

FILM-TECH

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INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and ~~L-150-1~~ XENON LAMP
1200

This shipment consists of:

- _____ L-100-2 Lamphouse w/
- _____ Nose Cone
- _____ L-157-1 Alignment Rod*) packed loose in lamphouse pack
- _____ L-173 Alignment Rod Bushing*(box
- _____ ¹²⁰⁰~~L-150-1~~ Xenon Lamp Assembly w/magnetic arc stabilizer -
 (packed separately to prevent damage in transit)
- _____ R-2180-4 Silicon Power Supply w/*cloth parts bag containing:
- _____ R-2187-1 Cord Cap in original carton (see connection instructions on carton)
- _____ L-156 Cross Bar Tool* (part of lamphouse alignment kit, shipped with power supply to facilitate shipment)
- _____ 5/64" Allen Wrench) in cloth bag attached to power sup
- _____ 1/8" Allen Wrench)
- _____ L-160 _____, L-240 _____, ~~L-340~~ _____,
 Negative Meniscus' Lens w/Mount and Retainer

Other:

*These items required for optical alignment of lamphouse and 35mm film projectors. Not shipped otherwise.

PACKING:

This equipment is correctly packed to withstand normal handling by all freight carriers, and should reach you in good condition. Upon receipt of the shipment, inspect equipment thoroughly. Report any damage, visual or concealed, to the carrier. Retain original packing materials. File claim for any shipping damage. Our responsibility ceases on acceptance of shipment by the carrier.

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

INSTALLATION OF L-100-2 KNI-TRON XENON LAMPHOUSE:

This lamphouse has been designed with an 8-1/2" optical center height, low enough to accommodate the shortest projector. Spacers can be supplied if required, to bring it up to the correct center height. Four 1/4-20 x 2-1/2" screws are furnished to secure the base of the lamphouse to the pedestal. The base has six tapped holes to accommodate the screws. A 110 Volt A.C. Receptacle is positioned in the "off" side of the lamphouse for plugging in a slide or film projector. (Form 237-3 covers general specification and schematic).

OPTICAL ALIGNMENT:

Optical alignment is very important in any Xenon installation. Haphazard alignment is poor policy. For this reason a 1/4" alignment bar is supplied, threaded on one end. Use it as follows (this applies only where pre-aligned systems are not supplied):

1. Remove lamphouse door. If equipment was received with the negative meniscus lens installed, remove the lens**.
2. After optical center height of projector is determined, mount the lamphouse loosely to the projector pedestal. Remove objective lens from the projector. Remove the 1/4" nut from L-157-1 Alignment Rod. Insert threaded end of rod, together with the L-173 5/16" diameter Bushing, through the lens opening, the film aperture, the nose cone of the lamphouse, and into the hole located on the horizontal and vertical adjustment mechanism of the lamphouse. Replace the 1/4" hex nut. Tighten alignment rod, firmly, from inside of lamphouse.
3. See Figure 1. Hold the L-156 Cross Bar Tool on the lower edge of the nose cone, and adjust alignment rod, so it just touches the end of the cross bar tool. Then hold it in a horizontal position, as shown in Figure 1. Adjust the horizontal position, until alignment rod just touches the end of the cross bar tool. The alignment rod will now be in exact center of the nose cone.

Examine its location in the film aperture and lens mount. Move the lamphouse into a position where the alignment rod is exactly in the center of both. Tighten mounting screws which secure lamphouse to the pedestal. Remove the alignment rod.

- 4.**Re-install negative meniscus lens in the nose cone. See Fig. 2, Page 8.

NEGATIVE MENISCUS LENS FOR 35 MILLIMETER APPLICATION:

Three negative meniscus lenses are available for 35mm application:
(Negative meniscus lenses are required for use with certain 16mm projector)

L-160 - Flat Field

L-240 - Provides 50% greater center of screen illumination than L-160 Lens

L-340 - Center of screen illumination is 50% greater than L-240

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICONE
POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

The normal converging beam, from the L-100-2 Lamphouse, has a 12" focus (10" from Pyrex front of lamp). At this distance, the "spot" measures about 1/2" in diameter, just sufficient to cover a 16 millimeter aperture. A 35 millimeter aperture measures approximately 1" across the diagonal. Therefore, optics must be used to enlarge the spot. When the Negative Meniscus Lens is ordered, with the lamphouse, it is mounted at the factory. (Follow lamphouse alignment instructions on Page 2.) The beam issuing from the negative meniscus lens will be almost parallel, so movement of the lamphouse, forward and backward, should not be required. Adjust spot for best aperture coverage.

NOTE: When a negative meniscus lens is ordered separately, a lens mount and lens retainer are supplied with each lens. With the smaller diameter of the Lens Mount toward the palm of your left hand, insert the lens, in the mount, with concave side toward your palm. Place the flat lens retainer over the front of the lens mount, with holes aligned. Insert lens assembly into lamphouse. Secure it with the fasteners which also secure the nose cone. Concave side of the lens must face the Xenon lamp.

INSTALLING AND ADJUSTING L-150-1 XENON LAMP ASSEMBLY:

Part No. L-150-1 consists of the Xenon Lamp and L-1018 Arc Stabilizing Magnet Assembly mounted in a special lampholder. The L-150-1 Assembly is a component of the L-100-2 Standard Lamphouse.

Always keep the nameplate, on lampholder, toward you when installing lamp. The converging spot, issuing from the lamp, has been examined at the factory. The lamp has been located in its holder to provide best possible aperture coverage. One stud holds the Xenon lamp in the horizontal and vertical adjusting assembly.

1. Tilt lamp assembly 45°, with nameplate toward you. Insert it through lamphouse door.
2. Insert the rear stud in hole provided in the adjusting mechanism. Secure it in place with the special 5/8" knurled nut supplied with lampholder.
3. Fasten negative, or rear lead, to the screw, farthest from you, on the terminal board. The special long hex nut permits you to get a 7/16" open end wrench on it easily.
4. The positive Silicone Rubber Covered lead, from front of lamp, attaches directly to the screw in center, top of Tesla coil of ignitor. A 9/16" open end wrench fits the nut. Be sure any bare section of nickel lead wire is placed at least 3/8" from all metal parts of lampholder.
5. In certain types of installations, it might be impossible to get the front face of the Xenon lamphouse close enough to film line. Accordingly, a lateral adjustment has been added to the vertical and horizontal adjustment which provides approximately 3/4" of forward movement of the Xenon lamp and holder. This is a special 1-1/4" diameter round nut located at the rear of the lampholder.

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

To extend the lamp forward, loosen the knurled nut at rear of lamphouse. Thread the 1-1/4" round adjusting nut away from the lamp the desired distance, and re-tighten the knurled nut. An 8-32 socket head set screw has been provided in the 1-1/4" round nut to lock it in place.

THE R-2240 IGNITION DEVICE:

The R-2240 Igniter is mounted in the base of the lamphouse. Ample voltage is supplied by the heavy duty Tesla design for ignition purposes. Duration of ignition pulse is extremely short. Durable tungsten contacts are employed in the spark gap. The Tesla coil and first stage transformer are epoxy encapsulated. If necessary to remove igniter:

- a) Disconnect four leads Nos. 10, 11, and 13, and the Anode Lead from center of Tesla coil.
- b) Remove the two special long 7/16" hexagon nuts which secure the igniter to the lamphouse base.
- c) The rear of the igniter sets in a slot. Lift front of igniter 45°. Pull it toward you, out of slot.
- d) Install new igniter in reverse order. Be certain all connections are correct and tight.

AUTOMATIC IGNITION IS OPTIONAL. INSTRUCTIONS ARE FURNISHED WHEN L-175 AUTOMATIC IGNITION KIT IS ORDERED.

CONNECTING THE R-2180-4 KNI-TRON SILICON POWER SUPPLY:

The R-2180-4 Power Supply is self-contained and supplied with interlocked circuitry to the lamphouse, as well as polarized locking connections. The A.C. lead cord is not supplied, as each installation differs. High voltage, avalanche silicon diodes, used in the power supply, are subject to high open circuit direct current voltages and radio frequencies developed by Xenon ignition devices. Silicon is non-aging, therefore output ripple value of the power supply remains uniform throughout life of diodes. High capacitance in the power supply is conducive to instant ignition.

1. Locate power supply beneath lamphouse. Insert positive and negative jacks, as well as the polarized receptacle into their respective connecting points in rear of lamphouse. You cannot make a mistake, as the three openings cannot be interchanged.
2. A grounded Hubbell A.C. connector body is furnished with the power supply. Determine length of #14/3 rubber covered lead cord required and attach it to the connector body. (See instruction on connector carton). Connect to an outlet having a circuit breaker or fused capacity of 20 amperes. This completes the installation.

NOTE: BE CERTAIN DOOR IS CLOSED BEFORE POWER SUPPLY IS PUT INTO OPERATION. OTHERWISE, THE ENTIRE VENTILATING SYSTEM IS IMPAIRED.

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

OPERATING THE LAMPHOUSE - SEE FIGURE 2:

1. Having completed all connections and supplied A.C. power to the R-2180-4 D.C. Power Source, throw the power supply switch, on the lamphouse, to the "ON" position.
2. Press the momentary contact (ignition) switch. The lamp will ignite immediately. Release switch the moment the lamp ignites, otherwise lamp life will be shortened.
3. Open the manually operated dowser, and project the lamp beam to the aperture. A 1/8" Allen Wrench is supplied for rough adjustment of the spot, vertically and horizontally. Adjust for best possible screen coverage. Two knurled nuts are supplied, attached to the stiffener bar on the Xenon lamp carriage. By tightening these, micrometer adjustment can be obtained, horizontally, and the lampholder made very rigid.

On 16 millimeter applications, moving the Xenon lamp forward enlarges the spot for better coverage, but reduces screen brilliance. Pulling it back raises the center-of-screen punch, as it reduces spot diameter.

THE NON-RESETTABLE ELAPSED TIME METER:

Certain L-100, L-100-1, and L-100-2 Lamphouses may have a dual-scale non-resettable elapsed time meter. The 60 cycle scale, in black, revolves once every 1000 hours. The 50 cycle scale revolves once every 1200 hours.

The dual-scale meters will have been superseded by a 10,000 hour, 60 cycle digital elapsed time meter. If the equipment is operated on 50 cycle frequency, record 5/6 of the meter reading for accurate record of elapsed time.

NOTE: Time must be recorded on the Xenon lamp guarantee control card, to permit lamp adjustment under the pro-rated guarantee. The guarantee control card must be completed and returned, to us, to permit pro-rated credit adjustment.

POWER SUPPLY MAINTENANCE AND REPAIR:

The R-2180-4 is equipped with a single bearing fan which does not require oiling. For convenience, the R-2360 Silicon Stack is mounted on the inside of a hinged door on left side of power supply.

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

To change the stack:

- a) Remove two #6 Binding Head screws on each side (top) of door. The door will now open.
- b) Remove two A.C. leads affixed to the diodes. Remove the (white) "Positive" Lead and the #16 (black) Capacitor Lead from the heat sink.
- c) Remove two 3/8-16 Acorn Nuts, and flat washers which secure the heat sink to the door.
- d) Install the new stack in reverse order. Be certain all electrical connections are well soldered, and mechanical connections are tight.

FUSE: A 30 ampere replaceable link fuse, affixed to a terminal board, is accessible through the hinged side door of the power supply.

The power supply housing is of light weight aluminum, arranged for easy access to the inner components for possible repairs. To remove the top, sides and back in one piece:

- a) Remove eleven #6 Binding Head Sheetmetal Screws from front panel:
Two at each side (center of panel).
Two at each side (top of panel).
One at center top of panel.
Do not remove bottom screws in front panel.
- b) Remove two #6 Binding Head Screws at top of hinged door. Open door. Remove two Acorn Nuts, from hinged door, to loosen silicon stack. Push silicon stack inside housing. Lift off power supply housing in one piece, with exception of front panel which remains affixed to base.
- c) After repairs are completed, be certain all connections are correct and solid before replacing housing. Follow procedure in reverse of removal.
- d) If rotary tap switch is replaced, be sure leads are arranged so they do not interfere with vertical movement of contacts.

L-100-2 LAMPHOUSE MAINTENANCE:

A single bearing motor is used for quiet operation. Two oil holes are provided, one in each end bell. The rear hole is exposed. Remove one screw from light shield covering the motor. Swing light shield out of the way to expose second oil hole, a 1/8" copper tube. Put two drops of light weight oil, in each hole, twice annually. Replace light shield after oiling

INSTRUCTIONS: OPERATION of L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

If necessary to replace fan blade or motor:

- a) Remove Xenon lamp in reverse of installation. See Page 3.
- b) Remove igniter. See Page 4.
- c) Disconnect fan leads.
- d) Remove two hex nuts and flat head screws which secure fan mounting bracket to lamphouse base. The fan assembly can now be removed, totally, from the lamphouse.
- e) Re-install in reverse procedure.
- f) Check all electrical and mechanical connections thoroughly, before putting equipment in service.

GUARANTEE:

The L-100-2 Xenon Lamphouse, excluding lamp, and the R-2180-4 Silicon Power Supply, excluding stack, are guaranteed for a period of one year, against faulty materials and poor workmanship, unless mis-used or abused.

The R-2360 Silicon Stack is guaranteed as follows:

- Failure in first year - repair no charge
- Failure in second year - repair at 1/3rd of replacement price
- Failure in third year - repair at 2/3rd of replacement price
- Failure in fourth year - replace at full price, or repair as might be agreed to.

The L-¹²⁰⁰~~150-1~~ Xenon Lamp is guaranteed for 2,000 hours of operation, as indicated by the elapsed time meter, or two years from date of factory shipment, whichever comes first. Adjustment is pro-rated, based on list price of the Xenon lamp.

NOTE: Request factory authorization before returning equipment.
Return shipments must be prepaid.

NOTE: PARCEL POST MAILING ADDRESS: The Kneisley Electric Company
2501-9 Lagrange Street
Toledo, Ohio 43608

LETTER MAILING ADDRESS:

The Kneisley Electric Company
May 22, 1972 - Rev. 5
Printed U.S.A.

P.O. Box 3537

Toledo, Ohio 43

Form No. L-100-2/R-2180-4 Instruction

INSTRUCTIONS: OPERATION OF L-100-2 XENON LAMPHOUSE and R-2180-4 SILICON POWER SUPPLY with MANUAL IGNITION and L-150-1 XENON LAMP

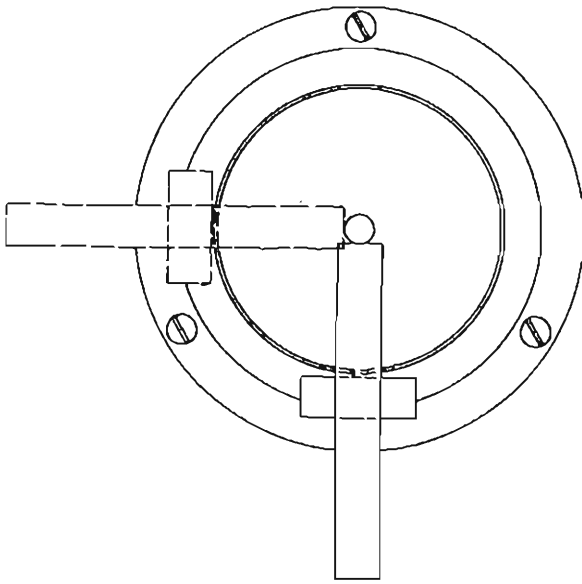
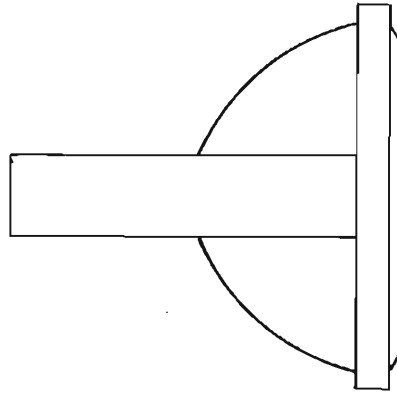


FIG. 1



CONCAVE SIDE TOWARD LAMP

FIG. 3

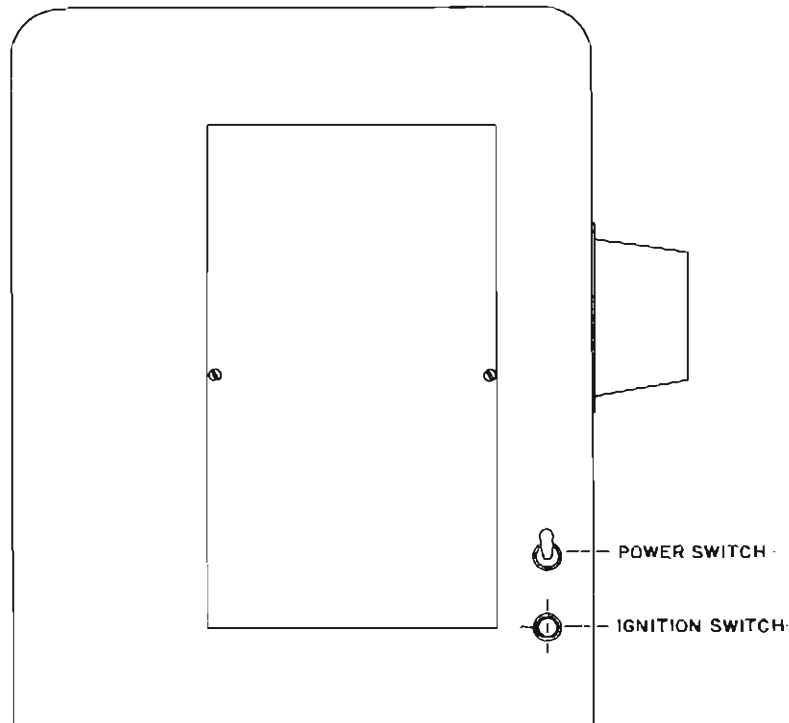


FIG. 2

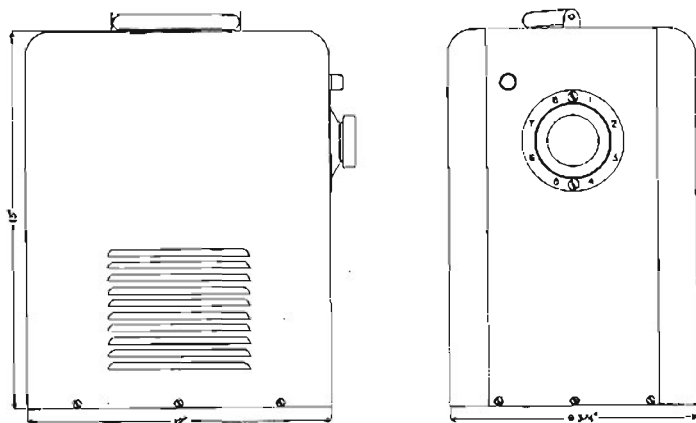
THE KNEISLEY ELECTRIC COMPANY

TOLEDO, OHIO

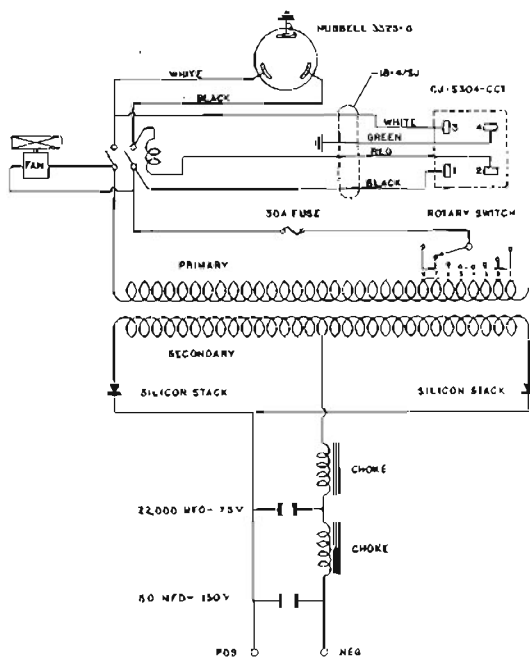
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Printed in U.S.A.

Form No. L-100-2/R-2180-4 INSTR.
Attach Form 236-4, 237-3 and 239.

GENERAL SPECIFICATIONS - MODEL R-2180-4 KNI-TRON SILICON POWER SUPPLY
for L-100-2 XENON LAMPHOUSE



PHYSICAL DIMENSIONS



THIS SCHEMATIC DIAGRAM COVERS THE MODEL R-2180-4 KNI-TRON SILICON XENON RECTIFIER
THE XENON ELECTRIC COMPANY, TOLEDO, OHIO, U.S.A.

CASE - 14 Gauge Aluminum with
16 Gauge Steel Base, Umber
Wrinkle Finish

STACK REQUIREMENT - 1 - R-2360 Silicon

INPUT VOLTAGE - 120 A.C.

INPUT CURRENT - 17.0 Amperes

FREQUENCY - 50/60 Cycles, 1 Phase

OUTPUT VOLTAGE - 18.5

OUTPUT CURRENT - 30.0 Maximum

DUTY - Continuous

VOLTAGE RANGE - 105/130

EFFICIENCY - 61.5%

TOTAL TEMPERATURE - 40° C. Maximum

DIMENSIONS:

HEIGHT - 15-3/4"

WIDTH - 14-1/2"

DEPTH - 9-3/4"

DOMESTIC PACKING:

NET WEIGHT - 63#

GROSS WEIGHT - 70#

EXPORT PACKING:

NET WEIGHT - 63#

LEGAL WEIGHT - 70#

GROSS WEIGHT - 87#

L-17" W-16" D-12"

Hubbell Cap Number 3323G is furnished with power supply. Cord length which will vary, supplied by customer.

(over)

Form No. 236-

MODEL R-2180-4 "KNI-TRON" SILICON POWER SUPPLY

The R-2180-4 Silicon Power Supply is designed to operate with the L-100-1 or L-100-2 Kni-Tron Xenon Lamphouse. They are companion pieces, both having identical case dimensions of 15-3/4" high, 9-3/4" wide, and 14-1/2" deep, finished in baked umber wrinkle.

The rectifier case is 14 gauge aluminum for weight reduction, with a 16 gauge steel base, totally enclosed, for strength and fire protection.

The power supply is fan cooled, having a permanently oiled, single bearing fan motor. Air draws through the top exhausts out three sides, resulting in low operating temperatures on a continuous duty basis.

High PRV, avalanche type silicon diodes, used in the stack, provide protection against voltage transients by limiting the voltage across the rectifying junctions. This reduces electrical stress which normally results in surface breakdown in non-avalanche diodes. Such protection is necessary in Xenon applications because of RF generated by the ignition device. The stack is mounted on the inside of the rear door of the power supply, and is easily accessible when the door is opened.

The D.C. Jacks, from the rectifier to the lamphouse, are polarized to prevent reversed current, on the Xenon lamp, which would destroy it immediately. A four-conductor (grounded) cord connects from the power supply to the lamphouse. It carries the relay current and the A.C. supply to the fan motor and ignition device contained in the lamphouse. An inter-lock switch, on the lamphouse, renders the lamp and power supply inoperative when the lamphouse door is opened.

A power relay is supplied as part of the unit, inter-connected with the lamphouse. A switch on the lamphouse activates the power supply.

A high resistance transformer, two filter chokes, and electrolytic capacitors complete the power supply and filter network. A rotary tap switch covers varying line voltages from 105 to 130 volts.

The power supply is equipped with Hubbell Receptacle Number 3325G and associated Cap Number 3323G is furnished. The inlet cord is to be supplied by the customer, as cord lengths vary with each installation.

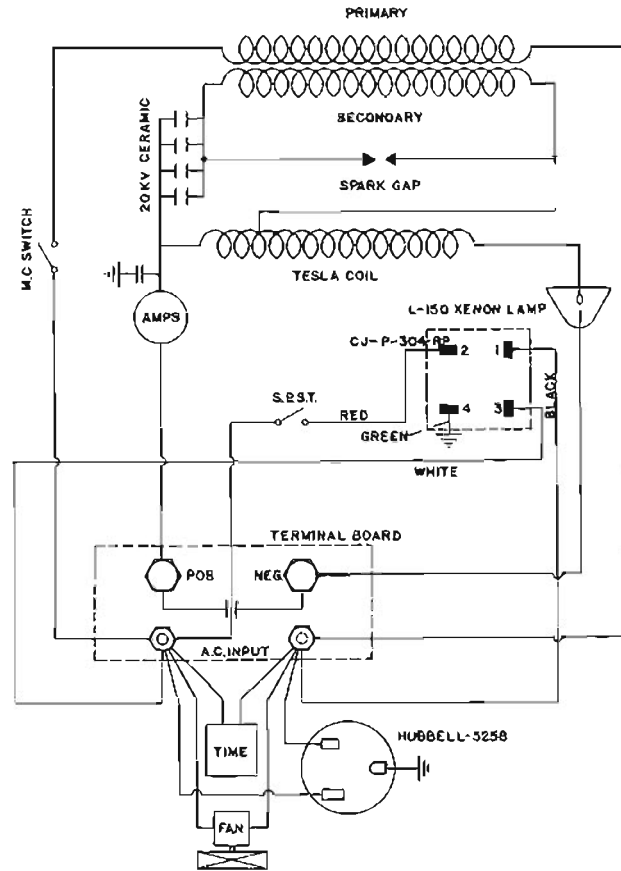
GUARANTEE:

The power supply is guaranteed for one year against faulty material and poor workmanship, unless mis-used or abused. The silicon stack is covered by a pro-rated guarantee as follows:

- Failure in the first year - no charge repair
- Failure in the second year - 1/3rd is charged for repair
- Failure in the third year - 2/3rds is charged for repair
- Failure in the fourth year - full price is charged for replacement, or repair as necessary at agreed price.

Guarantee registration cards must be completed and returned to the factory. Otherwise, guarantee is void.

GENERAL SPECIFICATIONS - MODEL L-100-2 KNI-TRON XENON LAMPHOUSE
FOR 16 MM AND 35 MM OPERATION



THIS SCHEMATIC COVERS THE MODEL L-100-2 KNI-TRON XENON LAMPHOUSE
THE KNEISLEY ELECTRIC COMPANY, TOLEDO, OHIO, U.S.A.

CASE - 16 Gauge Steel Baked
Umber Wrinkle Finish

LIGHT SOURCE - Kneisley L-150 - 500 Watt
Ellipsoidal Xenon Lamp Assembly
with dichroic reflector

D.C. VOLTS - 18.5

D.C. AMPERES - 30.0 MAXIMUM

AMMETER - 0 to 50 D.C.

ELAPSED TIME METER - 1000 hours, 50 and 60
(NON-RESETTABLE) cycles on same dial

OPTICAL HEIGHT - 8-1/2"

DOUSER - Manual (Standard). Electric douser
optional.

RELAY CONNECTION - C-J S304CCT in R-2180-3.
Input Terminals Polarized.
Mating Part CJ P304RP in
Lamphouse.

DIMENSIONS:

HEIGHT - 15-3/4"

WIDTH - 14-1/2"

DEPTH - 9-3/4"

DOMESTIC PACKING:

NET - 31# approx.

GROSS - 36# approx.

EXPORT PACKING:

NET - 31# approx.

LEGAL - 36# approx.

GROSS - 50# approx.

L-18" W-17" D-12"

GENERAL SPECIFICATIONS - MODEL L-100-2 KNI-TRON XENON LAMPHOUSE

Certain 16 millimeter projectors utilize the converging beam from lamp without additional optics. Others require a negative meniscus lens in the lamphouse nose cone. See price lists covering individual projectors and accessories which constitute each conversion.

Thirty-five millimeter operation utilizes lamp beam, plus a negative meniscus lens which mounts in the nose cone of the lamphouse.

MANUALLY OPERATED IGNITION DEVICE

ELECTRICAL CHARACTERISTICS:

A.C. VOLTS - 120
A.C. AMPERES - 2.5
DUTY - Intermittent
OUTPUT VOLTAGE - 20 K.V. Approx.
FREQ. - 50/60 Cycle, Phase 1

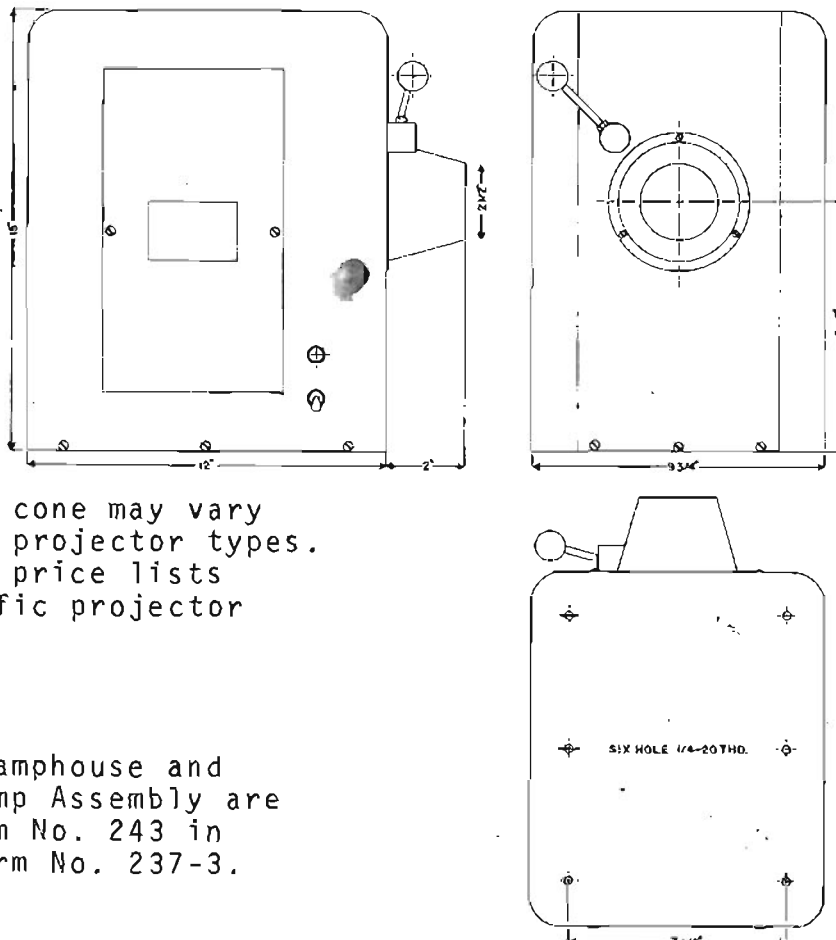
PHYSICAL DIMENSIONS:

LENGTH - 5-3/8"
WIDTH - 4"
HEIGHT - 5-1/4"
NET WEIGHT - 7-5/8#

The ignition device is a part of the lamphouse assembly. It mounts on the base of the lamphouse, secured by two special long nuts. First stage transformer and Tesla coil are molded in epoxy.

OPTIONAL:

L-175 Automatic Ignition Device. See Form 285.
L-360 Electric Douser and L-380 Electric Changeover. See Form 285.



NOTE 1:

Length of nose cone may vary with different projector types. See individual price lists covering specific projector conversions.

NOTE 2:

The L-100-2M Lamphouse and L-330 Xenon Lamp Assembly are covered by Form No. 243 in addition to Form No. 237-3.

THE KNEISLEY ELECTRIC COMPANY

P.O. BOX 3537

TOLEDO, OHIO 43608

Printed U.S.A.

4/1/71

Form No. 237-3