



INSTRUCTION BULLETIN

No. 9007932
Machine: M20 / M30 /
T20
Published: 08-2010
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 9007928, 9007929, 9007930, 9007931**

SYNOPSIS:

This kit contains the parts needed to install an *ec-H2O* system on M20 / M30 / T20 machines. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 5-12 hours)

PREPARATION: ALL MACHINES

1. Completely empty the recovery, solution tank, and hopper.
2. **M20 / M30 / T20 ES Machines Only:** Thoroughly clean all sediment and debris from the solution tank.
3. Park the machine on a clean level surface and set the parking brake.
4. **M20 / M30 Only:** Completely raise the hopper and engage the hopper support.



WARNING: Raised hopper may fall. Engage hopper support pin.



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

5. Turn off the machine.

6. **M20 / M30 Only:** Secure the switch closed with a wire tie. Refer to Fig, 1.



FIG. 1

7. Start the machine, completely lower the scrub head, and turn off the machine.

Machines equipped with optional side brush: Completely lower and extend the side brush.

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

8. Disconnect the battery cables from the battery and remove the battery from the machine. Set the battery aside.

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

9. Remove the operator seat / seat plate from the machine. Set the seat / seat plate aside.
10. Remove the engine shroud, front shroud, and seat shroud from the machine. Set the removed shrouds aside.
11. Remove the lower cover from the machine. Set the lower cover and hardware aside. Refer to Fig. 2.

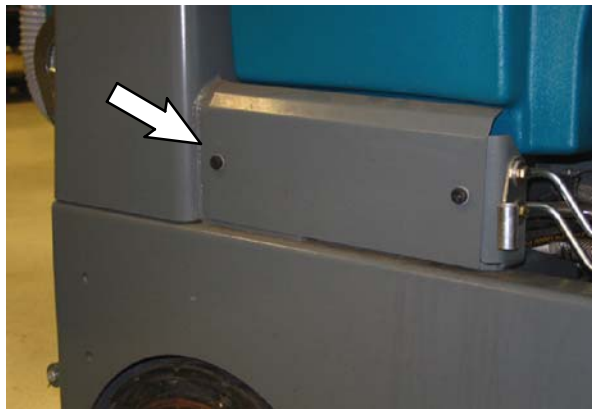


FIG. 2

12. **LP powered machines only:** Remove the LP tank from the machine. Refer to the Operators Manual for instructions how to remove the LP tank. Set the LP tank aside.
13. **Machines with Overhead Guard Option Only:** Remove the hardware holding the back end of the overhead guard to the machine. Set the hardware aside.

NOTE: Machines equipped with overhead guards only: It may be necessary to prop the back end of the overhead guard up to remove the mounting bracket.

14. **Machines not equipped with optional spray hose:** Remove the 2.5" plug from the mounting bracket located in the corner of the operators compartment. Discard the plug. Refer to Fig. 3.

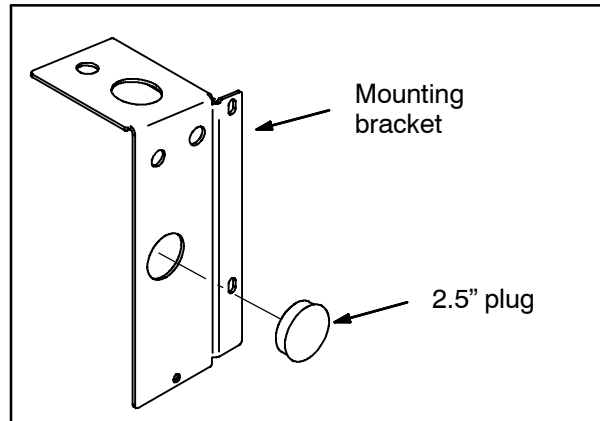


FIG. 3

15. **Machines with Spray Hose Option Only:** Disconnect spray hose fittings / hoses from the machine. Set removed items aside since they will need to be reinstalled after the mounting bracket is reinstalled onto the machine. Refer to Fig. 3.
16. Remove the mounting bracket from the machine. Set the mounting bracket and hardware aside. Refer to Fig. 3.
17. Remove the access panel from the operator compartment. Set the access panel and hardware aside. Refer to Fig. 4.



FIG. 4

18. **Machines with Side Brush Option Only:**
Remove the side brush guard assembly from the machine. Set the side brush guard assembly and all hardware aside. Refer to Fig. 5.



FIG. 5

19. Raise and lock the recovery tank cover open.

**INSTALLATION: M20 / M30 / T20
(CYLINDRICAL HEADS ONLY) ES MACHINES**

1. Disconnect the main wire harness and all hoses from the ES pump assembly and pressure switch inside the recovery tank. Refer to Fig. 1.
2. Remove the ES pump assembly, strainer assembly, and interconnected hoses from the recovery tank. Discard the removed ES components. Refer to Fig. 1.

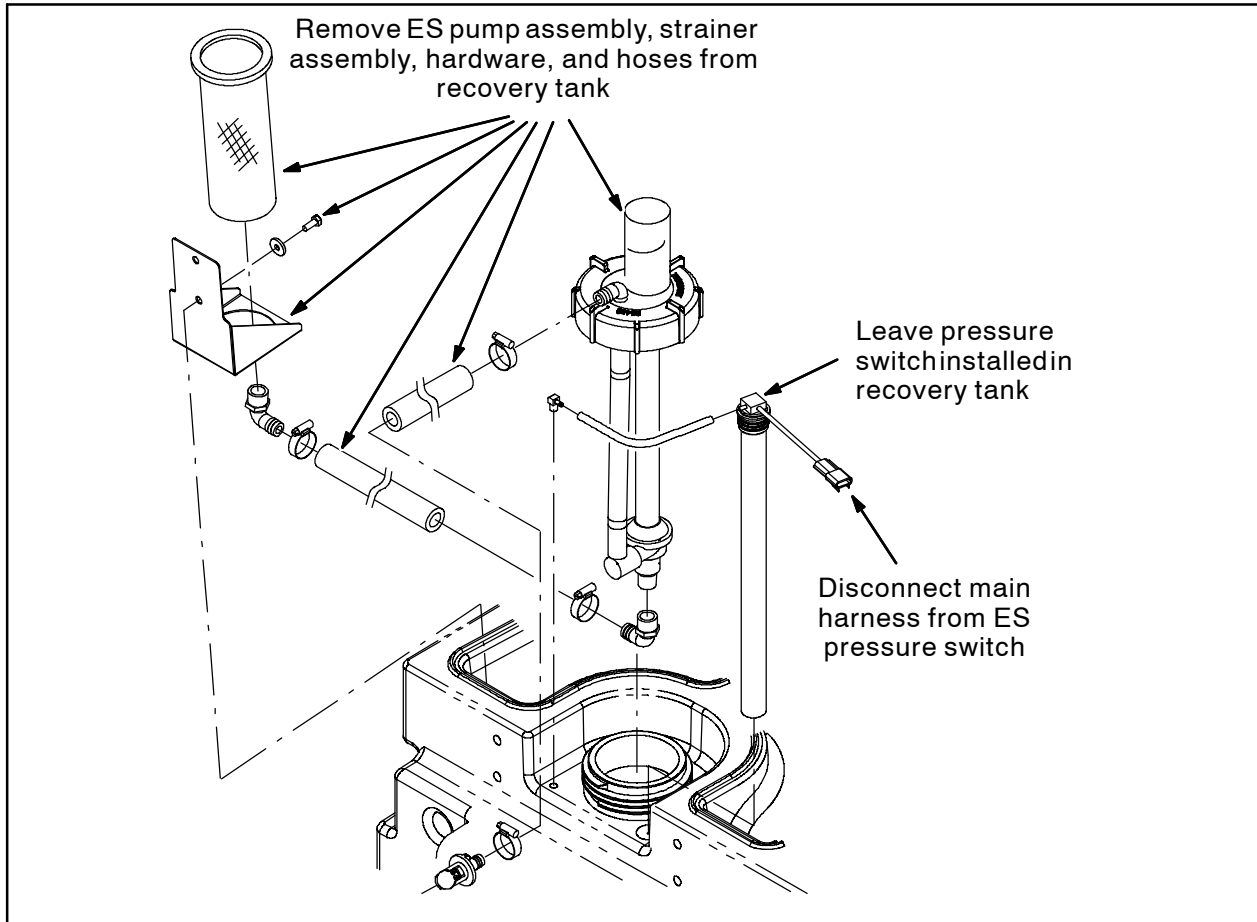


FIG. 1

3. Install the cap assembly onto the recovery tank. Refer to Fig. 2.
4. Remove the plastic fitting from the recovery tank. Refer to Fig. 3.

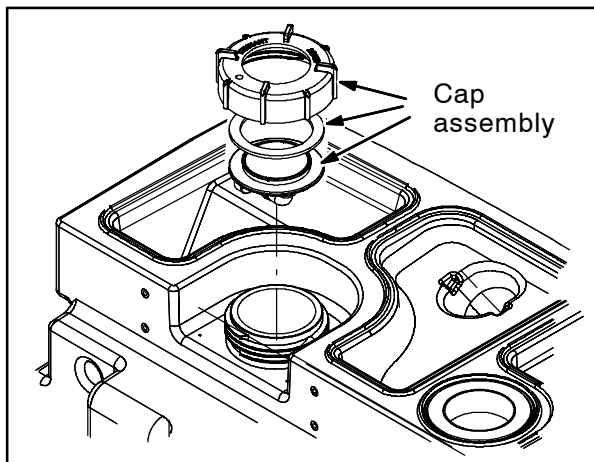


FIG. 2

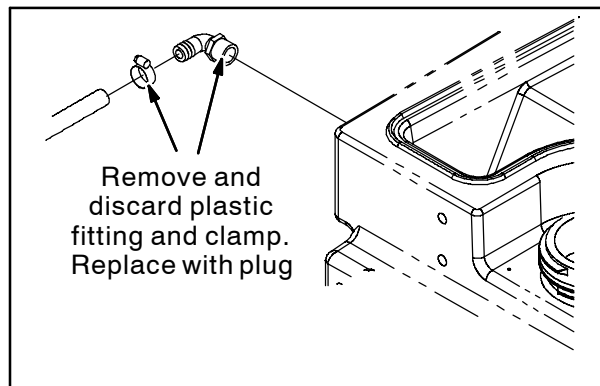


FIG. 3

5. Remove the auto fill assembly from the machine. Refer to Fig. 4.
6. Disconnect the main wire harness from the auto fill solenoids. **Do not** disconnect the float switch connector. Refer to Fig. 4.
7. Disconnect the auto fill hose from the solenoid and remove the hose from the machine. Discard the hose. Refer to Fig. 4.
8. Remove the auto-fill solenoids and fittings from the machine. Discard the fittings and solenoids. Refer to Fig. 4.

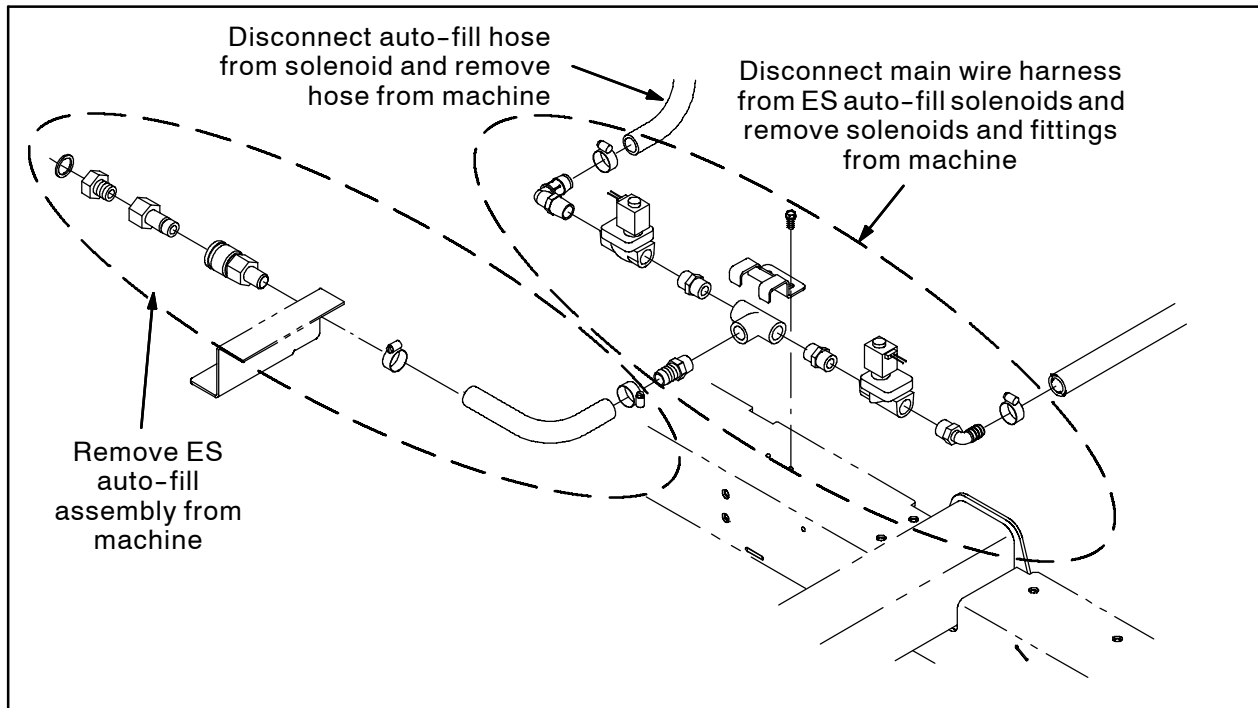


FIG. 4

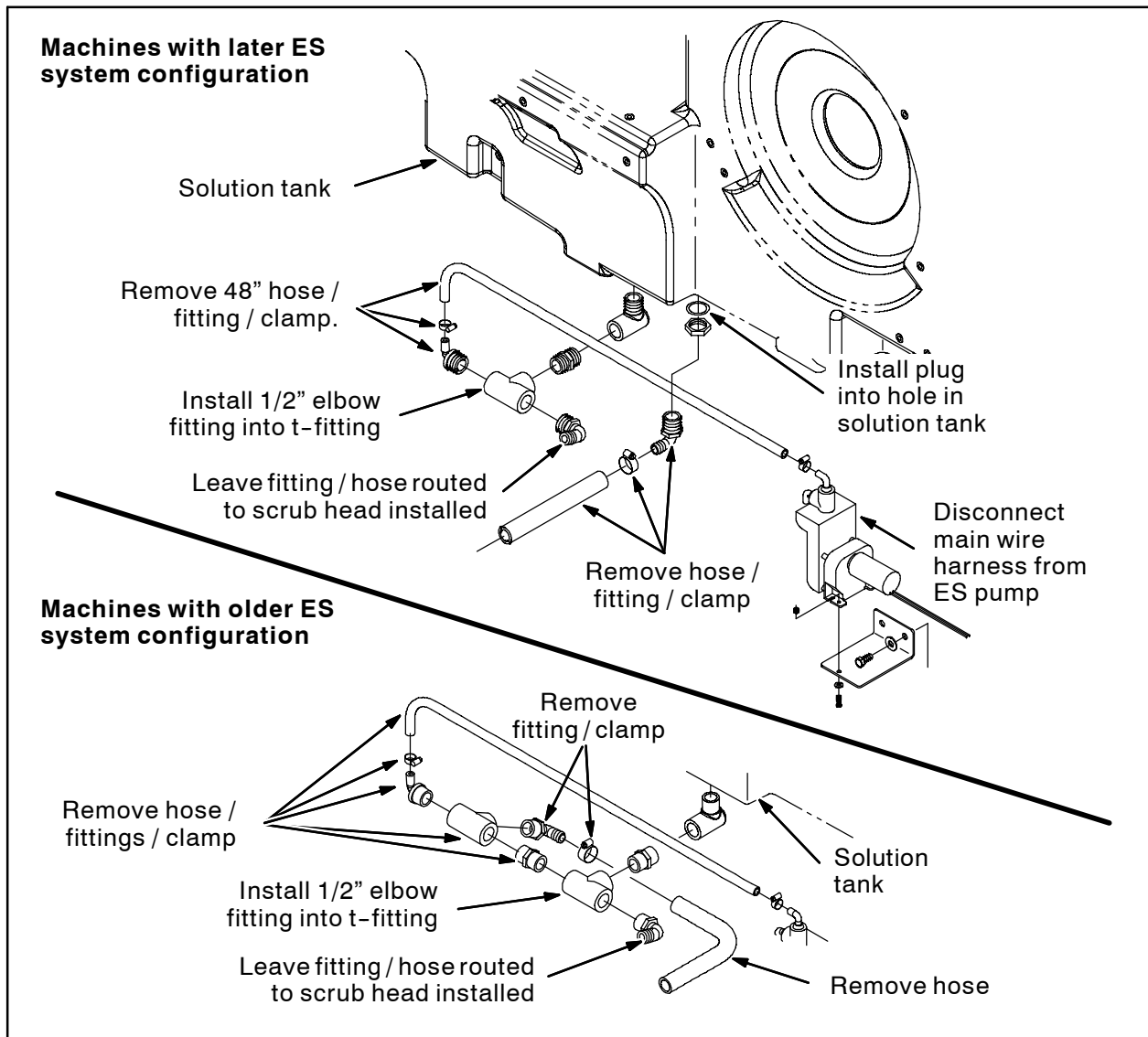


FIG. 5

9. Disconnect ES system hoses / fittings from the solution tank and ES pump. Discard removed hoses / fittings. Refer to Fig. 5.

14. Route the 48" PVC hose from the bottom of the solution tank and up into the operator compartment. Refer to Fig. 6.

NOTE: Leave the 90° fitting and hose routed to the scrub head installed on the machine.

10. Cut all remaining hoses from the ES pump and remove the hoses from the machine. Discard the removed hoses. Refer to Fig. 5.

11. Cut a 48" length of PVC hose.

12. Install a 1/2" elbow fitting onto the t-fitting located on the bottom of the solution tank. Refer to Fig. 5.

13. Use a hose clamp to connect the 48" PVC hose to the new elbow fitting installed in the previous step. Refer to Fig. 5.



FIG. 6

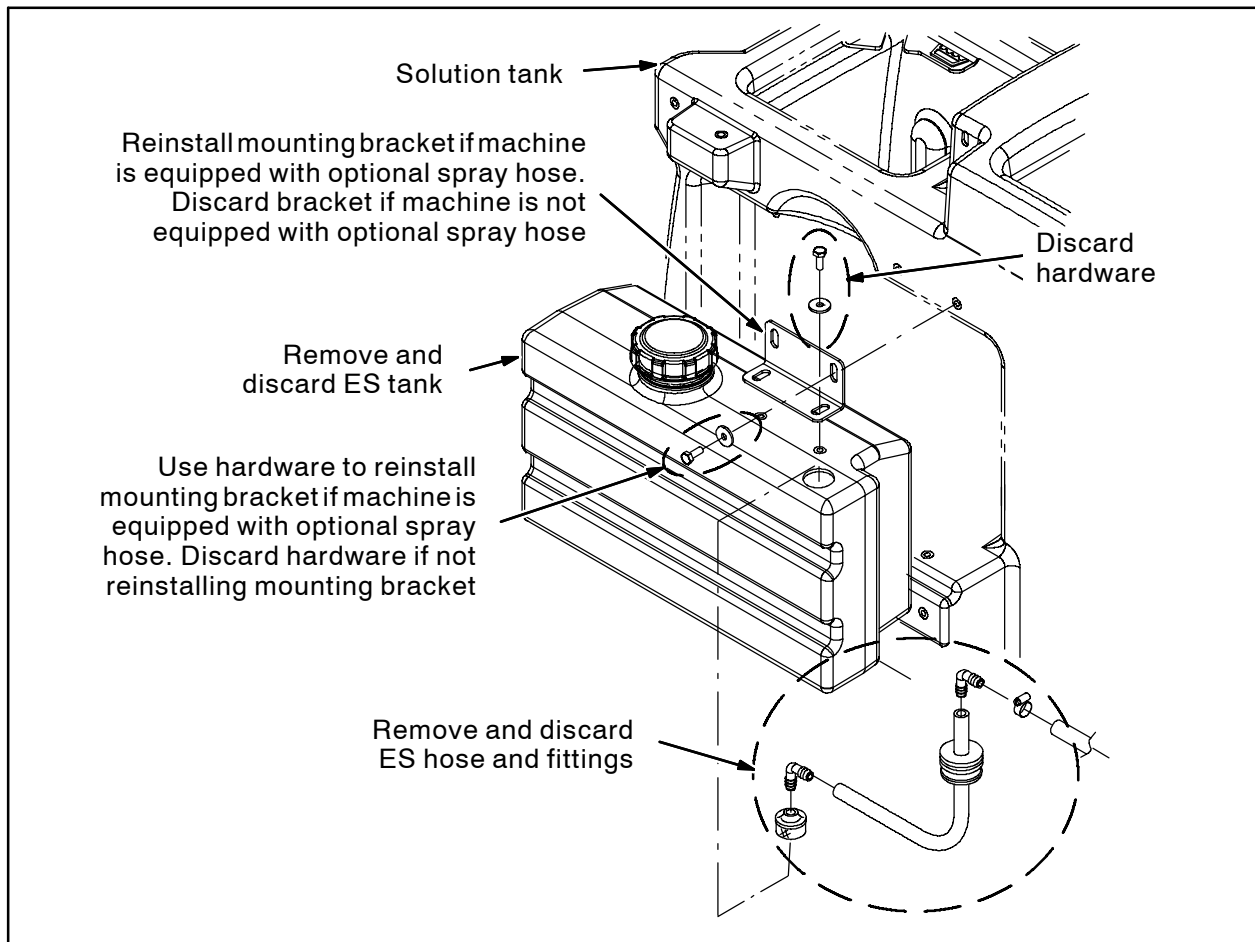


FIG. 7

15. Disconnect the main wire harness from the detergent pump. Refer to Fig. 7.
16. Remove the ES hose and fittings from the operators compartment and the ES tank from behind the operator seat. Reinstall the mounting bracket if the machine is equipped with the optional spray hose. Discard the ES tank, hose, and fittings. Refer to Fig. 7.
17. Place a chock behind each rear tire, jack up the front end of the machine, place jack stands under the front of the machine, and lower the machine onto the jack stands.

FOR SAFETY: When servicing machine, block machine tires before jacking machine up. Use a hoist or jack that will support the weight of the machine. Jack machine up at designated locations only. Support machine with jack stands.

18. Cut a 20" length of 0.38 ID PVC hose and a 60" length of 0.50 ID PVC hose.

19. Use a hose clamp to install the 20" PVC hose and 60" PVC hose onto a y-fitting.
20. Route the PVC hose (end with the y-fitting-if machine is equipped with optional side brush) from the operator compartment, down along the frame center beam, and to the scrub head. Refer to Fig. 8.

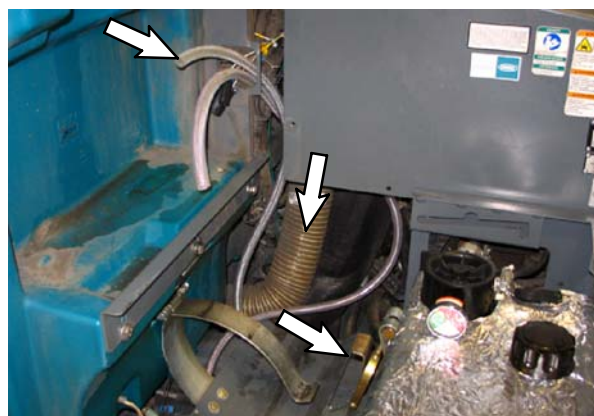


FIG. 8

21. Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".

NOTE: Complete Step 22 through Step 38 only if machine is equipped with the optional side brush.

22. Cut three 2" lengths of 0.50 ID PVC hose.
23. Cut a 13" length of 0.38" ID PVC hose.
24. Assemble the check valve, straight fittings, 13" hose, and 2" hoses as shown in Fig. 9. Note the direction of flow.
25. Use a hose clamp to attach the hose assembly assembled in the previous step to the y-fitting connected to the 60" 0.50 ID PVC hose. Refer to Fig. 9.
26. Use two M5 pan screws, two flat washers, and two M5 hex nuts to install the solenoid onto the solenoid bracket. Refer to Fig. 9.
27. Use a M8 thread roller to install the solenoid / solenoid bracket onto the frame of the machine. Refer to Fig. 9.
28. Trim 2" inches from the shorter end and 6" from the longer end of the bent hose.
29. Cut the bent hose 12" from the longer end of the hose. Refer to Fig. 9.
30. Use two hose clamps to install a check valve between the two sections of hose cut in the previous step. Note the direction of flow. Refer to Fig. 9.
31. Use a hose clamp to connect the trimmed hose to the solenoid. Refer to Fig. 9.
32. Use a hose clamp to connect the other end of the trimmed hose to the y-fitting connected to the 60" PVC hose from the operator compartment. Refer to Fig. 9.
33. Use a hose clamp to connect a 26" PVC hose to the solenoid. Refer to Fig. 9.

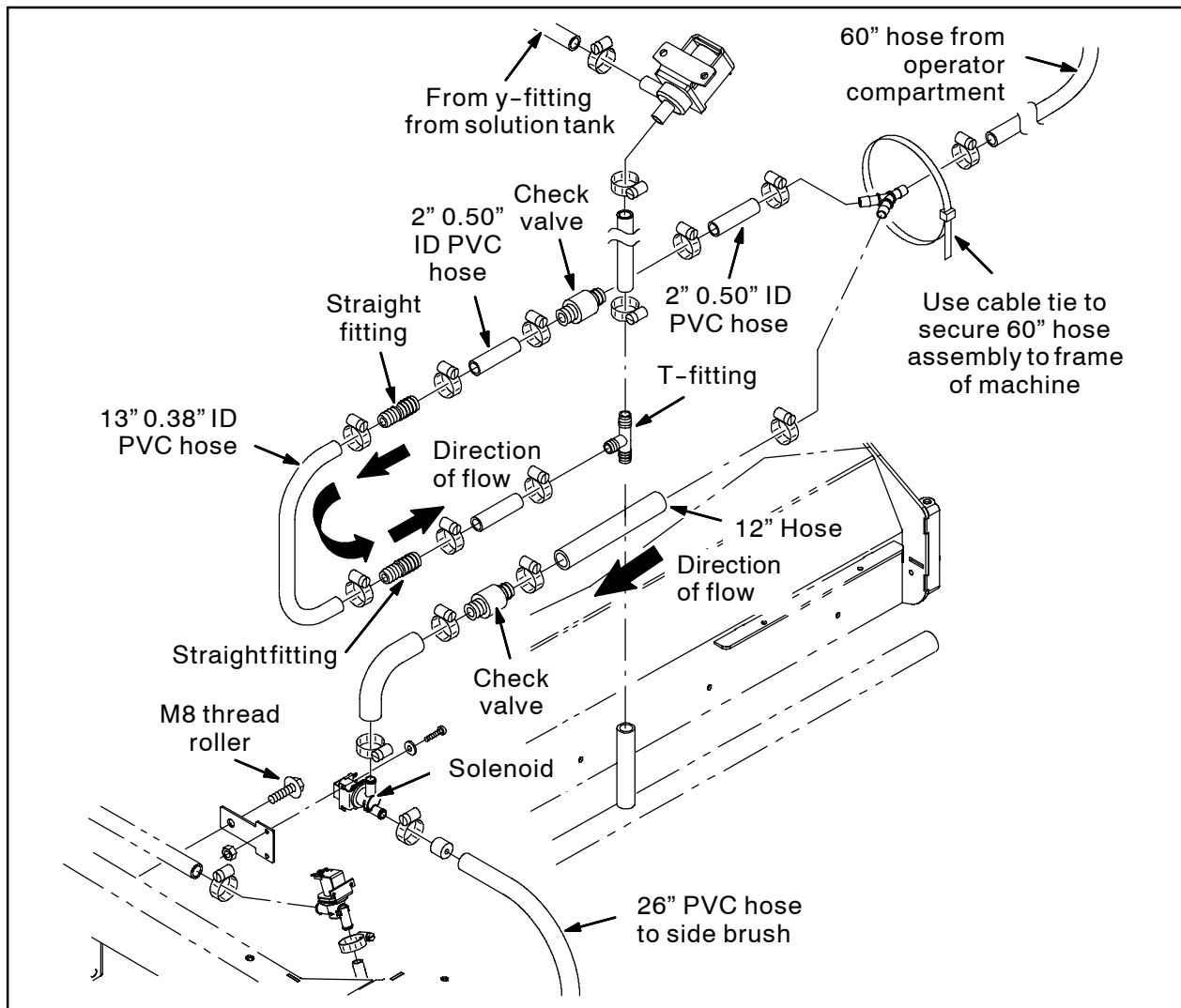


FIG. 9

34. Cut the solution supply hose 2.5" from where the hose is connected to the dispensing tube. Refer to Fig. 10.

35. Use a hose clamp to connect the y-fitting to the 2.5" solution supply hose. Refer to Fig. 10.

36. Use a hose clamp to connect the hose from the solution supply solenoid to the y-fitting. Refer to Fig. 10.

37. Use a hose clamp to connect the PVC hose from the solenoid to the y-fitting. Refer to Fig. 10.

38. Reinstall the side brush guard onto the machine.

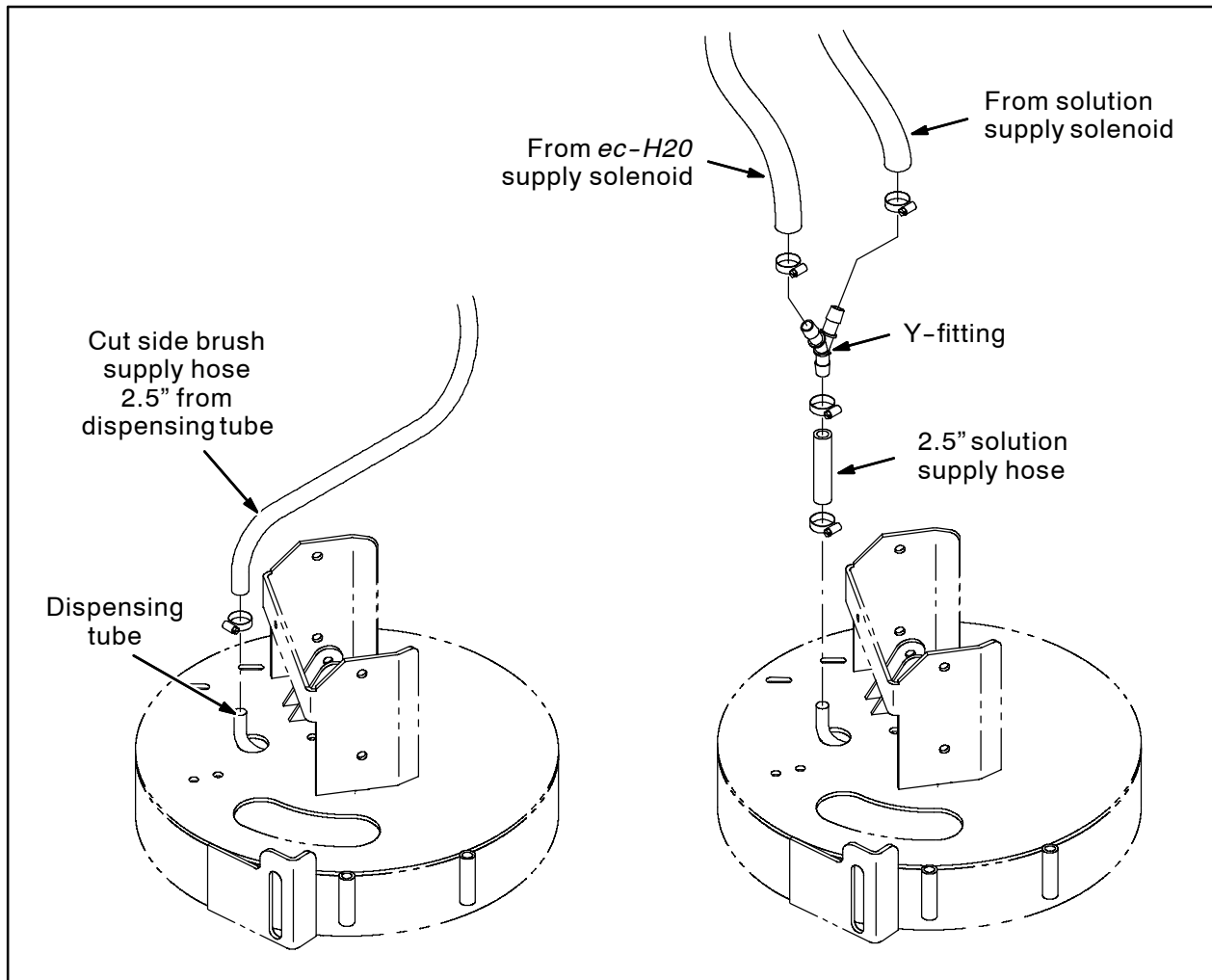


FIG. 10

39. Remove the skirt assembly from the front of the scrub head. Set the skirt assembly and mounting hardware aside. Refer to Fig. 11.

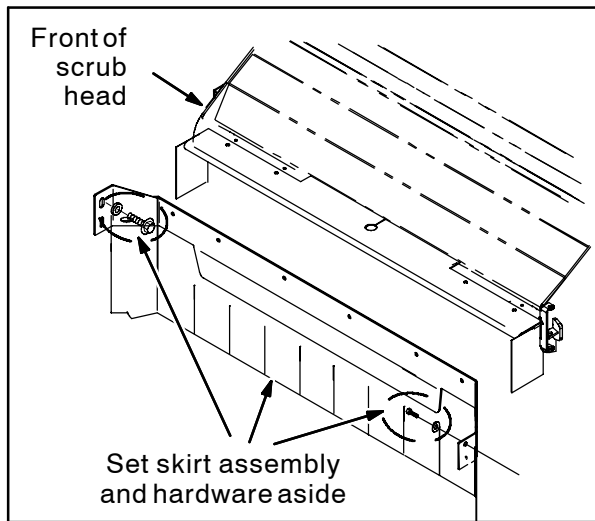


FIG. 11

40. Cut the solution supply hose to the scrub head approximately 2" from the top of the skirt. Refer to Fig. 12.

41. Use a hose clamp to connect the t-fitting to the hose from the solution spray bar manifold. Refer to Fig. 12.

42. Use a hose clamp to connect the hose from the scrub head solution solenoid to the t-fitting. Refer to Fig. 12.

43. Use a hose clamp to connect the hose from the y-fitting to the t-fitting. Refer to Fig. 12.

44. Use a cable tie to secure the hose assembly from the previous step to the center beam of the frame of the machine. Refer to Fig. 12.

45. Reinstall the skirt assembly onto the front of the scrub head. Refer to Fig. 12.

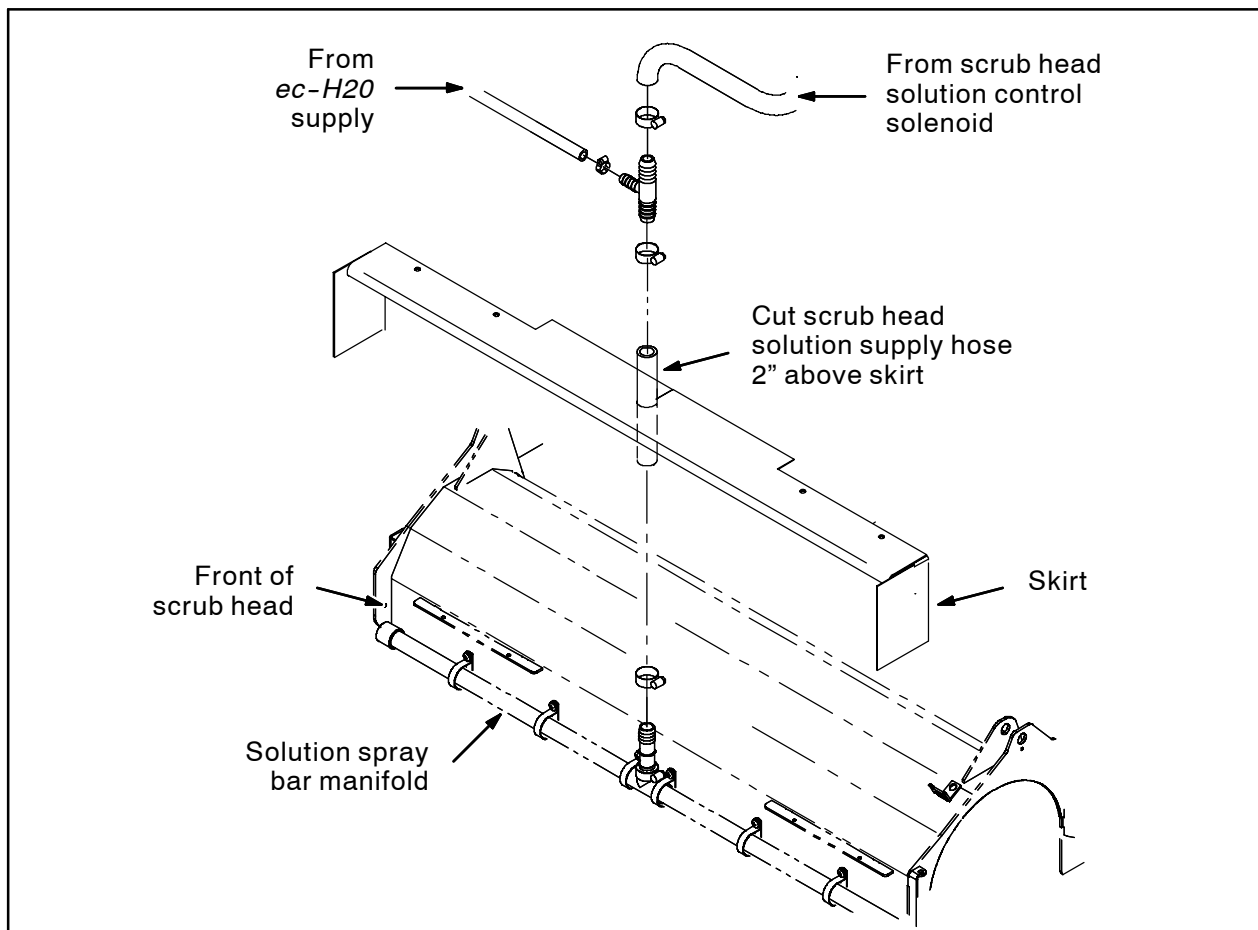


FIG. 12

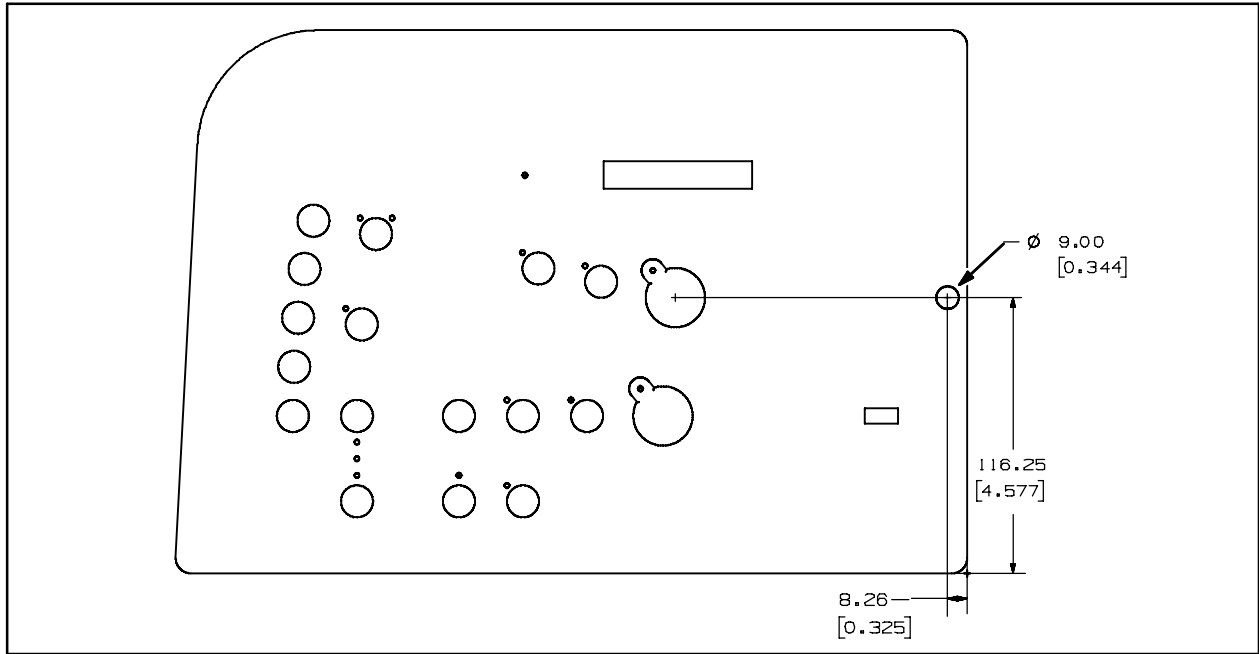


FIG. 13

46. Drill a 11/32" (0.344) hole through the instrument panel assembly. Refer to Fig. 13.
47. Remove the instrument panel label from the instrument panel.
48. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
49. Install the new instrument panel label onto the instrument panel.
50. Insert the LED light into the hole drilled into the 11/32" (0.344") hole. Refer to Fig. 13.
51. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
52. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

53. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 14.

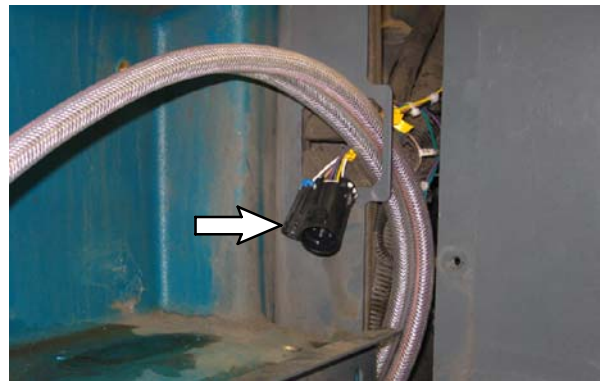


FIG. 14

54. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 15.

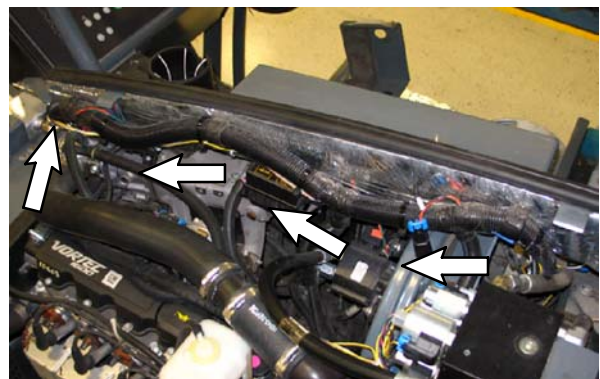


FIG. 15

55. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 16.
56. Route the remainder of the *ec-H20* harness along the main wire harness and into the battery compartment.
57. Cut the cable ties from the rubber boot and slide the boot from the ignition switch.
58. Remove the ignition switch from the dash panel. Set the ignition switch mounting hardware aside.
59. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the ignition switch PIN 30 terminal. Refer to Fig. 16.
60. Reinstall the ignition switch onto the dash panel.
61. Reinstall the rubber boot onto the ignition switch and use two cable ties to secure the boot onto the switch.
62. Connect the *ec-H20* harness to the LED light. Refer to Fig. 16.
63. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind the control panel.

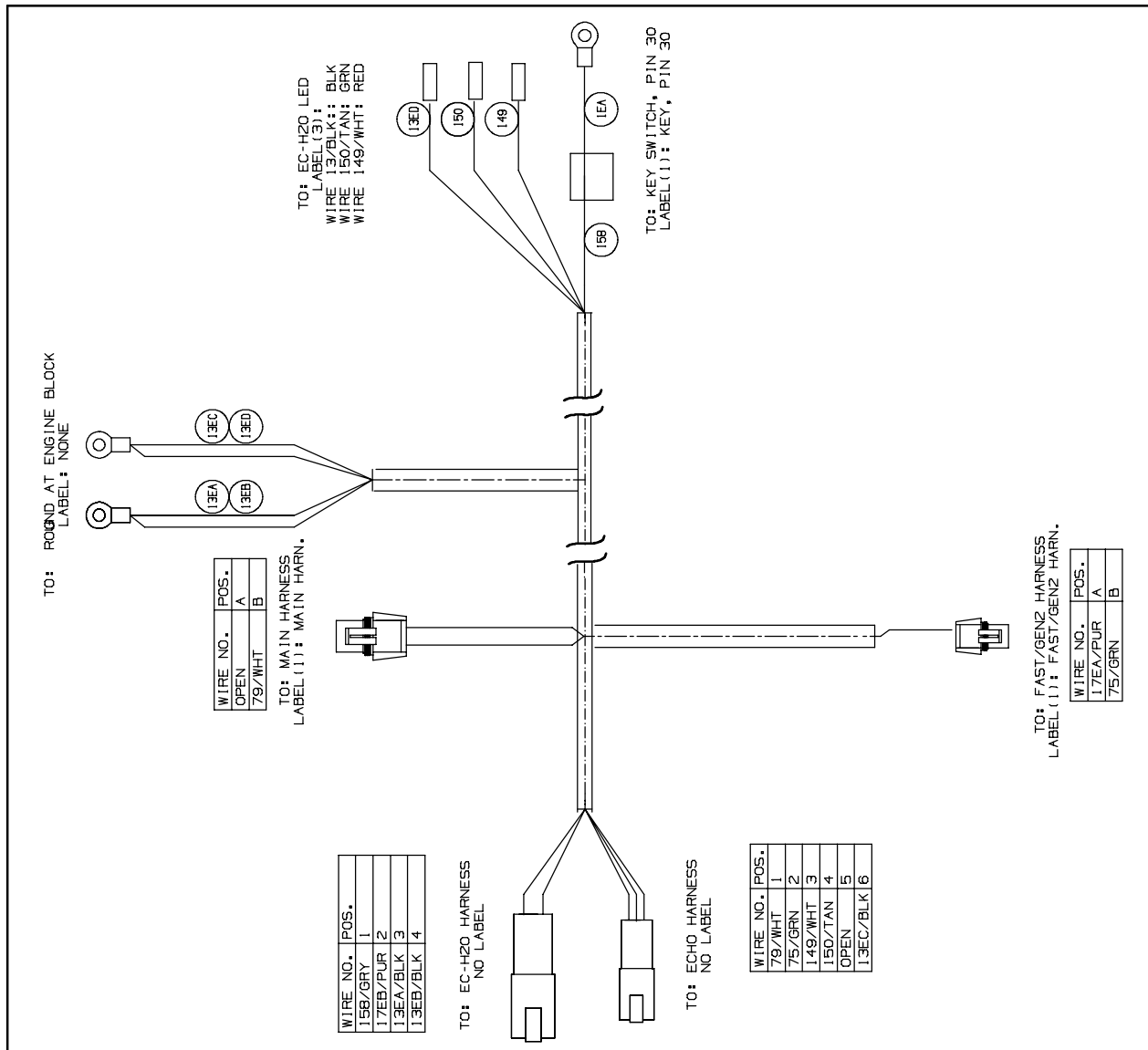


FIG. 16

64. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
65. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
66. Cut approximately 1" from the mounting bracket. Refer to Fig. 17.

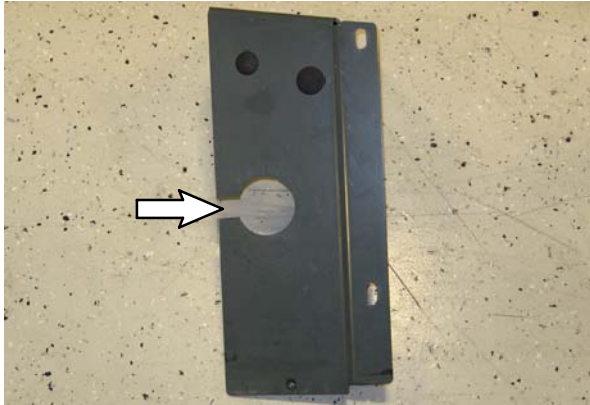


FIG. 17

67. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 21.
68. Connect the 60" PVC hose to the *ec-H20* assembly.

69. Connect the 48" PVC hose to the *ec-H20* assembly.
70. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 16.
71. Install the grommet into the mounting bracket. Refer to Fig. 18.
72. Reinstall the mounting bracket into the operator compartment.
73. Reinstall the cover onto the *ec-H20* assembly.
74. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
75. Install the storage bag onto the back of the operator seat. Refer to Fig. 18.
76. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 18.
77. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
78. Remove the cable tie holding the switch closed.
79. Reconnect the battery cables to the battery.

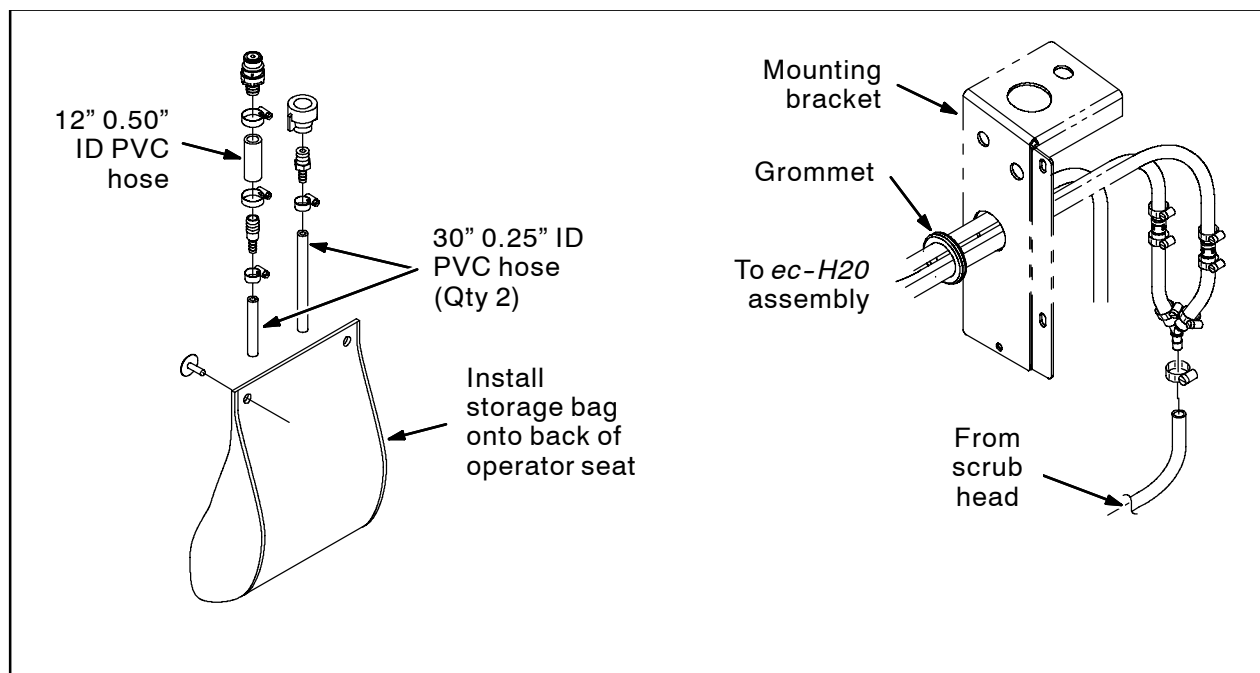


FIG. 18

**INSTALLATION: M20 / M30 / T20
(CYLINDRICAL HEADS ONLY) STANDARD
MACHINES**

1. Place a chock behind each rear tire, jack up the front end of the machine, place jack stands under the front of the machine, and lower the front of the machine down onto the jack stands.

FOR SAFETY: When servicing machine, block machine tires before jacking machine up. Use a hoist or jack that will support the weight of the machine. Jack machine up at designated locations only. Support machine with jack stands.

2. Disconnect the 96" PVC hose from the solution tank. Discard the hose clamp. Refer to Fig. 1.
3. Remove the straight fitting from the 90° fitting on the bottom of the solution tank. Discard the straight fitting. Refer to Fig. 1.

4. Install a straight fitting and two 90° fittings into the t-fitting. Refer to Fig. 1.
5. Install the t-fitting from the previous step onto the 90° fitting on the bottom of the solution tank. Refer to Fig. 1.
6. Use a hose clamp to connect the 96" PVC hose to the t-fitting assembly. Refer to Fig. 1.
7. Cut a 48" length of PVC hose. Refer to Fig. 1.
8. Use a hose clamp to connect the 60" PVC hose to the new elbow fitting installed on the t-fitting. Refer to Fig. 1.

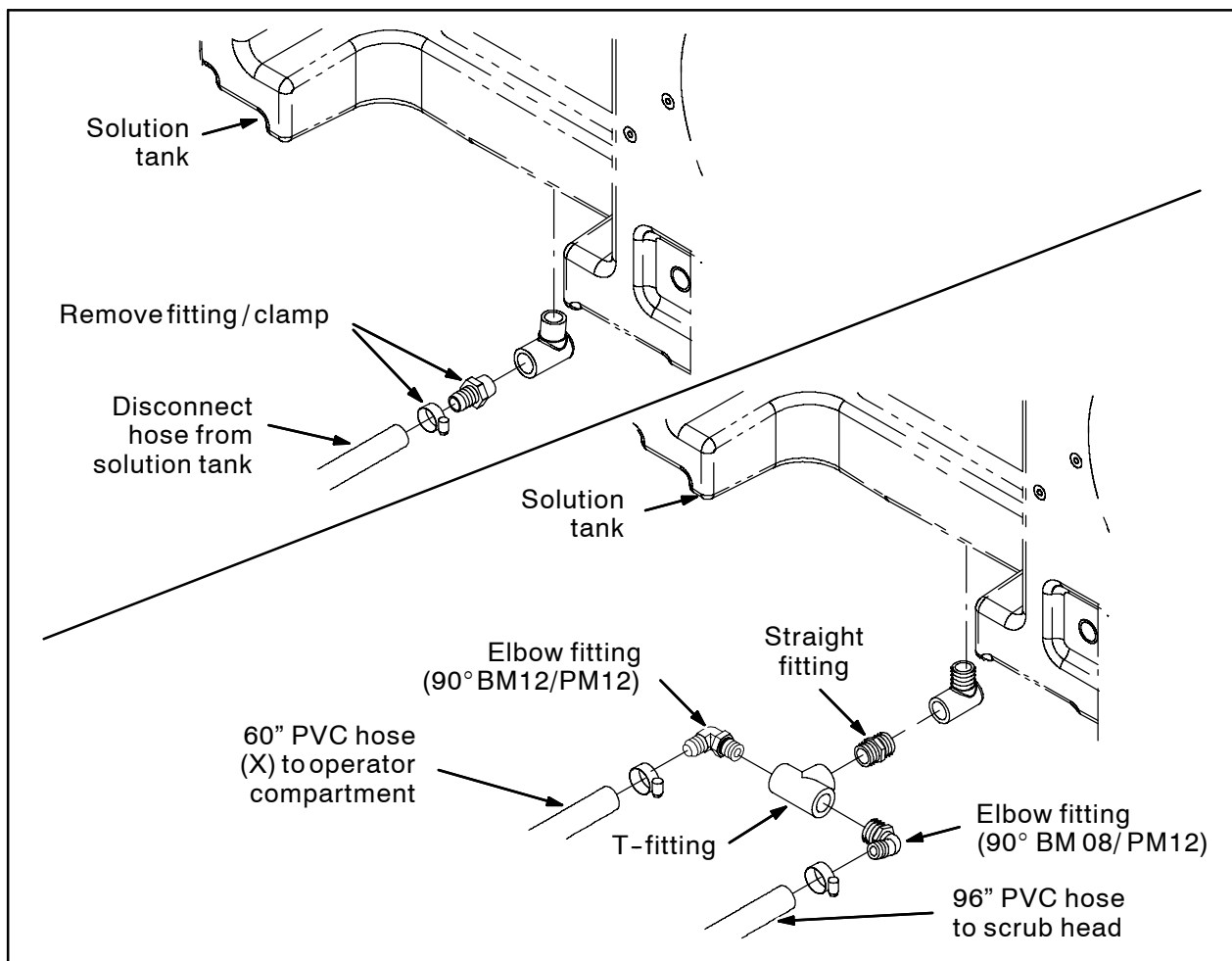


FIG. 1

9. Route the 48" PVC hose from the bottom of the solution tank and up into the operator compartment. Refer to Fig. 2.



FIG. 2

10. Cut a 20" length of PVC hose and a 60" length of PVC hose.
11. Use a hose clamp to install the 20" PVC hose and 60" PVC hose onto a y-fitting. Refer to Fig. 3.
12. Route the end of the PVC hose (end with the y-fitting-if machine is equipped with optional side brush) from the operator compartment down to the scrub head. Refer to Fig. 3.

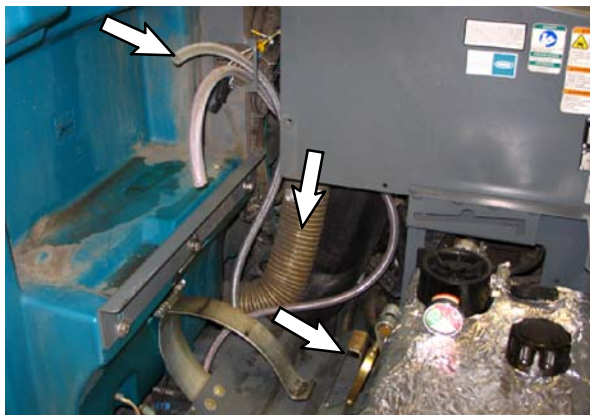


FIG. 3

13. Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".

NOTE: Complete Step 14 through Step 30 only if machine is equipped with the optional side brush.

14. Cut three 2" lengths of 0.50 ID PVC hose.
15. Cut a 13" length of 0.38" ID PVC hose.
16. Assemble the check valve, straight fittings, 13" hose, and 2" hoses as shown in Fig. 4. Note direction of flow.
17. Use a hose clamp to attach the hose assembly assembled in the previous step to the y-fitting connected to the 60" 0.50 ID PVC hose. Refer to Fig. 4.
18. Use two M5 pan screws, two flat washers, and two M5 hex nuts to install the solenoid onto the solenoid bracket. Refer to Fig. 4.
19. Use a M8 thread roller to install the solenoid / solenoid bracket onto the frame of the machine. Refer to Fig. 4.
20. Trim 2" inches from the shorter end and 6" from the longer end of the bent hose.
21. Cut the bent hose 12" from the longer end of the hose. Refer to Fig. 4.
22. Use two hose clamps to install a check valve between the two sections of hose cut in the previous step. Note the direction of flow. Refer to Fig. 4.
23. Use a hose clamp to connect the trimmed hose to the solenoid. Refer to Fig. 4.
24. Use a hose clamp to connect the other end of the trimmed hose to the y-fitting connected to the 60" PVC hose from the operator compartment. Refer to Fig. 4.
25. Use a hose clamp to connect a 26" PVC hose to the solenoid. Refer to Fig. 4.

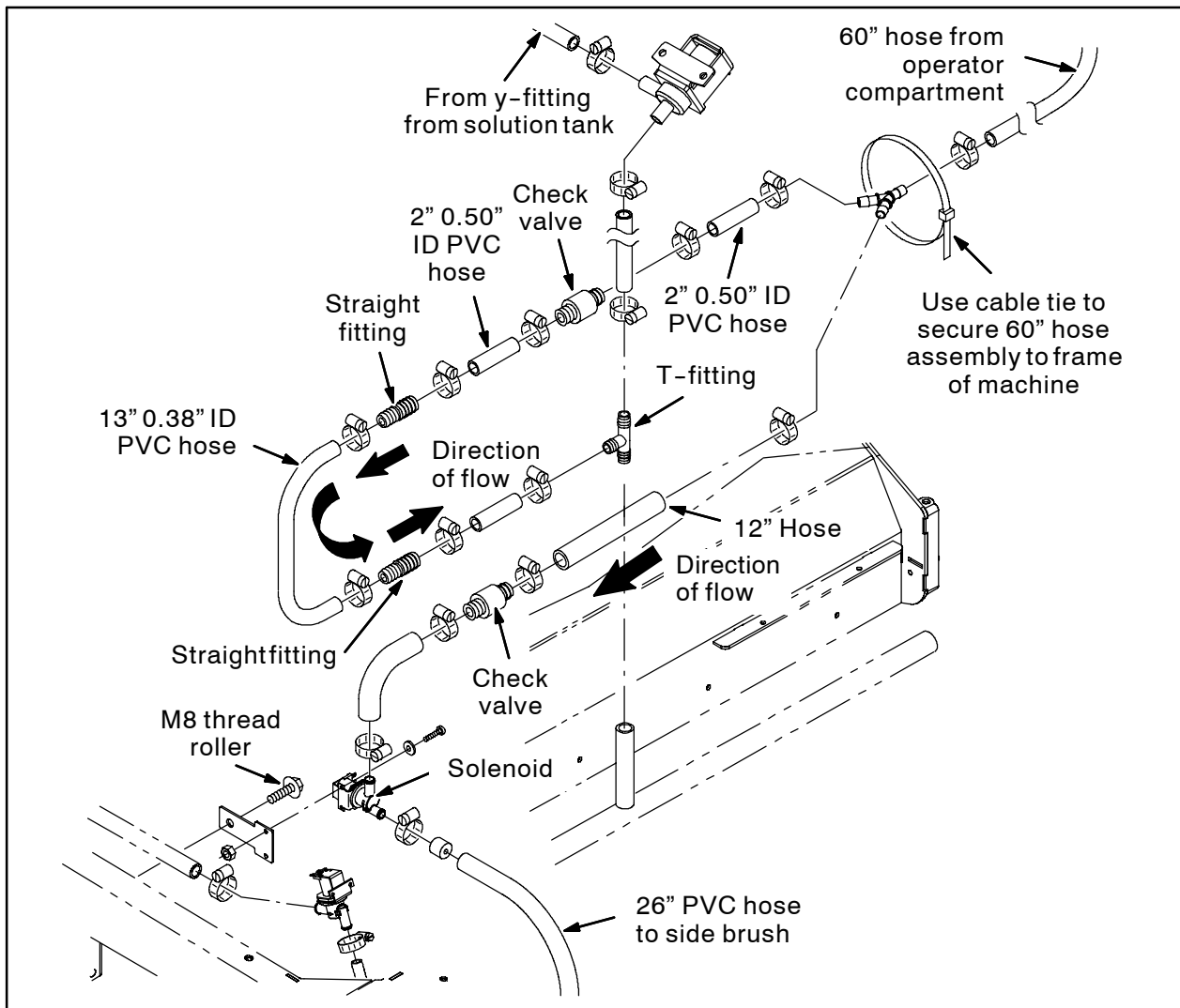


FIG. 4

26. Cut the solution supply hose 2.5" from where the hose is connected to the dispensing tube. Refer to Fig. 5.
27. Use a hose clamp to connect the y-fitting to the 2.5" solution supply hose. Refer to Fig. 5.
28. Use a hose clamp to connect the hose from the solution supply solenoid to the y-fitting. Refer to Fig. 5.

29. Use a hose clamp to connect the 20" PVC hose from the solenoid to the y-fitting. Refer to Fig. 5.
30. Reinstall the side brush guard onto the machine.

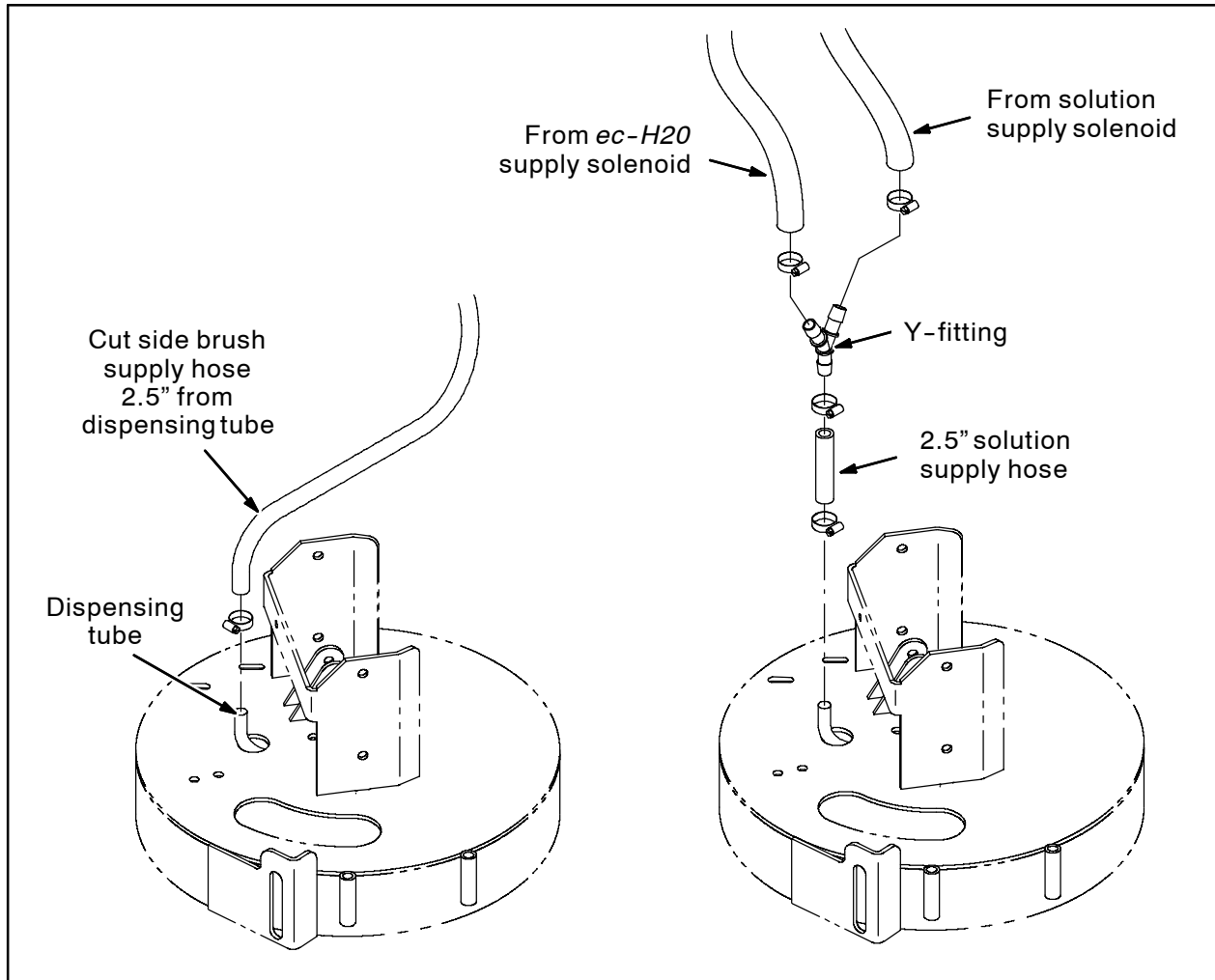


FIG. 5

31. Remove the skirt assembly from the front of the scrub head. Set the skirt assembly and mounting hardware aside. Refer to Fig. 6.

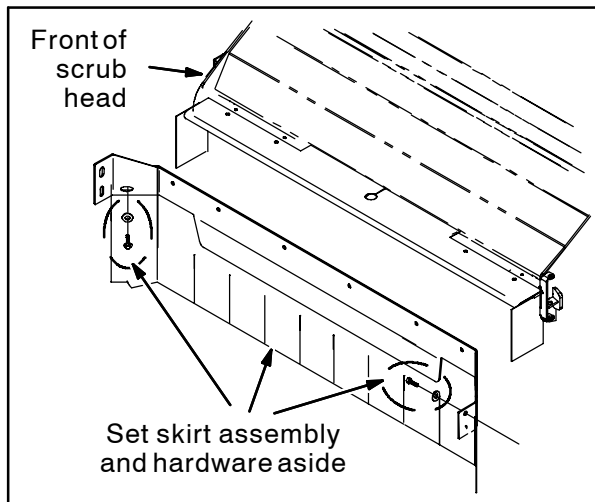


FIG. 6

32. Cut the solution supply hose to the scrub head approximately 2" from the top of the skirt. Refer to Fig. 7.

33. Use a hose clamp to connect the t-fitting to the hose from the solution spray bar manifold. Refer to Fig. 7.

34. Use a hose clamp to connect the hose from the scrub head solution solenoid to the t-fitting. Refer to Fig. 7.

35. Use a hose clamp to connect the 20" PVC hose from the y-fitting to the t-fitting. Refer to Fig. 7.

36. Reinstall the skirt assembly onto the front of the scrub head. Refer to Fig. 6.

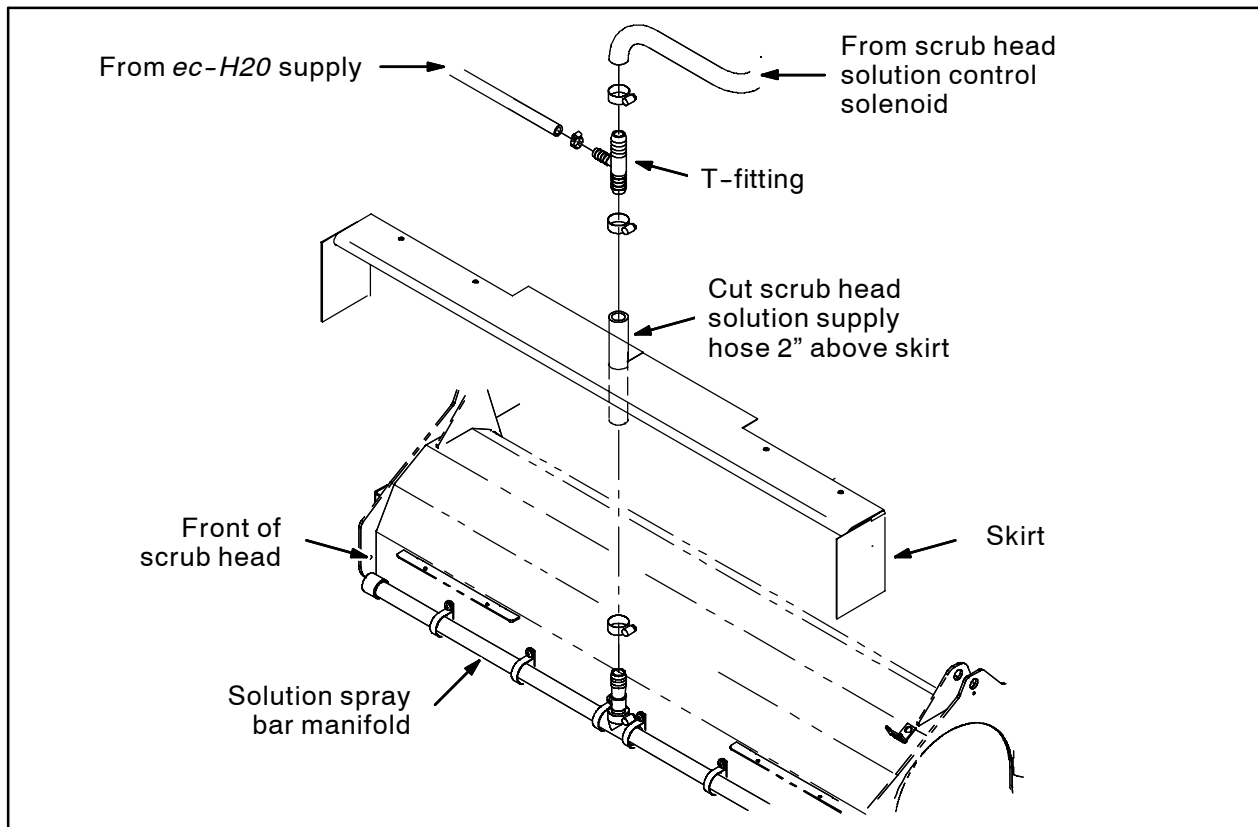


FIG. 7

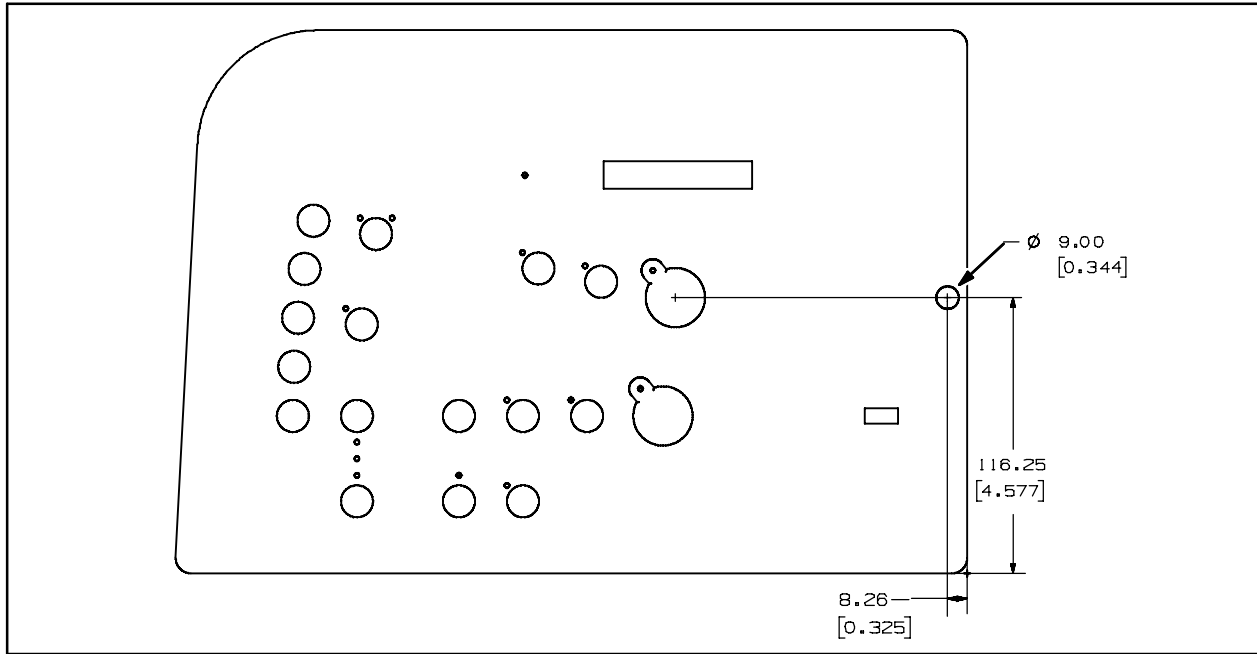


FIG. 8

37. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 8.
38. Remove the instrument panel label from the instrument panel.
39. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
40. Install the new instrument panel label onto the instrument panel.
41. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 8.
42. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
43. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

44. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 9.

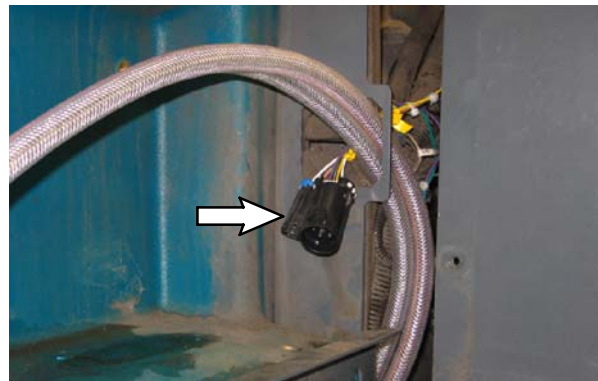


FIG. 9

45. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 10.

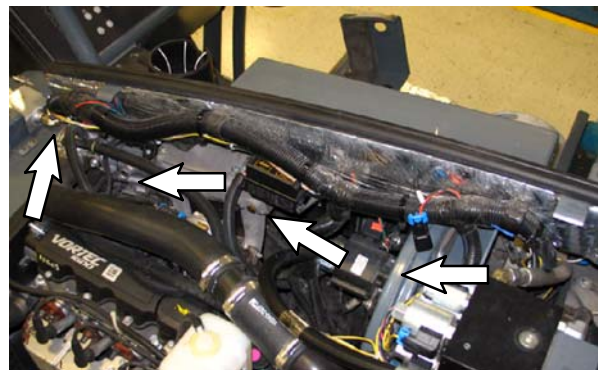


FIG. 10

46. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 11.
47. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
48. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
49. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 30 terminal on the ignition switch. Refer to Fig. 11.
50. Reinstall the rubber boot onto the ignition switch.
51. Connect the *ec-H20* harness to the LED light. Refer to Fig. 11.
52. Use several cable ties to secure the *ec-H20* harness behind the control panel..

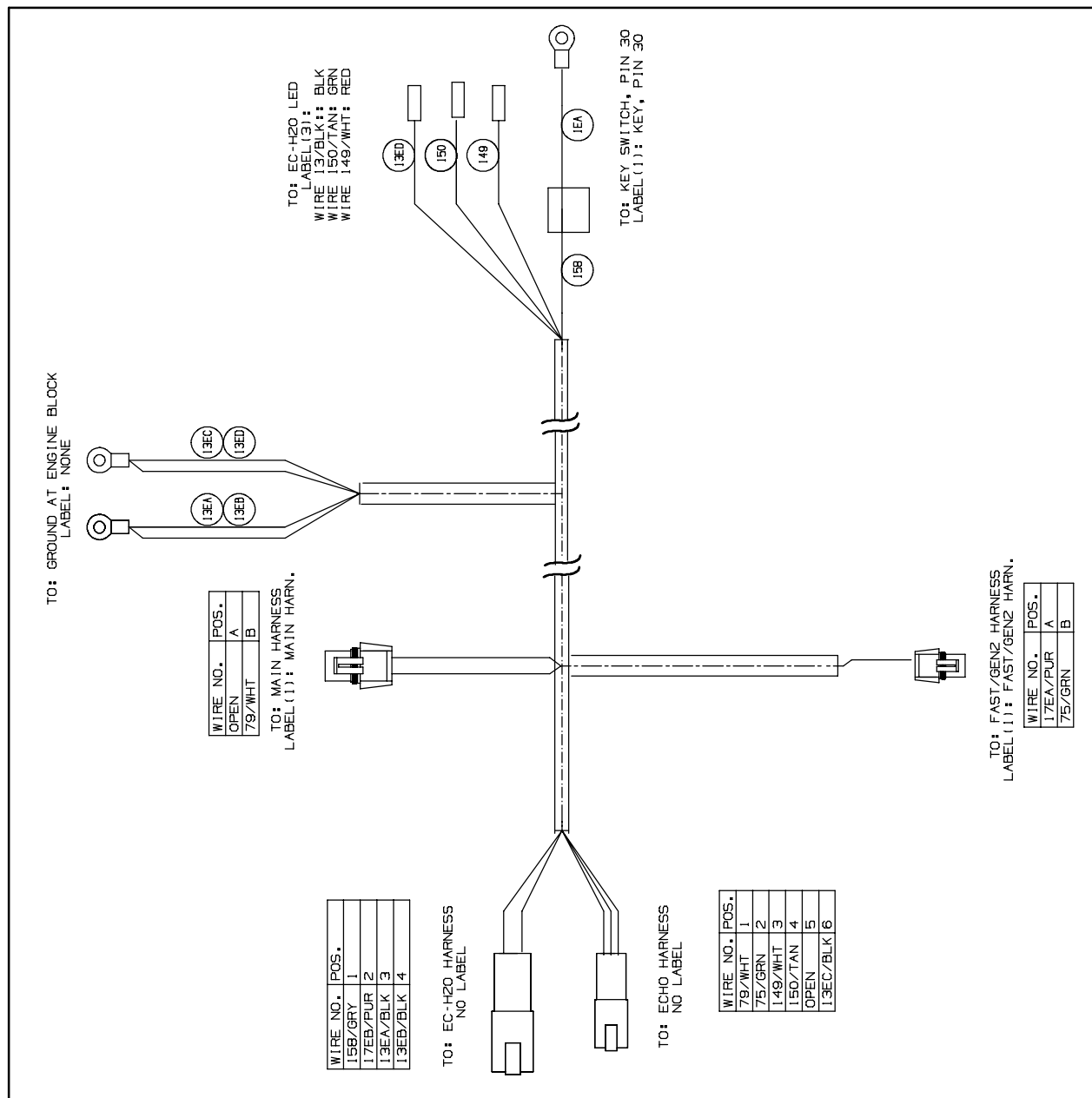


FIG. 11

53. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
54. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
55. Cut approximately 1" from the mounting bracket. Refer to Fig. 12.

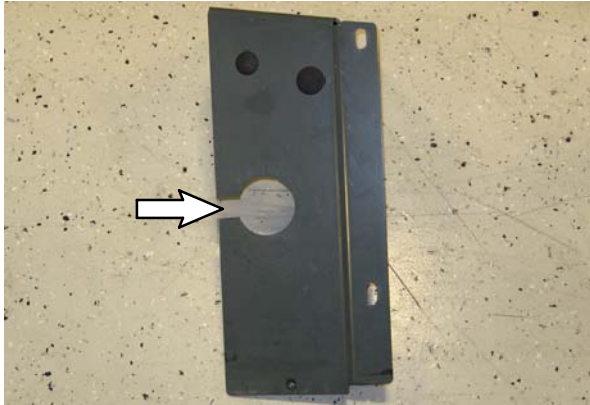


FIG. 12

56. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 15.
57. Connect the 60" PVC hose to the *ec-H20* assembly.

58. Connect the 48" PVC hose to the *ec-H20* assembly.
59. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 11.
60. Install the grommet into the mounting bracket. Refer to Fig. 13.
61. Reinstall the mounting bracket into the operator compartment. Refer to Fig. 13.
62. Reinstall the cover onto the *ec-H20* assembly.
63. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
64. Install the storage bag onto the back of the operator seat. Refer to Fig. 13.
65. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 13.
66. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
67. Remove the cable tie holding the switch closed.
68. Reconnect the battery cables to the battery.

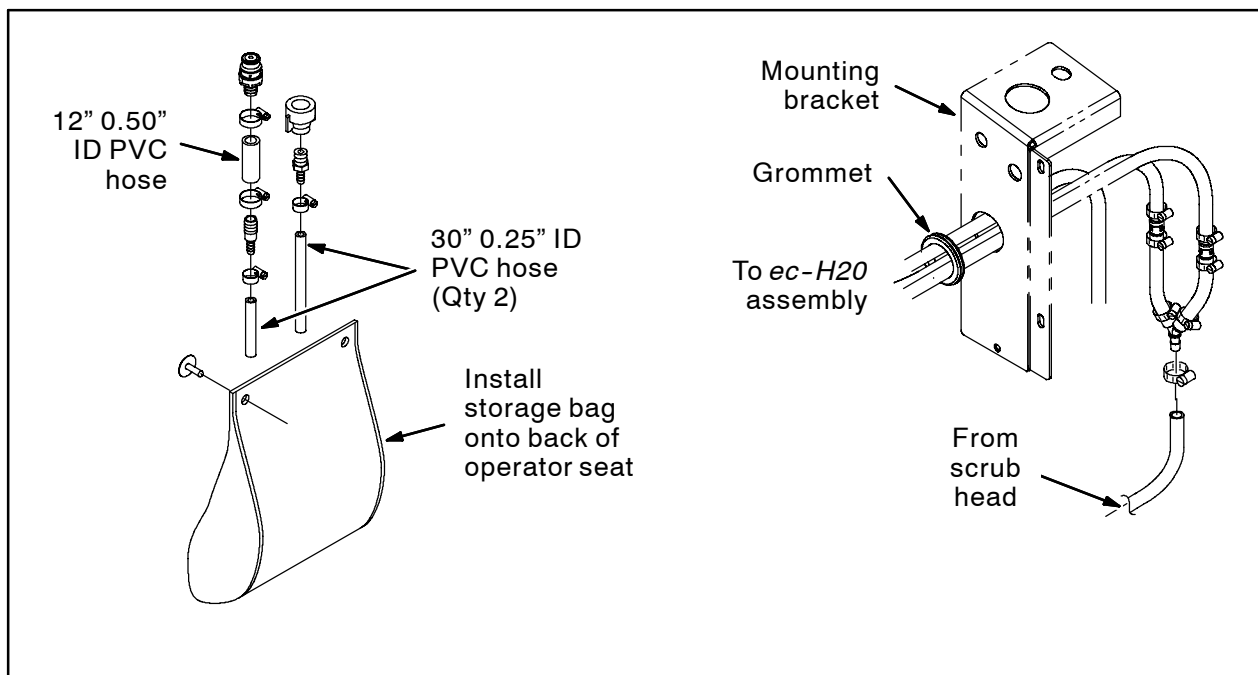


FIG. 13

INSTALLATION: FaST GEN I MACHINES - M20 / T20 (CYLINDRICAL HEADS) - ONLY

1. Disconnect the hoses and wire harness from the FaST assembly and remove the entire FaST assembly from the machine. Discard the FaST assembly and removed hardware. Refer to Fig. 1.

2. Remove the hoses and components labeled in Fig. 1 and discard the hoses and hose clamps.

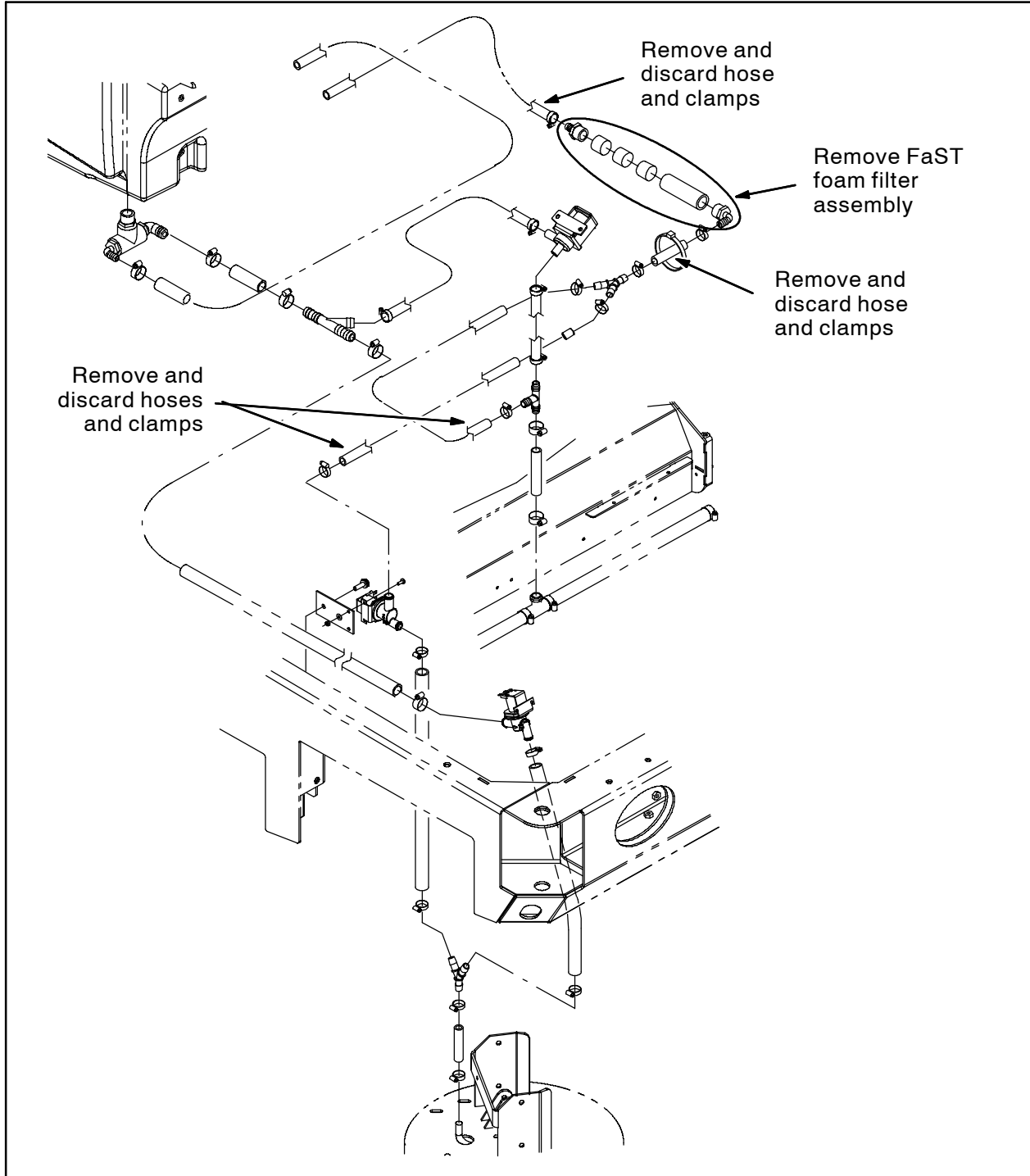


FIG. 1

NOTE: Complete Step 3 through Step 12 only if machine is equipped with the optional side brush.

3. Place a chock behind each rear tire, jack up the front end of the machine, place jack stands under the front of the machine, and lower the machine onto the jack stands.

FOR SAFETY: When servicing machine, block machine tires before jacking machine up. Use a hoist or jack that will support the weight of the machine. Jack machine up at designated locations only. Support machine with jack stands.

4. Cut a 60" length and three 2" lengths of 0.50 ID PVC hose.
5. Cut a 13" length of 0.38" ID PVC hose.
6. Assemble the check valve, straight fittings, 13" hose, and 2" hoses as shown in Fig. 2. Note the direction of flow.

7. Trim 2" inches from the shorter end and 6" from the longer end of the bent hose.
8. Cut the bent hose 12" from the longer end of the hose. Refer to Fig. 2.
9. Use two hose clamps to install a check valve between the two sections of hose cut in the previous step. Note the direction of flow. Refer to Fig. 2.
10. Use a hose clamp to connect the trimmed hose to the solenoid. Refer to Fig. 2.
11. Use a hose clamp to connect the other end of the trimmed hose to the y-fitting connected to the 60" PVC hose from the operator compartment. Refer to Fig. 2.
12. Use a hose clamp to connect a 26" PVC hose to the solenoid. Refer to Fig. 2.

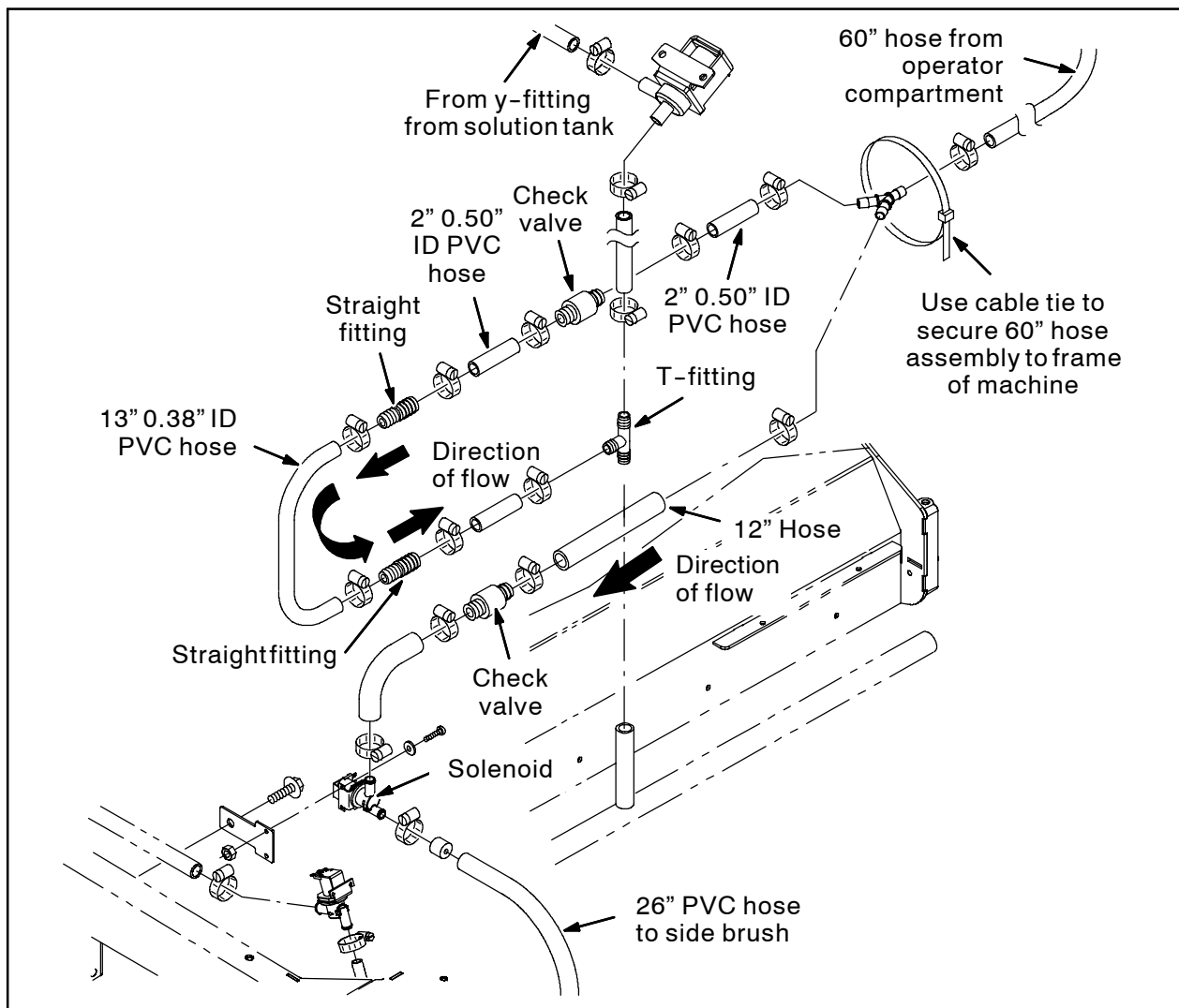


FIG. 2

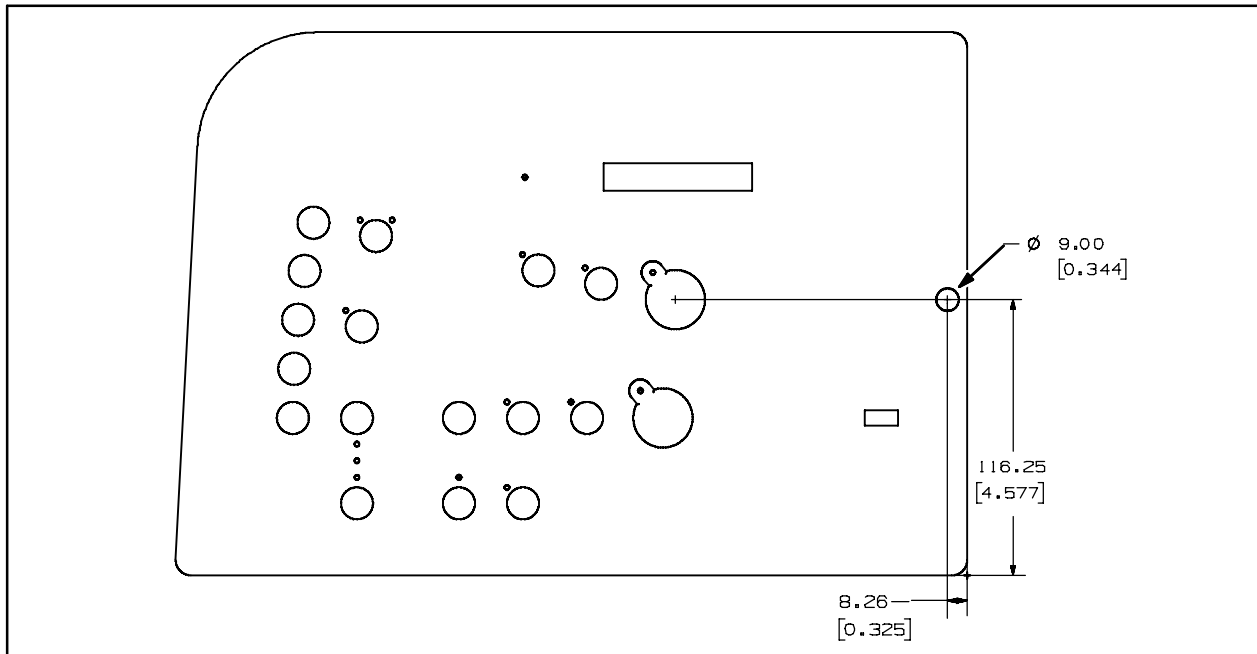


FIG. 3

13. Carefully drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 3.
14. Remove the instrument panel label from the instrument panel.
15. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
16. Install the new instrument panel label onto the instrument panel.
17. Reinstall the instrument panel into the dash panel.
18. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 3.
19. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
20. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

21. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 4.

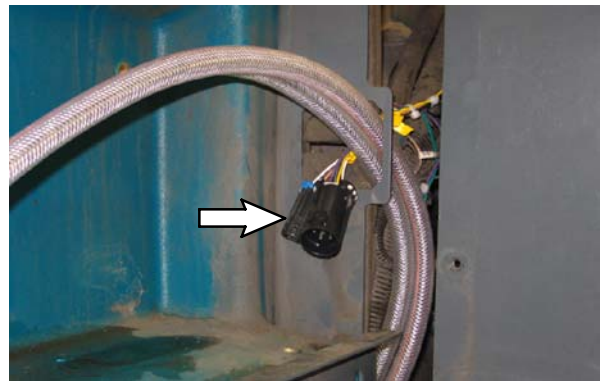


FIG. 4

22. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 5.

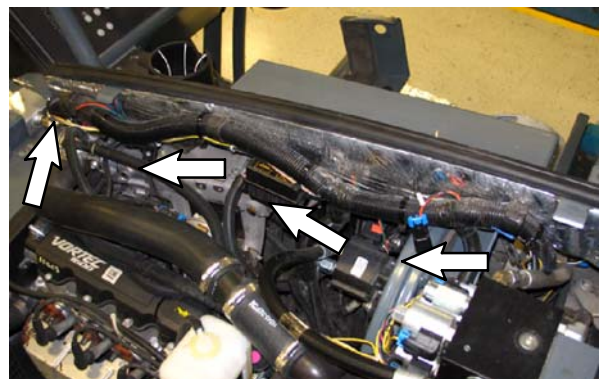


FIG. 5

23. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 6.
24. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
25. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
26. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to PIN 30 on the ignition switch. Refer to Fig. 6.

27. Reinstall the rubber boot onto the ignition switch.
28. Connect the *ec-H20* harness to the LED light. Refer to Fig. 6.
29. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind where the battery is located.

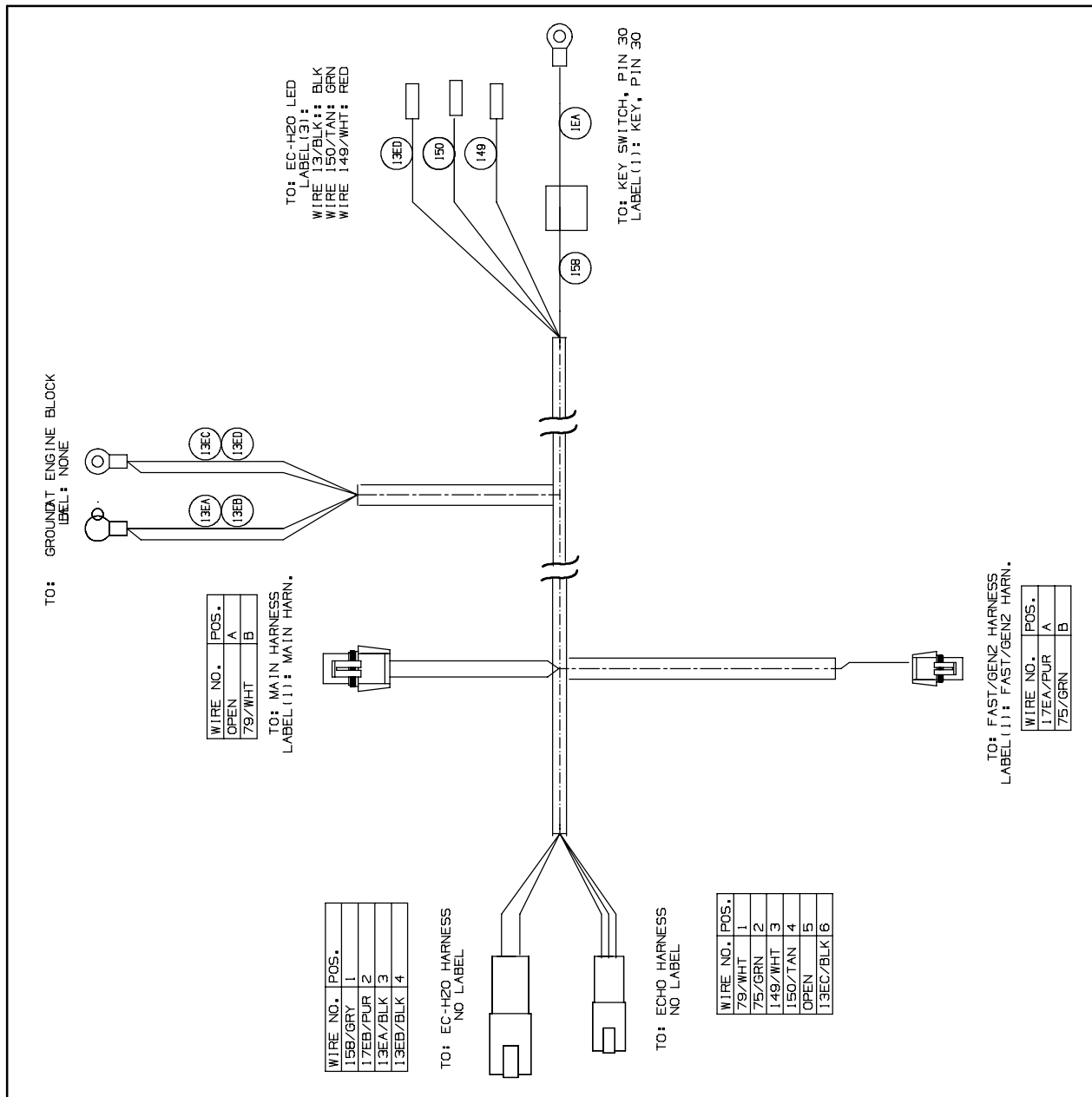


FIG. 6

30. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
31. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
32. Cut approximately 1" from the mounting bracket. Refer to Fig. 7.

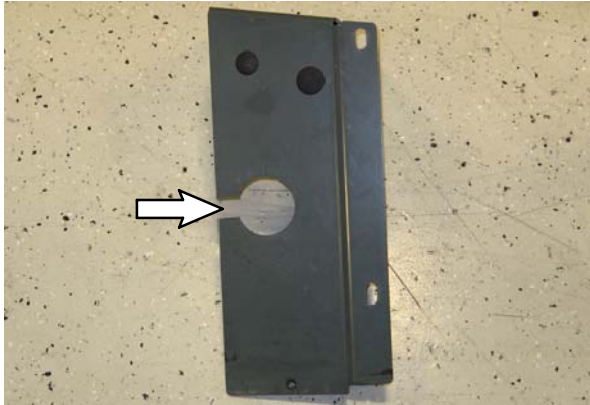


FIG. 7

33. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 8.
34. Connect the 60" PVC hose to the *ec-H20* assembly.

35. Connect the 48" PVC hose to the *ec-H20* assembly.
36. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 6.
37. Install the grommet into the mounting bracket. Refer to Fig. 8.
38. Reinstall the mounting bracket into the operator compartment.
39. Reinstall the cover onto the *ec-H20* assembly.
40. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
41. Install the storage bag onto the back of the operator seat. Refer to Fig. 10.
42. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 10.
43. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
44. Remove the cable tie holding the switch closed.
45. Reconnect the battery cables to the battery.

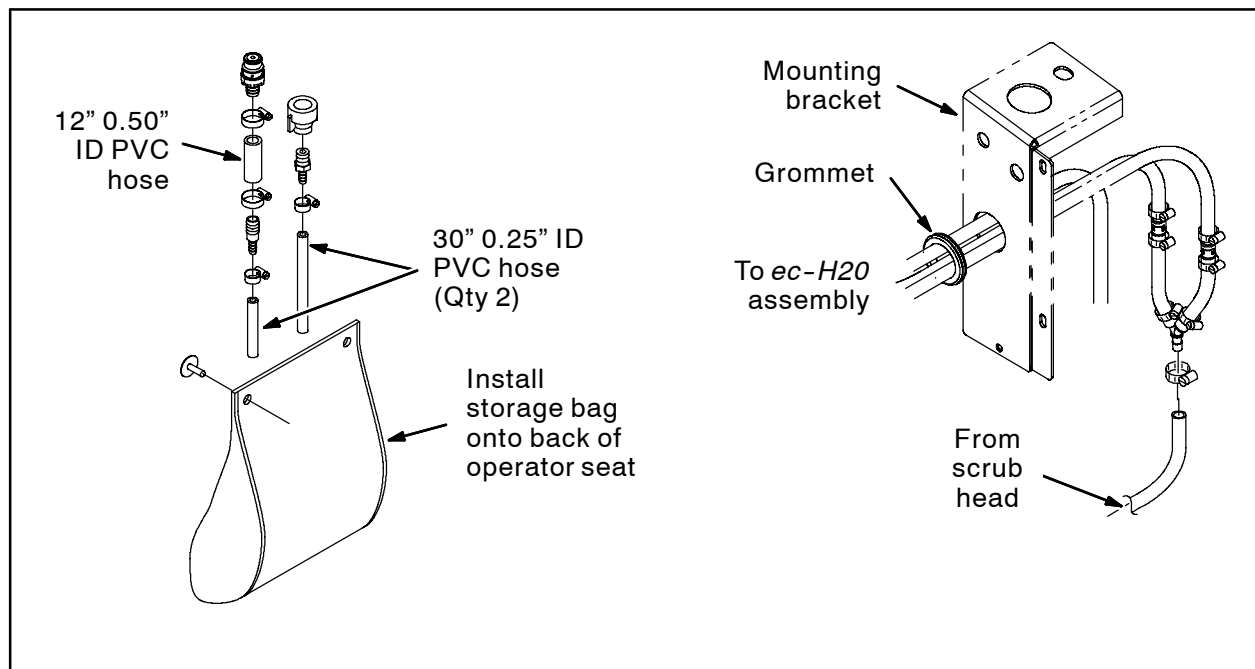


FIG. 8

**INSTALLATION: M20 / M30 / T20
(CYLINDRICAL HEADS ONLY) FaST GEN II
MACHINES**

1. Disconnect the hoses and wire harness from the FaST assembly and remove the entire FaST assembly from the machine. Discard the FaST assembly and removed hardware. Refer to Fig. 1.

2. Remove the hoses labeled in Fig. 1 and discard the hoses and hose clamps.

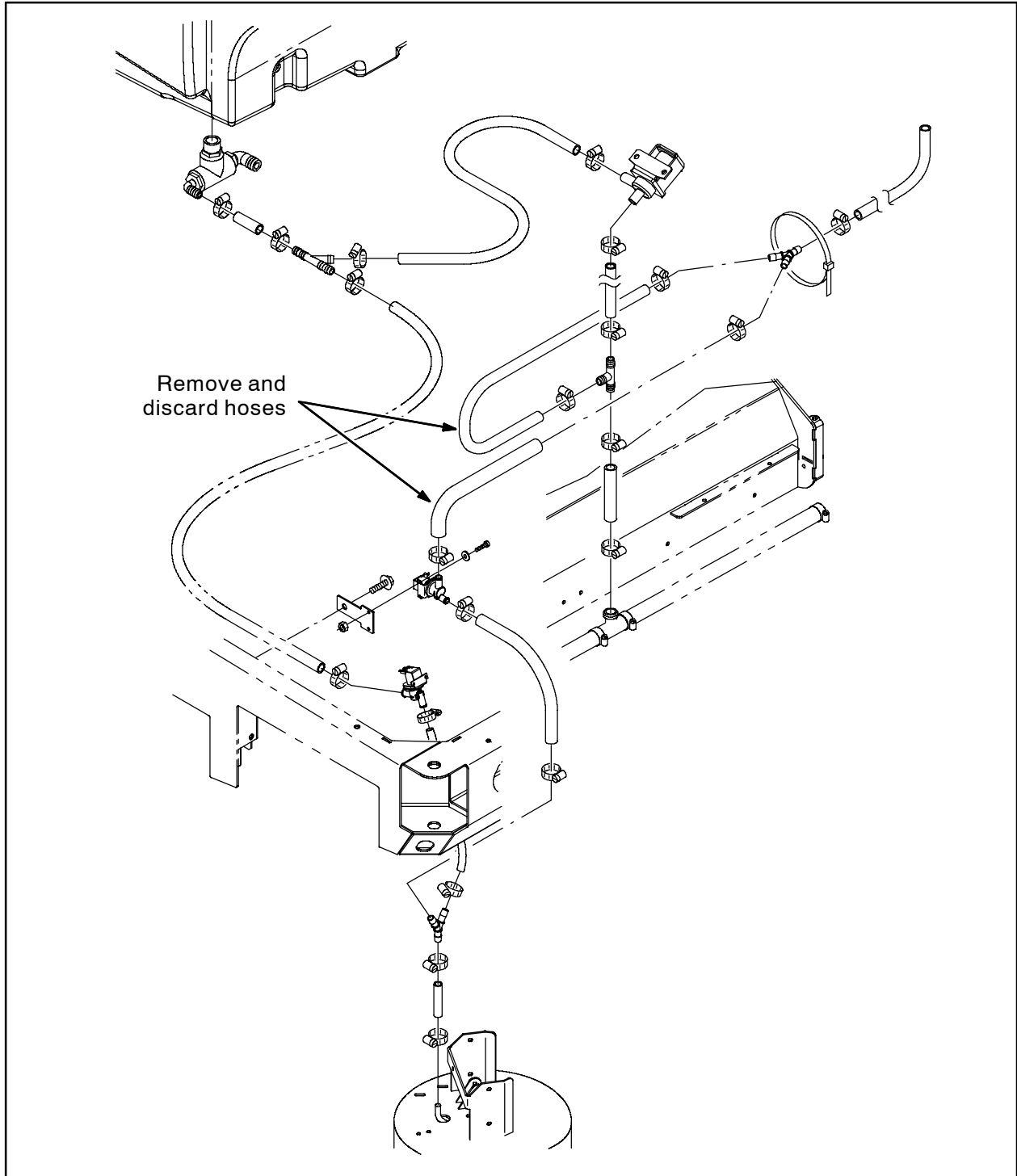


FIG. 1

NOTE: Complete Step 3 through Step 12 only if machine is equipped with the optional side brush.

- Place a chock behind each rear tire, jack up the front end of the machine, place jack stands under the front of the machine, and lower the machine onto the jack stands.

FOR SAFETY: When servicing machine, block machine tires before jacking machine up. Use a hoist or jack that will support the weight of the machine. Jack machine up at designated locations only. Support machine with jack stands.

- Cut a 60" length and three 2" lengths of 0.50 ID PVC hose.
- Cut a 13" length of 0.38" ID PVC hose.
- Assemble the check valve, straight fittings, and 13" hose / 2" hoses as shown in Fig. 2. Note the direction of flow.

- Trim 2" inches from the short end and 6" from the long end of the bent hose.
- Cut the bent hose 12" from the longer end of the hose. Refer to Fig. 2.
- Use two hose clamps to install a check valve between the two sections of hose cut in the previous step. Note the direction of flow. Refer to Fig. 2.
- Use a hose clamp to connect the trimmed hose to the solenoid. Refer to Fig. 2.
- Use a hose clamp to connect the other end of the trimmed hose to the y-fitting connected to the 60" PVC hose from the operator compartment. Refer to Fig. 2.
- Use a hose clamp to connect a 26" PVC hose to the solenoid. Refer to Fig. 2.

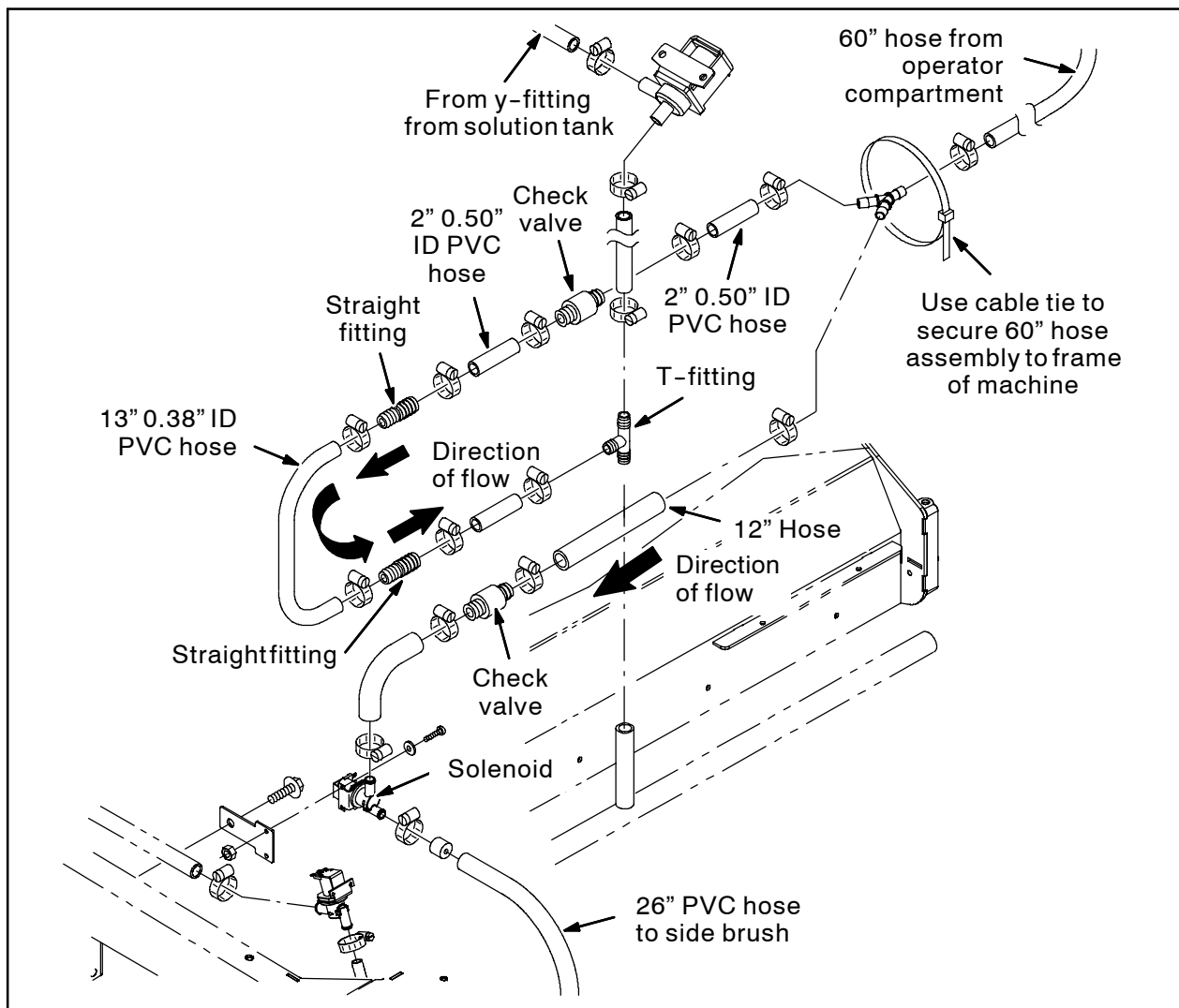


FIG. 2

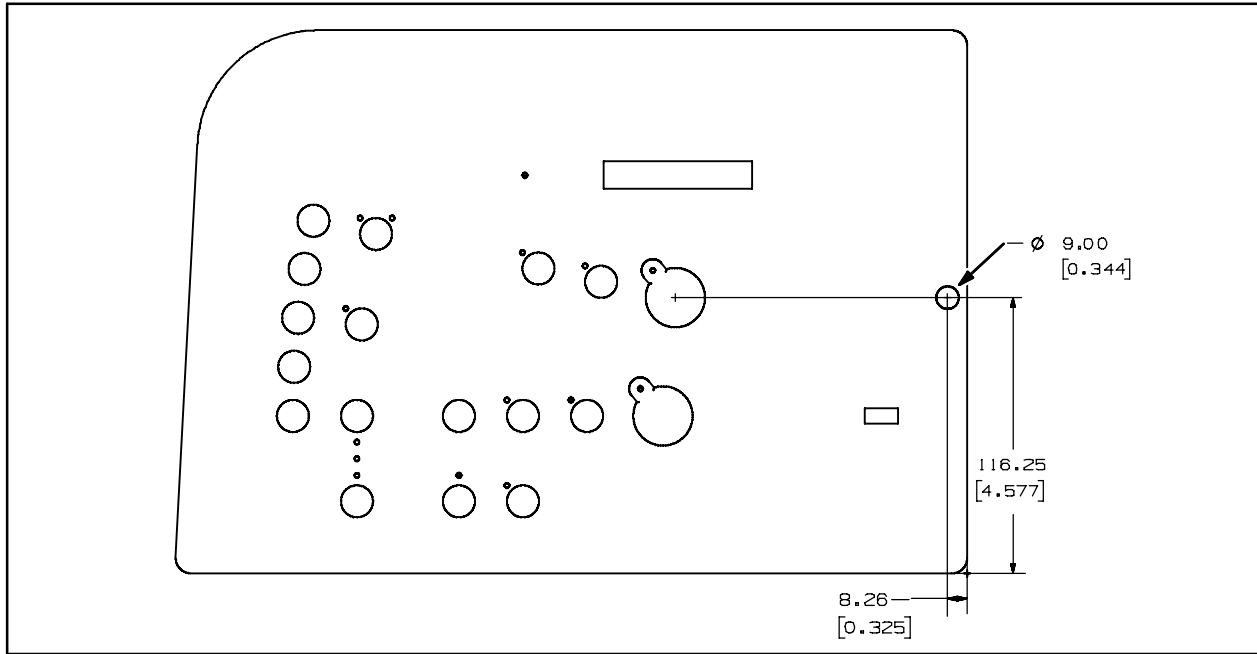


FIG. 3

13. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 3.
14. Remove the instrument panel label from the instrument panel.
15. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
16. Install the new instrument panel label onto the instrument panel.
17. Reinstall the instrument panel into the dash panel.
18. Insert the *ec-H20* warning light into the hole drilled in the previous step. Refer to Fig. 3.
19. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
20. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

21. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 4.

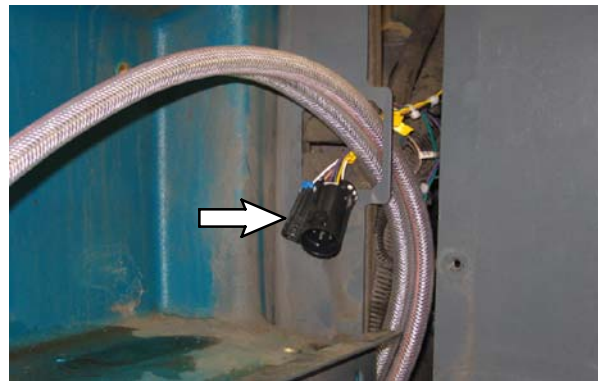


FIG. 4

22. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 5.

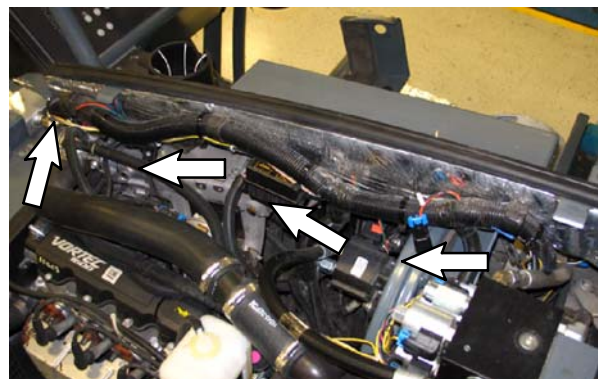


FIG. 5

23. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 6.
24. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
25. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
26. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 39 terminal on the ignition switch. Refer to Fig. 6.
27. Reinstall the rubber boot onto the ignition switch.
28. Connect the *ec-H20* harness to the LED light. Refer to Fig. 6.
29. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind where the battery is located.

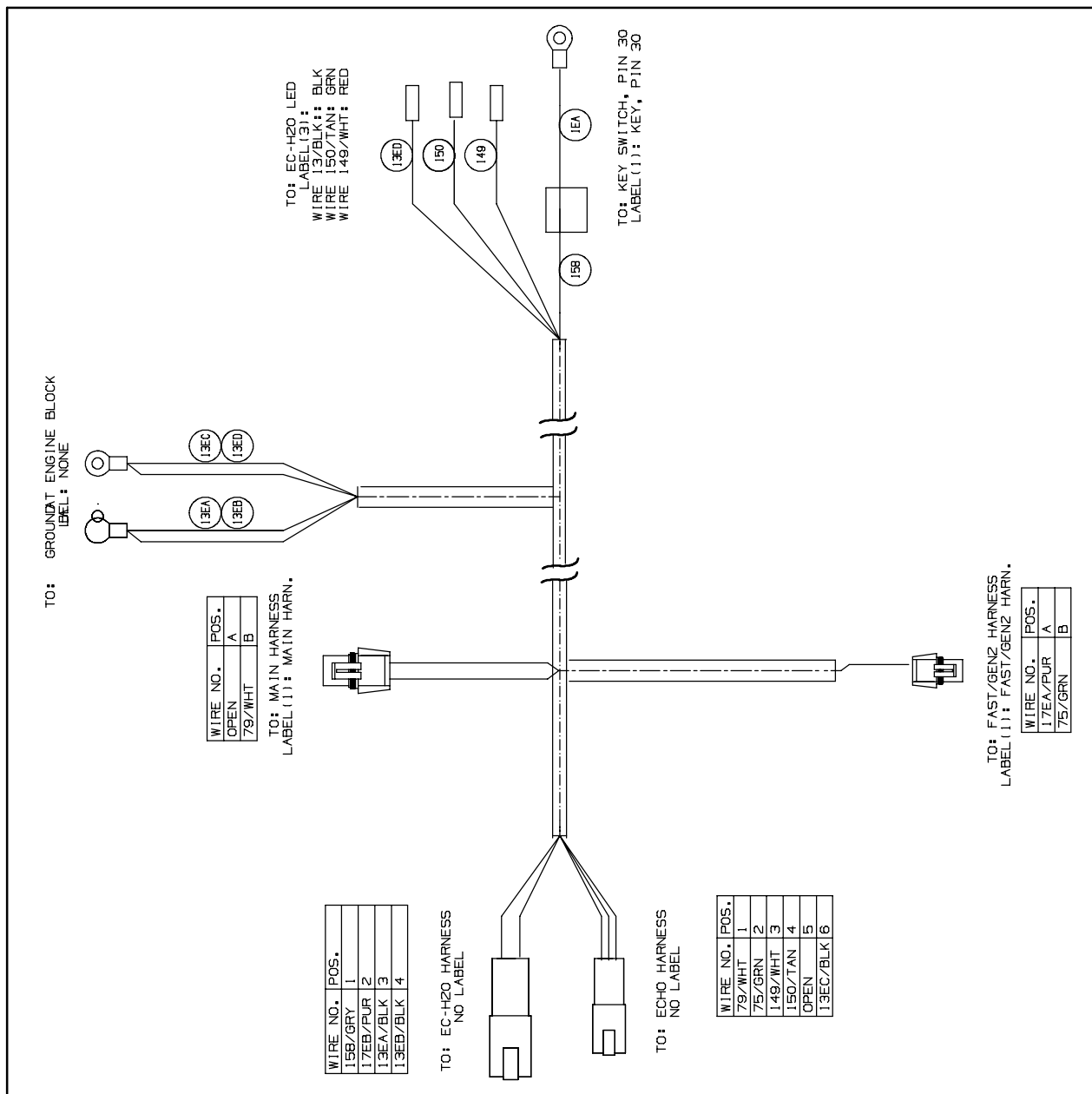


FIG. 6

30. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
31. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
32. Cut approximately 1" from the mounting bracket. Refer to Fig. 7.

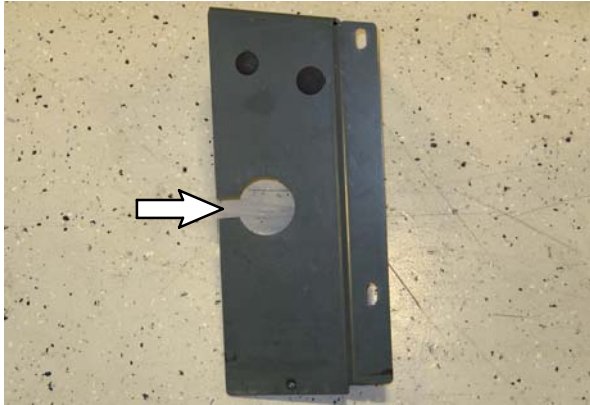


FIG. 7

33. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 8.
34. Connect the 60" PVC hose to the *ec-H20* assembly.

35. Connect the 48" PVC hose to the *ec-H20* assembly.
36. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 6.
37. Install the grommet into the mounting bracket. Refer to Fig. 8.
38. Reinstall the mounting bracket into the operator compartment.
39. Reinstall the cover onto the *ec-H20* assembly.
40. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
41. Install the storage bag onto the back of the operator seat. Refer to Fig. 8.
42. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 8.
43. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
44. Remove the cable tie holding the switch closed.
45. Reconnect the battery cables to the battery.

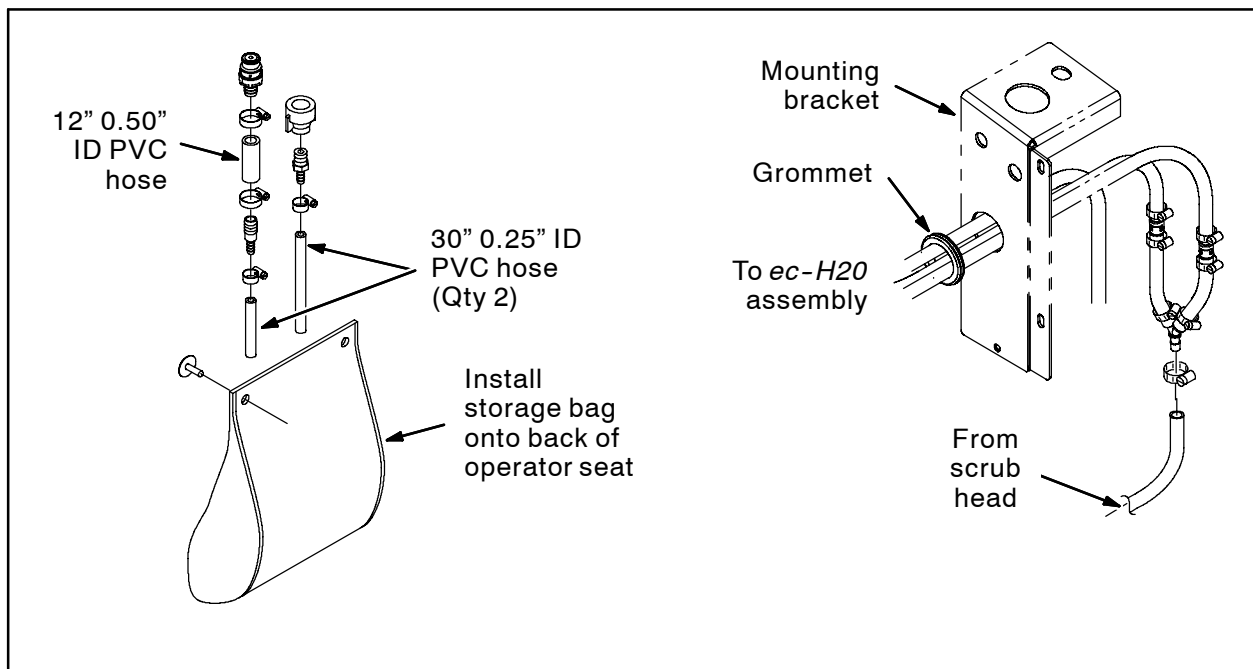


FIG. 8

**INSTALLATION: T20 STANDARD
(DISK HEADS ONLY)**

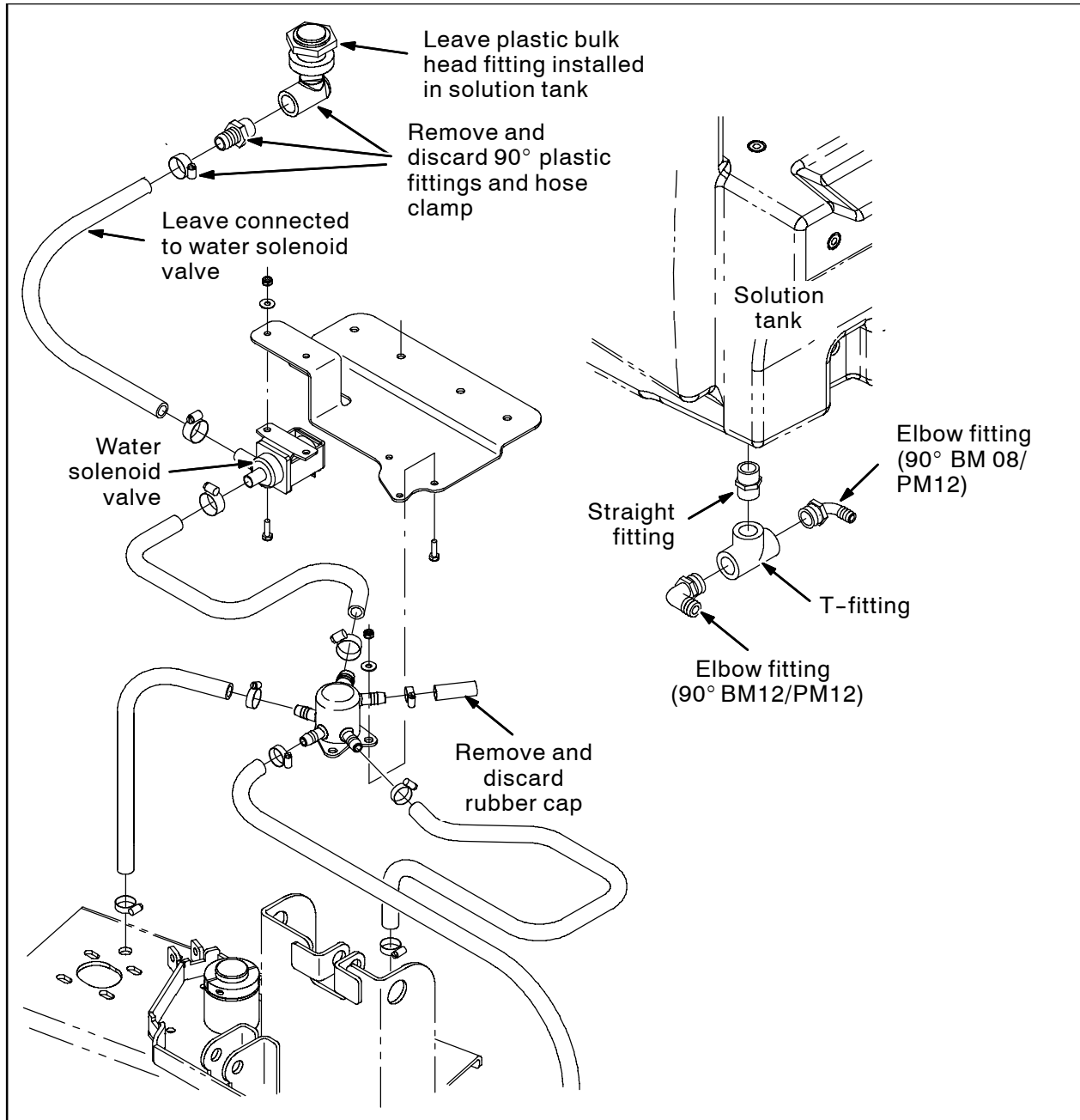


FIG. 1

1. Remove the rubber cap from the solution control manifold. Discard the cap and hose clamp. Refer to Fig. 1.
2. Disconnect the hose from the 90° fitting on the bottom of the solution tank. Discard the hose clamp. Refer to Fig. 1.
3. Remove the 90° fitting from the plastic bulk head fitting on the bottom of the solution tank. Refer to Fig. 1.
4. Install two 90° fittings and a straight fitting into the t-fitting. Refer to Fig. 1.
5. Install the t-fitting from the previous step into the plastic bulk head fitting on the bottom of the solution tank. Refer to Fig. 1 and Fig. 2.
6. Use a hose clamp to connect the hose disconnected from the removed 90° fitting to the outer 90° fitting on the t-fitting assembly. Refer to Fig. 1 and Fig. 2.

7. Cut a 60" length of 54" PVC hose.
8. Use a hose clamp to connect the 54" PVC hose to the other side of the t-fitting assembly. Refer to Fig. 2.
9. Route the 54" PVC hose over past the top of the scrub head and up into the operator compartment. Refer to Fig. 2.
10. **Machines Without Side Brush Option Only:** Route the 60" PVC hose from the operator compartment and down to the solution control manifold. Refer to Fig. 2.
11. **Machines Without Side Brush Option Only:** Use a hose clamp to connect the 60" PVC hose to the solution control manifold where the rubber cap was previously located. Refer to Fig. 1 and Fig. 2.
12. **Machines Without Side Brush Option Only:** Label the end of the 60" PVC hose from the previous step "SCRUB HEAD".

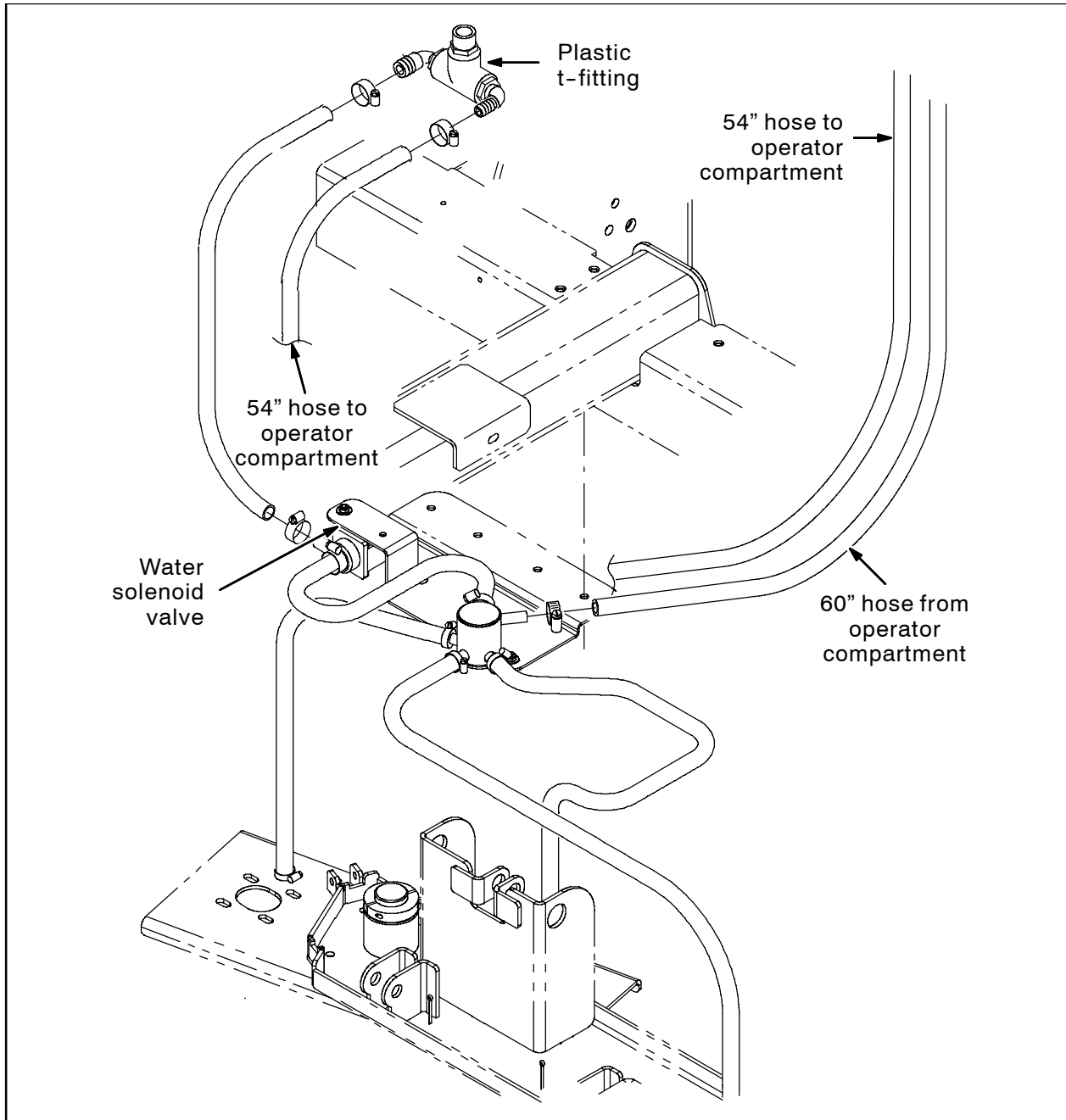


FIG. 2

NOTE: Complete Step 14 through Step 31 only if machine is equipped with the optional side brush.

13. Cut a 20" and 43" length of 0.50 ID PVC hose.
14. Cut three 2" lengths of 0.50 ID PVC hose.
15. Cut a 12" length of 0.38" ID PVC hose.
16. Cut 12" from one end of the 43" PVC hose. Refer to Fig. 3.
17. Use two hose clamps to install a check valve between the 31" and 12" PVC hoses. Note the direction of flow. Refer to Fig. 3.
18. Use two M5 pan screws, two flat washers, and two M5 hex nuts to install the solenoid onto the solenoid bracket. Refer to Fig. 3.
19. Use a M8 thread roller to install the solenoid / solenoid bracket onto the frame of the machine. Refer to Fig. 3.
20. Use a hose clamp to install a t-fitting onto the 60" PVC hose.
21. Assemble the check valve, straight fittings, 12" hose, and 2" hoses as shown in Fig. 3. Note the direction of flow.
22. Use a hose clamp to connect the hose assembly assembled in the previous step to the t-fitting on the 60" PVC hose from the operator compartment. Refer to Fig. 3.
23. Route the end of the 60" PVC hose with the t-fitting / additional hose assembly from the operator compartment and down to the scrub head. Refer to Fig. 3.
24. Use a hose clamp to connect the additional hose assembly to the solenoid. Refer to Fig. 3.
25. Use a hose clamp to connect a 20" PVC hose to the solenoid. Refer to Fig. 11.

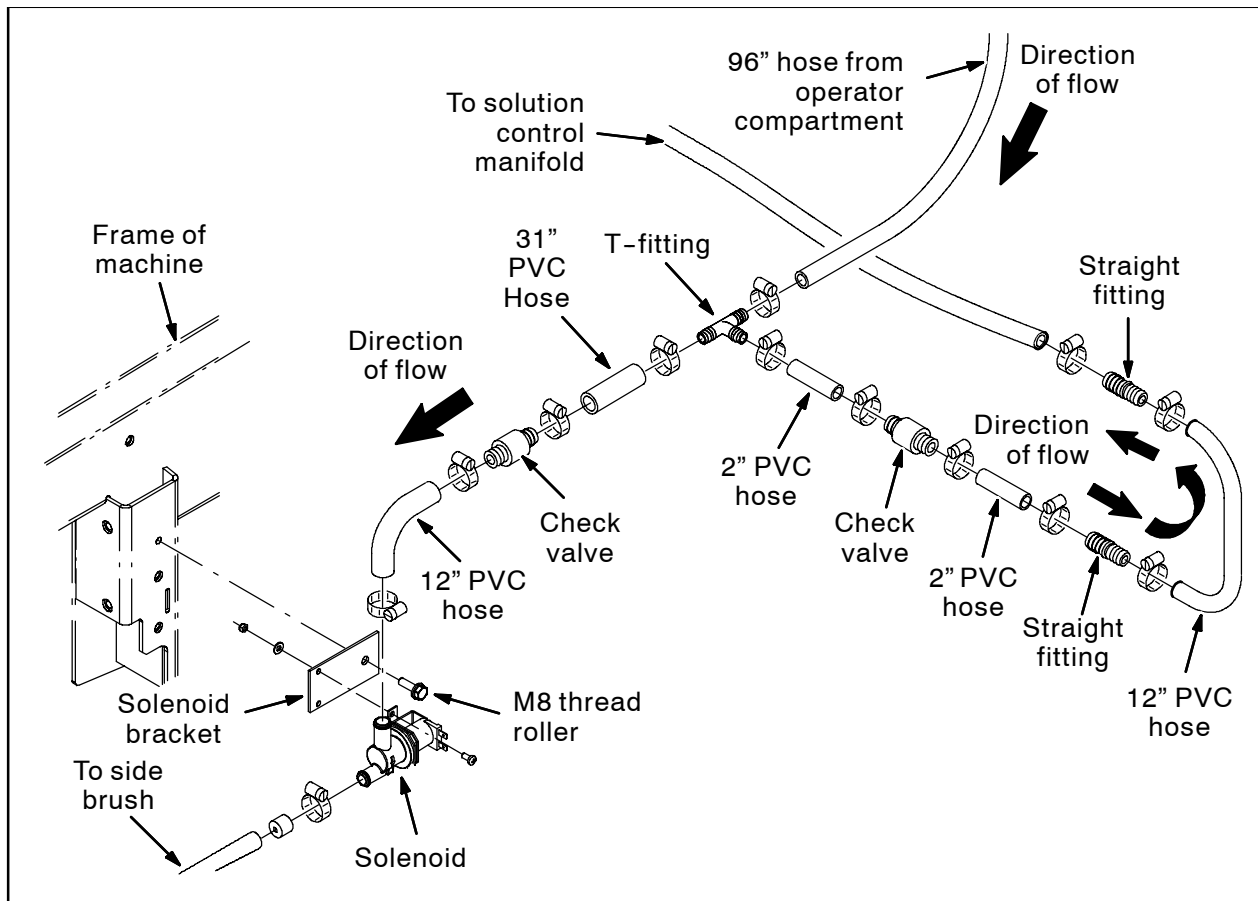


FIG. 3 - Machines With Optional Side Brush

26. Cut the solution supply hose 2.5" from where the hose is connected to the dispensing tube. Refer to Fig. 4.
27. Use a hose clamp to connect the y-fitting to the 2.5" solution supply hose. Refer to Fig. 4.
28. Use a hose clamp to connect the hose from the solution supply solenoid to the y-fitting. Refer to Fig. 4.

29. Use a hose clamp to connect the 20" PVC hose from the solenoid to the y-fitting. Refer to Fig. 3 and Fig. 4.
30. Reinstall the side brush guard onto the machine.

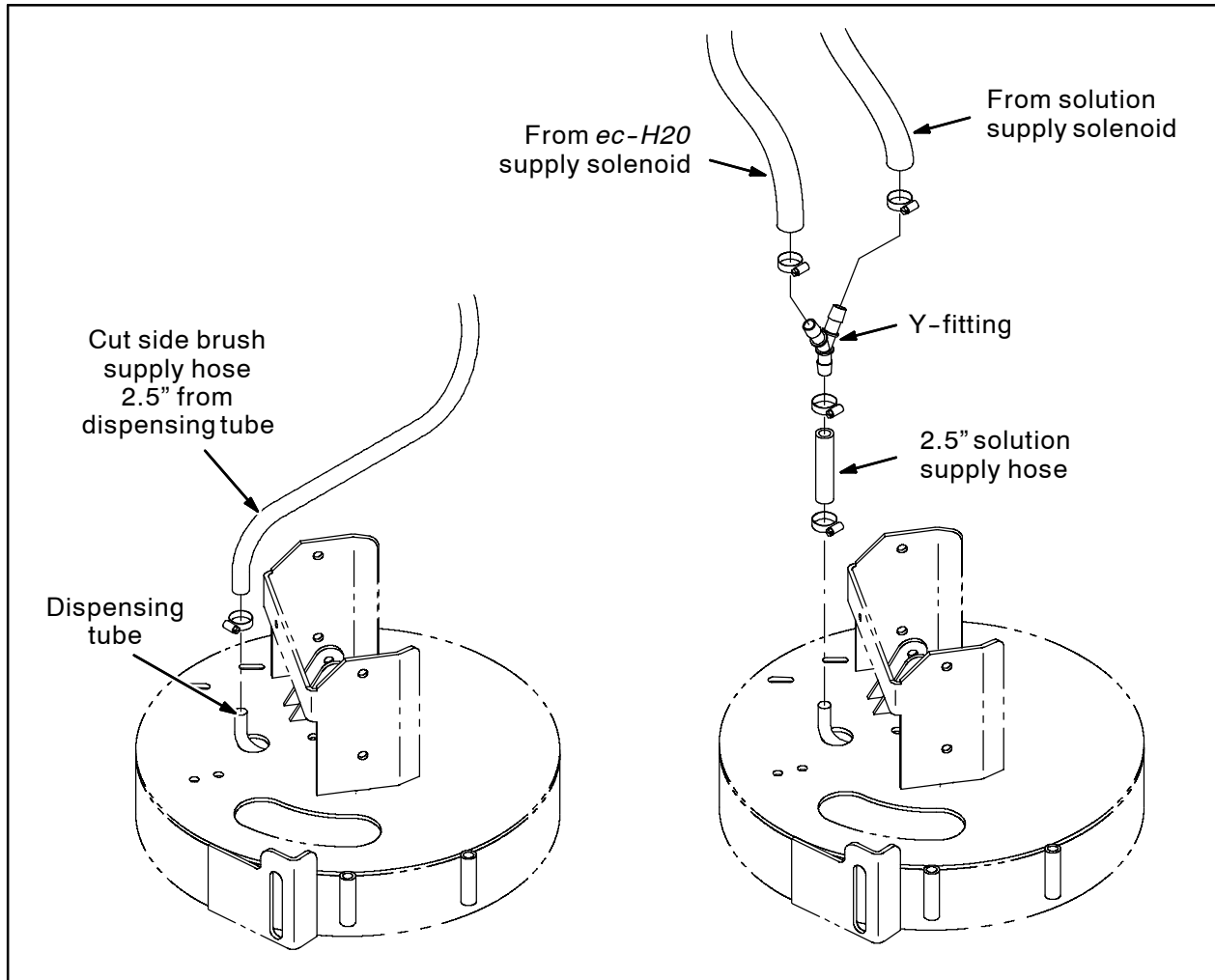


FIG. 4

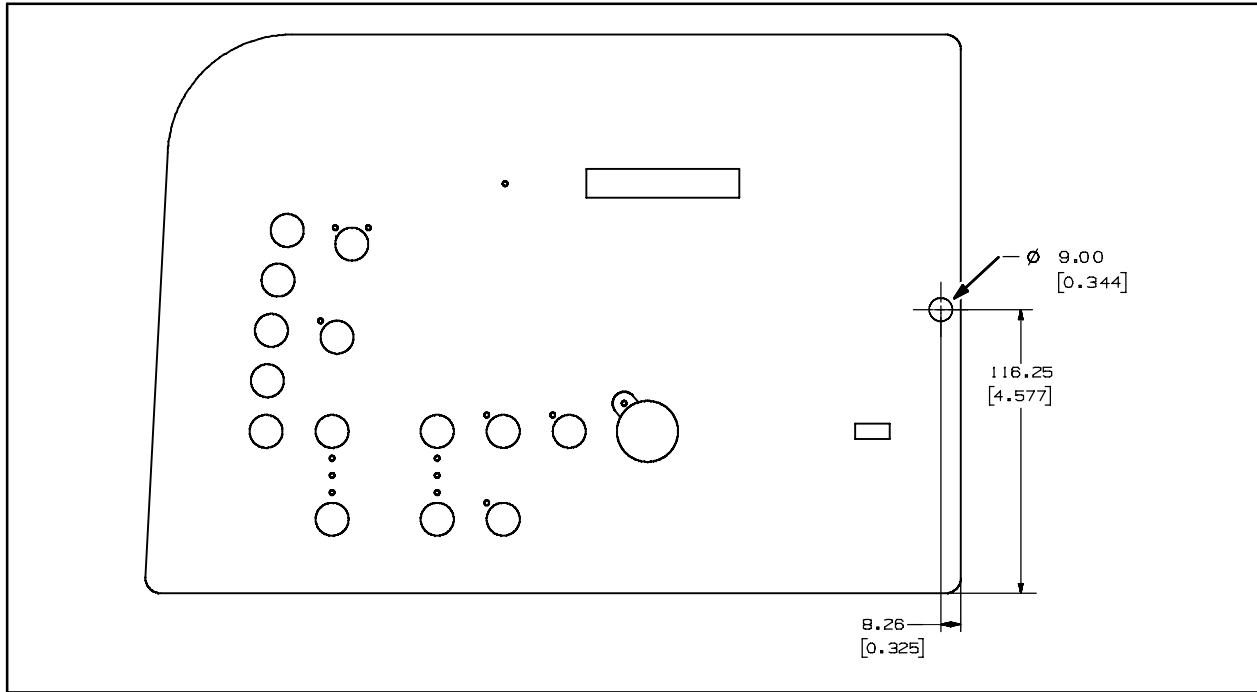


FIG. 5

NOTE: Complete the remainder of this procedure for both machine with and without the optional side brush.

31. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 5.
32. Remove the instrument panel label from the instrument panel.
33. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
34. Install the new instrument panel label onto the instrument panel.
35. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 5.
36. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
37. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

38. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 6.

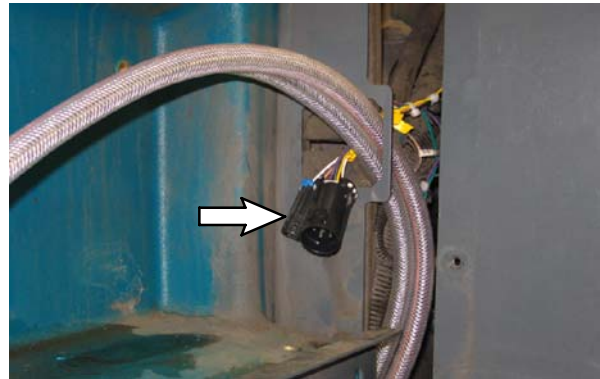


FIG. 6

39. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 7.

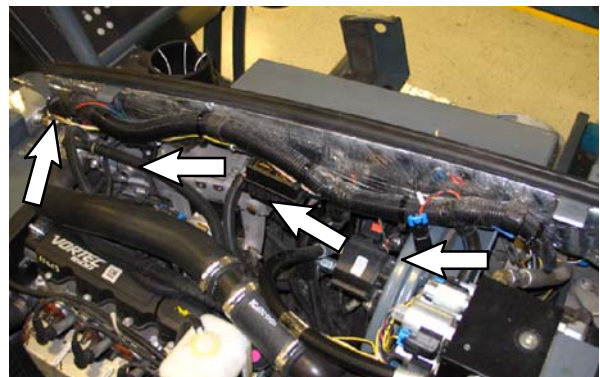


FIG. 7

40. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 8.
41. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
42. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
43. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 30 terminal on the ignition switch. Refer to Fig. 8.
44. Reinstall the rubber boot onto the ignition switch.
45. Connect the *ec-H20* harness to the LED light. Refer to Fig. 8.
46. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind where the battery is located.

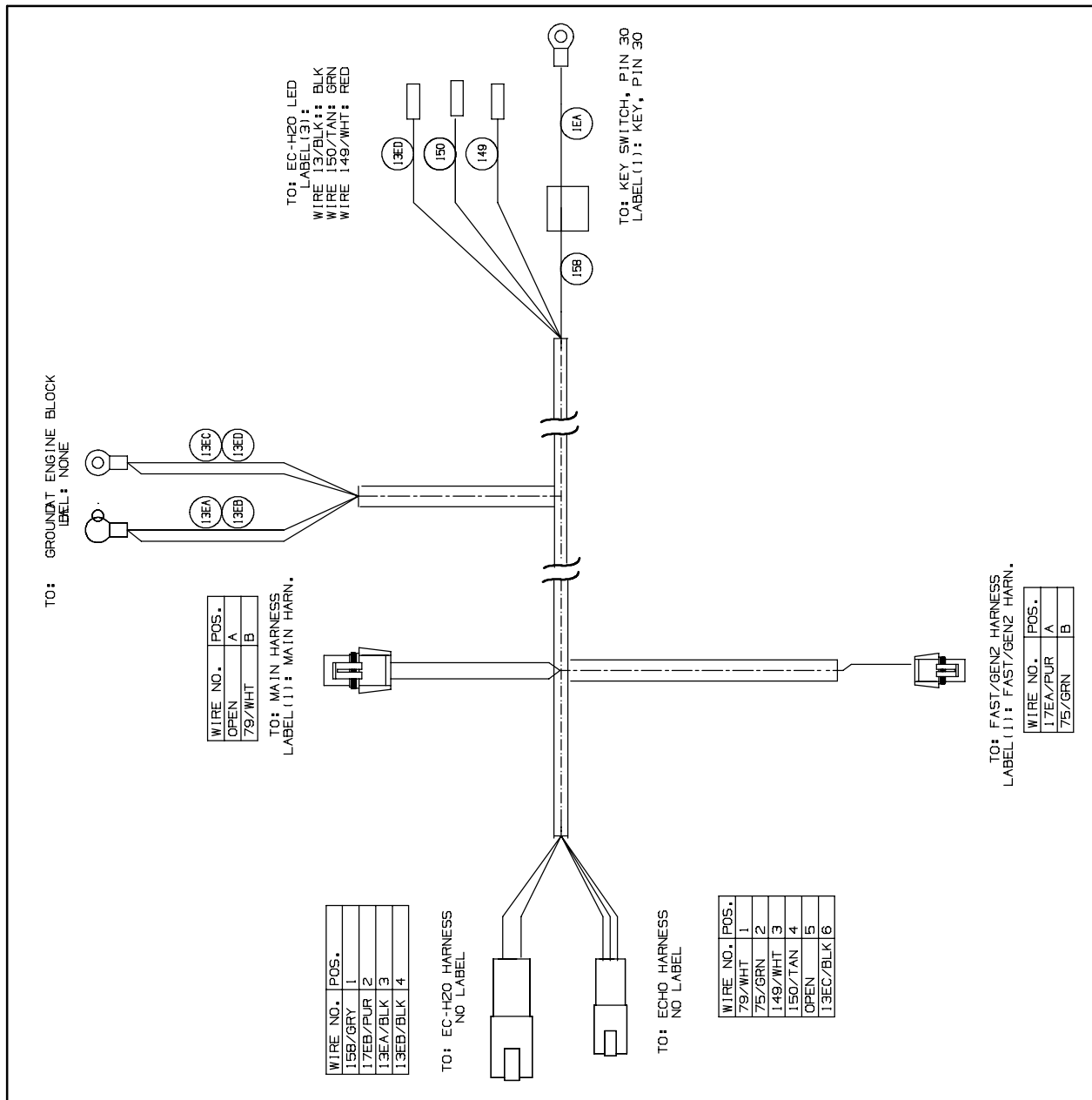


FIG. 8

47. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
48. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
49. Cut approximately 1" from the mounting bracket. Refer to Fig. 9.

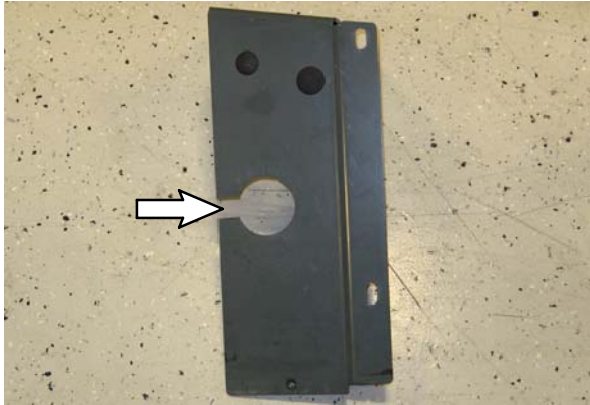


FIG. 9

50. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 10.
51. Connect the 60" PVC hose to the *ec-H20* assembly.

52. Connect the 72" PVC hose to the *ec-H20* assembly.
53. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 8.
54. Install the grommet into the mounting bracket. Refer to Fig. 10.
55. Reinstall the mounting bracket into the operator compartment.
56. Reinstall the cover onto the *ec-H20* assembly.
57. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
58. Install the storage bag onto the back of the operator seat. Refer to Fig. 10.
59. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 10.
60. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
61. Remove the cable tie holding the switch closed.
62. Reconnect the battery cables to the battery.

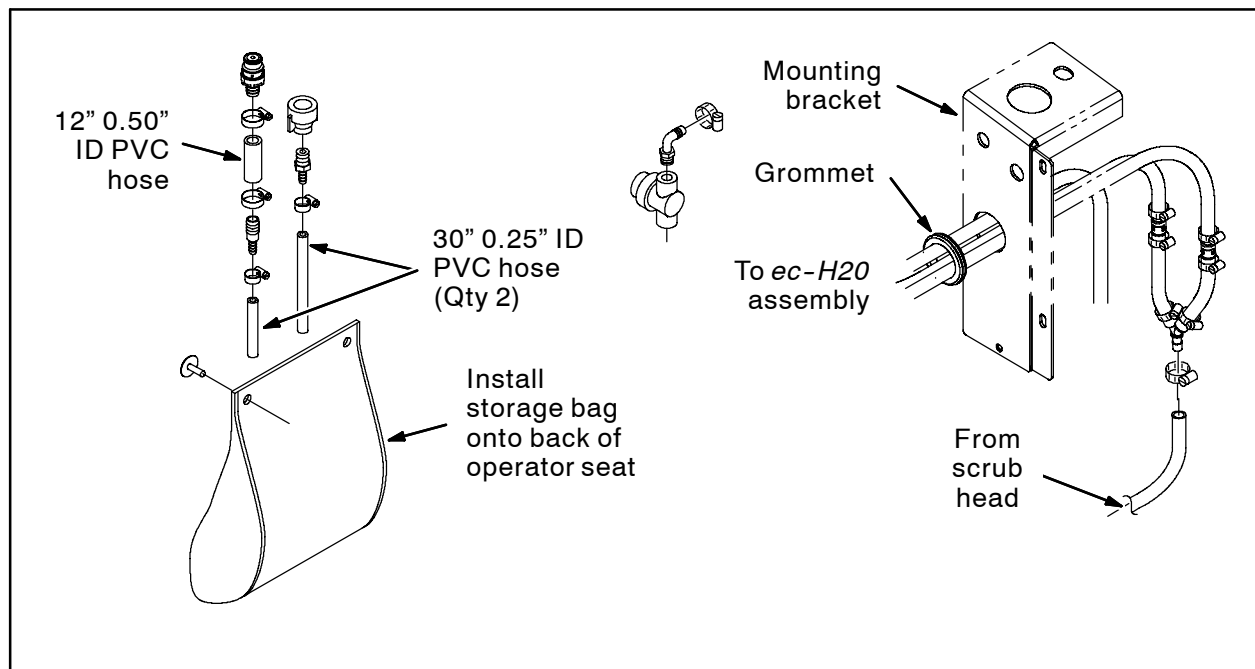


FIG. 10

**INSTALLATION: T20 ES MACHINES
(DISK HEADS ONLY)**

1. Disconnect the main wire harness and all hoses from the ES pump assembly and pressure switch inside the recovery tank. Refer to Fig. 1.
2. Remove the ES pump assembly, strainer assembly, and interconnected hoses from the recovery tank. Discard the removed ES components. Refer to Fig. 1.

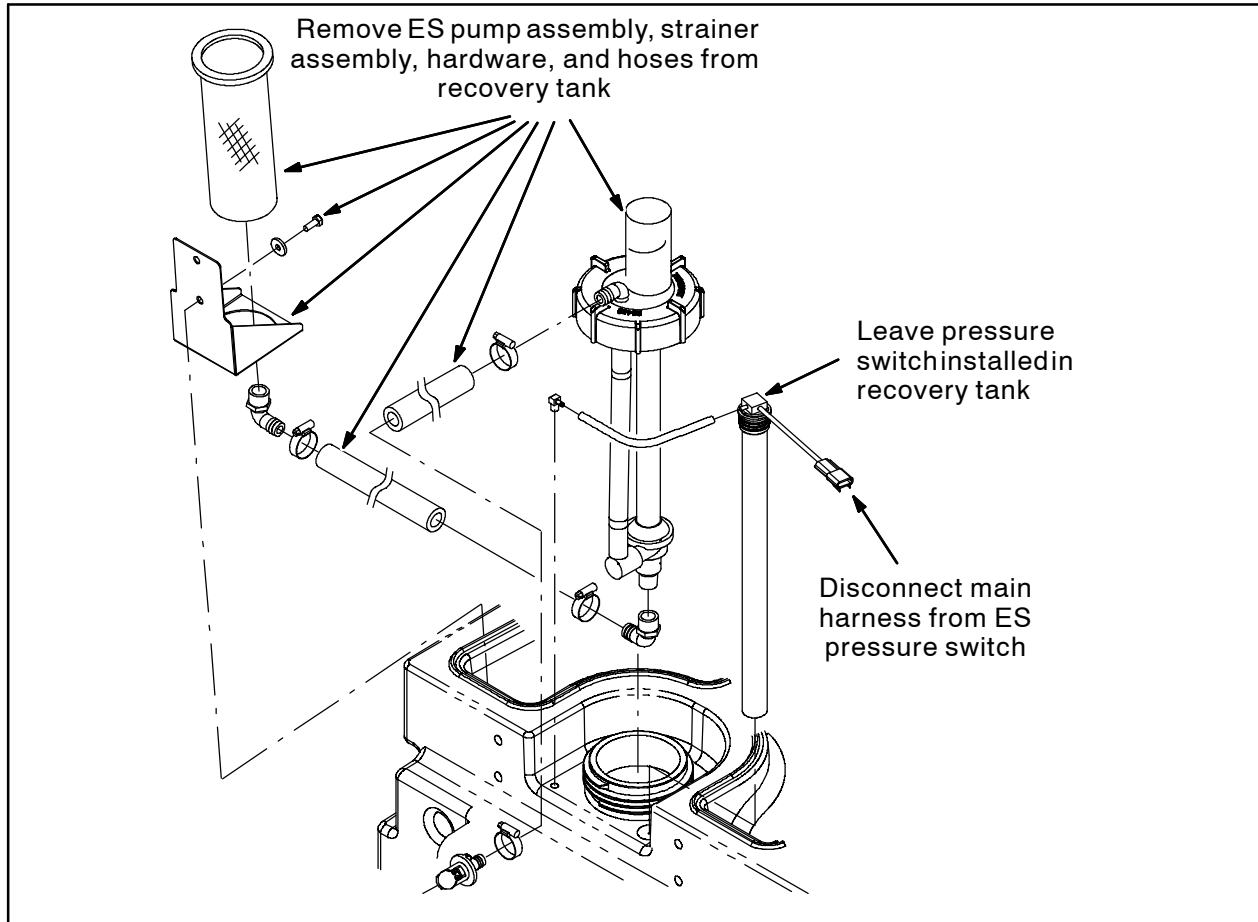


FIG. 1

3. Install the cap assembly onto the recovery tank. Refer to Fig. 2.
4. Remove the plastic fitting from the recovery tank. Refer to Fig. 3.

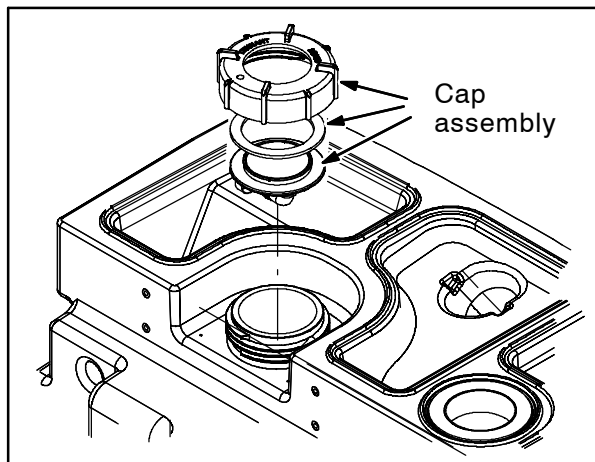


FIG. 2

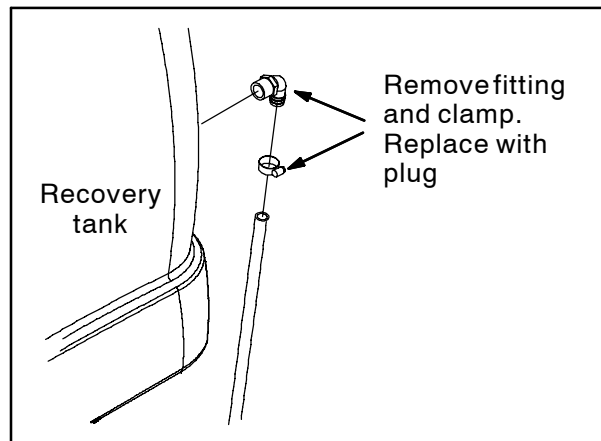


FIG. 3

5. Remove the auto fill assembly from the machine. Refer to Fig. 4.
6. Disconnect the main wire harness from the auto fill solenoids. **Do not** disconnect the float switch connector. Refer to Fig. 4.
7. Disconnect the auto fill hose from the solenoid and remove the hose from the machine. Discard the hose. Refer to Fig. 4.
8. Remove the auto-fill solenoids and fittings from the machine. Discard the fittings and solenoids. Refer to Fig. 4.

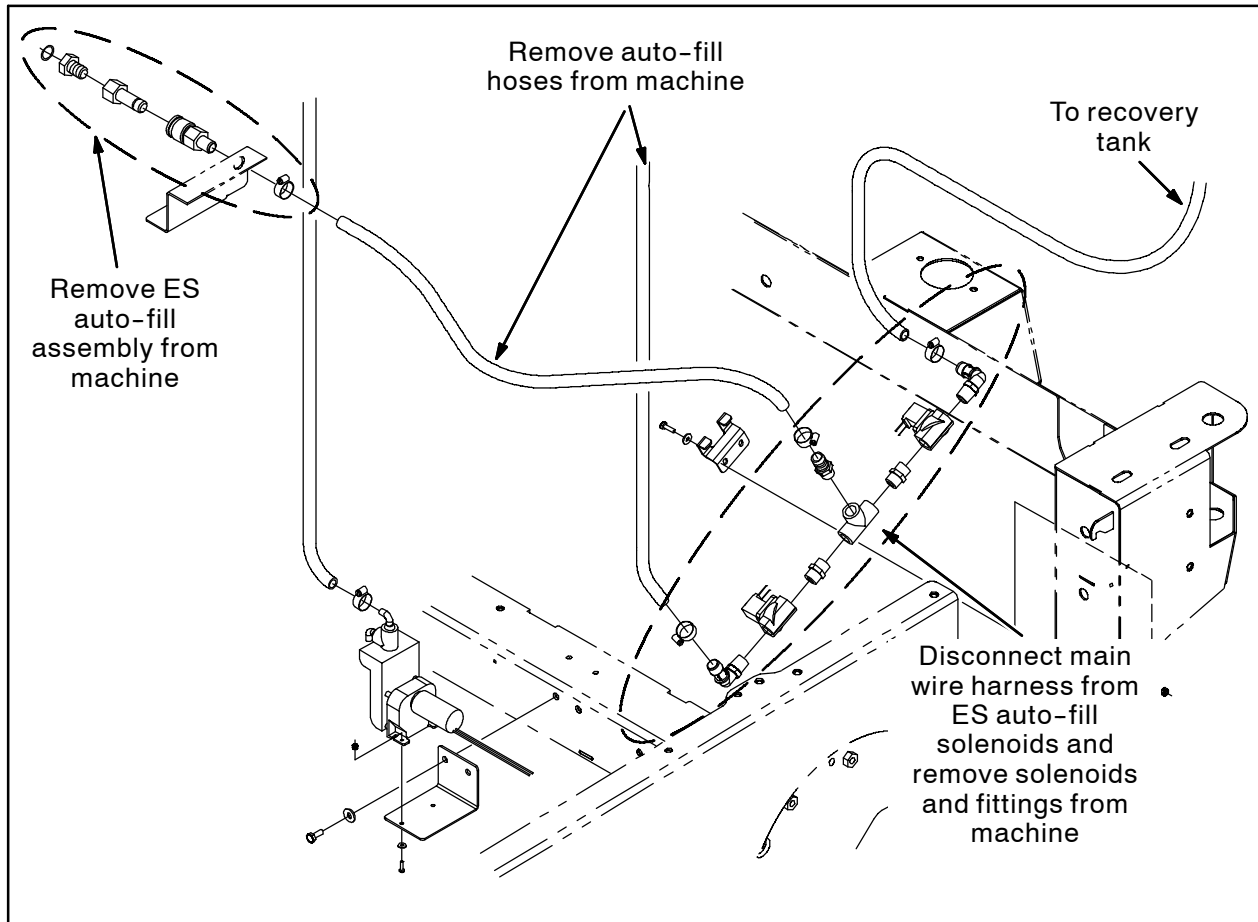


FIG. 4

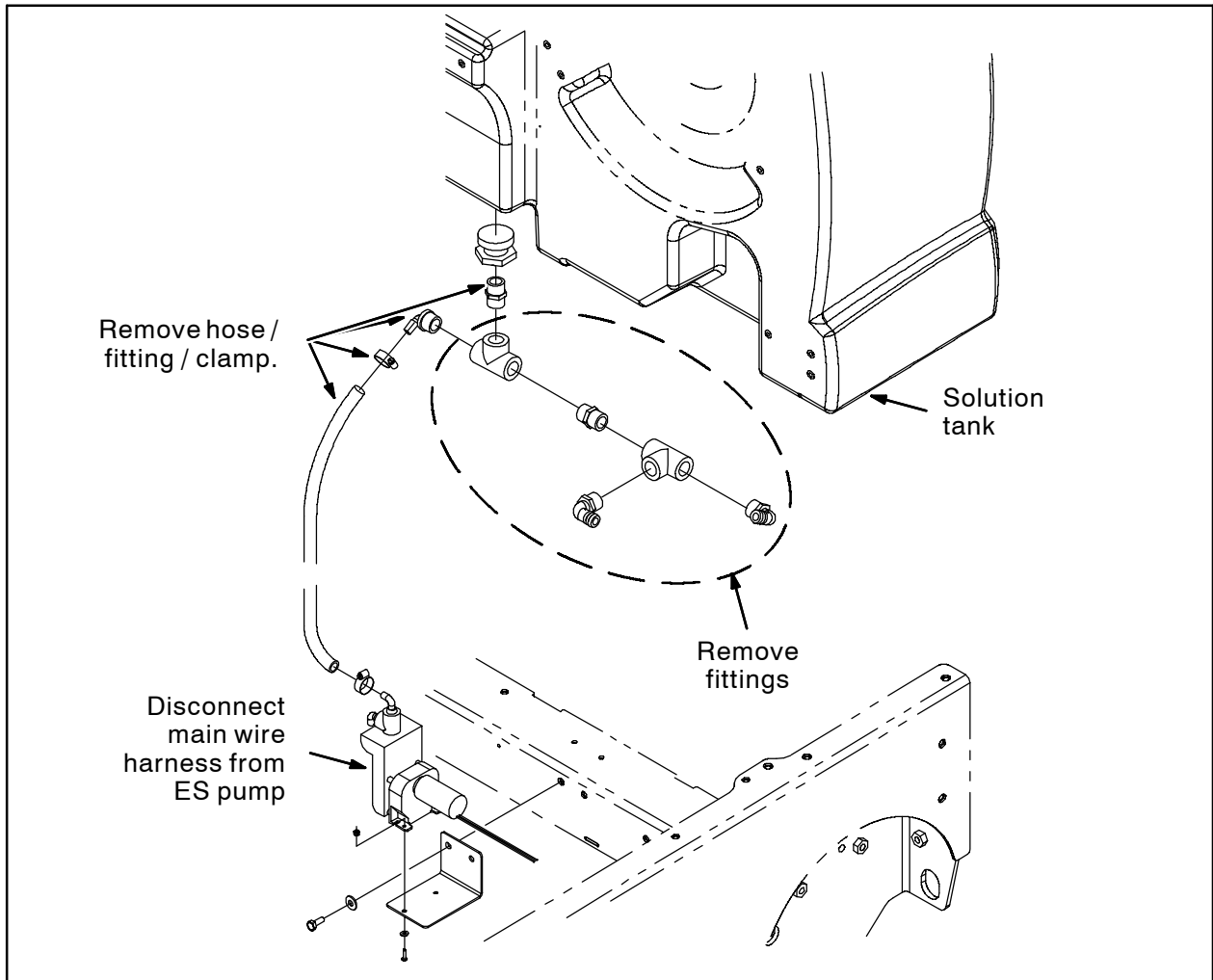


FIG. 5

9. Disconnect ES system hoses / fittings from the solution tank and ES pump. Discard removed hoses / fittings. Refer to Fig. 5.

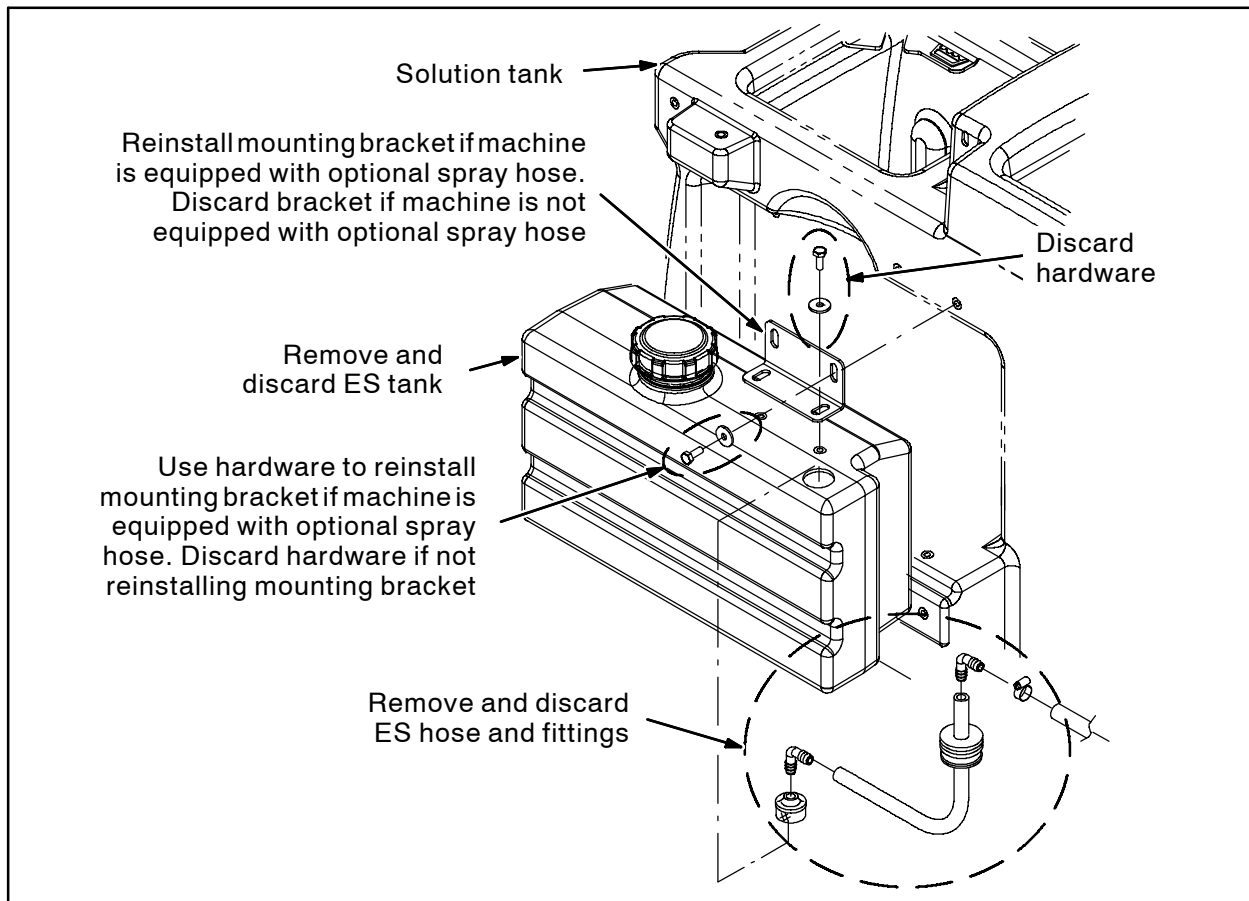


FIG. 6

10. Disconnect the main wire harness from the detergent pump.
11. Remove the ES hose and fittings from the operators compartment and the ES tank from behind the operator seat. Reinstall the mounting bracket if the machine is equipped with the optional spray hose. Discard the ES tank, hose, and fittings. Refer to Fig. 6.
12. Install two 90° fittings and a straight fitting into the t-fitting. Refer to Fig. 7.
13. Install the t-fitting from the previous step into the plastic bulk head fitting on the bottom of the solution tank. Refer to Fig. 7.
14. Cut a 54" and 96" length of PVC hose.
15. Use a hose clamp to connect the 96" PVC hose to the outer 90° fitting on the t-fitting assembly. Refer to Fig. 7.
16. Use a hose clamp to connect the 54" PVC hose to the elbow fitting closest to the center of the machine. Refer to Fig. 7.

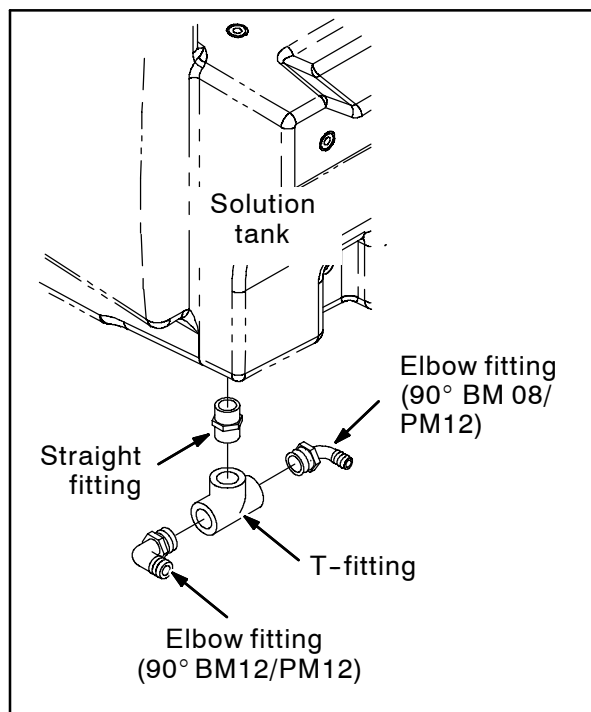


FIG. 7

17. Route the 54" PVC hose from the bottom of the solution tank and up into the operator compartment. Refer to Fig. 8.

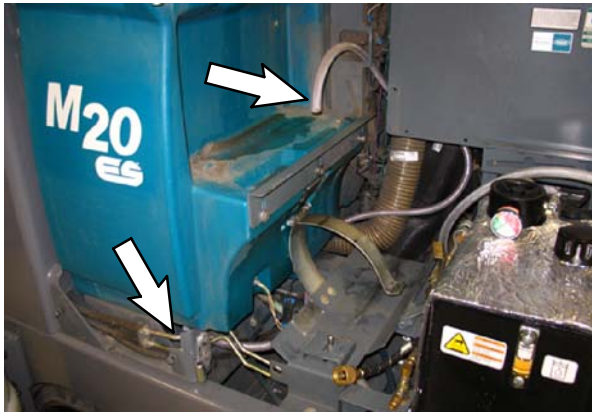


FIG. 8

18. Cut a 60 length PVC hose.

19. **Machines Without Side Brush Option Only:** Route the 60" PVC hose from the operator compartment, down along the frame center beam, and to the scrub head. Refer to Fig. 9.

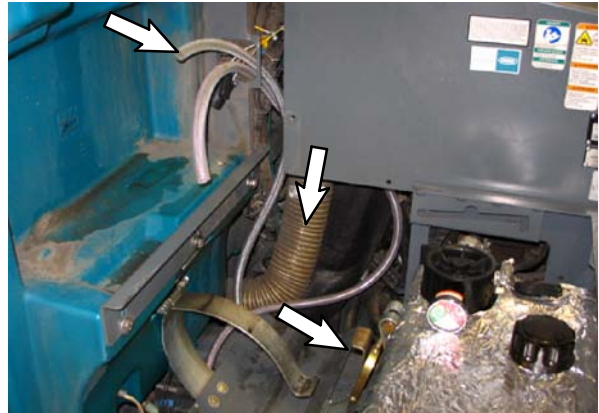


FIG. 9

20. **Machines Without Side Brush Option Only:** Use a hose clamp to connect the 60" PVC hose to the scrub head. Refer to fig. 10.

21. **Machines Without Side Brush Option Only:** Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".

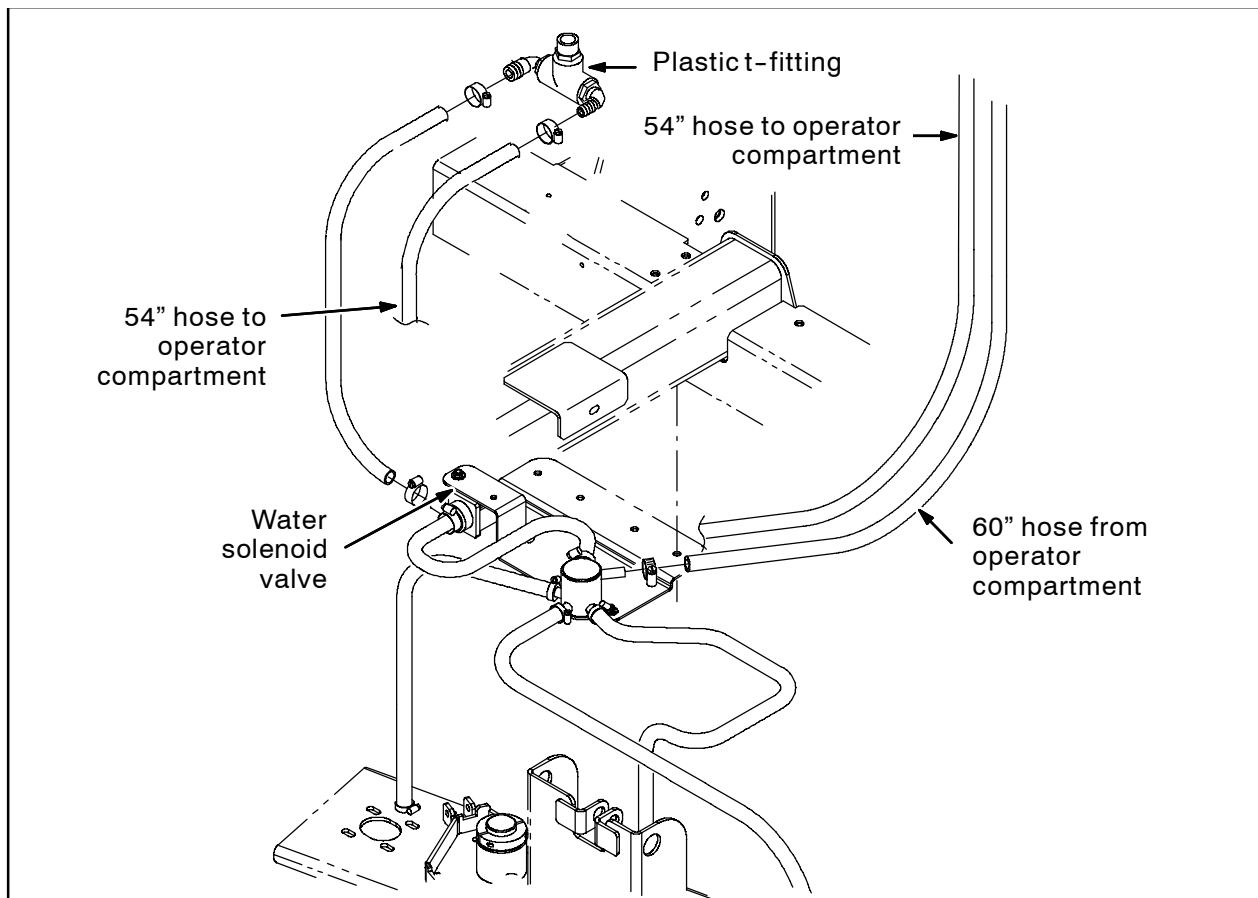


FIG. 10 - Machines Without Optional Side Brush

NOTE: Complete Step 22 through Step 40 only if machine is equipped with the optional side brush.

22. Cut a 20" and 43" length of 0.50 ID PVC hose.
23. Cut three 2" lengths of 0.50 ID PVC hose.
24. Cut a 13" length of 0.38" ID PVC hose.
25. Cut 12" from the 43" PVC hose.
26. Use two hose clamps to install a check valve between the two 31" and 12" PVC hoses. Note the direction of flow. Refer to Fig. 11.
27. Use two M5 pan screws, two flat washers, and two M5 hex nuts to install the solenoid onto the solenoid bracket. Refer to Fig. 11.
28. Use a M8 thread roller to install the solenoid / solenoid bracket onto the frame of the machine. Refer to Fig. 11.
29. Use a hose clamp to install a t-fitting onto the 60" PVC hose. Refer to Fig. 11.
30. Assemble the check valve, straight fittings, 12" hose and 2" hoses as shown in Fig. 11. Note the direction of flow.
31. Use a hose clamp to connect the previously assembled hose assembly to the t-fitting installed on the 60" PVC hose. Refer to Fig. 11.
32. Route the end of the 60" PVC hose with the t-fitting / additional hose assembly from the operator compartment and down to the scrub head. Refer to Fig. 11.
33. Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".
34. Use a hose clamp to connect the additional hose assembly to the solenoid. Refer to Fig. 11.
35. Use a hose clamp to connect a 20" PVC hose to the solenoid. Refer to Fig. 11.

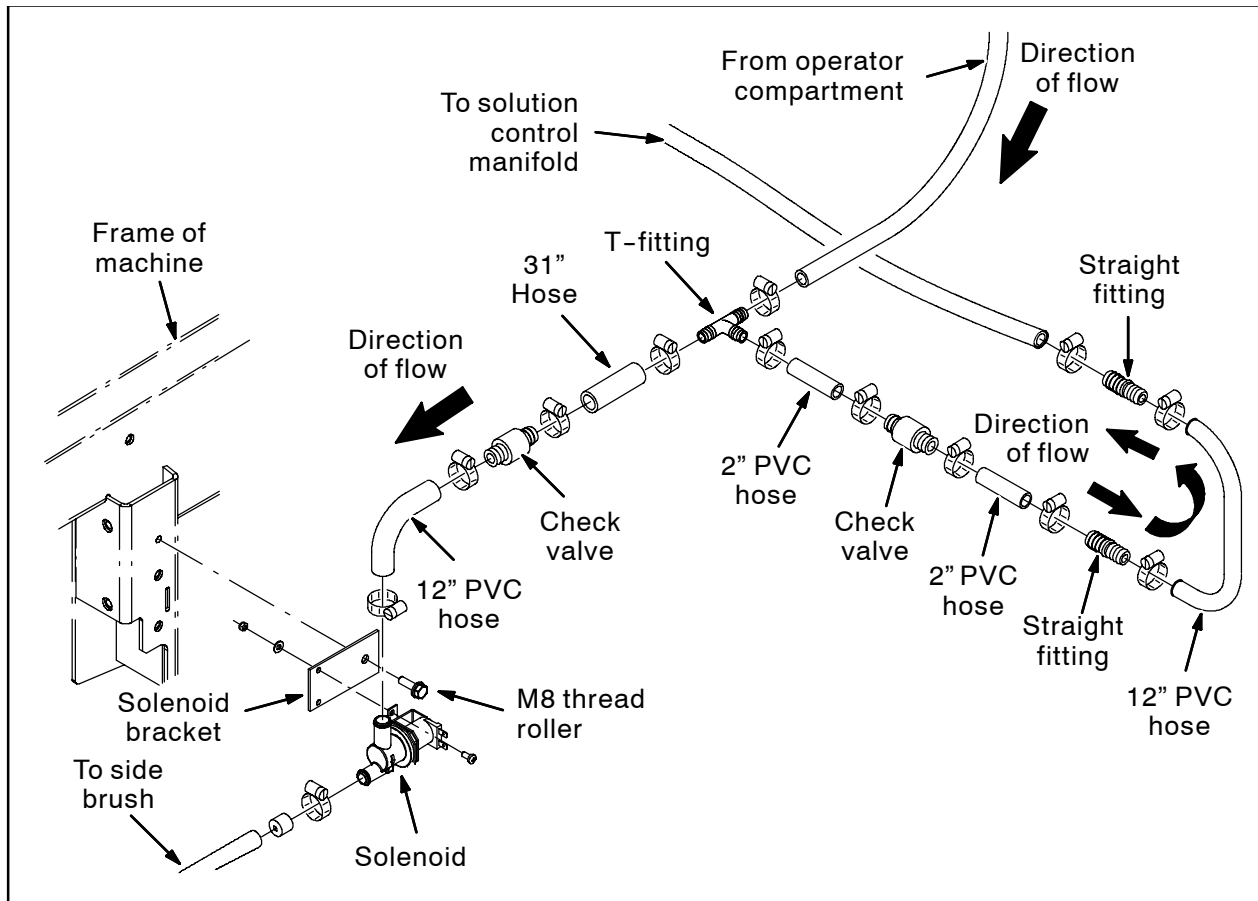


FIG. 11 - Machines With Optional Side Brush

36. Cut the solution supply hose 2.5" from where the hose is connected to the dispensing tube. Refer to Fig. 12.

37. Use a hose clamp to connect the y-fitting to the 2.5" solution supply hose. Refer to Fig. 12.

38. Use a hose clamp to connect the hose from the solution supply solenoid to the y-fitting. Refer to Fig. 12.

39. Use a hose clamp to connect the 20" PVC hose from the solenoid to the y-fitting. Refer to Fig. 12.

40. Reinstall the side brush guard onto the machine.

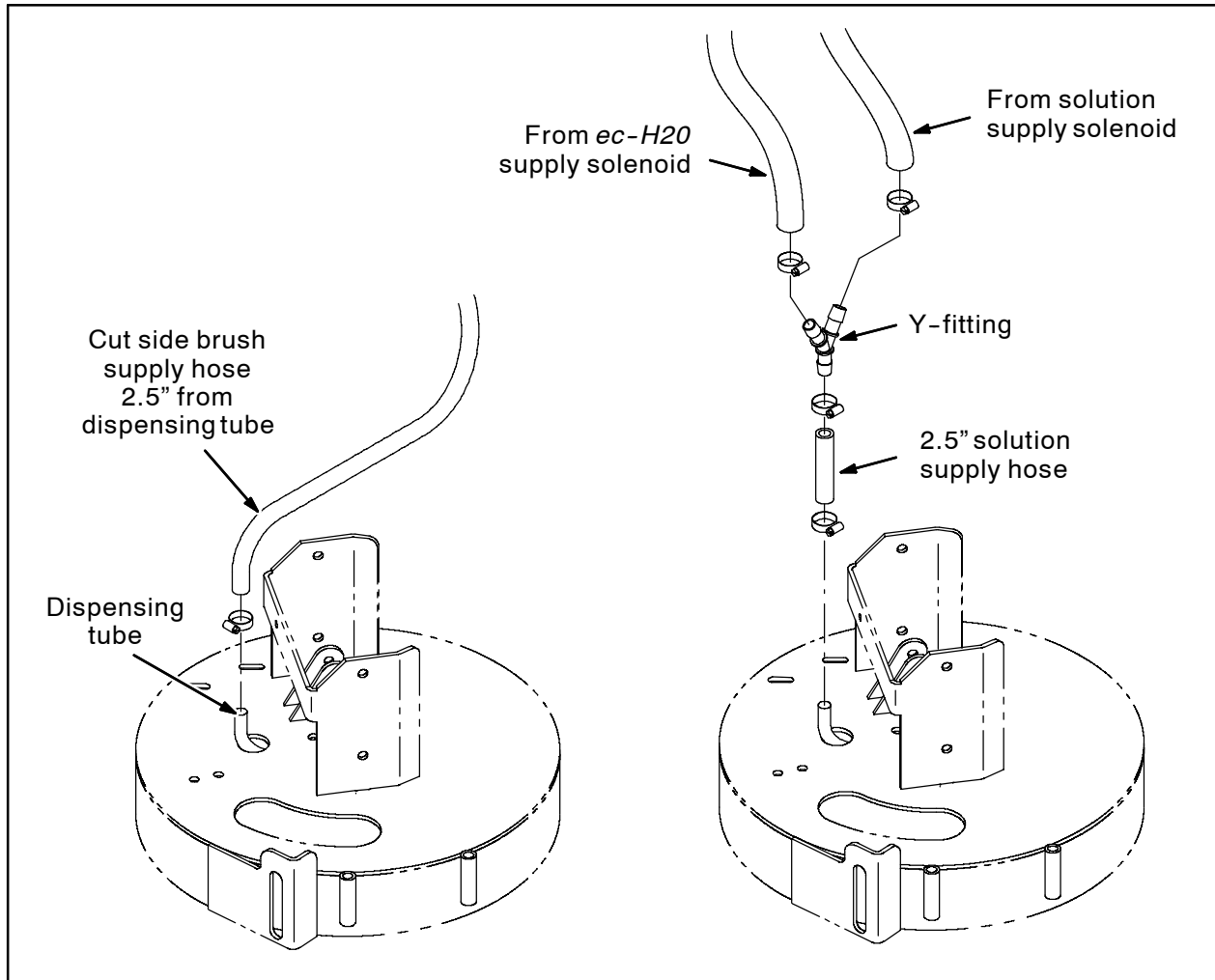


FIG. 12

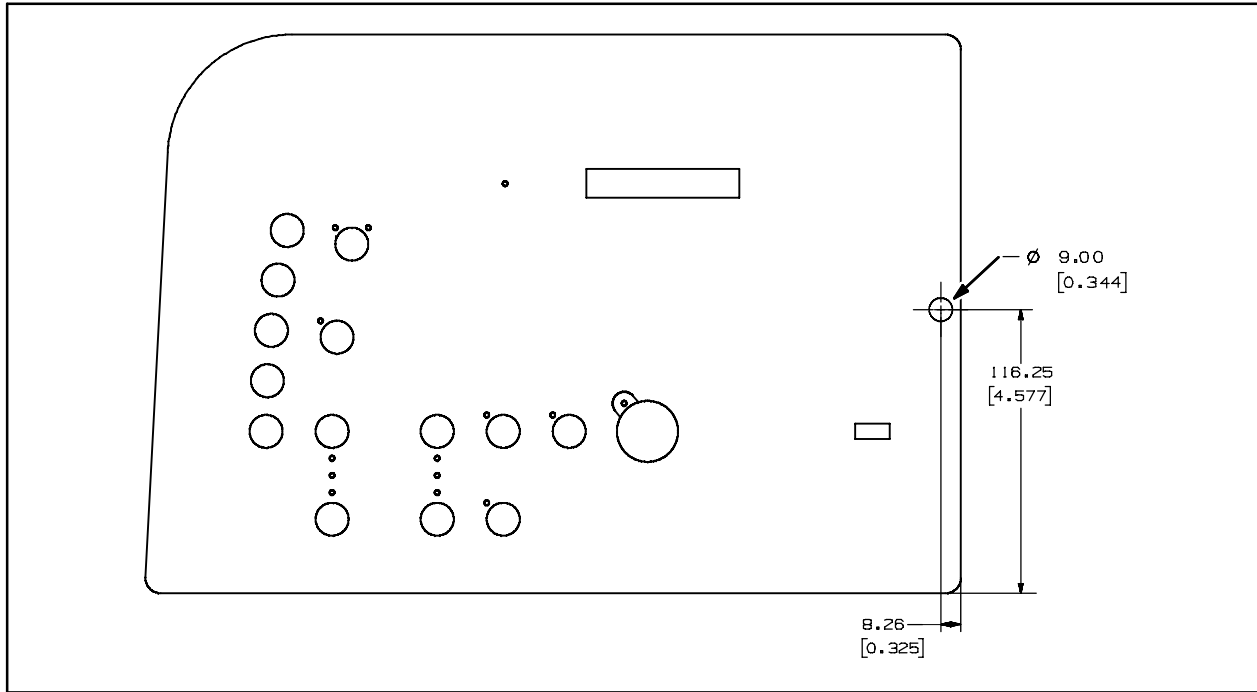


FIG. 13

NOTE: Complete the remainder of this procedure for both machine with and without the optional side brush.

41. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 13.
42. Remove the instrument panel label from the instrument panel.
43. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
44. Install the new instrument panel label onto the instrument panel.
45. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 13.
46. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
47. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

48. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 14.

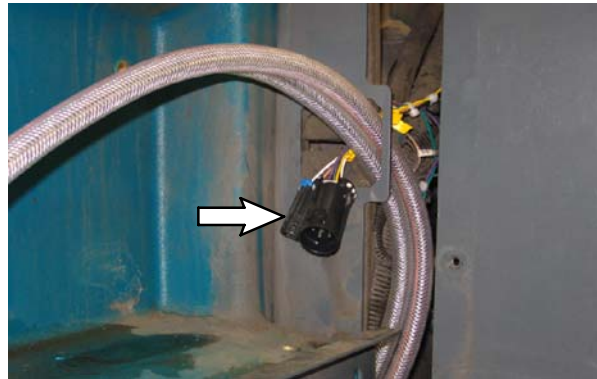


FIG. 14

49. Route the *ec-H20* harness along the bottom of the main wire harness and toward the front of the machine. Refer to Fig. 15.

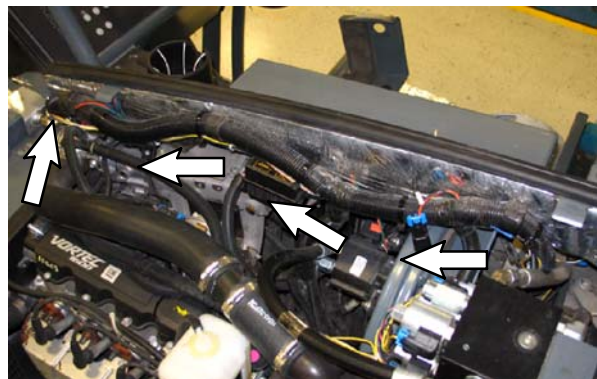


FIG. 15

50. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 16.
51. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
52. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
53. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 30 terminal on the ignition switch. Refer to Fig. 16.
54. Reinstall the rubber boot onto the ignition switch.
55. Connect the *ec-H20* harness to the LED light. Refer to Fig. 16.
56. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind the battery.

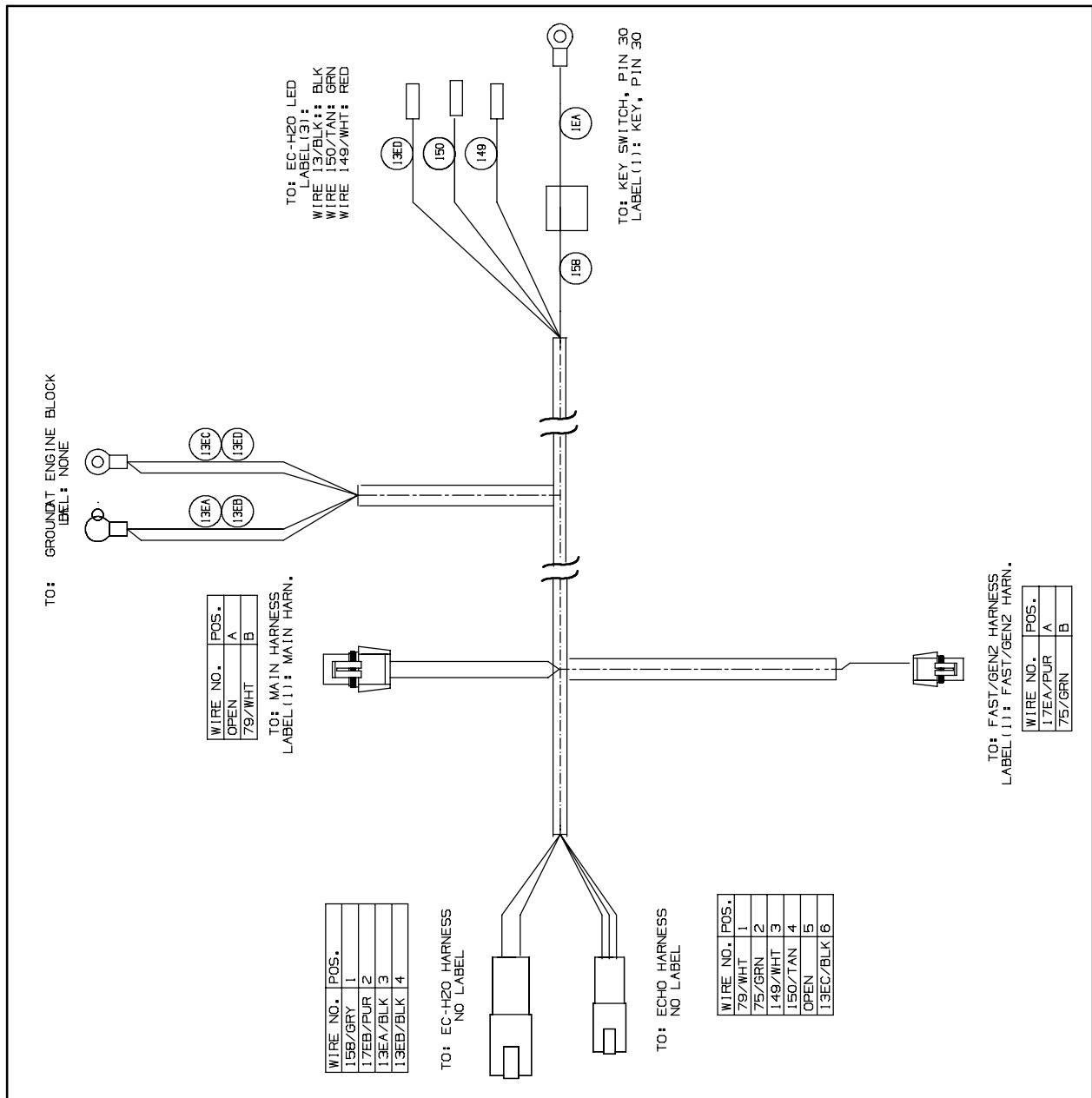


FIG. 16

57. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
58. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
59. Cut approximately 1" from the mounting bracket. Refer to Fig. 17.

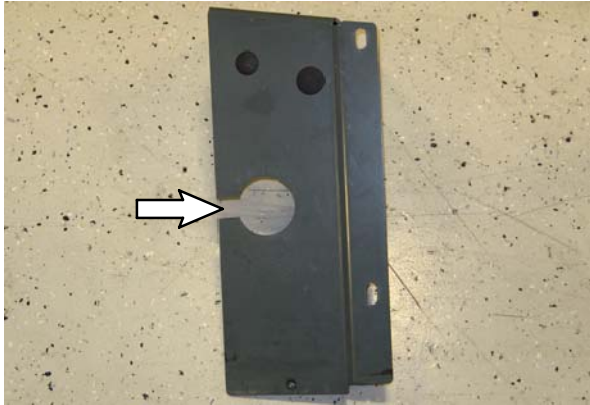


FIG. 17

60. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 18.
61. Connect the 60" PVC hose to the *ec-H20* assembly.

62. Connect the 72" PVC hose to the *ec-H20* assembly.
63. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 16.
64. Install the grommet into the mounting bracket. Refer to Fig. 18.
65. Reinstall the mounting bracket into the operator compartment.
66. Reinstall the cover onto the *ec-H20* assembly.
67. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
68. Install the storage bag onto the back of the operator seat. Refer to Fig. 18.
69. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 18.
70. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
71. Remove the cable tie holding the switch closed.
72. Reconnect the battery cables to the battery.

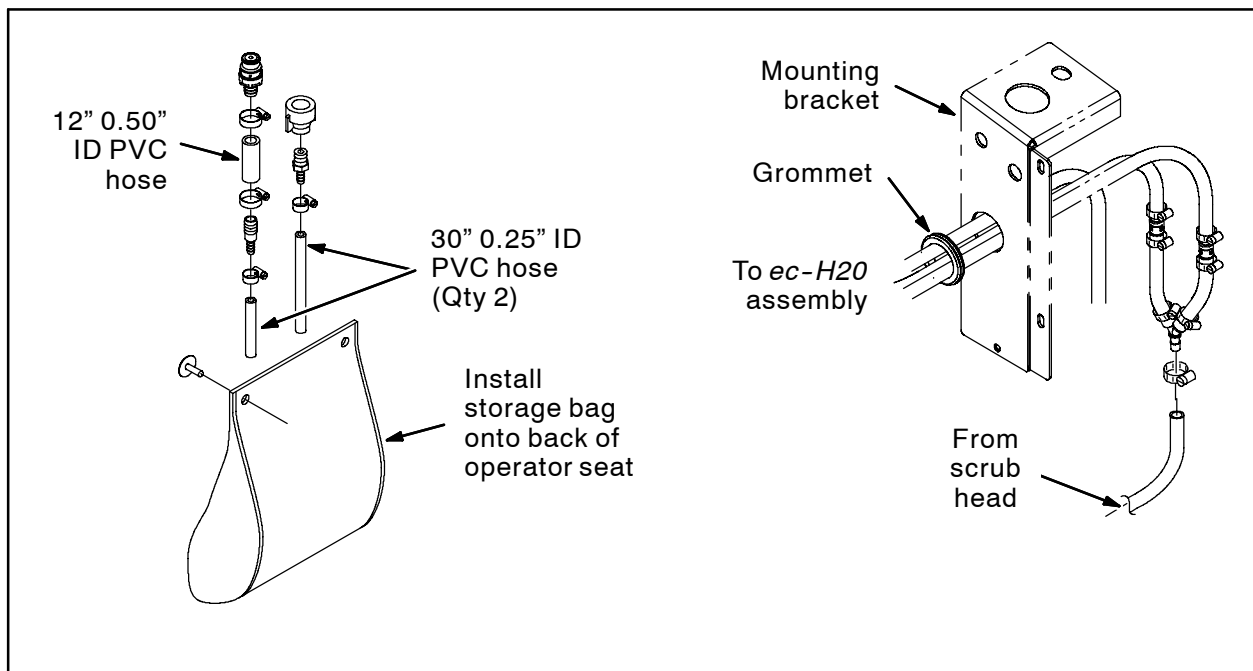


FIG. 18

**INSTALLATION: T20 FaST GEN I MACHINES
(DISK HEADS ONLY)**

1. Disconnect the hoses and wire harness from the FaST assembly and remove the entire FaST assembly from the machine. Discard the FaST assembly and removed hardware. Refer to Fig. 1.
2. Remove and discard the hoses and components labeled in Fig. 1.
3. Disconnect the main wire harness from the detergent pump.

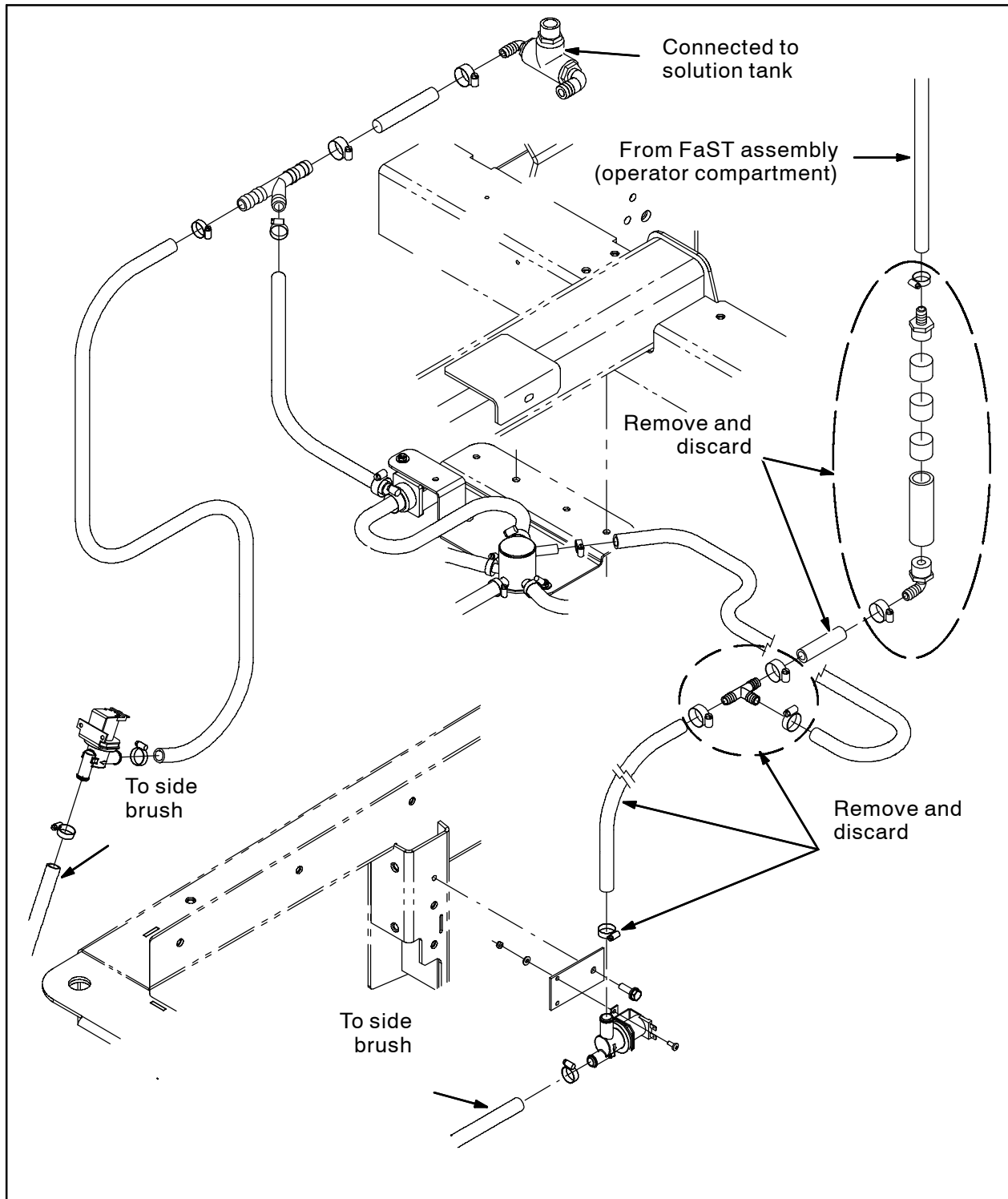


FIG. 1

4. Cut a 60 length PVC hose.

5. **Machines Without Side Brush Option Only:** Route the 60" PVC hose from the operator compartment, down along the frame center beam, and to the scrub head. Refer to Fig. 2 and Fig. 3.

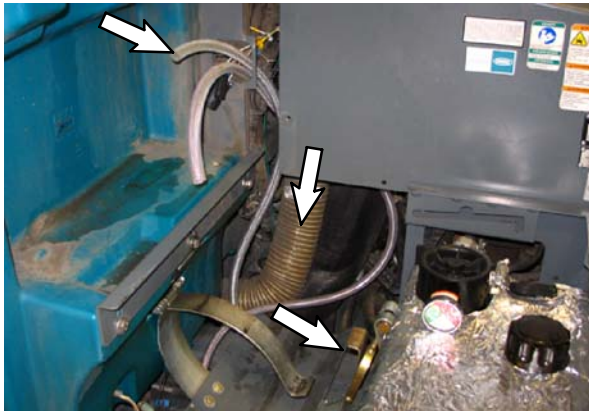


FIG. 2

6. **Machines Without Side Brush Option Only:** Use a hose clamp to connect the 60" PVC hose to the scrub head.

7. **Machines Without Side Brush Option Only:** Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".

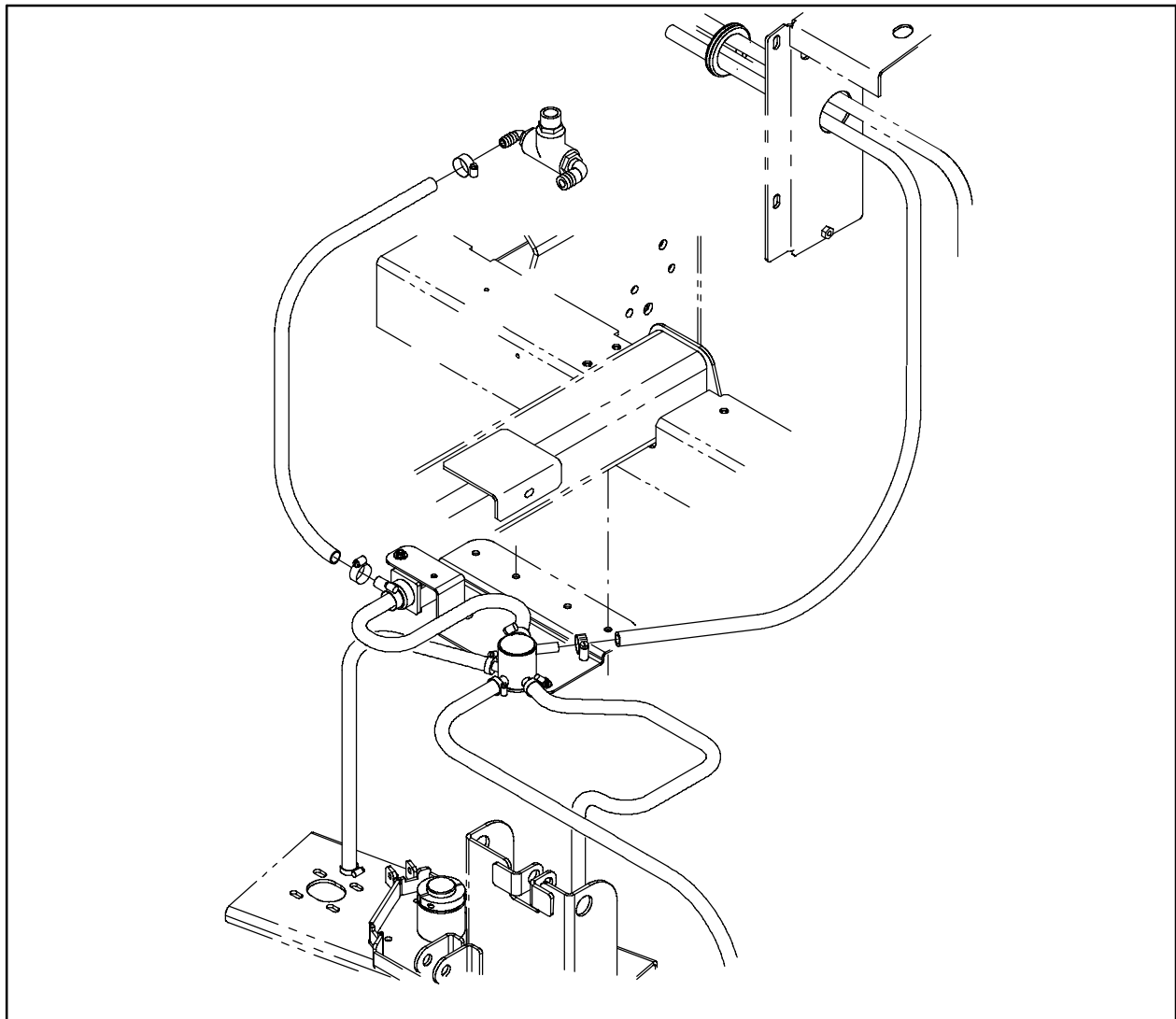


FIG. 3 - Machines Without Optional Side Brush

NOTE: Complete Step 8 through Step 20 only if machine is equipped with the optional side brush.

8. Cut a 20" and 43" length of 0.50 ID PVC hose.
9. Cut three 2" lengths of 0.50 ID PVC hose.
10. Cut a 13" length of 0.38" ID PVC hose.
11. Assemble the check valve, straight fittings, 12" hose, and 2" hoses as shown in Fig. 4. Note the direction of flow.
12. Use a hose clamp to connect the hose assembly assembled in the previous step to the t-fitting on the hose from the solution control manifold. Refer to Fig. 4.
13. Cut 12" from the 43" PVC hose.
14. Use two hose clamps to install a check valve between the 31" and 12" PVC hoses. Note the direction of flow. Refer to Fig. 4.
15. Use a hose clamp to install a t-fitting onto the 60" PVC hose. Refer to Fig. 4.
16. Use a hose clamp to connect the previously assembled hose assembly to the t-fitting installed on the 60" PVC hose. Refer to Fig. 4.
17. Route the end of the 96" PVC hose with the t-fitting / additional hose assembly from the operator compartment and down to the scrub head. Refer to Fig. 4.
18. Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".
19. Use a hose clamp to connect the additional hose assembly to the solenoid. Refer to Fig. 4.
20. Use a hose clamp to connect a 20" PVC hose to the solenoid. Refer to Fig. 4.

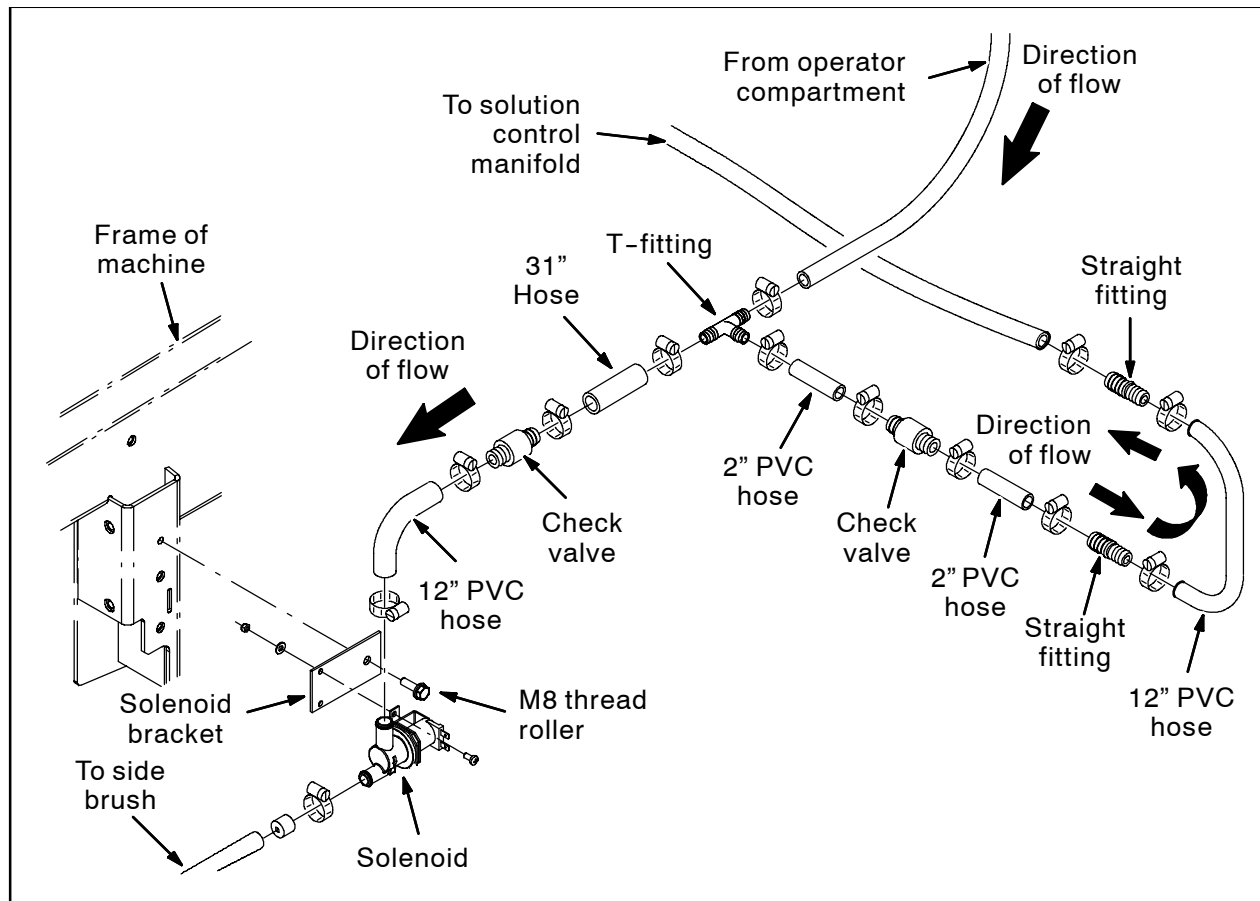


FIG. 4 - Machines With Optional Side Brush

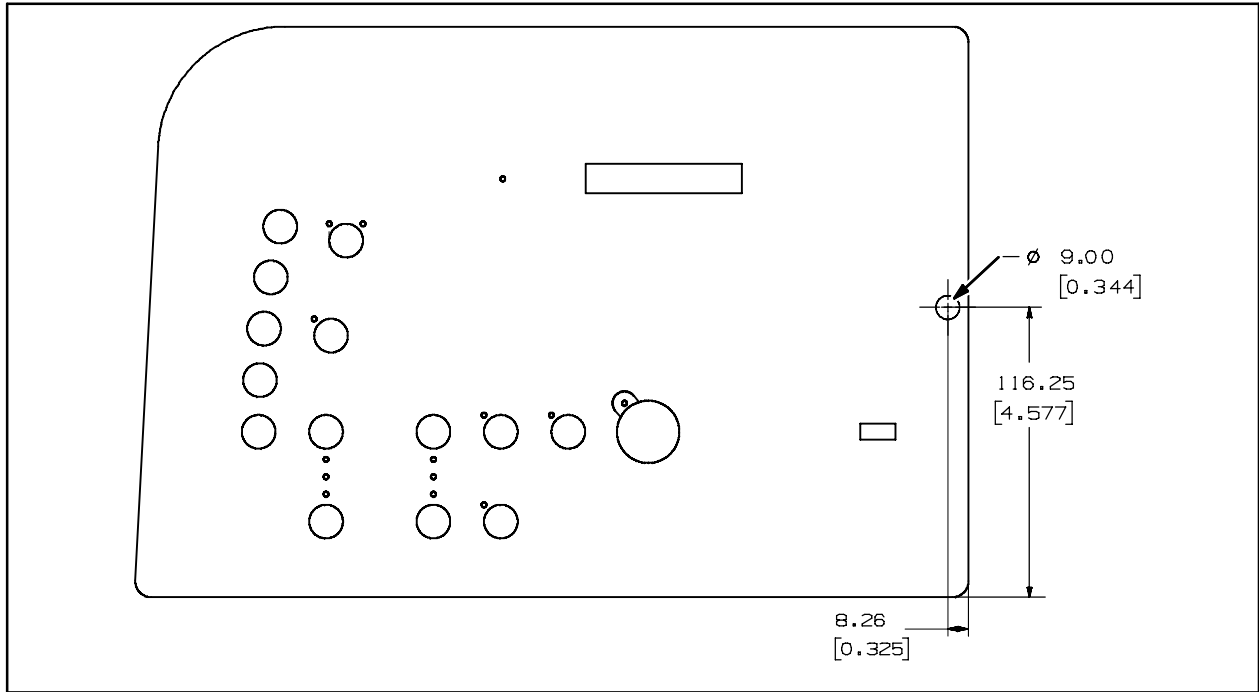


FIG. 5

NOTE: Complete the remainder of this procedure for both machine with and without the optional side brush.

21. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 5.
22. Remove the instrument panel label from the instrument panel.
23. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
24. Install the new instrument panel label onto the instrument panel.
25. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 5.
26. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
27. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

28. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 6.

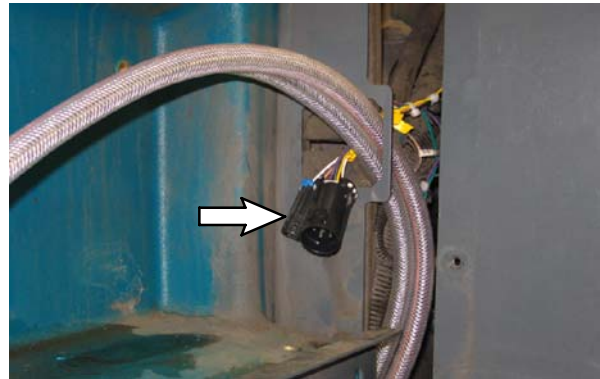


FIG. 6

29. Route the *ec-H20* harness along the bottom of the main wire harness and to the front of the machine. Refer to Fig. 7.

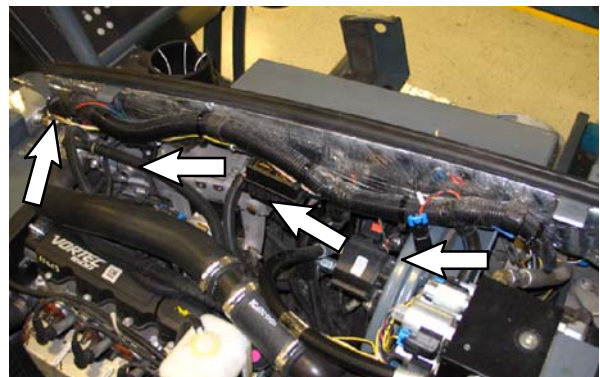


FIG. 7

30. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 8.
31. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
32. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
33. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 30 terminal on the ignition switch. Refer to Fig. 8.
34. Reinstall the rubber boot onto the ignition switch.
35. Connect the *ec-H20* harness to the LED light. Refer to Fig. 8.
36. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind the battery.

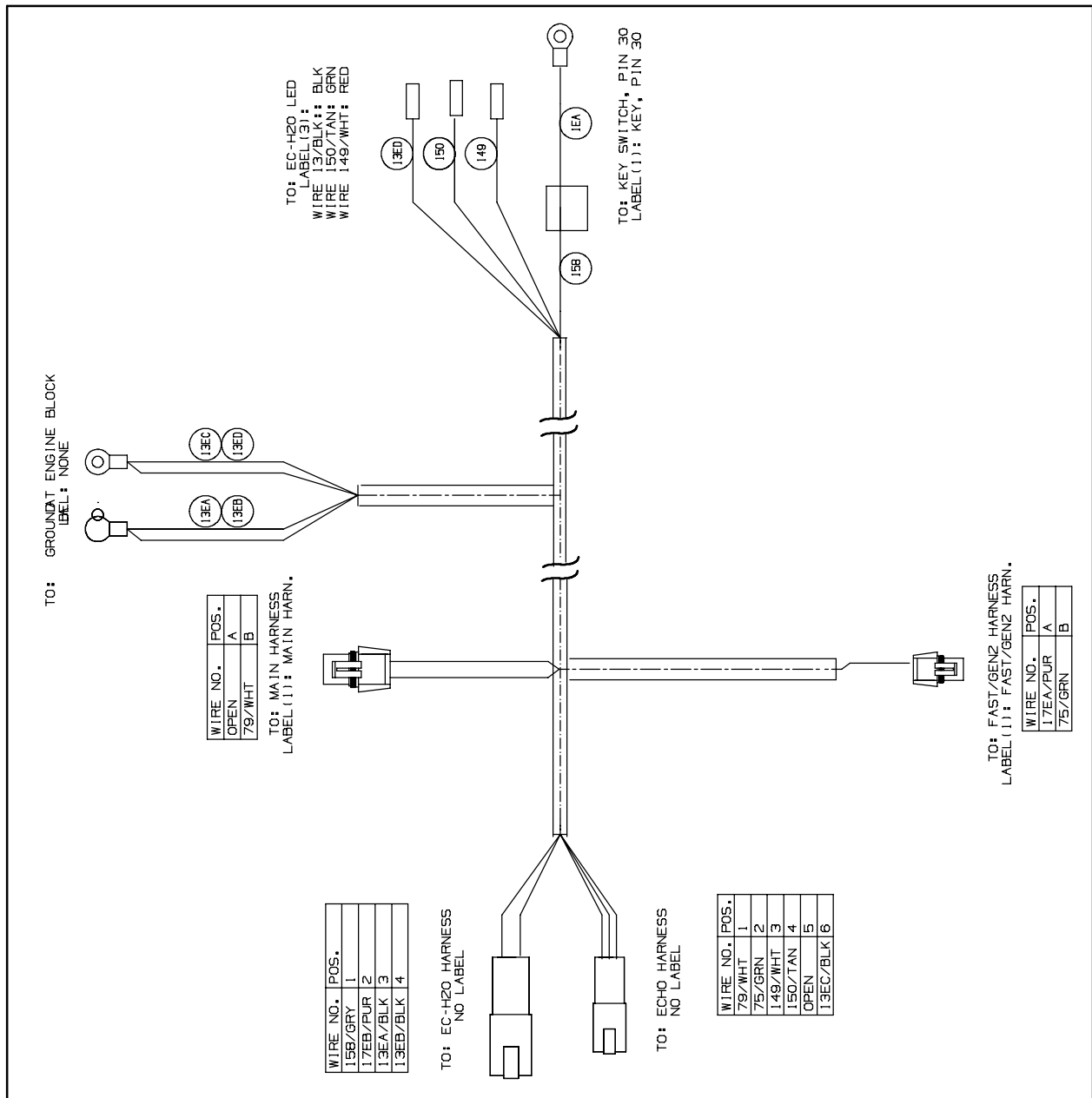


FIG. 8

37. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
38. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
39. Cut approximately 1" from the mounting bracket. Refer to Fig. 9.

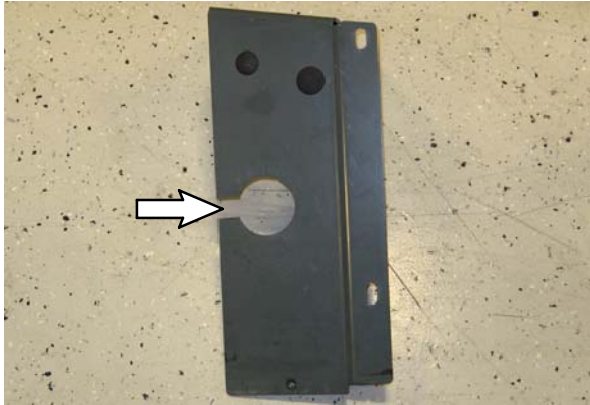


FIG. 9

40. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 10.
41. Connect the 60" PVC hose to the *ec-H20* assembly.

42. Connect the 72" PVC hose to the *ec-H20* assembly.
43. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 8.
44. Install the grommet into the mounting bracket. Refer to Fig. 10.
45. Reinstall the mounting bracket into the operator compartment.
46. Reinstall the cover onto the *ec-H20* assembly.
47. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
48. Install the storage bag onto the back of the operator seat. Refer to Fig. 10.
49. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 10.
50. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
51. Remove the cable tie holding the switch closed.
52. Reconnect the battery cables to the battery.

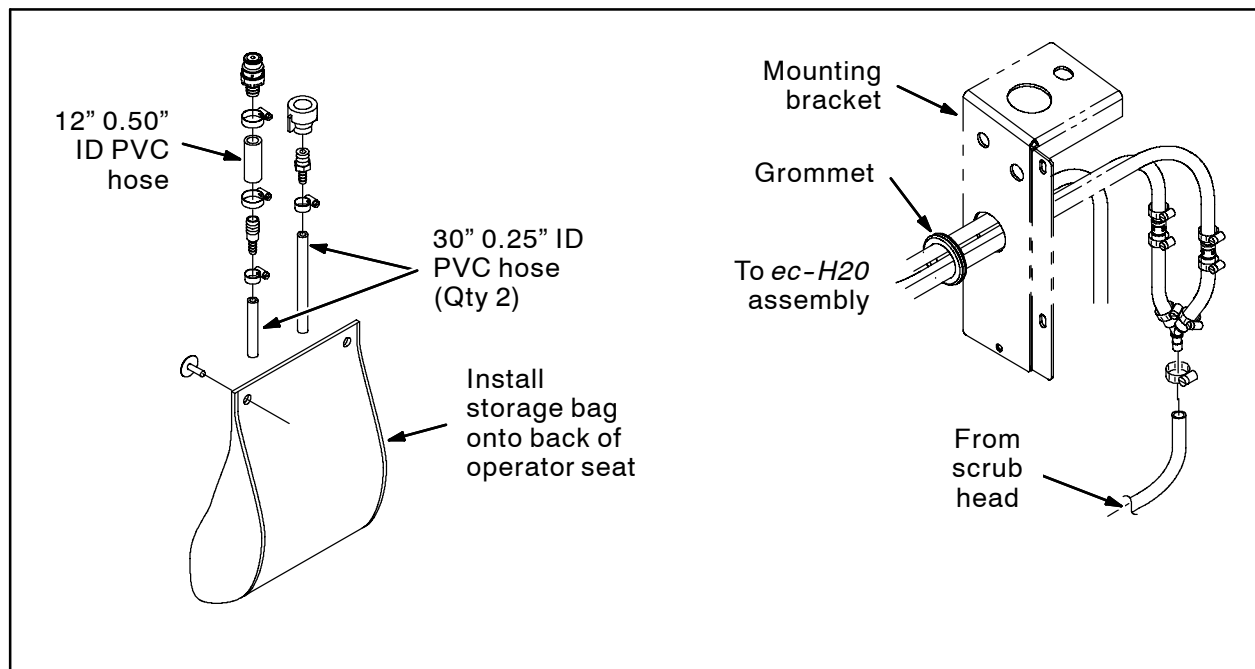


FIG. 10

**INSTALLATION: T20 FaST GEN II MACHINES
(DISK HEADS ONLY)**

1. Disconnect the hoses and wire harness from the FaST assembly and remove the entire FaST assembly from the machine. Discard the FaST assembly and hardware. Refer to Fig. 1.
2. Remove the hoses and components labeled in Fig. 1 and discard the hoses and hose clamps.
3. Disconnect the main wire harness from the detergent pump.

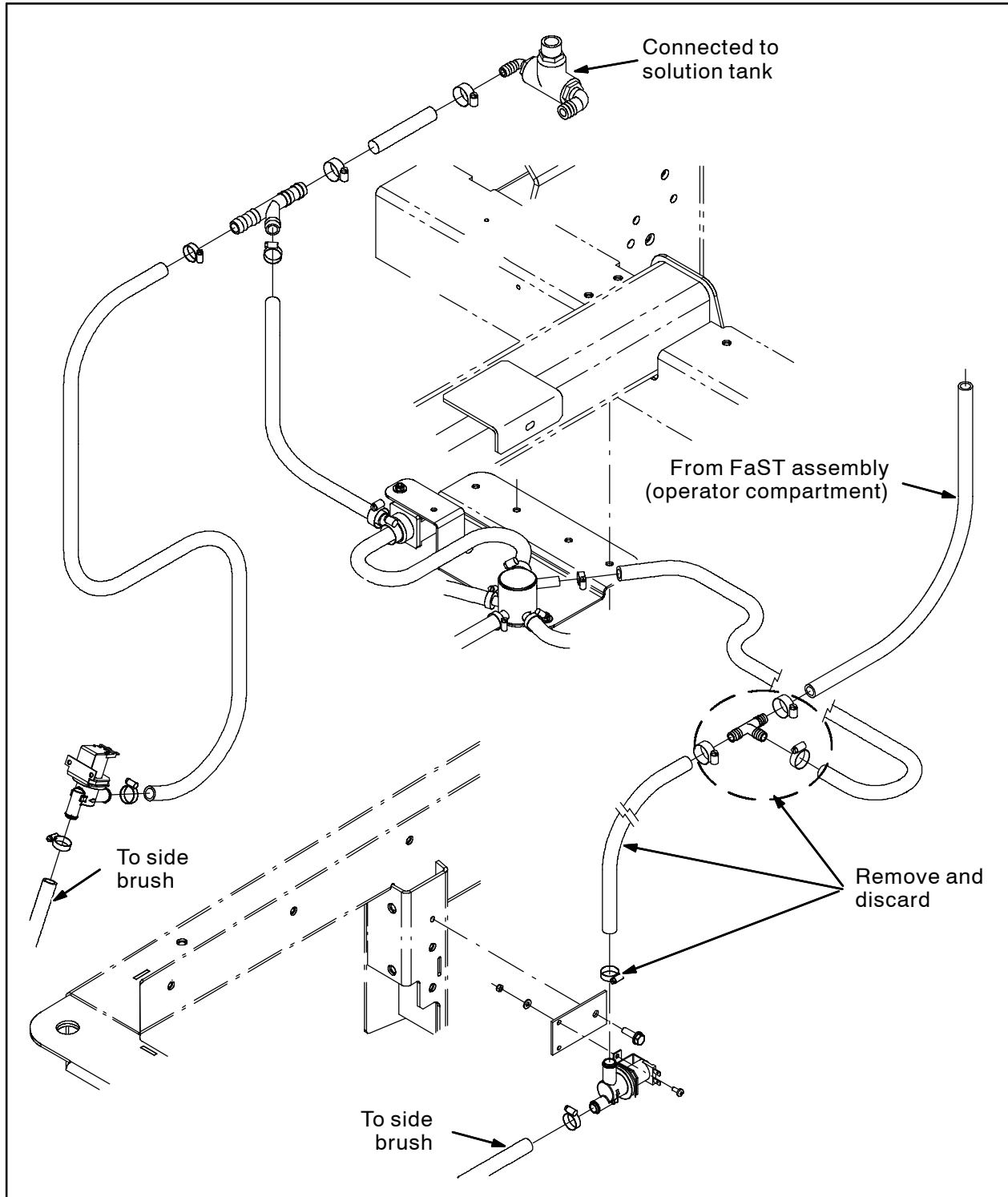


FIG. 1

4. Cut a 60 length PVC hose.

5. **Machines Without Side Brush Option Only:** Route the end of the 60" PVC hose from the operator compartment, down along the frame center beam, and to the scrub head. Refer to Fig. 8.

6. **Machines Without Side Brush Option Only:** Use a hose clamp to connect the 60" PVC hose to the scrub head.

7. **Machines Without Side Brush Option Only:** Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".

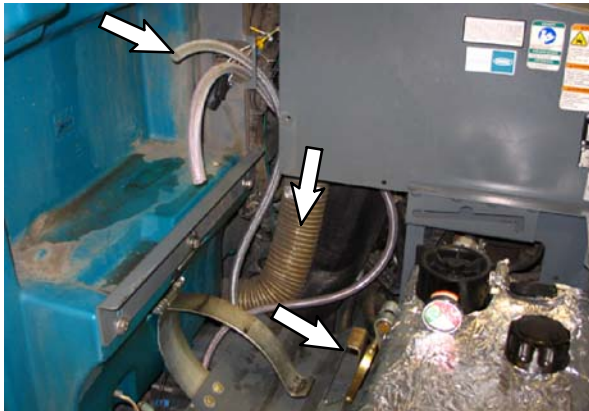


FIG. 2

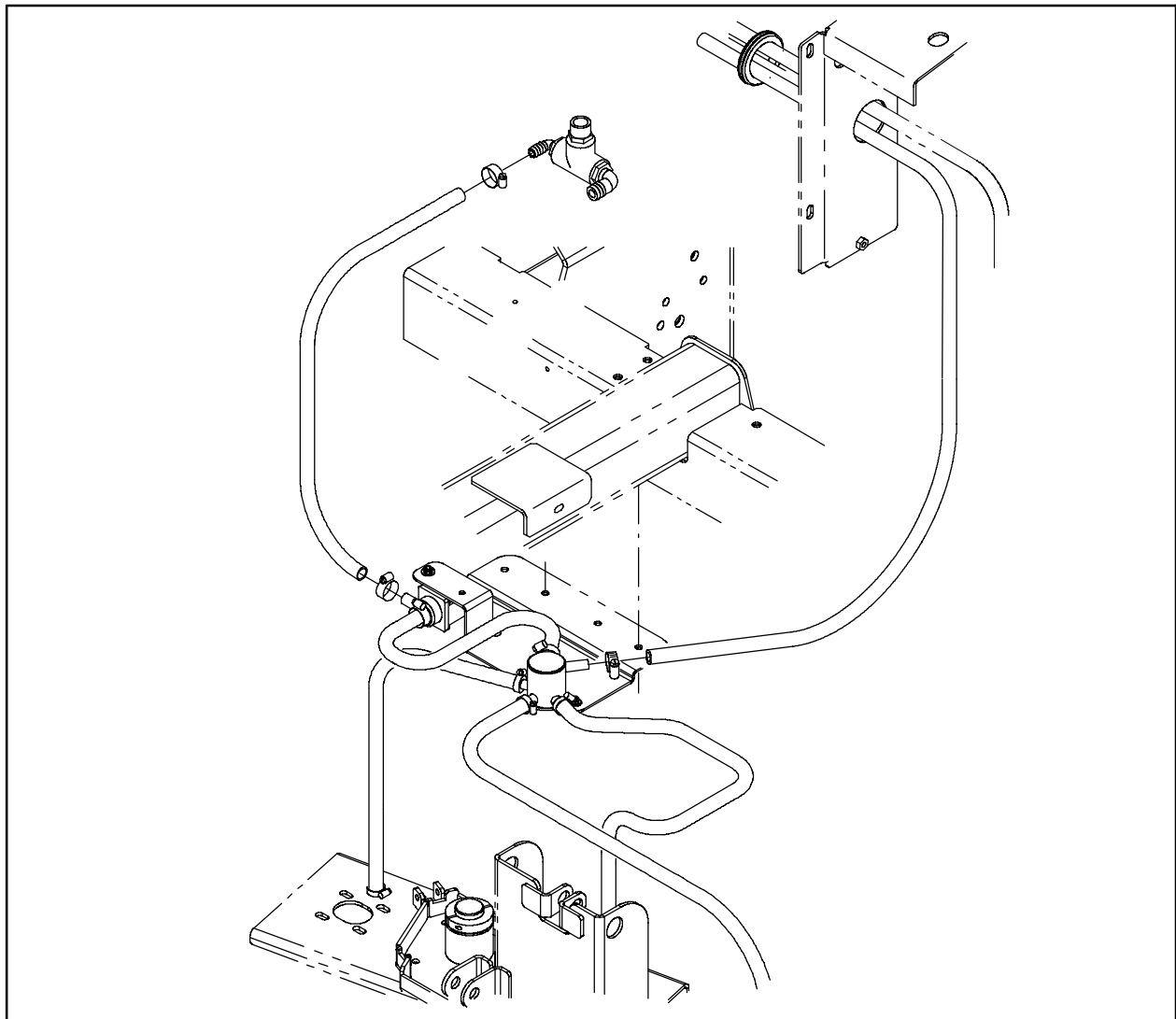


FIG. 3 - Machines Without Optional Side Brush

NOTE: Complete Step 8 through Step 18 only if machine is equipped with the optional side brush.

8. Cut a 60" and 43" length of 0.50 ID PVC hose.
9. Cut three 2" lengths of 0.50 ID PVC hose.
10. Cut a 13" length of 0.38" ID PVC hose.
11. Cut 12" from the 43" PVC hose.
12. Use two hose clamps to install a check valve between the 31" and 12" PVC hoses. Note the direction of flow. Refer to Fig. 4.
13. Use a hose clamp to install a t-fitting onto the 60" PVC hose. Refer to Fig. 4.
14. Assemble the check valve, straight fittings, 12" hose, and 2" hoses as shown in Fig. 4. Note the direction of flow.
15. Use a hose clamp to connect the previously assembled hose assembly to the t-fitting on the 60 PVC hose. Refer to Fig. 4.
16. Route the end of the 60" PVC hose with the t-fitting / additional hose assembly from the operator compartment and down to the scrub head. Refer to Fig. 4.
17. Label the end of the 60" length of 0.50 ID PVC hose still in the operator compartment "SCRUB HEAD".
18. Use a hose clamp to connect the additional hose assembly to the solenoid. Refer to Fig. 4.
19. Use a hose clamp to connect a 20" PVC hose to the solenoid. Refer to Fig. 4.

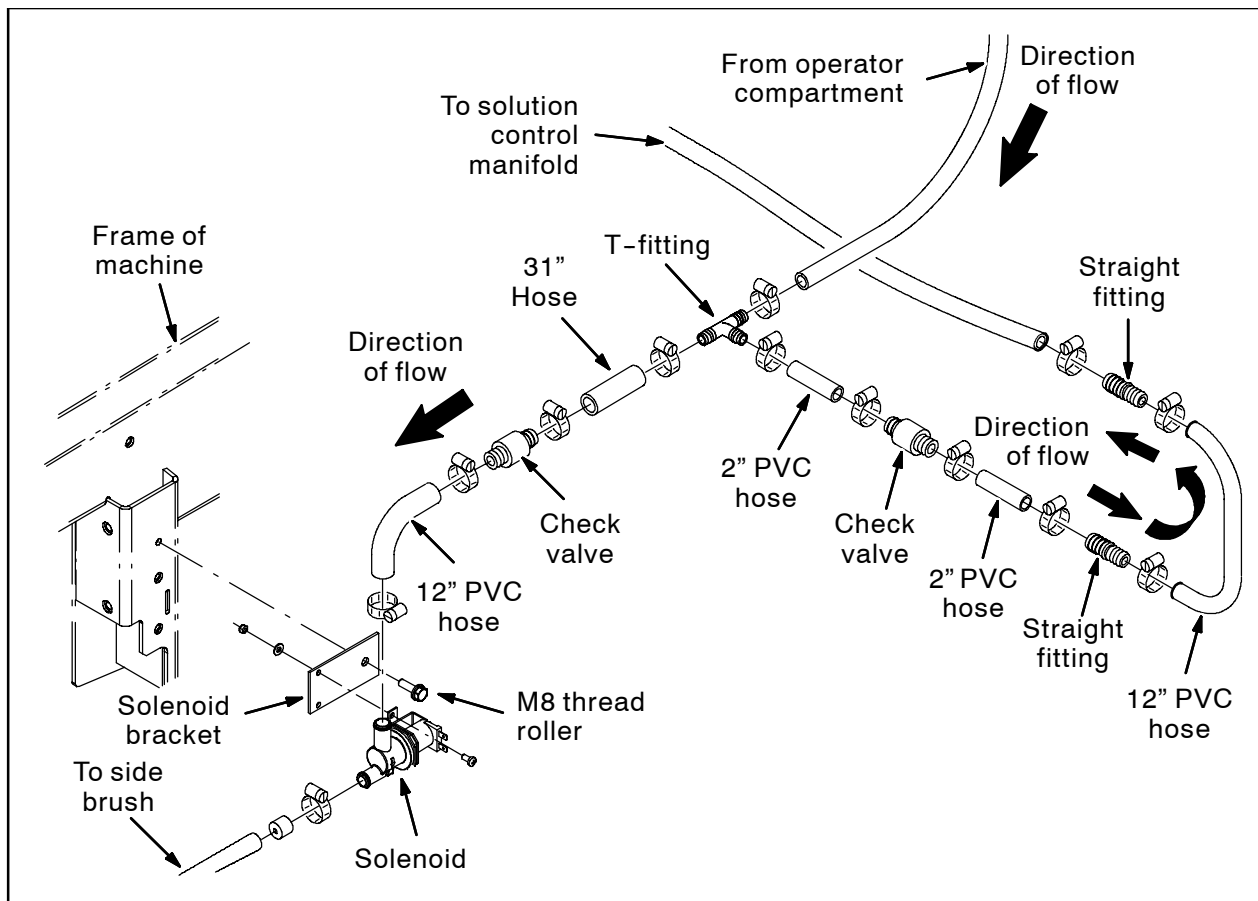


FIG. 4 - Machines With Optional Side Brush

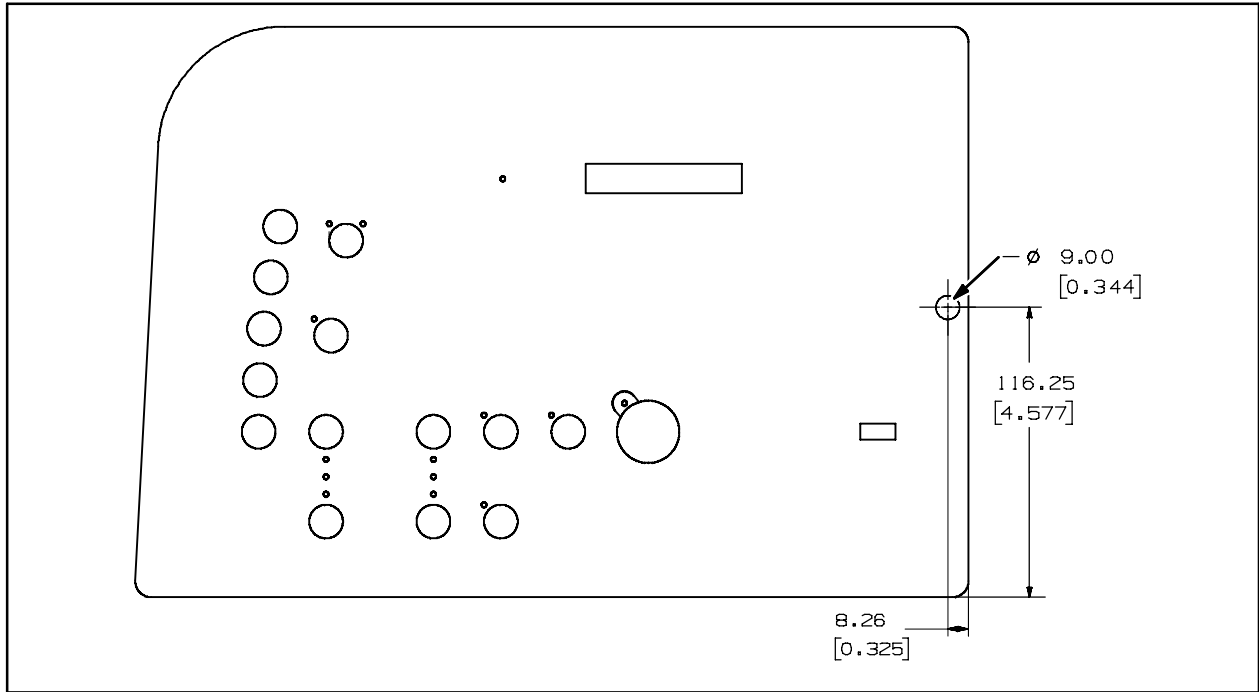


FIG. 5

NOTE: Complete the remainder of this procedure for both machine with and without the optional side brush.

20. Drill a 11/32" (0.344") hole through the instrument panel assembly. Refer to Fig. 5.
21. Remove the instrument panel label from the instrument panel.
22. Use a brake cleaning solvent to clean remaining residue from the instrument panel.
23. Install the new instrument panel label onto the instrument panel.
24. Insert the *ec-H20* warning light into the 11/32" (0.344") hole. Refer to Fig. 5.
25. Begin routing the *ec-H20* harness at the upper corner of the engine compartment. Loosely cable tie the *ec-H20* harness to the main wire harness.
26. Route the *ec-H20* harness along the main harness and down to the FaST connector on the the main harness and connect the *ec-H20* harness to the FaST connector.

27. Route *ec-H20* harness *ec-H20* assembly leads into the the operator compartment. Refer to Fig. 6.

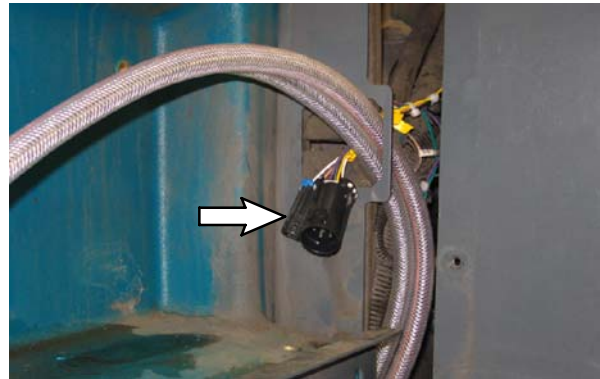


FIG. 6

28. Route the *ec-H20* harness along the bottom of the main wire harness and toward the front of the machine. Refer to Fig. 7.

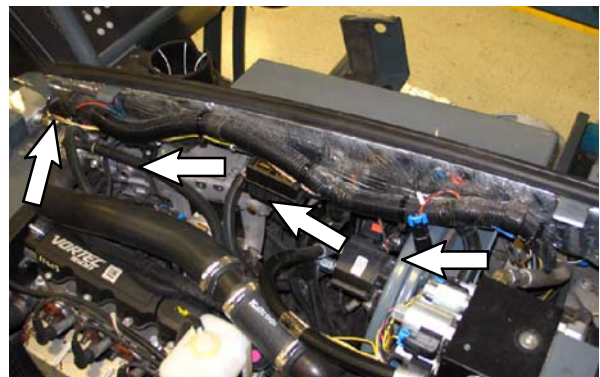


FIG. 7

29. Route the *ec-H20* harness ground lead to the engine ground and connect the ground lead to the engine ground. Refer to Fig. 8.
30. Route the *ec-H20* harness along the main wire harness and into the battery compartment.
31. Cut the cable ties from the rubber boot and slide the boot off from the ignition switch.
32. Slide the *ec-H20* harness ignition switch lead through the bottom of the boot and connect the ignition lead to the PIN 30 terminal on the ignition switch. Refer to Fig. 8.
33. Reinstall the rubber boot onto the ignition switch.
34. Connect the *ec-H20* harness to the LED light. Refer to Fig. 8.
35. Use several cable ties to secure the *ec-H20* harness to the main wire harness behind where the battery is located.

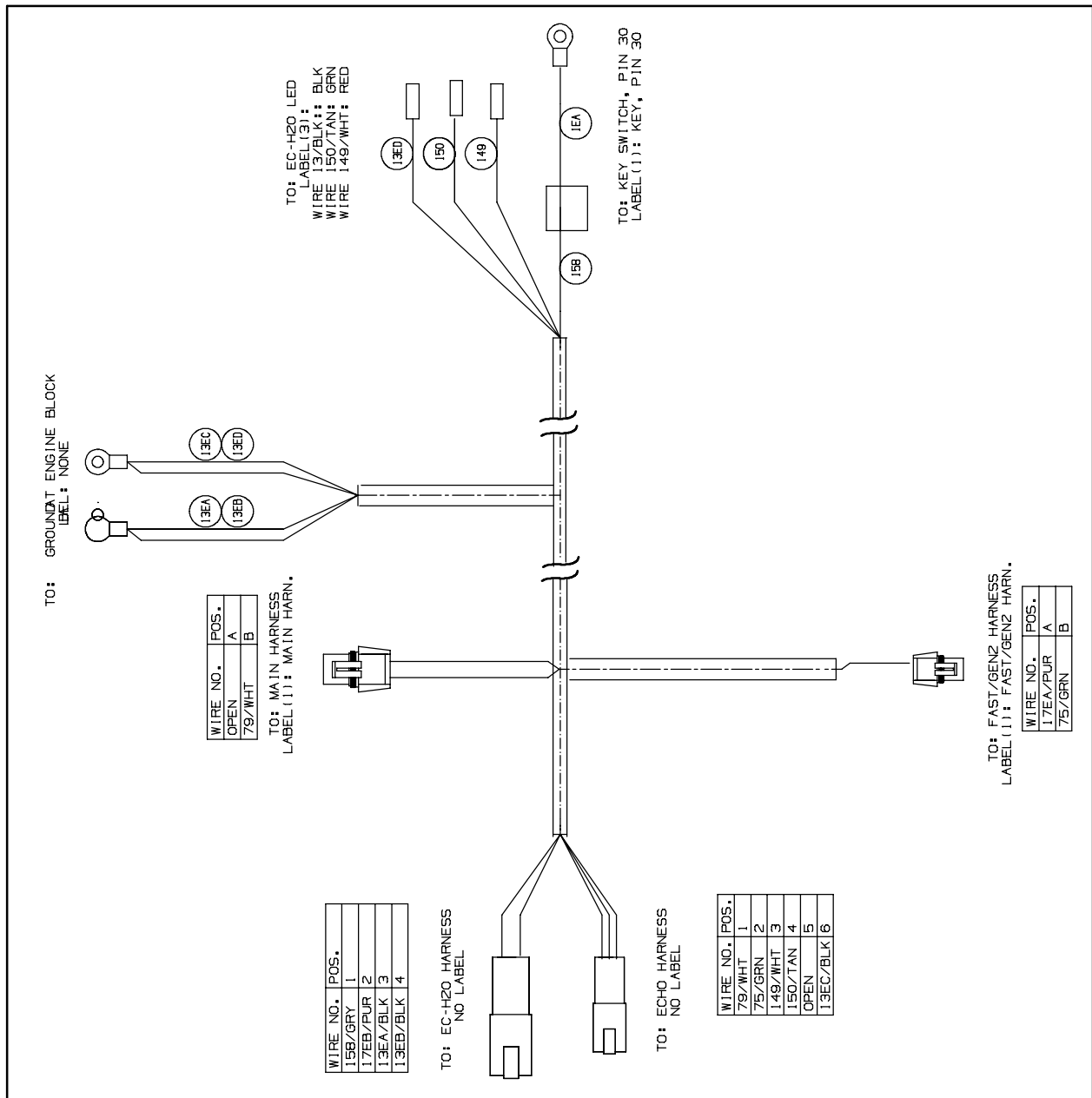


FIG. 8

36. Remove the cover from the *ec-H20* assembly. Set the cover and mounting hardware aside.
37. Use two hex screws and two flat washers to install the *ec-H20* assembly behind the operator seat.
38. Cut approximately 1" from the mounting bracket. Refer to Fig. 9.

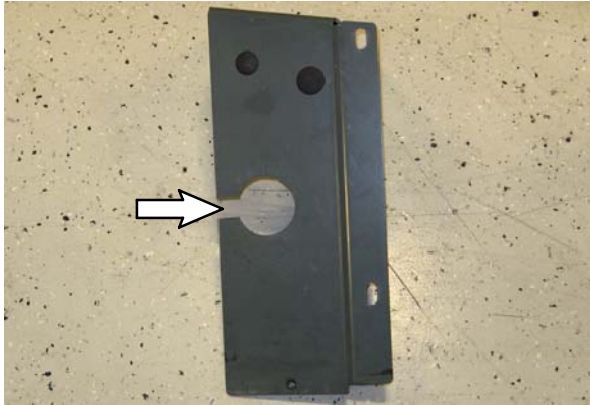


FIG. 9

39. Slide the grommet onto the hoses /cables on the *ec-H20* assembly. Refer to Fig. 10.
40. Connect the 60" PVC hose to the *ec-H20* assembly.

41. Connect the 72" PVC hose to the *ec-H20* assembly.
42. Connect the *ec-H20* harness to the *ec-H20* assembly. Refer to Fig. 8.
43. Install the grommet into the mounting bracket. Refer to Fig. 10.
44. Reinstall the mounting bracket into the operator compartment.
45. Reinstall the cover onto the *ec-H20* assembly.
46. Place the battery back into the battery compartment and reconnect the battery cables to the battery.
47. Install the storage bag onto the back of the operator seat. Refer to Fig. 10.
48. Assemble the *ec-H20* flush hose assemblies. Refer to Fig. 10.
49. Reinstall all covers and components removed from the machine to install the *ec-H20* kit.
50. Remove the cable tie holding the switch closed.
51. Reconnect the battery cables to the battery.

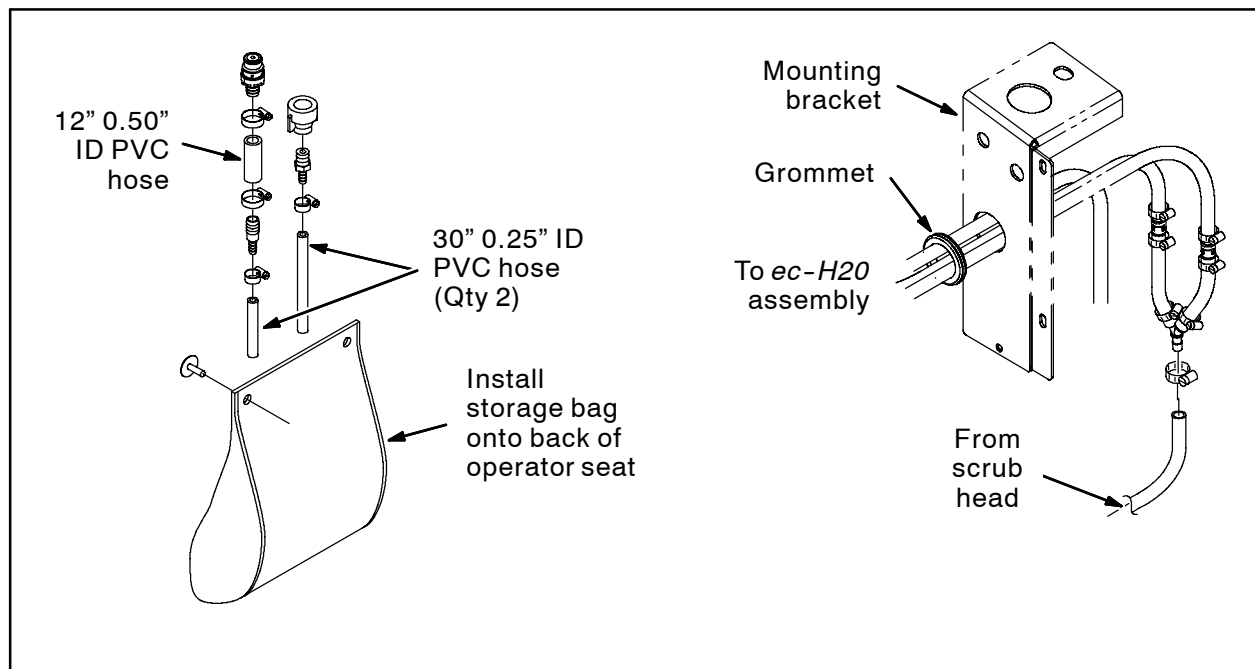
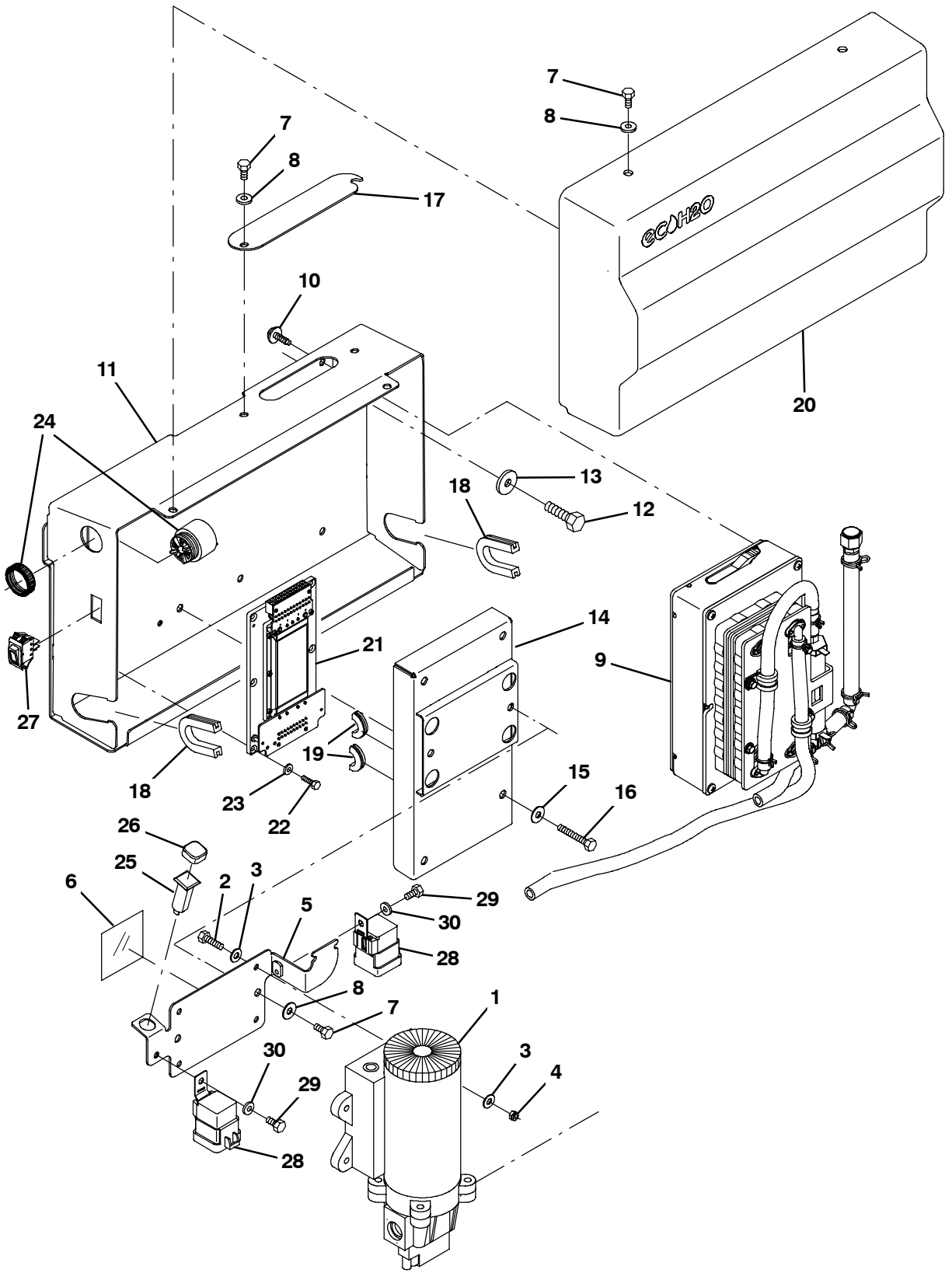
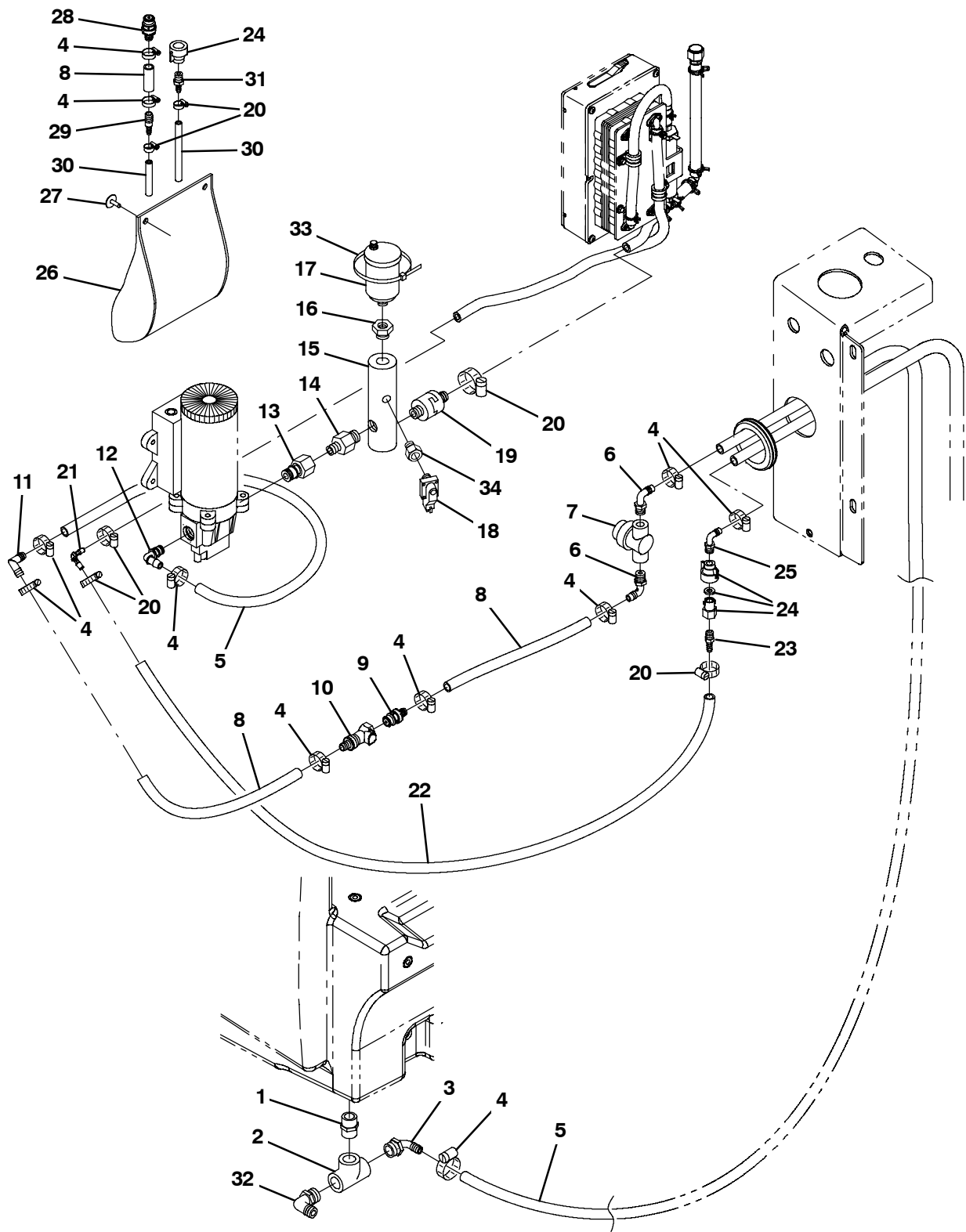


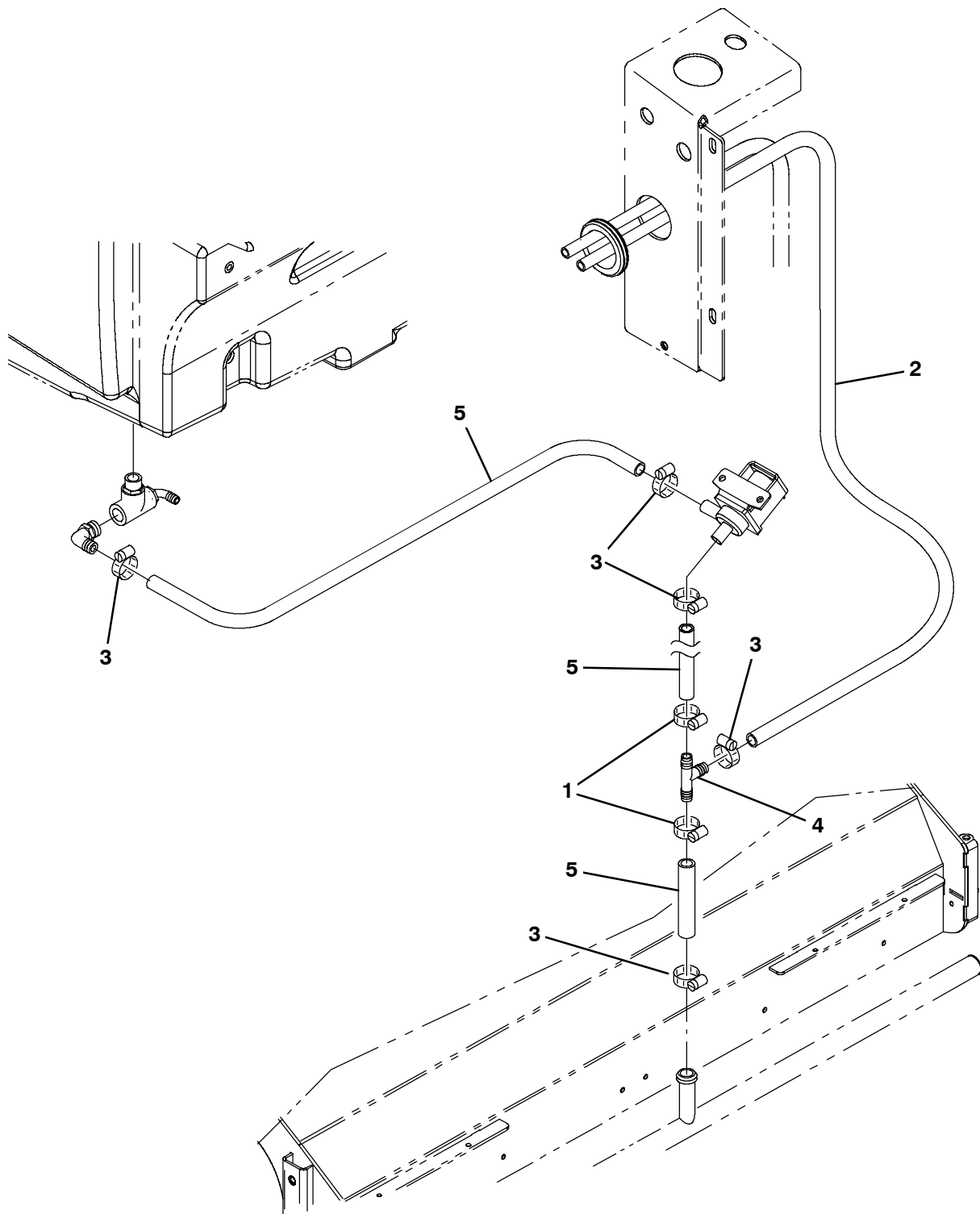
FIG. 10



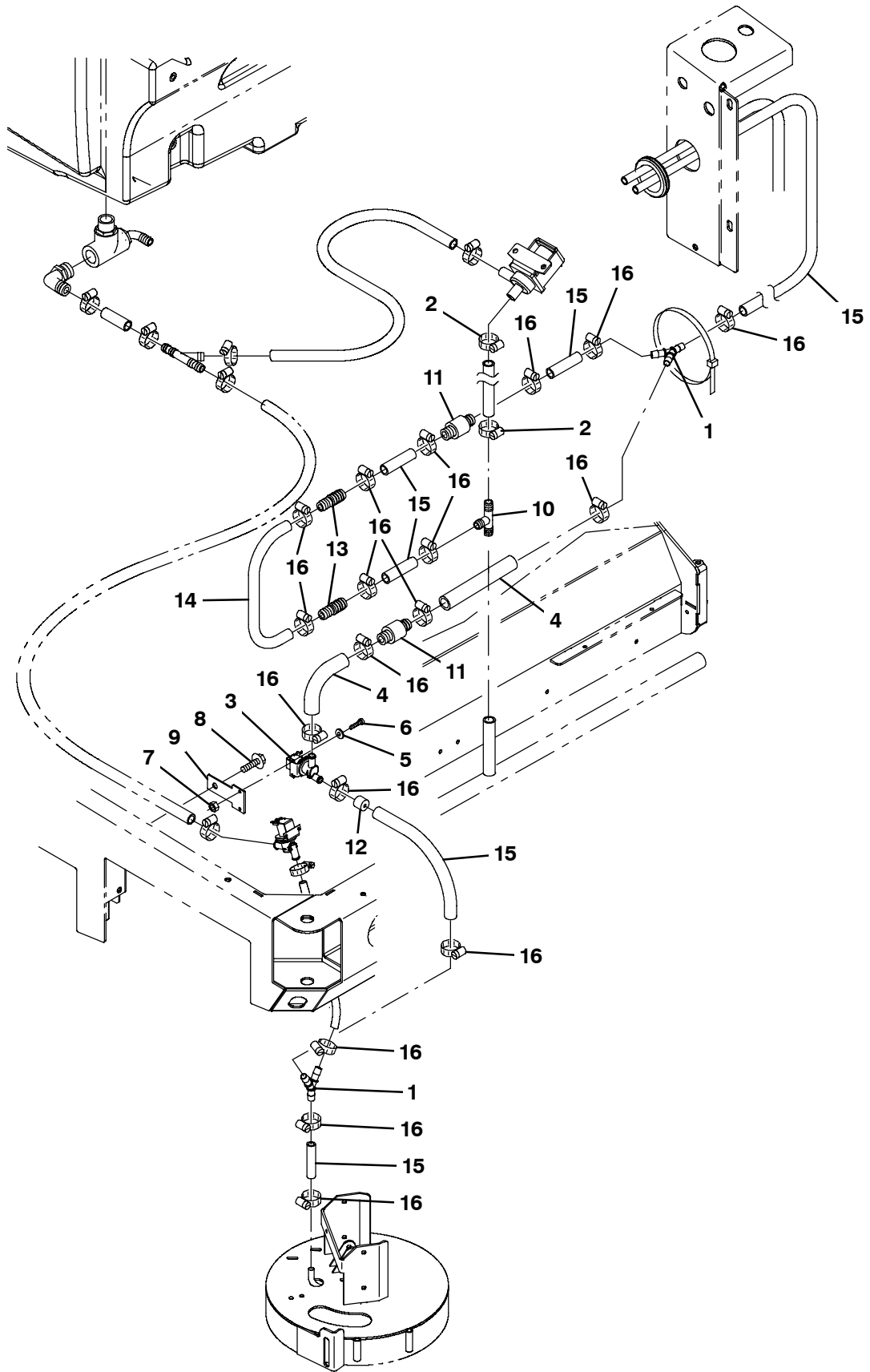
Ref.	Part No.	Serial Number	Description	Qty.
1	1060624	(000000-	) Pump, Soltn, Ele, 13.7vdc,12/28psi	1
2	09252	(000000-	) Screw, Hex, M5 X 0.80 X 20, 8.8	4
3	19066	(000000-	) Washer, Flat, 10	8
4	06549	(000000-	) Nut, Hex, Lock, M5 X 0.80, NI	4
5	1060273	(000000-	) Plate, Mtg, Pump	1
6	1059677	(000000-	) Strip, Rbr, 0.06 03.54w 03.5l [Neo/60]	1
7	09744	(000000-	) Screw, Hex, M6 X 1.00 X 12, Ss	6
8	01684	(000000-	) Washer, Flat, 0.27b 0.69d .05, Ss	6
9	9007882	(000000-	) Module Kit, Replmt [Ec-H20] (See Breakdowns)	1
10	1040467	(000000-	) Screw, Hex, M6 X 1.00 X 20, 9.8, Sems	4
11	1060292	(000000-	) Plate Wldt, Mtg	1
12	09740	(000000-	) Screw, Hex, M8 X 1.25 X 20, Ss	2
13	1017218	(000000-	) Washer, Flat, 0.32b 1.00d .12, Ss	2
14	1060185	(000000-	) Cover Wldt, Power Supply	1
15	01684	(000000-	) Washer, Flat, 0.27b 0.69d .05, Ss	4
16	07805	(000000-	) Screw, Hex, M6 X 1.00 X 35, Ss	4
17	1060291	(000000-	) Plate, Inspection	1
18	1020168	(000000-	) Molding, Afrmkt, Trim, Pvc, .08 .11, 01Ft	1
19	10632-4	(000000-	) Grommet, Rbr, 0.62id, F/0.9h, .06 Matl	1
20	1060719	(000000-	) Cover, Trimmed	1
21	1058963	(000000-	) Converter, Ele, 12-36 Vdc	1
22	09206	(000000-	) Screw, Hex, M4 X 0.70 X 12, 8.8	4
23	19065	(000000-	) Washer, Flat, 08	4
24	1052726	(000000-	) Alarm, 9-48vdc, 95 Db(A) [Ec-H20]	1
25	1053078	(000000-	) Circuitbreaker, 2.0a, Resetable	1
26	1046173	(000000-	) Boot, Circuitbreaker	1
27	1044393	(000000-	) Switch, Rocker, Spst, Mom	1
28	56186	(000000-	) Relay, 12vdc, 040a, Spdt No	2
29	09738	(000000-	) Screw, Hex, M5 X 0.80 X 12, Ss	2
30	01683	(000000-	) Washer, Flat, 10, Ss	2



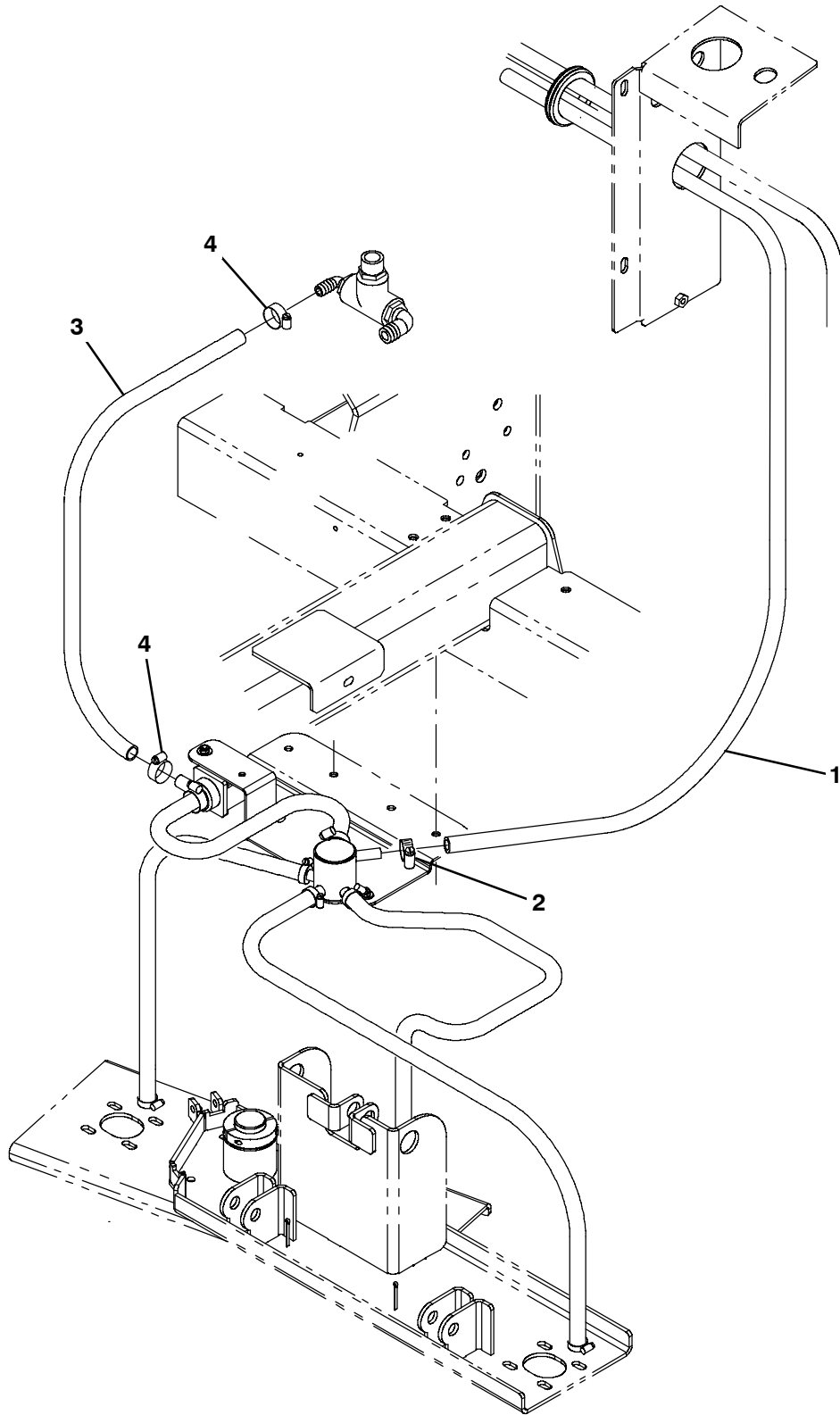
Ref.	Part No.	Serial Number	Description	Qty.
1	24544	(000000-	) Fitting, Plstc, Str, Pm12/Pm12 1.60l	1
2	42133A	(000000-	) Fitting, Plstc, Tee, Pf12/Pf12/Pf12	1
3	1005552	(000000-	) Fitting, Plstc, E90, Bm08/Pm12, Nyl	1
4	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d, .31w	1
5	1011521	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 02ft, Clr	2
6	64778	(000000-	) Fitting, Plstc, E90, Bm08/Pm06	2
7	1005302	(000000-	) Filter, In-Line, Pf06/Pf06 080mesh 02.6l	1
8	1011403	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 01ft, Clr	3
9	1017415	(000000-	) Insert, Cplg, Qm, Bm08	1
10	1017413	(000000-	) Housing, Cplg, Qf / Pm08	1
11	63987-1	(000000-	) Fitting, Plstc, E90, Bm08/Bm08	1
12	1049254	(000000-	) Fitting, Nyl, Qdc, E90, Bm08/ Qm10	1
13	1059372	(000000-	) Fitting, Plstc, Str, Pf06/Qm10, Pvc	1
14	1005219	(000000-	) Fitting, Plstc, Str, Pm04/Pm06, Nyl	1
15	1060596	(000000-	) Manifold, Water	1
16	24698	(000000-	) Fitting, Brs, Str, Pf02/Pm06	1
17	1017386	(000000-	) Valve, Vent, Air, Float Type	1
18	1058935	(000000-	) Switch, Press, 50 Psi, Pm02	1
19	1060693	(000000-	) Valve, Check, 0005psi Pm04/Bm06	1
20	43844	(000000-	) Clamp, Hose, Wormdrive, 0.25-0.62d, .31w	1
21	1059391	(000000-	) Fitting, Plstc, E90, Bm05/Bm05, Nyl	1
22	1052336	(000000-	) Hose, Afmkt, PVC, Brd, 0.31ld, 03Ft, Clr	2
23	1052017	(000000-	) Fitting, Plstc, Str, Bm05/Pm04	1
24	1043866	(000000-	) Fitting Assy, Qdc, Pf04	2
25	65581	(000000-	) Fitting, Plstc, E90, Bm08/Pm04	1
26	48790	(000000-	) Pouch	1
27	72968	(000000-	) Rivet, Plstc, .250d X 0.90	2
28	1017415	(000000-	) Insert, Cplg, Qm, Bm08	1
29	630164	(000000-	) Fitting, Plstc, Str, Bm04/Bm08	1
30	1006415	(000000-	) Hose, Afmkt, Pvc, Clr, 0.25id, 03ft	2
31	50901	(000000-	) Fitting, Plstc, Str, Bm04/Pm04	1
32	14877	(000000-	) Fitting, Plstc, E90, Bm12/Pm12	1
33	130773	(000000-	) Tie, Cable, Nyl, 11.0L, .14W, 3.0 Max. D	1
34	1062403	(000000-	) Fitting, Brs, Snubber, Pm02/Pf02	1



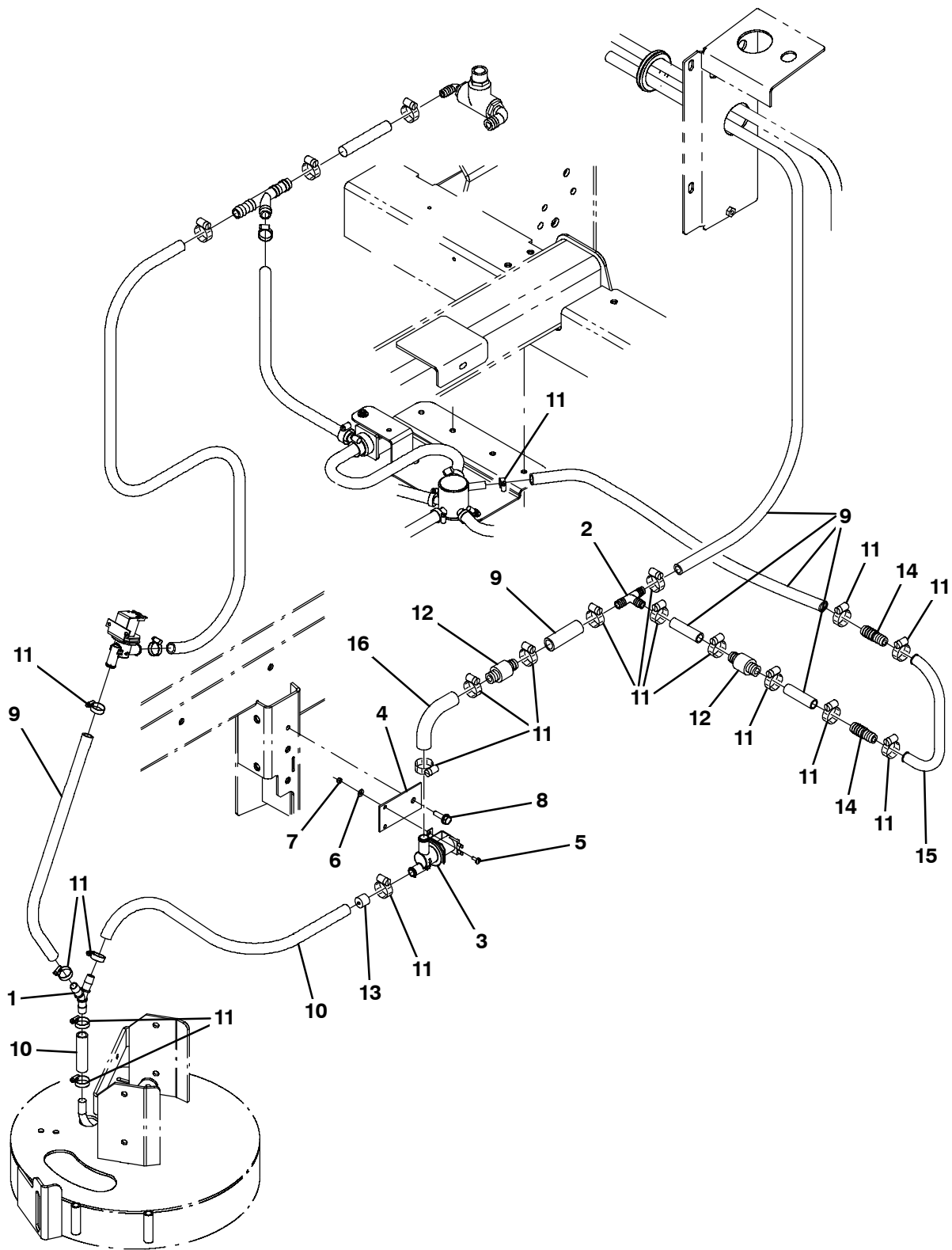
Ref.	Part No.	Serial Number	Description	Qty.
1	63810	(000000-	) Clamp, Hose, Wormdrive, 0.56-1.06d, .56w	2
2	1011837	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 12ft, Clr	1
3	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d, .31w	2
4	385644	(000000-	) Fitting, Plstc, Tee, Bm08/Bm12/Bm12, Br	1
5	1015045	(000000-	) Hose, Afmkt, Pvc, Brd, 0.75id, 08ft, Clr	1



Ref.	Part No.	Serial Number	Description	Qty.
1	1010668	(000000-	) Fitting, Plstc, Y, Bm08/Bm08/Bm08, Nyl	1
2	63810	(000000-	) Clamp, Hose, Wormdrive, 0.56-1.06d, .56w	2
3	1037825	(000000-	) Valve Assy, Water, Solenoid, 12vdc	1
4	31543	(000000-	) Hose, Heater, E90, 0.62id, 24.0 4.0	1
5	01683	(000000-	) Washer, Flat, 10, Ss	2
6	09200	(000000-	) Screw, Pan, Phl, M5 X 0.80 X 12, Ss	2
7	09739	(000000-	) Nut, Hex, Lock, M5 X 0.80, NI, Ss	2
8	76099	(000000-	) Screw, Hex, M8 X 1.25 X 25, Fmg	1
9	1030511	(000000-	) Plate, Mtg, Valve	1
10	385644	(000000-	) Fitting, Plstc, Tee, Bm08/Bm12/Bm12, Br	1
11	1010614	(000000-	) Valve, Check, 2gpm .5psi Bm08/Bm08	2
12	1061045	(000000-	) Plug, Restrictor	1
13	222375	(000000-	) Fitting, Plstc, Str, Bm06/Bm08	2
14	1014974	(000000-	) Hose, Afmkt, Pvc, Brd, 0.38id, 02ft, Clr	1
15	1011412	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 08ft, Clr	1
16	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d, .31w	18



Ref.	Part No.	Serial Number	Description	Qty.
1	1011412	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50ld, 08Ft, Clr	1
2	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88D, .31W	2
3	1015045	(000000-	) Hose, Afmkt, Pvc, Brd, 0.75ld, 08Ft, Clr	1
4	63810	(000000-	) Clamp, Hose, Wormdrive, 0.56-1.06D, .56W	2



Ref.	Part No.	Serial Number	Description	Qty.
1	1010668	(000000-	) Fitting, Plstc, Y, Bm08/Bm08/Bm08, Nyl	1
2	63245-1	(000000-	) Fitting, Plstc, Tee, Bm08/Bm08/Bm08	1
3	1037825	(000000-	) Valve, Solenoid, 12vdc, Water Flow	1
4	1030511	(000000-	) Plate, Mtg, Valve	11
5	09200	(000000-	) Screw, Pan, Phl, M5 X 0.80 X 12, Ss	2
6	01683	(000000-	) Washer, Flat, 10, Ss	2
7	09739	(000000-	) Nut, Hex, Lock, M5 X 0.80, NI, Ss	2
8	76099	(000000-	) Screw, Hex, M8 X 1.25 X 25, Fmg	1
9	1011412	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 08ft, Clr	1
10	1015067	(000000-	) Hose, Afmkt, Pvc, Clr, 0.50id, 08ft	1
11	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d, .31w	20
12	1010614	(000000-	) Valve, Check, 2Gpm .5Psi Bm08/Bm08	2
13	1061045	(000000-	) Plug, Rsestricator	1
14	222375	(000000-	) Fitting, Plstc, Str, BM06/BM08	2
15	1014974	(000000-) Hose, Afmkt, Pvc, Brd, 0.38id, 02Ft, Clr	1
16	31543	(000000-) Hose, Heater, E90, 0.62id, 24.0 4.0	1

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