



ARIZONA DEPARTMENT OF ECONOMIC SECURITY

ARIZONA INDUSTRIES FOR THE BLIND

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Mandatory Corrective Action

for

NSN 6240-01-455-7873, Surgical Light, Manufactured by Halogen Light, model HLP-002A, a component of Table, Operating Field, NSN 6530-01-321-5592

Description of problem – High Electrical chassis leakage.

Recent examination and safety inspection of the surgical light disclosed excessive electrical leakage current (>300 uA) from ground to the chassis. We contacted Arizona Industries for the Blind and together, we thought the problem was solved. The initial resolution indicated that a wire was to be added connecting service ground to the chassis as well as the printed circuit board (PCB).

That was not the solution, as the added wire increased the leakage caused by the capacitive reactance of the conductors on the PCB in close proximity to each other.

The resolution was, eliminate the ground wire from the PCB, where it is not connected to anything, but ensure that the chassis ground connection was maintained.

Procedure - Biomedical maintenance personnel to inspect and then follow this instruction procedure to correct the ground wiring used in the surgical light.

Safety Concerns:

Disconnect the light from any power source prior to physical inspection. If the inspection discloses the problem, then perform corrective action. Following such correction, perform electrical safety test. If the device passes, then return it to service.

Failure to disconnect the power supply could result in electrical shock.

Inspection and Corrective action:

1. Ensure that the light is not connected to a power supply.
2. Place the light on your work surface oriented with the light head to the right. The line cord access cover should face up. This location is where the cord enters the light on the side of the chassis near the mounting post. The light will match the orientation of the drawings shown below.
3. Remove the cord access cover. It is **not** necessary to remove the circuit board from the light. When the circuit board is installed in the chassis only the left end is exposed.
4. Confirm that the black phase leg is connected to the wire on the circuit board furthest from you as shown in figure 1 below. If this is not wired correctly the light may be damaged.

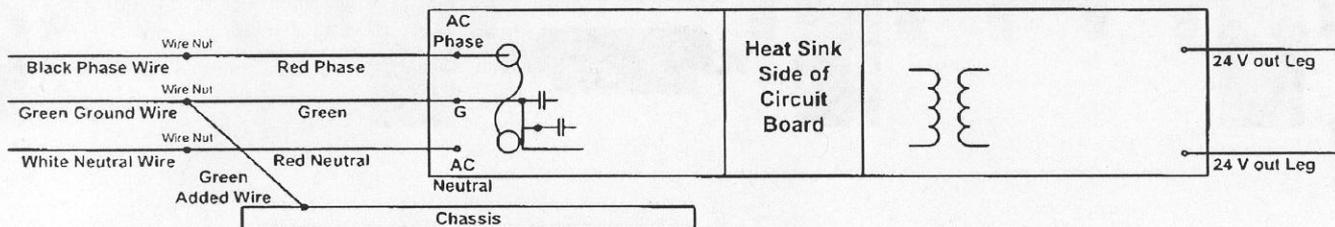


Figure 1 Initial Configuration

5. If the black phase wire is not correctly attached to the red phase line, correct it at this time. Reverse the supply leads if necessary.
6. Check for the green wire from the PCB to the chassis. That is the wire that will be relocated. If this wire is not found, it needs to be added at this time.
7. Drill a small hole in the chassis where it will be under the cord access cover and install a small screw with the head on the outside of the chassis. Use the screw to connect a short length of green wire (both ends stripped) to the chassis. Verify that no exposed part of the screw or wire is in contact with the circuit board.
8. Unscrew the wire nut on the cord green ground wire (it goes to the green middle wire from the circuit board and the green wire attached to the chassis, if it existed previously). Use the wire nut to reconnect the cord (green) ground leg to the green wire attached to the chassis.
9. Ensure that the line cord Green conductor is attached directly to the chassis with a screw.
10. Unscrew the wire nut from the cord white neutral leg (the wire from the circuit board that is nearest you as shown in figure 1 above). At this point there should be 2 loose wires (green and red) that come from the circuit board.
11. Replace the green wire on the Circuit board with a white wire of the same length.
12. Use a wire nut to reconnect the 2 loose wires (white and red) from the circuit board to the white neutral supply leg. The appearance of the wiring should now be as shown in figure 2 below.

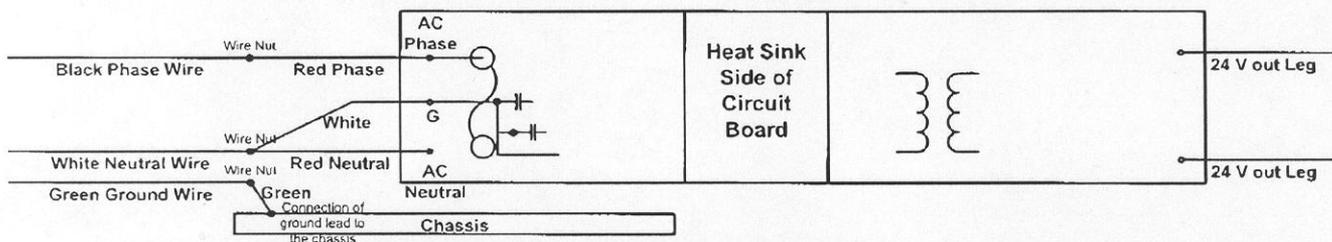


Figure 2 Completed Condition

13. Close the service supply cover using the machine screws that held it in place originally. Be careful to maintain a solid connection from the ground wire to the chassis.
14. Connect the light to the service supply and turn it on to verify proper operation.
15. Perform an electrical safety test. Electrical leakage should be about 20 uA or less.
16. If the light does not operate properly or does not pass electrical safety testing, it must be removed from service and repaired.

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