage reaches 85 volts. If there is no buzzing, remove the side panel from the lamphouse and take the cover off the igniter. Check to see if the igniter relay pulls in.

DANGER: DO NOT TOUCH IGNITER WHEN ENERGIZED DUE TO VERY HIGH VOLTAGE.

If relay is not operating, check relay circuit; operate relay manually. Replace relay if found defective. If relay is operating but no buzz is heard, replace spark gap.

- F. When the Emergency Start Button is pushed, listen for the normal buzz of the igniter. If there is no buzzing, remove the side panel from the lamphouse and take cover off the igniter. Replace the spark gap.

DANGER: DO NOT TOUCH THE IGNITER WHEN ENERGIZED DUE TO VERY HIGH VOLTAGE.

- G. If the igniter is operating properly, check for high-voltage arcing to ground as follows:

1. Disconnect the D-C power leads from the power supply.
2. While looking down through the Exhaust Air Duct (#13, Figure A), press the Emergency Start Button (#7, Figure A) and observe if there is any arcing from the bulb or from the positive bulb lead to any metal parts of the lamphouse or mirror.
3. If arcing is noticed from the flexible bulb lead, relocate the lead routing as far as possible away from any metal parts.

H. Check the bulb: *USE AUTHORIZED FACE MASK, JACKET, AND GLOVES.*

I. Check the bulb interlock circuits.

3. Light intensity on screen changes to a lower level:

A. Check bulb current.

B. Check focus adjustment.

C. Check fuses in A-C line.

D. If light intensity remains low after Steps A, B, and C, turn the bulb off and allow the bulb to cool for at least 10 minutes. Then, wearing authorized face shield, jacket, and gloves, open the lamphouse to observe if there has been any damage or deterioration of the mirror surface.

X. MAINTENANCE

1. Before opening the lamphouse, PULL THE A-C LINE DISCONNECTS TO THE LAMPHOUSE AND D-C POWER SUPPLY. USE AUTHORIZED PROTECTIVE MASK, JACKET, AND GLOVES, AND PLACE PROTECTIVE COVER ON BULB. Check the contact surfaces of the (+) and (-) connections at regular intervals or approximately 500 hours for cleanliness. If need be, clean them. It is important that this procedure be followed regularly as the contact resistance may lead to a scorching of the connectors. Clean the air intake openings.

2. Cleaning Optical Surfaces: The exposed optical surfaces of the lamphouse occasionally require cleaning. The snood heatshield may be removed for cleaning by turning the retainer clips down and taking out the shield from the inside. Mirror surface should be inspected every two weeks for cleanliness to maintain optimum system performance. Always remove the bulb (see Section VIII) before cleaning the mirror.

NOTE: Since repeated cleaning of optical surfaces can be more harmful than helpful, cleaning should be performed only when the surfaces are excessively dirty.

Using the cleaning supplies listed on Page 8, clean optical surfaces as follows (optics cleaning kits are available from Christie Electric Corp.):

- A. For surfaces that are dusty but do not have smudges, fingerprints, or grease marks:
- 1) Brush the dust from the surface with a camel-hair brush.
 - 2) Blow any remaining dust away with an ear syringe.
- B. For surfaces that are smudged or have oil grease smears:
- 1) Moisten a pad of cotton with detergent solution. The pad should be well moistened but not dripping wet.
 - 2) Gently swab the exposed lens or mirror surface, using a spiral motion and working from the center of the surface toward the edge.
 - 3) Sponge up moisture with cheesecloth or lens tissue.

CAUTION: NEVER USE CHEESECLOTH OR LENS TISSUE FOR MORE THAN ONE SPONGING. THROW IT AWAY.

- 4) Dampen a pad of cotton with methyl alcohol. Wipe surface, using spiral motion from center to edge, in one continuous motion.
 - 5) Dry exposed surface with a dry pad of cotton or with lens tissue.
 - 6) Repeat the procedure above as required. When exposed lens or mirror surface is dry and clean, loosen any remaining lint with brush and blow clean with the ear syringe.
- C. Maintaining Other Surfaces: Surfaces other than the optical surfaces require periodic maintenance to keep the lamphouse in good operating condition. These items are the blower, igniter, and air flow interlocks. Cleaning and lubricating these items should be performed approximately every six months depending on the environmental conditions in which the lamphouse is used. Very dusty or otherwise contaminated areas may require frequent maintenance.

Recommended procedure for these items are:

1. Blower - The blower impeller and motor should be cleaned to prevent build-up of contaminant on both the blower impeller surfaces and on the blower motor. Proper operation of the bulb is dependant on providing adequate cooling air flow. A dirty blower may not provide proper air flow with the result that the bulb and lamphouse may operate at higher temperatures than are desireable. The blower impeller may be cleaned by use of a vacuum sweeper if the dirt is loose on the impeller. If the dirt cannot be cleaned by this means it may be necessary to use a brush with hot water and a suitable detergent. Care must be exercised when cleaning the impeller so as not to bend the blades or to loosen the balancing weights.

Periodically lubricate the blower motor by applying 3-4 drops of a light machine oil to the oil holes in the motor housing. The blower cover (see Figure A, item 9) must be removed to gain access to the blower motor.

2. Igniter High Voltage Terminal - Periodically clean the high voltage terminal and insulator to prevent accumulation of dust or dirt.
3. Air Flow Interlocks - Periodically check and, if necessary, clean the air flow interlocks (vane and air tube) to remove any accumulated dirt.

WARNING: The lamphouse blower must be left ON for 8-10 minutes after turning off the xenon bulb (CXL-30 and CXL-40).

CLEANING OPTICAL SURFACES

CHRISTIE CLEANING KIT, P/N112481-1

<u>NAME</u>	<u>DESCRIPTION</u>	<u>MANUFACTURER</u>
Detergent solution in plastic bottle (M113691-1)	Comprising 1 part ORVUS to 9 parts water, or 1 teaspoonful of TIDE to 1 quart of water. ORVUS is a liquid and TIDE is a flake detergent.	ORVUS and TIDE are produced by the Procter and Gamble Co., Cincinnati, Ohio
Brush (598900-076)	3/4" camel's-hair	C.H. Dester and Sons, Inc., Windsor, Conn.
Lens tissue	Optical rice paper No. 51, 5-1/2 pound UT	
Cotton	1 inch pads, sterilized, medical (soft), absorbent	
Case, plastic, clear (598700-018)	Medical	
Bag, plastic	4 X 6	
Bag, plastic	9-1/2 X 12	

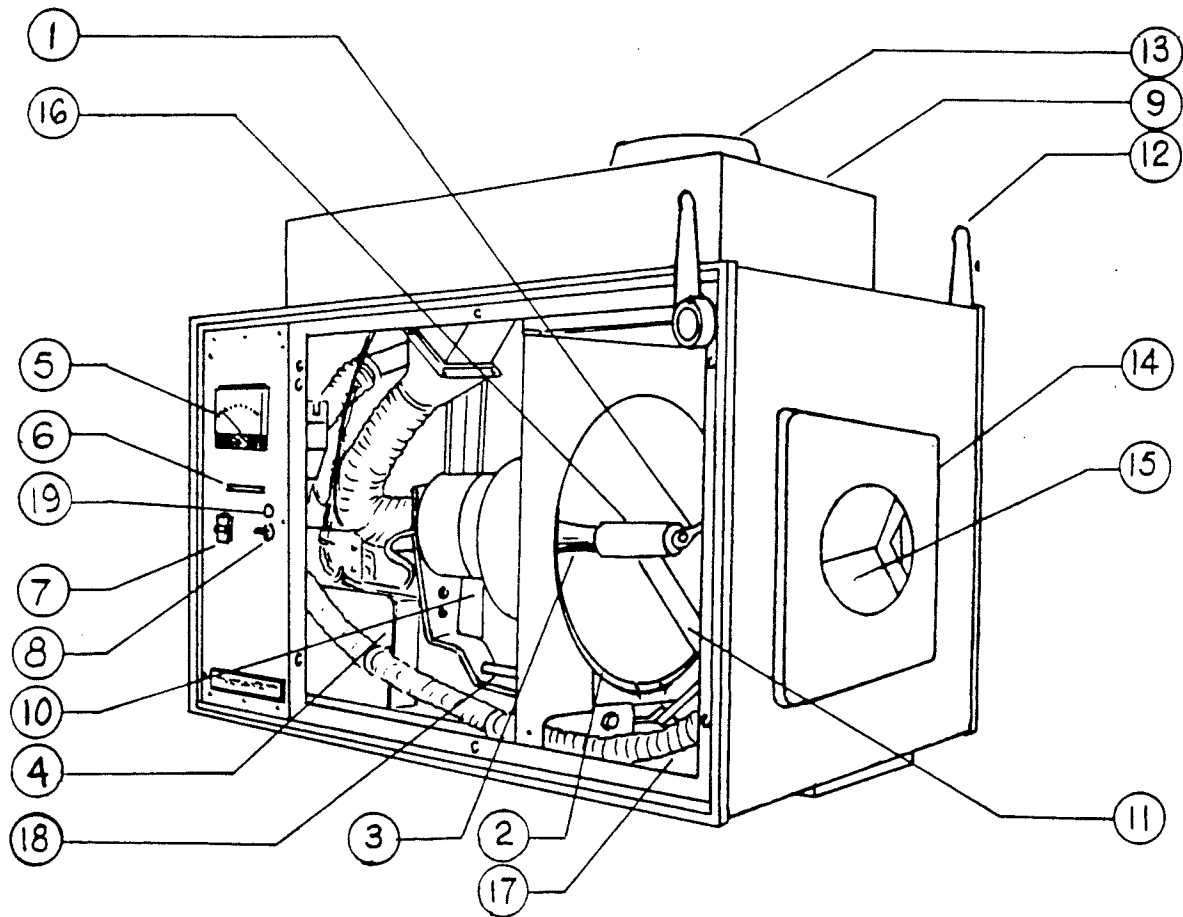


FIGURE A

- | | |
|---------------------------------------|--|
| 1. BULB ADAPTER (FRONT) | 10. AIR FLOW SWITCH (BULB) |
| 2. MIRROR CASTING | 11. FRONT BULB SUPPORT BRACKET |
| 3. BULB | 12. DOWSER HANDLE |
| 4. IGNITER (HIGH VOLTAGE) | 13. EXHAUST DUCT |
| 5. AMMETER | 14. SNOOD |
| 6. ELAPSED BULB TIME METER | 15. HEAT FILTER |
| 7. EMERGENCY START SWITCH | 16. RADIATION SHIELD |
| 8. DC POWER ON-OFF SWITCH
D.P.S.T. | 17. AIR TUBE (ANODE) |
| 9. BLOWER COVER | 18. MAGNET (ARC DEFLECTION) |
| | 19. PILOT LIGHT, GREEN (NOT PRESENT ON ALL MODELS) |

FIGURE A

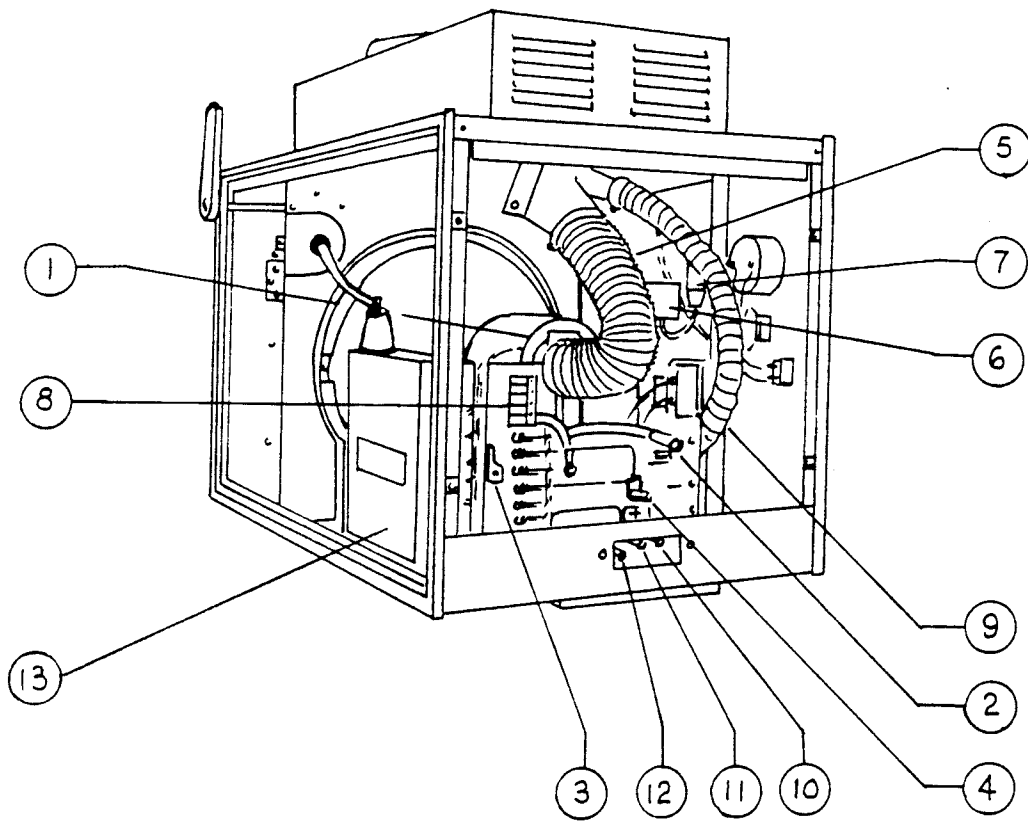


FIGURE B

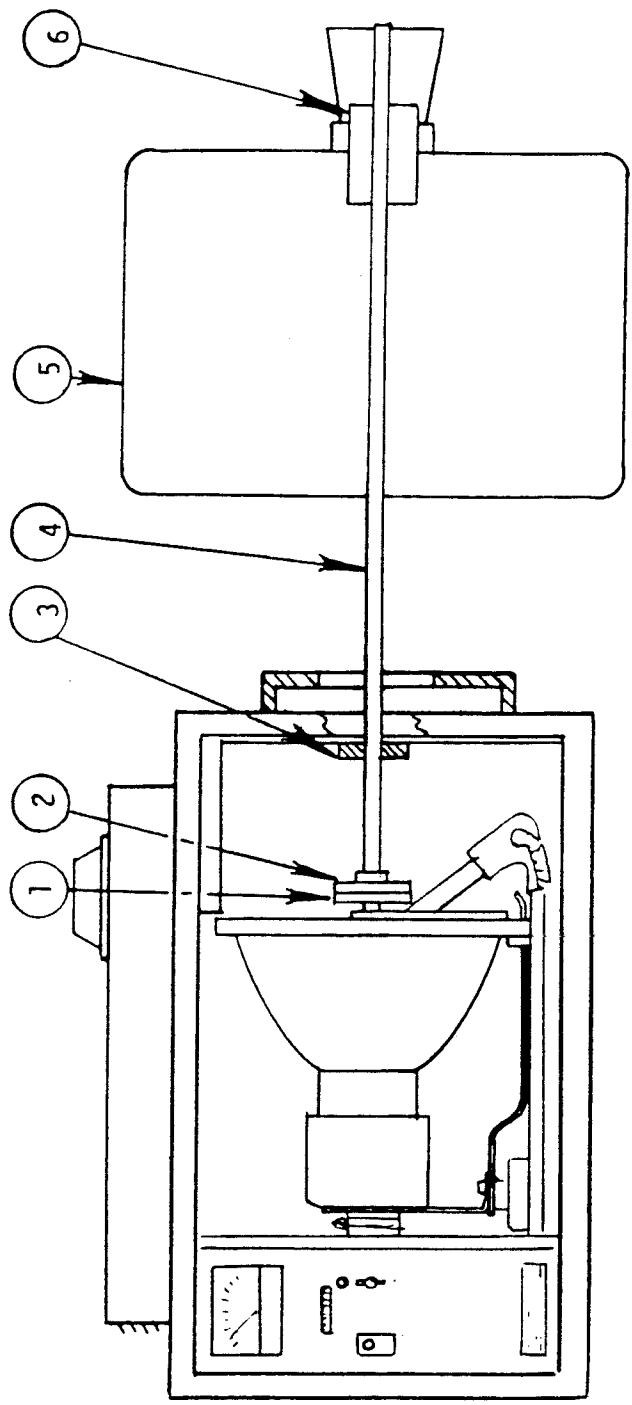
- | | |
|----------------------|--------------------------------|
| 1. REAR BULB SUPPORT | 7. PANEL INTERLOCK SWITCH |
| 2. NEGATIVE TERMINAL | 8. TB101 TERMINAL STRIP |
| 3. GROUND TERMINAL | 9. AIR TUBE |
| 4. POSITIVE TERMINAL | 10. BULB ADJUST FOCUS |
| 5. FLEXIBLE AIR DUCT | 11. BULB ADJUST VERTICAL |
| 6. VIEW SCREEN | 12. BULB ADJUST LATERAL |
| | 13. IGNITER HV |

FIGURE B

-10-

O.I. 8/13/73
REV. A 9-29-75

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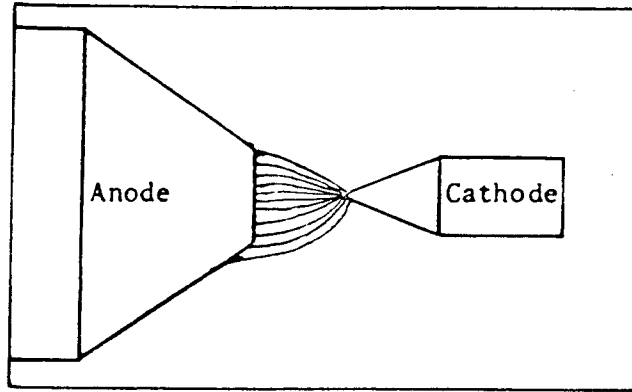
- 1. MIRROR ALIGNMENT TOOL
- 2. ALIGNMENT DISC
- 3. ALIGNMENT TOOL
- 4. ALIGNMENT ROD
- 5. PROJECTOR HOUSING
- 6. 2-25/32 DIAMETER ALUMINUM LENS SLUG

FIGURE C

- 11 -

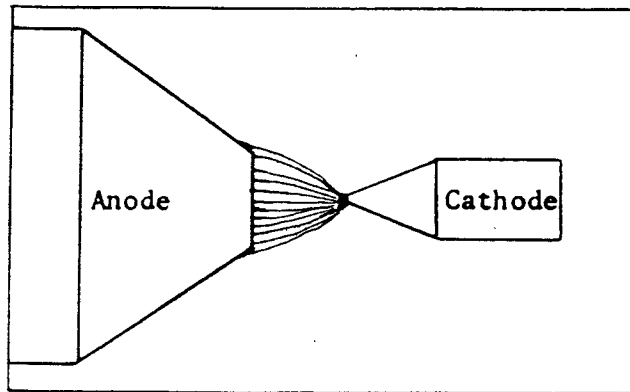
REV. A 4/15/75
 REV B 9-29-75

INVERTED ARC IMAGES AS SEEN IN VIEWING SCREEN



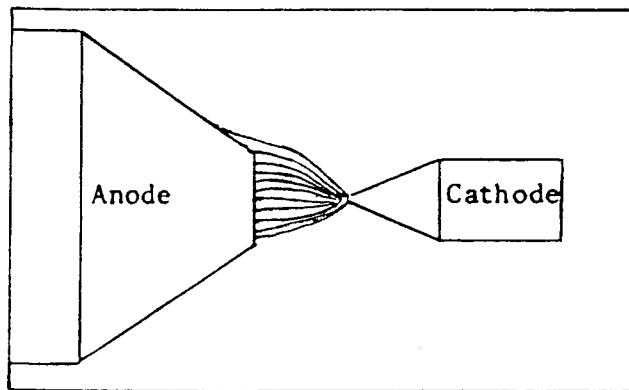
ARC IS TOO HIGH, ADJUST MAGNET UP

FIGURE E



NORMAL ARC POSITION

FIGURE F



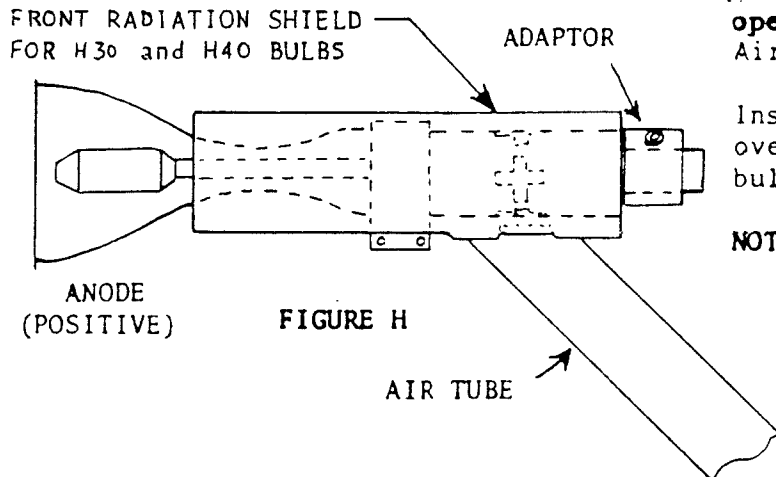
ARC TOO LOW, ADJUST MAGNET DOWN

FIGURE G

INSTALLATION OF RADIATION SHIELD AND ANODE CONNECTION

WARNING

ON H30 and H40 lamphouses, the Xenon bulb MUST be installed so that one of the four positive \oplus openings is located directly above the Airtube.



Install **Front Radiation Shield** over Xenon **bulb** as shown. Install bulb in Lamphouse.

NOTE: Make sure that the Airtube fits into the slot in the Radiation Shield.

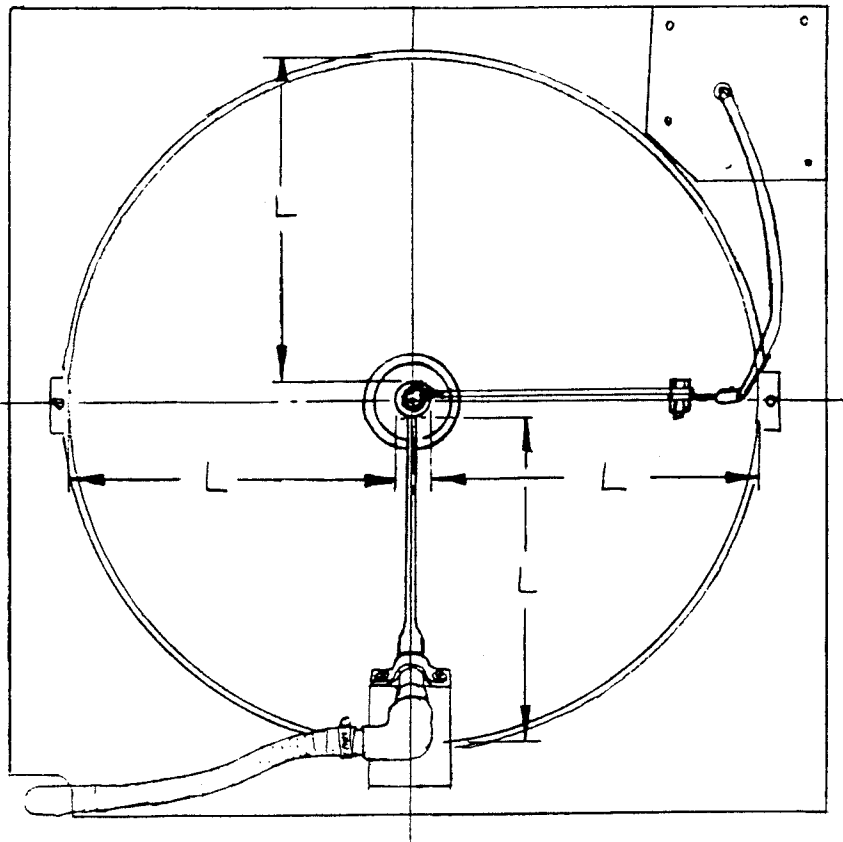


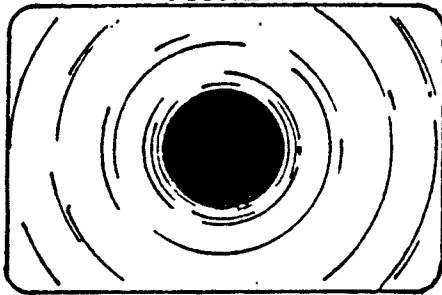
FIGURE J

-13-

O.I. 8/13/73

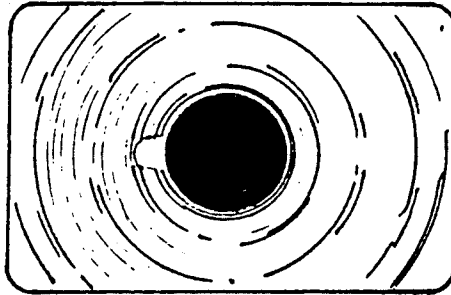
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FIGURE K



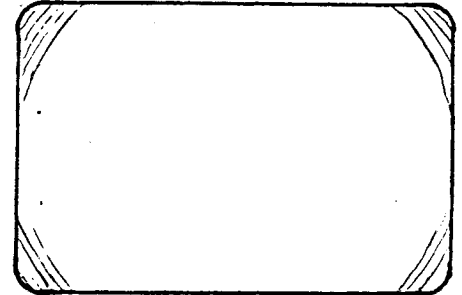
Correct picture
without projector
lens.

FIGURE L



Bulb centering too far
to left. Correct with
left-right adjustment.

FIGURE M



Correctly centered bright
spot with scope lens and
aperture plate.

INSTRUCTIONS for ALIGNING LAMPHOUSE

WITHOUT ALIGNMENT TOOLS

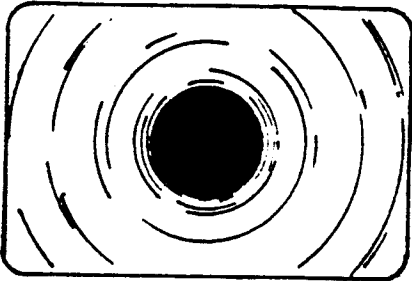
1. Inspect reflector and lens and clean if necessary. Check that lens is installed correctly with concave side toward bulb.
2. Inspect bulb for dirt or finger prints, - clean if required.
3. Install radiation shield (CXL20,25,30,40) on anode (+) end of bulb flush with end of ferrule.
4. Center the lamp adjustments in the rear of the lamphouse to the midpoint of their range.
5. Install bulb in the lamp with the anode radiation shield resting on the air tube and the threaded end in the rear lamp support. Install the starwasher and nut loosely. Be sure that the radiation tube is centered over the air tube and that the rear lamp support mates flat against the bulb ferrule.
6. Using a ruler, check that the anode end of the lamp is centered in the reflector from top to bottom. If not, adjust to center position by raising or lowering the air tube support.
7. Tighten nut as tight as possible by hand and then "snug" with pliers.
8. Measure to check that the anode is centered left to right in the reflector within 1/16". If it is not, remove the bulb and bend the rear lamp support to center bulb. This is most important for best results. Replace the bulb. NOTE that these adjustments must be made with the rear lamp adjustments centered and with the anode radiation shield centered over the air tube support.
9. When all preliminary adjustments are satisfactory, connect the positive connector to the anode ferrul. Be sure that the anode lead is clear of any metal parts, such as the dowser to prevent arcing.
10. With the anode centered, tighten the cathode (-) nut firmly and reconnect the lamp air cooling hose.
11. Replace the side panel of the lamphouse.
12. Set current control to lowest tap and start the lamphouse.
13. Install scope lens and aperture. Put light on screen and adjust bulb focus for maximum light. Only enough light is needed at this point to see the edges of the aperture. Move projector base sideways and adjust tilt until aperture is centered on screen.
14. Remove projector lens and adjust bulb "left and right". If bright dot does not pass through center of dark shadow, adjust bulb "up and down" until it does. (See fig. 2) Adjust bright dot until it is centered behind dark shadow. (See fig. 1)

INSTRUCTIONS for ALIGNING LAMPHOUSE
WITHOUT ALIGNMENT TOOLS

page 2

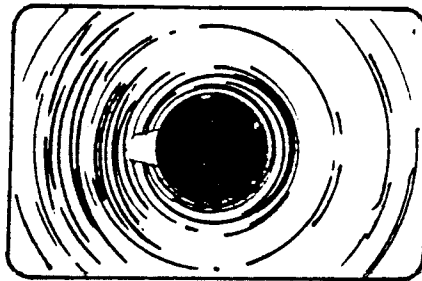
15. Replace scope lens. Adjust only bulb focus until there is a large bright spot on the screen with dark corners. (See fig. 3.) The spot must be centered and the 4 corners equal size. If it isn't centered, the whole lamphouse must be moved left or right and up or down, in respect to the projector until it is centered. On a console installation move the projector until centered.
16. Repeat step 8 and then step 9 until the bright spot fills all 4 corners at the same time when the bulb focus control is adjusted. Just barely fill the corners with light then stop. This is the point of maximum light. Now adjust the current tap switch on the rectifier for the desired amount of light within the current rating of the bulb.

Figure 1:



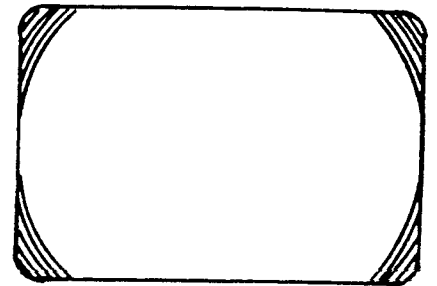
Correct picture
without projector
lens.

Figure 2:



Bulb centering too
far to left. Correct
with left-right ad-
justment.

Figure 3:



Correctly centered bright
spot with scope lens and
aperture plate.

LH/2/75

Appendix C: Bill of Materials

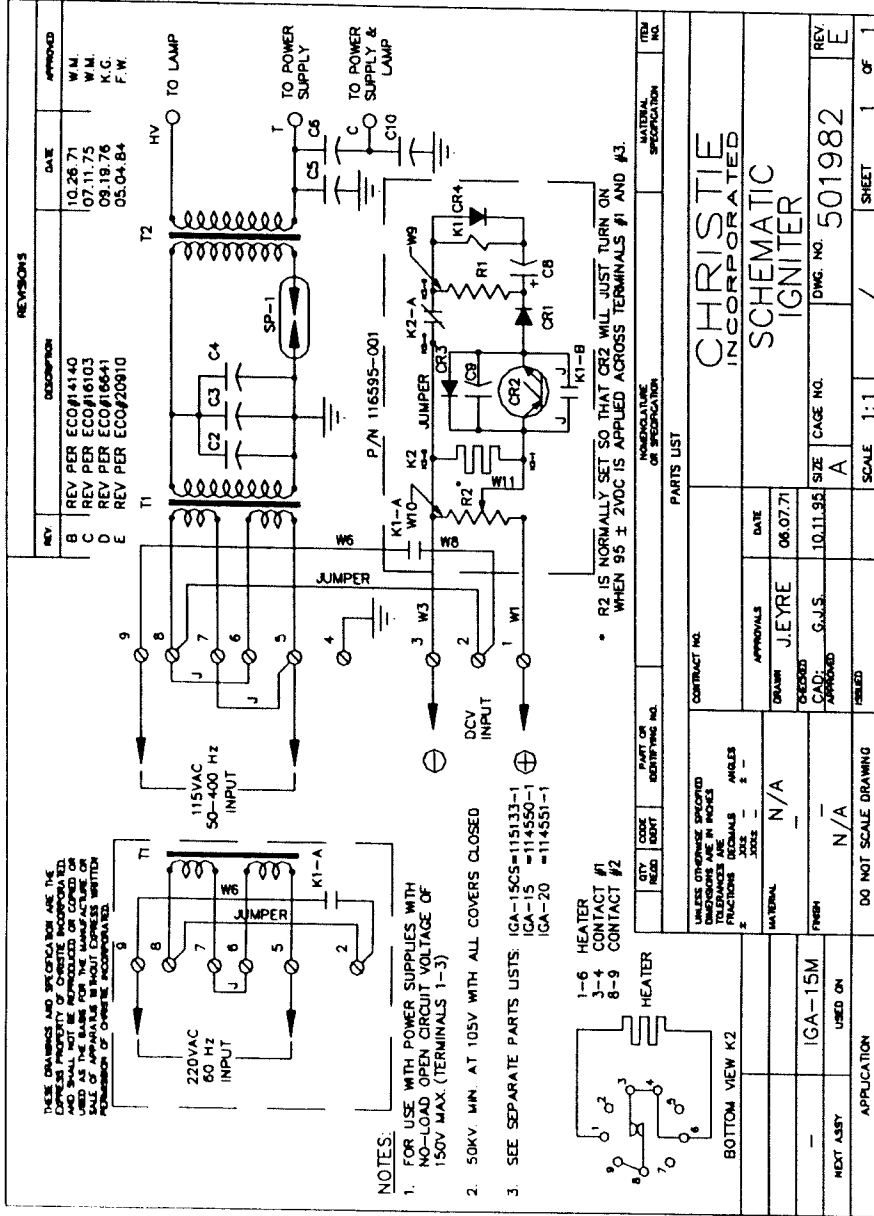


Figure B-2: Schematic Diagram for IGA-15M Igniter (P/N 501982)

REPLACEMENT PARTS LIST - MODEL H40

<u>PART NO.</u>	<u>PART NAME</u>
U117124-1	IGNITER - IGA-15 M
M114308-1	SPARK GAP
DM191943-1	ASSEMBLY - BLOWER (EXH.)
578400-011	SWITCH - AIRFLOW (EXH.)
578100-008	WINDVANE (EXH.)
DM191920-1	ASSEMBLY - BLOWER (LAMP)
578900-019	PRESSURE SWITCH
DM191959-3	HOSE - FLEXIBLE (2-1/2 I.D. X 11. LG.)
515000-102	HOSE - FLEXIBLE (1. I.D. X 43. LG.)
DG191939-1	ASSEMBLY - MIRROR
DG192305-1	ASSEMBLY - HEAT FILTER
DM191932-1	ASSEMBLY - PLASTIC MECHANISM
DM191945-3	ASSEMBLY - ADAPTER FWD.
DG192334-1	SUPPORT - LAMP FWD.
DM191854-1	ASSEMBLY - RADIATION SHIELD
598920-049	LAMP - CXL-40
M112481-1	OPTICAL CLEANING KIT
535122-306	AMMETER (200 AMP.)
581399-008	ELAPSED TIME INDICATOR
578000-028	SWITCH - MOM. (PUSH BUTTON START)
578000-034	SWITCH - MOM., SPST. (DOOR) INTERLOCK
578721-012	SWITCH - TOGGLE, DPDT. (ON-OFF)

WARRANTY

COVERING

XENOLITE THEATRE PRODUCTS

Manufactured by: CHRISTIE ELECTRIC CORP.
(herein referred to as "Christie")

Christie warrants the apparatus sold to the extent of the parts necessary to correct any defect in workmanship or materials which may develop under proper or normal use for a period of one (1) full year (90 days on electric motors) from date of installation (except as noted below) but not to exceed eighteen (18) months from date of shipment from Christie Electric Corp. Christie reserves the right to have the apparatus returned, freight prepaid, to the Christie factory to effect the warranty repairs.

Replacement parts for warranty repairs will be shipped promptly by Christie f.o.b. factory, and invoiced to the customer. Credit will be issued upon return of the defective part or parts, prepaid, to the Christie factory.

The above shall constitute a fulfillment of all Christie liabilities in respect to said apparatus.

This warranty does not cover the following items:

Special customer specified purchased parts or materials; also, xenon, mercury and other types of lamps (bulbs).

Christie shall not be liable for any consequential damages except:

Christie will replace standard Christie glass reflectors under warranty in XENOLITE lamphouse damaged by failure of a Christie xenon bulb during its warranted life and if properly operated, under the following terms and conditions: If the original reflector installed is less than one year old, full credit will be issued. If the original reflector is more than one year, but less than two years old, one half credit will be issued. If the original reflector is more than two years, but less than three years old, one quarter credit will be issued. After three years from date of original installation, no credit will be issued. (Mirror castings must be returned to Christie to receive credit.)



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