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# How to Set Up and Use Hot Lights

## Introduction

Hot lights are one of the three main types of photographic lighting that you will encounter. The proper and safe set up and use of hot lights is important for getting the photographic results that you want as well as for saving time and effort. This article will provide some instructions and guidelines for the proper and safe set up and put away of hot lights, especially in the UD/Art Lighting Studio.

## What are hot lights?

Hot lights are tungsten incandescent bulbs in a housing usually with a reflector. The following is an illustration of one of the hot lights found in the UD/Art Lighting Studio.



A Hot Light in its packed up state

Usually, the bulbs used are of high wattage (250, 500 or more). The hot lights found in the Cage and Lighting Studio are either 250 or 500 watts.

Hot lights get their name because the bulbs generate a lot of heat.



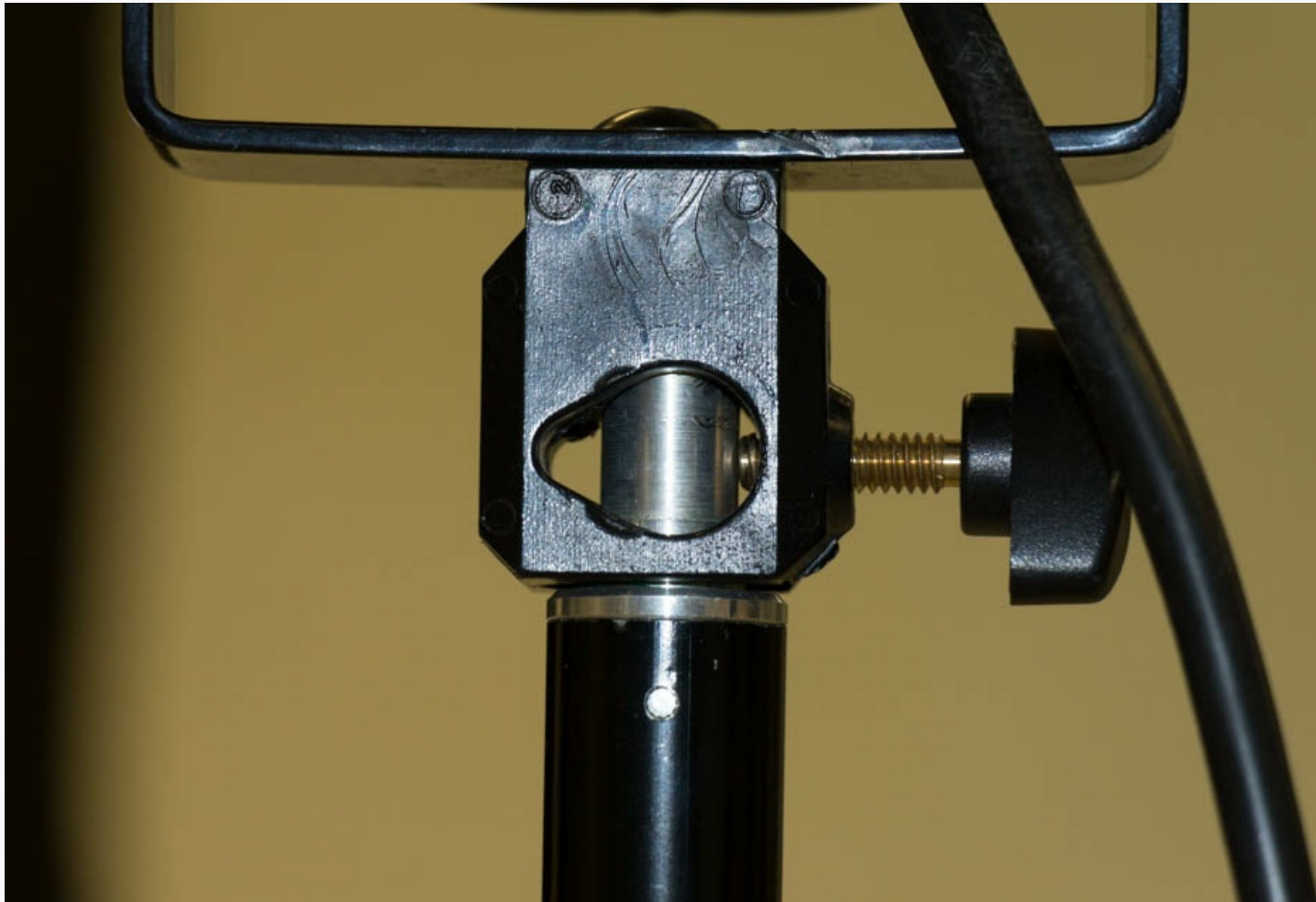
An unmodified hot light in action

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## Setting up Hot Lights

Just like any photographic lighting, hot lights need to be mounted to something, usually a light stand. Setting up light stands is beyond the scope of this article but is covered in [Light Stands and How to Set Them Up](#).

Be sure to fully seat the hot light's mounting socket on the stand's pin.



A hot light's mounting socket properly seated on a stand's pin

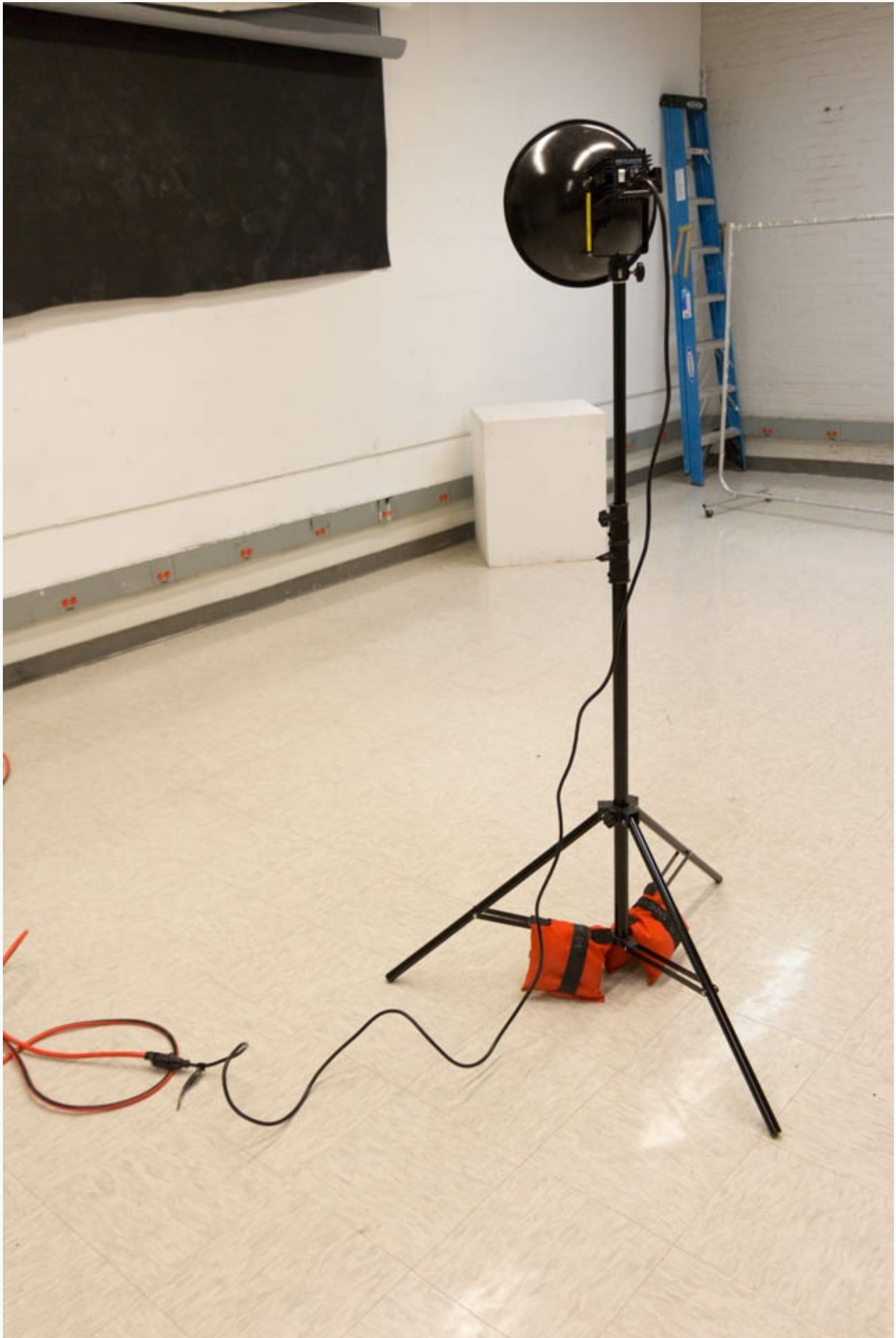
## Power cables and extension cords

For safety (both yours and the equipment's) reasons, it is essential to use extension cords to plug in lights. Cords dangling in mid-air present a tripping hazard and can result in injuries and broken equipment.



DO NOT ALLOW POWER CORDS TO DANGLE IN MID-AIR

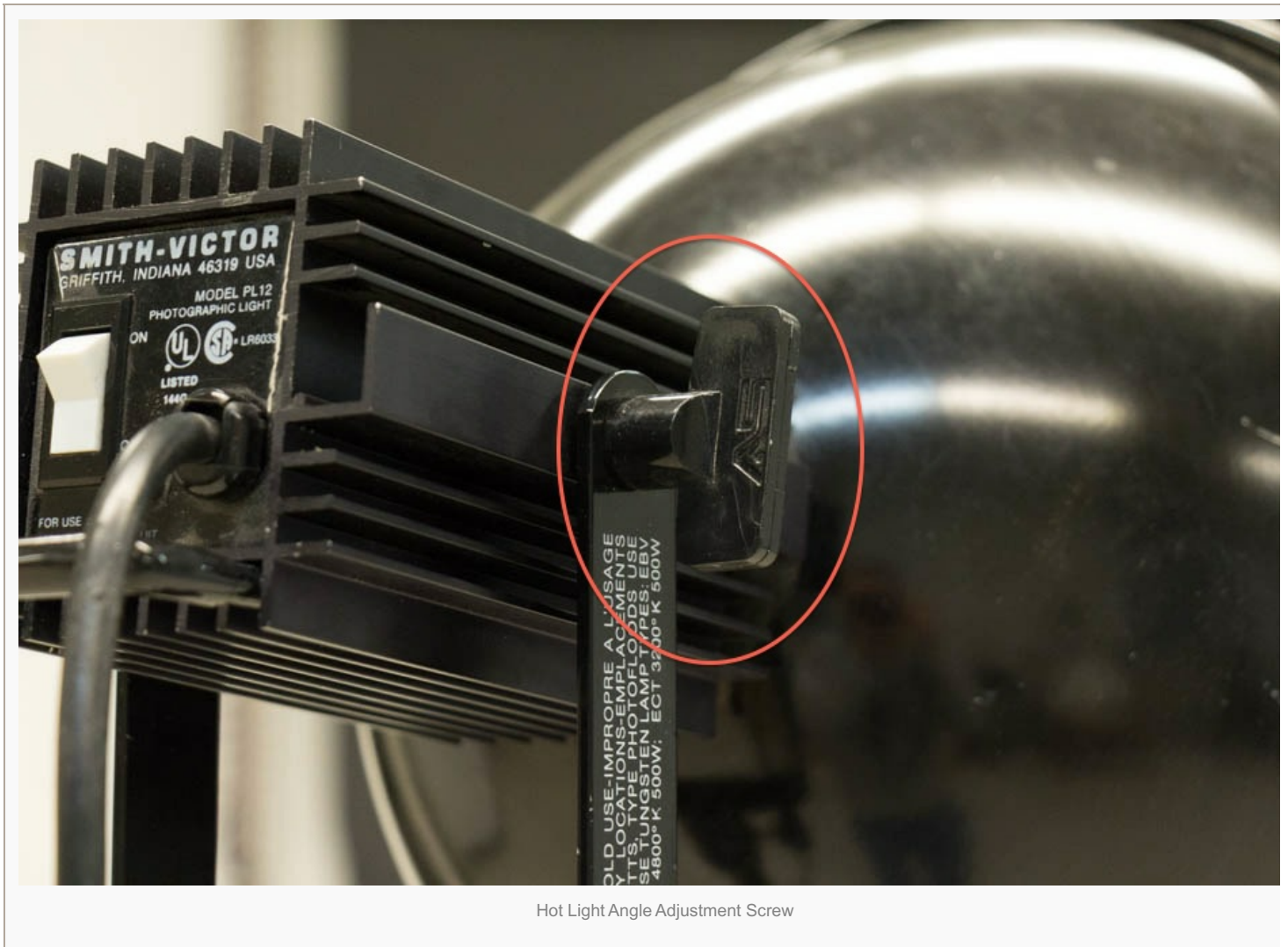




Use extension cords to avoid cables dangling in mid-air



The hot light has a screw that is used to loosen the up/down pivot of the light so it can be adjusted at any desired angle.



## Light Modifiers for Hot Lights

### Barn Doors

Barn doors are large flaps that can be opened and closed to varying degrees in order to shape the emitted light. Barn doors for hot lights mount on the front of the shade using pins that “grab” onto the edge of the shade.

**WARNING:** Always turn off the hot light and wait for it to cool a few minutes before you attach the barn doors and any other modifiers. Jostling the light while it is on will probably break the bulb’s fragile filament! Let a Cage monitor know if a bulb needs replacement.

The ring on the barn doors has the grabbing pins and also has a spring to help the ring to grab onto the shade.



Barn Door Pin Close-up



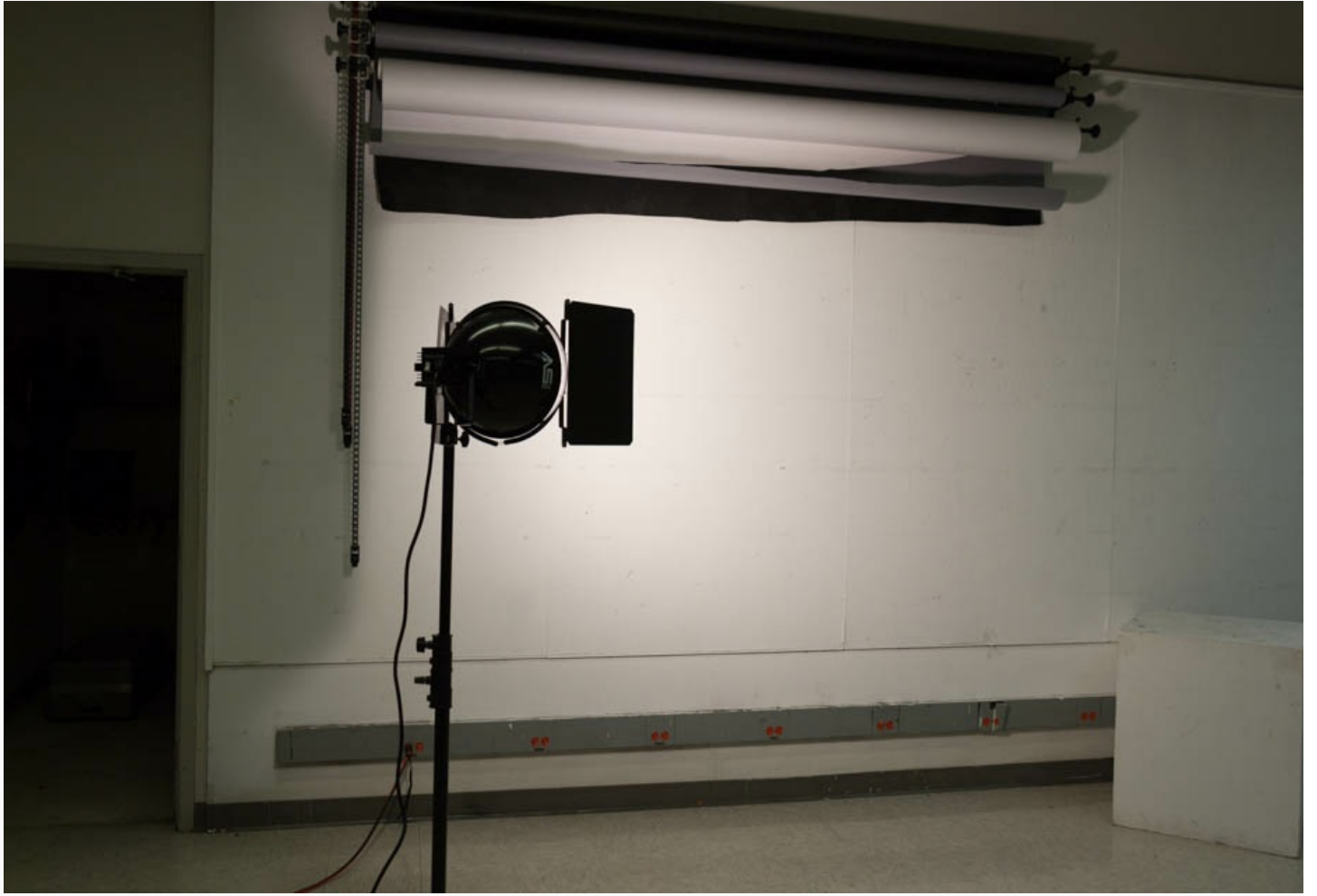
Barn Doors Folded with mounting pins highlighted

The following illustration shows what the barn doors look like when properly mounted on the hot light.



Barn doors on hot light

With the barn doors on the flaps can be used to “contain” the light output a bit. Some lights have barn doors on four sides that are more effective.



Hot Light On with Barn Doors Open (little bit of shadow from the left flap)



Hot light on with barn doors closed more

## Gels

Gels are heat-resistant colored transparent sheets of plastic that are used to tint the light output. The UD/Art Equipment Cage has a set of gels that you can borrow, called the "Gelly Roll".



Gelly Roll from the UD/Art Equipment Cage

The Gelly Roll has a variety of colors of gels. **NOTE:** Never cut the gels from the Cage!



Gelly Roll open showing some of the variety available

**Warning: Only use plastic you are certain is a gel!**

Only use plastic that you are certain is a gel, not plastic wrap or any other plastic sheeting! Regular plastic can melt and burn from the heat that hot lights and other photographic lighting can produce. If the plastic didn't come in the lighting kit or from another known gel set, then do not use it!

Gels can be hung in front of the hot lights only by using the barn doors. The barn doors have clips that are used to hold the gel sheets as seen in the following illustration.





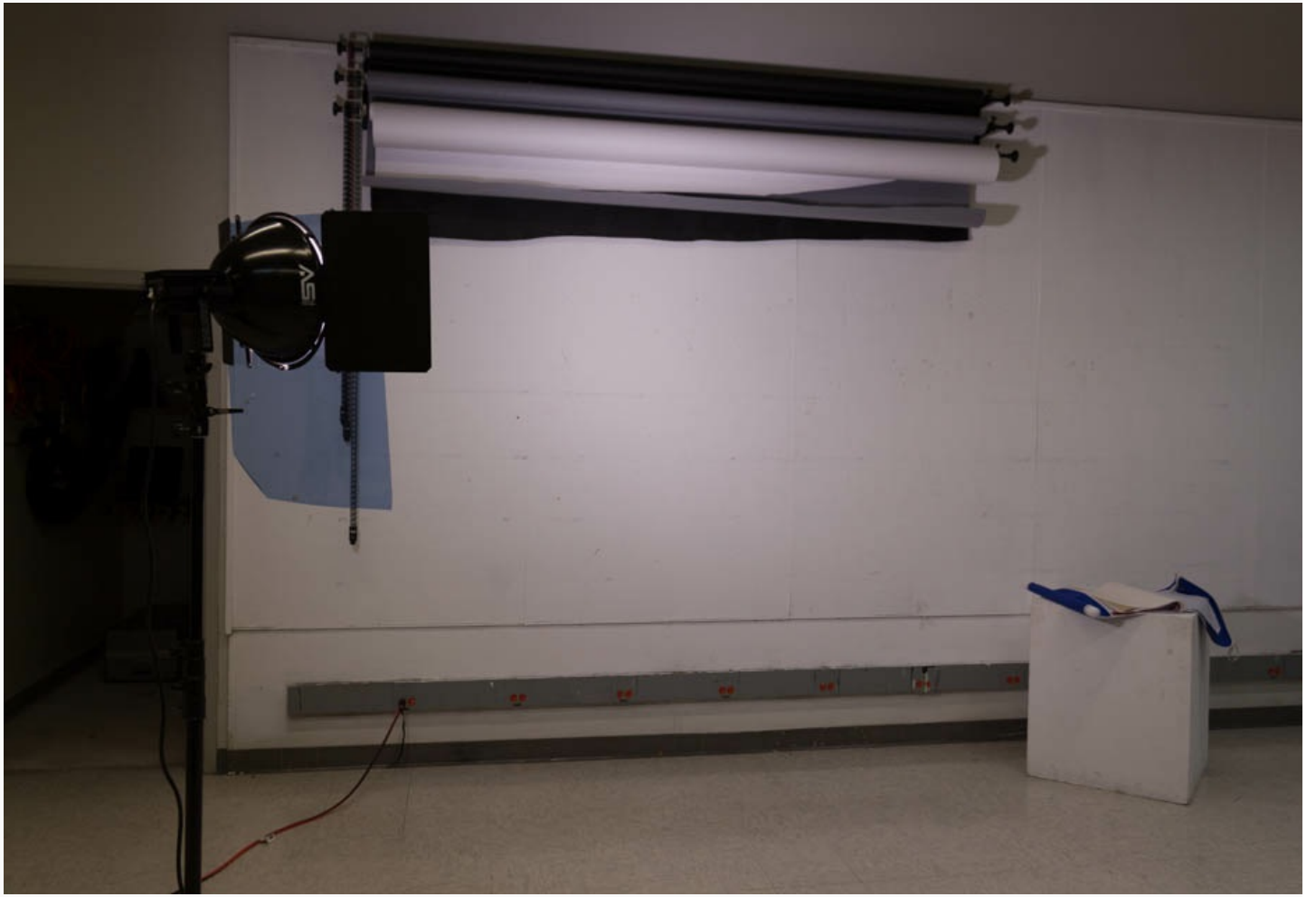
Gel clips on the barn doors

The following illustration shows how a gel should be clipped to the barn doors.

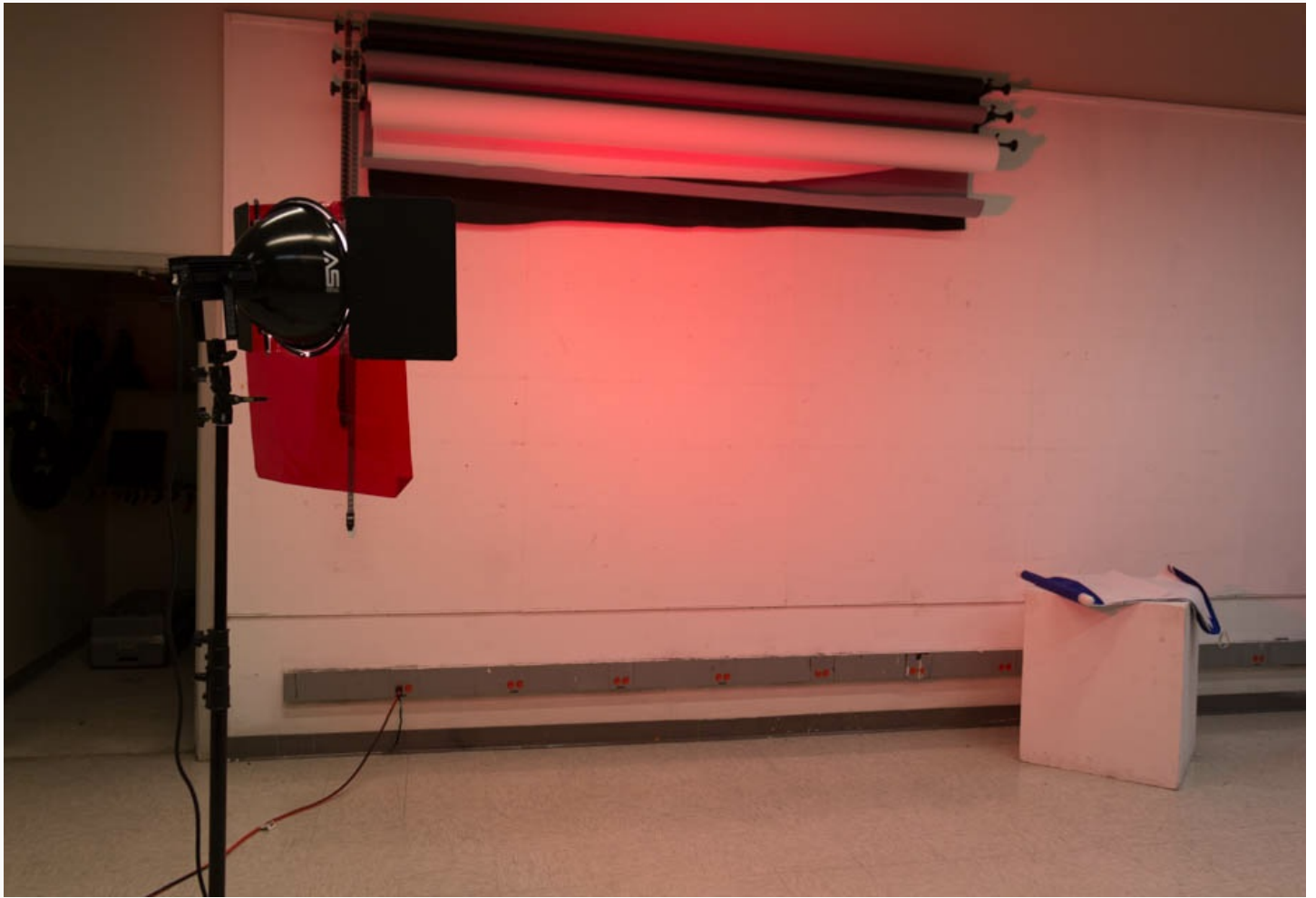


Gel on barn doors held on by the gel clips

The following two illustrations show examples of what the light from a hot light looks like with gels applied.



Hot Light on with (blue) daylight gel



Hot Light on with red gel

## **Umbrellas**

Lighting umbrellas are another way to modify the light output of a hot light. Only umbrellas meant for use with hot photographic lights may be used with hot lights. Only use umbrellas that come in a lighting kit or those that are labeled as acceptable for hot lights!



Folded lighting umbrella



Only umbrellas in lighting kits or those labeled as OK for use with hot lights may be used!

## **Umbrella swivels**

In order to use an umbrella with a hot light, you must use an umbrella swivel. An umbrella swivel goes between the light stand and the light and provides a hole into which one clamps the pole of the umbrella. The hole for the umbrella pole is usually slanted so that the umbrella is tilted into the path of the light output.

Adapter Pin, then Hot Light

Umbrella's Pole

Light Stand's Pin

Umbrella swivel (note hole for umbrella pole is slanted upward toward the light)

The end of the swivel without the umbrella hole is mounted onto the stand.



Umbrella Swivel Properly Seated on Stand

Since the light needs a mounting pin and the umbrella swivel has two socket ends, an adapter pin is used to provide the pin for the light.





Adapter Pin for Swivel

Here's what the pin looks like when properly seated in the umbrella swivel.



Adapter Pin in Swivel on Stand

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The light's socket mounts on the adapter pin just like it would on a bare stand.



NOT FOR HOUSEHOLD USE-IMPROPRE A L'USAGE  
DOMESTIQUE DRY LOCATIONS-EMPLACEMENT  
SECS. MAX. 500WATTS, TYPE PHOTOFLOODS US  
MEDIUM SCREW BASE TUNGSTEN LAMP TYPES EB  
3400° K 500W; EBW 4800° K 500W; ECT 3200° K 500W

Hot Light on Adapter Pin on Swivel on Stand

## Reflecting vs. diffusing umbrellas

There are two types of light modifier umbrellas: reflecting and diffusing. Light is shone into a reflecting umbrella and it bounces back out of the umbrella. This has the effect of making a larger, but less intense, light source (compared to the bare hot light).



Umbrella set up as a reflector. Light on the wall is much more spread out and less intense. Note: The umbrella in the illustration is not a true reflecting umbrella because it lets light through it. It did have a shiny interior, so it did reflect some of the light.

Light is shone through a diffusing umbrella which results in a larger light source with very scattered (aka. diffuse) light. This produces much less harsh shadows on the subject.



Umbrella in the diffusing arrangement. Note: Some of the light is reflected back and lost. The light toward the wall is reduced and scattered.

## Packing up the hot lights

When packing up the hot light, pivot the mounting bracket arm fully away from the reflector and loosely wrap the cord so it clears the bulb socket housing and rests on the reflector. Use the velcro wrap to keep the cord neat. Put it back where you found it (on the shelf in the Lighting Studio's equipment room or the kit you borrowed from the Cage).

## Conclusion

Here are some things that you need to remember about hot lights and their use.

- Use extension cords to avoid cables dangling in mid-air (trip hazard!).
- Only set up hot lights and/or add modifiers when the light is cooled off to avoid breaking the bulb's filament. Hot lighting equipment is a burn hazard. Always use caution when touching lights.
- If you plan on using umbrellas, you will need an umbrella swivel and an adapter pin for each one. Also, only use umbrellas labeled as approved for hot light use or found in the light kit itself.
- Gels can be clipped to the front of the barn doors. Only use lighting gels, not plastic wrap or some other unknown clear plastic. Regular plastic will melt and burn!



A Hot Light in its packed up state