

HD-1 MK-III SEARCHLIGHT OPERATING INSTRUCTIONS & MAINTENANCE

SETUP*

1. Place the Searchlight in the desired location taking care to ensure there are no obstructions to the Searchlight and that it can rotate freely and safely. The HD-1 is designed for the outdoors and can be operated and left out in the rain, snow, moderate windy environments.
When placing on a rooftop, Best results are obtained when the searchlight is placed on top of a large HVAC unit taking care not to place the searchlight over any blowers or fans and ensure the searchlights power cord does not pass over or through any operational parts of the HVAC unit such as any areas that move or get hot. be wary of any natural gas lines or pipes as well and NEVER run any power cords near any gas lines/pipes or any combustable materials.
2. The searchlight should be placed on a strong/sturdy flat and level surface.
it is ok if the surface is slight angled such as a slightly sloped rooftop, however it is not recommended to operate the searchlight on a slope over 5 L°.
3. **HOUSE POWER:** Plug in the Searchlight to any standard 110-120vac wall outlet.
The searchlight will be operating once it is plugged in.
The Searchlight pulls 9.4 Amperes during normal operation, a 15-20amp dedicated outlet is recommended to avoid overloading/tripping of the circuit breaker.
If the outlet is not dedicated, simply ensure there are no, or very little other electrical items sharing the same outlet/circuit.
GENERATOR POWER: Plug in the Searchlight to any standard 110-120vac outlet on the Generator.
The searchlight will be operating once plugged in and the Generator is running.
The Searchlight pulls 9.4 Amperes during normal operation, a 15-20amp outlet is required.
Do not use the same circuit on the Generator to power anything else.
Only good quality "Inverter" type generators (not vehicle power inverters) are recommended, using lesser, cheaper "alternator" or "modified Sine Wave" type Generators can cause operational problems with the searchlight, especially with the searchlights rotation.
Use of an inadequate generator to power the searchlight will completely void the warranty.
4. An extension cord can be used with the Searchlight The cord must be 14ga or heavier.
If using an extension cord, do not exceed 100 feet in cord length(14ga) or 150 feet(12a) otherwise you may encounter voltage drop problems causing the searchlight to shut down.
(this is the same effect as the "Long Garden Hose effect")
16a cords can be used if the total length is 50 feet or less.
5. *****IMPORTANT***** When power is applied to the searchlight, the searchlight MUST be allowed to warm up to FULL BRIGHTNESS, before the searchlight is turned off or unplugged.
Failure to properly allow the searchlight to warm up greatly reduces lamp life and brightness.

ADJUSTMENT & OPERATION*

1. The searchlight controls are located on the bottom/underside of the base. To locate them easily, simply look for the small round "NASA Searchlights" label on the top side of the searchlight base, the controls are directly under the label on the bottom.
The controls are (starting from the rubber foot) rotation direction toggle switch, rotation speed control knob, the searchlights circuit breaker, and lastly, the power cord.
2. With the searchlight operating, adjust the rotation speed knob until the searchlight stops rotating.
3. Loosen the side handles and point the head at the desired angle.
Lower angles project further and increase visibility at a distance. (the lower you can reasonably and safely point the light, the further away people will be able to see it).
4. Ensure that there is no light intrusion into buildings, windows, etc. throughout the Searchlights full 360° rotation. The light head can be rotated by hand even when the rotation is active and operating, stopping the rotation by grabbing the head will not damage the unit.
5. Adjust the rotation speed control knob to the desired rotational speed/RPM.
Slower speeds are recommended.
Rotating the light fast or too fast makes it difficult for people to see it as the beam in the sky passes by too quickly. In most cases, a speed of 1.0 - 2.0 rpm will achieve best results.
The searchlight is capable of rotating from 0 (stopped) to approximately 15 rpm (maximum)
The searchlight can sustain any speed/rpm indefinitely without any problem.
NEVER allow the light beam to be pointed stationary onto any objects, this can cause a fire!*
It is ok if the light beam passes over or across an object such as a tree or solid building wall etc. as long as the beam is always moving or rotating.
NEVER operate or use the searchlight indoors, this can cause a fire!*
6. After everything has been setup and adjusted, make a final check by simply watching the searchlight operate ensuring everything is operating smoothly and that the light beam is not intruding into any buildings, windows, hotels, etc.
7. **COOL DOWN PERIOD:**
The searchlight can be moved/stowed/secured/transported shortly after turning it off.
There is no need to wait any more than 1-2 minutes after turning it off.
A simple way to determine when it is safe to move the searchlight is to simply look at the lamp AFTER IT HAS BEEN SHUT OFF (**NEVER look into the light while it is on!**) and once the electrodes in the lamp are no longer glowing orange it is perfectly safe to move the searchlight. (typically less than a minute)

TIMER OPERATION

1. A timer can be used to automatically operate the searchlight.
2. Any OUTDOOR / Weather resistant timer can be used however it must have a continuous operating power rating of 15 Amperes or more.
Timers can be used with a generator setup however, the generator must always be operating and the timer continuously powered otherwise, the timer will "forget" all of its settings and day/date/time settings.
3. A good and recommended inexpensive digital 7 day timer is supplied with your new HD-1 Searchlight. This same timer as well as similar timers are readily available from home improvement stores.
4. Plug the timer into the 110-120vac outlet, do not plug the searchlight into the timer yet.
5. Set the Day and Time on the timer first. Be sure to get the AM/PM settings correct!
6. Set the desired timer programs following the instructions provided by the timer manufacturer. Again, be sure to get the AM/PM settings correct, incorrect AM/PM settings can result in the searchlight operating during the day and possibly never shutting off!
NOTE: Midnight is 12:00 AM not pm, NOON is 12:00PM not am. When setting the timer to operate the searchlight starting in the evening and then shutting off at a time after midnight passes, on only specific days, pay careful attention to the day of the week settings.
EXAMPLE: you want the light to operate only on a Friday night from 8pm until 2am, you would set the timer to turn the light on at 8pm FRIDAY and off at 2am SATURDAY. Setting it to turn off, in this example, at 2AM on FRIDAY would end up running the searchlight for 6 days solid!
NEVER set the timer to operate the searchlight for less than 2 minutes! The searchlight must be allowed to warm up each and every time it is turned on.
7. Set the timer for its "timed" operation, typically this setting is indicated by an icon reading "AUTO" however some timers may differ.
8. Plug the searchlight power cord into the outlet on the timer.
9. To test the searchlight with the timer to ensure the timer functions, simply press the appropriate button on the timer (typically labeled either "MODE", "MAN" or "MANUAL") until the timer is put into the forced "ON" setting (also known as "BYPASS" setting). The searchlight should turn on and begin its warm up. Again, be sure to let the searchlight warm up to full brightness before turning it off or setting the timer back to timed operation.
10. Put the timer back to timed / auto mode. Assuming the timer is set properly, the searchlight should turn on and off as programmed in the timer.

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MAINTENANCE

The HD-1 Searchlight requires practically no maintenance when used in typical outdoor environments however, some maintenance is recommended to maximize the life and performance of the searchlight especially when the searchlight is used in extreme environments such as high dust/dirt areas, and/or places of high humidity, corrosive, marine, pollution, etc.

LAMP:

1. The lamp is a very special 850 watt Direct Current High Intensity Mercury-Argon Discharge Lamp. It should be handled with care at anytime the lamp is removed from the searchlight.
2. The lamp contains MERCURY, please refer to the handling sheet included with each new lamp for handling and disposal precautions. (this same sheet has also been included with your new HD-1.)
3. The lamp is SAFE TO HANDLE when cold, unlike xenon lamps.
No ballistic gear is needed to change the lamp, however eye safety glasses or goggles are recommended when handling anything glass, and cotton gloves to protect the lamp from getting oils / dirt from your fingers onto the lamp which can cause the lamp to fail and void the warranty.
4. Replace the lamp every 750 hours (1000 hours MAX) failure to do so will result in major and costly damage to the searchlight and completely void the warranty.
5. To replace the lamp:
 - (a) Remove 6 screws around the front glass frame assembly.
 - (b) Remove the front glass/frame assembly and carefully set it aside.
This is a good time to clean the inside of the glass using a non-streaking glass cleaner and rag.
 - (c) Carefully unscrew the thumbwheel at the top of the lamp and remove the anode wire.
 - (d) Unscrew the lamp from the lamp holder by rotating counter-clockwise by turning the lamp from the knurled base of the lamp. never turn or handle the lamp by any of the glass portions.
If you cannot turn the lamp by hand, a small pair of channel lock pliers can be used at the base of the lamp being VERY careful not to break the lamp or scratch the mirror.
 - (e) Install the new lamp by reversing steps a,b,c,d. Be sure to hand tighten the lamp very snugly.
6. If you accidentally touch the glass portions of the lamp, simply carefully clean the glass portions with a clean cotton cloth and isopropyl alcohol.
7. After replacing the front glass of the searchlight, clean it with a non-streaking glass cleaner.

VENTS:

The HD-1 Searchlight vents normally require no maintenance, however, in certain environments it may become necessary to inspect and/or clean the vent screens.

VENT SCREEN CLEANING:

- (a) using a soft nylon bristle paintbrush or brush such as a small dustpan brush commonly found at Walmart or Target, brush and clear off any build up of dust, dirt, debris on the vent screens located on the back end of the searchlight. (the panel opposite the glass).
 - (b) Using the same brush, inspect and clean the exhaust vents which are just below the front glass behind a wind deflecting baffle. There is no need to remove the baffle.
- There should never be any maintenance for anything on or within the rotating base.

The entire searchlight is manufactured of corrosion resistant materials including Stainless Steel, Aluminum, and various polymers and plastics.

There should be no maintenance needed for the cabinet, housings, etc. except in very extreme environments.

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