FEDERAL SIGNAL CORPORATION
Emergency Products

256660F
REV. F 101
Printed in U.S.A.

WIRING AND MAINTENANCE INSTRUCTIONS FOR FEDERAL AEROHAWK LIGHT ASSEMBLY MODELS AH1, AH1LC, AH2, AH2LC, AH3 AND AH4

SAFETY MESSAGE TO INSTALLERS

People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with this product and the related add-on products. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install this light: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes.
- A light system is a high current device. In order for it to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light is to be used.
- High voltages are present inside the strobe light equipped models during and after operation. Ensure that power is disconnected and wait at least ten minutes before removing the dome.
- Locate light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- You should frequently inspect the light to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

I. ELECTRICAL WIRING.

The Light Assembly is completely wired at the factory and does not require any additional internal wiring. The cable connected to the Light Assembly contains all the conductors necessary for proper control of all basic and optional functions. The diagrams in figures 1 and 2 illustrate the function of each conductor in the cable. Be sure to use fuses (current ratings shown in figures 1 and 2), wire and switches with adequate current capacity for each function.

II. NFPA INSTALLATION.

MESSAGE TO NFPA INSTALLERS

For mounting, color configuration, and mounting considerations, refer to the latest edition of the NFPA standard for automotive fire apparatus.

For Models AH1LC and AH2LC, use figures 3 and 4 as a guide (for mounting and wiring) when installing this light assembly as part of an NFPA certified system.

III. MAINTENANCE.

A. *Cleaning the Plastic Domes.*

WARNING

Crazing (cracking) of domes will cause reduced effectiveness of light system. Do not use cleaning agents (which will cause crazing) such as strong detergents, solvents, or petroleum products. If crazing of domes does occur, reliability of light for emergency purposes may be reduced until domes are replaced.

Ordinary cleaning of the plastic domes can be accomplished by using mild soap and a soft rag. Should fine scratches or a haze appear on the domes, they can ordinarily be removed with a non-abrasive, high quality, one-step, automotive paste cleaner/wax and a soft cloth.

B. *Lamp Replacement.*

WARNING

A serious injury may result if lamp is touched when hot. Always allow lamp to cool before removing. Halogen lamps are pressurized and if broken can result in flying glass. Always wear gloves and eye protection when handling the lamps.

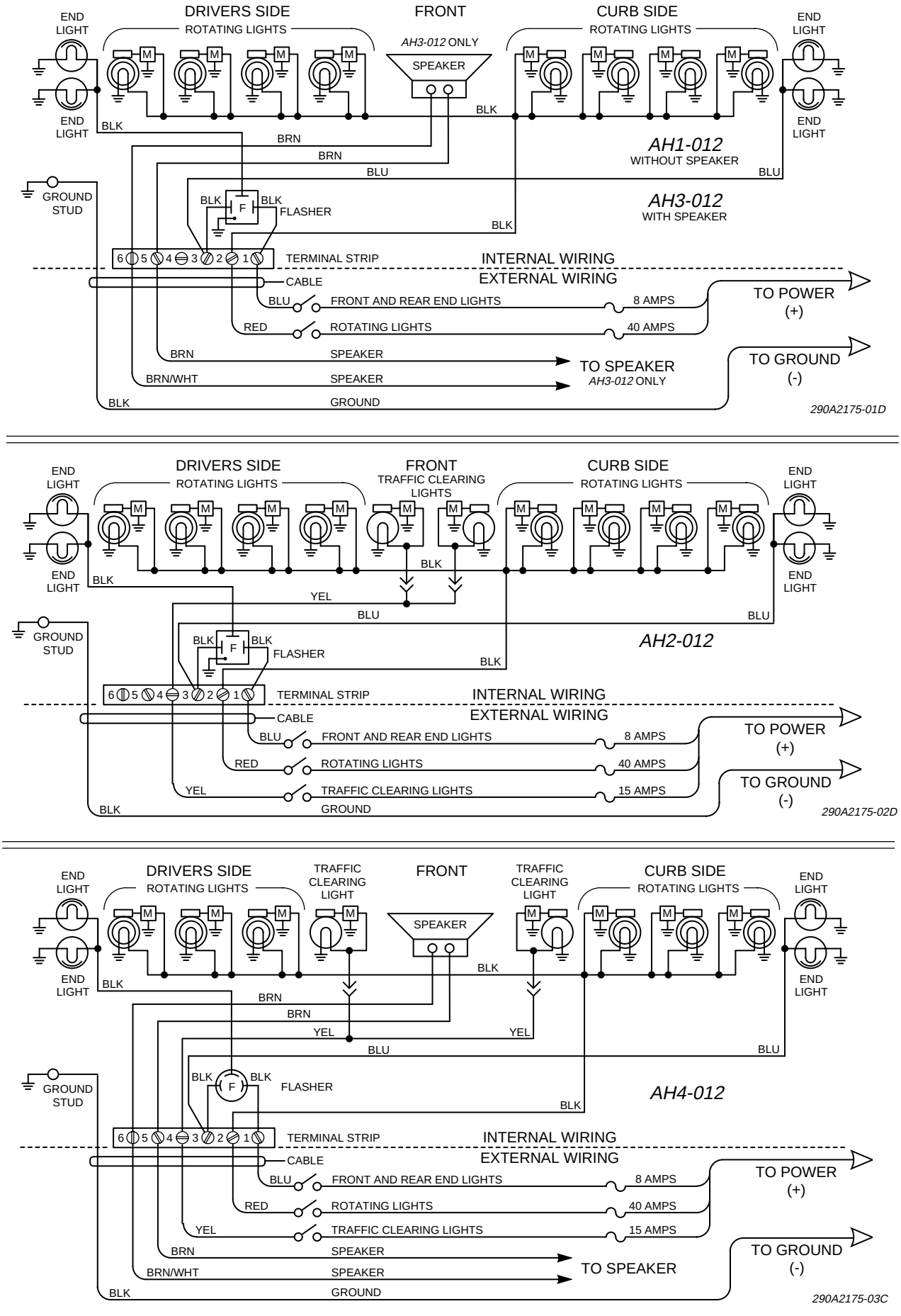
1. Dome Removal (see figure 5).

a. Turn-off power to Light Assembly.

b. Remove two 1/4-20 pan head screws which secure the dome to the light bar.

c. Carefully slide the domes off the light bar.

d. The domes can be replaced by reversing the procedure.


END LIGHT
DRIVERS SIDE
ROTATING LIGHTS
FRONT
AH3-012 ONLY
SPEAKER
CURB SIDE
ROTATING LIGHTS
END LIGHT
BLK
BRN
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AH1-012
WITHOUT SPEAKER
BLU
GROUND STUD
BLK
F
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FLASHER
AH3-012
WITH SPEAKER
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6 5 4 3 2 1
TERMINAL STRIP
INTERNAL WIRING
EXTERNAL WIRING
CABLE
BLU
FRONT AND REAR END LIGHTS
8 AMPS
TO POWER
(+)
RED
ROTATING LIGHTS
40 AMPS
BRN
SPEAKER
TO SPEAKER
AH3-012 ONLY
TO GROUND
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BRN/WHT
SPEAKER
BLK
GROUND
290A2175-01D
END LIGHT
DRIVERS SIDE
ROTATING LIGHTS
FRONT
TRAFFIC CLEARING LIGHTS
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BRN/WHT
SPEAKER
BLK
GROUND
290A2175-03C

Figure 1.

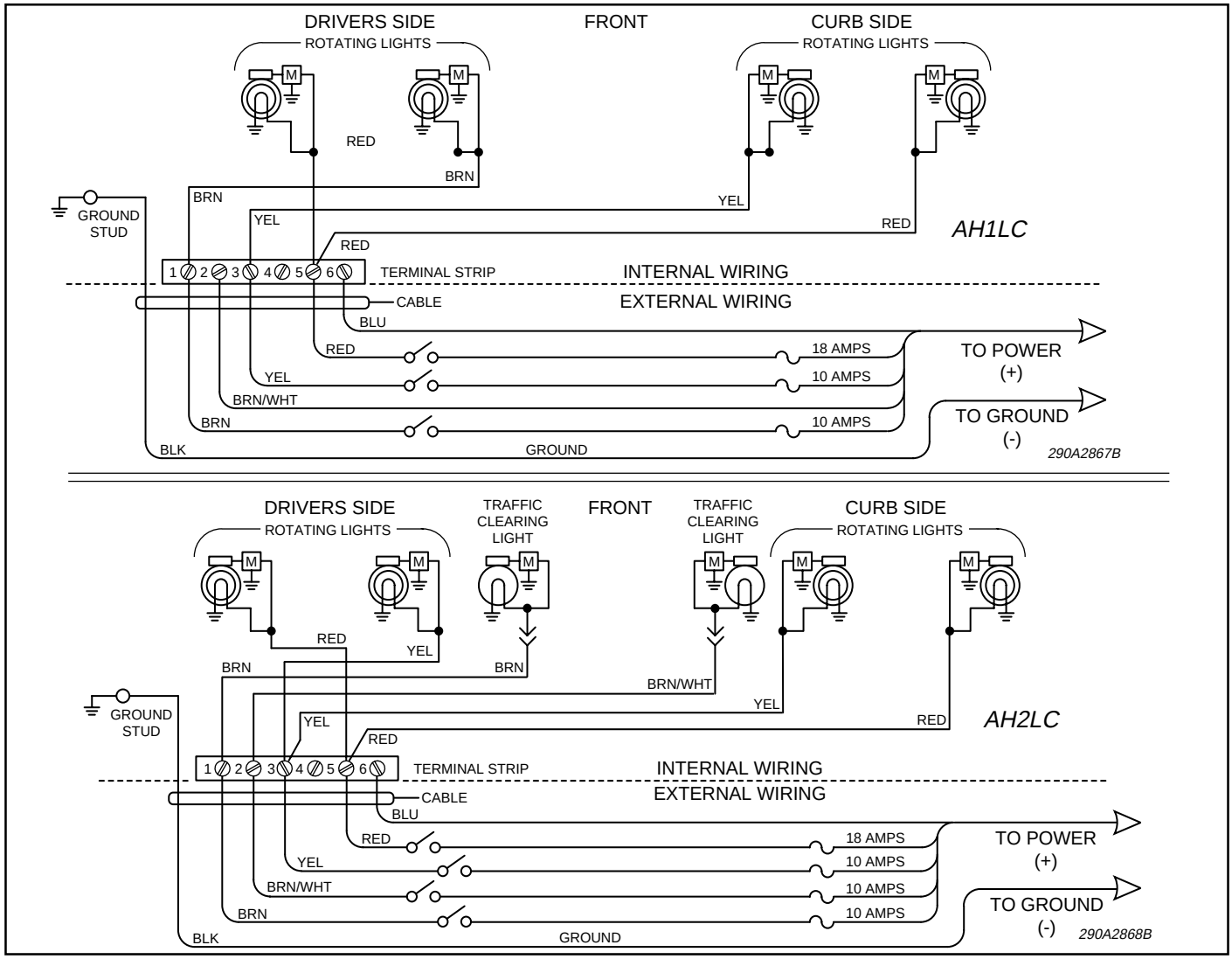

Figure 2.

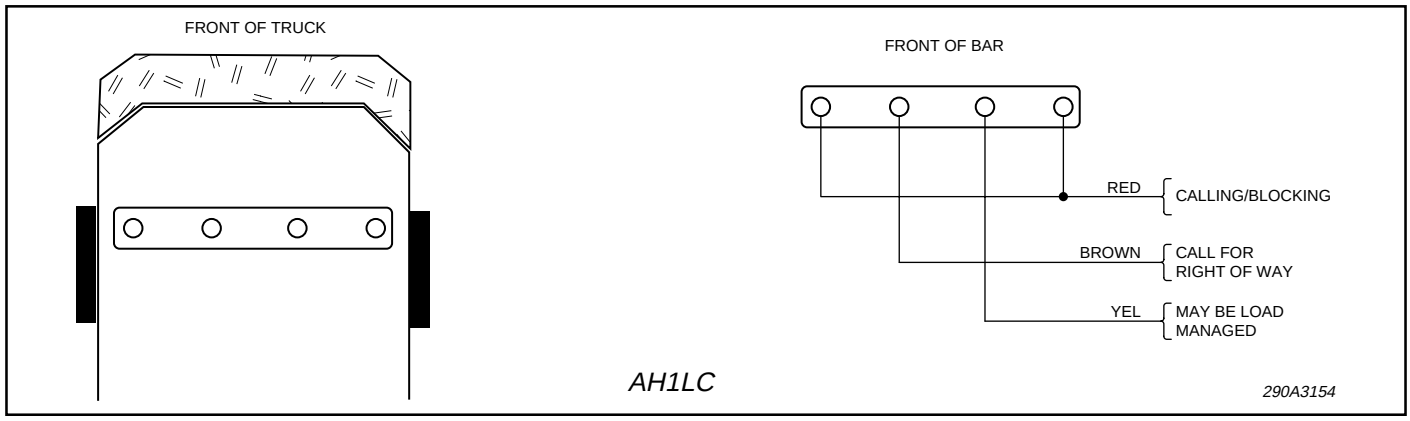

Figure 3.

2. Primary Rotating Lamps.

CAUTION

Forced rotation of the light mechanism will cause damage to the worm gear. ALWAYS rotate the light mechanism by rotating the motor shaft.

a. Rotate the reflector until the lamp clip (located at the base of the lamp) can be removed, and remove the clip by sliding it away from the reflector.

b. Note the lamp's orientation and pull the defective lamp and connector out of the socket.

CAUTION

When installing a new lamp, do not touch the glass portion. If the glass has been touched, shortened lamp life will result. If the glass end has been handled, it should be carefully cleaned with a grease solvent.

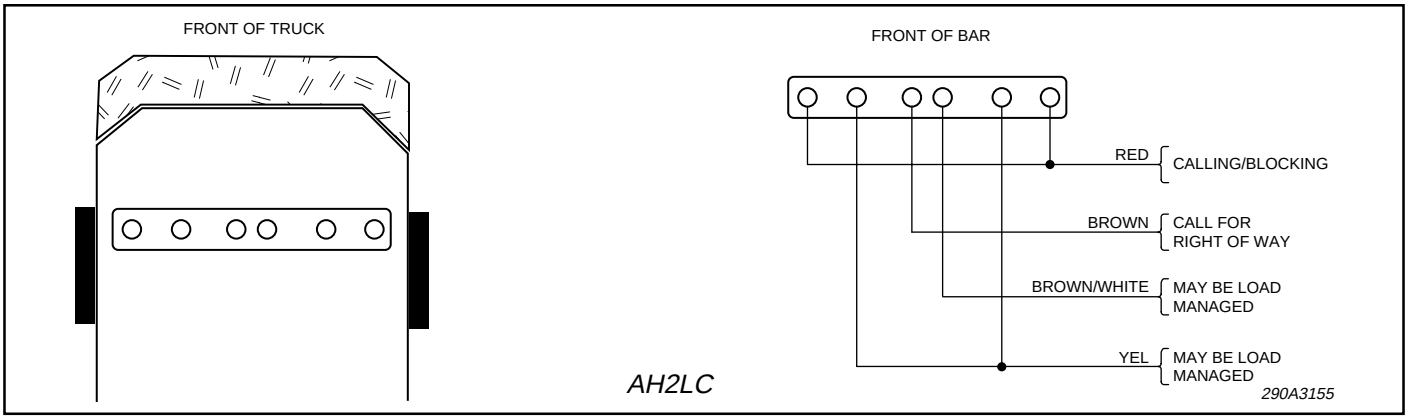

Figure 4.

c. Replace the defective lamp with a new H-1 halogen lamp (Federal Part No. 8440A265A). When reassembling, ensure that the lamp is secured to the connector and that the clip is properly seated in the grooves on the lamp socket.

3. Traffic Clearing Lamps.

Replace defective lamp by depressing and rotating it counter clockwise until spring tension is released. Then, remove lamp from socket. Replace with a 50-watt halogen lamp, #795 (Federal Part No. 8107A119A).

4. Flashing End Lamps.

Replace defective sealed beam lamp by pulling up on the wire form holding lamp in holder. Disconnect wires from back of lamp. Replace with an 18-watt sealed beam lamp, #4414 (Federal Part No. 8107A102A).

C. *Worm Gear and Bearing.*

All gears should be greased at least twice a year. Use medium consistency Dow Corning DC33 or equivalent type grease. Proceed as follows (see figure 6):

1. Remove lamp and clip from rotating light as described in paragraph II.B.2. above.

2. Lift-off reflector and worm gear. Lubricate with grease as shown in figure 6.

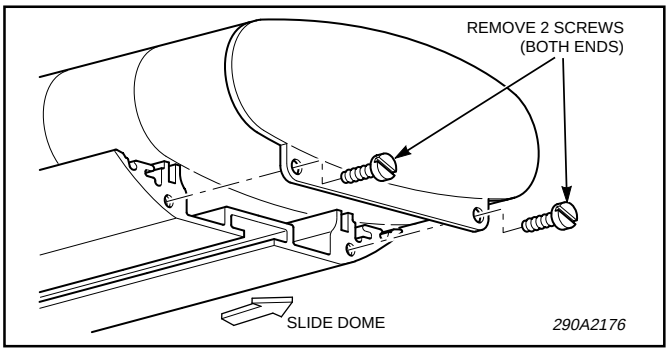

Figure 5.

3. Replace parts by performing the above procedure in reverse order.

NOTE

When reassembling, ensure that the lamp is secured to the connector and that the clip is properly seated in the grooves on the lamp socket.

D. *Motor.*

1. Before attempting to service the motor, ensure that the worm gear and worm are free of binding.

2. There should be a small amount of gear backlash for proper motor operation.

3. Replace motor if operation is sluggish or intermittent, after it has been determined that there is no binding and that all electrical connections are correct.

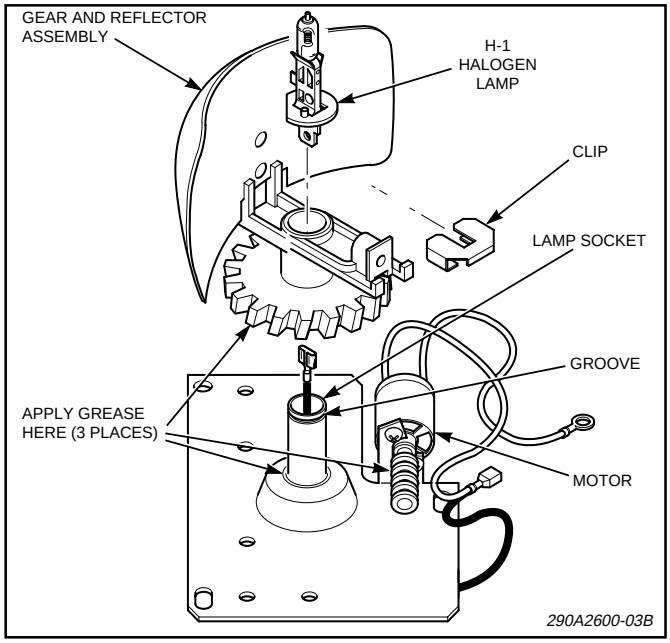

Figure 6.