

Film-Tech

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THE XENON BULB

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

Characteristics

Caution! Any Xenon bulb used in motion picture equipment can explode under certain conditions. At room temperature it is under several atmospheres of pressure. When operating in a normal manner this pressure increases considerably and if for any reason the quartz envelope is ruptured, a considerable force is generated and the lamphouse must be designed to contain the impact.

The bulb must always be treated with care--hot or cold. A new bulb is always shipped in a plastic protective jacket which is not removed until the bulb is installed in the lamphouse. Face mask, gloves and other protective clothing required by local codes should always be worn when handling the bulb. The quartz should never be touched with the bare hand as it can leave an oily fingerprint which could damage the bulb.

As a by-product of its operation, some ultra violet red radiation is developed. This also accounts for the ozone being generated. All of the early bulbs generated ozone but after a few years of experience, it was discovered that when the bulb had a certain amount of blackening on its inner surfaces the ozone was not present. We had in effect an ultra-violet filter which absorbed this radiation and prevented the formation of ozone. Practically all of the new bulbs are of the "Ozone Free" type. This means that for some lamphouses now being built it is not necessary to duct the lamphouse to the outside atmosphere. However, wherever possible we always recommend exterior venting.

It is still very important that direct viewing of the Xenon bulb, while it is operating, be avoided unless through a proper viewing glass. Ordinarily, the door interlock devices will make direct viewing impossible. Even the red hot electrodes are emitting infra red radiation and they also should not be viewed while in this state.

Use Of The Xenon Bulb

As there are no combustion products as the result of the Xenon Arc, only dust removal from the reflector surfaces is recommended every sixty days. With an air flow through the lamphouse, there will be a tendency for dust to collect on the reflector as well as some of the wire leads and insulators. A dry brush should be used to remove this dust on the same sixty day schedule.

Please note that it is always very important to check the polarity of the voltage being applied to the bulb during the original installation or when any change has been made to the power supply equipment. The positive side of the supply must be connected to the anode or larger electrode and there is no substitute for checking this with a voltmeter. This is a standard meter on all Xetron lamphouses.



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A reversal will damage the bulb in a few seconds. Also, during the original installation or when a bulb is to be replaced, it is recommended that any glass reflectors (used in vertical type lamphouses) be removed and the bulb operated for thirty minutes at normal current level. This is a precaution against the mechanical failure of a bulb that may have been damaged in shipment.

All connections to the bulb must be clean and tight to reduce localized heating.

When a bulb explodes, some noise is generated and in the case of glass reflectors, they are usually shattered. The quartz and tungsten electrodes will require about ten minutes for complete cooling and no effort should be made to open the lamphouse before this time. After removing the quartz and glass, the electrodes can be unclamped and removed. (If within warranty, these parts and all pertinent information should be returned to the dealer for warranty adjustment.) At this time it should be determined if the internal blower (if so equipped) is working properly to cool the bulb and other components normally. The new bulb should be given the thirty-minute burn test mentioned above before installing any glass reflector.

Most Xenon bulbs are sold with a pro-rated warrantee of 1000 to 2000 hours. A bulb will eventually require replacement due to its inability to produce enough light, an unstable operation, or becomes too difficult to ignite. Each time the bulb is ignited, a slight amount of damage is done to the small cathode tip. As the bulb reaches a point near the end of its useful life, the cathode tip is blunted and in effect increases the width of the gap between the two electrodes changing the voltage to current ratio. Also, as the result of a normal operation, the evaporation of the tungsten, which is deposited upon the inner surfaces of the bulb, gradually becomes blacker and blacker and eventually reduces the light output to an unsatisfactory level. As this blackness reaches the maximum, the heat is not radiated properly. The bulb operates at a higher temperature and is more likely to explode.

A bulb may also develop a slow leak. In this case the screen brightness will usually decrease in a matter of a few minutes and reach a point of practically no lights on the screen despite the fact that the ammeter reading may be near normal. Such a bulb should be turned off immediately, cooled to room temperature and removed. It will probably be milky-gray inside and if operated longer in this condition, will fail completely but is unlikely to explode as the pressure has been reduced to a low level.

A bulb no longer capable of satisfactory operation should be removed with the regular precautions, carefully placed in its protective cover and broken by dropping from a sufficient height. This applies only to a bulb out of warrantee. The bulb should never be disposed of as regular garbage.

XeTRON

A DIVISION OF
CARBONS, INC.

CEDAR KNOLLS, N. J. 07927
201 - 267 - 8200

XeTRON LAMPHOUSE
BULB WATTAGE CHART

DATE: 1975

<u>XeTRON LAMPHOUSE</u>	<u>SCREEN WIDTH</u>	<u>BULB</u>	<u>CURRENT</u>	<u>WARRANTY</u>
XH-1000	Up to 30'	XeTRON XOF-1000	30-50A 45A NOM.	2000 Hrs.
XH-2000	Up to 40'	XeTRON XOF-2000	45-80A 70A NOM.	2000 Hrs.
XH-3000	Up to 50'	XeTRON XOF-3000	60-100A 90A NOM.	1200 Hrs.
XH-4000	50' Up	XeTRON XOF-4000HC	80-150A 130A NOM.	1000 Hrs.

Lamphouse bulb mounts in the XH-1000, XH-2000 and XH-3000 are identical. To install the XOF-1000 bulb, use the XOF-1000 XH bulb adaptors. No modifications are necessary to install the XOF-2000 bulb. By loosening the XOF-3000 bulb extensions (with cables) and removing same, the XOF-3000 bulb becomes a direct fit. Bulbs shipped with original equipment usually have these extensions removed at the factory.

If desired, the XOF-1000HC and XOF-1600HC bulbs can be used in the XH-1000/3000 series lamphouses. When these bulbs are specified with the original equipment order, the proper adaptors will be supplied with the lamphouse at no additional charge.

<u>CINEMECCANICA LAMPHOUSE</u>	<u>SCREEN WIDTH</u>	<u>BULB</u>	<u>CURRENT</u>	<u>WARRANTY</u>
X-2000H/1000	Up to 28'	XeTRON XOF-1000HC	35-50A 45A NOM.	1500 Hrs.
X-2000H/1600	Up to 36'	XOF-1600HC	45-65A 55A NOM.	1500 Hrs.

Proper adaptors for these bulbs are supplied with the Cinemeccanica Lamphouse.

Using the XeTRON "Cross Hairs" alignment tool, align the lamphouse to the projector head. There are six pieces in the aligning set as follows:

1. Dummy Lens
2. Metal "Cross Hairs" tube used in dummy lens
3. Reflector front plug (10" diameter)
4. Reflector rear taper plug (2 1/4" diameter)
5. Hollow Plastic "Cross Hair" rod
6. Retaining nut

Install the dummy lens in the projector lens mount. Slide the metal "Cross Hair" tube through the dummy lens and through the aperture. Install the two plastic discs in the front and rear of the reflector (through opening in main casting) with the plastic "Cross Hair" rod passing through both of them-threaded section to the rear. Screw the retaining nut onto the threaded end of the "Cross Hair" rod. You will note that the plastic "Cross Hair" rod now defines the optical axis of the reflector. With the basic unit in operating position and the rear of the transparent "Cross Hair" rod back lighted (usually with a work light) you can now align the lamp. Adjust the lamp vertically and horizontally until, by sighting through the front of the metal "Cross Hair" tube at the front of the projector, all three "Cross Hairs" are superimposed. Remove aligning tool.

INSTALLATION OF BULB

It is recommended that the three bulb controls not be adjusted at this time as they should be satisfactorily adjusted at the factory for initial lamphouse alignment (center of their travel).

After aligning the lamphouse with the projector, the bulb can be installed. The bulb must be handled very carefully and a special effort made to prevent fingerprints or smears on the quartz surface. If they do appear, use Xekleen and a clear rag for removal. After inserting the negative end (small electrode) of the bulb in the rear mount and tightening the set-screws, the front spider assembly (XH-1000 thru 3000 only) is fitted onto the positive bulb terminal making sure the spider is located on its 3 teflon mounts. The operating side top leg of the spider terminates the positive cable. This connection, plus the set-screws at each bulb mount, must be securely fastened to prevent any contact trouble. For the XH-4000, swing the positive mount back to operating position, replace Allen bolt, and install bulb.

WHEN INSTALLING THE 3000 OR 4000 WATT BULBS, IT IS MOST IMPORTANT THAT ONE OF THE OPENINGS (PLUS MARKS OR ROUND HOLES, ETC.) IN THE METAL NECK PORTION OF THE BULB IS AT THE BOTTOM SO THAT MAXIMUM BENEFIT CAN BE OBTAINED FROM THE AIR TUBE.

(Cont.)

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XeTRON

XH-SERIES LAMPHOUSE

INSTALLATION INSTRUCTIONS

DATE: 1975

PAGE 3

OPERATION

With the bulb installation completed, set the auto-manual switch in manual position, and turn ON the ON/OFF switch on the lamphouse. This starts the internal blower which operates the airflow switch. This in turn operates the magnetic contactor in the power supply providing the door switch is properly closed. Check Voltmeter For Proper Polarity. Now push the manual pushbutton for ignition, set amperage at low setting.

Do not install any lenses at this time.

OPTICAL ALIGNMENT

You should now be viewing a white light with a series of concentric circles and black center. If the round black pattern in the center of the screen seems to be symmetrical, but not centered, then we suggest that the complete projector be aligned to the screen. With proper projector alignment, if the round black pattern in the center of the screen seems to be "egg" shaped (and still clearly defined) then it probably indicates that the horizontal or vertical bulb controls need to be readjusted. However, if the center black pattern seems to be distorted and either side, top, or bottom of the concentric ring field of light appears to be diffused, then it will probably still indicate a mechanical lamphouse misalignment to the projector even though the aligning rods were used.

To confirm an optical misalignment, insert the lens, and projecting 10 seconds ON and 10 seconds OFF at low amperage, again check the alignment of the lamphouse. You should now have a bright center with 4 equally dark corners. If the bright area is displaced to the top, bottom, or either side, do not move the reflector adjustments as this proves a further mechanical lamphouse misalignment problem suggested above. If the displaced bright area appears to be "cut in half" by the edge of screen move the lamphouse approximately 1/4" in the direction of the bright area. For instance, if the bright area is at the top of the screen, raise the position of the lamphouse. If to the right, move the lamphouse to the right, etc. It may be necessary, in severe cases, to realign the projector head. However, be cautious not to upset proper film travel.

After centering the bright area, move the focus control adjustment to make the spot on the aperture larger until an even or satisfactory field of light is obtained. Please note that the four dark corners should disappear evenly. Raise current to operating level of 14 to 18 footlamberts.

XETRON

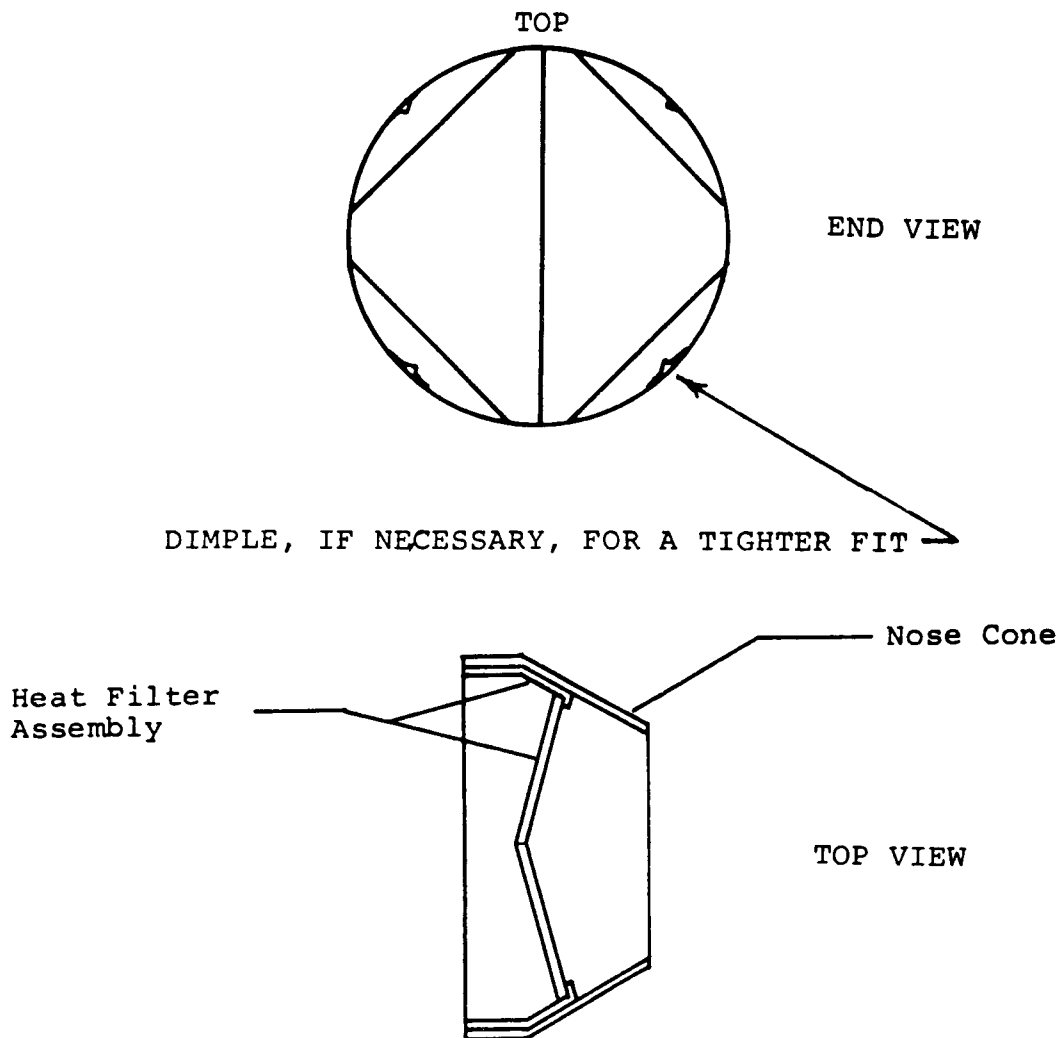
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201 - 267-8200

XH-3000 HEAT FILTER

XH-4000 HEAT FILTER

JULY 1976

Dwg. # XL - 051A



Installation:

1. Loosen the lamphouse mounting bolts and slide the lamphouse back from the projector approximately two inches.
2. Remove the nose cone and insert the heat filter assembly as shown above. If the heat filter assembly fits too loose in the nose cone, use a pair of long nose pliers and "dimple" the heat filter spinning slightly for a tighter fit. - See Illustration
3. Replace the nose cone and slide the lamphouse back up to the projector. Tighten mounting bolts.

Note: Split seam in heat filter must be vertical as shown.

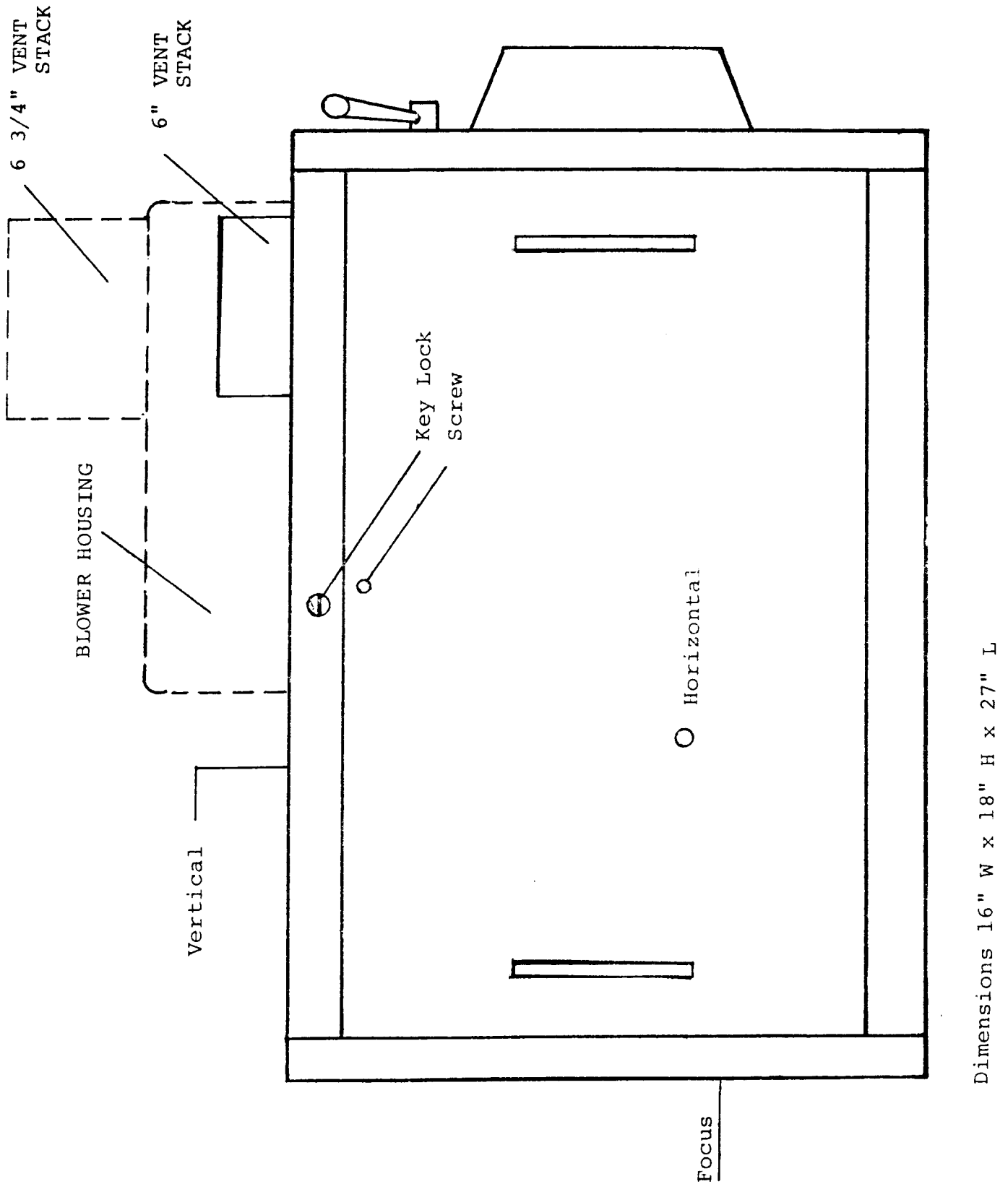


XH-1000/3000 SERIES LAMPHOUSE

DATE: 2/6/81

CONTROLS & DIMENSIONS

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

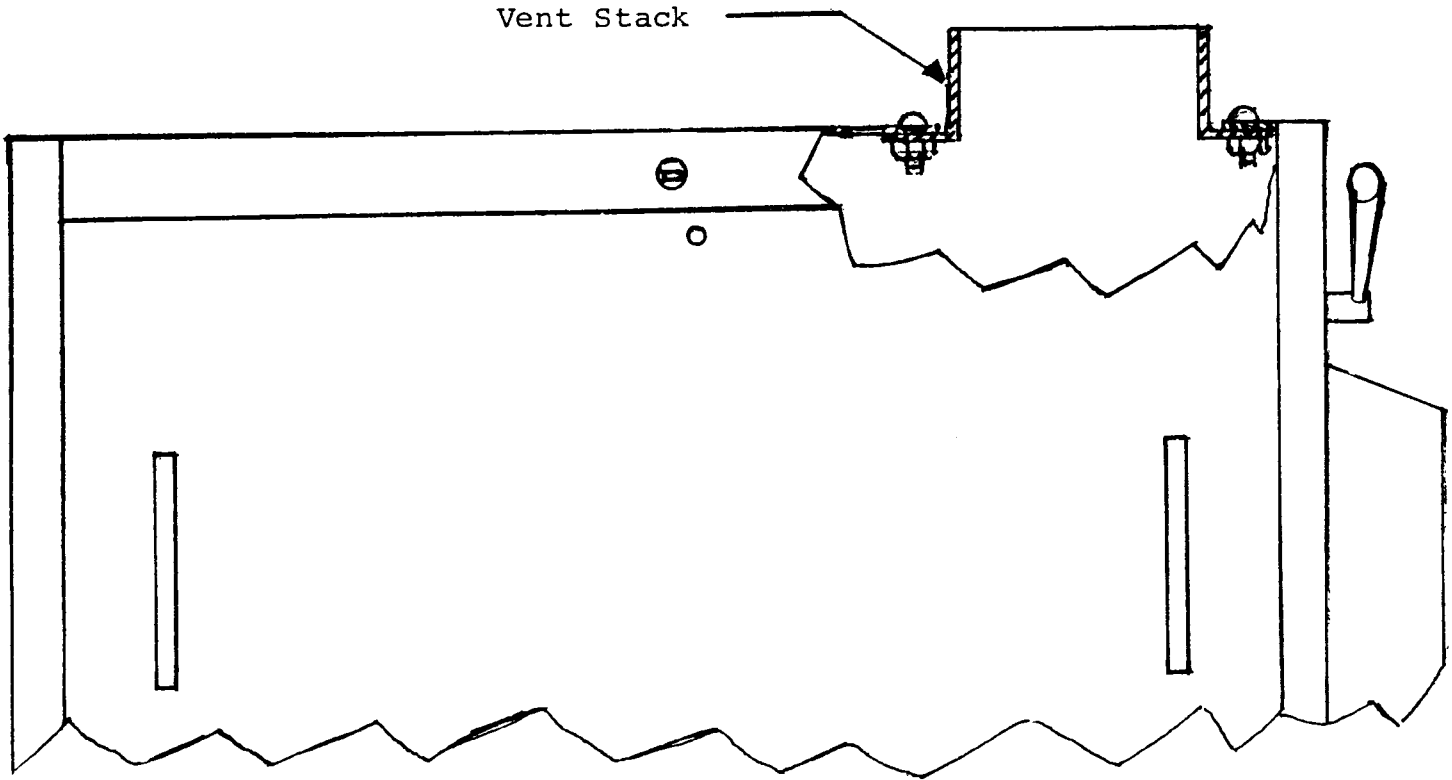




VENT STACK
XH-SERIES LAMPHOUSE

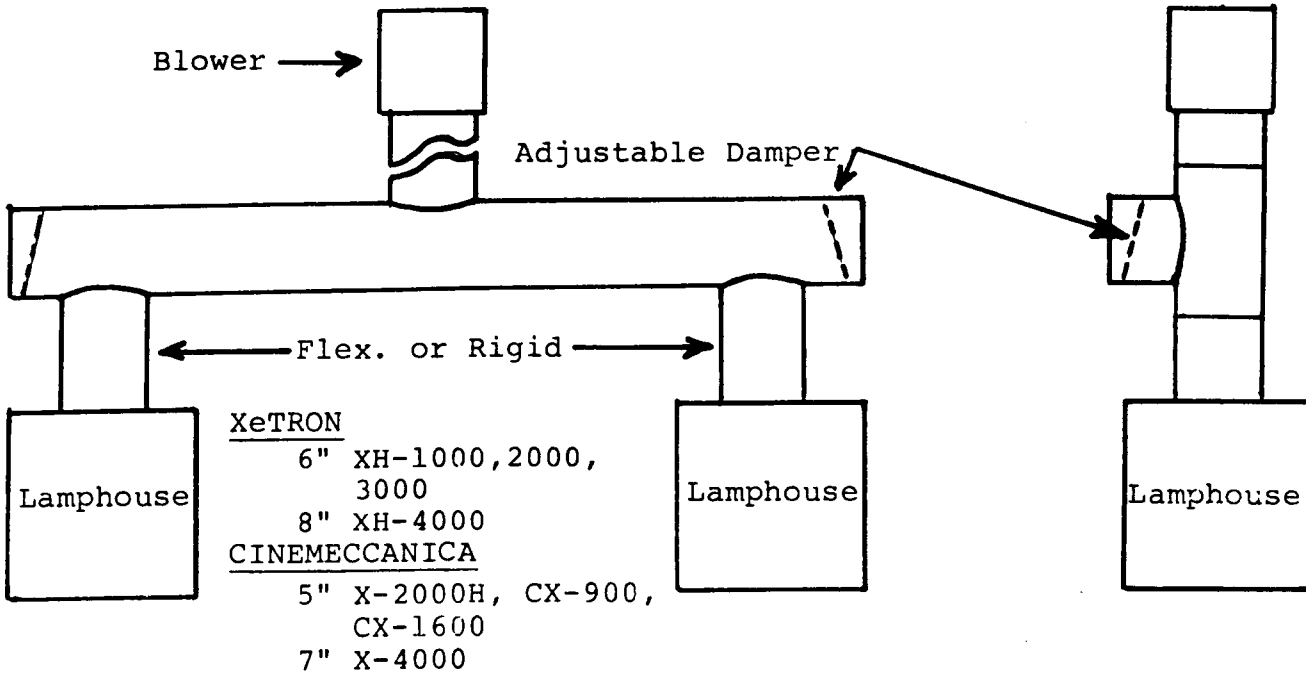
DATE: 2/9/81

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200



INSTALLATION

1. Remove the four 8-32 nuts and screws from the vent stack.
2. Remove the door on lamphouse and insert vent stack through hole in vented top. FROM THE INSIDE
3. Align holes in vent stack with holes in top and insert screws from top of panel.
4. Affix black keps to screws from inside lamphouse and tighten.



- * CFM Air Delivery - Free Air CFM+
- 1000 to 2000 watt Vertical or Horizontal - Grainger Blower #7C039 1005
- 2000 to 3000 watt Vertical or Horizontal - Grainger Blower #7C647 1180
- 4000 to 6500 watt Vertical or Horizontal - Grainger Blower #7C648 2060

VERTICAL ONLY

- * LFM (Lineal Feet Per Minute) Air Flow requirements at base of Vertical Xenon Bulb - measured with bulb and all optics installed, lamphouse doors closed (both lamphouses), and dowser open: Vertical type lamps only.

	<u>Minimum</u>	<u>Recommended</u>	<u>Maximum</u>
1000-2000 watt Vertical Only	200	250-300	400
2000-3000 watt Vertical Only	250	300-350	500

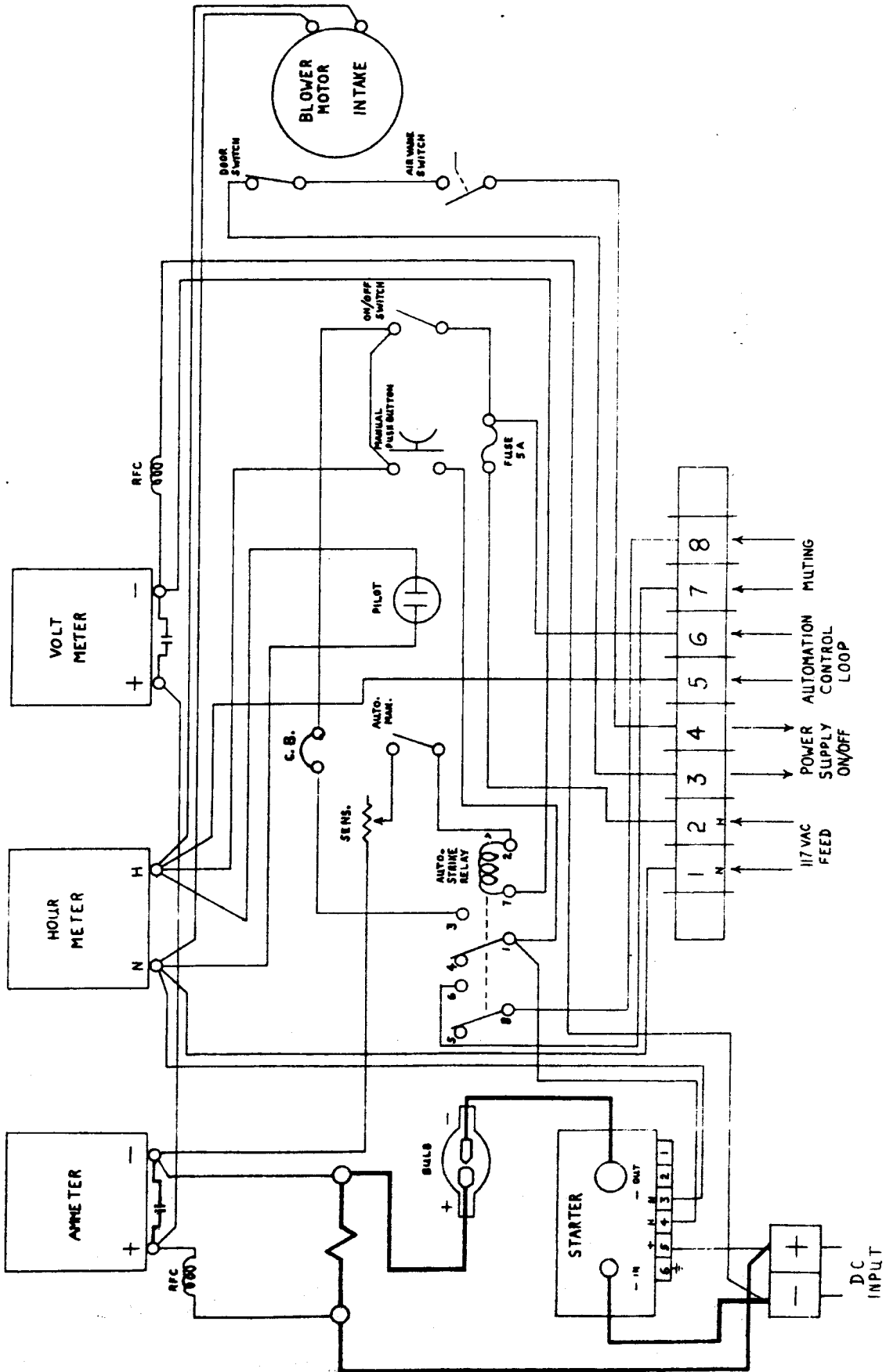
Observe meter (mounted in lamphouse on its side next to bulb) thru auxiliary reflector adjusting holes on operating side of lamphouse. It will be necessary to use a flashlight. If there are any questions regarding this measurement, please contact Carbons, Inc.

HORIZONTAL ONLY

No internal lamphouse measurements are necessary - XeTRON XH type lamps have blower with fixed output. Upon final installation and original testing, if lamphouse will not shut down by ON/OFF switch on lamphouse, it will probably mean the main exhaust blower is holding the air flow switch closed because of excessive air movement. Adjust dampers (also damper designed into flange on the XH-4000) so lamphouse will shut down within 4 seconds after turning off ON/OFF switch.

- * Suggested meter - Alnor Velometer Jr., Electro-Tech Equipment Co., 56-02 Roosevelt Avenue, Woodside, Long Island, New York.

+ 2 Machine Installation





INSTALLATION AND/OR REPLACEMENT
OF XENON BULBS IN
XHN/XCN-1000/3000 SERIES LAMPHOUSES

15 JULY 1983

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

1. All power must be off. Xenon bulbs must be handled only at room temperature.
2. Unlock operating side door with key provided.
3. Use protective face shield and other required clothing.
4. Remove cover plate (Item L) from main support casting held by two thumb screws (Item A) see Fig. 1,2 Drawing #XL-023.
5. Loosen large black knob (Item B) which permits you to swing basic unit toward you. Using Allen tool 3/32 supplied with the lamphouse, loosen the four Allen set screws (Item C) in the front spider support structure on the positive end of the bulb (Item F, Fig. 2). Holding metal portion of the positive end of the bulb with your left hand, allowing it to rest along side the opened lamphouse door. Do not allow the bulb to drop in its mount. Now grasp the positive end of the bulb with the right hand, which will free the left hand so that the 3/32 Allen tool can now be used to loosen the two (or four) Allen set screws (Item D) in the negative nickel plated bulb holder (Item E). Remove bulb from negative bulb holder by carefully pulling straight out from the device as the bulb is held by the right hand. (If this is a new installation a wooden dowel is placed for shipping purposes only and it should be removed prior to attempting to install a bulb).
6. Holding the positive end of the bulb firmly in the right hand remove the shipping jacket and place the negative end of the bulb through the rear reflector opening (Item J) inserting it into the negative bulb holder (Item E)--tighten set screws. Slide the spider onto the positive end of bulb while making sure the 3 guides of the spider align properly in the center of their Delrin guides (Item K). Tighten set screws in spider.
7. Swing the basic unit back into its original position and tighten Knob B. Replace access cover L, reinstall lamphouse door and lock securely.



SELECTION & INSTALLATION OF
PORTHOLE GLASS

DATE: 10/8/81

PAGE 1 of 2

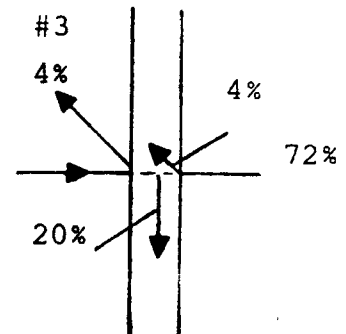
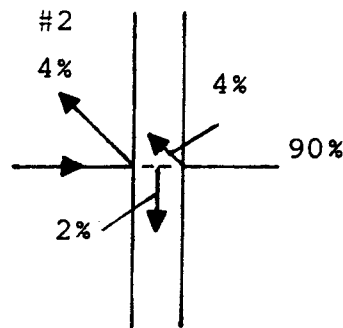
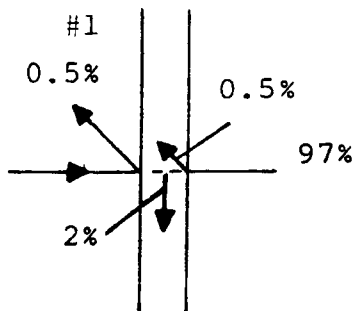
XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

A great number of projection problems are still being generated by the use of inferior glass and in some cases by the improper installation of good glass.

The ideal material would be optical glass, ground and polished on each side and with optical coatings on each side. This would provide the maximum light transmission with the minimum focus problem and discoloration of the projection illuminant.

Optical glass of this type, while highly recommended, is very expensive and in too many cases difficult to obtain. To help with this situation we would like to make several recommendations and to point out several of the things that have been done improperly.

1. The projection porthole glass should always be mounted perpendicular to the line of projection. If the angle of projection is zero degrees, the glass should be vertical and mounted in such a way that it can be easily removed for cleaning. If the projection angle is minus ten degrees the top of the glass should be toward the screen and the tilt at ten degrees so the glass would still be perpendicular to the line of projection. The reason for this is to allow the light to take the shortest path through the glass. We find the glass mounted at many angles for many reasons but recommend the above rule be followed.
2. The following drawings show the efficiency of plate glass as compared to optical glass and how easily a high percentage of the projected light can be lost in the porthole glass.





SELECTION & INSTALLATION OF
PORTHOLE GLASS

DATE: 10/8/81

PAGE 2 of 2

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

1. Optical glass. Ground, polished and coated both sides. The internal and external reflection losses total 1%. The absorption is 2% giving a total loss of 3% and transmission of 97%.
2. Optical glass. Ground and polished both sides but no coating. The internal and external reflection losses total 8%. The absorption is still 2% giving a total loss of 10% and transmission of 90%.
3. Ordinary plate glass. Internal and external reflection losses 8% but the absorption loss is 20% (and can be higher) giving a total loss of 28% and a transmission of 72%. In many theatres, this extra loss becomes very important, especially in a drive-in theatre where any loss of light is important.

Any glass should be carefully tested before making a permanent installation. With the white light on the screen, the glass should be carefully moved into the beam of light. If it is good optical glass, very little difference will be noted. If plate glass, the amount of light on the screen will be reduced and the blue-white light will become greenish in appearance. Both of these conditions do much to degrade the quality of the picture. The glass must also be checked to see if it degrades the focus of the projected picture. This is best done by projecting a known good target film. By moving the glass in and out of the projected beam, the focus should not change on any part of the screen. Use of the titles on a feature picture would be second best for this test.

4. Some theatres in an effort to reduce booth noise reaching the audience have used two pieces of glass, optical or plate, separated by about twelve inches. This has the effect of doubling the transmission losses and color problems. If the glass is not perpendicular to the line of projection, other problems such as multiple reflections will occur.

The type of glass can be easily determined by placing it in the projected beam of white light and observing the color of the light at any edge. If it is clear, optical glass is indicated. If white, it is "water clear" also recommended. If blue-green it is plate and should be replaced as it is degrading the projection.

Plexiglass is also very good in the one-quarter inch thickness. After our tests are completed, we may recommend its use and possibly supply it with our projection package.

The quality of the glass in the observation port is not as important but could add to the confusion if it made the picture look out of focus to the observer.



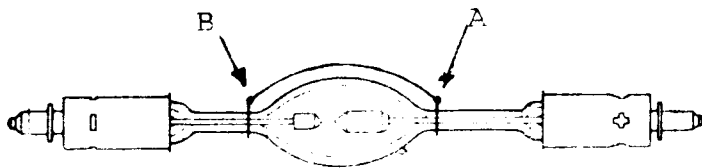
SERVICE BULLETIN
Hard Strike Xenon Bulbs

12/1/81
Replaces
1/1/72

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

It appears that all manufacturers have had problems where some bulbs are harder to strike than others. We assume this is a function of the internal gas pressure, although it is supposed to be very closely controlled.

Effective 1 January 1972, all bulbs shipped from Xetron Corporation, will have a wire loop around the elongated portion of the bulb to insure reliable starting. This wire should be nichrome or stainless steel as it is subjected to considerable heat and an ozone atmosphere. A single strand from a piece of #14 stranded wire can be used but will burn up after a few hours. Such a wire or even a strand of picture hanging wire will operate in an emergency. Xetron Corporation will supply wire to all dealers selling our bulbs for use in existing installations when necessary. The installation is very simple. Use a piece of wire 8 or 10 inches long. Make a loop around the quartz neck just above the enlarged section as shown (A) and twist it lightly to make it mechanically tight. Bring the wire down along the center of the bulb and make a similar loop around the bottom neck (B) just below the enlarged section. Under no circumstances should the wire touch the metal ends of the bulb nor the auxiliary reflector when used. Remove all fingerprints from the bulb and/or reflectors. There is no problem if the wire lightly touches the center quartz envelope area.



As the striking voltage is a high frequency pulse, the wire acts as a very small capacitor across the electrodes making it easier for the spark to jump from one electrode to the other. In some cases it may have an added advantage of reducing the striking noise in the sound.

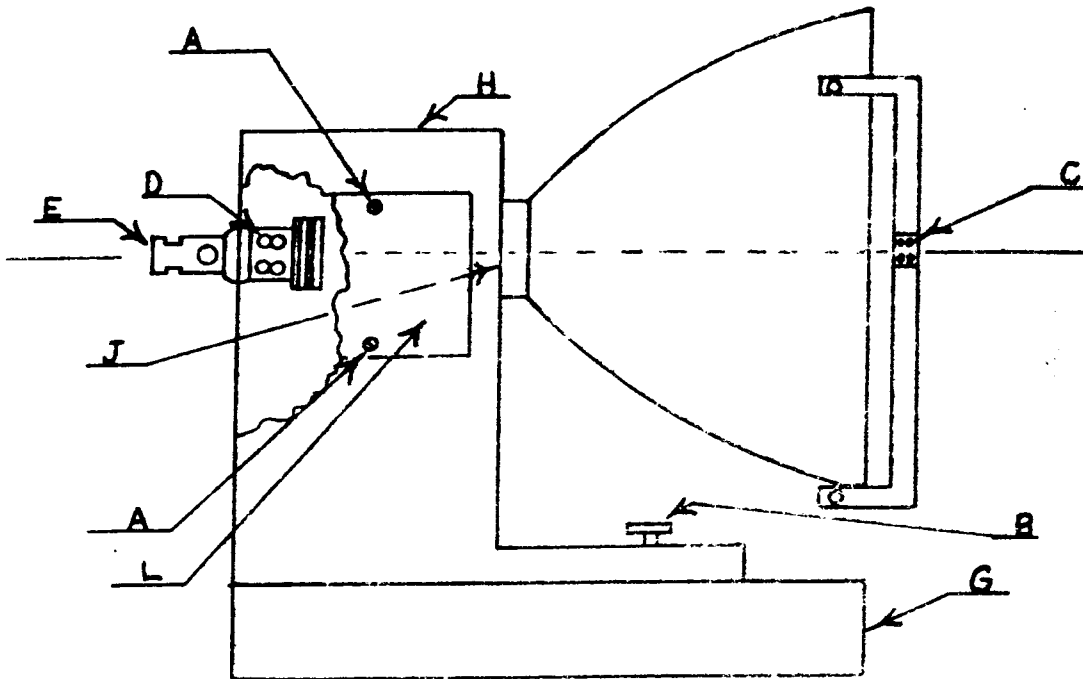


FIG. 1

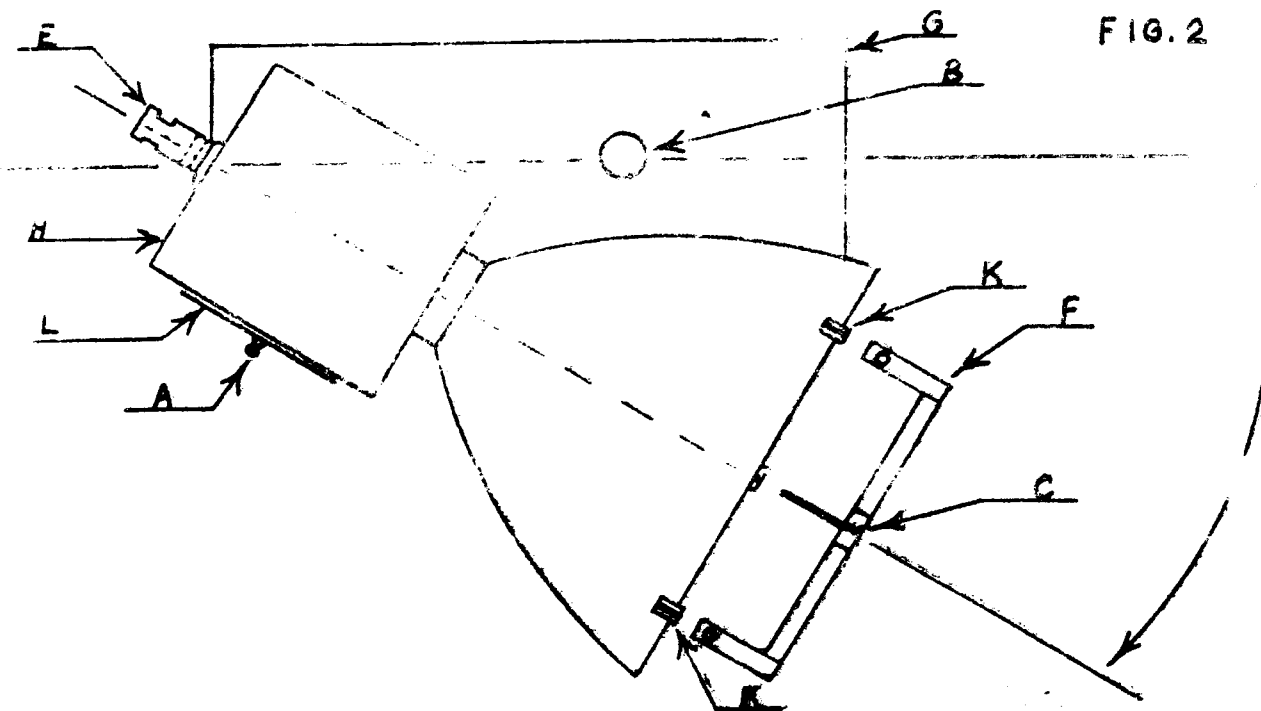


FIG. 2



XeTRON
XH-1000/3000 SERIES LAMPHOUSE
SERVICE

1 MARCH 1981
PAGE 1

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

The lamphouse has been designed for a minimum of service. The control panel and logic is very simple.

The ON/OFF switch and pilot light indicates when the system is ready for operation. If the auto-manual switch is on auto and the bulb does not ignite, the first thing to observe is the volt meter. If it does not read in excess of 70 volts, the power supply is not ON or not functioning properly. Turn the ON/OFF switch on the lamphouse to OFF, then ON. When this is done, you should hear the magnetic switch in the power supply operate. If not, the circuit breakers at the distribution box should be checked. The magnetic switch will not operate if the door switch or the air switch is open. Also remember that if the auto-manual switch is on manual, the push button switch must be operated for ignition.

Due to the fact that the spark gap is enclosed within the starter unit, its operation cannot be observed. However, with auto-manual switch in the manual position and the three phase power to the rectifier turned OFF at the distribution panel, when the push button is pressed a spark should be heard. By opening the lamphouse dowsler, the spark discharge within the bulb can be observed in the projector observation glass or on the screen. A very high quality IREM starter, Part No. XH-270-B is used in the XeTRON Lamphouse from Serial No. 1594. It is a totally encapsulated unit except for the high voltage capacitors and spark gap. Should the spark gap need replacement, remove the wires at the small terminal block, the two nuts holding the DC cables and the four bolts holding the body of starter. Remove starter from lamphouse. Remove rear cover. The gap is held by two spring clips. Reinstall starter using reverse procedure from above. Be sure all wires are properly replaced.

A blown 5A fuse would be evident as the blower, starter, pilot lamp and hour meter would be inoperative.

All DC connections must be tight and clean to prevent heating and voltage drop. This includes the set screws which hold the bulb in place. The input leads, the shunt, and bulb terminals should be checked at routine intervals to insure tightness. It is also good maintenance procedure to tighten the screw connections on TB-1 and the starter two or three times a year.

The autostrike relay is located inside the igniter. If it appears to be in trouble, it can be bypassed when the auto/manual switch is in manual. This relay operates on the high value of no load voltage developed by the power supply. Immediately after ignition, this voltage drops to 20-25 volts, depending upon the type bulb used, thus the relay cannot remain in its closed position due to the lower voltage.

(cont.)



CEDAR KNOLLS, N. J. 07927
201 - 267-8200

XeTRON
XH-1000/3000 SERIES LAMPHOUSE
SERVICE

1 MARCH 1978

PAGE 2

The sensitivity control is in series with the relay coil and must be adjusted so the relay pulls in and releases immediately. To adjust, turn it fully counter clockwise before turning the auto-manual switch to auto, then operate the ON-OFF switch to ON. The relay should not operate until the sensitivity control is advanced in clockwise position. When this position is reached, the ON-OFF switch should be operated several times as a final check. When the switch is turned ON, the blower comes up to speed, operates the air switch (door interlock switch is already closed) and this operates the power supply magnetic switch. At this time the voltmeter will read 70 plus volts, the auto-strike operates and the voltmeter drops to 20-25 volts. The bulb current is now adjusted to about its nominal value.

The auto-strike relay has an extra set of SPDT contacts which can be used in a muting circuit if the ignition noise appears in the sound. As this is not normally required, these contacts do not appear on TB-1 but must be picked up at the relay socket.

The piece of nickle-nichrome wire on the bulb makes it easier to ignite and should not be removed. It can also aid in reducing ignition noise in the sound in installation with this problem. Also, by using 3 more wires, positioned at 90°, ignition noise can sometimes be further reduced.

Due to the large volume of air passing over the bulb and reflector, cleaning must become a routine, especially when in a dusty location. For this service the operating side door must be opened, the fastening knob released and the front of the module pivoted out for access to the bulb and reflector. Clean the reflector with XeKLEEN. Even in a dusty booth we would not expect this to be done very often. Perhaps every 60 days. At the same time the condition of the bulb should be observed. If after 500-600 hours, the bulb is blackened along its top surfaces due to tungsten deposit, the holding screws should be loosened and the bulb rotated ninety degrees in order to prevent any great concentration of this blackening effect.

The bulb should always be handled with caution. At room temperature it is under a few atmospheres of pressure but at operating temperature the internal pressure increases considerably. Always wait until the bulb is reduced to room temperature before working inside the lamphouse or attempting to change the bulb. Always wear the face mask and other protective clothing when working in the lamphouse or handling a bulb.

The starter unit is necessary to develop a high voltage (approximately 50KV) to ionize the gas in the bulb. This voltage, plus a considerable amount of power stored in the output capacitor(s) of the power unit, discharged at the no load voltage, is responsible for the initial current flow thru the bulb. An open capacitor in this position may result in a very difficult or impossible strike.

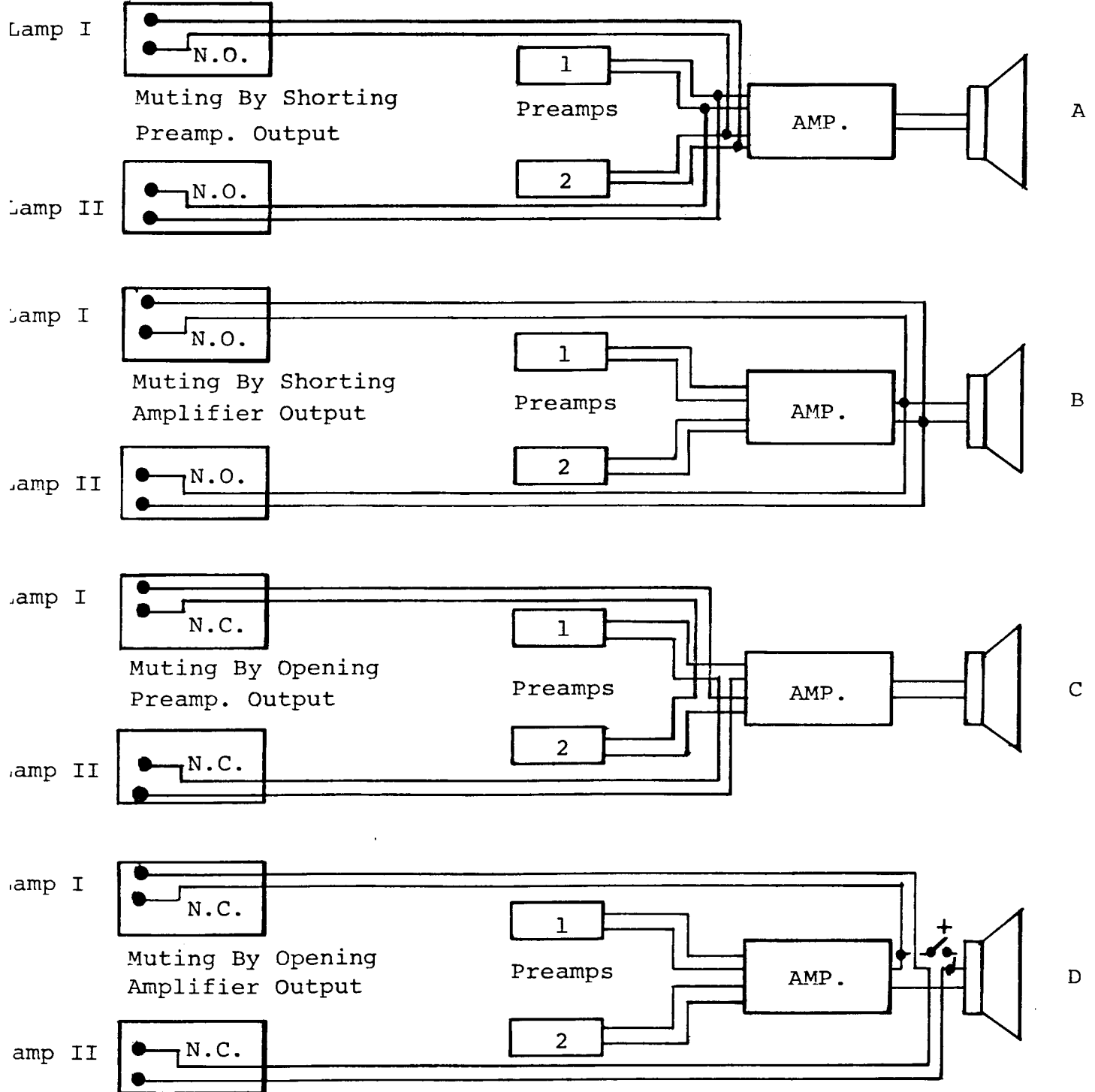


XHN/XCN
SUGGESTED CIRCUITRY
FOR SOUND MUTING
WHEN NECESSARY

JULY 1983

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

If Xenon strike noise invades the sound, the following circuits are suggested to suppress this condition.



*A load resistor can be placed across the output for amplifier protection (D). Also, we recommend to install an SPST switch across the muting circuit for emergency use.



XETRON
XH SERIES LAMPHOUSES
SPARE PARTS

1 MAY 1983

PAGE 1

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

FRONT CASTING ASSEMBLY

<u>Part #</u>	<u>Description</u>
XH-200	Front Casting Only
XH-200-1	Nose Cone (3 1/2")
XH-200-1A	Nose Cone (3")
XH-200-1AF	Holder With Heat Filter
XH-200-2	Hand Dowser Hub
XH-200-3	Hand Dowser Handle (Below Serial #2644)
XH-200-3A	Hand Dowser Handle (Above Serial #2644)
XH-200-4	Hand Dowser Stud
XH-200-5C	Hand Dowser Blade (Upper) (Below Serial #2644)
XH-200-6	Hand Dowser Blade (Lower) (Below Serial #2644)
XH-200-5CA	Hand Dowser Blade (Upper) (Above Serial #2644)
XH-200-6A	Hand Dowser Blade (Lower) (Below Serial #2644)
XH-200-7	Dowser Brass Bushing With Flange
XH-200-8	Dowser Brass Bushing Less Flange
XH-200-9	Pin For XH-200-2
XH-400-10*	Interior Front Baffle Standoffs (2 1/4")
XH-200-11	Dowser Spring Standoff (2")
XH-200-12	Dowser Spring
XH-200-13	Dowser Spring Standoff (5/8")
XH-400-14*	Interior Front Casting Heat Baffle
XH-200-15	Dowser Blade Bumper
XH-400-16	Heat Baffle For XH-200-5C
XH-400-17	Heat Baffle For XH-200-6

REAR CASTING ASSEMBLY

XH-210	Rear Casting Only
XH-210-1A	Hour Meter 120V
XH-210-2A	Ammeter 0-150
XH-210-3	Ammeter Leads
XH-210-5A	Voltmeter 0-150
XH-210-7	Manual Ignition Pushbutton
XH-210-8	Pilot Light - Green
XH-210-9	Power Switch
XH-210-10	Auto-Manual Switch
XH-210-11	Fuse Holder
XH-210-12	Fuse 5A
XH-410-13A	Meter Panel Wiring Harness
XH-210-14D	Meter Panel With Legend
XH-210-15E	Grill With 2 Louvers
XH-210-17	Black Face Nut
XH-210-13A+	Meter Panel Wiring Harness

*Indicates XH-4000 Only

+Indicates XH-1000/3000 Only

All Other Parts Common To Both Lamps



XETRON
XH SERIES LAMPHOUSES
SPARE PARTS

1 MAY 1983

PAGE 2

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

REAR CASTING ASSEMBLY (CONTINUED)

<u>Part #</u>	<u>Description</u>
XH-210-18	Cable Tie Mount
XH-210-20	Auto Potentiometer
XH-210-22A	Auto Relay
XH-210-23	Auto Socket
XH-210-24B	Mounting Bracket & Cover For Door
XH-210-29	Microswitch
XH-210-25	Door Microswitch
XH-210-26A	Capacitor 1KV .02 Disc
XH-210-27	Chokes
XH-210-28	Terminal Board For RF Choke Mounting
XH-210-29	Circuit Breaker

LEFT SIDE DOOR ASSEMBLY

XH-420-E*	Left Side Door Only (XH-4000)
XH-220-1	Flexible Duct
XH-220-2	Mounting Flange (Both Ends Of Flexible Duct)
XH-220-3	Hose Clamp (3 1/2")
XH-220-4A	Screen - Flexible Duct
XH-420-5*	Interior Heat Baffle
XH-420-6*	Interior Heat Baffle Standoffs (R & L)
XH-420-7*	Flexible Duct Mounting Flange (Door)
XH-220-D+	Left Side Door Only (XH-1000/3000)

RIGHT SIDE DOOR ASSEMBLY

XH-430-E*	Right Side Door Only (XH-4000)
XH-230-1	Door Lock
XH-430-2B*	Door Rail (R & L)
XH-430-3*	Bulb Sight Bezel Frame
XH-430-4*	Bezel Glass
XH-430-5*	Bezel Glass Spring
XH-430-6*	Interior Heat Baffle
XH-430-7	1/16" X 1/2" Foam Door Stripping
XD-120-13	Grommet (Bulb Adjustment Holes)
XH-230-D+	Right Side Door Only (XH-1000/3000)
XH-230-2+	Door Rail (R & L) (XH-1000/3000)

LAMPHOUSE TOP ASSEMBLY

XH-240-D+	Lamphouse Top Only
XH-240-1+	Vent Stack 6"

*Indicates XH-4000 Only

+Indicates XH-1000/3000 Only

All Other Parts Common To Both Lamps



XETRON
XH SERIES LAMPHOUSES
SPARE PARTS

1 MAY 1983

PAGE 3

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

LAMPHOUSE TOP ASSEMBLY (CONTINUED)

<u>Part #</u>	<u>Description</u>
XH-240-7+	Vented Top Panel
XH-240-8+	Louver Top Panel
XH-440-E*	Lamphouse Top Only (XH-4000)
XH-440-10*	Rotron Blower - Tarzan
XH-440-12*	Starter/Blower Housing
XH-440-13*	Blower/Starter Standoffs - Rubber
XH-440-14*	Vent Stack Adapter 6 3/4"
XD-120-15*	Rubber Grommet
XH-440-15*	Top Corner Baffle Right
XH-440-16*	Top Corner Baffle Left
XH-240-10	Capacitor

MAIN BASE ASSEMBLY

XH-450-E*	Main Base Only
XH-250-6	Door Spacing Shim (Top & Base)
XH-250-7	DC Terminal Block Modules
XH-250-8	DC Terminal Block Ends
XH-250-9	AC Terminal Block Modules
XH-250-10	AC Terminal Block Ends
XH-250-11	AC Terminal Strip Legend
XH-250-9	Ammeter Shunt
XH-450-13*	Brass DC Cable Terminal Block To Shunt
XH-450-14*	Negative DC Cable
XH-450-15*	Positive DC Cable
XH-450-16*	Front & Rear Air Duct Hold Down
XH-450-17*	Positive Bulb Support - Metal
XH-450-18*	Positive Bulb Support - Bakelite
XH-450-20*	Pivot Spring Pin 1/4" X 1 1/4"
XH-450-21*	Nylon Allen Cap Screw 1 1/2" X 1/4-20 (4)
XH-450-22*	Allen Cap Screw 1" X 1/4-20 (4)
XH-450-23*	Allen Cap Screw 1" X 1/4-20 S.S.
XH-250-D+	Main Base Only (XH-1000/3000)
XH-250-21A+	Negative DC Cable (Starter To Socket)
XH-250-21B+	Negative DC Cable (Starter To DC Block)
XH-250-22A+	Positive DC Cable (Shunt To Spider)
XH-250-22B+	Positive DC Cable (Shunt To DC Block)

HORIZONTAL BASIC UNIT ASSEMBLY
1000/2000/3000 WATT

XH-260-1	Blower Complete
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*Indicates XH-4000 Only

+Indicates XH-1000/3000 Only

All Other Parts Common To Both Lamps



XETRON
XH SERIES LAMPHOUSES
SPARE PARTS

1 MAY 1983

PAGE 4

XETRON CORPORATION, Ten Saddle Rd., Cedar Knolls, NJ 07927 U.S.A. Telephone (201) 267-8200

HORIZONTAL BASIC UNIT ASSEMBLY
1000/2000/3000 WATT (CONTINUED)

<u>Part #</u>	<u>Description</u>
XH-260-1-1	Washer - Blower Motor Mounting Screw (4)
XH-260-1-2	Screw - Blower Mount
XH-260-1-3	Grommet - Blower Motor Wires
XH-260-2A	Air Vane Switch W/ Paddle (Front Of Main Duct)
XH-260-3A	Air Vane Switch Mounting Bracket For 2A
XH-260-4A	Flexible Drive - Bulb Adjustment (2)
XH-260-4A-1	Set Screw For Flexible Drive
XH-260-5B	Plate - (1/8" Thick) Horizontal Control Casting Support
XH-260-6	3/16" Allen Tool (Reflector Controls)
XH-260-7	3/32" Allen Tool (Bulb Mounts)
XH-260-8	Horizontal Adjustment Plate
XH-260-9	Vertical Adjustment Plate
XH-260-10A	Negative Bulb Holder (Casting Only - Brass)
XH-260-10A-1	Spring - Negative Bulb Holder
XH-260-10A-2	Brass Ball - Negative Bulb Holder
XH-260-10A-3	Square Cross Bar - Negative Bulb Holder
XH-260-10A-4	Washer - (Lock) Negative Cable To Negative Bulb Holder
XH-260-10A-5	Stud - Negative Bulb Holder To Cable
XH-260-10A-6	Nut For XH-260-10A-5 Stud (2)
XH-260-11	Black Bakelite Locking Knob
XH-260-12	Set Screw - Basic Unit Lateral Positioning
XH-260-13	Focus Swivel Bar (Round)
XH-260-13-1	Focus Control Stud (Internal)
XH-260-13-2	Nut For Focus Control Stud (2)
XH-260-13-3	Washer For XH-260-13-1
XH-260-13-4	Focus Adjusting Screw (In Casting)
XH-260-13-5	Focus Control Arm Pivot Bolt (Lower)
XH-260-13-6	Nut (Self-Locking) For XH-260-13-5
XH-260-14	Focus Control Arm (2) For Use W/XH-260-15
XH-260-14-1	Focus Control Arm (2) For Use W/XH-260-10A-3
XH-260-15	Focus Control Pivot Screw - Brass (2) (Old Style) Replaced By XH-260-10A-3
XH-260-16	Vertical Drive Stud Bracket - Attaches To XH-260-8
XH-260-16-1	Vertical Drive Stud
XH-260-17	Pivot Bracket For Focus Control Arms
XH-260-18	Horizontal Control Casting Only
XH-260-18-1	Horizontal Adjusting Screw
XH-260-18-2	Cotter Pin For Horizontal Focus Control
XH-260-19	Vertical & Focus Control Casting
XH-260-20	10" Horizontal Rhodium Reflector W/Mount
XH-260-20-CD	10" Horizontal Dichroic Reflector W/Mount
XH-260-20-1	Screw - Reflector Mount (3)