

**IMARC 850 Watt Followspot
OPERATION & SERVICE MANUAL**

MODEL: IM-850/120

MODEL: IM-850/220



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**IMARC 850 Watt Followspot
OPERATION & SERVICE MANUAL**

**110-120 VAC & 220-240 VAC Models
January 2006**

The intended use of this manual is for users and qualified service technicians.

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LIMITED WARRANTY

Thank you for purchasing the Phoebus Manufacturing **imarc 850**.

The Phoebus Manufacturing imarc 850 watt followspot is warranted against defects in material and workmanship for a period of one year from date of purchase from Phoebus Manufacturing. In case of difficulty, contact Phoebus Manufacturing or your dealer for repair or return instructions. Iris, dowser, and clipper are warranted for six months under normal use. Lamp and Ballast are warranted by the Lamp Manufacturer (Ushio). Lamps and ballast will be repaired or replaced at their discretion.

This warranty does not apply to mechanical defects caused by rough handling or to damage caused by improper operation not in accordance with this manual. Cause of defect is in the sole judgement of Phoebus Manufacturing .

This warranty is voidable at Phoebus Manufacturing's option under the following Circumstances:

- User makes unauthorized modifications (electrical or mechanical).

- The unit is connected to improper voltage supply.

- Any other condition occurs which causes catastrophic failure or impairs Phoebus Manufacturing's ability to render proper service.

If the unit is modified by the customer without permission, the customer agrees to pay for any time or parts necessary to remove the modifications before repair, if necessary.

Phoebus will not be responsible for consequential damages caused by failure for whatever reason of equipment of its manufacture. Sole liability is for equipment of its manufacture. Sole liability is for repair or replacement (at Phoebus Manufacturing's option) of the defective equipment under the terms described above.

CONTROL DESCRIPTION

I. FOLLOWSPOT

- 1) 3 POSITION POWER SWITCH.....Controls power to fans and ballast
Down - Off
Middle - Fans only
Up - Ballast Auto strike, lamp run.
- 2) FUSE HOLDER.....Fuse 15 Amp 3AB
- 3) HOUR COUNTER.....Records operating time accumulated on lamp. Operates in switch up position
Non-resetable.
- 4) REAR LENS CONTROL HANDLE.....Used to focus image. Turn handle clock wise to lock and counter-clockwise to unlock. Slide handle to focus beam.
- 5) FRONT LENS CONTROL HANDLE.....Changes image size. Turn handle clock wise to lock and counter-clockwise to unlock. Slide handle forward for smaller image, spot distribution, long throws. Slide back for larger image, flood distribution, or short throws..
- 6) DOWSER.....Mechanical dimmer. Gradually dims to black out when lever is moved away from the operator.
- 7) CLIPPER.....Mechanical Blades mask spot to a Rectangular strip. Open when lever is moved towards operator.
- 8) IRIS.....Controls size of image. Opens widest when lever is moved towards operator
Iris does not fully close.
WARNING: Iris left in closed position with dowser open for extended time may cause damage to iris leaves.
- 9) COLOR CONTROL.....Color is inserted into beam when lever is moved up and locks into place. The self cancel feature will automatically release the previously inserted frame when next frame is locked into place. The release lever is located on the top of the boom housing. Pull up to release all six control frames.
- 10) ADJUSTABLE YOKE TILT HANDLE.....Friction lock for vertical tilt of unit.
Push button for handle adjustment.
- 11) LINE CORD.....Plugs into 110-120 VAC wall outlet.

- 12) REAR ACCESS DOOR.....Allows operator access to lamp adjust-
screws for hotspot adjustments.
- 13) THUMBSCREWS.....Autoboom, front and rear housing
lockdown.

II. BALLAST EBM-801DC

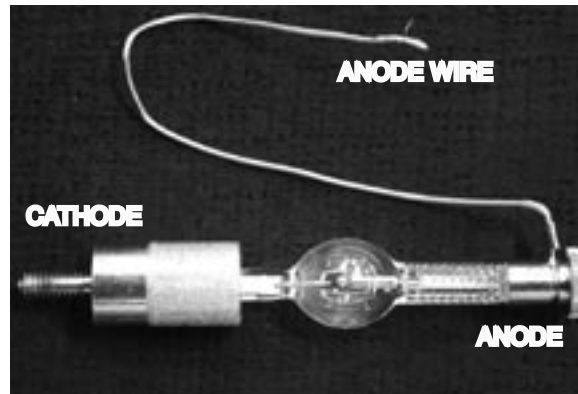
- 1) WATTAGE ADJUSTMENT.....The EMB-801-DC features a variable
wattage adjustment dial located inside
the ballast. The IM850 is an 850 watt
followspot and is factory set to 850
watts. Tampering with wattage setting
will compromise the lamp output and
lamp life.
220 VAC models are set at the factory
and there is no need for adjustments.
Ballast contains no user servicable
parts

INITIAL SET-UP

- 1) Unpack carefully and inspect for shipping damage.
- 2) Bolt the 4 base legs onto the 3 1/2" square tubing with the elevator brackets and caster holes facing down. (See Collapsible Base Assembly Instruction Diagram on page 6).
- 3) Insert casters into legs.
- 4) Insert levels into elevator brackets located at the end of each leg.
- 5) Insert height collar handle into height collar.
- 6) Slip height collar and handle onto yoke
- 7) Insert Teflon height collar washer onto yoke.
- 8) Insert yoke into base.
- 9) Turn tilt lock knobs on either side of the bail so 3/4" of thread is showing. Position fiber washers nearest the bail.
- 10) Lift the imarc 850 using the front and rear of the chassis as supports. Position the bail handle shafts in the U-shaped slots at the top of the yoke. Ensure that the washers are positioned properly. Turn the tilt lock knobs to tighten the grip on the yoke.
- 11) Remove shipping bolts and insert tapered handles into front and rear lens holder.
- 12) Unscrew the four thumbscrews on either side of the color boomerang.
- 13) Unpack boomerang. Position it upside down with the control levers facing you.
- 14) Raise the left-hand (operator right) gel holder.
- 15) Insert gel, cover with ring and secure with three clips. Use hammer or pliers to flatten the clips. (This will keep the gel frames from catching on one another during use.)
- 16) Lower left-hand (operator right) gel holder and raise the next one.
- 17) Repeat steps #14 through #16. To access the bottom gel clip, raise all the gels to the left or right and lower the one being worked on.
- 18) As you move toward the right-hand gels (operator left), insert progressively lighter colors. The left hand (operator right) holder should be used for deep blue or purple colors). This will prolong the life of the gels.
- 19) Place the color boomerang on the top of the imarc 850 with the lever handles facing the other operation controls. Secure with four thumbscrews near the bottom of the boomerang.
- 20) Insert the three control handles (steel shaft with ball knob) into the slots at the top and to the rear of front housing. The handles screw into threaded holes which can be seen through the slots. A nyloc nut is provided to secure control handle underneath the swivel. Note: To access the control swivels, you must unscrew the ball knobs and carefully remove the main housing (four thumb screws on either side secure housing to chassis.)

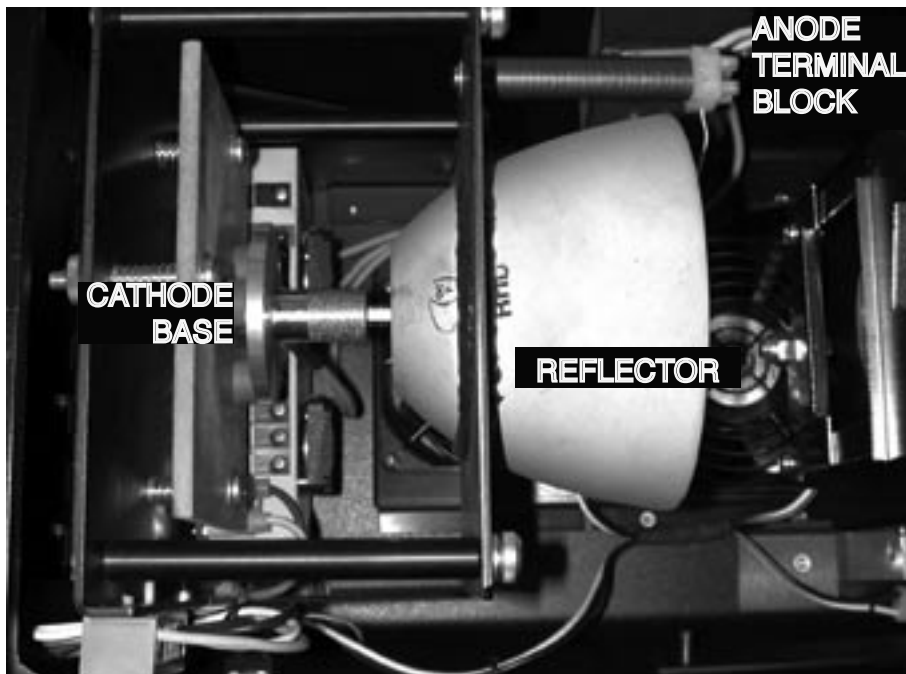
LAMP INSTALLATION

- 1) If main housing has not been removed in step 20, remove it now.
- 2) Make sure power switch is in off position & unplug unit from power source.
- 3) Carefully remove lamp from container taking care not to touch glass envelope.



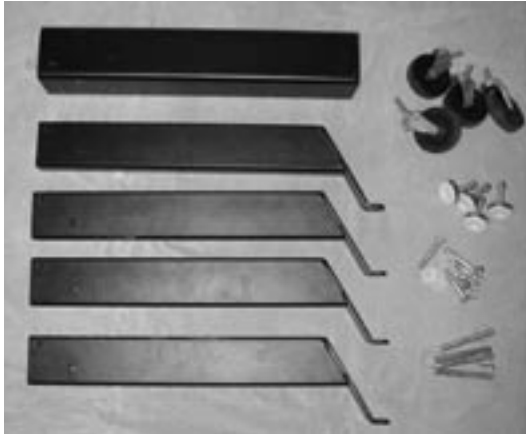
SMH-850/D2 LAMP

- 4) Insert the lamp, Cathode first, through hole in reflector.
- 5) Carefully screw lamp into the Cathode Base, gripping it on the knurled part of the Cathode end. Do not touch the glass envelope of lamp.
- 6) Attach the Anode wire to Anode Terminal Block. Tighten in place.
- 7) To remove lamp, reverse steps 5 & 6. It is not necessary to detach Anode wire from Anode end.
- 8) Replace Main Housing, making sure that control handle shafts line up with their respective slots. Secure Housing with thumbscrews, and screw ball knobs back onto steel control shafts.
- 9) Plug the imarc into a 110-120v outlet, and turn switch to "on" position.



Overhead view of Lamp and Reflector with Main Housing removed.

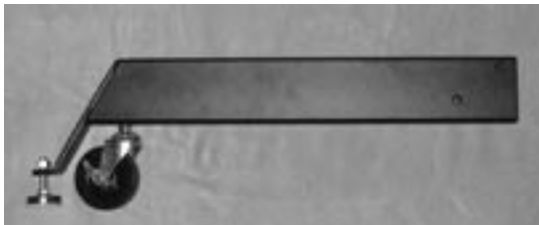
COLLAPSIBLE BASE ASSEMBLY



Base is shipped unassembled. Parts include Main Base Tube, 4 Base legs, 4 Casters, 4 Leveling Feet, 4 detent pins, & 4 bolts, nylon washers, and nylok nuts.



- 4) Rotate leg down and insert detent pin into hole as shown.
- 5) Repeat steps 3 and 4 for remaining base legs.



- 1) Screw casters into base legs
- 2) Screw leveling jacks onto base leg extension feet. Secure with 3/8-16 hex nuts.



- 3) Insert bolt through hole on the base leg as shown. Place nylon washer on the bolt. Pass bolt through hole in main base tube and secure with nyloc nut. **NOTE: Nylon washer should be between base leg and main base tube. Nyloc nut should be secured on inside of the base leg.**



6. For storing or transporting base: Remove detent pin and rotate leg around lock nut. Replace pin to lock legs securely in place.

FOLLOWSPOT OPERATION

- 1) Connect to 120 Volt 60Hz power source. Turn power switch to middle position (lamp blower & gel fan only). Be sure both are operating properly before flipping switch to upper position to strike lamp. The lamp should strike within one second and warm up to full output within 60 seconds. The imarc 850 uses a **hot re-strike lamp**. It is not necessary to run cooling fans after lamp is turned off.
- 3) Dowser, Iris and Clipper are controlled by the ball knobs on top of imarc.
- 4) The Front Lens Control Handle (on lower side) is used to adjust lens for desired throw by sliding it forward for a narrow beam (long throw) or towards the rear for a wider beam (short throw). Handle may be locked in place by turning it clockwise. Do not over tighten!
- 5) The Rear Lens Control Handle (side of unit, near middle) is used to obtain the desired focus; soft or hard edge. Slide it forward for wide beam (short throw) or backward for a narrowbeam (long throw). Handle may be locked in position by turning clockwise. Do not over tighten!
- 6) To obtain the desired beam size and focus at a given distance, both lenses must be moved. Lens position may be chalk marked on the side of the unit.

FOCUSING

- 1) Move iris, dowser, and clipper controls to extreme right hand position (viewing the unit from the rear).
- 2) Move rear lens until edge of pattern is in focus. Position may be adjusted hard or soft edge.
- 3) Close down the iris by moving its control handle left.
- 4) Focus may change slightly with iris closed. Best focus setting is with iris half open.
- 5) To “zoom” the lenses to a new position, a coordinated motion of both front and rear lenses is used. Note that these lenses move opposite to each other to maintain focus.

BEAM CONTROL

- 1) The Dowser is a mechanical dimmer. The rear control handle is moved left to close and right to open the dowser.
- 2) The Clipper shapes the image to a strip or rectangle of variable height. Move the middle control handle left to close and right to open the clipper.
- 3) The Iris provides a 6 to 1 change in image diameter. It is controlled by the front handle; left to close and right to open. The brightest spot is obtained with the iris open and the lenses adjusted for the largest spot desired. Smaller spots are obtained using the iris.

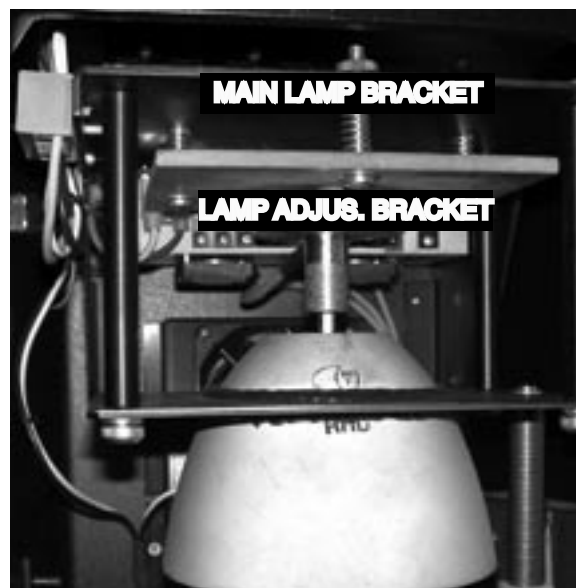
FLAT FIELD ADJUSTMENT

From time to time it may be necessary to optimize the position of the lamp in the reflector to attain desired flatness of field across the beam. In the imarc 850, this adjustment may be made without removing the Main Housing.

- 1) Turn unit on and focus the beam on a light colored surface.



- 2) Open the Rear Access Door found at back of unit.
- 3) Using the three focus knobs found on the Main Lamp Bracket, carefully re-position the Lamp Adjustment Bracket to attain desired flatness of field.
Note: Adjustments should be done in small increments. Distance between Main Lamp Bracket and the Lamp Adjustment Bracket is factory set at 7/8".

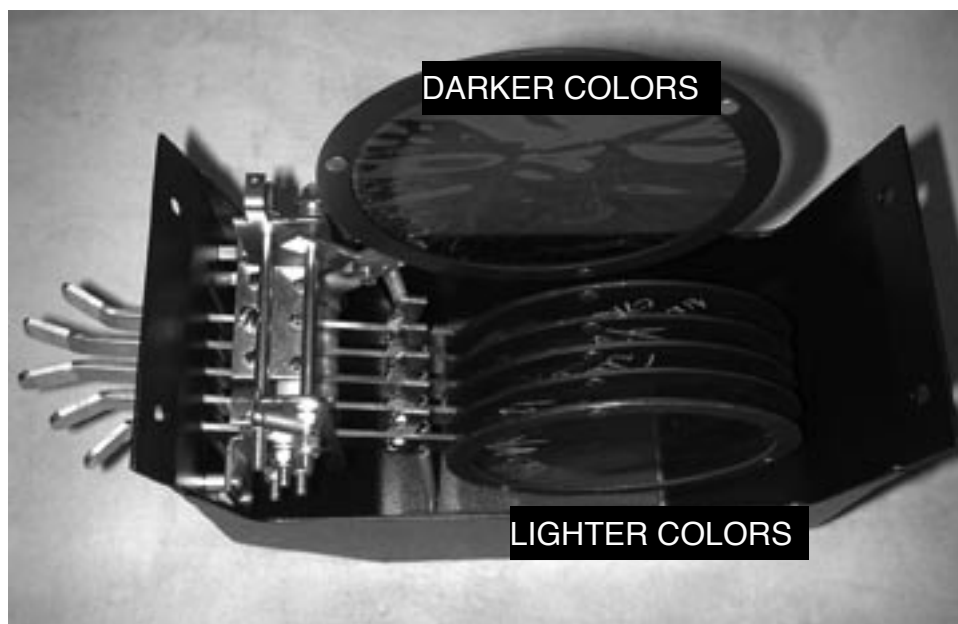


- 4) Close Rear Access Door and secure in place.

GEL INSTALLATION

- 1) Unscrew four thumbscrews on either side of the color boomerang.
- 2) Lift boomerang off. Position it upside down. Control levers should be facing you.
- 3) Raise the lever of the gel holder farthest to the left with the control levers facing you on the boomerang and lower all the others.
- 4) Insert gel, cover with ring and secure with three clips. Use hammer or pliers to flatten the clips. This will also keep the gel frames from hooking up on one another during use.
- 5) Lower first gel holder and raise the next one.
- 6) Repeat steps #3 through #5 for the remaining gel holders. To access the bottom gel clip, raise all the gels to the left or right and lower the one being worked on.
- 7) As you move toward the right, insert progressively lighter colors. The farthest left gel holder should be used for deep blue or purple gels. This will prolong the life of the gel.
- 8) Replace boomerang assembly and secure with four thumbscrews. Due to the extreme concentration of energy in the light beam and the unavoidable compromise between cooling power and fan noise, please load color boomerang so that darkest gels are the farthest away from the light source.

NOTE: The use of HT or High Temperature color media is recommended for use in the imarc 850.



imarc 850 boomerang assembly

MAINTENANCE

I. LENS CLEANING

- 1) Unscrew and remove Control Handle Knobs.
- 2) Remove Main Housing to access all lenses for cleaning.
- 3) Clean all lenses using glass cleaner and a soft, lint-free cloth.
- 4) Replace Main Housing.
- 5) Replace Control Handle Knobs.
- 6) Replace and tighten all thumbscrews.

II. LUBRICATION

- 1) Unscrew and remove Control Handle Knobs.
- 2) Remove Main Housing to access all lenses for cleaning.
- 3) Wipe all four bearing shafts with a clean cloth dampened with light wax or light lubrication (WD-40). Avoid excess wax.
- 4) Operate front and rear lenses forward and back to distribute wax.
- 5) Replace Main Housing.
- 6) Replace Control Handle Knobs.
- 7) Replace and tighten all thumbscrews.

III. TROUBLESHOOTING – LAMP AND BALLAST (ELECTRICAL)

- 1) If blower fails to run, check power and fuse. Replace fuse with 10 amp 3AB fuses.
- 2) If blower runs and lamp does not strike.
 - A. Check that the lamp is firmly seated in Cathode Base. Check that Anode wire is firmly attached to Anode Terminal Block. If all appears normal, the lamp may have reached the end of its life. Replace the lamp.
 - B. If the new lamp does not strike, check line voltages. Lamps may not start with power line below 105 volts.
 - C. If the above measures are unsuccessful, the ballast is probably defective. Call your distributor or Phoebus Manufacturing for further assistance.

TECHNICAL DATA

I. LAMP

The imarc 850 uses an Ushio SMH-850/D2 high intensity DC arc lamp. This is a 850 watt enhanced metal halide projection lamp. An electronic ballast is used to operate the lamp from standard 120V, 50/60Hz power. Replacement lamps are available from Ushio lamp distributors as well as from Phoebus Manufacturing.

Lamp life is an average of 1000 hours in normal use. The life depends on the burning time per start. Lamps burned for several hours per start will last longer. Operation for less than 15 minutes per start is not recommended. An hour meter is mounted on the housing to keep track of lamp life (or rental usage). Lumen loss occurs typically at end of lamp life and the lamp will fail to start. Another end of life symptom is arc swirl or flicker in the projected image. Occasionally, a new lamp may exhibit this problem. Return such to your Ushio distributor for exchange.

Color temperature is about 5600° Kelvin (white) but may vary somewhat from lamp to lamp.

In handling the lamp, avoid touching the arc tube. Always hold the lamp by the knurled metal base of the Cathode. If the arc tube is touched, clean it with alcohol or freon before use to prolong lamp life. There is no explosion hazard in handling this lamp since high pressure is present only when the bulb is hot.

The lamp is cooled by a blower located below the lamp. This blower is essential to lamp operation. Improper cooling will cause decreased life and arc instability or color shift.

II. ELECTRICAL

The imarc 850 operates on 105 to 125 Volt 50/60 Hz AC. Present models draw less than 15 amps, starting or running, at high power factor. An electronic ballast is used to supply the lamp with proper starting and running voltages and currents.

NOTES

WARRANTY CARD

MODEL NUMBER _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

PLACE OF PURCHASE (DEALER NAME) _____

USER'S NAME _____

COMPANY NAME _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP _____

TELEPHONE _____ FAX _____ EMAIL _____



Please fold along the dotted lines and staple
with return address on the outside as shown above.
Thank you!

Place
stamp
here

PHOEBUS MANUFACTURING
2800 THIRD STREET
SAN FRANCISCO, CA 94107

ATTENTION: WARRANTY DEPARTMENT