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INSTRUCTION MANUAL

XENON TROUPER
FOLLOW SPOTLIGHT
48050



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PREFACE

THE STRONG XENON TROUPER SPOTLIGHT Model 48050 is a direct current follow spot complete with a xenon lamphouse, power supply, and color boomerang.

THE SPOTLIGHT ASSEMBLY consists of the arc lamp, variable focal length lens system with a color boomerang and a base. The separate power supply completes the installation.

ONLY THE SPECIAL POWER SUPPLIES manufactured by Strong Electric can be used with the xenon spotlight. For installation and operation of the power supply, see the manual furnished separately.

THE XENON LAMPHOUSE utilizes a deep ellipse cold metal reflector designed to operate in a fixed position, with a xenon bulb as the light source and operated with the electrode in the horizontal position.

ONLY XENON BULBS designed for horizontal operation should be used in the follow spot. The present approved rating for the bulb in the spotlight is the 700W. Hanovia or Osram.

ADJUSTMENT CONTROL for the xenon bulb is located at the rear of the lamphouse. The adjustments are for the horizontal, vertical and focus control of the xenon bulb.

THIS LAMP is equipped with an ammeter and a running time meter. The ammeter indicates the operating current of the lamp. The running time meter indicates the number of hours the lamp has been operated. The current adjustment for the xenon bulb must be made at the power supply. See your power supply manual for additional instructions.

THE LAMP BLOWER internally wired in the lamp, operates on 115 V. AC and is required to keep the seals on the bulb at a safe operating temperature. This blower will operate continuously until power is turned off at the main line switch to the xenon power supply.

THE AIR FLOW SWITCH in the lamphouse prevents operation of the xenon bulb if the blower is not operating or maintaining air flow.

A ROCKER SWITCH (AUTO-MAN) located on the rear of the lamphouse is provided to permit ignition of the xenon bulb from a remote station (Auto) or by the operator (Man.) at the lamphouse. The normal position of this switch for use as a follow spotlight would be in the manual mode.

THE LAMP POWER SWITCH (ON-OFF), located on the rear of the lamphouse, is provided for bulb ignition in the manual operation mode.

THE LAMPHOUSE is supplied with a 13 foot cable containing the two D. C. leads, the ground wire and all the A. C. control leads. The cable terminates in a multiple pin MS connector to mate with the receptacle on the xenon power supply.

WHEN TRANSPORTING the spotlight it is recommended that the xenon bulb be removed and placed in its original shipping carton with the cover on the bulb to insure against breakage.

COLOR TEMPERATURE REDUCTION FILTERS, required for use with television and videotape, are available from theatrical supply dealers.

IF AT ANY TIME you have a suggestion, or desire aid in securing anticipated results, please feel free to write directly to STRONG ELECTRIC.

INSTALLATION AND SETTING UP SPOTLIGHT

THE XENON FOLLOW SPOT is shipped in sections which must be assembled.

ASSEMBLE the four base legs to the square section of the center tube, using the 5/16-18 x 2-1/2 inch hex head cap screws and 5/16 inch split ring lockwashers to secure each leg. The four angle brackets on the legs are for use as hold-down brackets for the spotlight. Bolt the brackets to the floor or platform using shims between the brackets and floor to level the spotlight.

IF IT IS IMPOSSIBLE to bolt down the spotlight, insert the leveling feet and locknuts in each of the four brackets and raise the base enough to remove the casters from contact with the floor, then level with the leveling feet. The feet will provide more stability than the casters.

THE INNER TUBE and support yoke has four holes to permit adjusting the height of the system. The four holes are on four inch centers and will allow an optical center height of approximately 48 inches, 52 inches, 56 inches and 60 inches above floor level to the optical center of the lamphouse and lens system. The leveling feet may be adjusted through a two inch range. Insert the height location pin through the hole in the outer tube and one of the holes in the inner tube and secure with cotter pins.

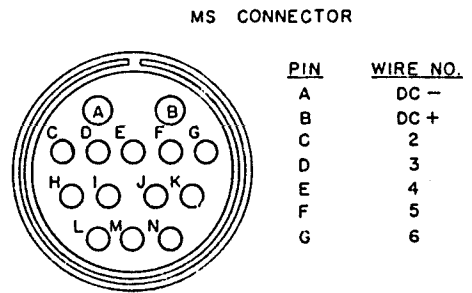
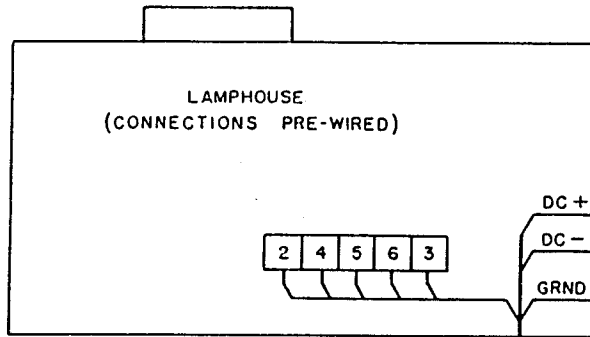
THE HORIZONTAL SWING and vertical tilt locking knobs are on the right hand (operating) side of the yoke assembly. Tighten both of these locking devices securely before attempting to place the lamphouse and lens system on the support yoke.

PLACE THE LAMPHOUSE and lens system on the yoke assembly, with the lens control knob to the right hand (operator's side), the same as the locking knobs on the yoke. Line up the four mounting holes in the bottom of the lamphouse and optical system support pan with the four mating holes in the support yoke and secure with the four 5/16-18 wing screws.

ATTACH THE COLOR BOOMERANG to the front of the optical system by inserting the hinge pin through the hinge on the boomerang and optical system. Fasten the boomerang yoke to the slotted angle bracket on the underside of the optical system pan. Adjust and tighten securely the wing nut and lock nuts to hold the boomerang parallel with the front of the optical system housing.

ATTACH THE LAMPHOUSE CABLE connector to the receptacle on the power supply. Secure the green ground lead to the ground terminal on the outside of the power supply housing.

LAMPHOUSE - POWER SUPPLY INTERCONNECTION DIAGRAM



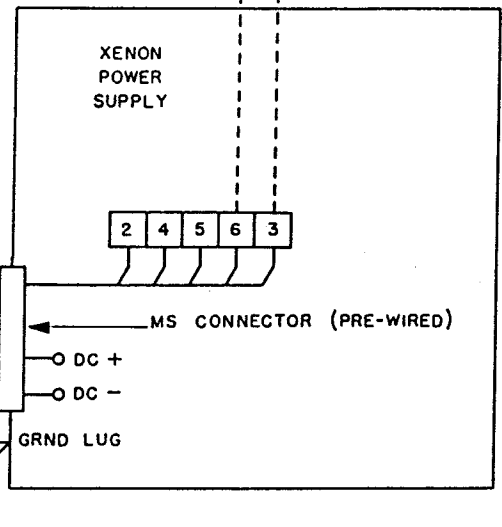
LAMPHOUSE
CABLE ASS'Y.

CONDUIT

REMOTE - AUTO
SUSTAINED 5 AMP.
DRY CONTACT
(BY INSTALLER)

SYSTEM MUST BE GROUNDED

ALL WIRING MUST CONFORM TO
LOCAL ELECTRICAL CODE; SHIELD
LAMPHOUSE CABLE IN CONDUIT
IF REQUIRED.



EXHAUST SYSTEM INSTALLATION

IF THE SPOTLIGHT is installed in a closed booth, we recommend exhausting the lamphouse to the outside atmosphere to remove the heat from the booth.

THE EXHAUST STACK of the lamphouse is designed to fit a six inch diameter pipe. The exhaust system must be designed and installed in a way to eliminate any possibility of a down draft or of rain dripping on the xenon bulb. The exhaust fan must be capable of removing 750 lineal feet (150 CFM) of air per minute at each lamphouse.

TO PERMIT MOVEMENT of the followspot, install a section of six inch diameter flexible tubing between the lamphouse exhaust opening and the projection booth exhaust system.

THE LAMPHOUSE is shipped to the customer, with an exhaust cap installed on the lamphouse. This cap must be removed before connection to the exhaust system.

THE EXHAUST CAP may be left in place if the installation is made in a location where it is not possible to install the recommended exhaust system.

THE RADIATION from the xenon bulbs can convert the oxygen in the surrounding air to ozone. Ozone can endanger health, but it spontaneously changes back to oxygen in a very short time, especially if it mixes with a large volume of air, as in an auditorium, arena or outside a building. Many of the currently manufactured xenon bulbs are classified as ozone free and do not release ozone.

SAFETY PROCEDURES

THE XENON BULB is highly pressurized. When ignited, the normal operating temperature of the bulb increases the pressure to a level at which the bulb may explode if not handled in strict accordance to the manufacturer's operating instructions.

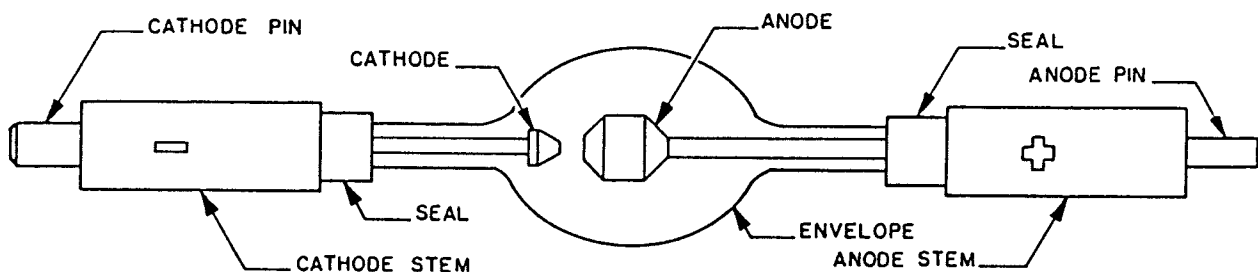
THE BULB is stable at room temperature, but may still explode if dropped or otherwise mishandled.

REFER bulb replacement and service to QUALIFIED PERSONNEL with adequate protective clothing (face shield, clean cotton gloves, welder's jacket). For routine lamphouse service, observe the following rules.

1. Allow the bulb to cool to room temperature before opening the lamphouse. Put on protective clothing described above.
2. De-energize the xenon power supply at the AC source before opening the lamphouse compartment.
3. When possible, encase the bulb in its protective cover when cleaning or servicing the lamphouse interior. The bulb, when outside the lamphouse, must be encased in the cover.
4. Clean the bulb only after it has cooled to room temperature. Do not touch the quartz envelope of the bulb; fingerprints will burn in and create hot spots which may shorten bulb life. If fingermarks are made, they should be carefully removed with methyl alcohol and cotton prior to bulb operation.
5. Never view an ignited bulb directly. **BLINDNESS OR PERMANENT EYE DAMAGE MAY BE INCURRED.**
6. Use only xenon bulbs designated as OZONE FREE. When possible, vent the lamphouse exhaust to outside atmosphere.
7. Maintain the lamphouse blower in good operating condition. Keep the blower inlet clean for unrestricted air flow.
8. To insure maximum bulb life, operate the lamphouse blower for at least ten minutes after extinguishing the bulb.
9. If returning a bulb for warranty adjustment, pack it in its original shipping container.

10. Dispose of expended bulbs that are beyond warranty in the following manner: Wrap the bulb tightly in several layers of canvas or heavy cloth. Place it on a hard surface and shatter the envelope with a sharp hammer blow. DO NOT place an unshattered bulb in an ordinary refuse container.

11. DO NOT PERMIT UNAUTHORIZED PERSONNEL TO ATTEMPT ANY PHASE OF XENON BULB HANDLING OR SERVICE.

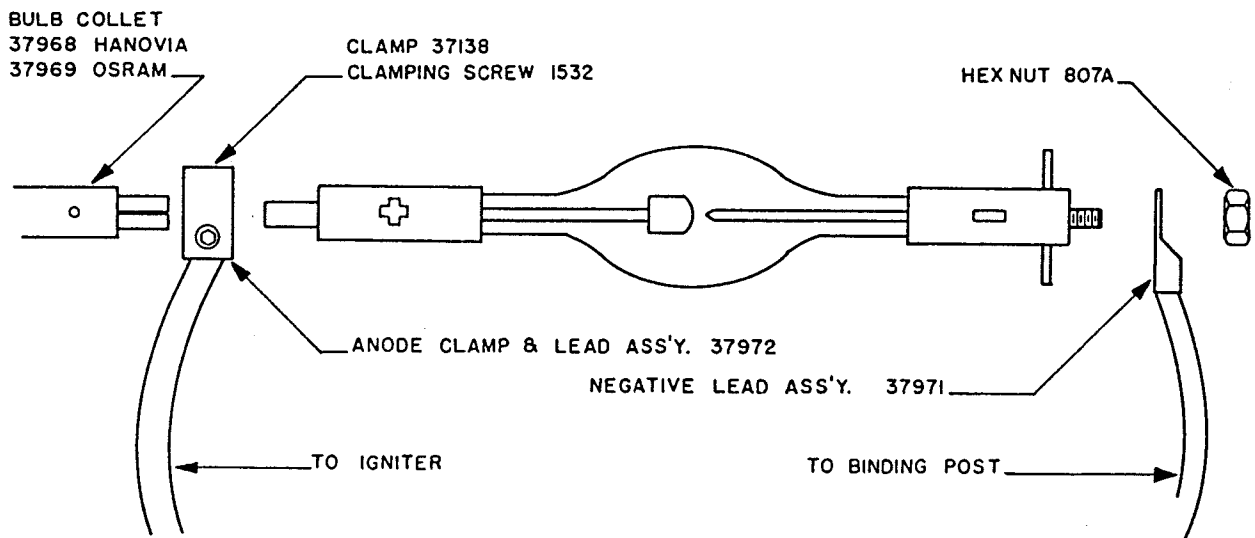


BULB INSTALLATION

CAUTION: OBSERVE ALL SAFETY PROCEDURES. Put on protective face shield. Wear clean cotton gloves to prevent marking the quartz envelope of the bulb with fingerprints.

REMOVE THE TOP COVER of the lamphouse, by using the special screwdriver provided, to remove the four screws securing the cover.

HANOVIA AND OSRAM BULBS require different anode rear support collets. The lamphouse is assembled with the anode (rear) support for the Canrad-Hanovia 700 watt bulb. If it is necessary to use the Osram bulb, the support in the rear casting must be changed. The support for the Osram bulb is shipped as a separate piece with the lamphouse.



ATTACH NEGATIVE LEAD TO CATHODE PIN BEFORE INSTALLING BULB

TO CHANGE THE SUPPORT COLLET, remove the complete bulb adjustment control mechanism from the rear casting. Remove the two large knurled thumb screws to release the assembly. Remove the "E" retaining ring and push the support collet, from the rear, out of the assembly. Reverse this procedure for replacement.

THE NEGATIVE LEAD ASSEMBLY (37971) must be attached to the threaded cathode (-) pin with the 5/16-18 hexnut (807A) provided prior to installation in the lamphouse. Leave the bulb in its protective cover. This connection must be tight to avoid overheating, but avoid putting mechanical strain on the quartz envelope.

INSERT THE BULB into the top of the lamphouse between the reflector support and the front casting. Remove the cover from the bulb only if necessary. Pass the anode (+) end (large electrode) through the hole in the reflector.

INSERT THE STEM into the support collet. The stem must be inserted as far as possible to permit full focus travel of the bulb. Firmly tighten the socket head clamping screw.

REMOVE THE NUT, lockwasher, and flatwasher from the binding post located at the base of the reflector frame. Place the terminal of the negative cable assembly on the post, replace the hardware, and tighten securely.

IT IS RECOMMENDED to establish a routine of periodically checking all electrical connections for tightness, particularly both connections at the bulb. A loose connection at either of these points will cause failure of the leads and contacts, and may destroy the bulb.

THE REFLECTOR is pre-aligned at the factory for maximum optical efficiency. Do not alter this positioning by adjusting the tie-rod located in the upper corner of the reflector support.

XENON LAMP: OSRAM XBO 700W/HS OFR
MUST BE USED WITH STRONG # 37969 ANODE SUPPORT ROD

LAMP OPERATION

REMOVE THE PLASTIC COVER from the xenon bulb. Do not ignite the lamp with the cover on the bulb.

SECURE THE LAMPHOUSE COVER with the (4) special screws using the wrench furnished with the lamphouse. The cover must be secure in position to actuate the interlock switch and permit bulb ignition.

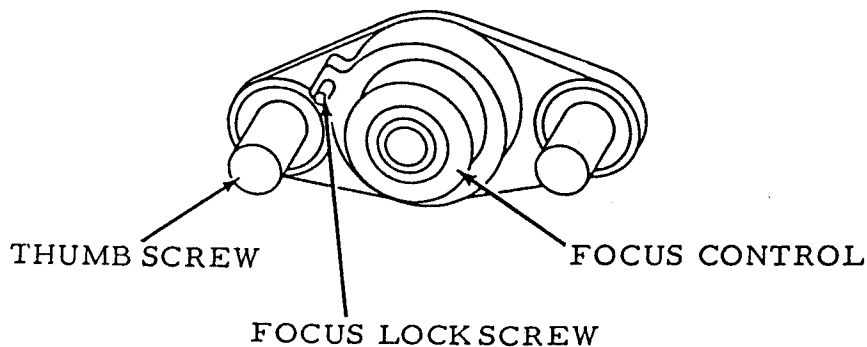
PLACE THE "MAN-AUTO" SWITCH in the manual position and turn on the main line switch to energize the power supply. The lamp blower will start and the blower interlock switch will be actuated to permit lamp ignition. This lamp blower will operate continuously until the main line switch to the xenon power supply is opened.

PLACE THE "ON-OFF" SWITCH in the "ON" position and the bulb will ignite. The lamp current should not exceed 45 amperes for the 700 Watt bulb. The recommended initial current is 40 Amperes, which may be gradually increased to a maximum of 45 amperes as the bulb ages.

ADJUST THE DIAL SWITCH on the power supply to obtain the desired current as indicated on the ammeter. See your power supply manual for additional instructions.

REMOVE THE REAR COVER PANEL (two pull type knobs) to expose the bulb positioning adjustment control.

BULB ADJUSTMENT CONTROLS



THE CENTER SECTION of the control is a threaded member that focuses the bulb in relation to the reflector. Turning this adjustment moves

the bulb in only one plane, into or away from the reflector. Turning this section clockwise moves the bulb away from the reflector. The small knurled screw to the left of this section can be tightened to lock the focusing mechanism, after the following procedures have been completed.

THE THUMB SCREWS, on either side of the focusing control, lock the horizontal and vertical adjustment mechanism in position.

TO FOCUS THE XENON BULB and obtain the best light on the stage, the two methods outlined below are the most suitable.

MOVE THE SPOT SIZE CONTROL handle on the large lens carriage all the way forward to project the smallest spot possible; with the iris, the masking shutter and the dimming control or douser in the full open position. Project the spot to a wall or similar flat perpendicular area opposite the follow spotlight.

TURN THE CENTER FOCUSING SECTION of the bulb position control counterclockwise until a small black spot is projected on the wall. It may be best to run this adjustment both directions to permit positive identification of this dark spot.

LOOSEN THE TWO THUMB SCREWS, one on either side of the center focusing section just enough to permit manual movement of the complete assembly. The bulb adjustment control will now move about these two thumb screws and as this control is shifted, the smooth shadow of the electrode can be seen extending beyond the projected center hole in the reflector. The shadow of the electrode must be centered in the projected hole of the reflector.

MOVE THIS CONTROL SECTION around the two screws until the black spot is as round as possible to project. It may be necessary to again rotate the focus control to project a sharp spot.

AFTER THE BLACK SPOT is as even around the outside as possible to project, tighten the two thumb screws to lock this adjustment section and turn the center focus control section to obtain the brightest light with the best light distribution. Rotate the lens spot focus control knob, located on the front of the lens mechanism, to obtain the sharpest edge possible on the projected spot.

THE SECOND METHOD of focusing the xenon bulb is to project the spot to the stage, and working with the above lamphouse controls, adjust these controls to obtain a "hot-spot" on the projected spot. Then center this "hot-spot" on the projected light by moving the entire control section around the two thumb screws. Once this hotspot is centered in the projected light, lock the control in position with the two thumb screws and turn the center section to obtain a spot with an even distribution of light. Turn the lens spot focus control knob to obtain a sharp edge on the projected spot.

THIS ADJUSTMENT should not be disturbed until it is necessary to replace the xenon bulb. Then the procedure on obtaining a smooth round black spot or "hot-spot" may have to be repeated.

REPLACE THE REAR COVER PANEL over the bulb adjustment control mechanism.

DUE TO MANUFACTURING TOLERANCES on the xenon bulb, and normal aging, it may be necessary to operate one lamp at a little higher or lower current than the other to obtain equal light balance between projected spots. This can be adjusted at the xenon power supply.

DO NOT EXCEED, at any time, the 45 ampere maximum current limit established by the manufacturer of the 700 watt xenon bulb.

TO EXTINGUISH the arc, place the "ON-OFF" switch, on the back of the lamphouse, to the "OFF" position. The blower in the lamphouse will continue running until the main switch in the A. C. power line to the power supply is opened. Let the blower run for five minutes, to cool the xenon bulb, before de-energizing the xenon power supply.

TO OPERATE this followspot in an automatic system, place the "Man-Auto" switch in the "Auto" position, the "ON-OFF" switch in the "ON" position; then the lamp can be turned "ON" or "OFF" from the remote switching station. See the power supply manual for wiring instructions on an automatic system. This type of installation is intended for use only if the followspot is to be used as a fixed spotlight without an operator at the equipment.

CAUTION: In either mode of operation, it is necessary to break the main A. C. line to the power supply to stop operation of the lamphouse bulb seal blower.

DAILY OPERATION in the "Manual" mode, after the above procedures have been followed, requires only that the main A. C. line switch to the power supply be placed in the "ON" position, then the lamp "ON-OFF" switch to the "ON" position, and the bulb will ignite. Reverse this procedure for turning the lamp off. Run the blower to cool the bulb.

DAILY OPERATION in an automatic system: Leave the "Man-Auto" switch in the lamphouse in the "Auto" position, the "ON-OFF" switch in the "ON" position, then operate the lamp from the remote station or switch. The switch in the main A. C. supply line to the power supply must be actuated to turn off the lamp blower after cooling the bulb.

HANDLING THE SPOTLIGHT

GENERALLY THE BEST POSITION for the operator to stand is near the center of the spotlight, on the right hand side, although angle of tilt and size of porthole may alter the position for the most convenient operation.

EACH OPERATOR will after a few minutes of operation, generally develop his own system and position for operating the follow spotlight.

THE HORIZONTAL SWING LOCK LEVER and vertical tilt lock lever located on the base assembly can be set to give the required amount of friction on the spotlight swing to suit the individual operator.

THE LENS CARRIAGE FRICTION BRAKE is located on the out-
rider of the large lens carriage and is preset at the factory for the most satisfactory operation. Individual requirements vary and the brake can be adjusted to suit the operator. Remove the color boomerang and lens housing cover, loosen the locknut, and adjust the screw on the friction brake until the desired tension is applied to the large lens carriage. Tighten the locknut and replace the lens housing cover and the color boomerang.

OPERATION OF OPTICAL SYSTEM

THE IRIS CONTROL is the front lever which projects through the top of the optical system housing. When this lever is to the left, looking at the spotlamp from the rear, the largest aperture is provided. Smaller apertures are obtained as the lever is moved to the right.

THE SPOT SIZE CONTROL HANDLE is located on the right side of the optical system just above the base pan. A variation of spot sizes from full flood to a small spot can be obtained by moving the spot size control from one extreme to the other. Beam intensity is increased by this optical system when reducing from flood to spot and maximum intensity is reached when the spot size control is in the extreme forward position.

THE MAXIMUM FLOOD SPOT is obtained with the iris control lever to the left (away from operating side) for the large aperture and with the spot size control handle moved as far as possible toward the rear.

SMALLER SIZED SPOTS are projected as the spot size control handle is moved forward. Most of the spot sizes needed will be produced with the iris in its maximum open position.

FOR A "HEAD SPOT" or any spot size smaller than can be obtained with the spot size control handle in its extreme forward position, shift the iris control lever to the right (toward operating side) for a smaller aperture. The iris control lever should always be returned to its extreme left position before the spot size control handle is again moved to obtain larger spots.

THE MASKING SHUTTER LEVER is the middle lever projecting through the top of the optical system housing. The masking shutter blades are operated by this lever to shape the projected spot to a rectangle, strip spot, or dousing.

THE DISENGAGED POSITION of the masking shutter lever is to the extreme right (toward operating side) and varying degrees of masking to complete cutoff are obtained by moving the lever to the left (away from operating side).

THE ANGLE OF THE MASKING SHUTTER BLADES can be adjusted to compensate for the horizontal projection angle. Remove the color boom-erang, optical system housing, and loosen the screws holding each of the masking shutter blades just enough to allow adjustment. Ignite the bulb and adjust the angle of the bottom blade by tapping with a screwdriver so its projected edge lies parallel to the footlights, tighten in place with the screw.

OPERATE THE MASKING SHUTTER LEVER to close the blades. Adjust the upper blade to close in line with the bottom blade. Tighten the screw to secure the upper blade.

THE FADEOUT MECHANISM AND DOUSER is the rear lever projecting through the top of the optical system housing. This lever controls the intensity of light from complete fadeout when the lever is to the left, to full intensity when the lever is to the right.

THE LENS FOCUSING CONTROL is located on the operating side of the optical system base pan (forward end) and is used to adjust the optical system for the length of throw. When making an adjustment rotate the spot focusing control until the sharpest edge is obtained on the projected spot.

OPERATION OF COLOR BOOMERANG

THE COLOR BOOMERANG is equipped with six color filters and provision has been made for installation of an ultra-violet filter. The ultra-violet filter can be purchased as an accessory and is easily attached to the front of the boomerang. Additional filter holders can be supplied by your dealer.

TO OPERATE INDIVIDUAL COLOR FILTERS, lower the desired filter selector lever. A rocker catch located in the color disc housing holds the filter in position.

TO RELEASE A COLOR, push the filter release arm up or engage another color, thus releasing the previous color automatically.

TO REPLACE A FILTER HOLDER, open the hinged top of the color disc housing and lift out the desired filter holder.

CAUTION: WHEN REPLACING COLOR FILTERS in the boomerang, the less dense colors should be placed in the holders toward the rear (toward arc) of the spotlight, and those of greater density should be placed in holders nearer the front (away from arc) of the spotlight.

MAINTENANCE

THE XENON SPOTLIGHT requires very little maintenance to keep it in good working order.

THE REFLECTOR should be cleaned periodically with a clean, soft, lint free cloth to remove any dust from the reflecting surface.

CHECK ALL ELECTRICAL CONNECTIONS periodically for tightness, especially the D. C. leads at the xenon bulb and at the shunt and igniter.

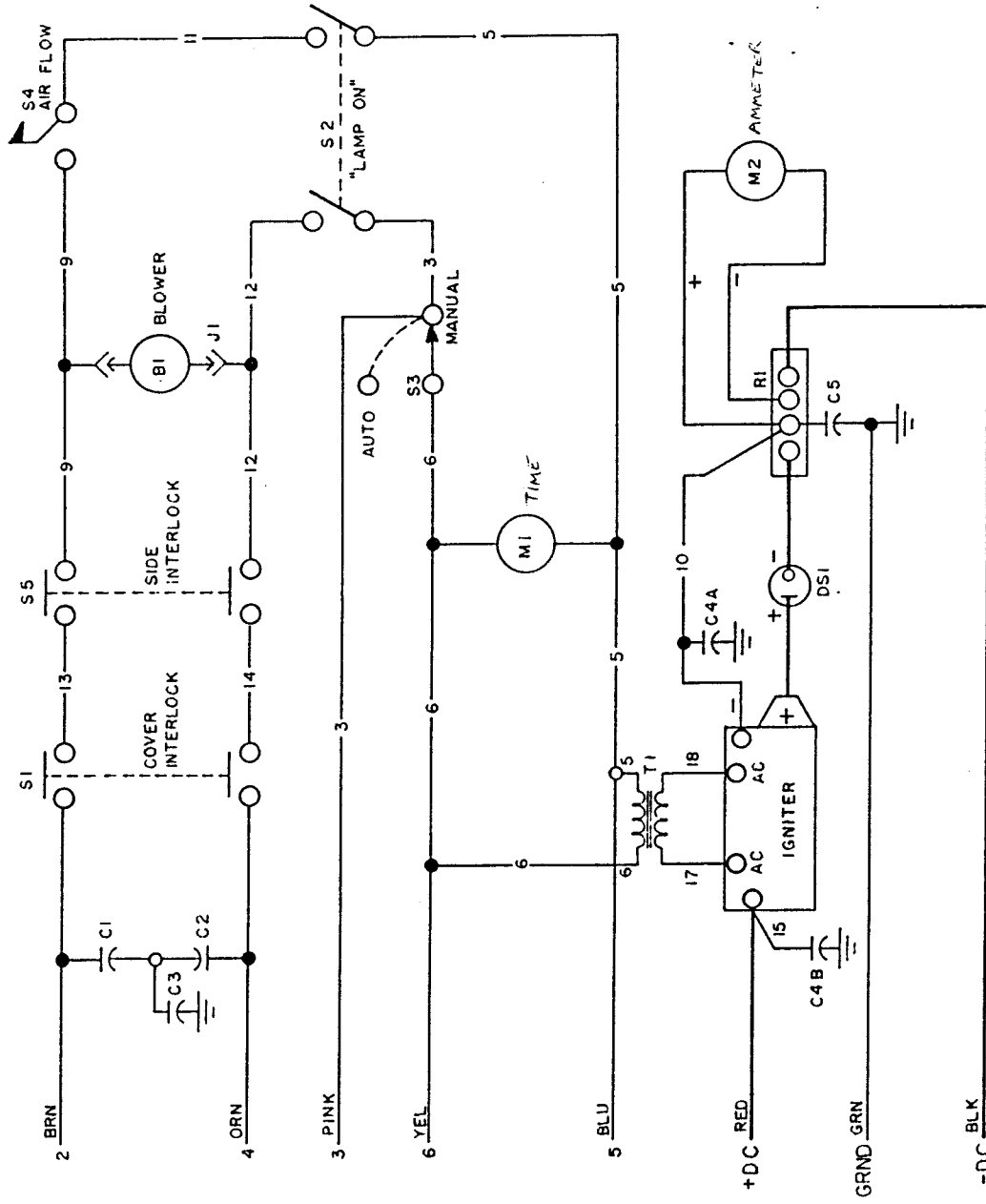
THE XENON BULB should be checked occasionally for presence of foreign material on the envelope. Any dirt or other foreign material should be removed promptly. CAUTION: Observe all safety procedures when working with the exposed bulb.

THE INSIDE OF THE LAMPHOUSE and the fan should be cleaned periodically, depending on the dust conditions at each installation. The fan needs cleaning to remove the dust build-up that accumulates over a period of time. Keep the air inlet screen clean to permit a free air flow.

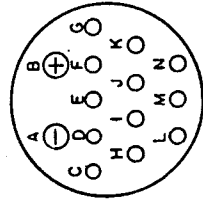
THE OPTICAL LENS SYSTEM should be kept clean to prevent any light reduction in the projected spot. Tighten the horizontal swing and vertical tilt locking clamps. Remove the color boomerang and lens housing.

CLEAN THE PROJECTION LENS and large lens with any cleaner approved for use on coated projection lens. If the small lens is removed for any reason, the end with the FL marking must be toward the iris when replaced in its support.

WHEN TRANSPORTING the spotlight it is recommended that the xenon bulb be removed and placed in its original shipping carton with the cover on the bulb to insure against breakage.



CABLE 65935
MS CONNECTOR



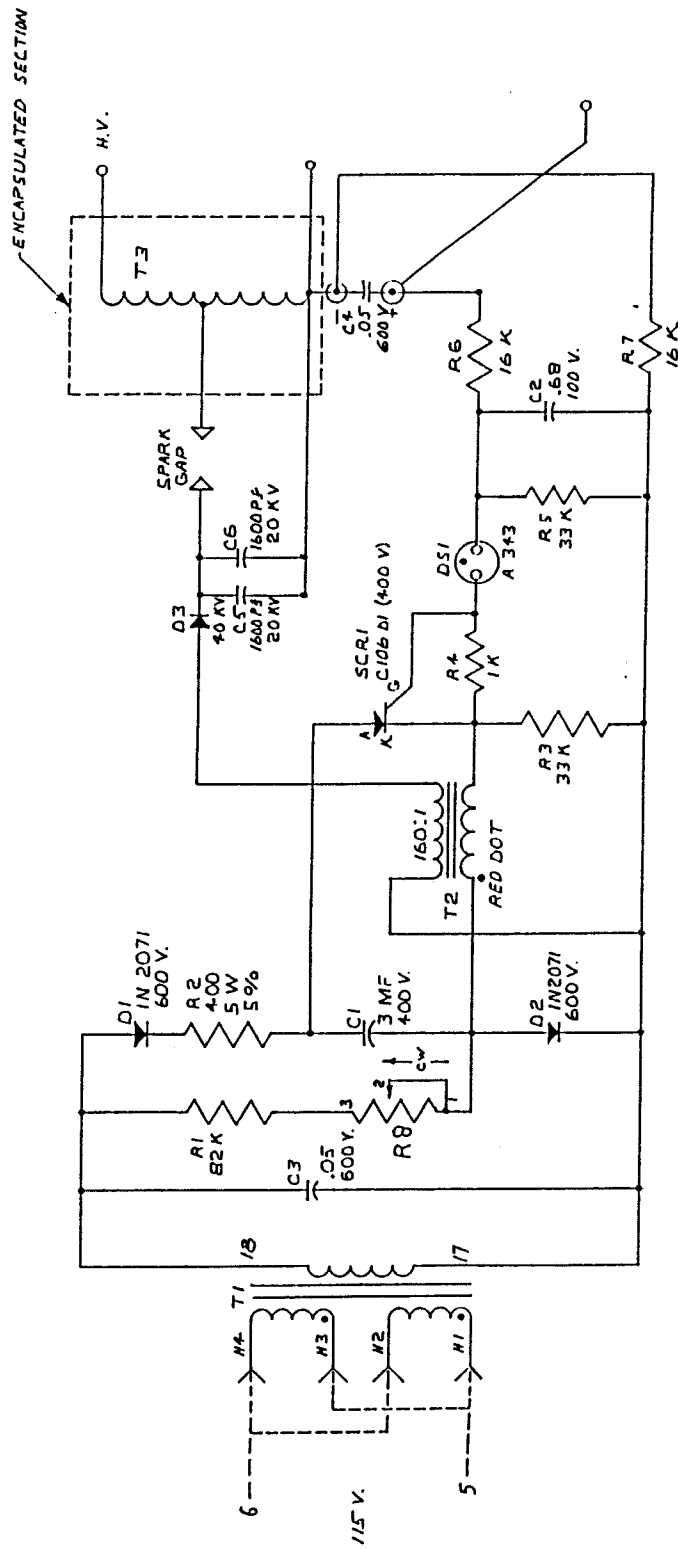
- | | | | |
|--------|---------|-------------|---------|
| A- BLK | NEG. DC | B- RED | POS. DC |
| C- BRN | 2 | D- PINK | 3 |
| E- ORN | 4 | H- GRAY | |
| G- YEL | 6 | I- PUR | |
| F- BLU | 5 | J- WHT | |
| | | GRN- GROUND | |

XENON TROUPER-LAMPHOUSE WIRING DIAGRAM

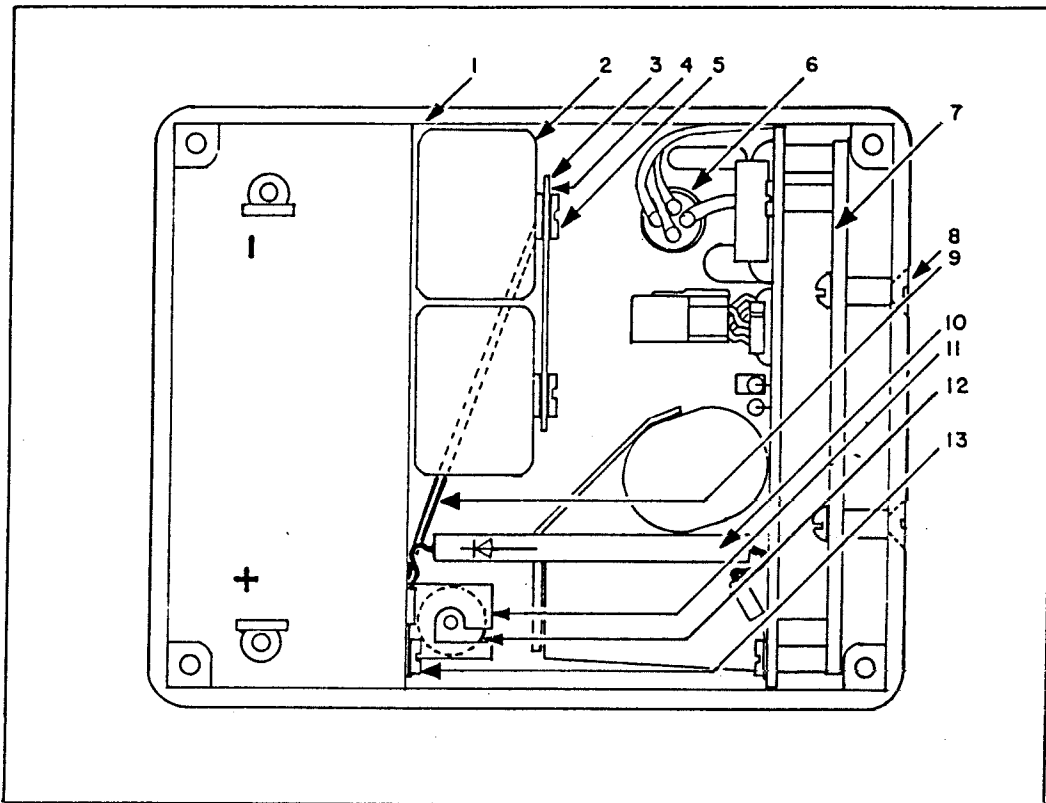
PARTS LIST

XENON TROUPER LAMPHOUSE 37050-1

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
-	37959	Igniter
B1	65227	Blower
C1&C2	76132	Capacitor .005 MFD/600W. V. D. C.
C3	76133	Capacitor .01 MFD/400W. V. D. C.
C4A&C4B	80177	Capacitor 1.0 - 1.0 MFD/600W. V. D. C.
C5	81947	Capacitor .01 MFD/600W. V. D. C.
DS1	-	Xenon Bulb
M1	65891	Elapsed Time Meter (60 Hz)
M1	39195	Elapsed Time Meter (50 Hz)
M2	65142	Ammeter
R1	82167	150A. Shunt-Ammeter
S1	80168	Cover Interlock Switch
S2	81275	On-Off Switch, <i>ROCKER TYPE</i>
S3	81276	Man-Auto Switch, <i>ROCKER TYPE</i>
S4	75187	Air Flow Switch
S5	80168	Side Interlock Switch
J1	37990	Fan Cord Assy.
T1	37982	Isolation Transformer Assy.



IGNITION CIRCUIT
Xenon Trouper Lamphouse



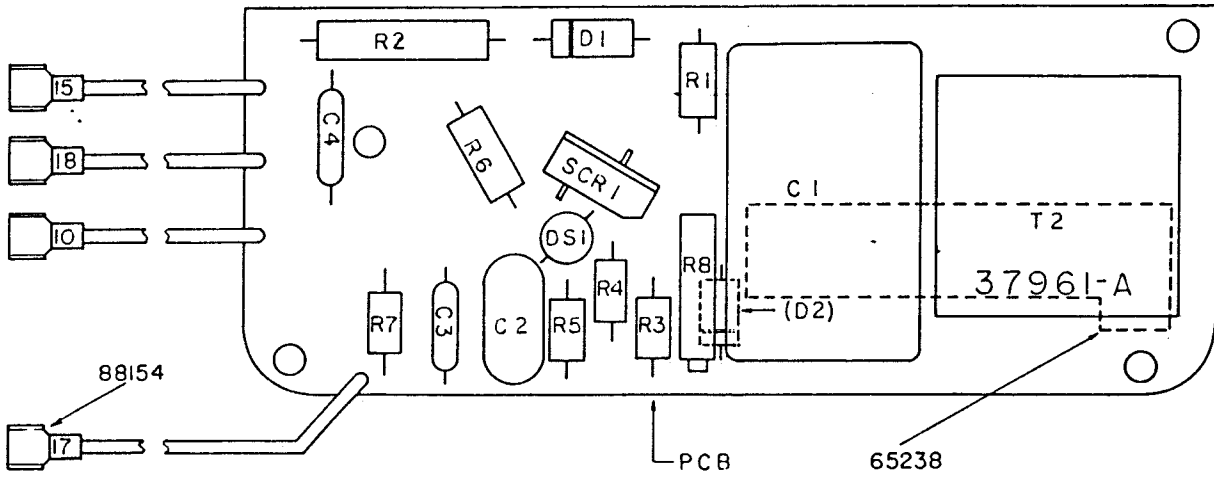
PARTS LIST
IGNITER

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	72910	Igniter Encapsulated Assy.
2	72129	High Voltage Capacitor
3	72131	Capacitor Connector
4	891A	#8 Lockwasher (Shakeproof)
5	1382	Screw, 8-32 x 3/16 Bd. Hd.
6	48316	Nylon Bushing (Location)
7	37960	PC & Spacer Board Assy.
8	165	Screw, 6-32 x 3/8 Flat Hd.
9	72978	Capacitor Connector Wire Assy.
10	72985	Diode Assy. - Spark Gap
11	72128	Holder - Spark Gap
12	65237	Spark Gap
13	1304	Screw, 8-32 x 5/16 Bd. Hd.

Not Shown

72357	Igniter Box Lid
48316	Nylon Bushing (In lid)
1305	Screw, 6-32 x 1/4" Bd. Hd. (Lid Mounting)
37996	Hold-Down Strap Assy.
685	Screw, 1/4-20 x 3/8" Hex. Hd.
889	1/4" Lockwasher (Shakeproof)

IGNITER PRINTED CIRCUIT BOARD



<u>SYMBOL</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
PCB	72132	Printed Circuit Board
C1	65204	Capacitor, 3 MFD, 400V.
C2	65222	Capacitor, .68 MFD, 100V.
C3, C4	88263	Capacitor, .05 MFD, 600V. D. C.
D1, D2	65223	Silicone Diode, 600 ma, 600V.
DS1	65224	Neon Glow Lamp
R1	65226	Resistor, 82 K Ohms, .5W.
R2	65227	Resistor, 400 Ohms, 5 W.
R3, R5	65228	Resistor, 33 K Ohms, .5W.
R4	65229	Resistor, 1 K Ohm, .5 W.
R6, R7	65250	Resistor, 16 K Ohms, .5 W.
R8	65348	Trim Pot 100 K Ohms
SCR1	65225	Silicon Controlled Rectifier
T2	65220	High Voltage Pulse Transformer
-	88154	Auto Clip Terminal
-	65238	Capacitor & Transformer Bracket

Not Shown

65201	Hex Spacer, 3/8"
65242	Brass Spacer, 1/2"
72134	Insulator Board
147	Screw, 6-32 x 1/4"
892	#6 Lockwasher
1448	Screw, 6-32 x 3/4"

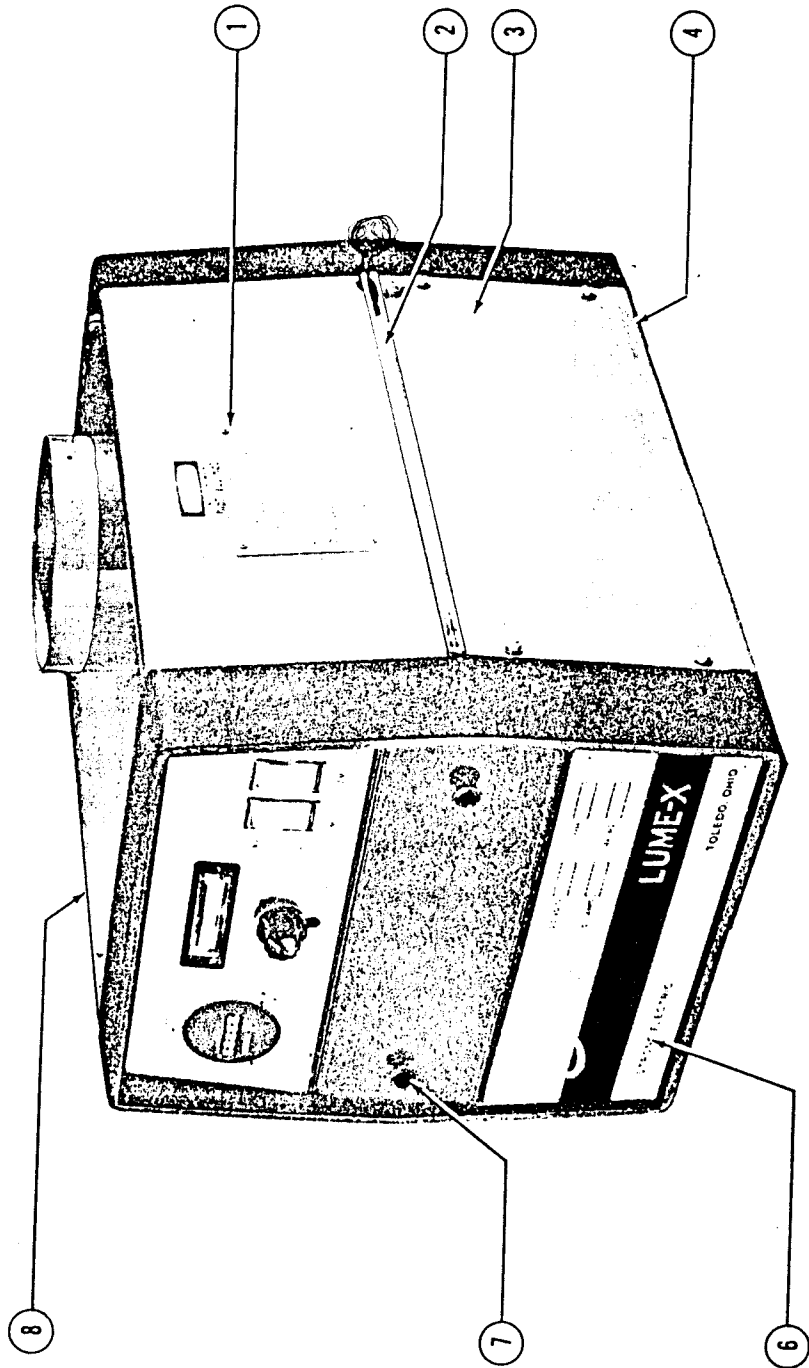


FIGURE 1

PARTS LIST

FIGURE 1

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	81282	Caution Plate
-	1639-5	Pop Rivet
-	65353	Danger Plate
2	37103	Trim Strip (not used on all models)
3	37119	Access Panel (used with item 2)
3	37963	Access Panel (for lamphouse without item 2)
4	37115	Lamphouse, Lower (used with item 2)
4	37964	Lamphouse, Lower (for lamphouse without item 2)
6	37139	Name & Data Plate
-	1639-2	Pop Rivet
7	65968	Cover Assy., Bulb Adj.
-	65140	Cover Panel
-	65166	Plunger
-	65167	Grommet
8	37993	Top Cover Assy.
-	1716	Screw, Switch Actuator #10-24 x 5/8"
-	797	Nut #10-24 Hex
-	1736-1	Screw #10-32 x 1/2" Holt Hd. (Special)
-	1715	Washer, Flat #10
-	65149	Driver (tool for 1736-1)
	65866	Vent Cap, Exhaust Stack (not shown)

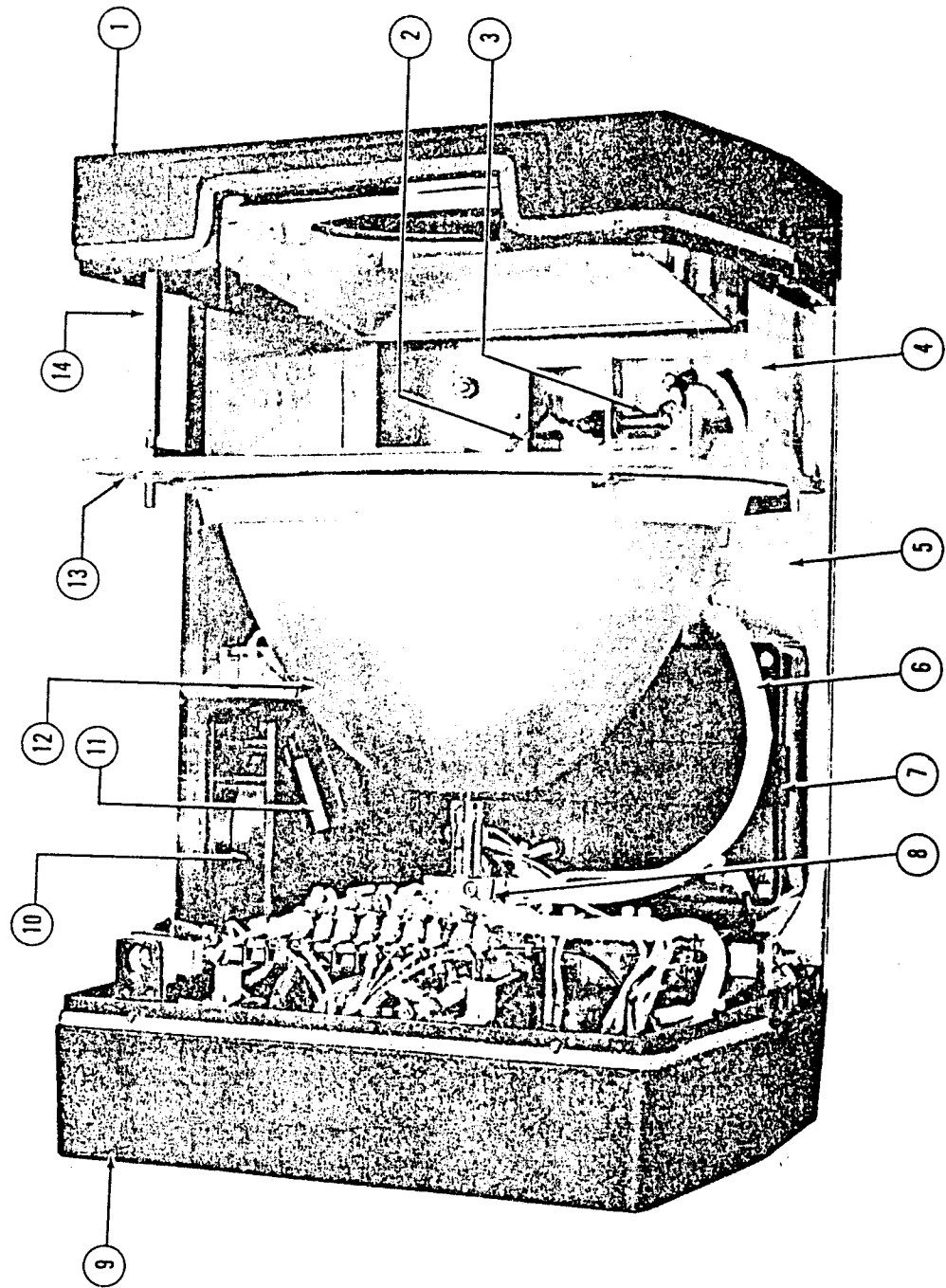


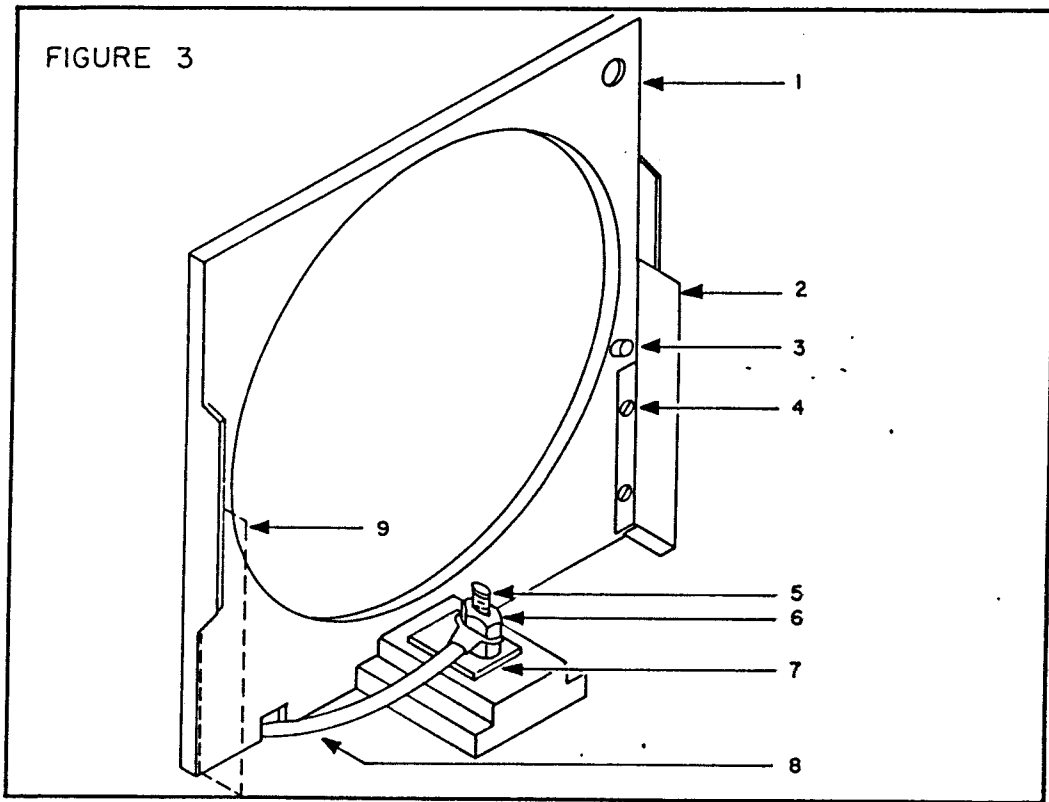
FIGURE 2

PARTS LIST

FIGURE 2

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	65111	Front Casting
2	-	See Figure 3
3	-	See Figure 3
4	65156	Heat Shield, Right
-	65155	Heat Shield, Left
-	1304	Screw, 8-32 x 5/16" Pan Hd.
5	37970	Negative Lead
6	37972	Positive Lead & Clamp Ass'y.
-	685	Screw, 1/4-20 x 3/8" Hex Hd.
-	806A	Jam Nut, 1/4-20
-	876	Split Lockwasher, 1/4"
7	37959	Igniter
-	37996	Strap
-	685	Screw, 1/4-20 x 3/8" Hex Hd.
-	889	Shakeproof Lockwasher, 1/4"
8	37138	Anode Clamp
-	1532	Screw, 8-32 x 7/8" Socket Hd.
9	37967	Back Casting Ass'y. (see Figure 4, 5)
10	45227	Blower (B1)
-	83131	Grille
-	1795	Screw, 6-32 x 1" Pan Hd.
11	81870	Actuator Vane, Air Flow Switch
-	75187	Switch (S4; not shown, see Figure 5)
12	65936	Reflector Ass'y. <small>LUME-X</small>
-	1737	Screw, 10-32 x 5/8" Hex Hd.
-	1507	Tinnerman Nut, #10
13	65114	Bulkhead Casting (see Figure 3)
-	876	Split Lockwasher, 1/4"
-	805	Hex Nut, 1/4-20
-	691	Screw, 1/4-20 x 3/4" Hex Hd.
-	1561-2	Dowel Pin
14*	65164	Tie Rod
-	806A	Jam Nut, 1/4-20
-	805	Hex Nut, 1/4-20

* This tie rod fixes the optical alignment of the reflector. Do not adjust.



LAMPHOUSE BULKHEAD ASS'Y.
PARTS LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
-	37966	Lamphouse Bulkhead Assy.
1	65114	Casting, Bulkhead
2	65155	Inner Heat Shield (Left)
3	1561-2	Dowel Pin, 3/16 x 1/2"
4	1304	Screw, 8-32 x 5/16" Bd. Hd.
5	616	Screw, 5/16-18 x 1" Hex Hd.
6	807	Hexnut, 5/16-18
-	1502	Lockwasher, 5/16" Shakeproof
7	37129	Electrode Plate
8	37970	Shunt Lead Assy.
9	65156	Inner Heat Shield (Right)

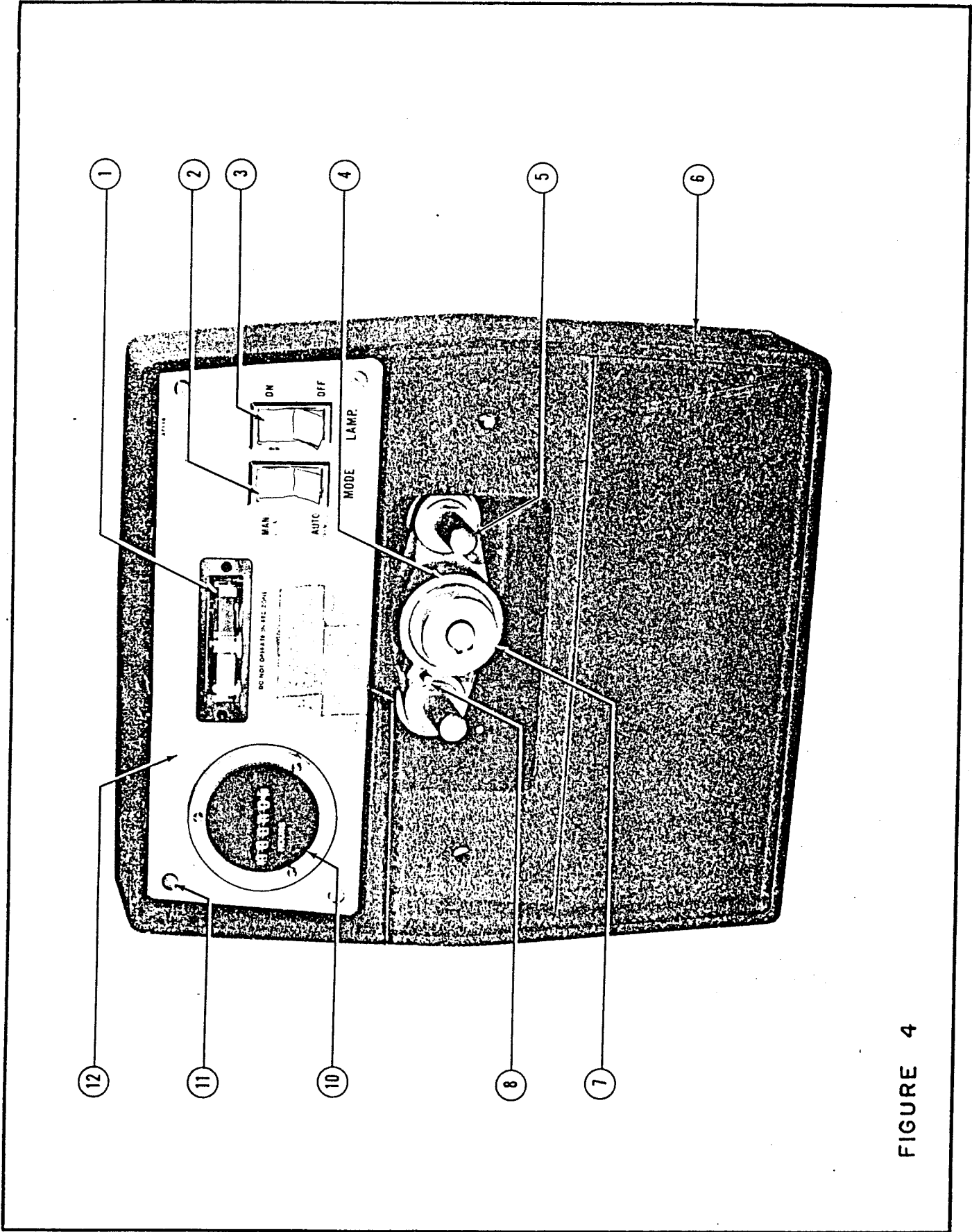


FIGURE 4

PARTS LIST

FIGURE 4

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	65142	Ammeter (Green-Red Zone) (M2) (includes screws & nuts)
2	81276	Switch, Man-Auto (S3)
3	81275	Switch, On-Off (S2)
4	65116	Bulb Adjustment Cstg.
5	37985	Thumb Screw
-	15010	Spring
-	65150	Washer, Flat
6	65112	Rear Cstg., Lamphouse
7	37135	Focus Screw
-	90416-A	Retaining Ring
8	65153	Knurled Screw
-	65154	Ball
10	65891	Elapsed Time Meter (60 Hz, M1)
-	65870	Elapsed Time Meter (50 Hz, M1)
-	953	Screw #4-40 x 1/2" Rd. Hd.
-	1620	Nut #4-40 Hex.
-	1343	Lockwasher, #4 Shakeproof
11	1382	Screw #8-32 x 3/16" Bd. Hd.
12.	37118	Panel, Instrument

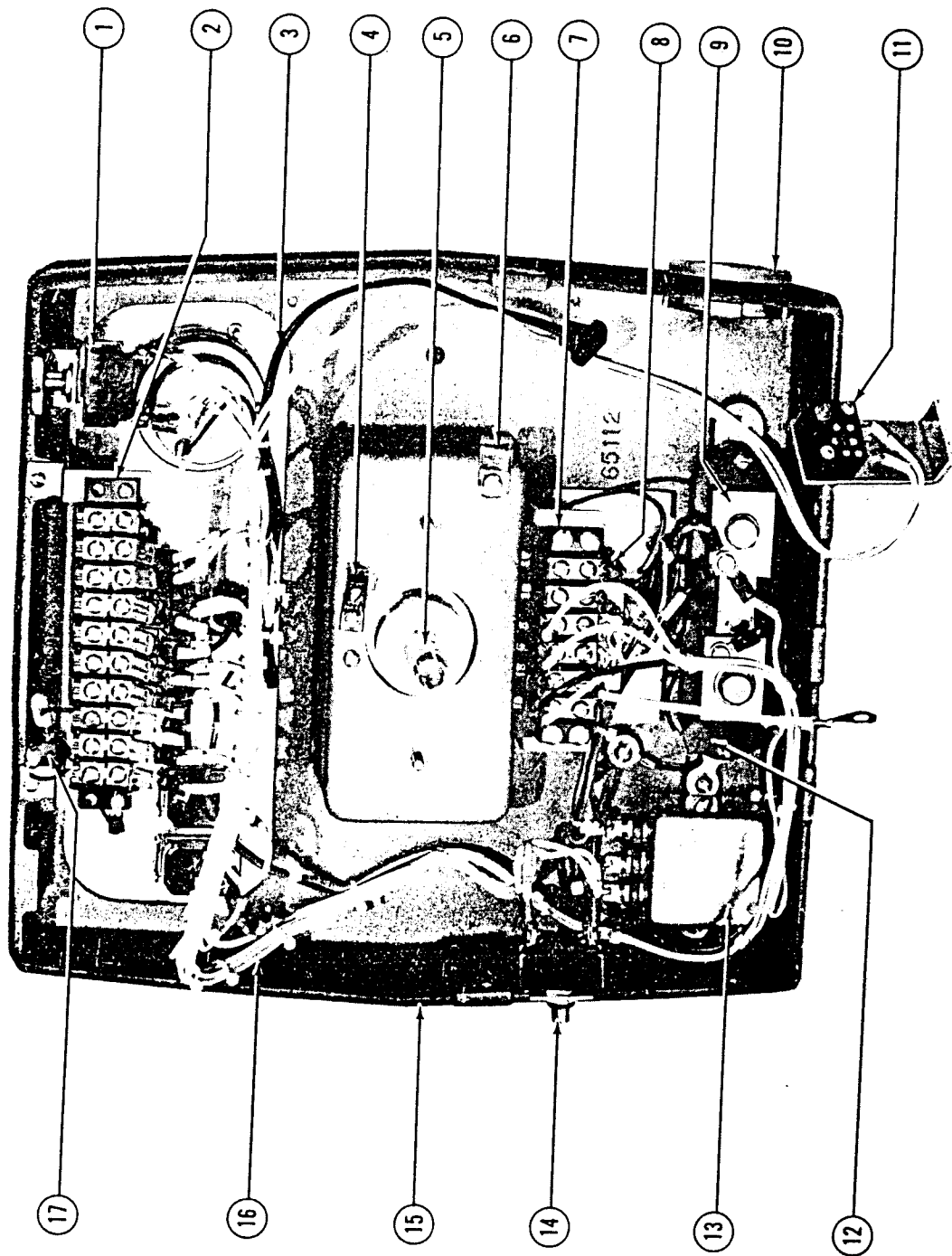


FIGURE 5

PARTS LIST

FIGURE 5

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	80168	Switch, Cover Interlock (S1)
-	1741	Lockwasher 7/16" Shakeproof
-	65185	Bracket, Switch
-	255	Screw #8-32 x 5/16" Fil. Hd.
-	891A	Lockwasher #8 Shakeproof
2	65134	Terminal Strip
-	182	Screw #6-32 x 7/16" Fil. Hd.
-	65160	Bracket
-	255	Screw #8-32 x 5/16 Fil. Hd.
-	891A	Lockwasher #8 Shakeproof
3	37990	Cord Assy., Blower
4	79131	Ground Lug
-	255	Screw #8-32 x 5/16" Fil. Hd.
-	886A	Lockwasher #8 Split Ring
5	37968	Anode (+) Support Assy.
-	90416A	Retaining Ring
6	M4361	Cable Clamp
-	377	Screw #10-24 x 1/4" Fil. Hd.
7	72176	Terminal Strip
-	1312	Screw #8-32 x 1/2" Bd. Hd.
-	37117	Marker Strip, Insulator
-	37111	Mounting Bracket
-	255	Screw #8-32 x 5/16" Fil. Hd.
-	886-A	Lockwasher #8 Split Ring
8	37982	Transformer (T1)
-	1382	Screw #8-32 x 3/16 Bd. Hd.
9	82167	Shunt
-	875	Lockwasher 3/16" Split Ring
-	385	Screw #10-24 x 1/2" Fil. Hd.
10	95119	Bushing
-	95120	Locknut
11	75187	Switch, Airflow (S4)
-	1565	Screw #4-40 x 3/4" Rd. Hd.
-	37105	Bracket, Switch
-	1304	Screw #8-32 x 5/16" Bd. Hd.
12	81947	Capacitor (C5)
13	80177	Capacitor (C4A, 4B)
14	80168	Switch, Access Panel (S5)
15	65112	Back Casting
16	37983	Lamphouse Cable Assy.
17	65890	Capacitor Assy., RF Suppression (C1, 2, 3)

OPTICAL SYSTEM AND BASE - PARTS LISTS



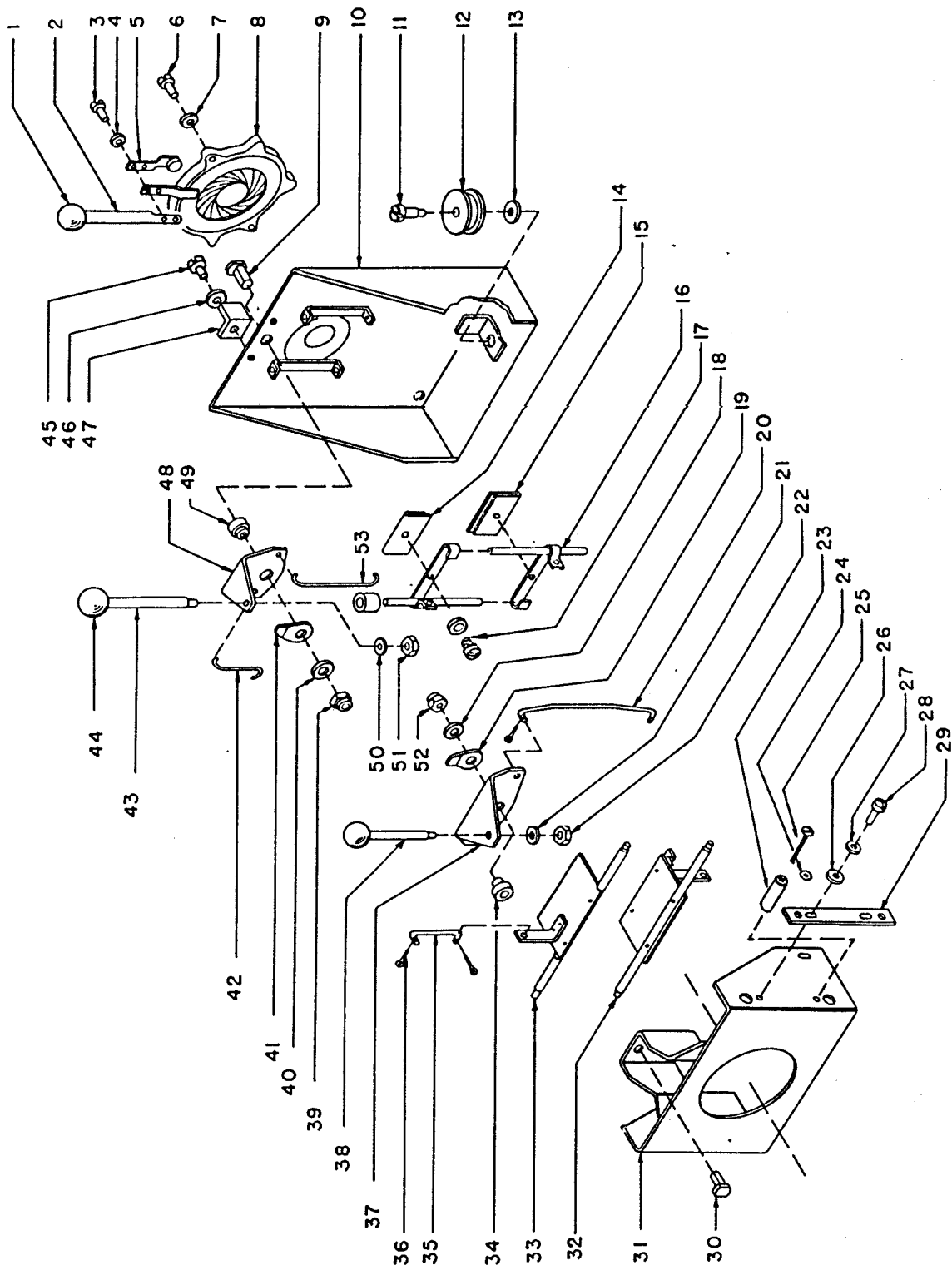


FIGURE 1

FIGURE 1

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	10048	Knob
2	48402	Shaft, Iris
3	179	Screw, Mach., Fill.Hd. 6-32 x 1/4
4	892	Lockwasher #6 Shakeproof #1206 Internal
5	51978	Friction Spring, Iris
-	51229	Friction Pad
6	184	Screw, Mach., Fill.Hd. 6-32 x 5/8
7	892	Lockwasher #6 Shakeproof Internal
8	51979	Iris
9	51226	Stud, Chopper Blade
10	51871	Support Plate, Aperture
11	51160	Stud, Pulley
12	51157	Pulley, Small
13	830	Washer #8
14	47191	Chopper Blade
15	47191	Chopper Blade
16	47982	Slide Assy., Chopper Blade
-	MAL-64	Spacer
17	253	Screw, Mach. Fill.Hd. 8-32 x 3/16"
-	891A	Lockwasher, #8 Shakeproof #1208
18	853	Washer, 1/4" (SAE) Steel
19	51156	Plate Friction, Chopper Blade
20	51602	Rod, Lower, Blade Operating
21	876	Lockwasher, Split Ring 1/4"
22	805	Nut, 1/4-20 Steel
23	51517	Spacer
24	866	Washer, #10, Flat
25	400	Screw, 10-32 x 1-1/2 Fil.Hd.
26	831	Washer, Thick Brass, #10 7/16 OD x .200 ID x .036
27	1344	Lockwasher, #10 Internal Shakeproof #1210
28	378	Screw-Mach., Fill.Hd. 10-32 x 1/4
29	51443	Retainer, Pivot Shaft
30	51226	Stud, Chopper Blade
31	48898	Bracket Assy., Fadeout Mech.
32	48878	Blade Assy., Lower Fadeout Mech.
33	48879	Blade Assy., Upper Fadeout Mech.
34	51153	Bushing, Spacer Chopper Blade
35	51515	Rod, Upper, Blade Operating
36	919	Cotter Pin 1/16" x 1/2"
37	51520	Bracket, Fadeout Handle
38	51452	Shaft Handle, Fadeout Mech.
39	1406	Nut, Flexlock 5/16-18 x 1/4
40	853	Washer, Steel 1/4" (SAE) Std.
41	51156	Plate, Friction, Chopper Blade

Figure 1 - Pg. 2

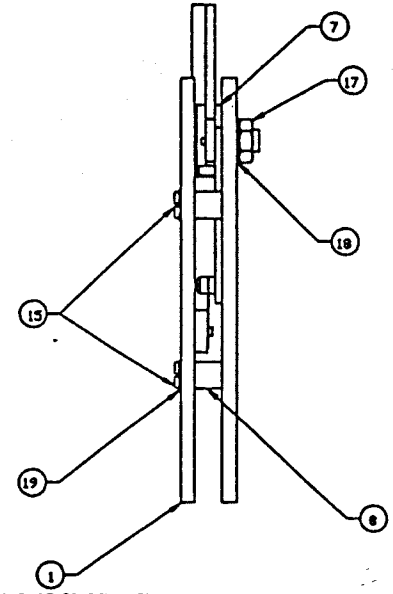
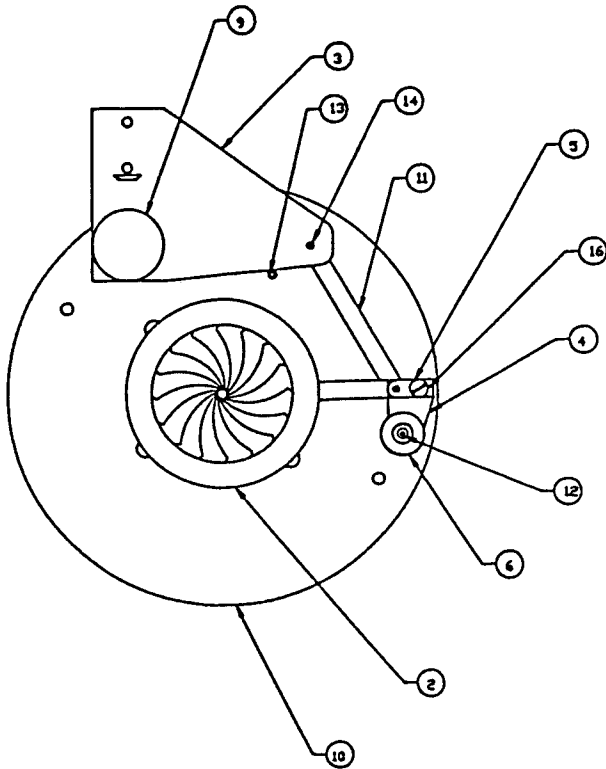
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
42	51498	Pull Rod, Short
43	51155	Shaft, Chopper Blade Handle
44	10048	Knob
45	254	Screw 8-32 x 1/4" Fill.Hd.
46	891	L'Washer #8 Shakeproof (Steel)
47	47170	Stop, Iris
48	48406	Handle, Bracket
49	51153	Bushing, Spacer, Chopper Blade
50	876	L'Washer 1/4" Split Ring
51	805	Nut 1/4-20 Steel
52	1406	Locknut 5/16-18 Maclean Fogg
53	51497	Pull Rod, Long

Not Shown

(Required for Short Throw Super Trouper Only)

83181	Iris Masking Plate
83182	Retaining Clip

"NEW" IRIS ASSEMBLY



THIS PART IS REMOVED
IN OTHER VIEWS

PARTS LIST
Iris Assembly, New (1992) Style

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	51639	Rear Mounting Plate
2	51638	Iris (New Style)
3	51635	Bell Crank
4	51636	Drag Spring
5	51634	Spring Retainer
6	51633	Drag Shoe
7	51632	Pivot Washer
8	51628	Plate Bushing
9	51629	Bell Crank Pivot
10	51637	Front Mounting Plate
11	51640	Bell Crank Link Ass'y.
12	1639-2	Rivet, 1/8 x 5/16"
13	21-37004	Roll Pin, 1/8 x 1/2"
14	21-37007	Roll Pin, 3/32 x 5/16"
15	41-51090	Screw, 8-32 Pan Hd.
16	41-51015	Screw, 5-40 Pan Hd.
17	41-35066	Stop Nut, 5/16-24
18	41-70016	Lock Washer, 5/16"
19	41-70002	Washer, #8

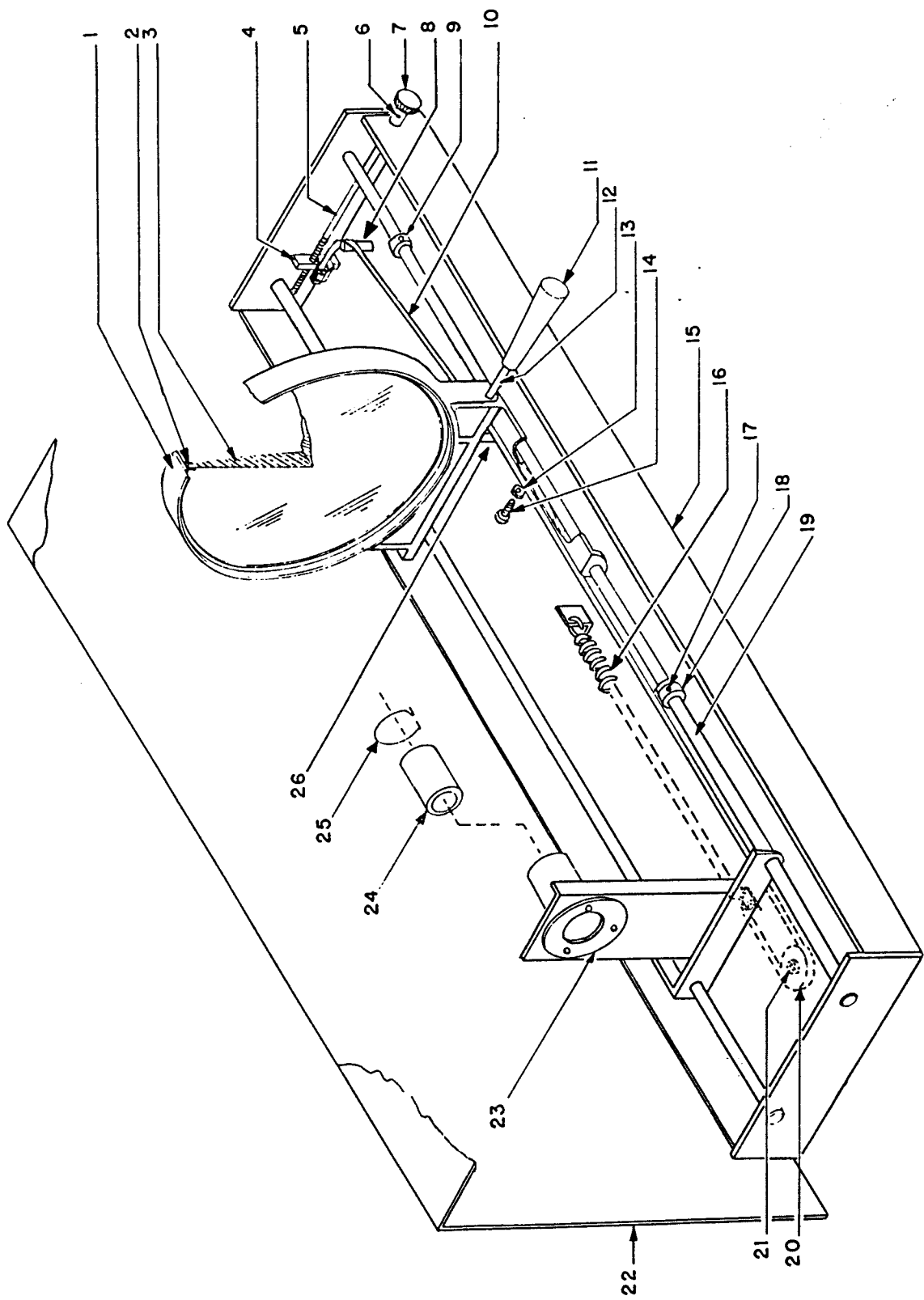


FIGURE 1A

FIGURE 1A

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	51876	Carriage, Large Lens Assy.
2	51493	Ring, Lens Retaining
-	51492	Rubber Lens Cushion
-	217	Screw, 8-32 x 5/16" Rd. Hd.
-	830	#8 Flatwasher (Brass)
-	866	#10 Flatwasher
3	51102	Lens
4	51133	Block, Lens Focus
5	51489	Shaft, Lens Focus
-	866	#10 Flatwasher
-	1475	Cotter Pin, 1/16 x 3/8"
6	51202	Set Screw
7	51168	Knob, Lens Focus
8	51167	Stud
-	490	Screw, 1/4-20 x 1/2" Flt. Hd.
9	51114	Stop Collar
10	51992	Ribbon Assy., Lens Focus
11	51509	Handle, Large Lens Assy.
12	48401	Handle Shaft
13	1752	Hexnut, 1/4-20 (Nylon)
14	1754	Screw, 1/4-20 x 1" Hex Hd. (Nylon)
15	48899	Base Pan, Welded Assy.
16	51162	Tension Spring
17	722	Set Screw, 10-32 x 1/4"
18	51114	Stop Collar
19	51485	Slide Rod
-	48127	Retaining Clip, Truarc #5100-56
-	48147	Retaining Clip, Truarc #5101-56
20	51157	Pulley
21	51160	Pulley Stud
-	830	#8 Flatwasher (Brass)
NOTE: Items 20 & 21 shown offset for clarity. See Figure 1, Items 11, 12 and 13.		
22	48895	Housing Assy.
-	1307	Screw, 10-32 x 3/8 " Pan Hd.
-	541	Screw, 1/4-20 x 1/2" Pan Hd.
23	48896	Small Lens Carriage Assy.
-	51101	Small Lens (2.5" Focal Length)
-	48404	Mounting Plate, Small Lens (2 req'd)
-	48403	Mounting Tube, Projection Lens
-	241	Screw, 8-32 x 5/8" Flt. Hd.

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
24	44239	Projection Lens (4.5" Focal Length)
25	83155	Retaining Ring
26	51160	Pulley Stud
-	830	#8 Flatwasher (Brass)

Not Shown

48891		Base Rail, Lamphouse & Len Mechanism
49342		Hand Rail, Chromed
1346		Screw, 5/16-18 x 1/2" Hex Hd.
877		5/16" L'Washer, Split

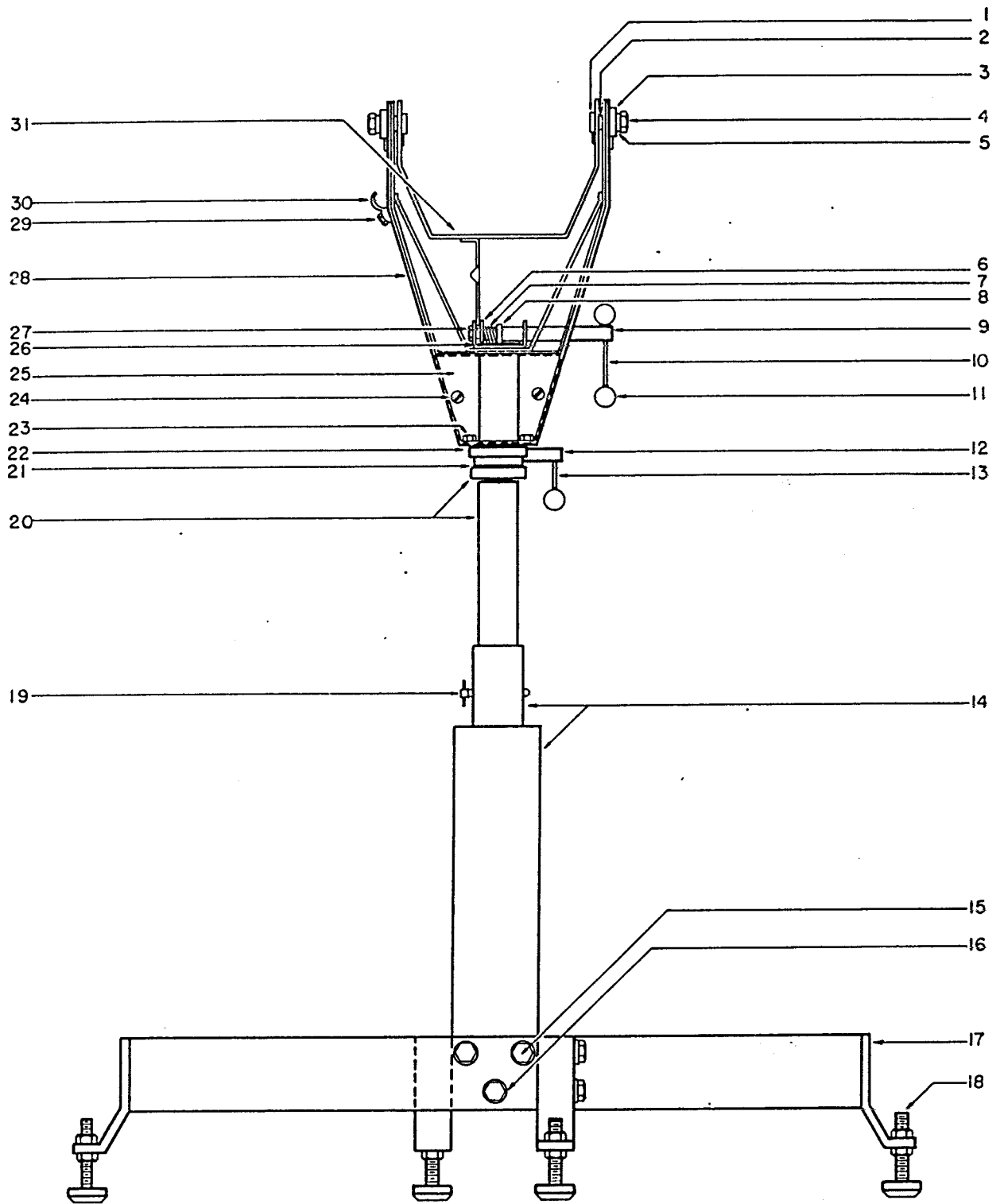
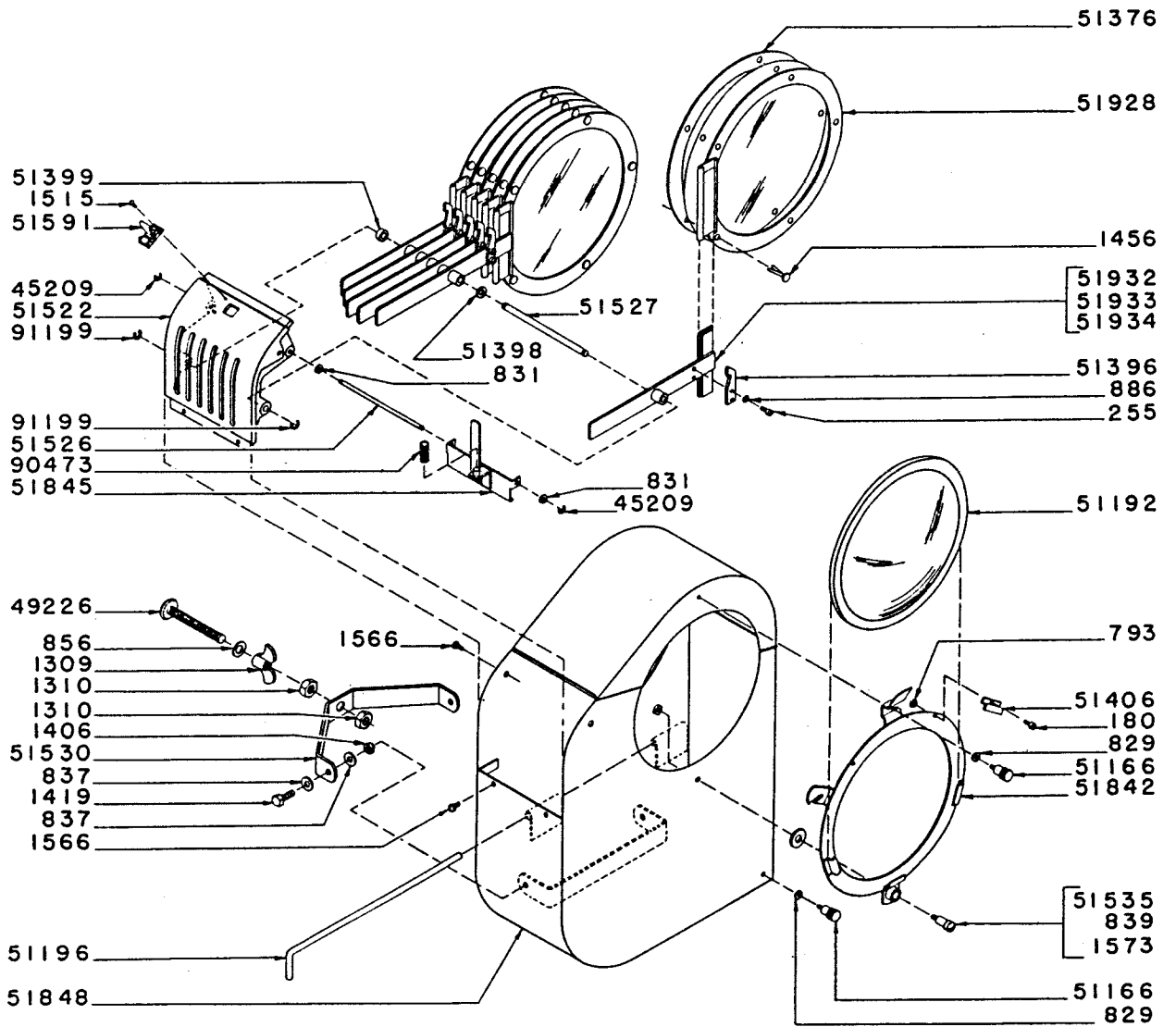


FIGURE 2

FIGURE 2
PARTS LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	49120	Tilt Axis Bolt
2	2411	Washer, Negative Spider
3	49121	Axis Tilt Washer
4	818	Hex Nut, 3/8-16
5	854	Washer, 3/8" (Flat)
6	49126	Trunnion, Clamp Plate
7	49125	Trunnion Spring
8	49124	Trunnion Clamp Bushing
9	49129	Trunnion Clamp Shaft
10	49130	Clamp Shaft Handle
11	10048	Knob
12	49179	Swivel Clamping Nut
13	49114	Handle Stud
14	48888	Base Support Column
15	1656	Screw, 5/16-18 x 2-1/2" Hex Hd.
16	877	Lockwasher, 5/16" I. D.
17	48887	Base Leg Assy.
18	49226	Leveling Foot
19	48395	Pin-Height Adjust
20	48885	Inner Tube Assy.
21	48399	Bronze Washer
22	49185	Swivel Clamp Collar
23	687	Screw, 1/4-20 x 1/2
24	1304	Screw, 8-32 x 5/16
25	48394	Yoke Cover Plate (Outlined, not shown)
26	49191	Inner Tube Retaining Collar
27	1317	Screw, 1/2-13 x 2-1/2"
28	49977	Yoke Assy.
29	689	Screw, 1/4-20 x 5/8
30	83341	Cable Clamp
31	48884	Yoke - Quadrant Plate Assy.

PLATE 2148



180	Screw - Fil. Hd., 6-32 x 5/16
255	Screw - Fil. Hd., 8-32 x 5/16
793	Nut - Steel, 6-32
829	Washer - Brass #8 3/8" O.D.
831	Washer - Brass #10 7/16" O.D.
837	Washer - Brass 5/16 3/4" O.D.
839	Washer - Brass 3/8 7/8" O.D.
856	Washer 1/2" S.A.E. Std.
886	L'Washer - Split Ring #8
1309	Wing Nut 1/2-13
1310	Nut 1/2-13 Hex Half Nut
1406	L'Nut 5/16-18 x 1/4"
1419	Screw - Hex Cap 5/16-18 x 3/4
1456	Fastener
1515	Screw - Rd. Hd. #4-40
1566	Screw - Bnd. Hd. 10-24 5/16 Lg.
1573	Jam Nut - 1/4-20 Std.
45209	"E" Ring 3/16
49226	Screw - Adjusting
51166	Screw - Shoulder
51192	Filter - Ultra Violet
51196	Pin
51376	Cover Plate
51396	Catch
51398	Nylon Spacer - Washer
51399	Spacer
51406	Clip - U. V. Filter
51522	Frame - Color Disc Housing
51526	Shaft - Rocker Catch Pivot
51527	Shaft - Color Disc Pivot
51530	Yoke
51535	Screw - U. V. Filter Pivot
51591	Latch - Color Disc Housing
51842	Frame Assem. - U. V. Filter Support
51845	Catch Assem. - Rocker
51848	Housing Assembly
51928	Main Plate & Slide Channel Assem.
51932	Arm Assembly (5-3/16)
51933	Arm Assembly (4-11/16)
51934	Arm Assembly (4-3/16)
90473	Spring
91199	"E" Ring 5/16

Serial number of equipment must be given when ordering parts, or in any reference of the units involved.

Additional color filters may be obtained from any local theatre supply agency.

XENON BULB RECORD

LAMPHOUSE TYPE _____ MACHINE NO. _____

WATTAGE _____ NOM. CURRENT _____ AMPS. MAX. CURRENT _____ AMPS.

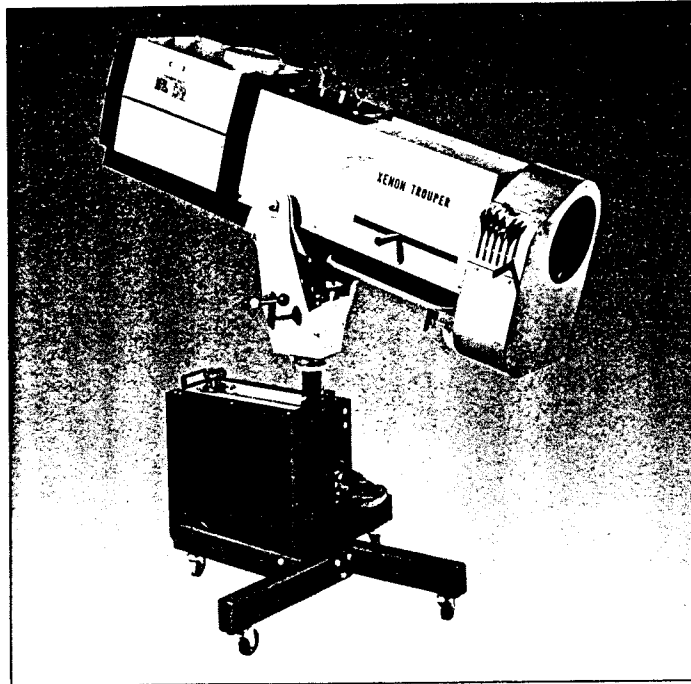
BULB		DATE LAMPHOUSE HOURS		
MFGR.	SERIAL NO.	INSTALLED	ROTATED *	REPLACED

*IF REQ'D BY BULB MFGR.

Strong Xenon Trouper



Follow with
the leader



A Strong Xenon Trouper follow spotlight sets a precedence in the theater industry. Strong spotlights are simple to operate and require no waiting time for warm-up and restart. Projected light performance will remain constant throughout use.

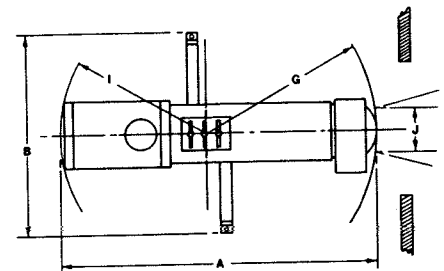
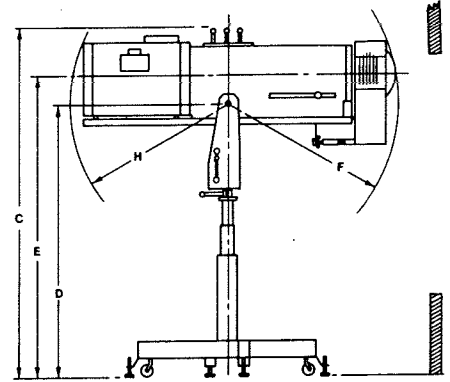
The Xenon Trouper, like all Strong spotlights, utilizes Strong's exclusive variable focal length lens which increases intensity as the light beam is reduced from flood to spot.

The high reactance power supply is furnished with a standard twistlock attachment cord cap for 115 V. 60 cycle, A.C. supply.

The control cable between the lamp and power supply is furnished with an MS connector at the power supply for quick and easy disconnect.

Specifications

Letter/Description/Dimension	Letter/Description/Dimension
A Overall length of unit 54"	* Maximum height at front with maximum upward tilt 65"
B Overall width of unit at base 37"	Maximum diameter of beam with 200' throw 80'
* C Overall height of unit 56"	Minimum diameter of beam with 200' throw 44"
* D Height of pivot point 42.5"	Maximum diameter of beam with 100' throw 40'
* E Height of beam axis when horizontal 47.5"	Minimum diameter of beam with 100' throw 22"
F Front clearance radius for vertical movement 31"	Maximum downward tilt 45°
G Front clearance radius for horizontal movement 30"	Maximum upward tilt 25°
H Rear clearance radius for vertical movement 28"	Horizontal sweep 360°
I Rear clearance radius for horizontal movement 26.5"	Net weight (less Power Supply) 194#
J Diameter of beam at unit 7"	Power Supply (Net) 128#
* Maximum height at rear with maximum downward tilt . . 67.5"	Gross shipping wgt. approx. . . . 540#
	*Measurements shown with spotlight at lowest height. Spotlight base provides variable adjustment upward of 12 inches.



Strong International
1712 Jackson Street
Omaha, Nebraska 68102
(402) 342-4444
Telex: 484481
(Western Union)

Light Data Variable Lens System Performance at Various Distances						
MAXIMUM FLOOD			SMALL SPOT		MIN. SPOT DIA. WITH IRIS	
Throw In Feet	Diameter Feet	Foot Candles	Diameter	Foot Candles	Diameter	Foot Candles
10	4.0	1650	14 in.	22875	2 in.	22875
20	8.0	413	28 in.	5719	4 in.	5719
40	16.1	103	57 in.	1413	9 in.	1430
60	24.1	46	85 in.	635	13 in.	635
80	32.1	26	114 in.	357	18 in.	357
100	40.2	17	142 in.	229	22 in.	229
120	48.2	11.5	170 in.	159	26 in.	159
140	56.2	8.4	199 in.	117	31 in.	117
200	80.3	4.1	284 in.	57	44 in.	57



Strong International
 1712 Jackson Street
 Omaha, Nebraska 68102