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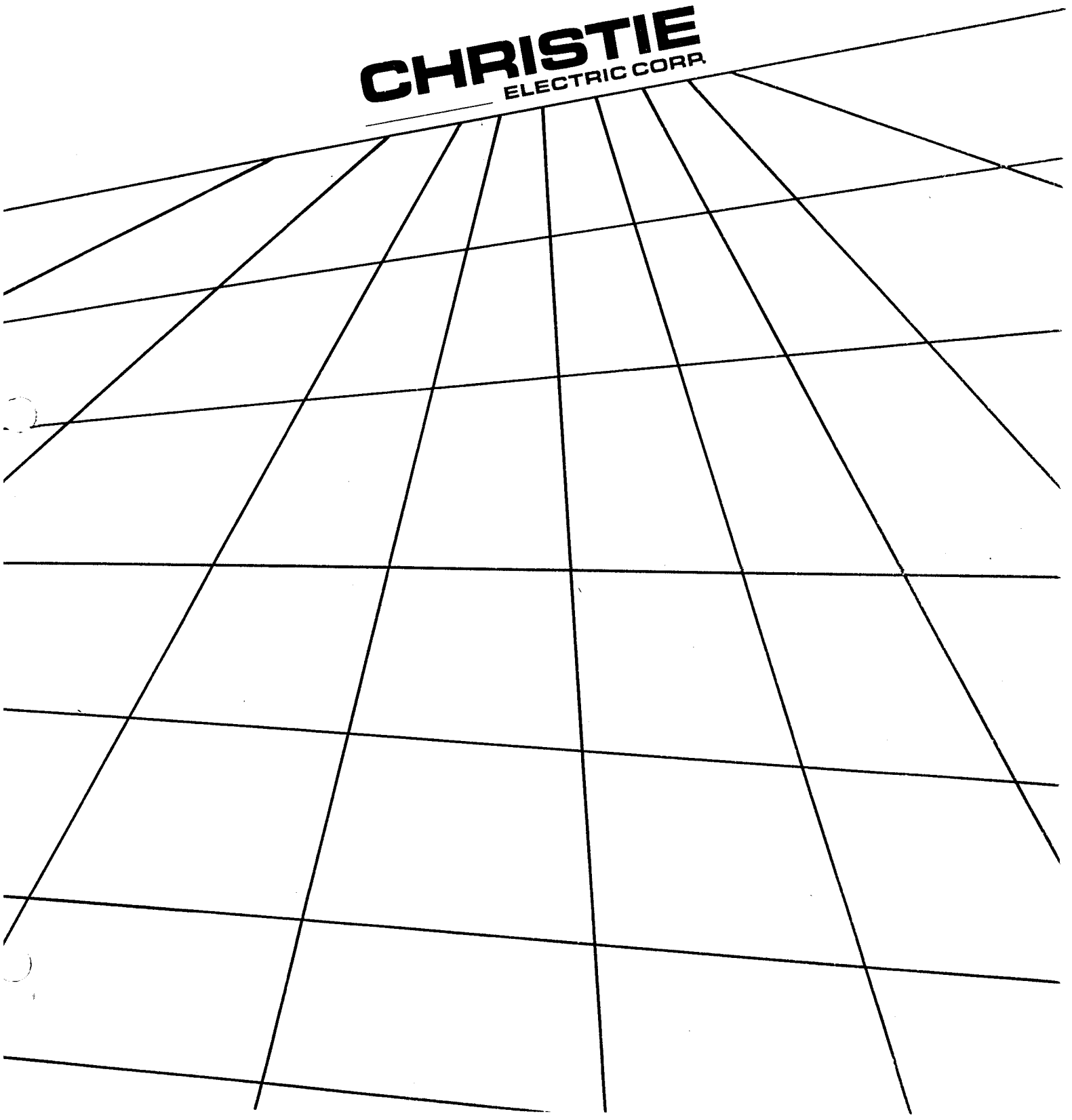
XENOLITE CONSOLE

CH10-CC10



XENOLITE CONSOLE

CH10-CC10

INSTRUCTIONS

FOR

"XENOLITE"

CH10, 20, 25 SERIES

XENON CONSOLES

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

CHRISTIE ELECTRIC CORP.
18120 SO. BROADWAY
GARDENA, CA 90248 (213) 715-1402
TWX (910) 349-6260 FAX (213) 618-8368

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I. GENERAL DESCRIPTION

This XENOLITE "CH" Xenon Console is a series of integral projection illuminator systems which combine the rectifier D-C power supply and projector base with a Xenon lamphousing in a single integrated unit that allows a minimum of installation and wiring expense.

These Consoles are designed to be operated with any standard 35mm or 35/70mm motion picture projector head and will accommodate Xenon Compact Arc Bulbs (lamps) in ratings from 1000-2500 watts.

They 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 a computer-generated, aspheric shape to achieve maximum efficiency. The high voltage igniter (#1, Figure B) required for starting the Xenon bulbs is included in the enclosure. For the bulb description, recommendations and warranty information, see the Christie (or equivalent) bulb instruction.

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 Consoles are equipped with a double latch system on the bulb access panels to eliminate inadvertent opening of the enclosure.

II. UNPACKING

1. It is recommended that the unit be moved to the site of installation before uncrating.

2. Be sure the container is upright. Open the crate and remove the packing.

3. Carefully remove the unit from the crate. Thoroughly inspect the unpacked unit for possible damage that may have occurred during shipment. Any damage discovered should be reported to the transportation company at once for inspection and filing of claim.

III. INSTALLATION

1. Place the Console on its intended operating location in the projection booth (preferably over an electrical pull-box in the floor for input power wiring).

2. Install the four (4) leveling feet (#18, Figure B) which are screwed into the four corners underneath the base until about 1" of thread remains exposed. (A recommended method is to carefully tilt the Console to one side to install the first two feet, then rock it over to the other side for the other two feet.)

3. Remove the upper right side panel by unlocking the key-lock in the safety panel and then loosening the 1/4-turn fasteners. Then remove the upper and lower rear and lower right side panels as well. The upper rear panel has a safety screw in the top left corner. The nut must be held from inside when removing the screw. When replacing panels, all screws and fasteners must be secured.

4. Set the tilt angle of the Console to the approximate projection angle required. This is accomplished by loosening the Tilt Adjust Locking Bolts (#17, Figure B) located on both sides at the bottom rear inside the enclosure. Markings showing the approximate tilt angle are provided along the adjustment slot.

   CAUTION: It is recommended that this adjustment be made before the projector and sound heads are installed. If the projector is already mounted, DO NOT loosen the Tilt Adjust Locking Bolts without first providing adequate support under the projector. Otherwise, the projector and Console could tilt violently forward and cause extensive damage.

5. If installation is in a confined area, such as in a projection booth, it may be necessary 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 (#10, Figure A) on top of the lamphouse. Be sure that there are no obstructions in the ducting and that the air intake openings (#9 & #26, Figure A) of the Console are unobstructed.

   If the unit is procured with exhaust cooling fan and ozone-free bulbs are used, a short vertical exhaust stack (3 foot minimum) may be used provided local codes do not require exhausting directly outside.

   There must be sufficient air flow through the bulb chamber to properly cool the xenon bulb. The CH25 Console is furnished with an exhaust blower so auxiliary ventilation is not normally required. If the exhaust duct height exceeds fourteen feet, an auxiliary blower must be added. All other Consoles should be installed with a blower in the exhaust duct capable of providing the following minimum air-flow:

CH25	200 cfm
CH20	300 cfm
CH10	200 cfm

IV. ELECTRICAL CONNECTIONS

1. BEFORE CONNECTING, PULL THE A-C DISCONNECT SWITCH IN ALL THE A-C SUPPLY LINES.

2. Check the a-c voltage shown on the Console nameplates. Then check the a-c supply voltages with a voltmeter to see that they do not differ by more than 10% from the rated nominal values of the unit.

3. Pull the power cable from the a-c supply for the rectifier power supply through one of the cable entrance holes in the bottom front of the rectifier compartment. Connect these wires to Terminals L1, L2, and L3 (or L1 and L2 for single phase supplies) on Terminal Board TB-1 (#24, Figure A). Connect a grounding wire to the grounding lug (#25, Figure A) in the rectifier compartment. GROUNDING THE CABINET IS AN IMPORTANT SAFETY MEASURE.

4. Pull the wires from a 1-phase, 115 volt, a-c, 60 Hz.* line through the other cable entrance hole in the base. Connect these wires to TB2-1 and TB2-2 (#7, Figure B) on the rear of the rectifier. The white wire should be connected to TB2-1 and the colored wire to TB2-2.

   This same 115 volt circuit may be connected to the convenience outlet (#4, Figure B), if desired. Controls for various booth functions may be mounted and wired to the 19" blank panel provided below the lamp control panel, if desired.

   The "CH" Console is now completely wired and the lower rear and side panels may be replaced.

5. If automation control (automatic remote control) is used, connect Terminals 4 and 5 of Terminal Board TB2 to normally open contacts of the remote control relay or switch (furnished by customer) using size 14 or 12 Awg. wire. For manual override to the Automation Control, set the d-c Power ON-OFF Switch to ON.

   CAUTION: If these connections are not properly made, the lamphouse interlocks will be inoperative and the bulb warranty will be void.

V. MECHANICAL ALIGNMENT

The "CH" series lamphouses are optically aligned at the factory so that the optical axis is aligned to the center of the snood. In order to achieve optimum screen illumination and uniformity, the center of the snood 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 snood lens (#15, Figure A) from the inside of the lamphouse by loosening the front lens retaining clips and rotating them out of the way.

2. Install the snood alignment reticle in the rear of the snood (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 reticle and tooling are properly seated.

3. Remove the lens from the projector and insert the $2\text{-}\frac{25}{32}$ diameter plug (#6, Figure C) into the lens holder. (Use a lens adapter, if required.)

*) or other voltage or frequency supply as specified.

4. Insert the 1/2" alignment rod (36" long) into the aluminum plug, open the fire dowser, and run the rod through the projector to the snood alignment reticle. If necessary, adjust the projector base so that the rod passes smoothly through the reticle.

5. Open the lamphouse dowser and slide the rod through the dowser reticle. 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 dowser reticle during this adjustment.

6. Tighten all adjustment screws and remove the alignment tool. Replace the lens in the snood and install and tighten the retainer clips. 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 6-1/4" ± 1/8".

VI. INSTALLATION OF BULB

1. Remove the right side and rear panels (see section III 3., Page 2).

2. Remove the Flexible Air Duct (#10, Figure B) and the connecting flange from the Rear Lamp Support.

DANGER: POSSIBLE EXPLOSION HAZARD. WEAR AUTHORIZED PROTECTIVE MASK, JACKET AND GLOVES, WHEN WORKING WITH ANY COMPACT ARC 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 (except on Model CH10 *). Install the forward adaptor on the anode terminal approximately 5° from the vertical and tighten the clamp. Remove access cover from the snood (#17, Fig. A). Insert bulb through access hole. Insert cathode threaded terminal through the hole in the center of the rear support (#2, Fig. 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 (except CH10, see Fig. D). Install the nut loosely on the cathode terminal and connect the high voltage lead (from the igniter) to the forward adaptor. After tightening the high voltage (positive) connection, check that the radiation shield is resting correctly on the air tube. Now tighten the knurled nut on the cathode terminal finger tight, using care to keep the bulb from rotating out of position. Avoid applying any bending or twisting stress on the quartz body of the bulb. Replace the flexible air duct and connecting cone.

4. Take care to insure that the bulb is connected with the right polarity; the positive lead to be connected to the high voltage terminal in lamphouse (#18, Fig. A) and the negative lead to the rear terminal on lamphouse (#2, Fig. B). Operating with reversed polarity will ruin the bulb.

*) CH 10 bulbs are rested on the wire cradle at the anode end.

Make sure that the positive lead from the bulb to the igniter does not touch or run close to any metal parts of the lamphouse or the mirror. If these leads are close to any metal parts, it will 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 it becomes dirty, clean it with alcohol and subsequently clean it with a soft cloth and distilled water. *AUTHORIZED PROTECTIVE MASK, JACKET AND GLOVES MUST BE WORN.*

6. Replace the side and rear panels and snood access cover, making certain that all fasteners are secure and the key fasteners and the safety latch is locked. Observe and record the elapsed time meter reading before starting any new bulb.

NOTE: An Interlock Switch (#12, Figure B) will prevent the system from operating if the safety lock on the rear panel is not closed securely or if the polarity of the d-c leads from the power supply are reversed.

VII. 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.

3. Check to see that DC Power ON-OFF Switch (#4, Figure A) is in OFF position. Energize all a-c power to the Console. The pilot lamp (#6, Figure A) will light. (The power supply should not energize until the d-c Power ON-OFF switch is switched ON.) Set the current adjust on the power supply to its medium position (#5,6, Figure B). Check to insure that the lamphouse cooling is operating. The green Interlock light (#27, 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.)

Set DC Power ON-OFF switch to the ON position. If Automation Control (Automatic remote control) is used, the ON-OFF switch is left in its OFF position. The operation of the bulb is controlled by the Automation relay. If this relay malfunctions, the bulb can be ignited by setting the DC Power ON-OFF Switch to ON.

4. Check that the Dowser Handle (#11, Figure A) is closed (up position). Turn DC Power ON-OFF Switch to ON position. The bulb will ignite automatically. If not, momenatrily press the Emergency Start Button (#3, 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 maximum bulb current or drop below 40% of that value. If the current is too high or too low, use the tap switch to adjust the power supply to the proper current. The bulb may extinguish when the power supply is switched, but should restart automatically. If not, it 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, FigureA). 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 Console be opened except as described in Paragraph IX below.

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

7. If, after a 10 minute warm-up period, the correct current cannot be obtained with the tap switch, turn the unit off, pull the a-c disconnect switches, remove the lower right panel of the Console and change the Hi-Lo Links (#7, Figure A) as necessary.

8. Extinguish the bulb by turning the D-C Power On-Off Switch to the OFF position. DO NOT open the bulb compartment until at least 10 minutes after switching off the bulb. Always wear an authorized protective face mask, jacket and gloves when opening the bulb compartment, or when handling an unprotected bulb. Pull the a-c disconnects in the a-c lines before entering the Console.

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

VIII. OPTICAL ALIGNMENT AND ADJUSTMENTS.

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

2. Using the Bulb Adjustment Mechanism (#13, 14, 15, Figure B), adjust the bulb Focus (#13, Figure B) until the dark spot is clearly defined and then center it using the Vertical and Lateral Adjustments (#14 & 15, Figure B).

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 V) and repeat these adjustments.

   NOTE: The dark spot may have a slight oval shape. If so, turn off the bulb, close the dowser and rotate the snood lens so the oval shape becomes horizontal. If the lens cannot be reached from the front, wait 10 minutes and enter through side panel wearing authorized face mask, jacket and gloves.

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.

   NOTE: There is normally no need to change any of the adjustments thereafter until the bulb is replaced.

IX. 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 disconnects to the Console. 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. Worn out 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 the failed bulb including electrodes must accompany the bulb to aid in evaluation of any warranty claim.

X. TROUBLE SHOOTING

1. Power Supply Will Not Start

A. Check carefully with a voltmeter across all 3 phases of the a-c line to see that the phase-to-phase voltages are equal on all 3 phases within 5%. To locate trouble in the line, start the test at the power supply input terminals, and then proceed to both sides of the fuses in the line, then on to the disconnect switch.

B. Check electrical connections and interlock (#12, Figure B) in the Console.

C. Try new fuses in the a-c line.

D. Check the indicator light.

2. Bulb Cannot Be Ignited, Check Following:

A. D-C power supply is set to proper value, as specified.

B. D-C voltage at bulb 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.

C. Check the capacitor(s) (#3, Figure B) in the power supply output circuit (see schematic).

D. 115 volt a-c is supplied to igniter.

E. Wiring connections to bulb power supply are correct and secure.

F. When the On-Off Switch is turned ON, listen for the normal buzz of the igniter when the d-c voltage reaches 85 volts. If there is no buzzing, remove the left side panel 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.

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

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

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

1) Disconnect the d-c power leads from power supply.

2) OPEN DOWSER. Remove the access panel from the snood.

3) While looking through the opening, momentarily press the Emergency Start Button and observe if there is any arcing from the front of the bulb or from the positive (front) bulb lead to any metal parts of the Console or mirror.

4) If arcing is noted from the flexible bulb lead, relocate the lead routing as far as possible away from any metal parts.

I. Check the Bulb: *USE AUTHORIZED FACE MASK, JACKET AND GLOVES.*

1) Check for air leakage into bulb. A xenon bulb which "goes air" while running will turn suddenly black and cloudy.

3. If the Power Supply Will Not Deliver Its Full Output, or Output is Not Steady:

A. Turn off power and make a complete inspection of all connections in the d-c and a-c lines. Connections found hot to the touch by hand after operation are indications of loose or dirty contacts.

B. If one phase of a 3-phase supply line is open, the power supply will deliver a reduced current of high ripple. In such case, check with a voltmeter or a test light across all three a-c terminals to see that the phase-to-phase voltages are equal on all three phases within 5% of rated voltage while the power supply is delivering load current.

C. Check for an "open" or "short" in one of the diodes. To do this, disconnect the flexible pigtail connection (or the lead to the diode) and measure the resistance of the diode from the pigtail to the base, using a standard ohmmeter. Reverse the meter leads and repeat the measurement. If both measurements are below 1 ohm., the diode is shorted. If both measurements are above 10,000 ohms., the diode is open. Replace open or shorted diodes and all other power diodes mounted on the same heatsink assembly. Observe polarity of diodes if new diodes are installed.

4. Light Intensity on Screen Changes to a Lower Level:

A. Check bulb current.

B. Check focus adjustment of bulb while viewing raw light on the screen to get the brightest setting.

C. Turn d-c power off and cool bulb 10 minutes. With authorized face mask, jacket, and gloves on, open Console and observe if there has been any damage or deterioration of the mirror surface or if bulb has dropped into a new position due to incorrect placing.

XI. MAINTENANCE

1. Before opening the Console, PULL THE AC LINE DISCONNECTS TO THE CONSOLE. USE AUTHORIZED FACE MASK, JACKET, AND GLOVES AND PLACE PROTECTIVE COVER ON BULB. Check the contact surfaces of the (+) and (-) connections at regular intervals of 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 air intake openings.

2. Cleaning Optical Surfaces. The exposed optical surfaces of the lamphouse occasionally require cleaning. Always remove the bulb (See Section IX) before cleaning the mirror. Remove the Snood Access Cover (#17, Figure A) to clean mirror and inside of lens. Mirror surface should be inspected every two weeks for cleanliness to maintain optimum performance of the system.

   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 in Table 1, 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 or 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.

TABLE 1

CLEANING OPTICAL SURFACES

NAME	DESCRIPTION	MANUFACTURER
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	
Lens tissue	Optical rice paper No. 51. 5-1/2 pound UT	C. H. Dester and Sons, Inc., Windsor, Conn.
Cotton (598900-083)	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	

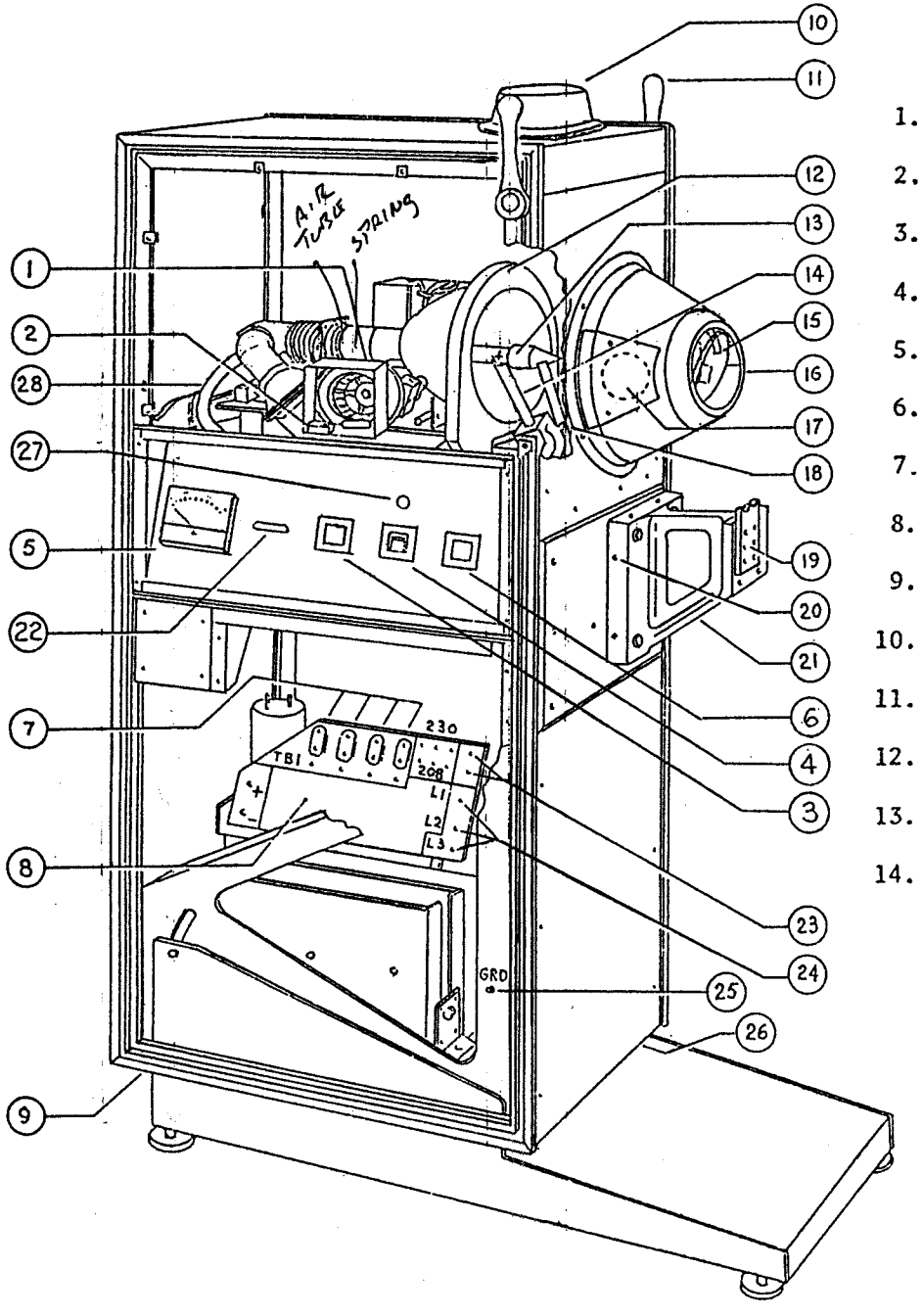

FIG. A
-12-
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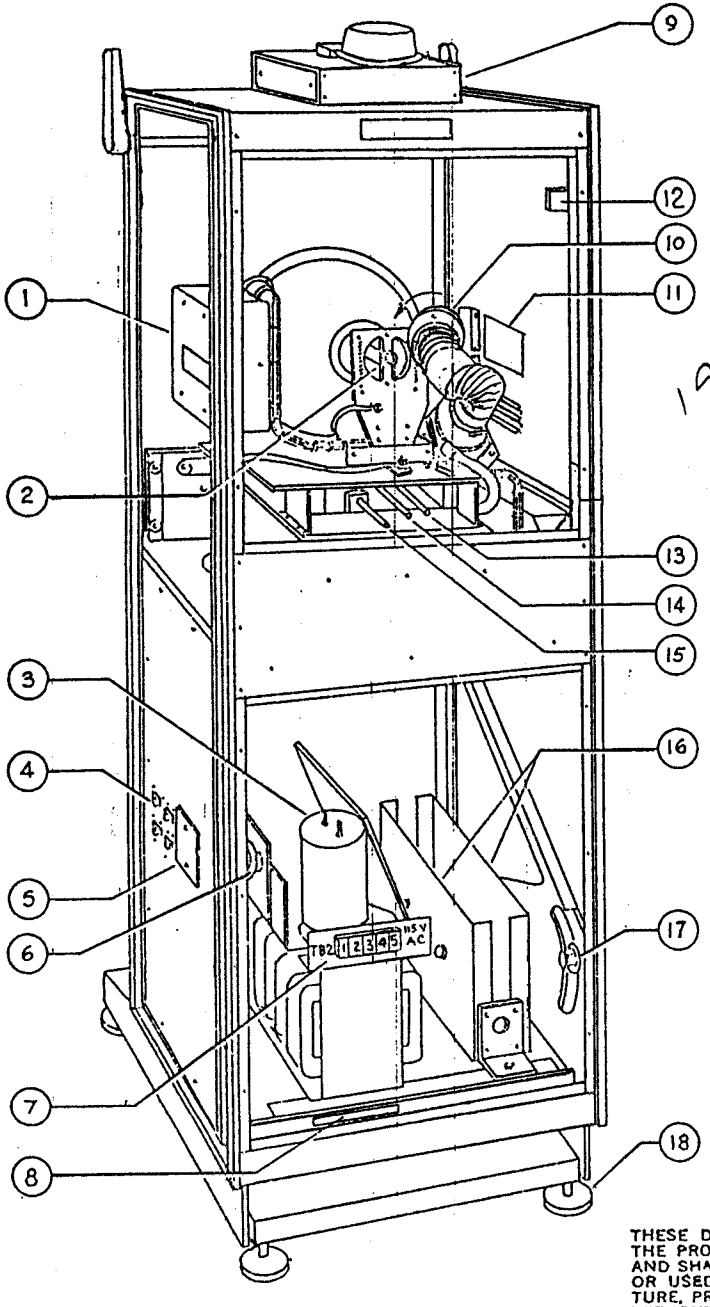
1. Blower
2. Air Flow Switch
3. Emergency Start Button
4. D.C. Power On-Off Switch
5. Ammeter
6. Power On Light
7. Hi-LO Links
8. TBI Terminal Board
9. Air Inlet
10. Exhaust Duct
11. Dowser Handle
12. Mirror Casting
13. Lamp Adapter (Front)
14. Front Lamp Support Bracket
    (Thin metal wire on CH10 Not Shown)
15. Snood Lens
16. Snood
17. Access Cover for Mirror cleaning
18. Positive Bulb Connection
19. Projector Mounting Spacer
20. Projector Alignment and adjustment Screws
21. Projector Mount Casting
22. Elapsed Bulb Time Meter
23. 1Ø AC Input Terminals
24. 3Ø AC Input Terminals
25. Chassis Ground
26. Air Inlet
27. Pilot Light
28. Air Tube



1. Igniter (High Voltage)
2. Rear Bulb Support
3. Capacitor
4. A.C. Receptacles
5. Tap Switch Access Panel
6. Tap Switch
7. TB2 Terminal Strip
8. Power Supply Nameplate
9. Blower (CH25 only)
10. Flexible Airtube
11. View Screen
12. Panel Interlock Switch
13. Bulb Adjust Focus
14. Bulb Adjust Vertical
15. Bulb Adjust Lateral
16. Heatsinks
17. Tilt Adjust Locking Bolts
18. Leveling Pads

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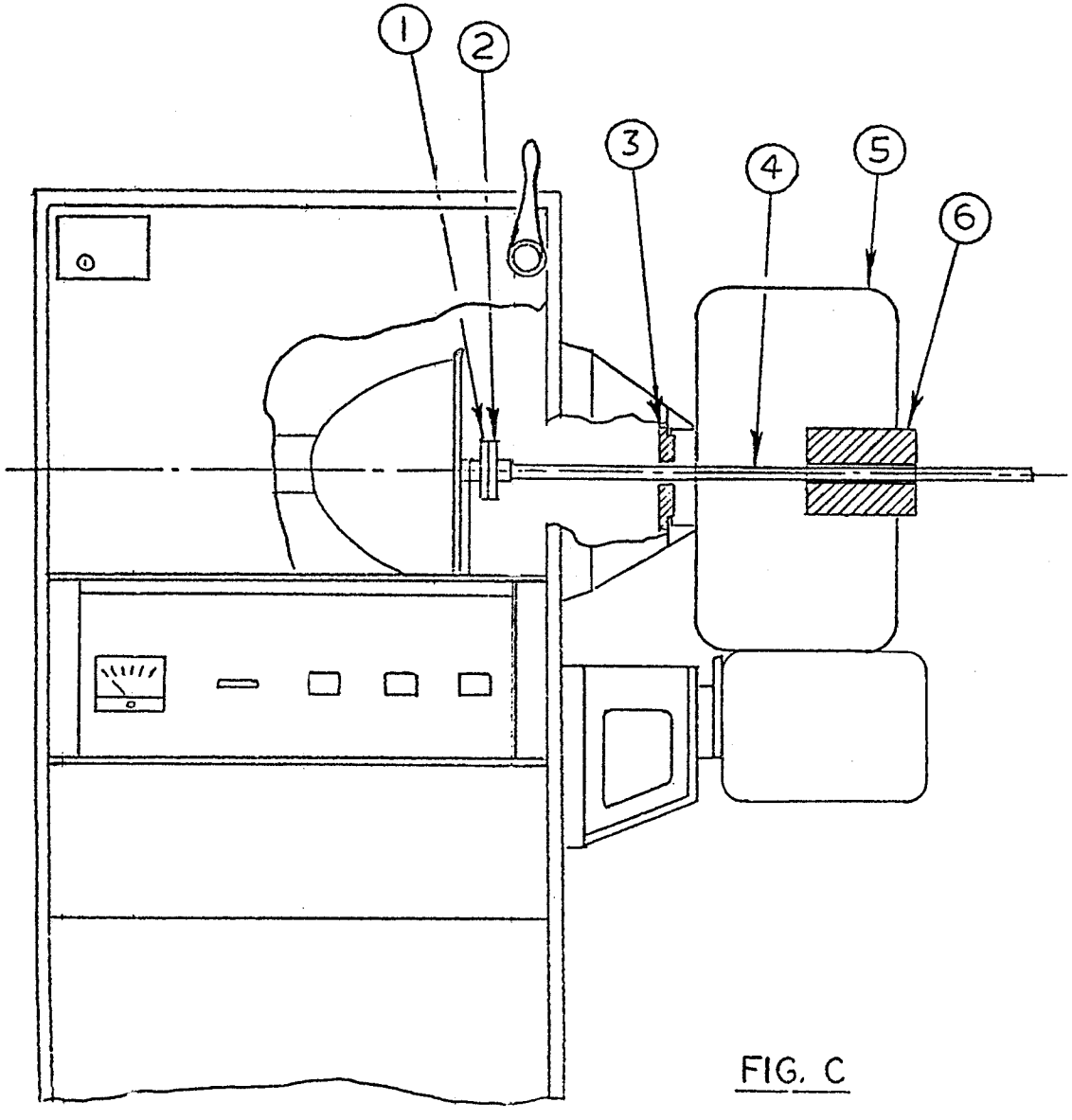
FIG. B



1. Mirror Alignment Tool
2. Alignment Disk
3. Snood Alignment Reticle
4. Alignment Rod
5. Projector Housing
6. 2-25/32 Dia. Alum. Lens Plug

FIG. C

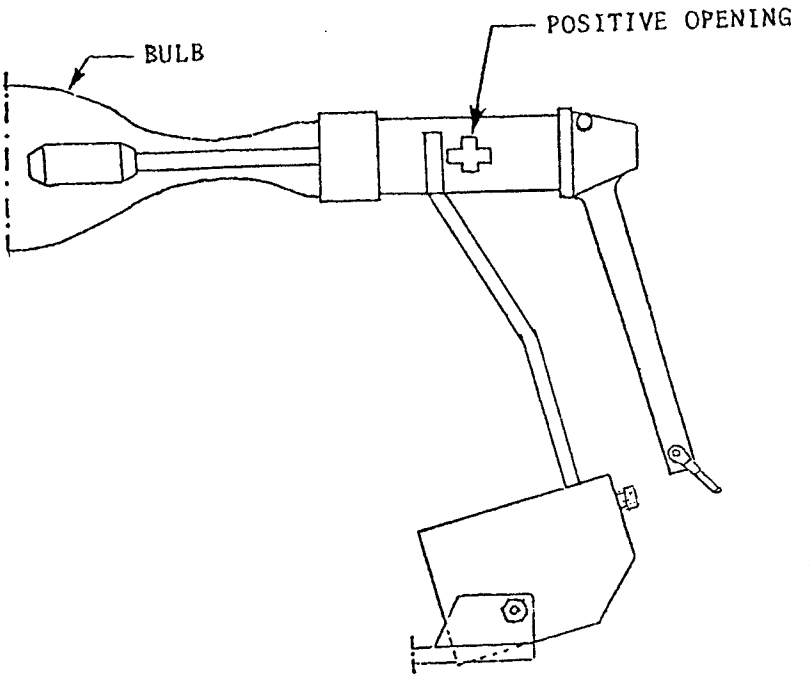
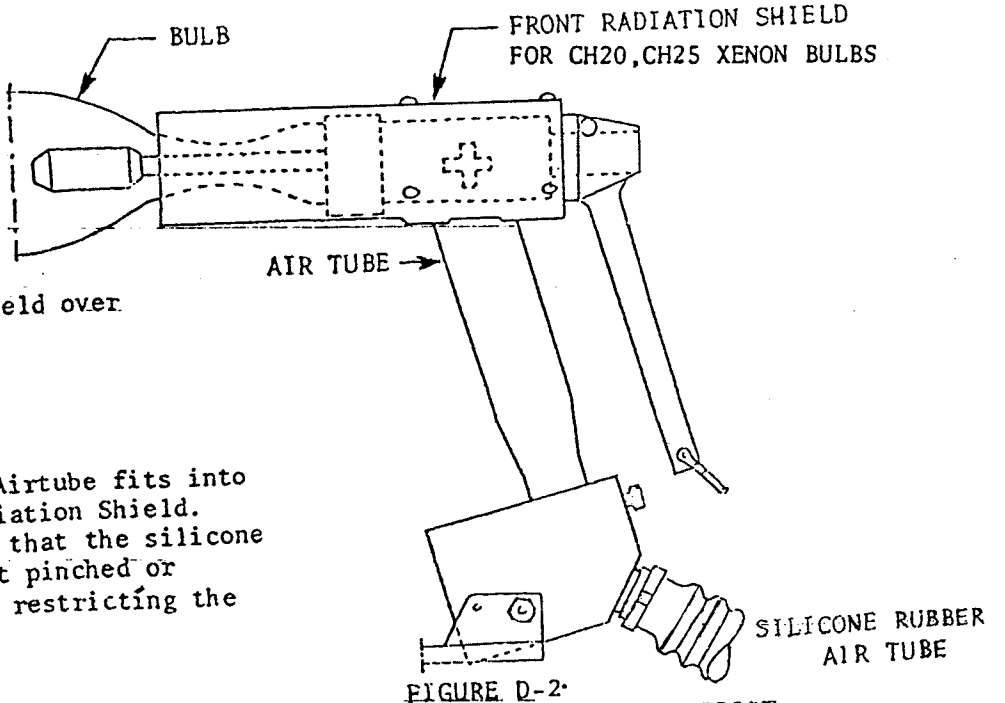


FIGURE D-1
CH10, FRONT BULB SUPPORT



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

WARNING

NOTE: Make sure that the Airtube fits into the slot in the Radiation Shield. Check and make sure that the silicone rubber tubing is not pinched or collapsed, thereby; restricting the airflow.

FIGURE D-2

FIG. D CH20, CH25, FRONT BULB SUPPORT

INVERTED ARC IMAGES AS SEEN IN VIEWING SCREEN

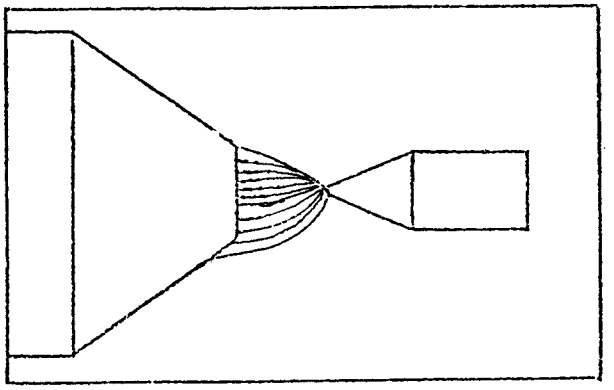


fig. E

ARC IS TOO HIGH, ADJUST MAGNET UP

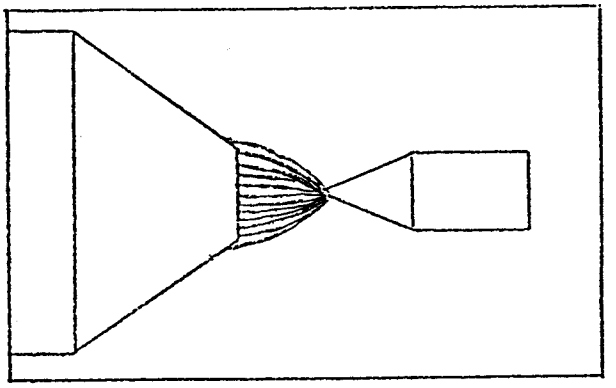


fig. F

NORMAL ARC POSITION

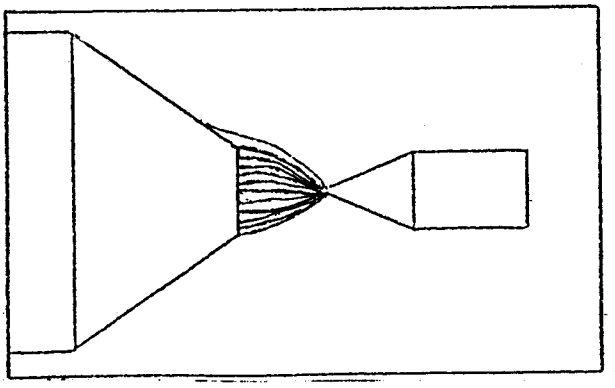


fig. G

ARC TOO LOW, ADJUST MAGNET DOWN

LENS INSTALLATION FOR MODEL CH10, 20 & 25

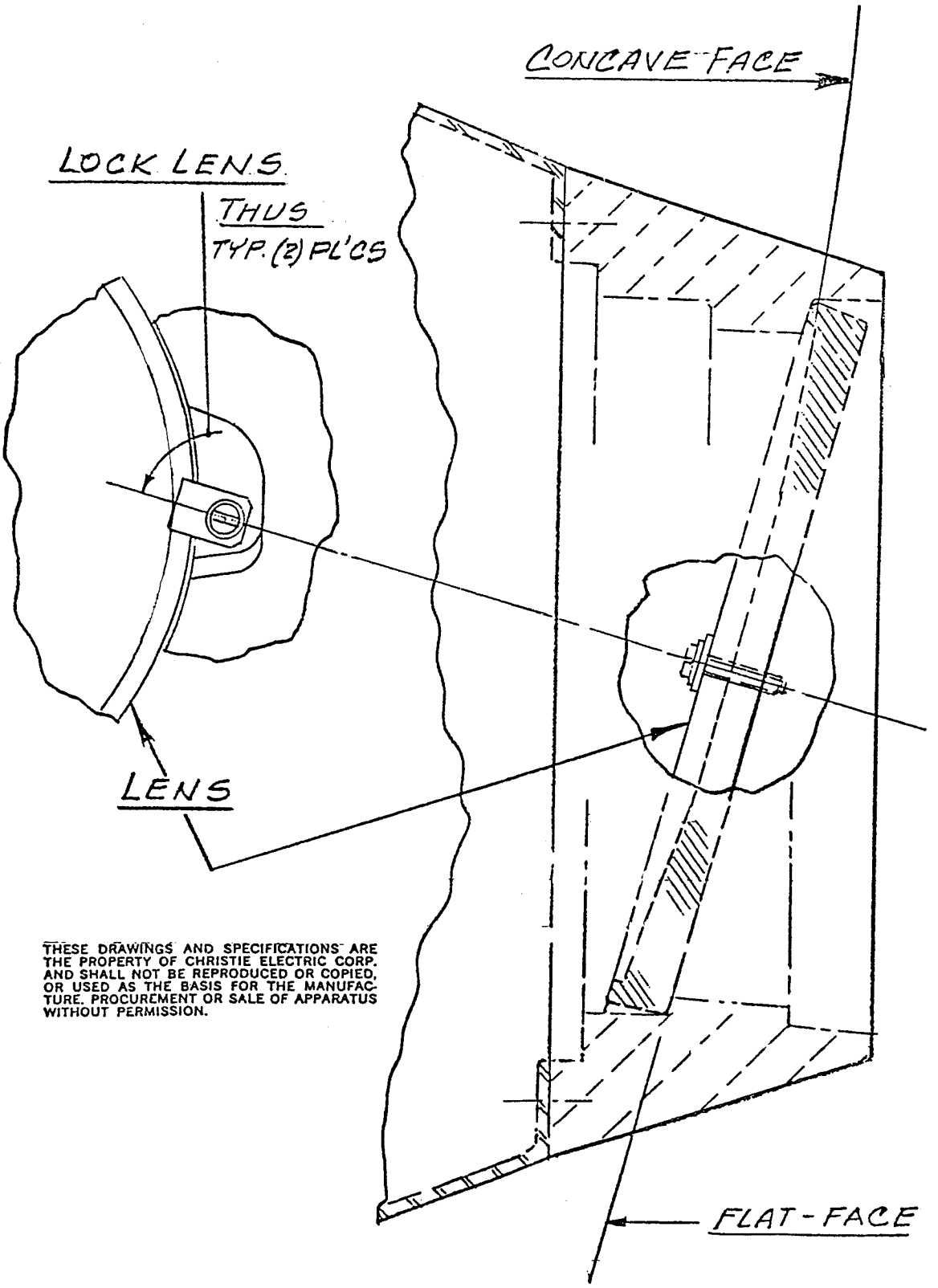


FIG. H

O.I. 9/5/73
REV. B 3/6/79

LENS INSTALLATION
FOR MODEL H10, 20 & 25

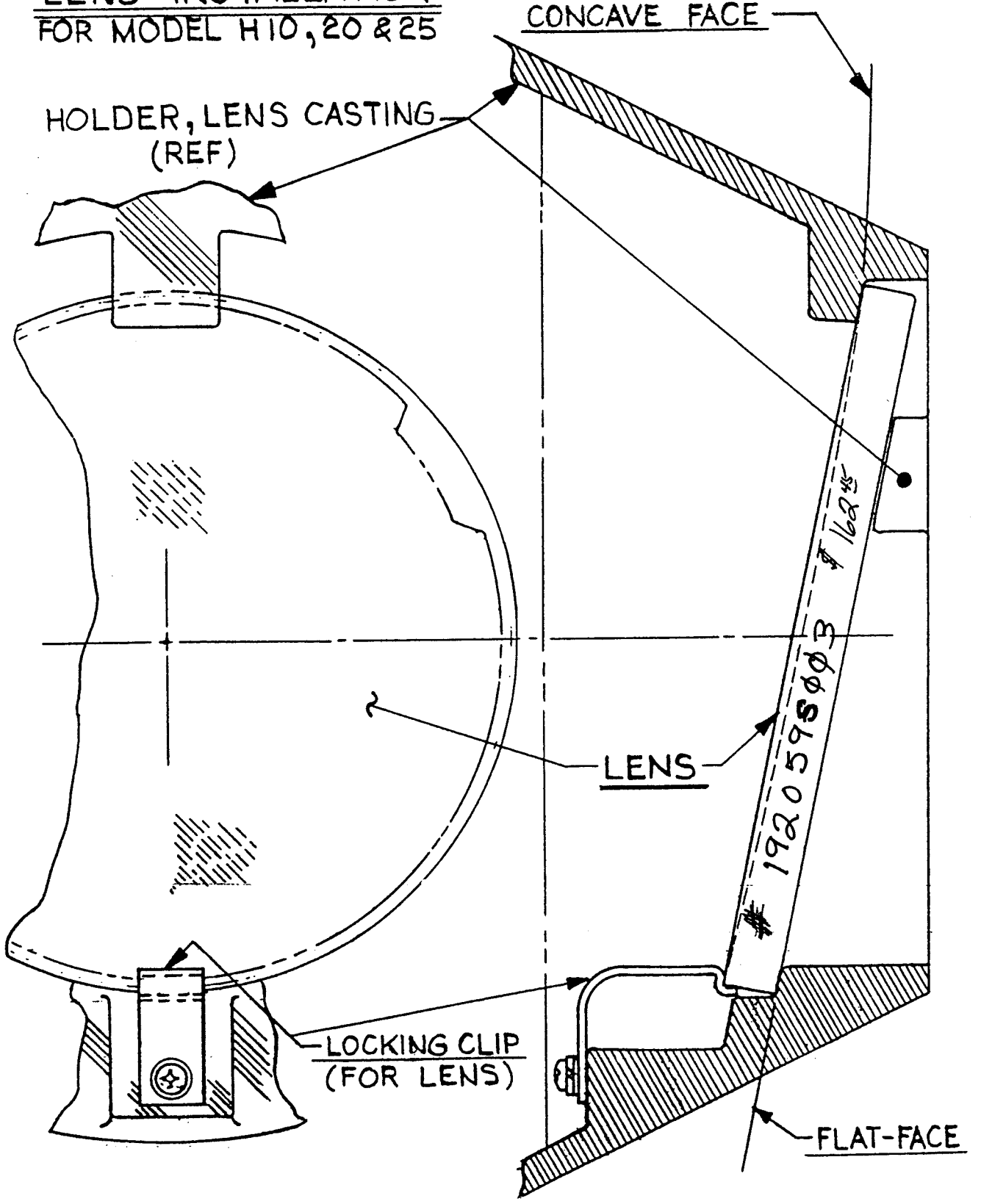


FIG. 1

O. I. 3/6/79

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 ferrule. 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.

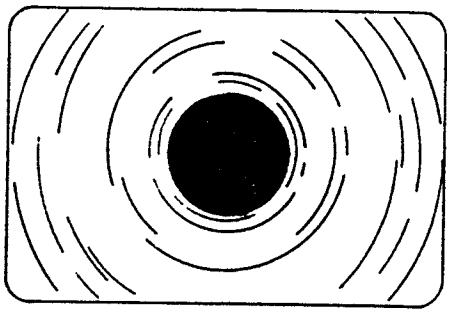
14. Remove projector lens and adjust bulb "left and right". If bright dot does not pass through center of dark shadow, adjust bulb "up and down"

behind dark shadow. (See Figure 1).

15. Replace scope lens. Adjust only bulb focus until there is a large bright spot on the screen with dark corners. (See Figure 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.

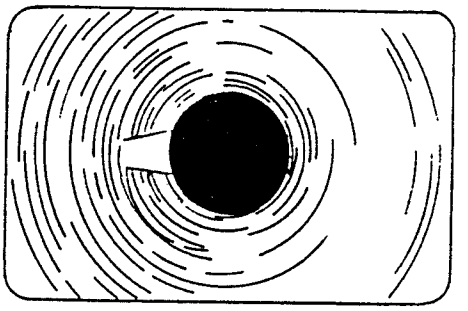
16. Repeat step 8 and then step 9 until the bright spot fills all 4 corners at the same time when the bulb focus control is adjusted. Just barely fill the corners with light then stop. This is the point of maximum light. Now adjust the current tap switch on the rectifier for the desired amount of light within the current rating of the bulb.

Figure 1:



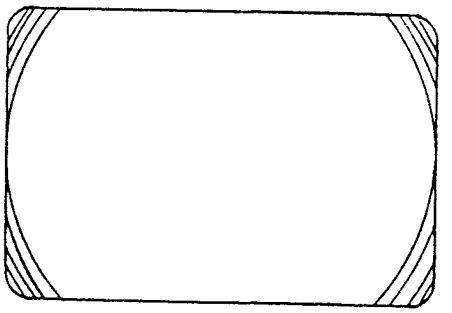
Correct picture without projector lens.

Figure 2:



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

Figure 3:



Correctly centered bright spot with scope lens and aperture plate.

RECOMMENDED METHODS OF CLEANING FOR CHRISTIE LENSES AND REFLECTORS

It is in your best interest to insure that your Christie equipment is properly maintained for best performance. Proper maintenance of the optical surfaces is very necessary to obtain the most consistent lighting possible and they should therefore be inspected regularly, at least every 45 to 60 days. If they have accumulated excessive dust or if they have been accidentally soiled with dirt or oil accumulation, the following procedures are recommended:

DUST:

A. Brush dust from the surface with a clean, soft, dry brush (camel hair brushes are recommended).

B. Blow any remaining dust away with a syringe.

GENERAL:

A. Always remove dust first, using the above procedure.

B. Moisten Kleenex tissue or a cotton pad with detergent solution (Kleenex is recommended because it produces no lint). The pad should be well moistened but not dripping wet.

C. Using a spiral motion with light pressure work from the center of the surface towards the edge. If the pad becomes dirty, discard it and use a new one.

D. Sponge up all excess moisture with a clean tissue.

E. Moisten a tissue or cotton pad with acetone or methyl alcohol (acetone is recommended), and repeat step "C".

F. Dry exposed surfaces with a dry cotton pad or Kleenex tissue using light pressure.

CAUTION..... Do not overclean optics. Excessive cleaning of the optical surfaces can be more damaging and produce greater light loss than a moderate amount of dust. Therefore, care should be exercised not to clean optical surfaces excessively.

NOTE: Christie Electric Corp. has optical cleaning kits available (Part No. 11248I-1).

RECOMMENDED EXHAUST DUCTING FOR CHRISTIE XENON LAMPHOUSE

Christie horizontal lamphouses and consoles utilizing ozone-free bulbs must be vented outside the projection booth unless they are procured with an extra blower (suffix "B") from Christie. If the lamphouses or consoles are vented to the outside, it is most important that the exhaust system is capable of providing a MINIMUM OF 750 FT/MIN OF AIRFLOW measured just above the exhaust stack of the lamphouse. The measurement of airflow must be made when the lamphouse is in its normal operating condition with all doors and panels closed, blowers operating, etc. in order to accomplish the above the following recommendations are offered:

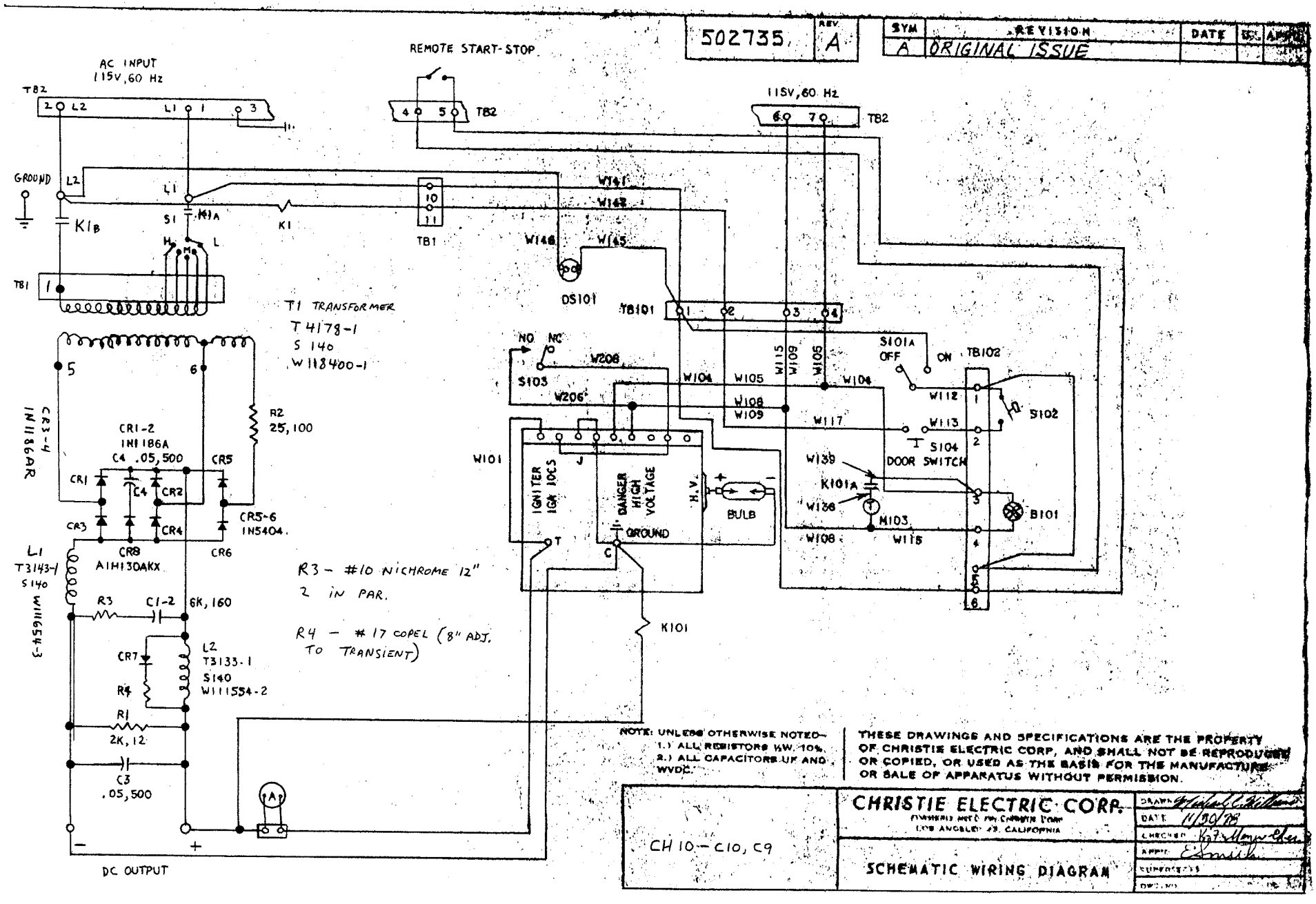
1. The projection booth must be provided with sufficient air intakes to supply adequate cooling air to the lamphouses. The lamphouse must not be "starved" of intake air supply.

2. Use 6" I.D. flexible fireproof ducting material between the lamphouse exhaust stack and the permanent ducting. Insure that there are no obstructions, tight bends or crimps in the ducting.

3. It is recommended that each lamphousing be exhausted separately to the outside of the building. In this way there is no chance of an imbalance occuring in the system, which could reduce the airflow from one of the two lamphouses. Each exhaust should be provided with a blower which removes 300 cfm from each lamphouse.

4. If the exhaust from two lamphouses must be combined to a common duct and blower, the size of the blower should be doubled to approximately 600 cfm. Then the airflow must be carefully measured at the exhaust stack of each lamphouse under all possible operating conditions to insure that the system is balanced and that all units have proper cooling. (To repeat, proper cooling is defined as when the airflow at the exhaust stack of each lamphouse is measured at a minimum of 750 ft/min under normal operating conditions.)

5. If the lamphouses are to be installed at altitudes greater than 5,000 feet or operated with input power other than 60 hertz, check with Christie Electric for further instructions.


502735 REV. A
SYM REVISION DATE BY APP'D
A ORIGINAL ISSUE
AC INPUT
115V, 60 Hz
REMOTE START-STOP
115V, 60 Hz
TB2
GROUND
L2
L1
K1B
S1
M1A
K1
H
M
L
TB1
T1 TRANSFORMER
T4178-1
S140
W118400-1
W141
W142
W146
W145
DS101
TB101
S101A
OFF
ON
TB102
S103
W206
W104
W105
W115
W109
W108
W117
W112
W113
S102
S104
DOOR SWITCH
W101
IGNITER IGN LOCS
DANGER HIGH VOLTAGE
H.V.
BULB
W139
K101A
W136
M103
B101
W108
W115
K101
CR1-2
IN1186A
C4 .05,500
CR5
R2
25,100
CR3-4
IN1186AR
CR1
CR2
CR3
CR4
CR5-6
IN5404
CR8
CR6
A1H130AKX
L1
T3143-1
S140
W111554-3
R3
C1-2
6K, 160
CR7
L2
T3133-1
S140
W111554-2
R4
R1
2K, 12
C3
.05,500
DC OUTPUT
R3 - #10 NICHROME 12" 2 IN PAR.
R4 - #17 COPEL (8" ADJ. TO TRANSIENT)
NOTE: UNLESS OTHERWISE NOTED-
1.) ALL RESISTORS ½W. 10%.
2.) ALL CAPACITORS UF AND WVDC.
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DATE 11/20/58
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APP'D
SUPERSEDES
DWG. NO.