

Hanging A Lighting Unit - A Process.

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Advance Check:

Check the three “systems”, Mechanical, Electrical, Optical

- A. MECHANICAL - Does the instrument have all it's parts including knobs, bolts, handles, shutters, lens retainers, gel holding clips, etc? Are these parts in working order? Is there a safety for the instrument?
- B. ELECTRICAL - Do a visual inspection of the wiring, especially at the plug and the lamp. Do all wires appear to be properly and securely connected? Is there evidence of “arcing”? Does the unit turn on properly when connected to a power source?
- C. OPTICAL - Check to see that all required lenses are in place and intact. Inspect the cleanliness of the lens and the reflector. Turn on the unit and inspect the beam. Does it appear to be of proper intensity? Examine the geometry. In an ERS, is the hot-spot properly placed? Is the field's evenness appropriate to the task? Bench focus if necessary.

Light Hanging Rules:

- A. Hang all instruments on each pipe with the “c—clamp” facing in the same direction (the direction that allows the most accessibility to the bolt).
- B. Make sure that each instrument placement allows for adequate maneuverability. Pay particular attention to providing adequate slack in the electrical leads to the instrument.
- C. Make sure that each instrument will not interfere with the focus or operation of its neighbors.
- D. Before the cabling process begins, aim each instrument in the approximate direction of its intended focus.
- E. All shutters and irises on each ERS must be placed in the open position as part of the hanging process.
- F. Verify that each fresnel is placed in the “spot” mode.
- G. Use safety cables where appropriate.
- H. All gel frames must be secure in the instruments. Taping gel frames to an instrument is not a safe practice.
- I. Gel should be secured in its frame with the use of a single “paper fastener”. Tape should not be used for this purpose.
- J. All adjustments should be rendered tight, but not so tight as to interfere with focusing procedures, or structural integrity of the part or instrument.

Steps of Hanging a Lighting Unit, An Overview:

- A. See that you have the proper instrument in hand, that you know where it is to be placed, and where it is to be focused.
- B. Perform an advance check of all systems (see above)
- C. Orient the C-Clamp on the instrument before hanging. - Be sure to use the set screw for pan adjustment. Do NOT over tighten the set screw. (Be sure to check that once hung and focused, the unit will not be upside down. The gel holder position will be the most effective means of verifying this.)

- D. On ERS units, open all shutters. On Fresnels, make sure they are in the spot position.
- E. Make sure that all bolts are reasonably tight.
- F. Make sure that the C-Clamp is loose enough to easily slip over the pipe.
- H. Hang the unit on the pipe with all c-clamps facing the same way (with the c-clamp bolt towards you). Hand tighten.
- I. Tighten the c-clamp very securely
- J. Attach the safety
- k. Plug in the light to an available circuit being sure to record the circuit number on the plot.

Overview of the focusing process:

- A. Before the light is turned on, aim the unit at the head of the designer, standing at the place of intended focus.
- B. (After the light is turned on, work quickly and efficiently so as not to burn your little digits.)
- C. First pan the light till it lines up with the designer's body. Tighten the set screw and make sure the yoke bolt is tight as well. Do NOT over tighten the set screw.
- D. Next tilt the light up so that the "hot spot" is slightly above the designer's head. Tighten with the goal of having the hot spot end up right at the designer's head. (The designer may request additional adjustment.)
- E. The designer will then order you to lock the instrument. Make sure that all adjustment bolts and handles are tight enough to ensure that the unit will not move. Do so in a way that in itself will not move the instrument!
- F. Temporarily push in a side shutter. Adjust the lens barrel on ERS units and the spread in fresnels to the proper softness /sharpness (ERS) or diameter (fresnels). Note the adjustment. (This may often be applied in advance to subsequent ERS units.) When done, make sure that the adjustment knob is tight. Pull the side shutter back out.
- G. In ERS Units, adjust the shutters. Remember that shutters are opposite to their image's orientation on stage. (ie. Top shutter adjusts the bottom of the beam, left shutter appears on the right, etc. On your own, make sure that ERS units are shuttered off of architectural obstructions such as the proscenium, masking, edge of stage, etc.)
- H. When the unit is completely focused, add the gel in frame, and add in any attachments that may be required such as barn doors. Secure these with a safety as required.

Cable Installation: Further Notes and Procedures

- A. Set aside all cable that does not appear to have its electrical or mechanical integrity intact. The risk of using such cable is great.
- B. Make sure all connections are tight. If necessary, "spread the pins" with a knife blade. Be careful — this "simple process" seems to cause a whole lot of injuries!
- C. Where possible, all cable connections are to be knotted. At the end of a pipe it is useful to loop the cable bundle in a half hitch so as to relieve strain at the pipe end.
- D. Taping connections should be avoided. A better alternative is to tie the connection with tie line where necessary.

- E. Cable should be tied to a pipe ONLY after all connections have been made.
- F. The process should begin at the point on each pipe that is farthest from available circuits, and then work towards these circuits.
- G. Cable bundles must be kept very neat, and tight, while allowing appropriate slack at each instrument.
- H. The cable bundle should be tied along the top of the pipe using tie line with a clove hitch followed by a bow. The spacing of tie lines should be enough to maintain the integrity and neatness of the bundle. This process is most efficient when using two persons. -
- I. Cable slack should be neatly coiled (together where possible) at the cable box, so as not to interfere with scenery movement or sight lines.

Striking a Lighting unit....The Steps:

- A. Remove all accessories including gel, gobo, barn doors.
- B. Unplug the light - feed the end of the connector once through the yoke
- C. Return the lighting unit to its neutral position For ERS units this would mean:
 - 1. Shutters in
 - 2. Lens train in and tight
 - 3. Lighting unit pointing down
 - 4. Unit oriented straight to the c-clamp
- D. Remove the safety and re-attach to the unit
- E. Wrench loosen the unit
- F. Remove the lighting unit
- G. Strike to storage area. **HAND TIGHTEN** the unit onto the storage rack. Do not wrench tighten