



INSTRUCTION BULLETIN

No. 340631
Machine: Sentinel
Published: 03-2007
Rev. 00

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in the machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save the cost of ordering an entire kit.

NOTE: Numbers in parenthesis () are reference numbers for parts listed in Bill of Materials.

Installation instructions for **kit number 770170**

SYNOPSIS:

This kit contains the parts needed to install an arrow light kit onto Sentinel machines equipped with rear revolving lights.
Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS:

(Estimated time to complete: 2 hours)

Always be aware of locations of wires and hydraulic lines before drilling holes into the hopper. Do Not drill into wires or hydraulic lines.

PREPARATION:

1. Park the machine on a clean level surface, turn off the machine, remove the key, and set the parking brake.

FOR SAFETY: Before leaving or servicing machine, stop on level surface, set parking brake, turn off machine, and remove key.

2. Disconnect the battery cables from the batteries.



WARNING: Always disconnect battery cables from machine before working on electrical components.

INSTALLATION:

1. Remove the top cover and back cover from inside the cab. Set the covers and hardware aside. Refer to Fig. 1.

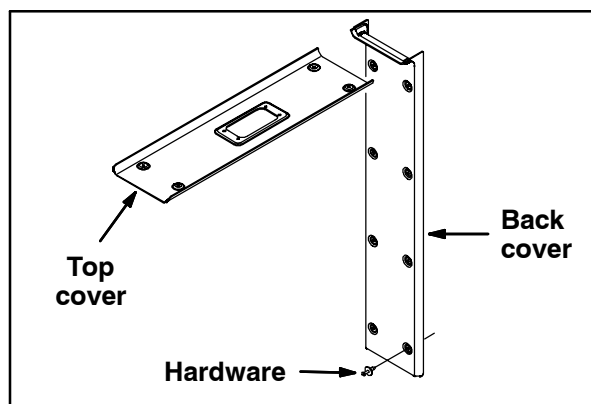


FIG. 1

2. Drill a 5/8 in. hole through the upper control panel and the metal backing behind the upper control panel. Refer to Fig. 2.

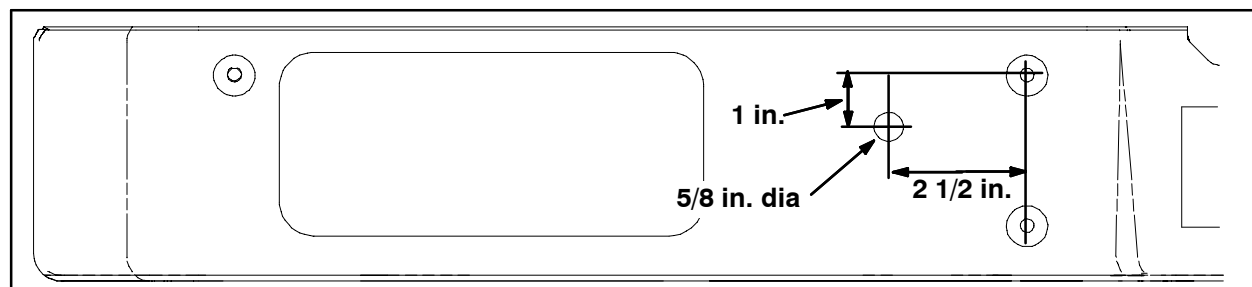


FIG. 2-Upper Control Panel

3. Remove the upper control panel from the machine. Set the upper control panel and hardware aside.
4. Drill two 13/64 in. holes into the top of the cab. Drill completely through both the cab and the insulation inside the cab. Refer to Fig. 3.

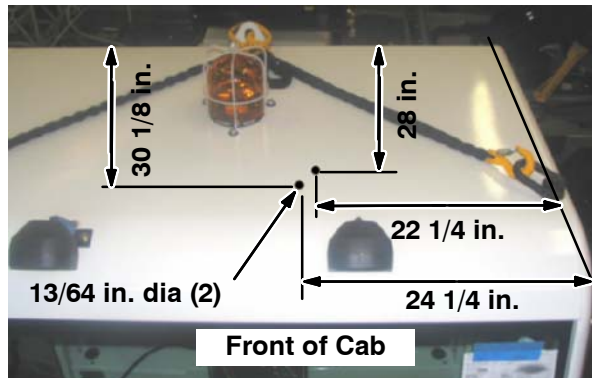


FIG. 3

5. Use an M6 X 1.0 tap to tap the holes drilled into the cab in the previous step. Refer to Fig. 3.
6. Use two hex screws (11), four flat washers (8), six hex nuts (10)-use as spacers, and two hex nuts (9) to install the controller included with the light assembly (1) to the cab. Refer to Fig. 4.

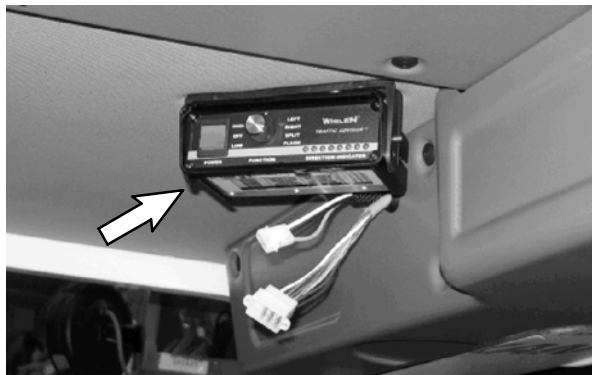


FIG. 4

7. Route the connector end of the arrow stick cable assembly (2) to be connected to the controller up through the channel at the rear and top of the cab, and to the upper control panel. Refer to Fig. 5 and Fig. 6.



FIG. 5

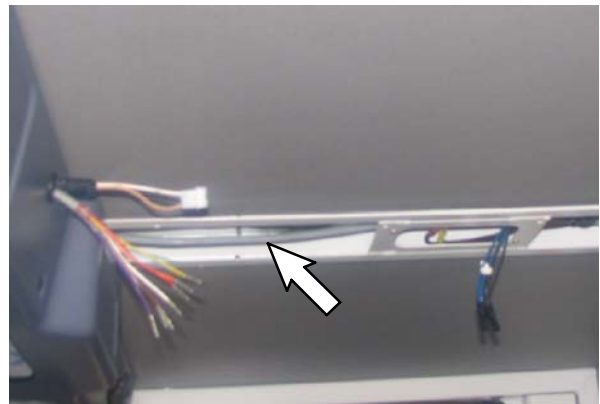


FIG. 6

8. Route the arrow stick controller connector on the main wire harness and the arrow stick cable assembly (2) through the 5/8 in. hole in the upper control panel and reinstall the panel onto the machine. Refer to Fig. 6 and Fig. 7.

9. Slide the grommet (6) over the arrow stick controller connector and arrow stick cable assembly (2) and install the grommet (6) into the 5/8 in. hole in the upper control panel and metal backing. Refer to Fig. 7.

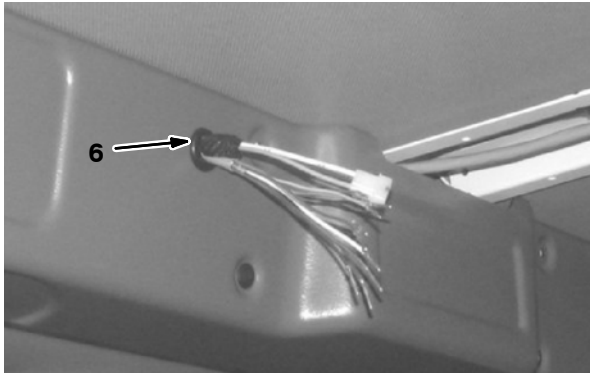


FIG. 7

10. Plug the the arrow stick controller connector from the main harness and the arrow stick cable assembly (2) into the controller. Refer to Fig. 7 and Fig. 34.
11. Remove the fuse panel cover from the center control console panel. Set the fuse panel cover aside. Refer to Fig. 8.

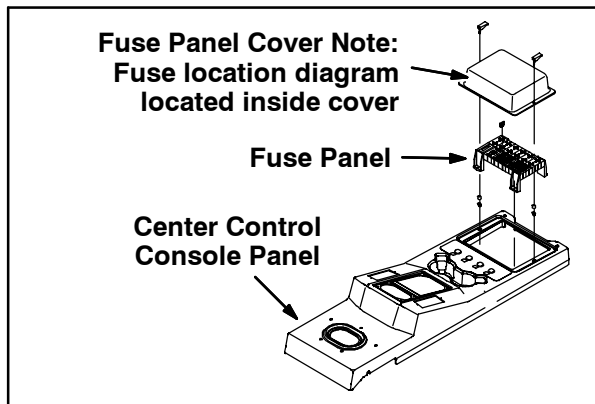


FIG. 8

12. Remove the hardware securing the fuse panel to the center control console panel and set the fuse panel next to the center control console panel. **Do not** disconnect the wire harness from the fuse panel. Set the hardware aside. Refer to Fig. 8.
13. Install the 20-Amp. fuse (5) into fuse box position FU-13 and the 5-Amp. fuse (12) into fuse box position FU-22. Refer to the label on the bottom of the fuse panel cover for fuse positions in the fuse box. Refer to Fig. 8 and Fig. 34.

14. Route the arrow stick cable assembly (2) down to the hole at the bottom of the cab. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 9.

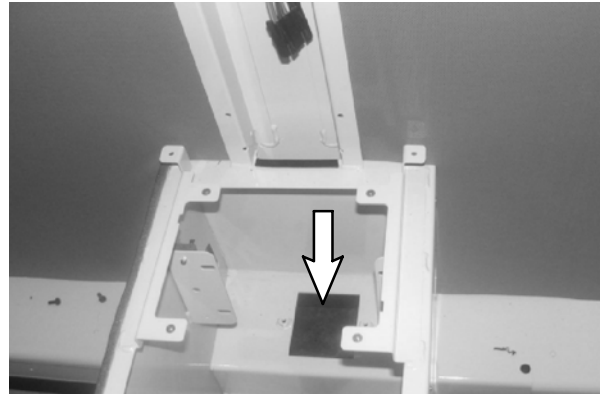


FIG. 9

15. Remove the motor guard and insulation from the hopper. Set the motor guard, insulation, and hardware aside. Refer to Fig. 10.

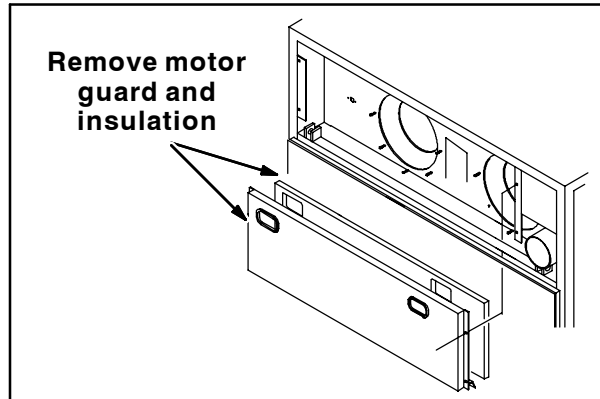


FIG. 10

16. Disconnect the hopper wire harness from the revolving light and remove the revolving light and guard from the hopper. Set the revolving light, guard, and all hardware aside. Refer to Fig. 11.

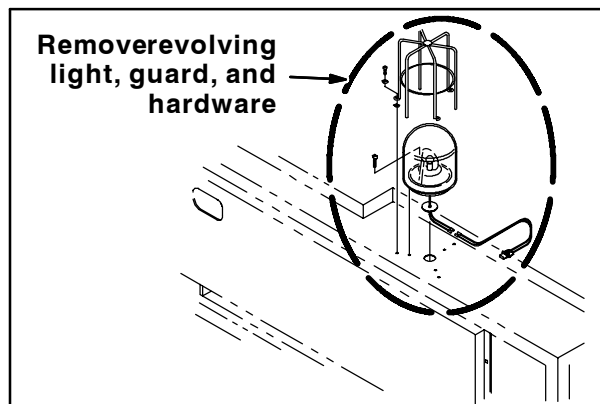


FIG. 11

17. Drill seven 1/4 in. holes into the top of the hopper. Refer to Fig. 15, Fig. 16, and Fig. 17.

NOTE: Be sure the holes are drilled to the rear of the vacuum fan chamber seam in the hopper. **Do Not drill holes into the vacuum fan chamber.**

18. Drill a 7/8 in. hole into the top of the hopper. Refer to Fig. 12.

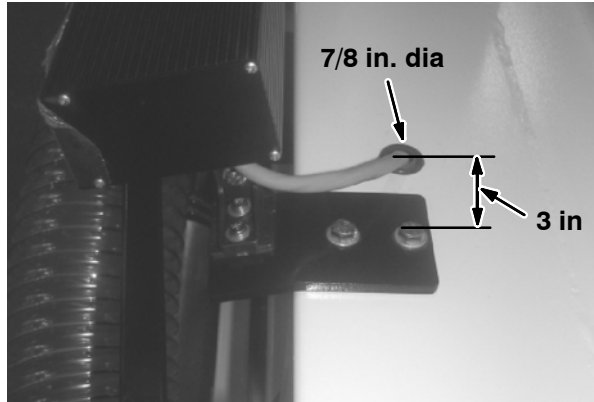


FIG. 12

19. Insert a grommet (6) into the hole drilled in the previous step. Refer to Fig. 12.
20. Insert a grommet (6) into the hole on top of the strobe mounting bracket (3). Refer to Fig. 13.

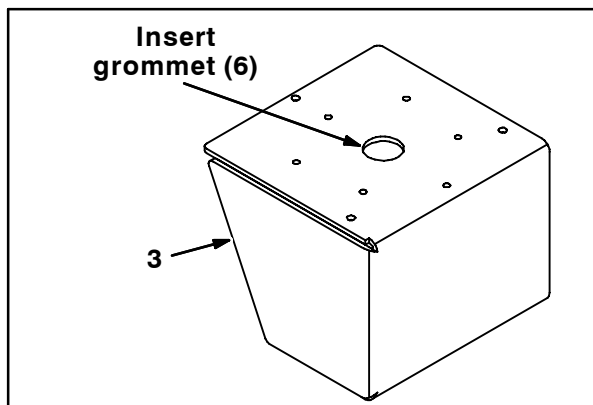


FIG. 13

21. Use mounting hardware to mount the revolving light onto the strobe mounting bracket (3).

22. Use three hex screws (7), three flat washers (8) and three hex nuts (9) to mount the strobe mounting bracket (3) to the hopper. Refer to Fig. 18.

23. Route the wires from the revolving light down through the hole in the mounting bracket (3) and the hole they were previously routed through in the back end of the hopper. Refer to Fig. 18.

24. Use two hex screws (7), two flat washers (8) and two hex nuts (9) to mount each mounting plate (4) to the hopper. Refer to Fig. 16 and Fig. 17.

25. Use four hex screws (7), four flat washers (8) and four hex nuts (9) to mount the arrow stick light (1) to the mounting plates (4). Refer to Fig. 14.

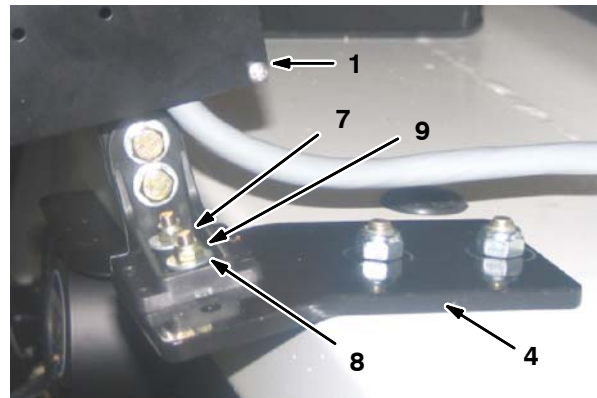


FIG. 14

26. Route the cable from the arrow stick light (1) down through the 7/8 in. hole drilled in Step 18. Refer to Fig. 12.

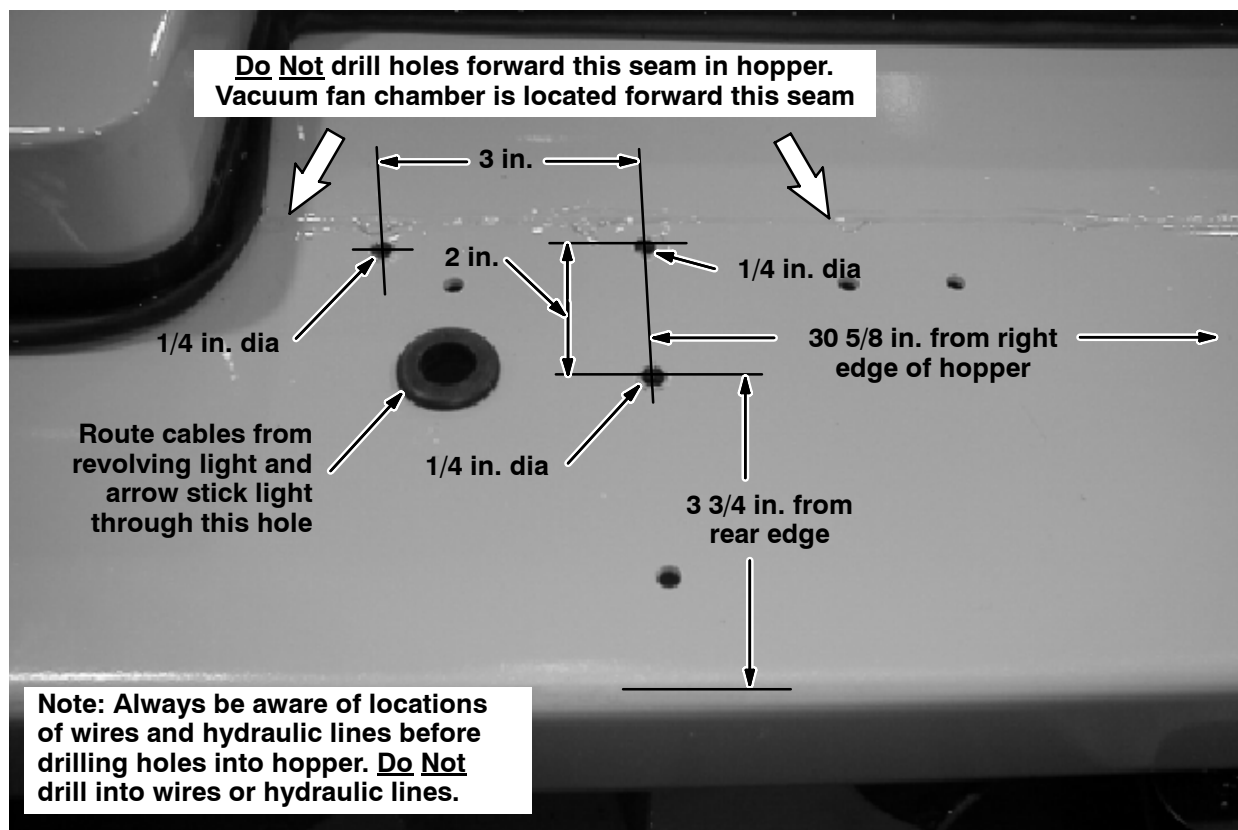


FIG. 15

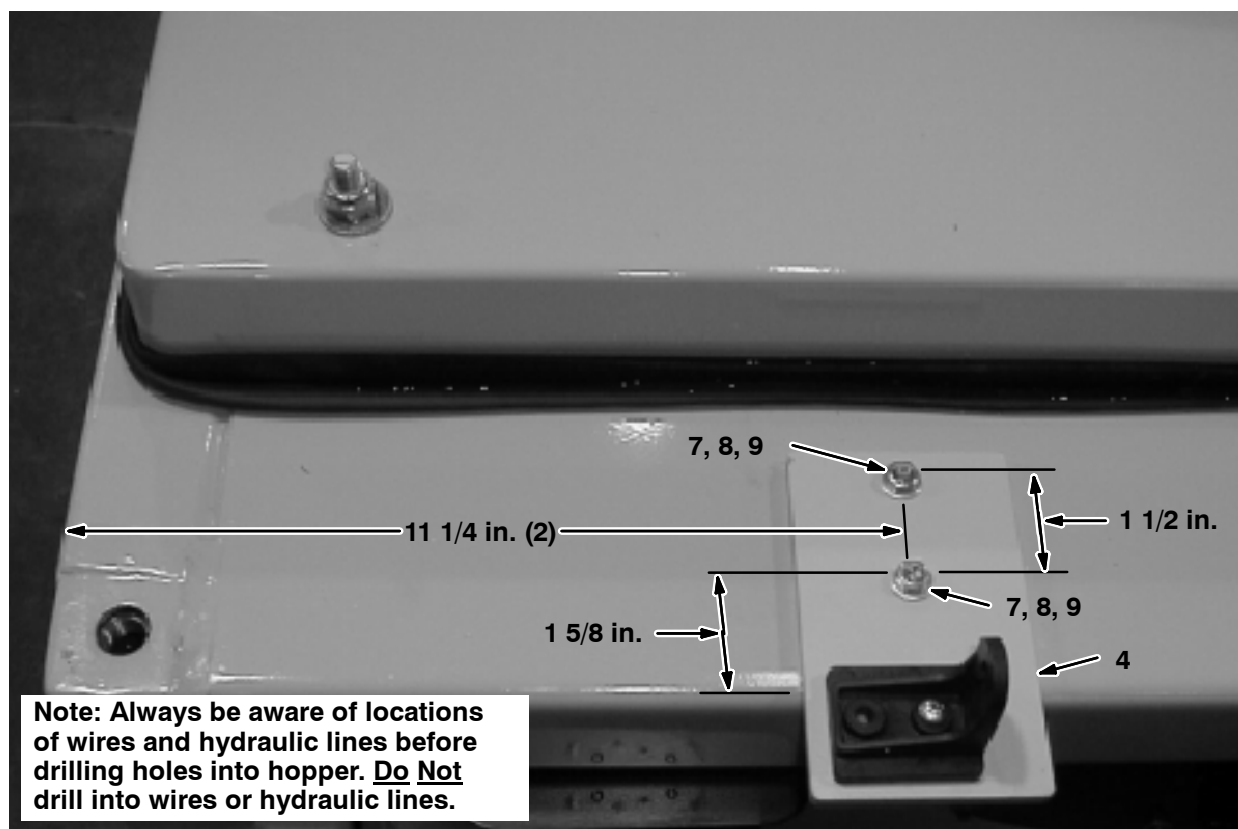


FIG. 16

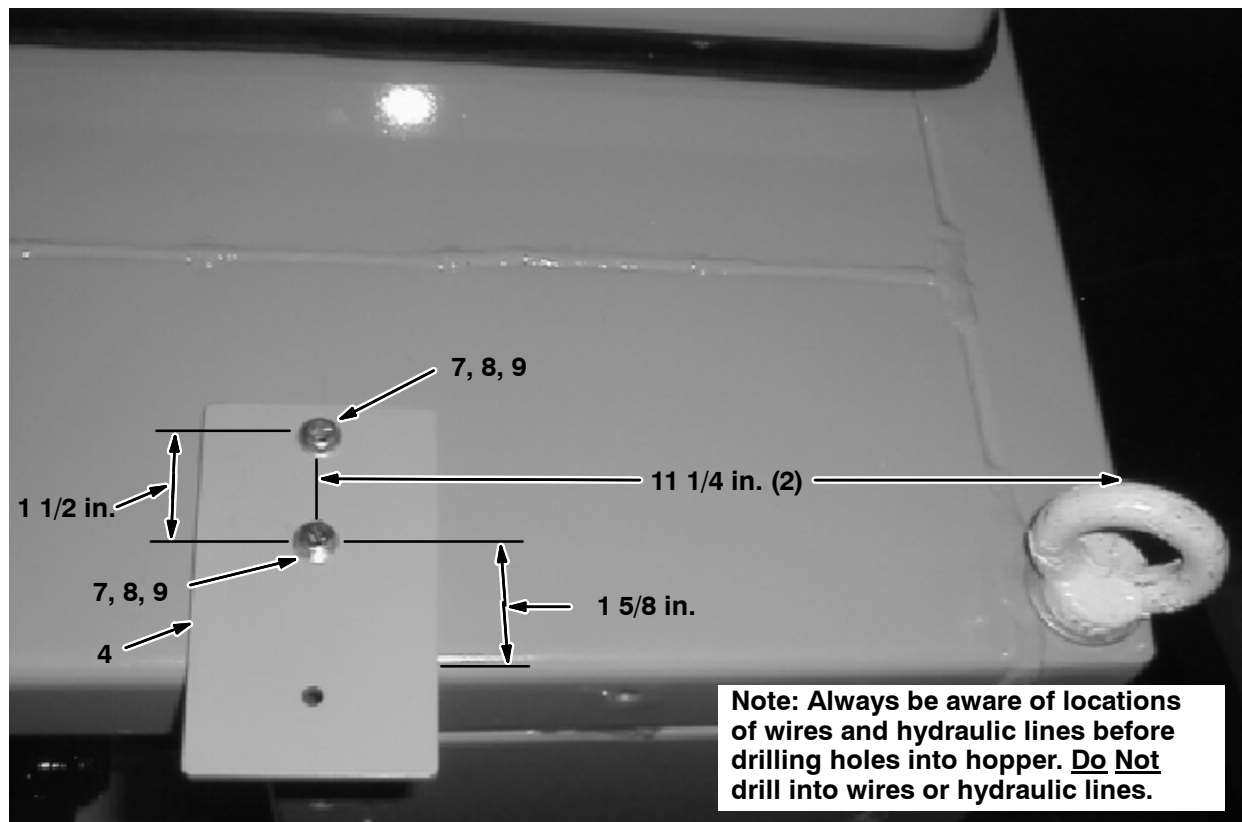


FIG. 17

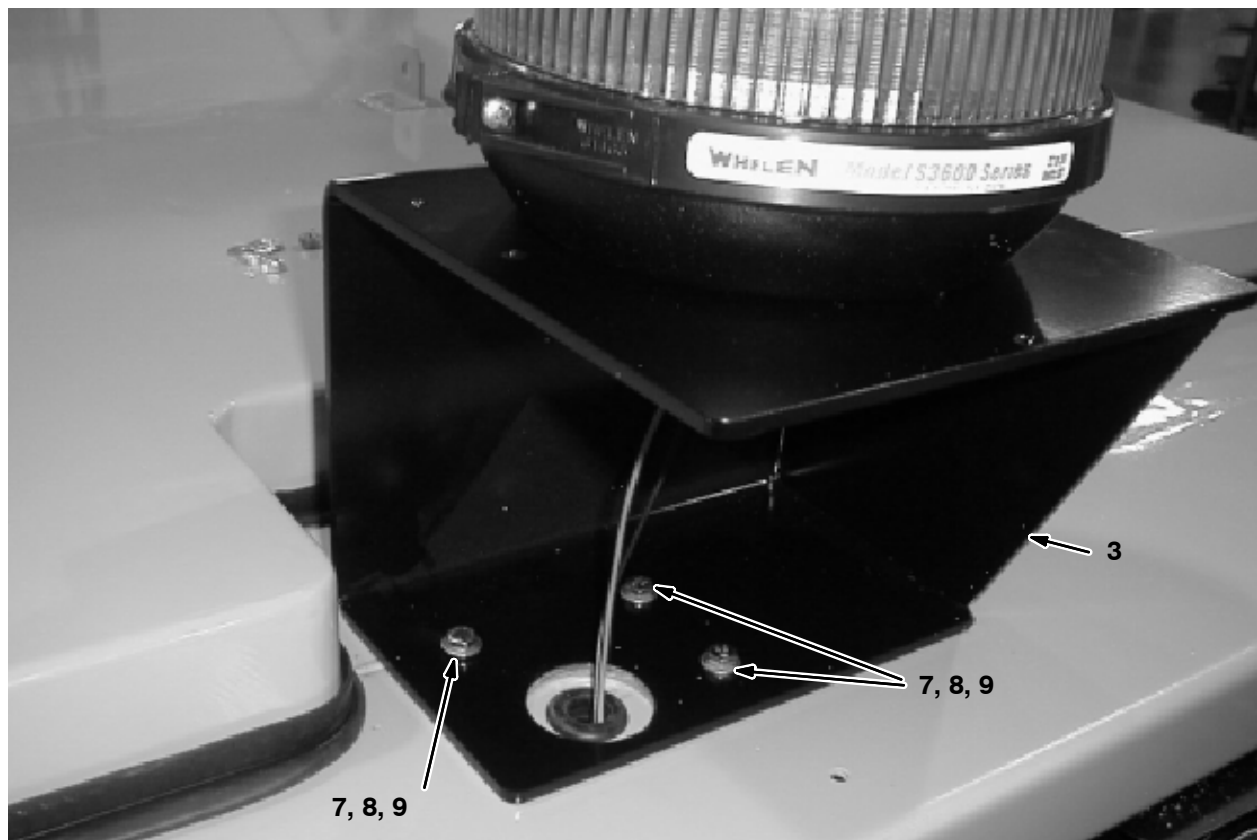


FIG. 18

27. Reconnect the battery cables to the batteries.

28. Start the machine, raise the hopper, turn off the machine, and engage the hopper support.

! WARNING: Lift arm pinch point. Stay clear of hopper lift arms.

! WARNING: Raised hopper may fall. Engage hopper support bar.

29. Disconnect the battery cables from the batteries.

! WARNING: Always disconnect battery cables from machine before working on electrical components.

30. Disconnect the gas springs (one on each side of the cab) from the back of the cab. The gas springs can remain attached to the doors.

31. Use a small cable tie to tie off the windshield washer hose by the wiper arm.

32. Pry the plastic hole plugs located inside both rear corners of the cab to expose the hardware holding the cab down to the machine. Set the plastic plugs aside. Refer to Fig. 19.



FIG. 19

33. Remove the M20 hex nuts and washers holding the cab down to the machine. Set the hex nuts and washers aside. Refer to Fig. 20.

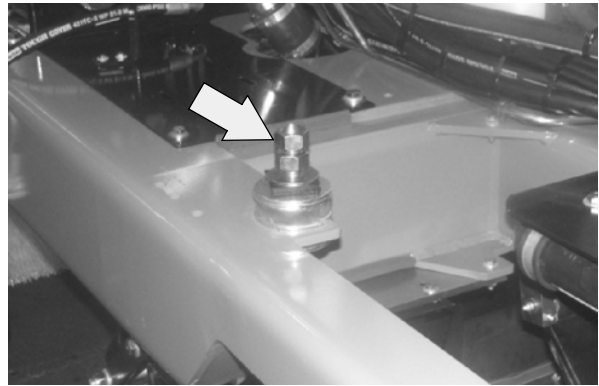


FIG. 20

34. The cab prop arm is located on the passenger side bottom of the cab. Engage the prop arm when the cab is in the forward tilted position. Refer to Fig. 21.

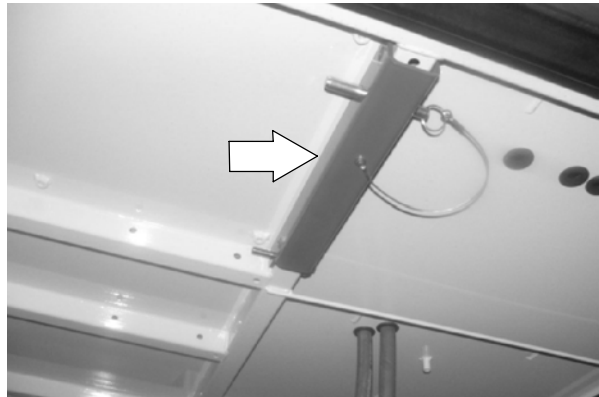


FIG. 21

CAUTION; DO NOT ATTEMPT TO TILT THE CAB WITHOUT AN OVERHEAD MOTORIZED TROLLEY CRANE.

35. Hook the overhead hoist chain to the lug located on the cab. Refer to Fig. 22.

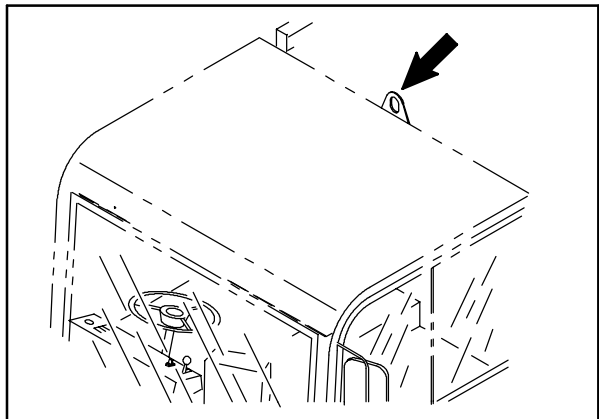


FIG. 22

36. Start lifting the cab and simultaneously moving the hoist toward the front of the machine. The cab is completely tilted when the retaining cable is taut.
37. Pull the pin from the cab prop arm, let arm drop down, install pin into the lower hole on the arm and frame bracket. Refer to Fig. 23.

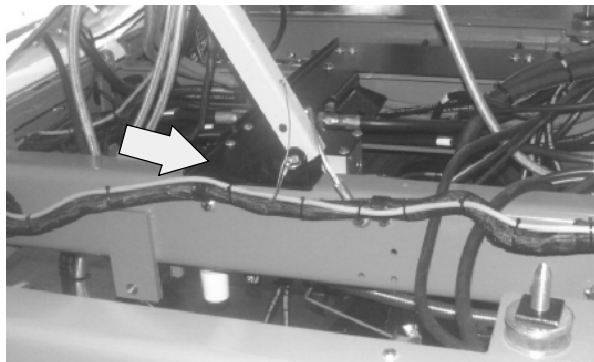


FIG. 23

38. Leave the hoist chain hooked to the cab while working under the cab.
39. Remove the plates and grommet from the bottom of the cab. Set the plates, grommet and hardware aside. Refer to Fig. 24.



FIG. 24

40. Route the arrow stick cable assembly (2) out through the hole at the bottom of the cab and along the wire harness. Refer to Fig. 24.
41. Reinstall the grommet and plates onto the bottom of the cab. Refer to Fig. 24.

42. Remove the cover from the left channel. Set the cover and mounting hardware aside. Refer to Fig. 25.

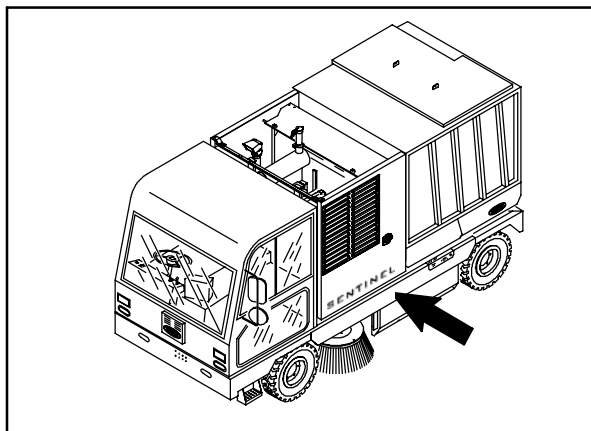


FIG. 25

43. Route the arrow stick cable assembly (2) underneath the cab along with the main wire harness. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 26.

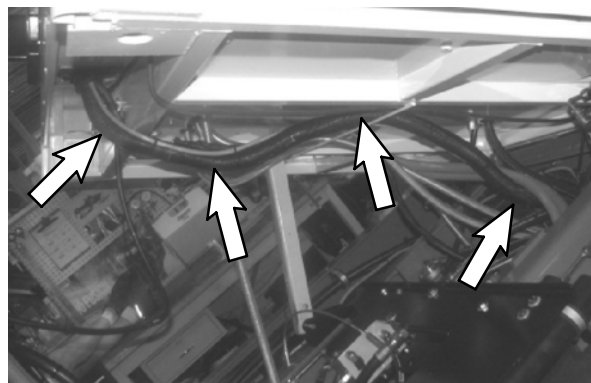


FIG. 26

44. Route the arrow stick cable assembly (2) along the main wire harness and to the hopper. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 27.

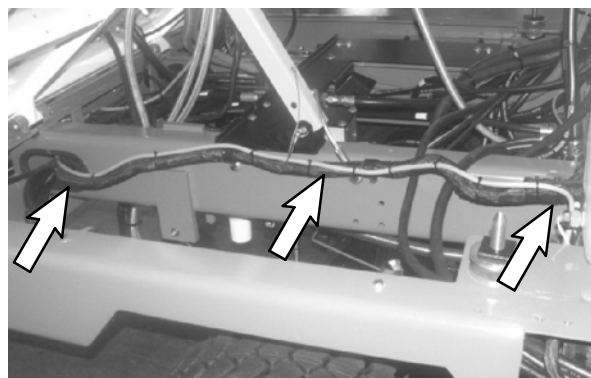


FIG. 27

45. Route the arrow stick cable assembly (2) along the main wire harness and into the service channel. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 28.

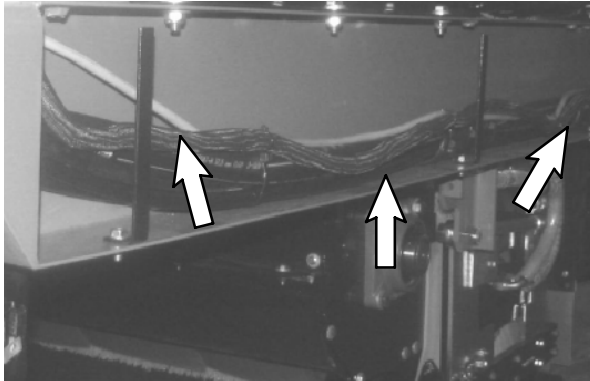


FIG. 28

46. Route the arrow stick cable assembly (2) along the wire harness, out the service channel, and to the hopper harness. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 29.

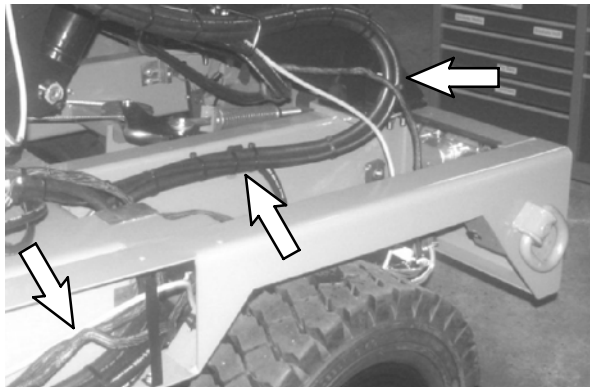


FIG. 29

47. Route the arrow stick cable assembly (2) along the hopper harness and up the hopper lift. Use cable ties (13) to secure the arrow stick cable assembly to the wire harness. Refer to Fig. 30.

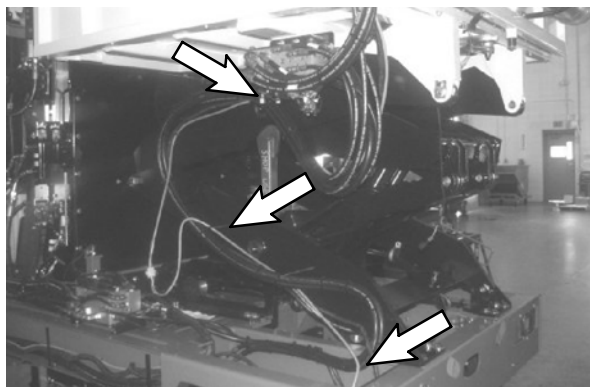


FIG. 30

48. Connect the cable from the arrow stick light to the arrow stick cable assembly (2).

49. Lower the cab down onto the frame and reinstall all hardware and components in the reverse order of which they were removed to raise the cab. Refer to Steps 30 through 38.

50. Reinstall the fuse panel and fuse panel cover onto the center control console panel. Refer to Fig. 8.

51. Reinstall the top cover and back cover inside the cab. Refer to Fig. 1.

52. Reconnect the battery cables to the batteries.

53. Disengage the hopper support, start the machine, lower the hopper, and turn off the machine.

! WARNING: Lift arm pinch point. Stay clear of hopper lift arms.

! WARNING: Raised hopper may fall. Engage hopper support bar.

54. Disconnect the battery cables from the batteries.

! WARNING: Always disconnect battery cables from machine before working on electrical components.

55. Reconnect the wires from the revolving light to the hopper harness.

NOTE: Complete Steps 55 through 62 only if machine is equipped with the night light option. Proceed to Step 63 if machine is not equipped with the night light option.

56. Disconnect the hopper harness from the night light and remove the night light from the motor guard. Set the light and hardware aside. Refer to Fig. 31.

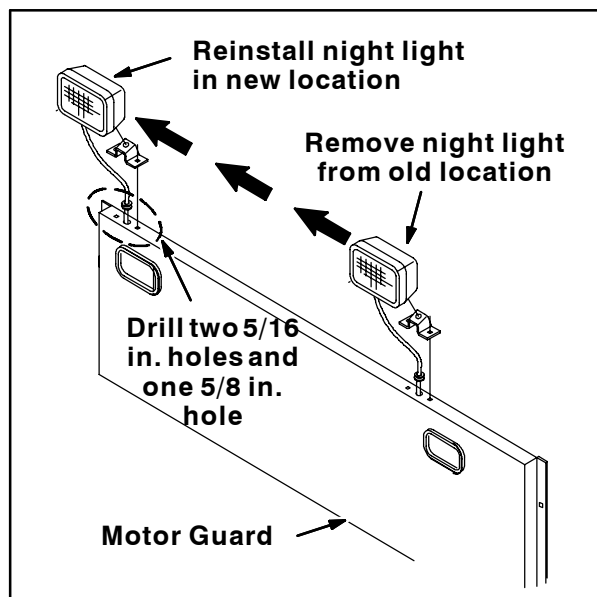


FIG. 31

57. Hold the night light bracket onto the motor guard (as a template) and drill two 5/16 in. holes through the holes in the bracket and into the motor guard. Remove the night light guard and drill a 5/8 in. hole between the two 5/16 in. holes. Refer to Fig. 31 and Fig. 32.

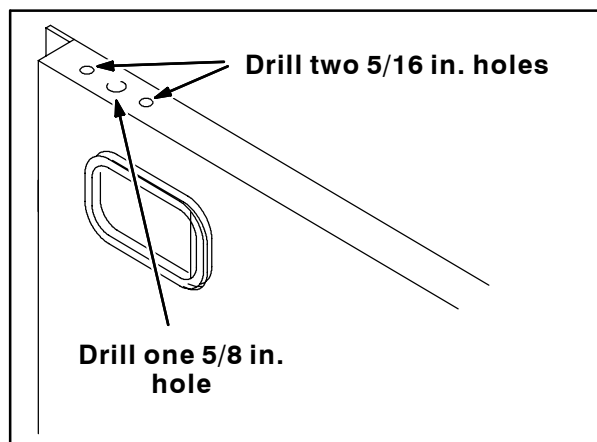


FIG. 32

58. Reinstall the night light onto the new location on the motor guard. Route the night light cable through the center hole drilled into the motor guard. Refer to Fig. 31 and Fig. 32.

59. Cut the existing female connectors from the portion of the hopper harness previously attached to the night light. Leave enough wire on the connectors so they can be spliced onto the reworked harness. Set the female connectors aside. Refer to Fig. 35.

60. Splice an additional 7 ft. of wire onto each wire cut in the previous step. Apply heat shrink or wrap tape over each splice to protect the splice and exposed wires from the elements. Refer to Fig. 35.

61. Splice the female connectors onto the ends of the 7 ft. wires. Apply heat shrink or wrap tape over each splice to protect the splice and exposed wires from the elements. Refer to Fig. 35.

62. Route the wires spliced to the hopper harness along the hopper harness and to the side of the machine where the night light is mounted. Use cable ties (13) to secure the wires to the hopper harness.

63. Connect the wires spliced to the hopper wire harness to the night light. Refer to Fig. 35.

64. Reinstall the motor guard and the insulation onto the hopper. Refer to Fig. 33.

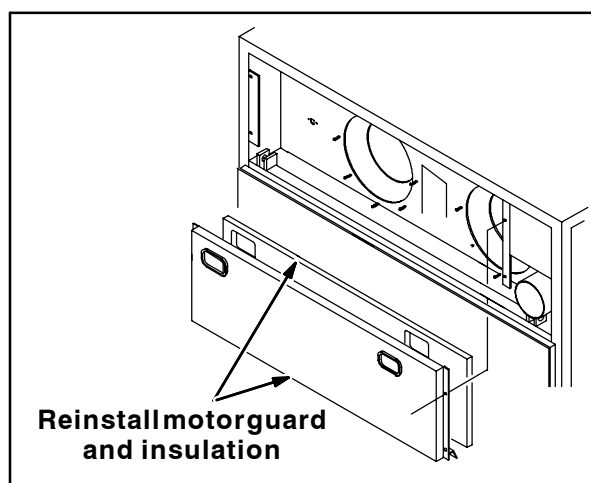


FIG. 33

65. Reconnect the battery cables to the batteries.

66. Start the machine and test the arrow light/revolving light.

67. Program the arrow light. Refer to manufacturer installation guide for programming instructions.

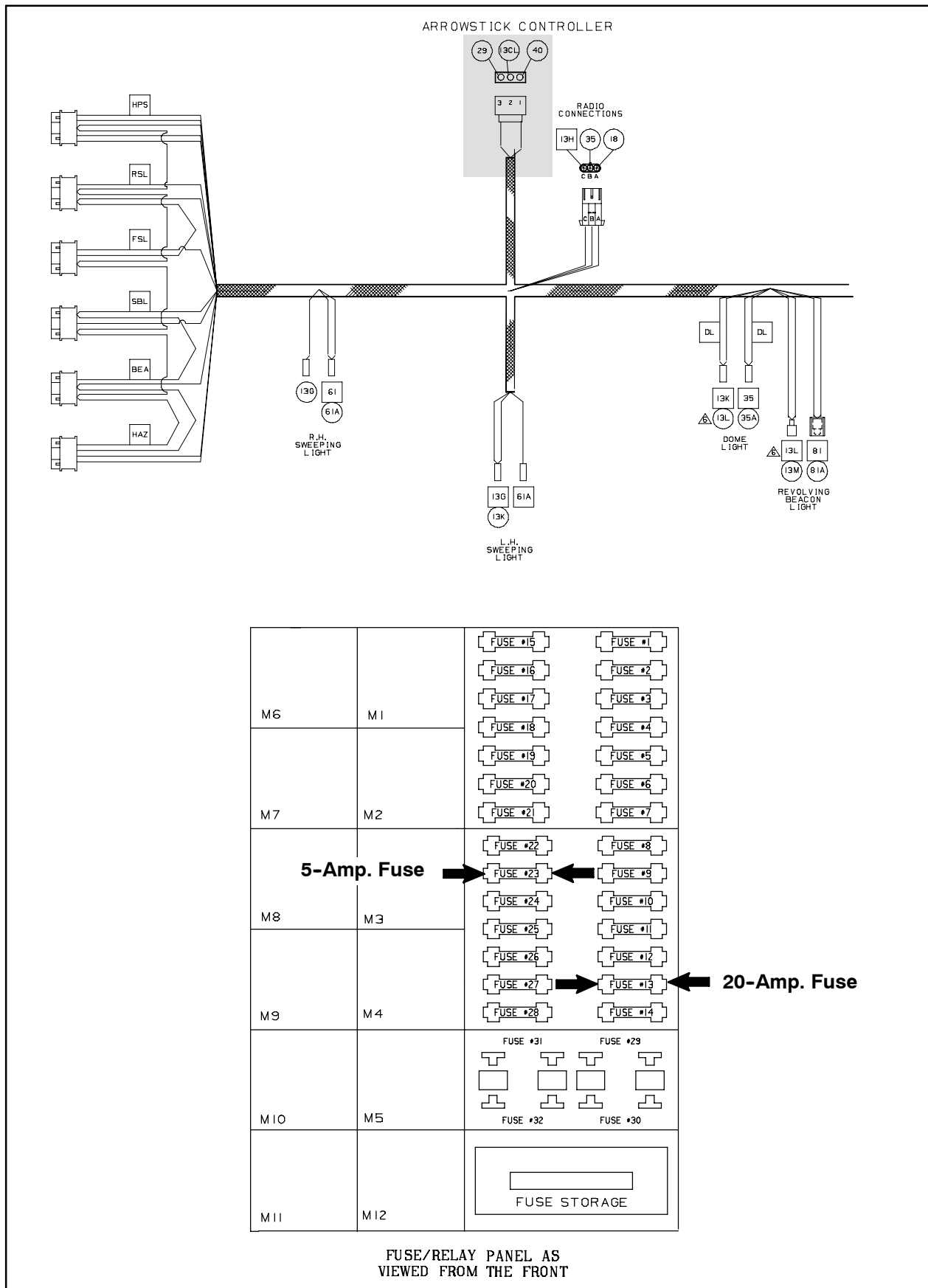


FIG. 34

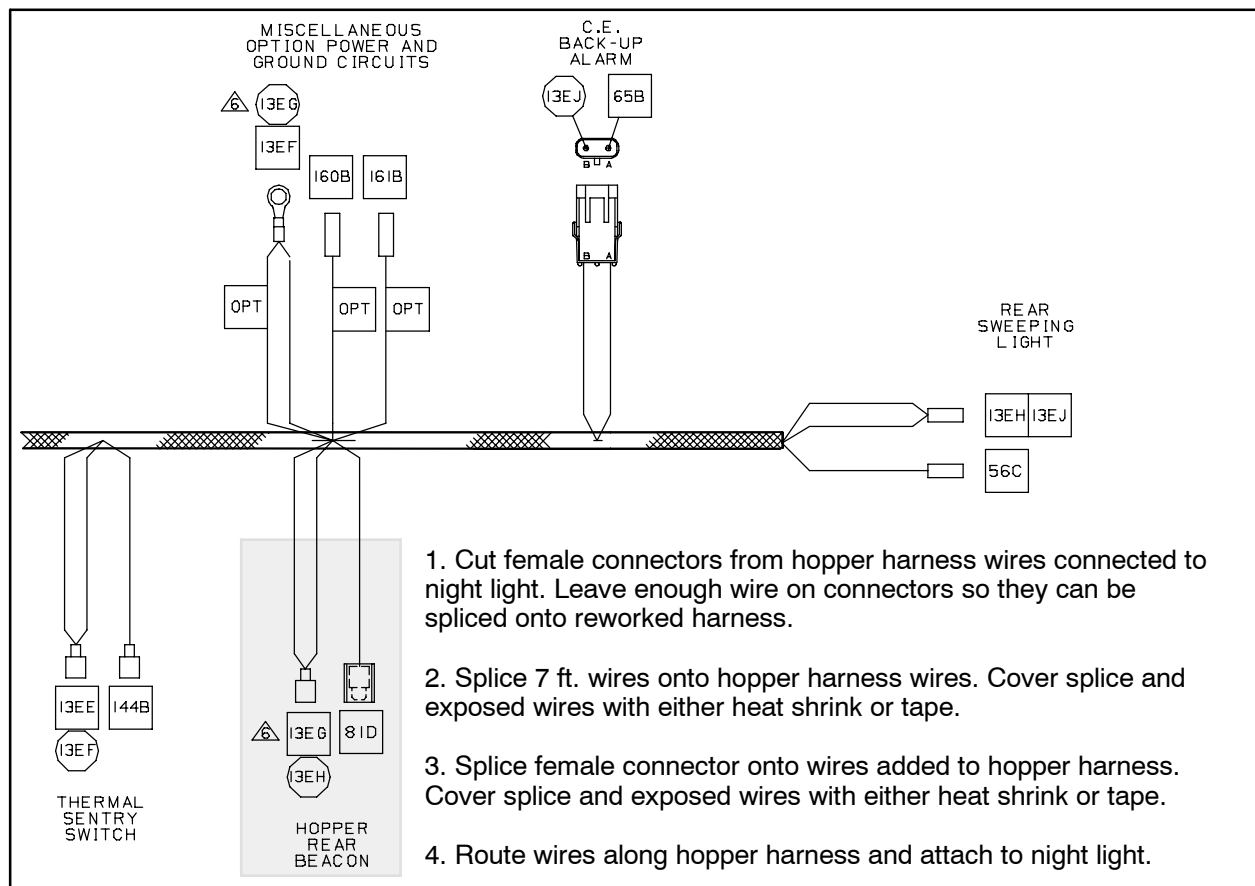


FIG. 35

Bill of Materials for Light Kit, Arrow, CI, w/Revl Light-770170

Ref.	Tennant Part No.	Description	Qty.
▽	770170	Light Kit, Arrow, CI, w/Revl Light	1
▲ 1	768504	Light, Arrow Stick, 8 Lamp, [Whelen]	1
▲ 2	768505	Cable Assy, Arrow Stick	1
▲ 3	769300	Bracket, Mtg, Strobe, RH	1
▲ 4	770500	Plate, Mtg	2
▲ 5	762515	Fuse, 020A 032VDC	1
▲ 6	10632-2	Grommet, Rbr, 0.62ID, F/0.9H, .12 Matl	3
▲ 7	06944	Screw, Hex, M6 X 1.0 X 35, 8.8	12
▲ 8	19066	Washer, Flat, #10	16
▲ 9	08708	Nut, Hex, Lock, M6 X 1.00, NL	14
▲ 10	39311	Nut, Hex, Std, M8 X 1.25	6
▲ 11	06947	Screw, Hex, M6 X 1.0 X 40, 8.8	2
▲ 12	762534	Fuse, 005A [ATO]	1
▲ 13	763116	Tie, Cable, Nyl, 15.3L. W 4.5 Max D	50

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