

E-01a: Repair/Replace Lighting Device (Multi-Vapor)

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- The sprinkler system in the ceiling poses an overhead hazard when operating the manlift.
- Replacing lights over heat treat areas involve heat hazard.
- New lights have explosive potential, keep your distance when applying power to a newly replaced light.

EQUIPMENT

- basic Electrician hand tools
- manlift
- digital volt-ohm meter (DVM)

RESOURCES

- experienced journeyman (for wattage information)
- manufacturer's specifications, if available
- transformer data plate information

Repair/Replace Lighting Device (Multi-Vapor)

1. Sign in for the lighting device repair ticket.
 - Follow your facility instructions for signing in for a job.
2. Obtain the tools and equipment.
 - Use a JLG or other manlift device to reach the lighting device.
 - Follow all facility safety procedures when operating the manlift and working overhead.

Warning: Remember to check the oil and fuel in the manlift. Check the manlift operation before moving to work site. Wear the required safety harness and remember to attach the harness to the basket. Mark the work area with the required overhead work safety sign.

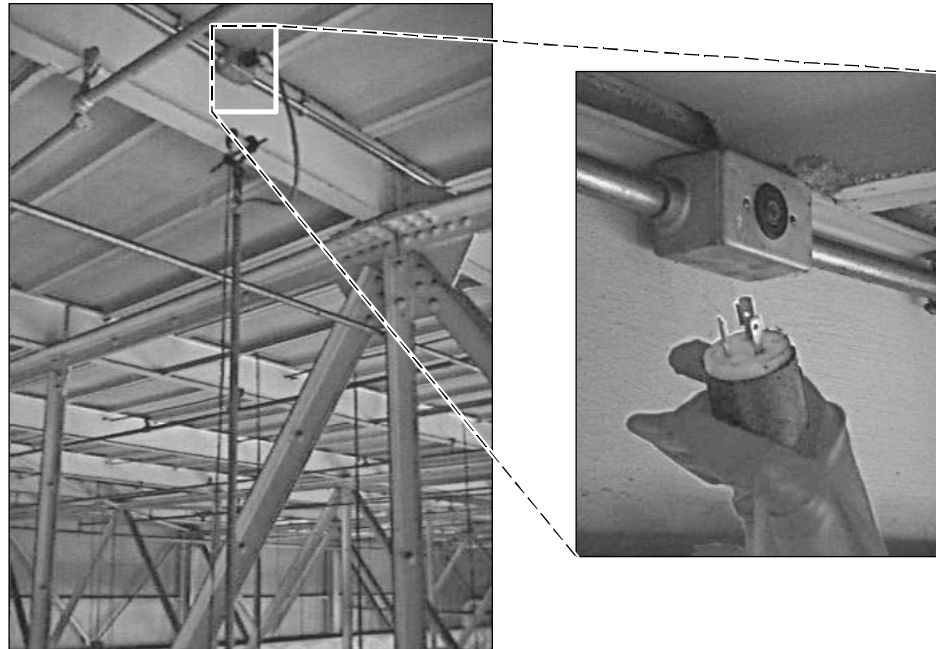
3. Move the lift to the job site and check out the job.
 - Bring the lamp and the fuse, if the size is known.
 - Place the overhead work safety sign so that it is clearly visible.
4. Lockout/tagout the overhead power according to plant procedures.
 - Lockout/tagout any overhead cranes in the area.



Crane Power Supply Locked Out and Tagged

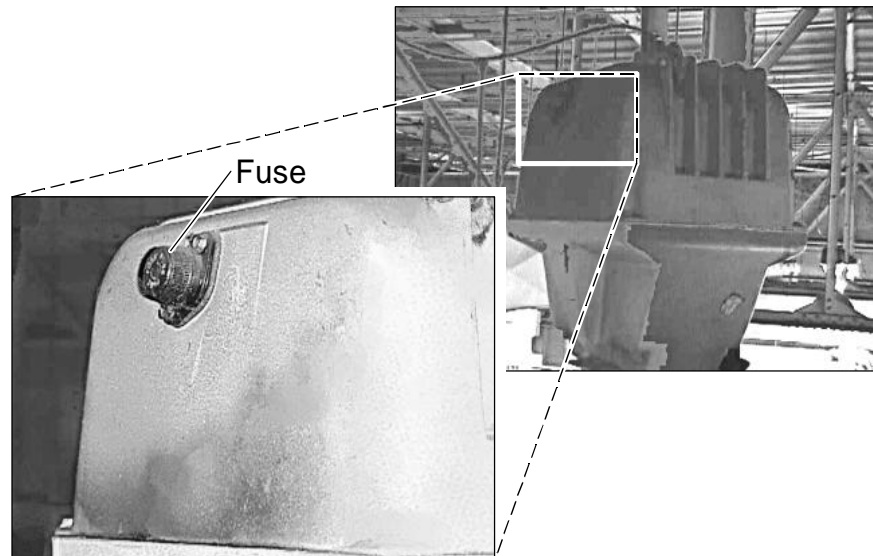
5. Position the lift to the lighting device.
 - Remember to attach the safety harness to the basket.

6. Unplug the lighting device.



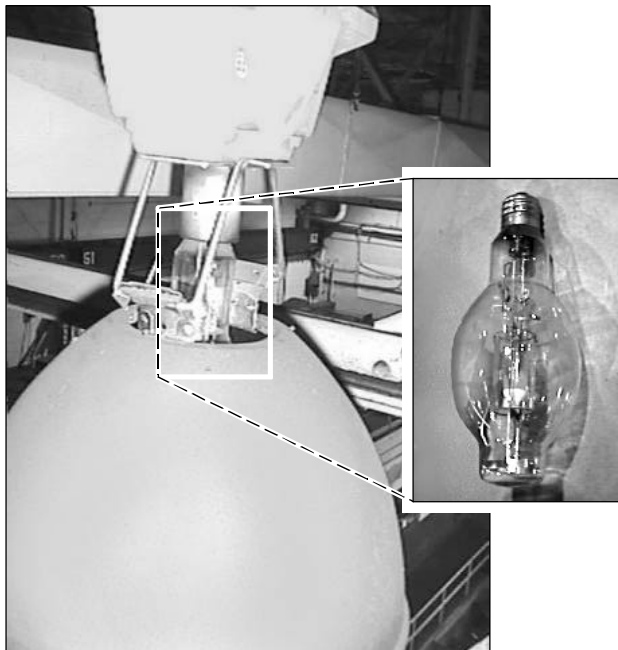
Lighting Device Receptacle

7. Verify voltage at the receptacle.
8. Remove the fuse, if applicable, and check the fuse operation.



Multi-vapor Fuse Location

9. Replace the fuse if it is blown.
 - Compare the fuse specifications with the replacement fuse.
 - Obtain a new fuse at this time, if necessary.
10. Replace the lamp if there is no fuse or the fuse is blown.
 - Compare the lamp specifications with the replacement lamp.
 - Obtain a new lamp at this time, if necessary.



Warning: A defective lamp may explode and cause personal injury.
Always stay away when a new bulb is installed in the lamp.

11. Plug in the lighting device.
 - Verify that the light illuminates, if so proceed to step 17.
 - If the lighting lamp does not illuminate, unplug the lighting device, and replace the ballast.

12. Remove the lighting device to rebuild the ballast.

Hanger Bolt



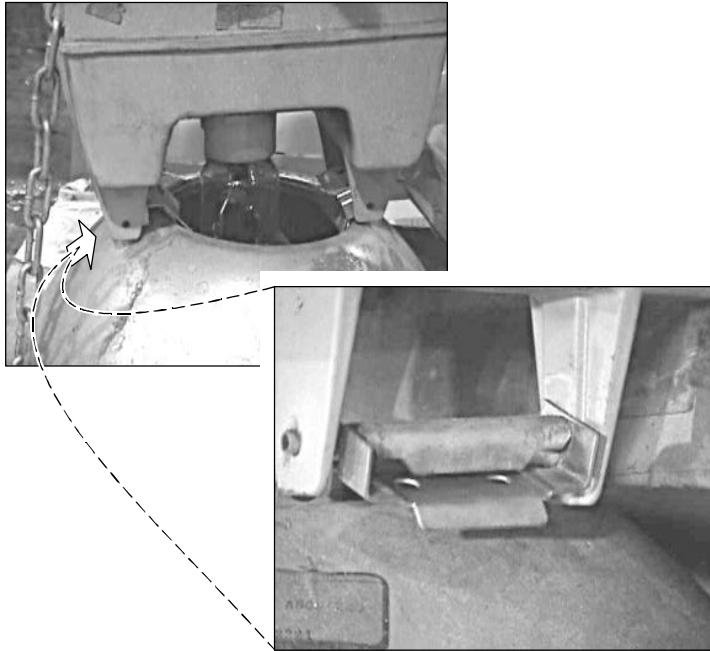
Lighting Device Removal

- Remove the conduit from the hanging device at the hanger bolt.
 - Secure the lighting device in the basket.
 - Remove the safety cable from the I-beam.
 - Lower the manlift with the lighting device to the floor.
13. Take the lighting device to the shop.
14. Rebuild the lighting device with a new ballast.
- Obtain or order a new ballast from the crib. Match the ballast specifications.

Ballast Specification



- Replace the cord, if needed, and move the conduit hanger to the new ballast.
- Remove and clean the lamp shade.



Lamp Shade and Ballast Connector

- Reinstall the lamp shade on the new ballast.
 - Install a new lamp, if necessary.
 - Install a new fuse, if necessary.
15. Install the rebuilt lighting device.
 16. Verify the light operation.
 - Plug the reinstalled lighting device into the receptacle.
 - Verify that the light illuminates, as expected.
 17. Remove the lockout/tagout from the crane power supply.
 18. Clean up the work area and sign off on the job.