



INSTRUCTION BULLETIN

No. 9006557
Machine: 7300 / 8300
Published: 08-2009
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 9006106, 9006107, 9006108**

SYNOPSIS:

This kit contains the parts needed to install the *ec-H₂O* option on 7300 / 8300 machines.
Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: NONE

(Estimated time to complete: 3 hours – machines equipped with FaST / 4-5 hours – standard machines and machines equipped with ES)

PREPARATION: (All Machines)

1. Completely empty the recovery tank and solution tank.
2. Park the machine on a clean level surface, lower the scrub head, turn off the machine, remove the key, and set the parking brake.

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

3. Disconnect the battery cables from the battery.



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

4. Open the front cover of the machine.

**INSTALLATION: (Machines with
FaST Gen I/Cylindrical Scrub Head)
7300 NA Serial Numbers 000000-003746 /
7300 CE Serial Numbers 0000-1384
8300 NA Serial Numbers 000000-004791 /
8300 CE Serial Numbers 0000-1121**

1. Disconnect the supply and dispensing hoses from the FaST assembly and remove the FaST assembly from the machine.
2. Remove the FaST components and hardware from the machine. Discard all removed parts. Refer to Fig. 1.
3. Cut two 45" (1140 mm) sections of clear PVC hose. Label both ends of one hose SOL (solution supply hose) and both ends of the other hose DISP (solution dispensing hose).

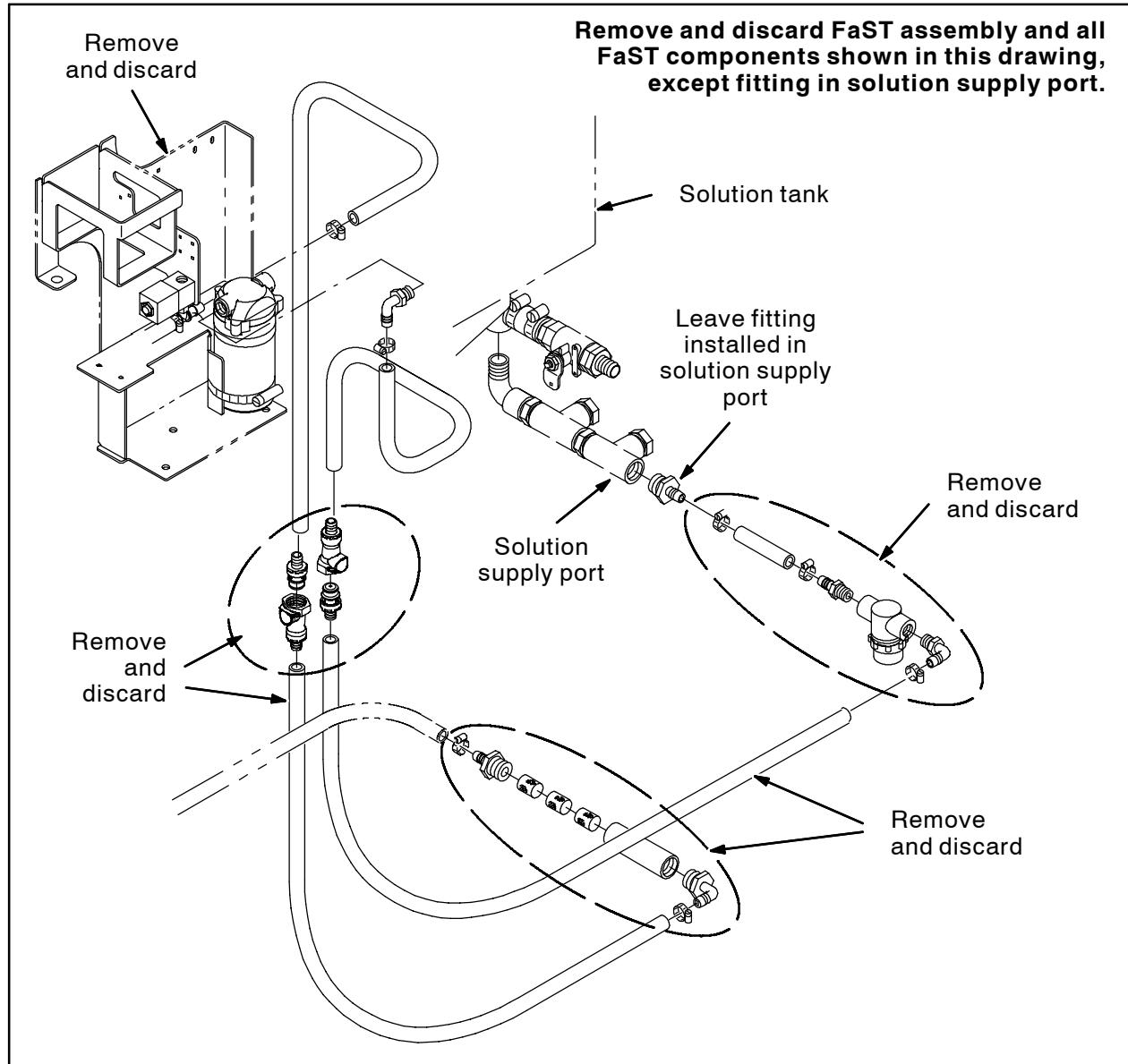


FIG. 1

4. Remove the motor cover panel from the operator compartment. Set the hardware and panel aside. Refer to Fig. 2.

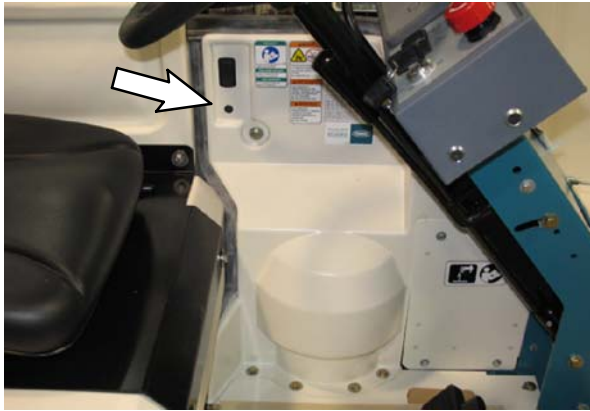


FIG. 2

5. Remove the cover from the control box. Set the hardware and cover aside. Refer to Fig. 3.

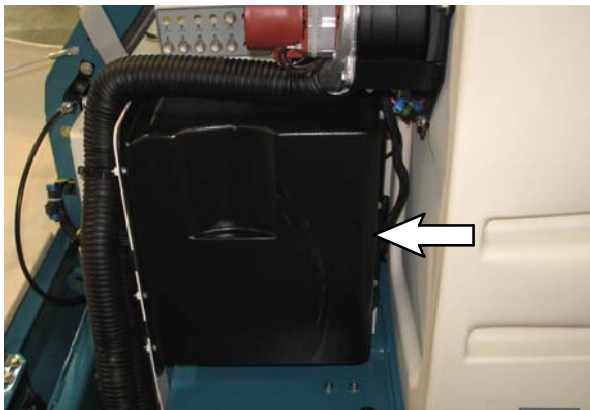


FIG. 3

6. Route both 45" (1140 mm) hoses from the operator compartment, along the main harness (away from the actuator and other moving parts), and down to the scrub head. Refer to Fig. 4.

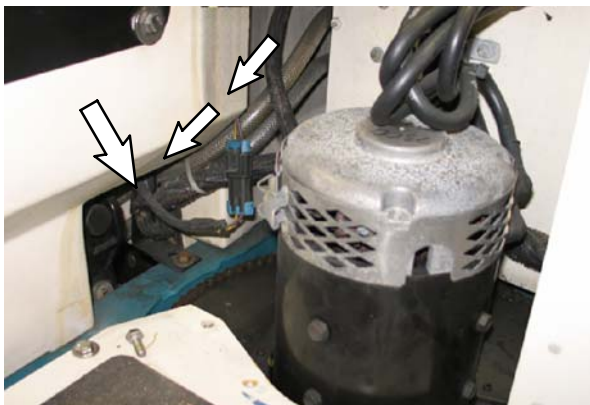


FIG. 4

7. Route the hose labeled SOL to the solution supply assembly and use a hose clamp to secure the hose to the solution supply port. Refer to Fig. 5.

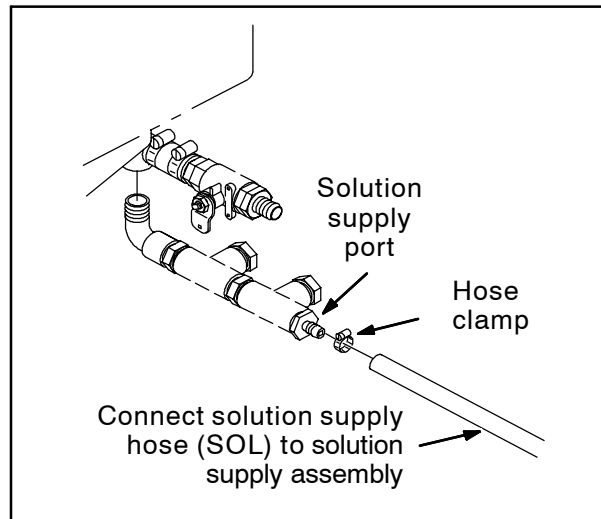


FIG. 5

8. Route the hose labeled DISP to the y-fitting and use a hose clamp to secure the hose to the y-fitting. Refer to Fig. 6.

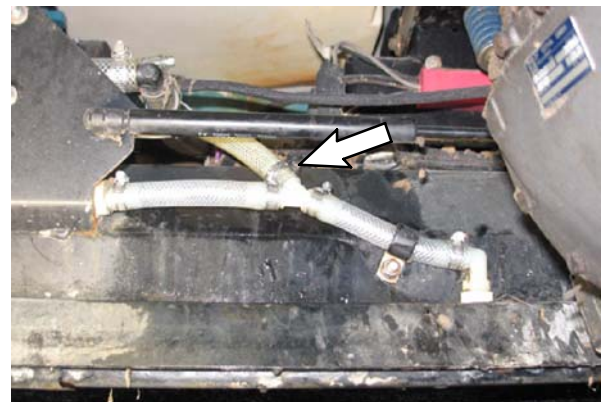


FIG. 6

9. Route the end of the *ec-H2O* harness with the diode through the hole in the frame of the machine and to the water valve attached to the scrub head. Refer to Fig. 7.

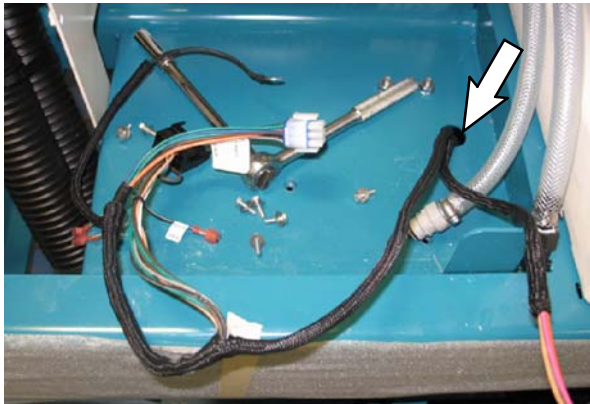


FIG. 7

10. Disconnect the main wire harness from the water valve attached to the scrub head. Refer to Fig. 8.

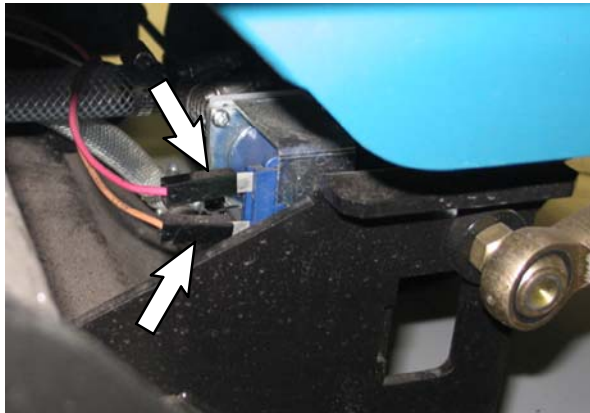


FIG. 8

11. Connect the two wires previously attached to the water valve to the *ec-H2O* harness. Refer to Fig. 8 and Fig. 12.
12. Connect the *ec-H2O* harness to the water valve. Refer to Fig. 12.

13. Route both 45" (1140 mm) hoses from the operator compartment into the control board compartment. Refer to Fig. 9.



FIG. 9

14. Remove the FaST switch and circuit breaker from the operator compartment. Discard the circuit breaker and switch. Refer to Fig. 10.



FIG. 10

15. Install the *ec-H2O* label over the FaST label on the operator compartment. Refer to Fig. 10, Fig. 11, and Fig. 12.



FIG. 11

19. Connect the *ec-H2O* harness to the light.
Refer to Fig. 12.
20. Connect the *ec-H2O* harness to the switch.
Refer to Fig. 12.
21. Connect the ground lead of the *ec-H2O* harness onto the ground stud on the control box plate. Refer to Fig. 12.
22. Reinstall the control box cover and motor cover panel onto the machine.



23. Thread three M6 X 1.25 SEMS screws into the frame of the machine. Refer to Fig. 13.

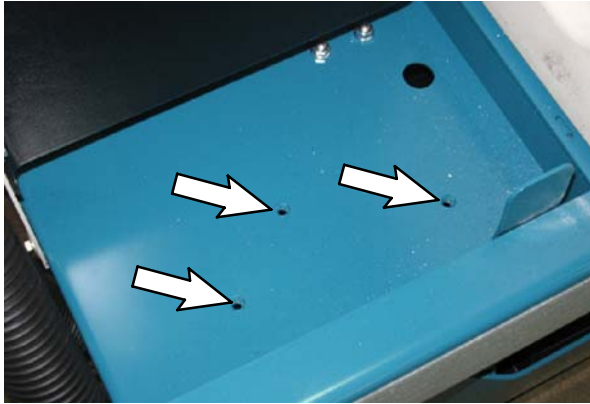


FIG. 13

24. Set the *ec-H2O* assembly into the machine and tighten the three M6 X 1.25 SEMS screws installed in the previous step. Refer to Fig. 14.

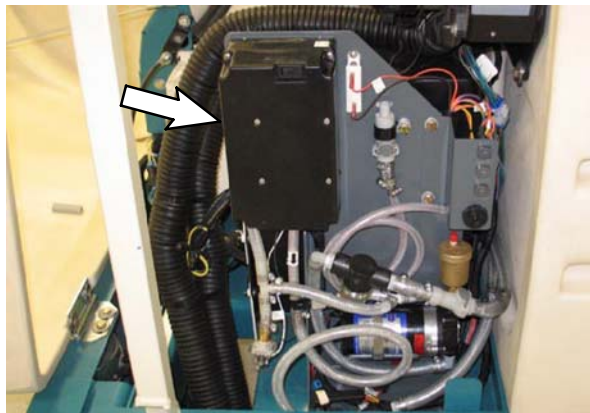


FIG. 14

25. Use cable ties to secure the *ec-H2O* harness to the main harness. Be sure to leave enough slack in the *ec-H2O* harness to allow for scrub head movement and edge scrub (if equipped with the edge scrub option).
26. Install the male end of the black connector attached to the *ec-H2O* assembly outlet hose onto the end of the hose labeled DISP and the male end of the gray connector attached to the *ec-H2O* assembly solution supply hose onto the end of the hose labeled SOL.

27. Connect hose from the scrub head to the *ec-H2O* assembly outlet hose. Refer to Fig. 15.

*NOTE: Be sure the outlet hose from *ec-H2O* assembly is looped as shown in Fig. 15.*

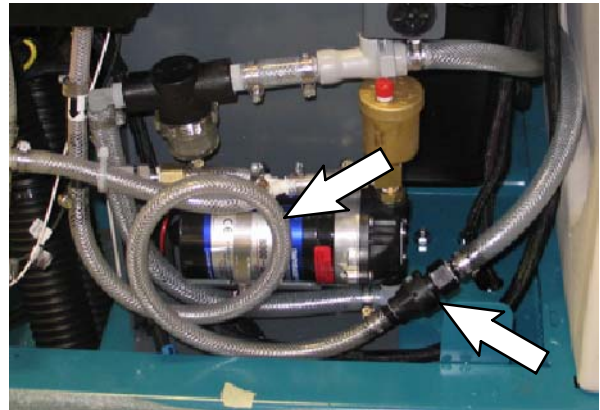


FIG. 15

28. Connect solution supply hose to the *ec-H2O* assembly inlet hose. Refer to Fig. 16.

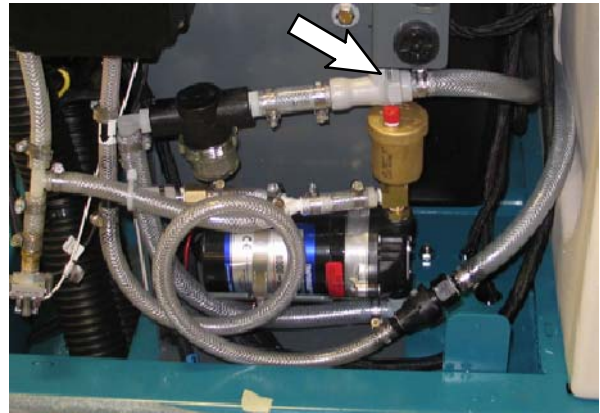


FIG. 16

29. Reattach the battery cables to the batteries.
30. Start and test the machine. Activate the *ec-H2O* system and scrub a section of floor to ensure the system is functioning. Check the newly install hoses and components for leaks.
31. Use isopropyl alcohol to clean the surfaces where labels will be installed onto the machine. Install the labels onto the machine. Refer to **Fig. 2 - Switch and Label Group** for label locations.

INSTALLATION: (Machines With FaST Gen II - Cylindrical & Disk Scrub Head)
7300 NA Serial Numbers 003746- /
7300 CE Serial Numbers 1384-
8300 NA Serial Numbers 004791- /
8300 CE Serial Numbers 1121-

1. Disconnect the hose to the scrub head and the solution supply hose from the FaST assembly. Refer to Fig. 1.

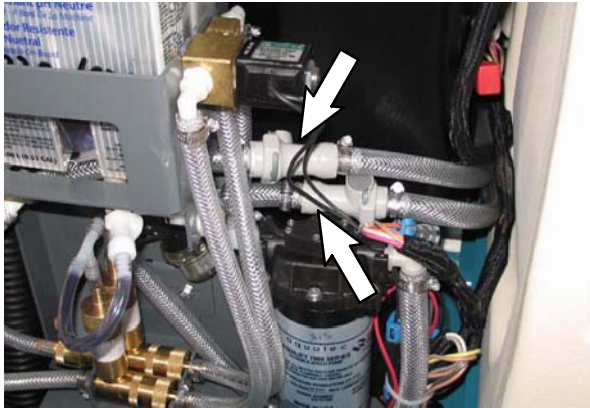


FIG. 1

2. Remove the fitting from the end of the hose to the scrub head disconnected from the FaST assembly in the previous step.
3. Remove the entire FaST assembly (FaST-PAK, pump, and valve assembly) from the machine.
4. Route the end of the *ec-H2O* harness with the diode through the hole in the frame of the machine and to the water valve attached to the scrub head. Refer to Fig. 2.

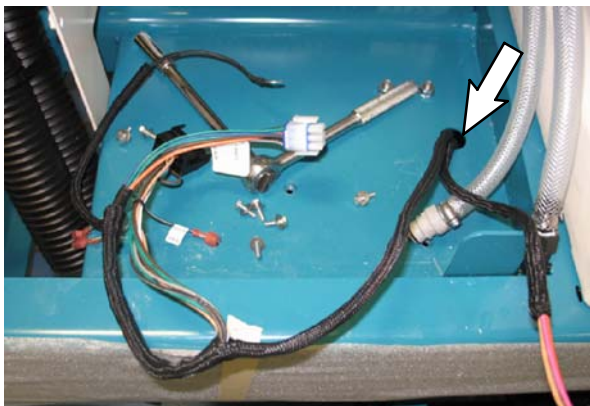


FIG. 2

5. Disconnect the main wire harness from the water valve attached to the scrub head. Refer to Fig. 3.

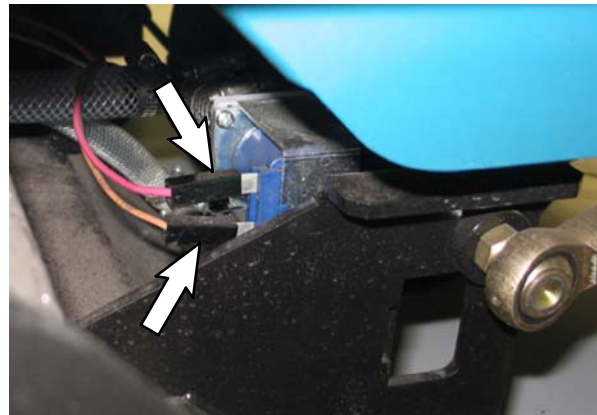


FIG. 3

6. Connect the two wires previously attached to the water valve to the *ec-H2O* harness. Refer to Fig. 3 and Fig. 8.
7. Connect the *ec-H2O* harness to the water valve. Refer to Fig. 8.
8. Remove the motor cover panel from the operator compartment. Set the hardware and panel aside. Refer to Fig. 4.

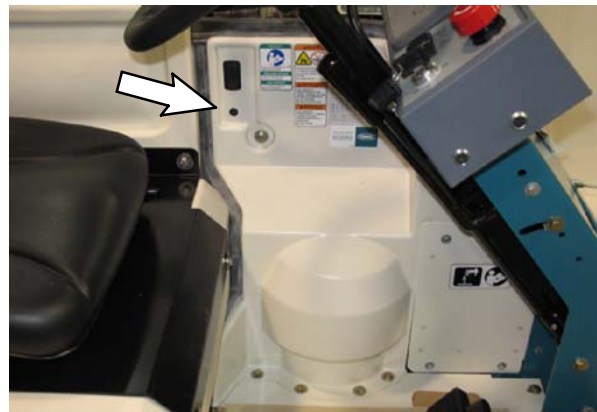


FIG. 4

9. Remove the cover from the control box. Set the hardware and cover aside. Refer to Fig. 5.

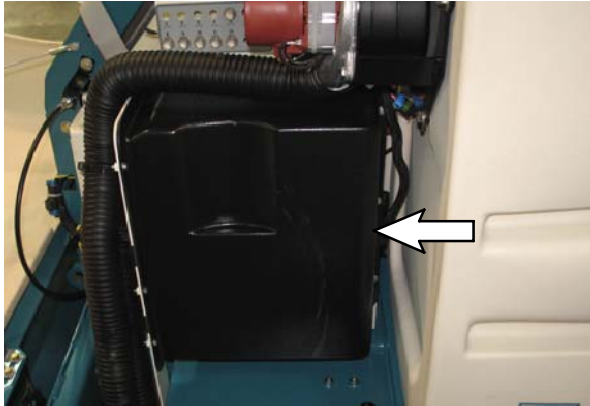


FIG. 5

10. Remove the FaST switch and circuit breaker from the operator compartment. Discard the circuit breaker and switch. Refer to Fig. 6.



FIG. 6

11. Install the *ec-H2O* label over the FaST label on the operator compartment. Refer to Fig. 6, Fig. 7, and Fig. 8.



FIG. 7

12. Install the *ec-H2O* switch into the operator compartment. Refer to Fig. 7 and Fig. 8.
13. Remove the mounting clamp from the *ec-H2O* warning light, slide the bushing onto the light, install the light into the operator compartment, and slide the plastic washer onto the light. Reinstall the mounting clamp to secure the light into place. Refer to Fig. 8.
14. Route the end of the *ec-H2O* harness with the connector for the switch up behind the area of the operator compartment where the light and switch were installed in the previous steps.
15. Connect the *ec-H2O* harness to the light. Refer to Fig. 8.
16. Connect the *ec-H2O* harness to the switch. Refer to Fig. 8.
17. Connect the ground lead of the *ec-H2O* harness onto the ground stud in the control box plate. Refer to Fig. 8.
18. Reinstall the control box cover and motor cover panel onto the machine.

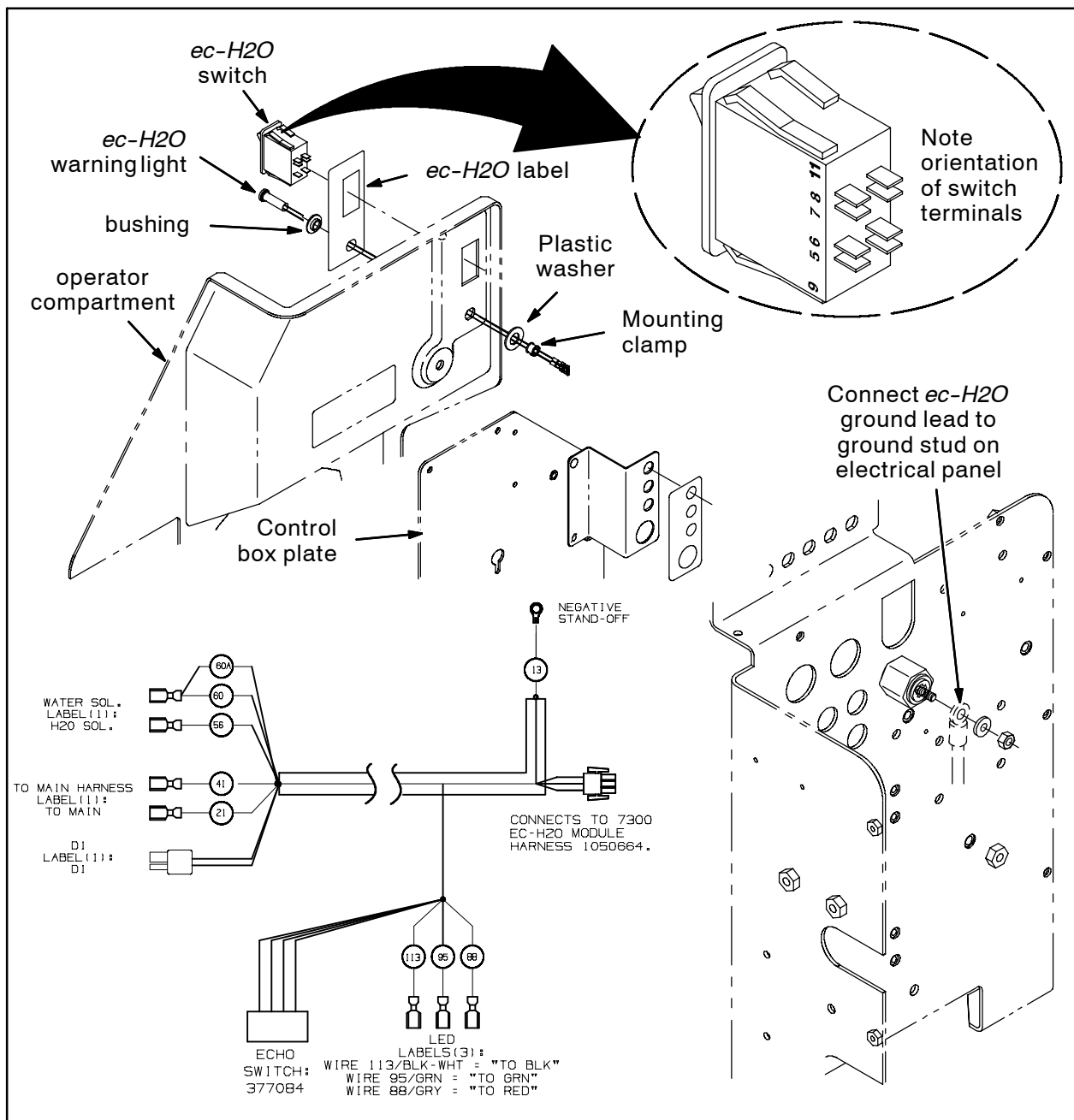


FIG. 8

19. Thread three M6 X 1.25 SEMS screws into the frame of the machine. Refer to Fig. 9.

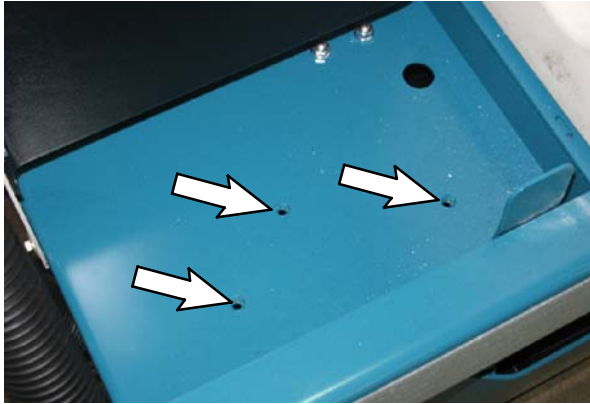


FIG. 9

20. Set the *ec-H2O* assembly into the machine and tighten the three M6 X 1.25 SEMS screws installed in the previous step. Refer to Fig. 10.

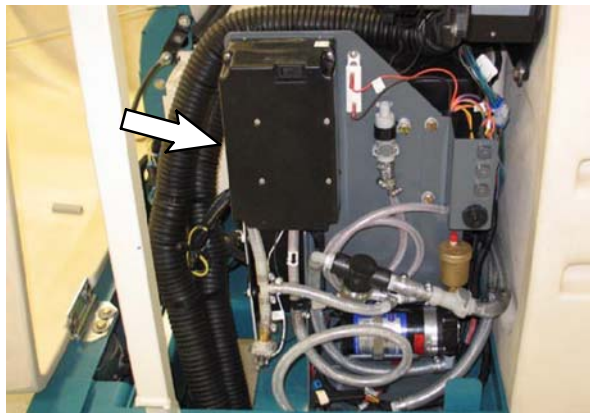


FIG. 10

21. Use cable ties to secure the *ec-H2O* harness to the main harness. Be sure to leave enough slack in the *ec-H2O* harness to allow for scrub head movement and edge scrub (if equipped with the edge scrub option).

22. Connect hose from the scrub head to the *ec-H2O* assembly outlet hose. Refer to Fig. 11.

NOTE: Be sure the outlet hose from ec-H2O assembly is looped as shown in Fig. 11.

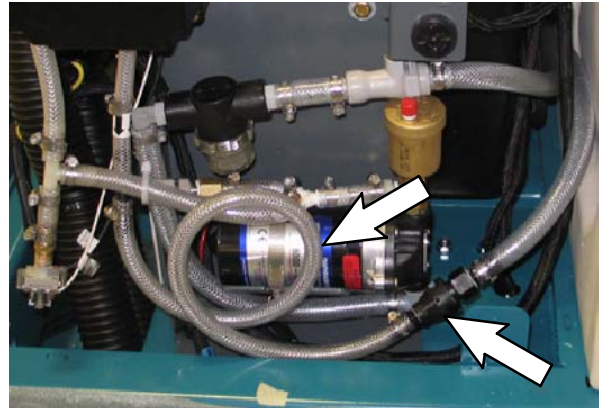


FIG. 11

23. Connect solution supply hose to the *ec-H2O* assembly inlet hose. Refer to Fig. 12.

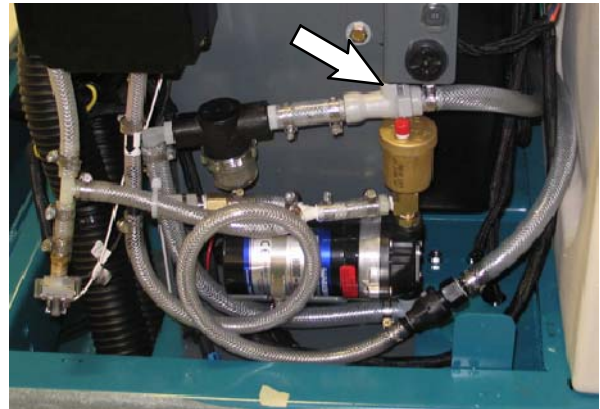


FIG. 12

24. Reattach the battery cables to the batteries.
25. Start and test the machine. Activate the *ec-H2O* system and scrub a section of floor to ensure the system is functioning. Check the newly install hoses and components for leaks.
26. Use isopropyl alcohol to clean the surfaces where labels will be installed onto the machine. Install the labels onto the machine. Refer to **Fig. 2 - Switch and Label Group** for label locations.

INSTALLATION: (ES / Standard Machines - Cylindrical Scrub Head)

1. **ES Machines Only:** Remove the ES tank, hoses, and mounting components from the machine. Discard the removed items and all mounting hardware. Refer to Fig. 1.



FIG. 1

2. **ES Machines Only:** Remove the elbow fitting from the solution supply assembly. Install a PM12 plastic plug where elbow fitting was previously located. Discard the elbow fitting. Refer to Fig. 2.

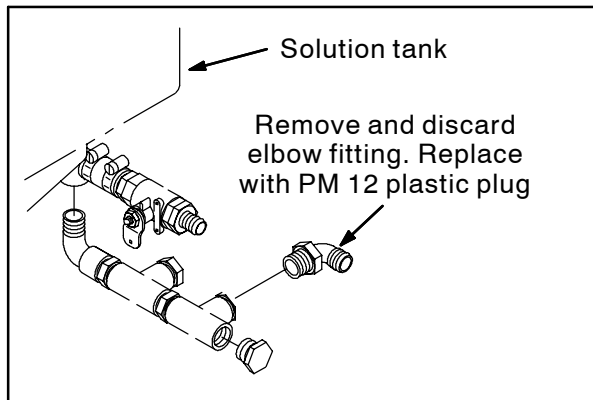


FIG. 2

3. Remove the plug from the solution supply assembly. Discard the plug. Refer to Fig. 3.

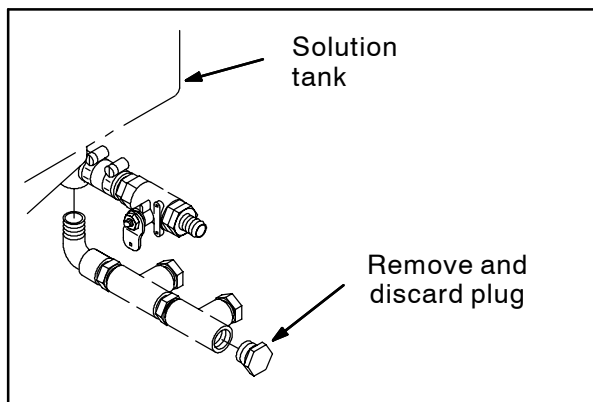


FIG. 3

4. Install the fitting onto the solution supply assembly. Refer to Fig. 4.

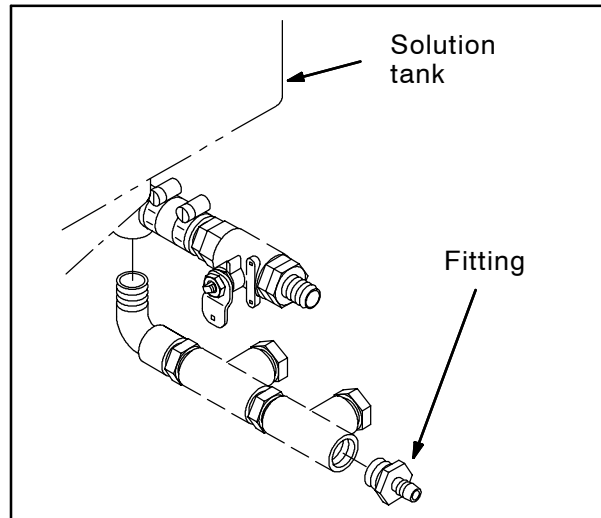


FIG. 4

5. Apply a light coat of thread sealer onto the 90° fitting and install the fitting onto the spray tube bar. Refer to Fig. 5.

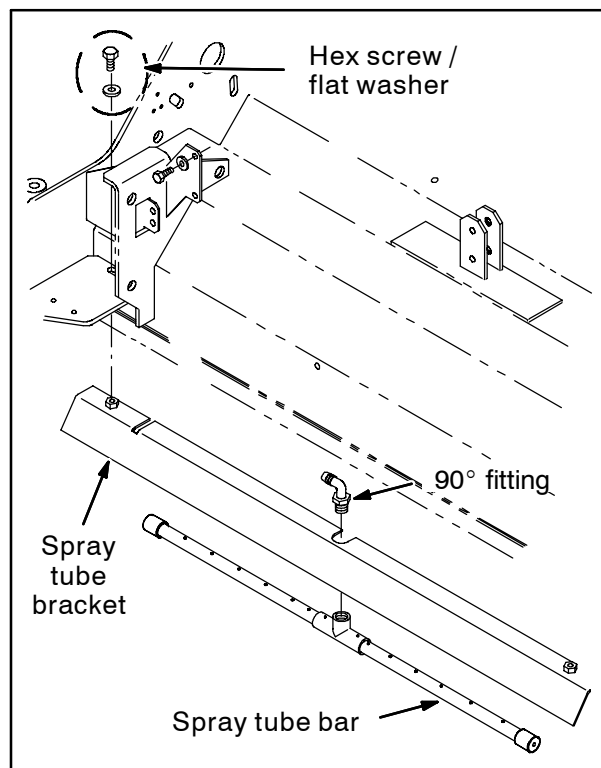


FIG. 5

6. Use hex screws and flat washers to install the spray tube bar and the spray tube bracket onto the scrub head. Refer to Fig. 5.

7. Cut the existing scrub head solution supply hose located on the front of the scrub head. Refer to Fig. 6 where to cut the hose.

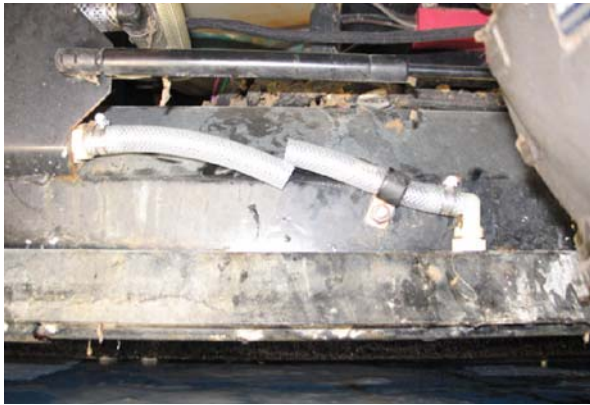


FIG. 6

8. Cut two 45" (1140 mm) sections of clear PVC hose. Label both ends of one hose SOL (solution supply hose) and both ends of the other hose DISP (solution dispensing hose).
9. Remove the motor cover panel from the operator compartment. Set the hardware and panel aside. Refer to Fig. 7.

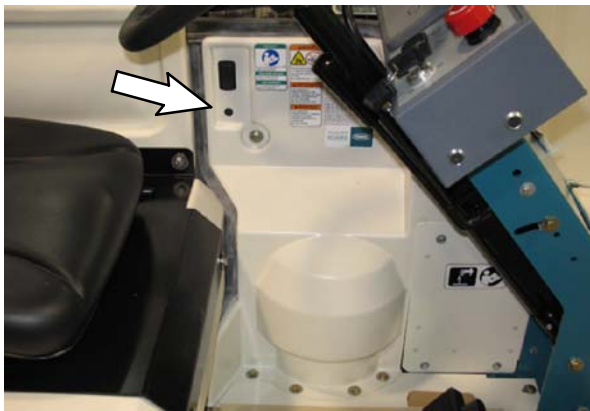


FIG. 7

10. Remove the cover from the control box. Set the hardware and cover aside. Refer to Fig. 8.

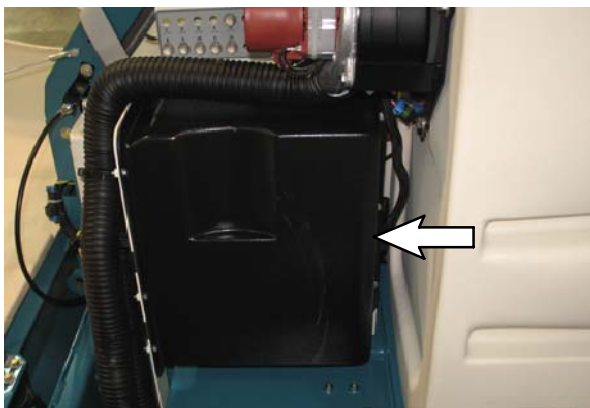


FIG. 8

11. Route both 45" (1140 mm) hoses from the operator compartment, along the main harness (away from the actuator and other moving parts), and down to the scrub head. Refer to Fig. 9.

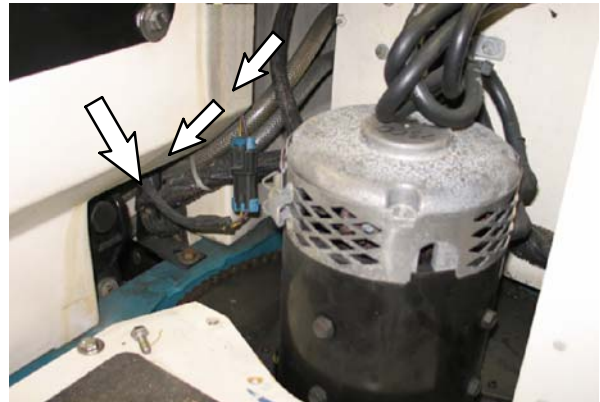


FIG. 9

12. Route the hose labeled SOL to the solution supply assembly and use a hose clamp to secure the hose to the solution supply assembly. Refer to Fig. 10.

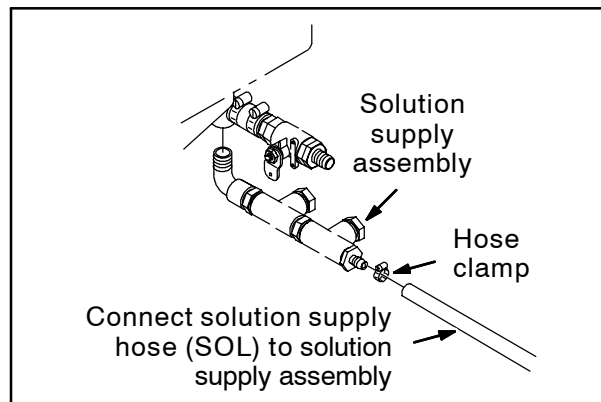


FIG. 10

13. Install the y-fitting onto the scrub head solution supply hose cut in the previous step. Refer to Fig. 11 for how y-fitting should be positioned on the hose.

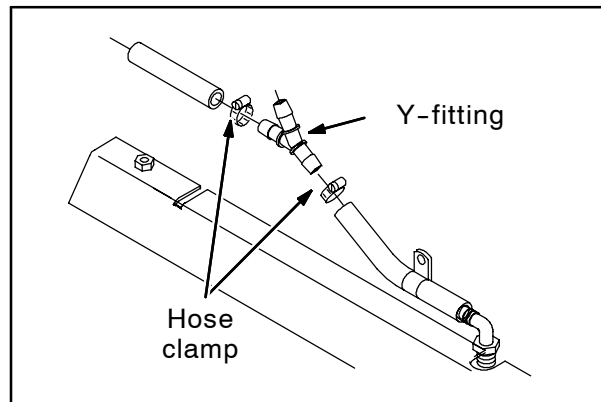


FIG. 11

14. Route the hose labeled DISP to the y-fitting and use a hose clamp to secure the hose to the y-fitting. Refer to Fig. 12 and Fig. 13.

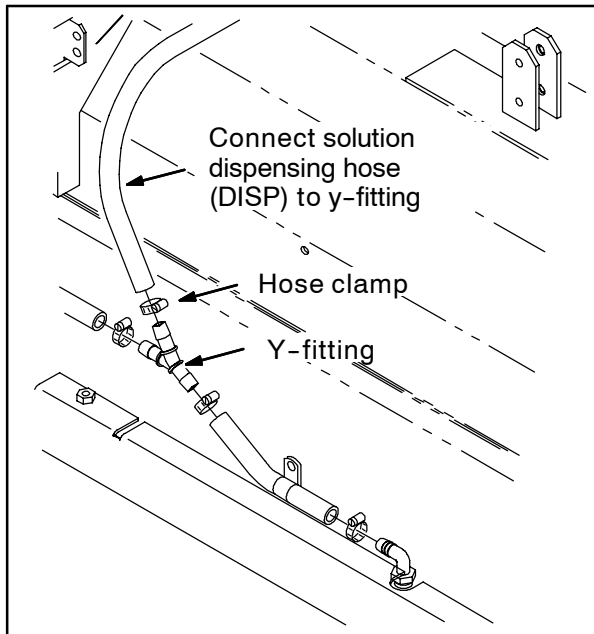


FIG. 12

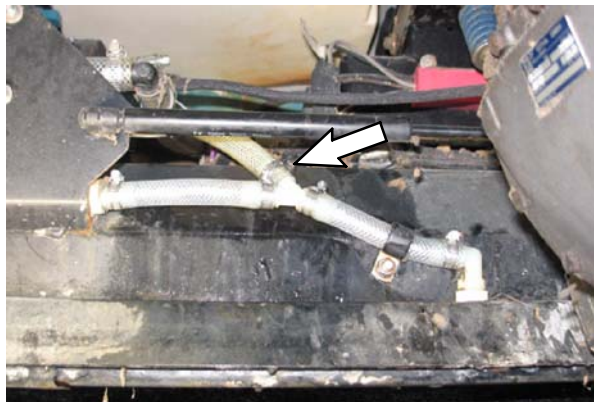


FIG. 13

15. Route the end of the *ec-H2O* harness with the diode through the hole in the frame of the machine and to the water valve attached to the scrub head. Refer to Fig. 14.

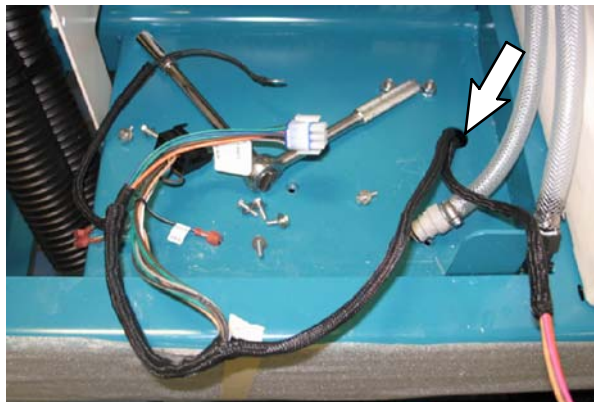


FIG. 14

16. Disconnect the main wire harness from the water valve attached to the scrub head. Refer to Fig. 15.

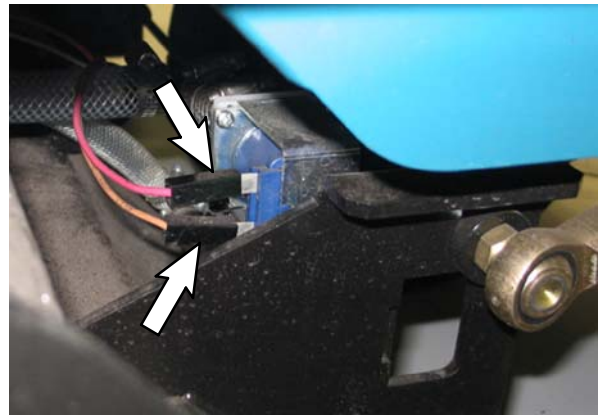


FIG. 15

17. Connect the two wires previously attached to the water valve to the *ec-H2O* harness. Refer to Fig. 15 and Fig. 19.
18. Connect the *ec-H2O* harness to the water valve. Refer to Fig. 15 and Fig. 19.
19. Route both 45" (1140 mm) hoses from the operator compartment and into the control board compartment. Refer to Fig. 16.

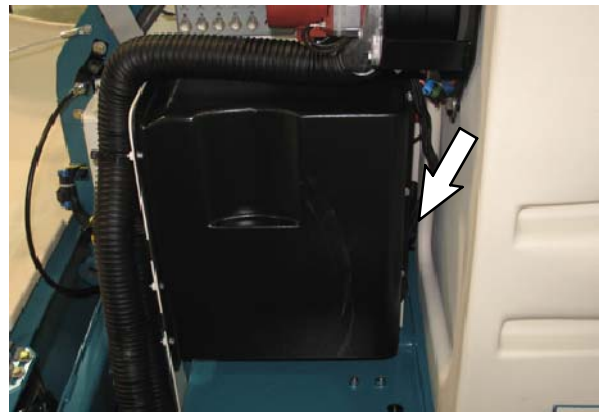


FIG. 16

20. Remove the plugs from the operator compartment. Discard the plugs. Refer to Fig. 17.



FIG. 17

21. Install the *ec-H2O* label onto the operator compartment. Refer to Fig. 17, Fig. 18, and Fig. 19.



FIG. 18

22. Install the *ec-H2O* switch into the operator compartment. Refer to Fig. 17, Fig. 18, and Fig. 19.

23. Remove the mounting clamp from the *ec-H2O* warning light, slide the bushing onto the light, install the light into the operator compartment, and slide the plastic washer onto the light. Reinstall the mounting clamp to secure the light into place. Refer to Fig. 19.

24. Route the end of the *ec-H2O* harness with the connector for the switch up behind the area of the operator compartment where the light and switch were installed in the previous steps. Refer to Fig. 19.

25. Connect the *ec-H2O* harness to the light. Refer to Fig. 19.

26. Connect the *ec-H2O* harness to the switch. Refer to Fig. 19.

27. Connect the ground lead of the *ec-H2O* harness onto the ground stud in the control box plate. Refer to Fig. 19.

28. Reinstall the control box cover and motor cover panel onto the machine.

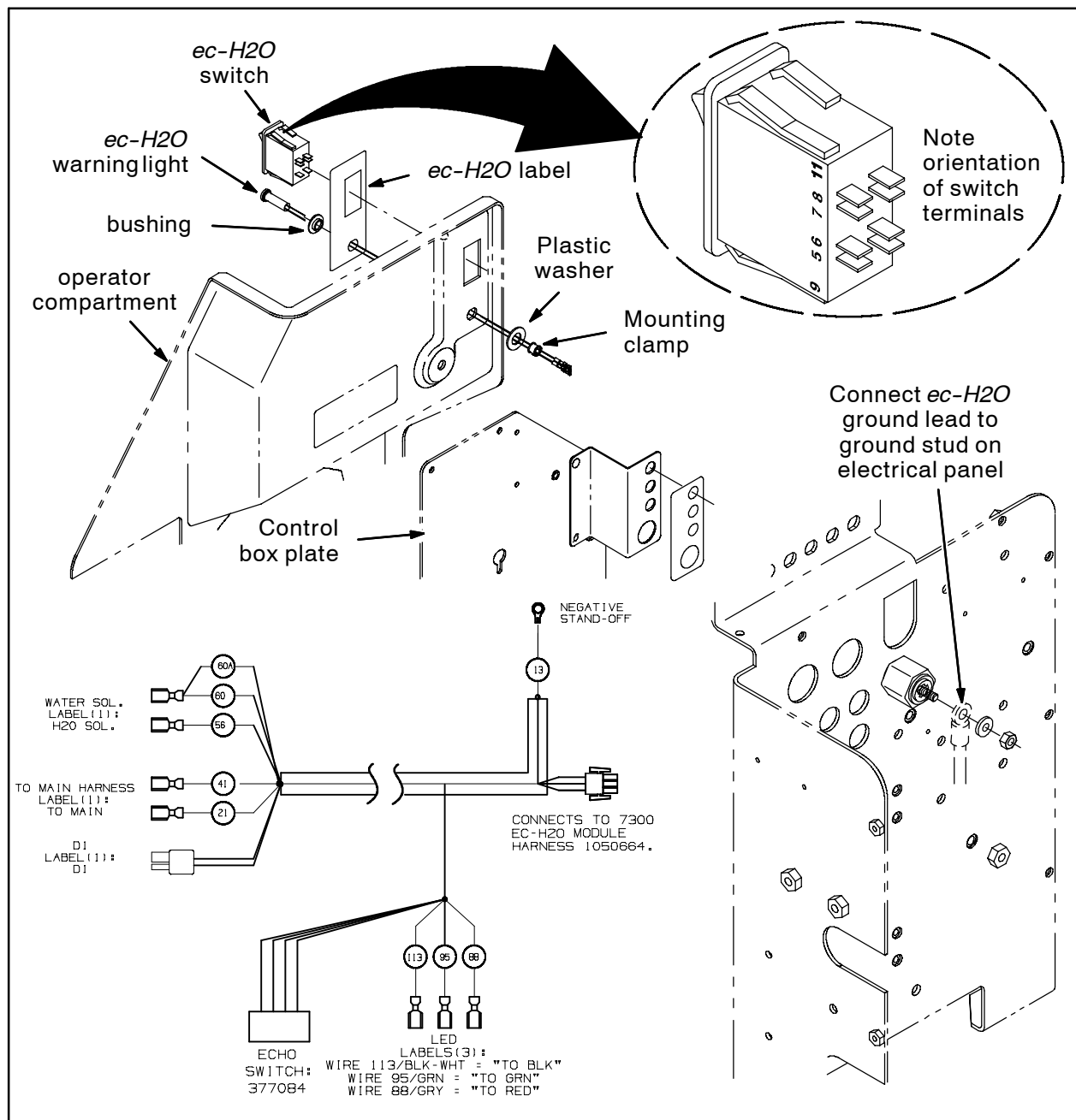


FIG. 19

29. Thread three M6 X 1.25 SEMS screws into the frame of the machine. Refer to Fig. 20.

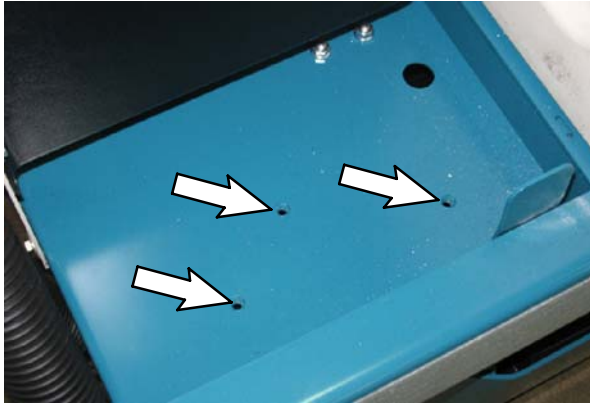


FIG. 20

30. Set the *ec-H2O* assembly into the machine and tighten the three M6 X 1.25 SEMS screws installed in the previous step. Refer to Fig. 21.

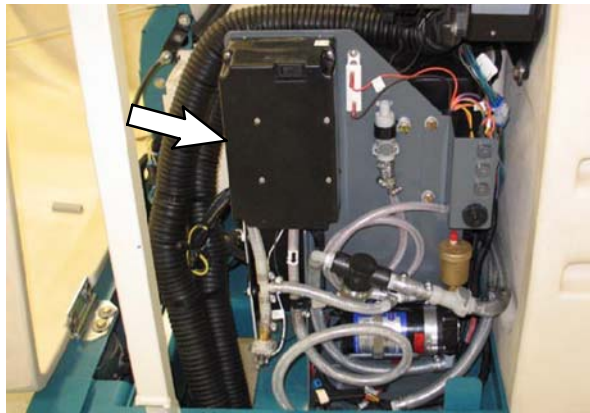


FIG. 21

31. Use cable ties to secure the *ec-H2O* harness to the main harness. Be sure to leave enough slack in the *ec-H2O* harness to allow for scrub head movement and edge scrub (if equipped with the edge scrub option).
32. Install the male end of the black connector attached to the *ec-H2O* assembly outlet hose onto the end of the hose labeled DISP and the male end of the gray connector attached to the *ec-H2O* assembly solution supply hose onto the end of the hose labeled SOL.

33. Connect hose from the scrub head (DISP) to the *ec-H2O* assembly outlet hose. Refer to Fig. 22.

NOTE: Be sure the outlet hose from ec-H2O assembly is looped as shown in Fig. 22.

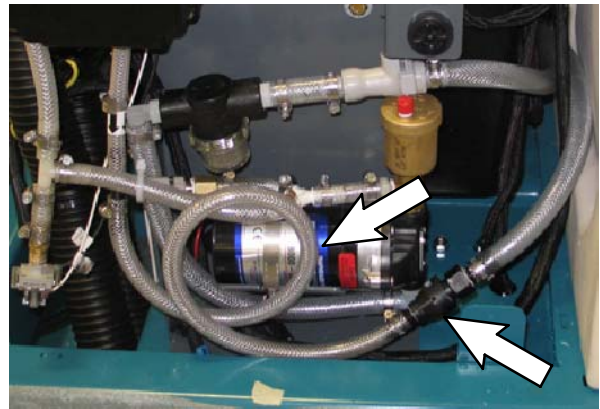


FIG. 22

34. Connect solution supply hose (SUP) to the *ec-H2O* assembly inlet hose. Refer to Fig. 23.

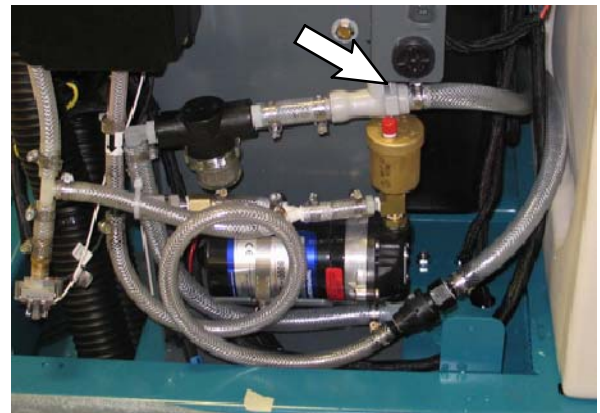


FIG. 23

35. Reattach the battery cables to the batteries.
36. Start and test the machine. Activate the *ec-H2O* system and scrub a section of floor to ensure the system is functioning. Check the newly install hoses and components for leaks.
37. Use isopropyl alcohol to clean the surfaces where labels will be installed onto the machine. Install the labels onto the machine. Refer to **Fig. 2 - Switch and Label Group** for label locations.

**INSTALLATION: (Machines With FaST Gen I /
Disk Scrub Head)**
7300 NA Serial Numbers 000000-003746 /
7300 CE Serial Numbers 0000-1384
8300 NA Serial Numbers 000000-004791 /
8300 CE Serial Numbers 0000-1121

1. Disconnect the supply and dispensing hoses from the FaST assembly and remove the FaST assembly from the machine.
2. Remove the FaST components and hardware labeled in Fig. 1 from the machine. Discard all removed parts.

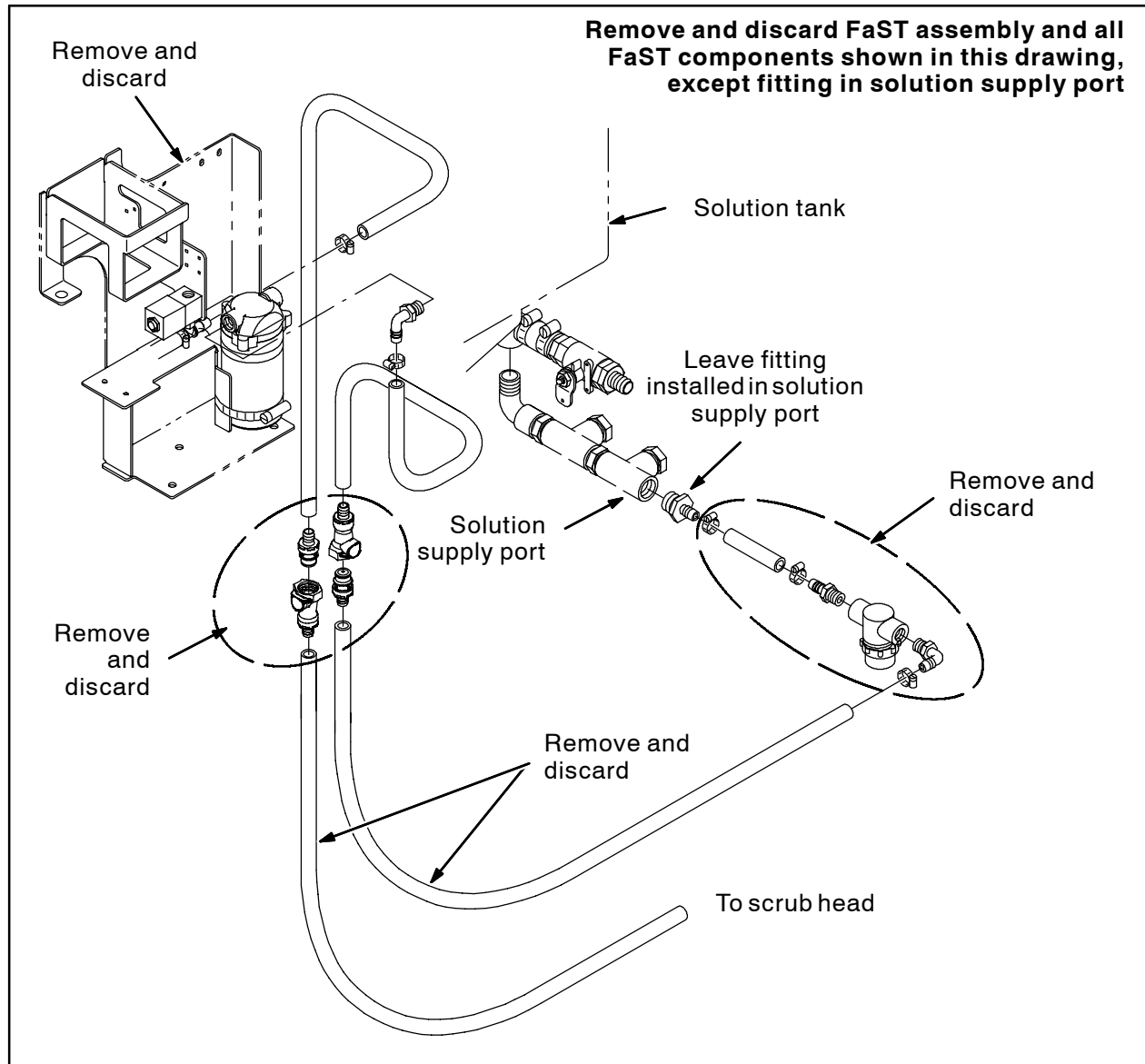


FIG. 1

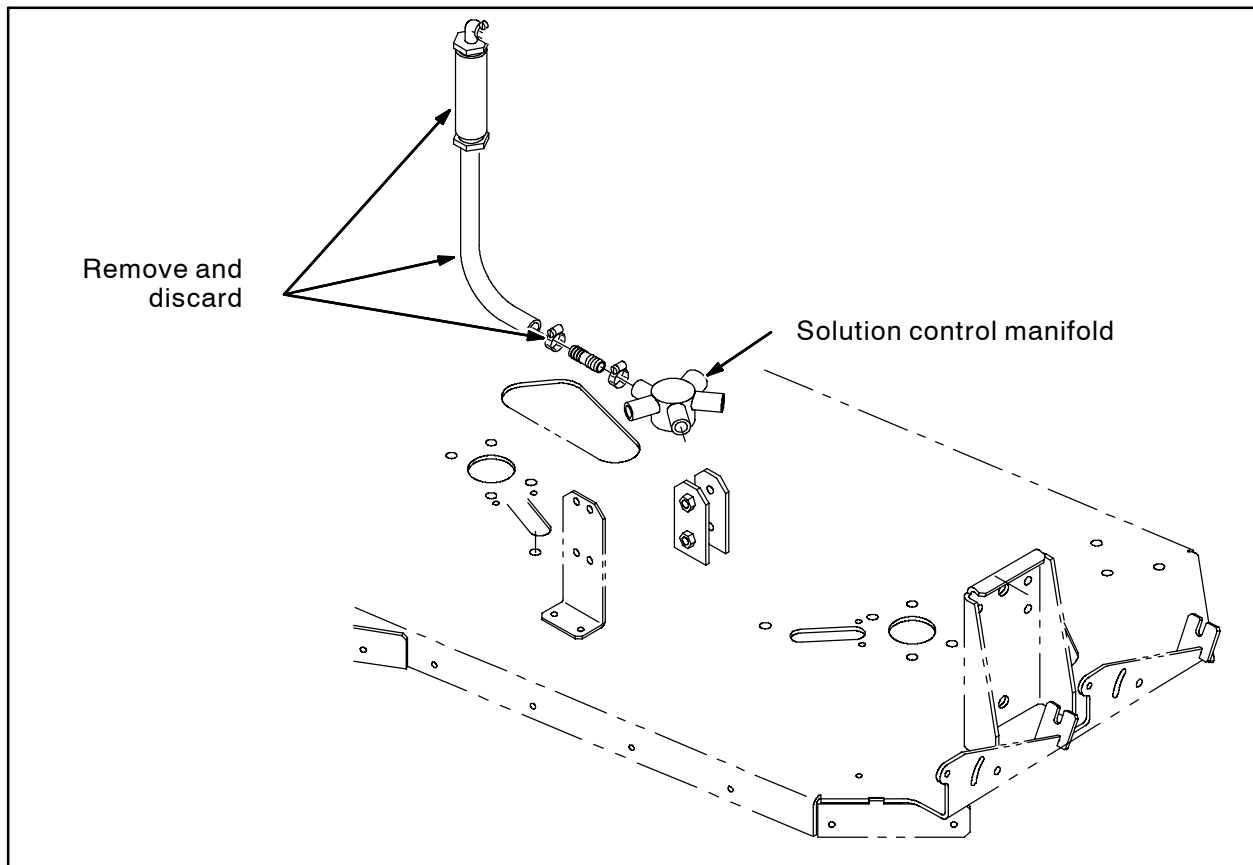


FIG. 2

3. Disconnect the hose with the mixing chamber from the solution control manifold. Discard the hoses, mixing chamber, and hose clamp. Refer to Fig. 1 and Fig. 2.
4. Remove the motor cover panel from the operator compartment. Set the hardware and panel aside. Refer to Fig. 3.

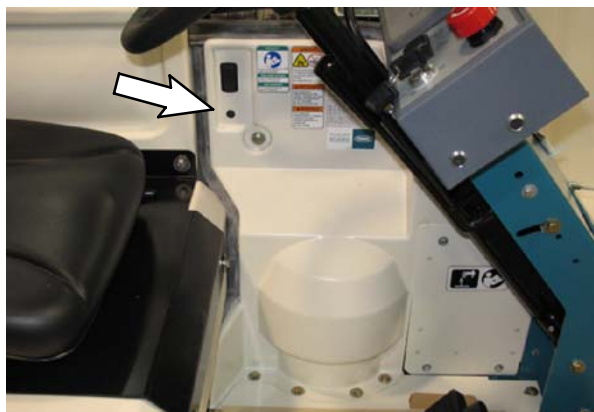


FIG. 3

5. Remove the cover from the control box. Set the hardware and cover aside. Refer to Fig. 4.

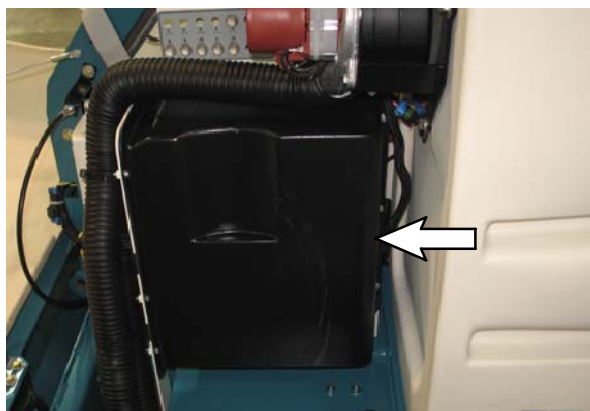


FIG. 4

6. Cut two 45" (1140 mm) sections of clear PVC hose. Label both ends of one hose SOL (solution supply hose) and both ends of the other hose DISP (solution dispensing hose).

7. Route both 45" (1140 mm) hoses from the operator compartment, along the main harness (away from the actuator and other moving parts), and down to the scrub head. Refer to Fig. 5.

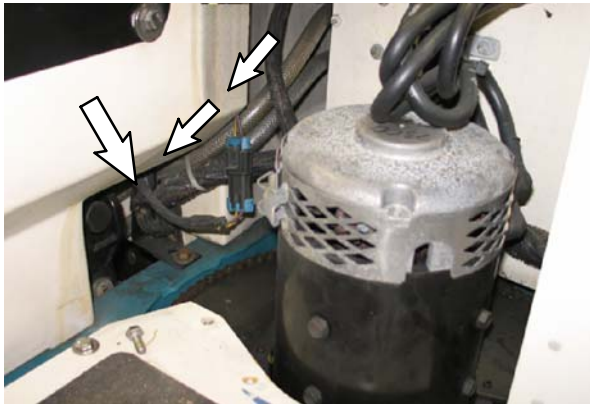


FIG. 5

8. Route the hose labeled SOL to the solution supply assembly and use a hose clamp to secure the hose to the solution supply port. Refer to Fig. 6.

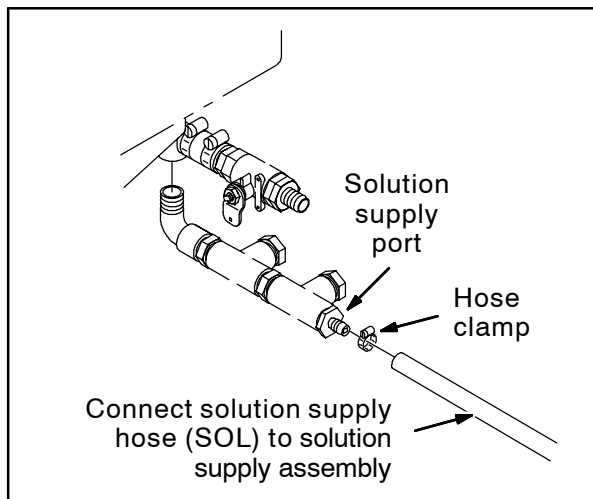


FIG. 6

9. Route the hose labeled DISP to the solution control manifold and use a hose clamp to connect the hose to the port on the solution control manifold where the FaST was previously located. Refer to Fig. 5.

10. Route the end of the *ec-H2O* harness with the diode through the hole in the frame of the machine and to the water valve attached to the scrub head. Refer to Fig. 7.

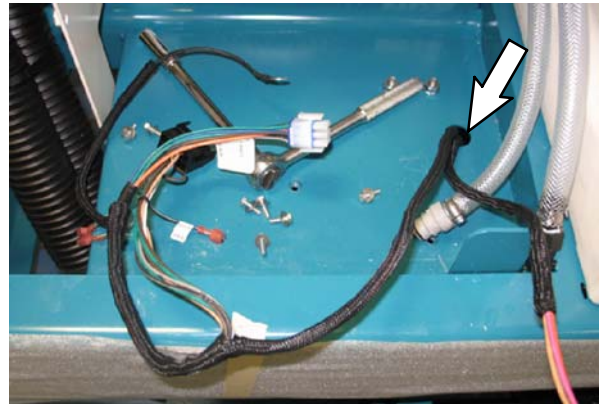


FIG. 7

11. Disconnect the main wire harness from the water valve attached to the scrub head. Refer to Fig. 8.

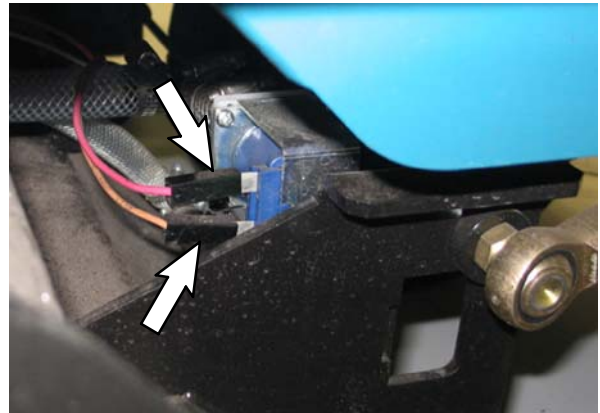


FIG. 8

12. Connect the two wires previously attached to the water valve to the *ec-H2O* harness. Refer to Fig. 8 and Fig. 12.
13. Connect the *ec-H2O* harness to the water valve. Refer to Fig. 12.

14. Route both 45" (1140 mm) hoses from the operator compartment and into the control board compartment. Refer to Fig. 9.

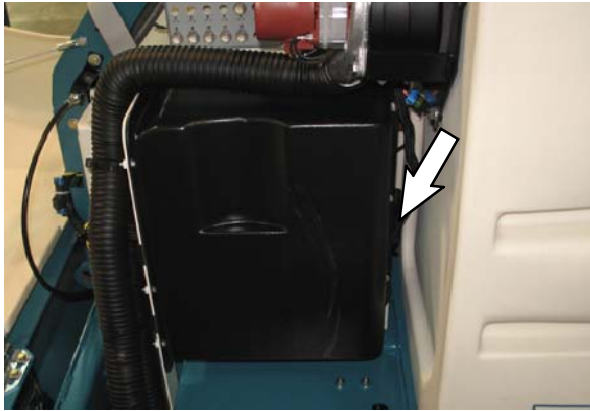


FIG. 9

15. Remove the FaST switch and circuit breaker from the operator compartment. Discard the circuit breaker and switch. Refer to Fig. 10.



FIG. 10

16. Install the *ec-H2O* label over the FaST label on the operator compartment. Refer to Fig. 10, Fig. 11, and Fig. 12.



FIG. 11

17. Install the *ec-H2O* switch into the operator compartment. Refer to Fig. 11 and Fig. 12.
18. Remove the mounting clamp from the *ec-H2O* warning light, slide the bushing onto the light, install the light into the operator compartment, and slide the plastic washer onto the light. Reinstall the mounting clamp to secure the light into place. Refer to Fig. 11 and Fig. 12.
19. Route the end of the *ec-H2O* harness with the connector for the switch up behind the area of the operator compartment where the light and switch were installed in the previous steps.
20. Connect the *ec-H2O* harness to the light. Refer to Fig. 12.
21. Connect the *ec-H2O* harness to the switch. Refer to Fig. 12.
22. Connect the ground lead of the *ec-H2O* harness onto the ground stud in the control box. Refer to Fig. 12.
23. Reinstall the control box cover and motor cover panel onto the machine.

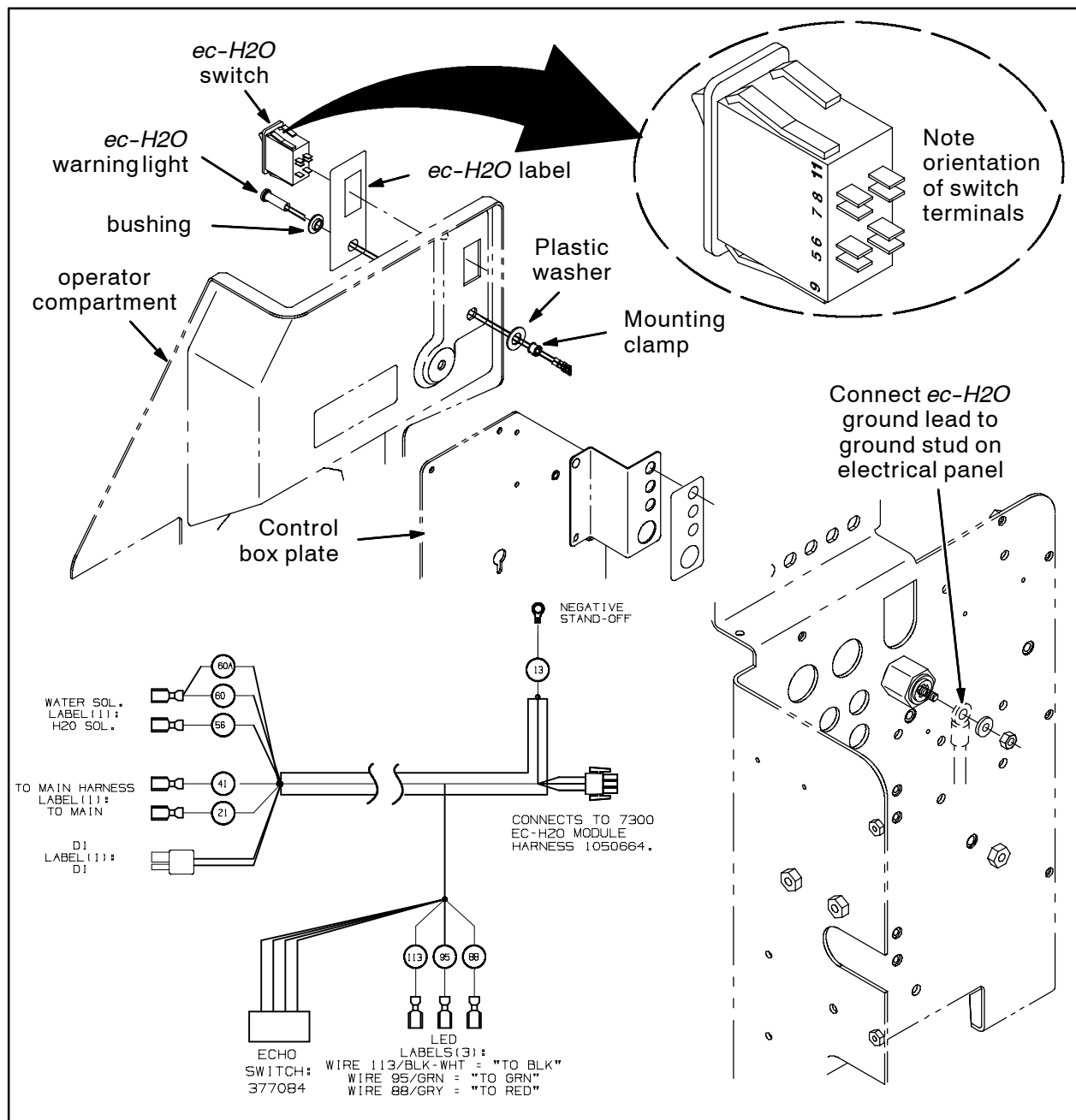


FIG. 12

24. Thread three M6 X 1.25 SEMS screws into the frame of the machine. Refer to Fig. 13.

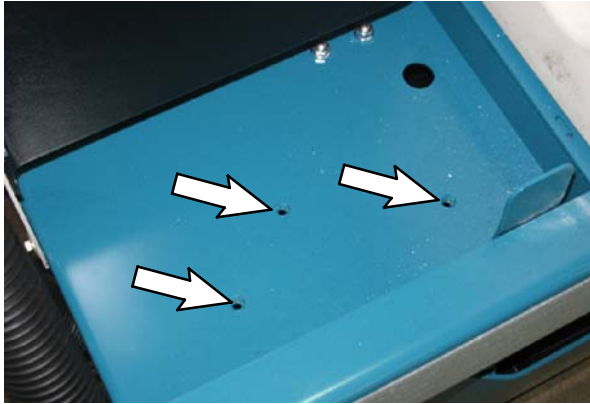


FIG. 13

25. Set the *ec-H2O* assembly into the machine and tighten the three M6 X 1.25 SEMS screws installed in the previous step. Refer to Fig. 14.

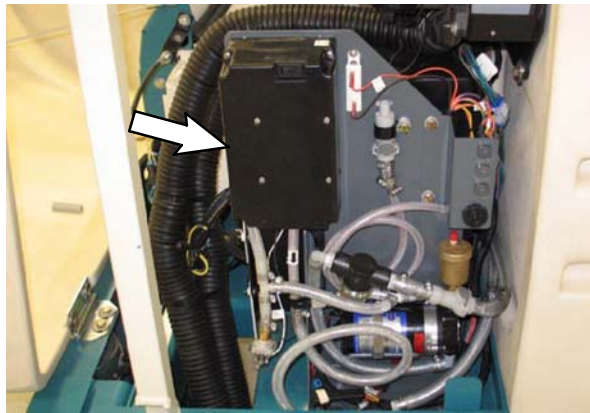


FIG. 14

26. Use cable ties to secure the *ec-H2O* harness to the main harness. Be sure to leave enough slack in the *ec-H2O* harness to allow for scrub head movement and edge scrub (if equipped with the edge scrub option).
27. Install the male end of the black connector attached to the *ec-H2O* assembly outlet hose onto the end of the hose labeled DISP and the male end of the gray connector attached to the *ec-H2O* assembly solution supply hose onto the end of the hose labeled SOL.

28. Connect hose from the scrub head to the *ec-H2O* assembly outlet hose. Refer to Fig. 15.

NOTE: Be sure the outlet hose from ec-H2O assembly is looped as shown in Fig. 15.

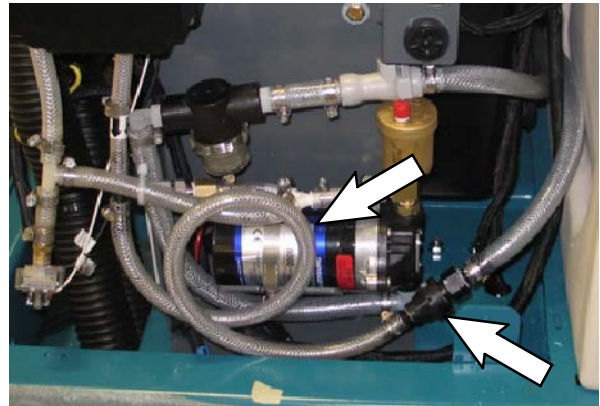


FIG. 15

29. Connect solution supply hose to the *ec-H2O* assembly inlet hose. Refer to Fig. 16.

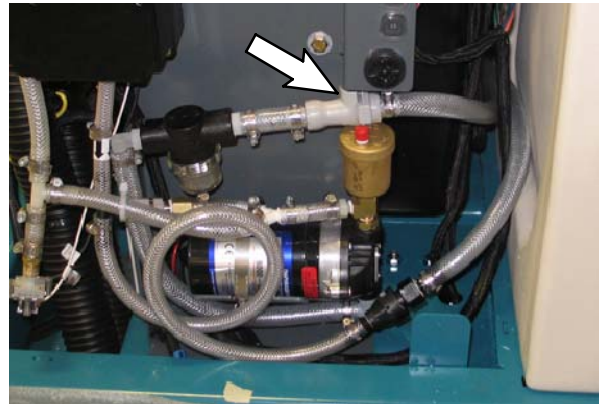


FIG. 16

30. Reattach the battery cables to the batteries.
31. Start and test the machine. Activate the *ec-H2O* system and scrub a section of floor to ensure the system is functioning. Check the newly install hoses and components for leaks.
32. Use isopropyl alcohol to clean the surfaces where labels will be installed onto the machine. Install the labels onto the machine. Refer to **Fig. 2 - Switch and Label Group** for label locations.

INSTALLATION: (ES / Standard Machines - Disk Scrub Head)

1. ES Machines Only: Remove the ES tank, hoses, and mounting components from the machine. Discard the removed items and all mounting hardware. Refer to Fig. 1.



FIG. 1

2. **ES Machines Only:** Remove the elbow fitting from the solution supply assembly. Install a PM12 plastic plug where elbow fitting was previously located. Discard the elbow fitting. Refer to Fig. 2.

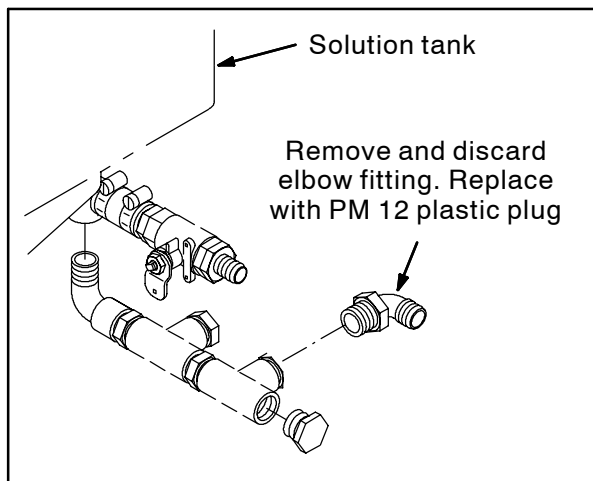


FIG. 2

3. Install the fitting onto the solution supply assembly. Refer to Fig. 3.

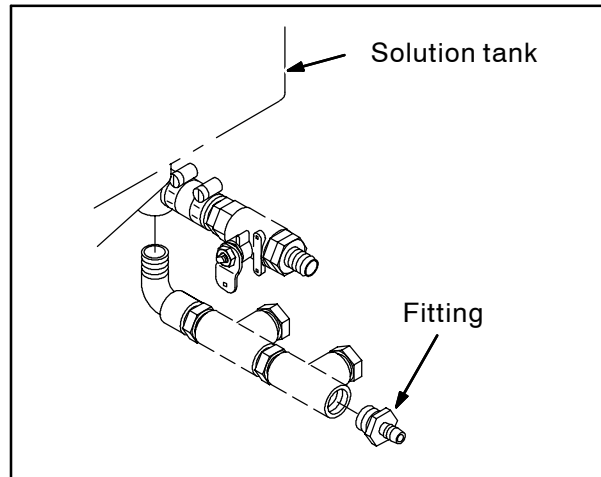


FIG. 3

4. Remove the plug from the unused port on the solution control manifold. Refer to Fig. 4.

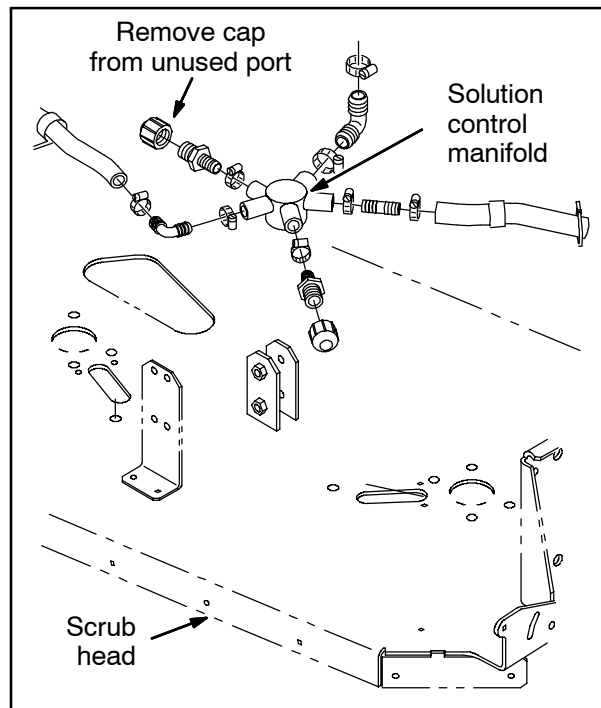


FIG. 4

5. Cut two 45" (1140 mm) sections of clear PVC hose. Label both ends of one hose SOL (solution supply hose) and both ends of the other hose DISP (solution dispensing hose).

6. Remove the motor cover panel from the operator compartment. Set the hardware and panel aside. Refer to Fig. 5.

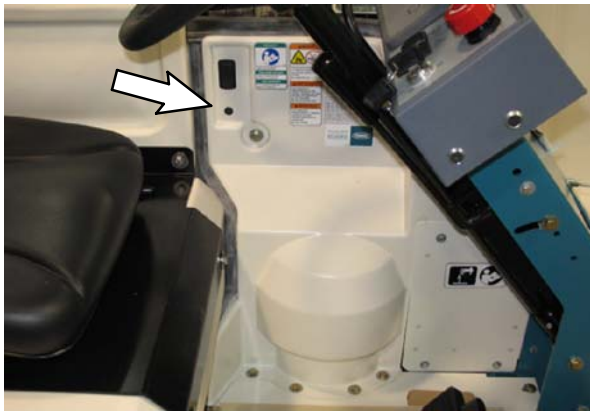


FIG. 5

7. Remove the cover from the control box. Set the hardware and cover aside. Refer to Fig. 6.

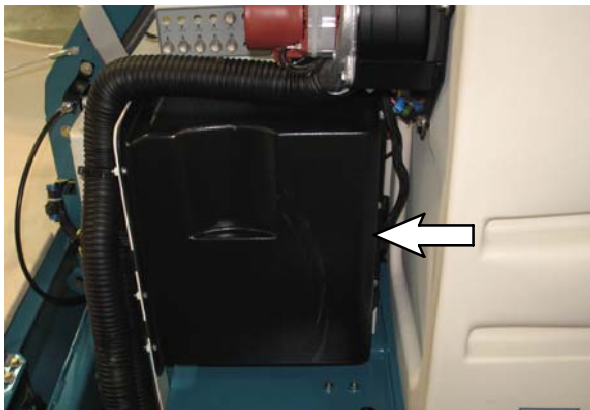


FIG. 6

8. Route both 45" (1140 mm) hoses from the operator compartment, along the main harness (away from the actuator and other moving parts), and down to the scrub head. Refer to Fig. 7.

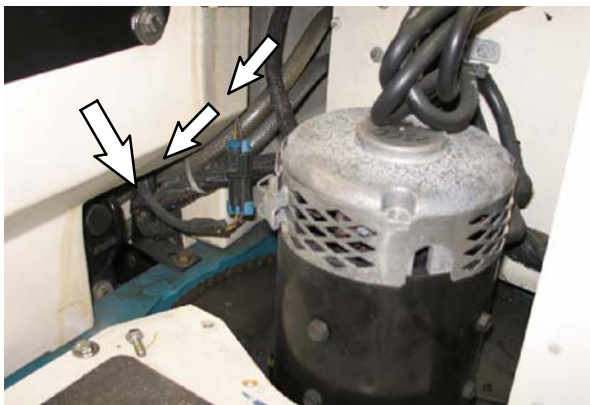


FIG. 7

9. Route the hose labeled SOL to the solution supply assembly and use a hose clamp to secure the hose to the solution supply assembly. Refer to Fig. 8.

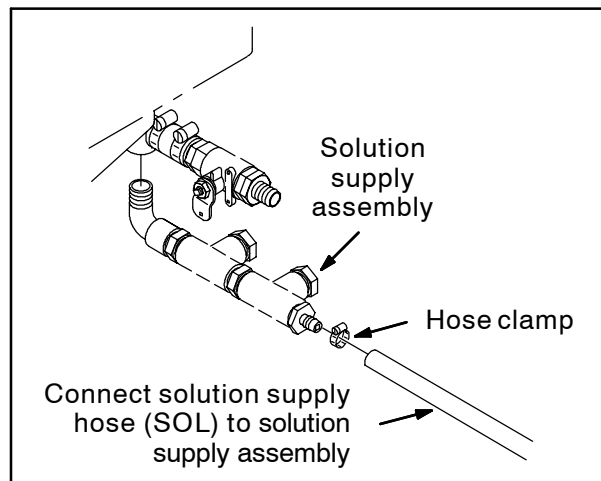


FIG. 8

10. Route the hose labeled DISP to the unused port on the solution control manifold and use a hose clamp to secure the hose to the manifold. Refer to Fig. 4.

11. Route the end of the *ec-H2O* harness with the diode through the hole in the frame of the machine and to the water valve attached to the scrub head. Refer to Fig. 9.

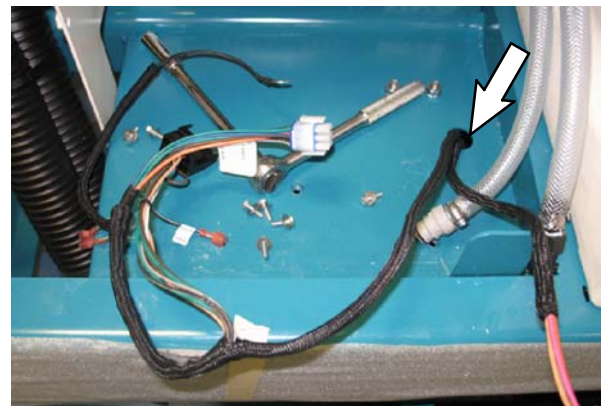


FIG. 9

12. Disconnect the main wire harness from the water valve attached to the scrub head. Refer to Fig. 10.

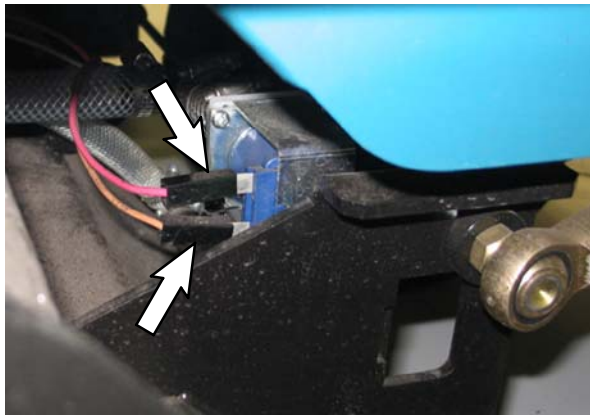


FIG. 10

13. Connect the two wires previously attached to the water valve to the *ec-H2O* harness. Refer to Fig. 10 and Fig. 14.
14. Connect the *ec-H2O* harness to the water valve. Refer to Fig. 10 and Fig. 14.
15. Route both 45" hoses from the operator compartment into the control board compartment. Refer to Fig. 11.



FIG. 11

16. Remove the plugs from the operator compartment. Discard the plugs. Refer to Fig. 12.



FIG. 12

17. Install the *ec-H2O* label onto the operator compartment. Refer to Fig. 12, Fig. 13, and Fig. 14.



FIG. 13

18. Install the *ec-H2O* switch into the operator compartment. Refer to Fig. 13 and Fig. 14.

19. Remove the mounting clamp from the *ec-H2O* warning light, slide the bushing onto the light, install the light into the operator compartment, and slide the plastic washer onto the light. Reinstall the mounting clamp to secure the light into place. Refer to Fig. 14.
20. Route the end of the *ec-H2O* harness with the connector for the switch up behind the area of the operator compartment where the light and switch were installed in the previous steps. Refer to Fig. 14.
21. Connect the *ec-H2O* harness to the light. Refer to Fig. 14.
22. Connect the *ec-H2O* harness to the switch. Refer to Fig. 14.
23. Connect the ground lead of the *ec-H2O* harness onto the ground stud in the control box panel. Refer to Fig. 14.
24. Reinstall the control box cover and motor cover panel onto the machine.

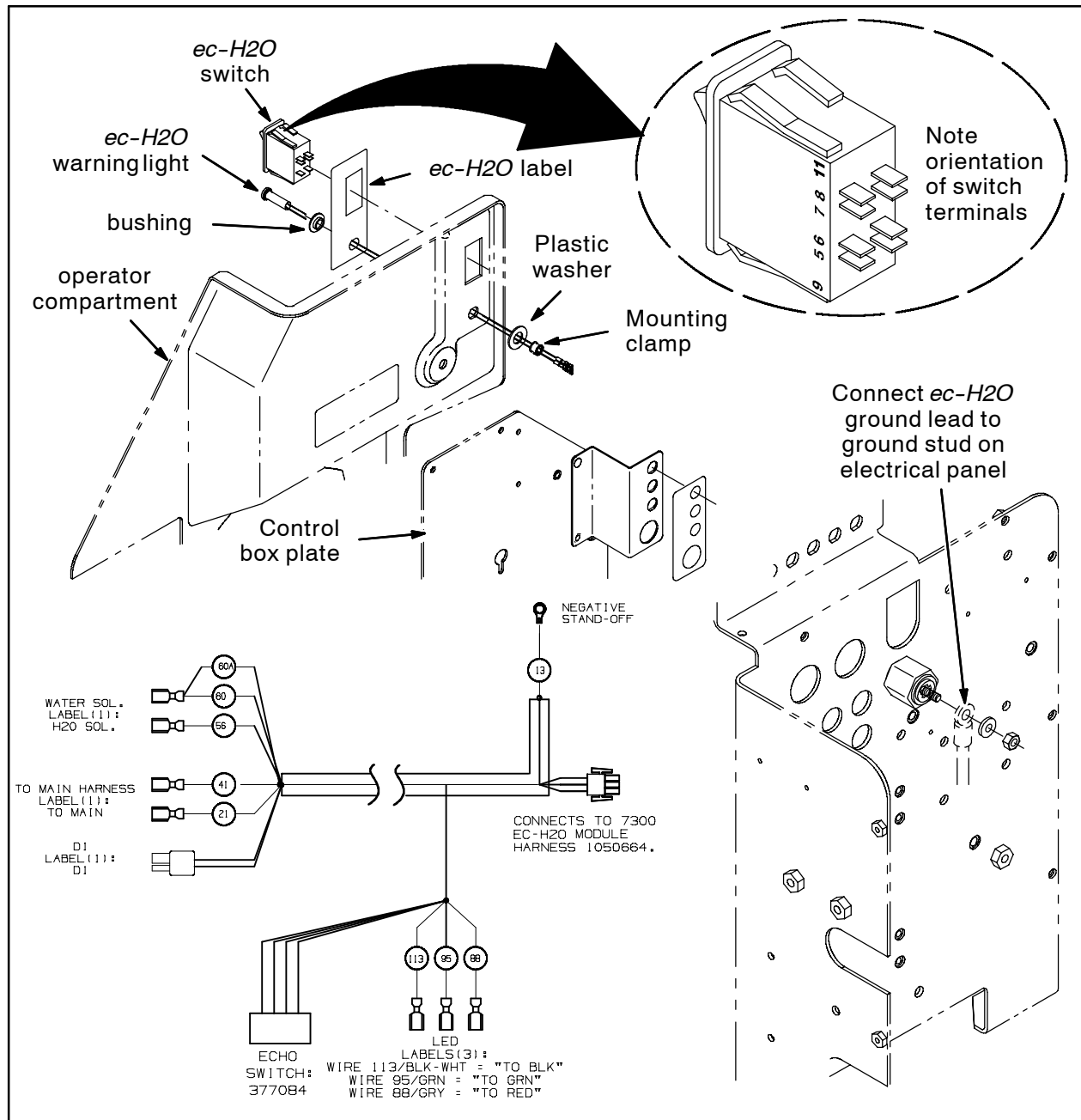


FIG. 14

25. Thread three M6 X 1.25 SEMS screws into the frame of the machine. Refer to Fig. 15.

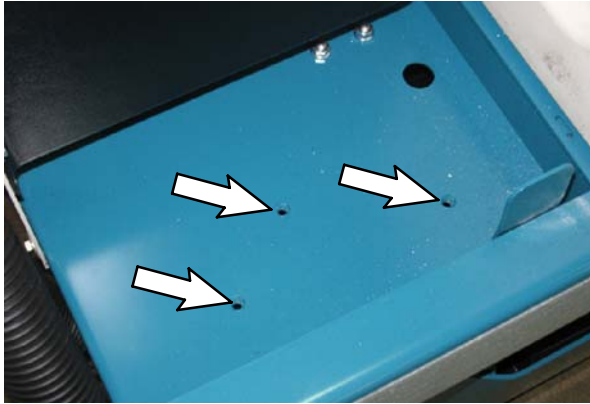


FIG. 15

26. Set the *ec-H2O* assembly into the machine and tighten the three M6 X 1.25 SEMS screws installed in the previous step. Refer to Fig. 16.

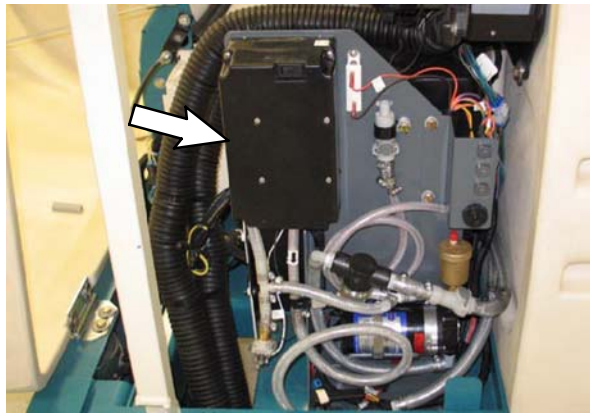


FIG. 16

27. Use cable ties to secure the *ec-H2O* harness to the main harness. Be sure to leave enough slack in the *ec-H2O* harness to allow for scrub head movement and edge scrub (if equipped with the edge scrub option).
28. Install the male end of the black connector attached to the *ec-H2O* assembly outlet hose onto the end of the hose labeled DISP and the male end of the gray connector attached to the *ec-H2O* assembly solution supply hose onto the end of the hose labeled SOL.

29. Connect hose from the scrub head (DISP) to the *ec-H2O* assembly outlet hose. Refer to Fig. 17.

NOTE: Be sure the outlet hose from ec-H2O assembly is looped as shown in Fig. 17.

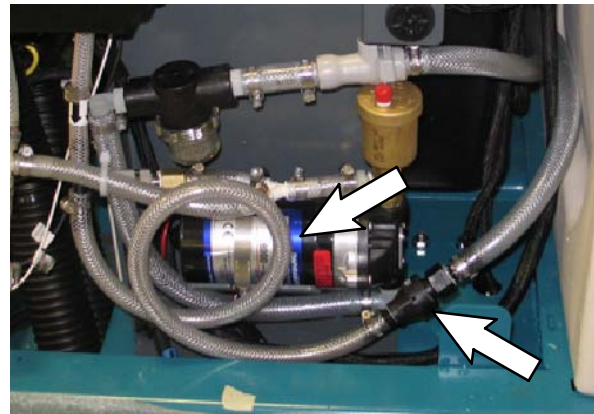


FIG. 17

30. Connect solution supply hose to the *ec-H2O* assembly inlet hose. Refer to Fig. 18.

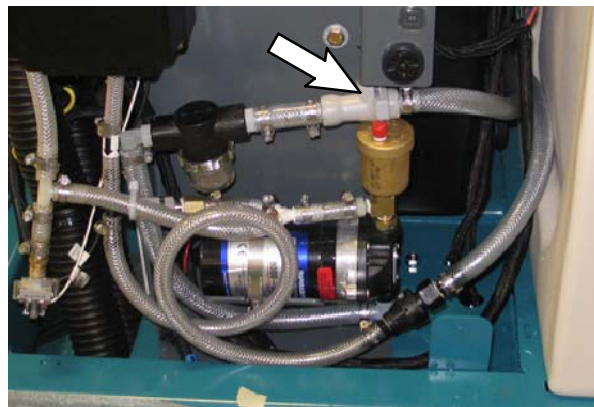


FIG. 18

31. Reattach the battery cables to the batteries.
32. Start and test the machine. Activate the *ec-H2O* system and scrub a section of floor to ensure the system is functioning. Check the newly install hoses and components for leaks.
33. Use isopropyl alcohol to clean the surfaces where labels will be installed onto the machine. Install the labels onto the machine. Refer to **Fig. 2 - Switch and Label Group** for label locations.

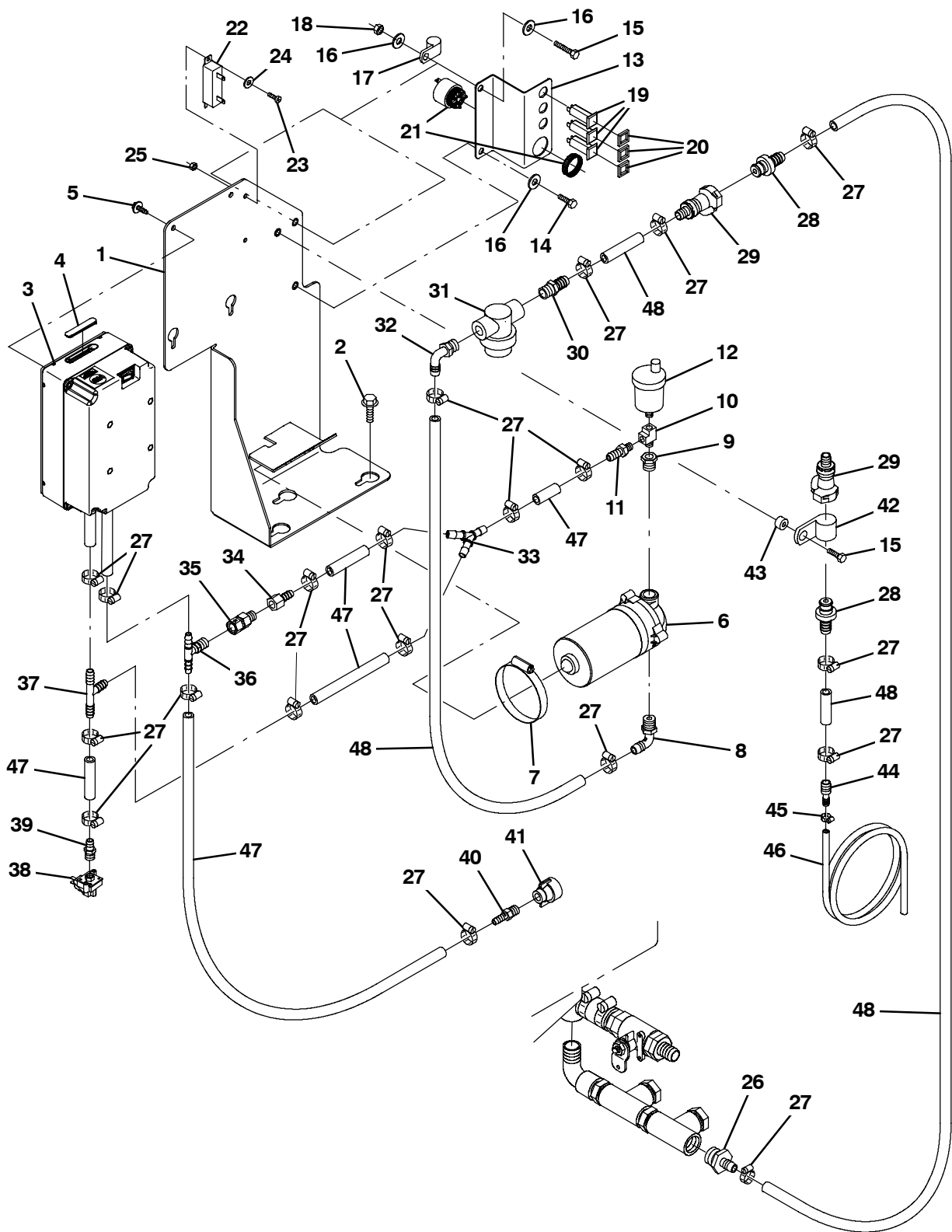


FIG. 1 - Solution Pump Group

Bill of Materials for Solution Pump Group - Refer to Flg. 1

Ref.	Tenant Part No.	Machine Serial Number	Description	Qty.
1	1055336	(000000-	) Bracket Wldt, Module	1
2	1037346	(000000-	) Screw, Hex, M8 X 1.25 X 25, 9.8, Sems	3
3	9006210	(000000-	) Module, Water, W/Pkg [7300 Ec-H2O]	1
4	1050431	(000000-	) Grommet, Blind	1
5	1040467	(000000-	) Screw, Hex, M6 X 1.00 X 20, 9.8, Sems	4
6	1005866	(000000-	) Pump, Soltn, Ele, 36vdc (See Breakdowns)	1
7	17188	(000000-	) Clamp, Hose, Wormdrive, 2.50-3.50d, .50w	1
8	64778	(000000-	) Fitting, Plstc, E90, Bm08/Pm06	1
9	24698	(000000-	) Fitting, Brs, Str, Pf02/Pm06	1
10	26426	(000000-	) Fitting, Brs, Tee, Pf02/Pf02/Pm02, Run	1
11	1005375	(000000-	) Fitting, Plstc, Str, Bm06/Pm02, Nyl	1
12	1017386	(000000-	) Valve, Vent, Air, Float Type	1
13	1052683	(000000-	) Bracket, Component	1
14	16735	(000000-	) Screw, Hex, M8 X 1.25 X 16, 8.8	1
15	76570	(000000-	) Screw, Hex, M8 X 1.25 X 30, 8.8	2
16	32490	(000000-	) Washer, Flat, 0.25, Std	3
17	82829	(000000-	) Clamp, Cable, Stl, 0.63d X 0.75w, 1hole	1
18	08709	(000000-	) Nut, Hex, Lock, M8 X 1.25, NI	1
19	1053078	(000000-	) Circuit breaker, 2.0a, Resetable	3
20	1046173	(000000-	) Boot, Circuitbreaker	3
21	1052726	(000000-	) Alarm, 9-48vdc, 95 Db(A) [ec-H2O]	1
22	1056416	(000000-	) Resistor, 011.00 Ohm, 0040Watt [5%]	1
23	12312	(000000-	) Screw, Hex, M5 X 0.80 X 12, 8.8	2
24	01683	(000000-	) Washer, Flat, 10, Ss	2
25	07789	(000000-	) Nut, Hex, Flng, M5 X 0.80	2
26	79273-1	(000000-	) Fitting, Plstc, Str, Bm08/Pm12	1
27	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d, .31w	19
28	1017415	(000000-	) Insert, Cplg, Qm, Bm08	2
29	1017413	(000000-	) Housing, Cplg, Qf / Pm08	2
30	64743	(000000-	) Fitting, Plstc, Str, Bm08/Pm06	1
31	1005302	(000000-	) Filter, In-Line, Pf06/Pf06 080mesh 02.6l	1
32	64778	(000000-	) Fitting, Plstc, E90, Bm08/Pm06	1
33	1017255	(000000-	) Fitting, Plstc, Y, Bm06/Bm06/Bm06, Nyl	1
34	150511	(000000-	) Fitting, Brs, Str, Bm06/Pf04	1
35	1055255	(000000-	) Valve, Check, 0030psi Pm04/Pf04	1
36	1052832	(000000-	) Fitting, Plstc, Tee, Bm05/Bm05/Pm04	1
37	87173	(000000-	) Fitting, Plstc, Tee, Bm06/Bm06/Bm06	1
38	1055254	(000000-	) Switch, Press, 25 Psi, Pm02	1
39	150016	(000000-	) Fitting, Brs, Str, Bm06/Pf02, Spcl	1
40	1052017	(000000-	) Fitting, Plstc, Str, Bm05/Pm04	1
41	1043866	(000000-	) Fitting Assy, Qdc, Pf04	1
42	40678-1	(000000-	) Clamp, Cable, Stl, 0.88d X 0.62w, 1hole	1
43	360352	(000000-	) Tube, 0.34id 0.62od 00.2l, Stl	1
44	630164	(000000-	) Fitting, Plstc, Str, Bm04/Bm08	1
45	43844	(000000-	) Clamp, Hose, Wormdrive, 0.25-0.62d, .31w	1
46	1011411	(000000-	) Hose, Afmkt, Pvc, Brd, 0.25id, 03ft	1
47	1014976	(000000-	) Hose, Afmkt, Pvc, Brd, 0.38id, 08ft, Clr	1
48	1011412	(000000-	) Hose, Afmkt, Pvc, Brd, 0.50id, 08ft, Clr	1

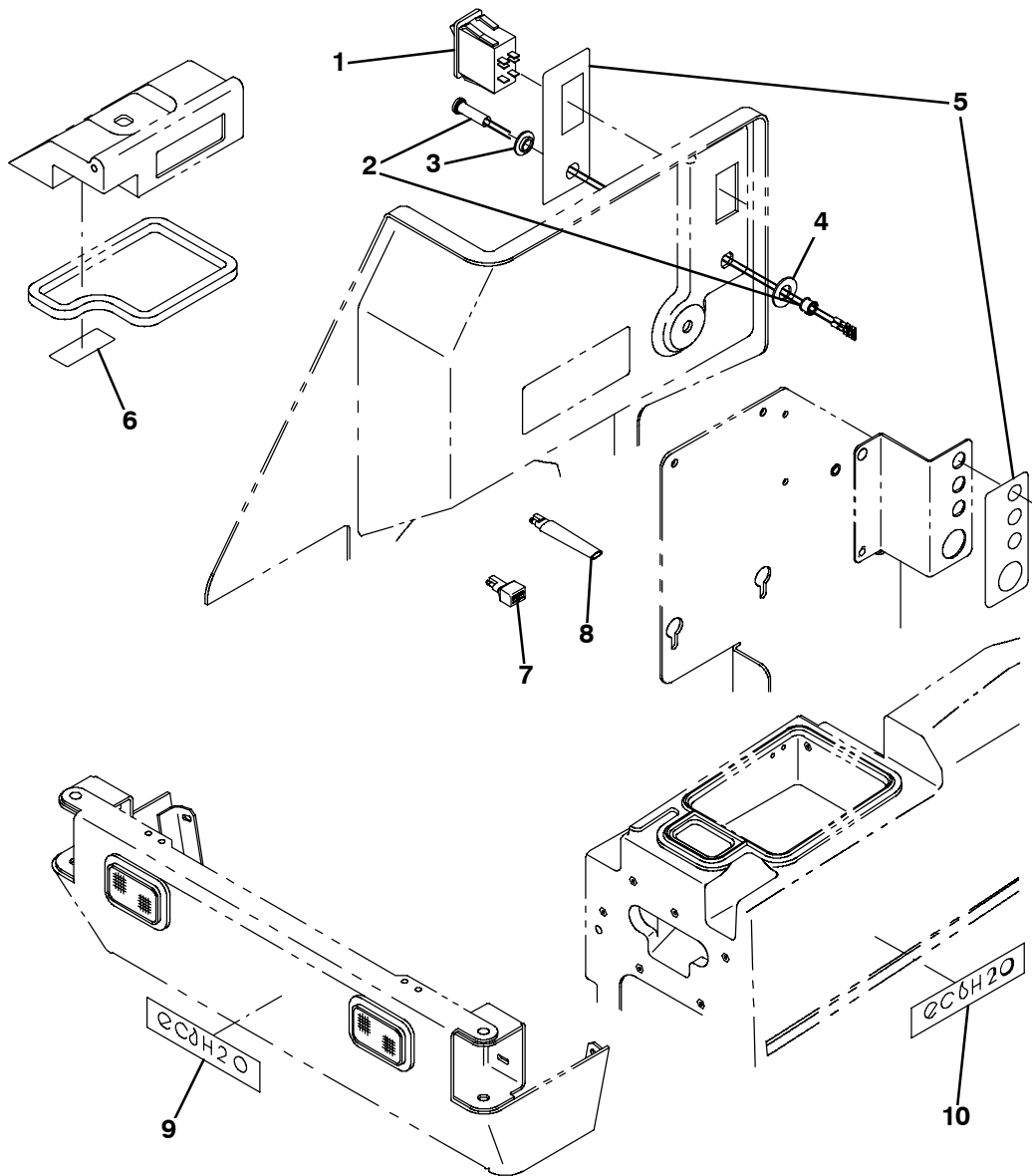


FIG. 2 - Switch and Label Group
Bill of Materials for Switch and Label Group - Refer to Fig. 2

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	377084	(000000-	) Switch, Rocker, Prgrsv	1
2	1041822	(000000-	) Light, Led, .312d, 2 Volt [Tri-Color]	1
3	1055883	(000000-	) Bushing, Light, Led	1
4	43454	(000000-	) Washer, Flat, 0.34b 0.69d .06, Nyl	1
5	1056331	(000000-	) Label Set, Opertnl [7300 ec-H2O]	1
6	1050003	(000000-	) Label [User, Attention, Ec-H2o]	1
7	222290	(000000-	) Diode, Ele, Plug	1
8	1040868	(000000-	) Capacitor, Plug [.01 Uf, 200v]	1
9	1052755	(000000-	) Label, Front [Ec-H2o, T15]	1
10	1056944	(000000-	) Label, Tank [ec-H2O]	2

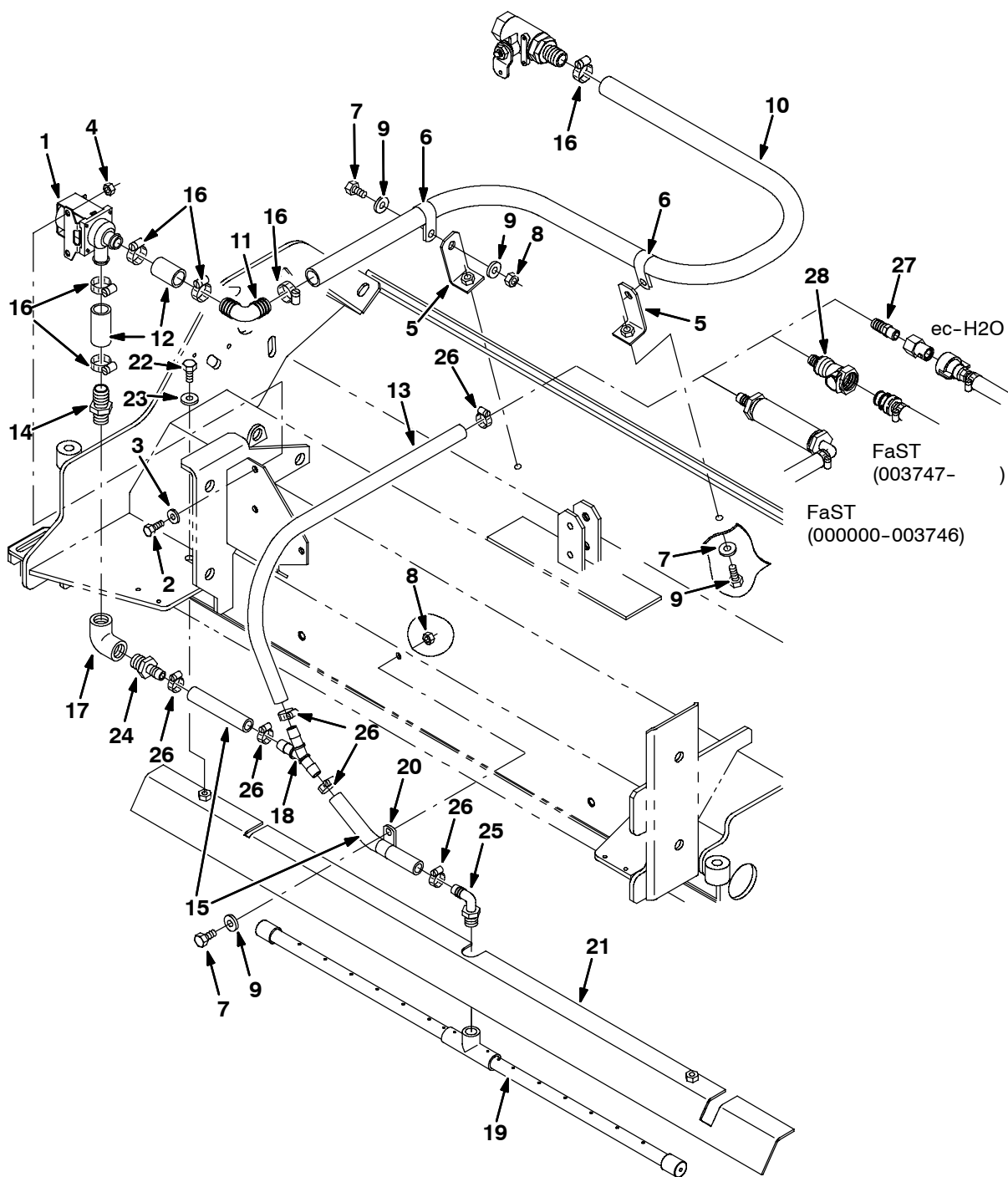


FIG. 3 - Solution Valve Group (Cylindrical)

Bill of Materials for Solution Valve Group - Refer to Fig. 3

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	84028	(000000-	) Valve, Water	1
2	15678	(000000-	) Screw, Hex, M06 X 1.0 X 16, Ss	2
3	01684	(000000-	) Washer, Flt, .25 Ss	2
4	08712	(000000-	) Nut, Hex, Lock, M06 X 1.0, NI, Ss	2
5	386490	(000000-	) Angle	2
6	69234	(000000-	) Clamp, Cable, Stl, 1.00d X 0.62w, 1h	2
7	15675	(000000-	) Screw, Hex, M08 X 1.25 X 16, Ss	5
8	08709	(000000-	) Nut, Hex, Lock, M08 X 1.25, NI	3
9	01685	(000000-	) Washer, Flt, .31 Ss	7
10	1015045	(000000-	) Hose, Afmkt, Pvc, Brd 0.75id 8 Ft	1
11	40566	(000000-	) Fitting, Plstc, E90, Bm12/Bm12	3
12	1015048	(000000-	) Hose, Afmkt, Pvc, Brd 0.75id 1 Ft	1
13	1011521	(000000-	) Hose, Afmkt Replmt, Pvc, Brd 0.50id 2 Ft	1
14	78398	(000000-	) Fitting, Plstc, Str, Bm12/Pm08, Nyl	1
15	1011403	(000000-	) Hose, Afmkt Replmt, Pvc, Brd 0.50id 1 Ft	1
16	11399	(000000-	) Clamp, Hose, Wormdrive, 0.81-1.50d	6
17	79572	(000000-	) Fitting, Plstc, E90, Pf08/Pf08	1
18	1010668	(000000-	) Fitting, Plstc, Y, Bm08/Bm08/Bm08 Nyl	1
19	1010832	(000000-	) Bar Assy, Spray [7300/8300]	1
20	07471	(000000-	) Clamp, Cable, Stl, 0.75d X 0.75w, 1h	1
21	1014875	(000000-	) Bracket, Spray Bar, 48" [7300/8300]	1
22	49826	(000000-	) Screw, Hex, M8 X 1.25 X 16, Ss, NI	2
23	32492	(000000-	) Washer, Flat, 0.38 Std	2
24	79273-4	(000000-	) Fitting, Plstc, Str, Bm08/Pm08	1
25	64778	(000000-	) Fitting, Plstc, E90, Bm08/Pm06	1
26	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d	6
27	48610	(000000-	) Fitting, Plstc, Str, Bm08/Pm04 (ec-H2O)	1
28	1017413	(003747-	) Housing, Cplg, Qf / Pm08 (FaST)	1

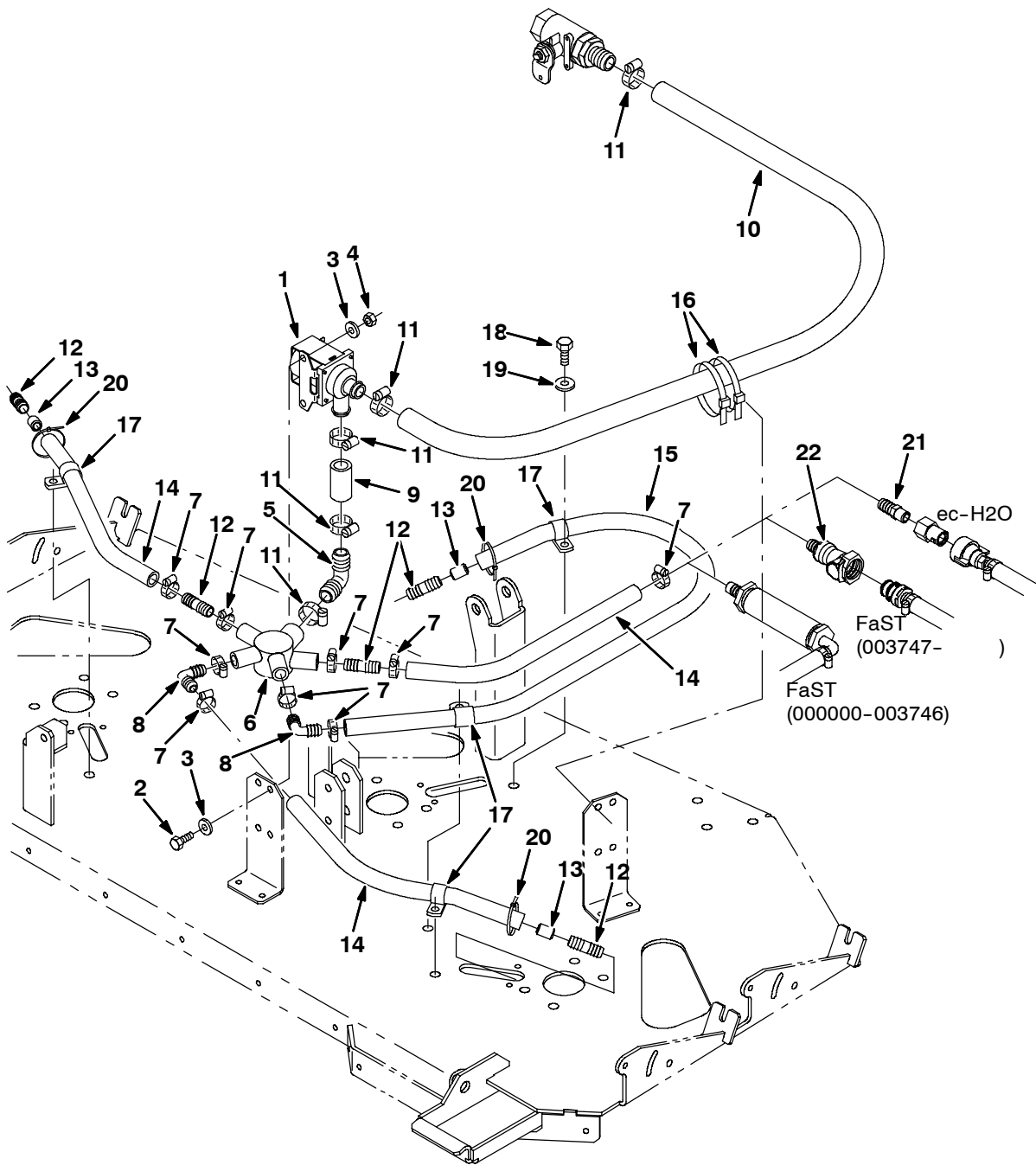


FIG. 4 - Solution Valve Group (Disk)

Bill of Materials for Solution Valve Group (Disk) - Refer to Fig. 4

Ref.	Tennant Part No.	Machine Serial Number	Description	Qty.
1	84028	(000000-	) Valve, Water	1
2	15678	(000000-	) Screw, Hex, M06 X 1.0 X 16, Ss	2
3	32490	(000000-	) Washer, Flt, .25 Std	4
4	08712	(000000-	) Nut, Hex, Lock, M06 X 1.0, NI, Ss	2
5	40566	(000000-	) Fitting, Plstc, E90, Bm12/Bm12	1
6	1012528	(000000-	) Manifold, Soltn, Cntrl	1
7	54333	(000000-	) Clamp, Hose, Wormdrive, 0.31-0.88d	9
8	63987-1	(000000-	) Fitting, Plstc, E90, Bm08/Bm08	2
9	1015048	(000000-	) Hose, Afmkt, Pvc, Brd 0.75id 1 Ft	1
10	1015045	(000000-	) Hose, Afmkt, Pvc, Brd 0.75id 8 Ft	1
11	63810	(000000-	) Clamp, Hose, Wormdrive, 0.56-1.06d, .56w	5
12	364631	(000000-	) Fitting, Plstc, Str, Bm08/Bm08	5
13	77334	(000000-	) Fitting, Plstc, Rst, .50od/.31id	3
14	1011521	(000000-	) Hose, Afmkt Replmt, Pvc, Brd 0.50id 2 Ft	3
15	1006401	(000000-	) Hose, Afmkt Replmt, Pvc, Brd 0.50id 3 Ft	1
16	44961	(000000-	) Tie, Cable, Nyl, 14.5l .30w 4.0 Max D	2
17	67767	(000000-	) Clamp, Cable, Stl, 0.69d X 0.62w, 1h	4
18	12273	(000000-	) Screw, Hex, M08 X 1.25 X 20, Ss, NI	4
19	01685	(000000-	) Washer, Flt, .31 Ss	4
20	49266	(000000-	) Tie, Cable, Nyl, 07.3l .19w 1.8 Max D	3
21	48610	(000000-) Fitting, Plstc, Str, Bm08/Pm04 (ec-H2O)	1
22	1017413	(003747-) Housing, Cplg, Qf / Pm08 (FaST)	1

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ELECTRICALLY CONVERTED WATER

Service Testing

Rev. 4.5 May-28-2009

Service Testing

Prior to performing any tests the following conditions must be met.

- Machine batteries are fully charged.
- Sufficient tap water is in the solution tank.
- All other machine operating systems are functioning properly.
- Confirm the operator fully understands the operation of the Conventional / ec-H2O mode switch. (See Figure 1)
(0 = ec-H2O Systems Off - 1 = ec-H2O Systems On)

Figure 1



Operational LED Indicator Link

Testing Step Links

[Step 1: Configuration](#)

[Step 2: Mode Selector](#)

[Step 3: Supply Voltage - A](#)

[Step 4: Supply Voltage - B](#)

[Step 5: Negative Board Switching](#)

[Step 6: Board functioning](#)

[Step 7: ec-H2O System Total Amp Draw](#)

[Step 8: e-cell Amp Draw](#)

[Step 9: Oxygenizer \(Sparger\) Amp Draw](#)

[Step 10: Pump Voltage Supply](#)

[Step 11: Pump Operation](#)

[Step 12 Pressure Switch Testing](#)

[Step 13 ec-H2O Module Flush Procedure Example](#)

[Step 14: ec-H2O Module Activation Test](#)

ec-H2O Systems Operational Indicator Light



Green Light

The ec-H2O system is functioning properly

Red Solid Light

Over current condition: (shorted component)

- Solenoid
- Pump
- ec-H2O Control Board
- Sparger (Oxygenizer)
- E-Cell

or

- ec-H2O system ran with antifreeze:
Perform Flush Procedure

•Approximate Amp Draw by Component

- Solution Flow Solenoid = 0.3 Amps
- Solution Pump = 0.2 Amps (Higher at higher flow rate settings)
- ec-H2O Module Control Board = 0.2 Amps
- Sparger (Oxygenizer) = 0.3 Amps
- e-cell = 0.9 Amps
- Overall ec-H2O system = 2.0 Amps + 0.5 / - 0.2 Amps
(Dependant on machine model and water flow setting)

Red Flashing Light

Over pressure or a low e-cell current draw

- System blocked: Perform Flush Procedure
- Pressure switch wired incorrectly
- Bad pressure switch
- Wires to switch faulty
- Bad solenoid
- Bad wires to solenoid
- Kinked hose
- Plumbed incorrectly
- Low water conductivity

Note: In most situations, low current can be remedied by performing one or two flush procedures unless the water has low conductivity. If the light is still flashing red after two flushes, the water may have low conductivity. To confirm this is the cause, add ½ tablespoon of salt to every 10 gallons (37.85L) of water and perform the flush procedure again.

Note: If the Red LED starts to flash within 1 – 10 seconds after starting to scrub, it is likely an over pressure fault. If the Red LED starts to flash after 1 minute of scrubbing, it is likely due to low water conductivity.

Step 1: Configuration



See Figure 2

Confirm the ec-H2O module is configured correctly for the machine and the application.

Figure 2



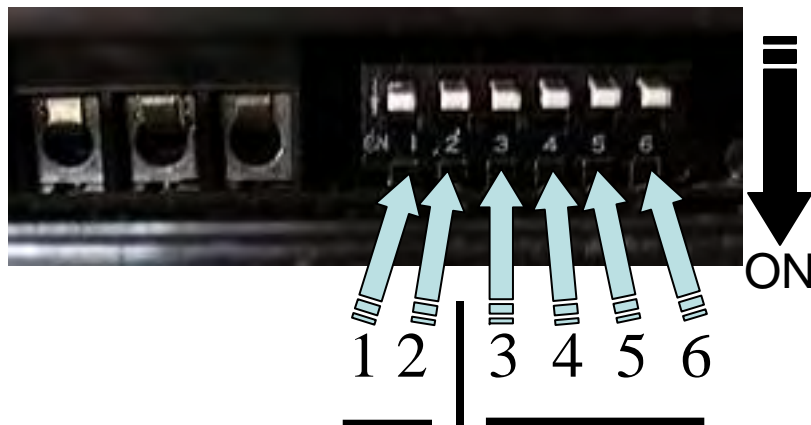
Specific flow rates are adjusted by the control board, according to the on-board dip switch settings. Each machine has a specific dip switch setting.

The default flow rate setting for each machine model is in the first line of the chart for that model.

Locate the machine model and follow that line to the right where the Dip Switch settings are indicated. Compare the actual dip switch settings on the machine with those indicated in the chart.

If an adjustment of the flow rate is required, use dip switches 1 and 2 to increase or decrease the ec-H2O system flow rate.

Remove rubber plug on ec-H2O module to access dip switches.



Dip Switches
used to configure
water flow rate.

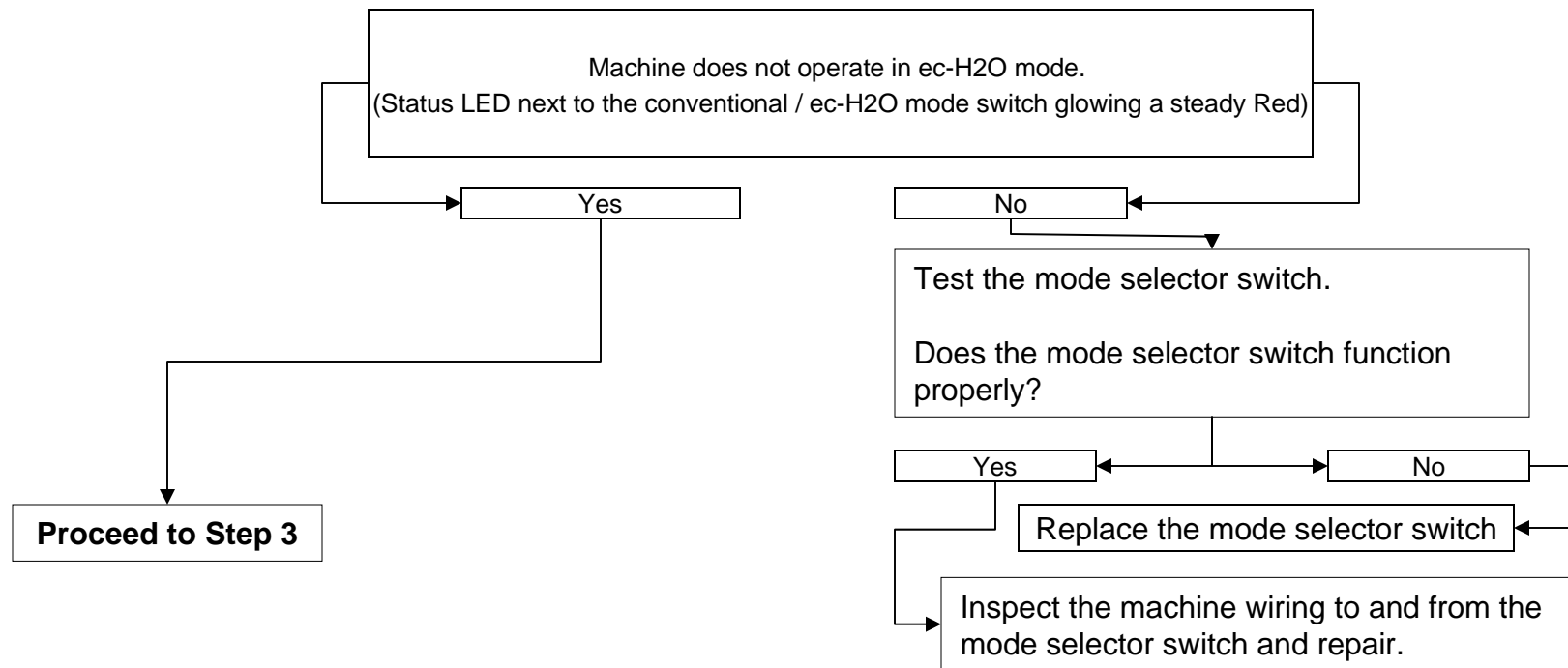
Dip Switches
used to configure
for specific machines.

Machine description	FaST flow (gpm)	Setting	Water flow (gpm)	Pump voltage		E-Cell current		Sparger current		Flow		Machine					
				Normal	Bypass	Normal	Error	Normal	Error	1	2	3	4	5	6		
5680/5700 36	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↑		
		Med	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↑		
		High	0.53	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↑		
5680/5700	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↓		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↓		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↓		
T5/SS28-32	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↑		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↑		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↑		
T5/SS24-26	0.15	Low	0.15	6.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↑		
		Med	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↑		
		High	0.30	10.6	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↑		
T3/SS3	0.12	Low	0.12	6.0*	8.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↓		
		Med	0.19	7.5*	8.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↓		
		High	0.25	9.0	8.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↓		
T7	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↓		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↓		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↓		
T15	0.39	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↑		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↑		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↑		
7300/8300	0.55	Low	0.44	11.6	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↓		
		Med	0.62	16.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↓		
		High	0.84	25.5	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↓		
	Operator High	1.00	Battery		0.90	0.40	0.30	0.00	Machine controls pump when operator panel switch is ON								
Voltage flip time		600	seconds		6.5		0.0		0.0		Flow Rate		Machine Configuration				
Flush mode setting																	

Default Setting Disk
Default Setting Cylindrical
Default Setting Disk and Cylindrical

*The T3 low and medium flows are set to high for the first 30 seconds of scrubbing after the keyswitch is turned ON.

Step 2: Mode Selector



Step 3: Supply Voltage - A



(See Figure 3) Connect the meter as shown, turn on the key switch and read the voltage between the ec-H2O side of the fuse and battery negative. Do you read near battery volts DC?

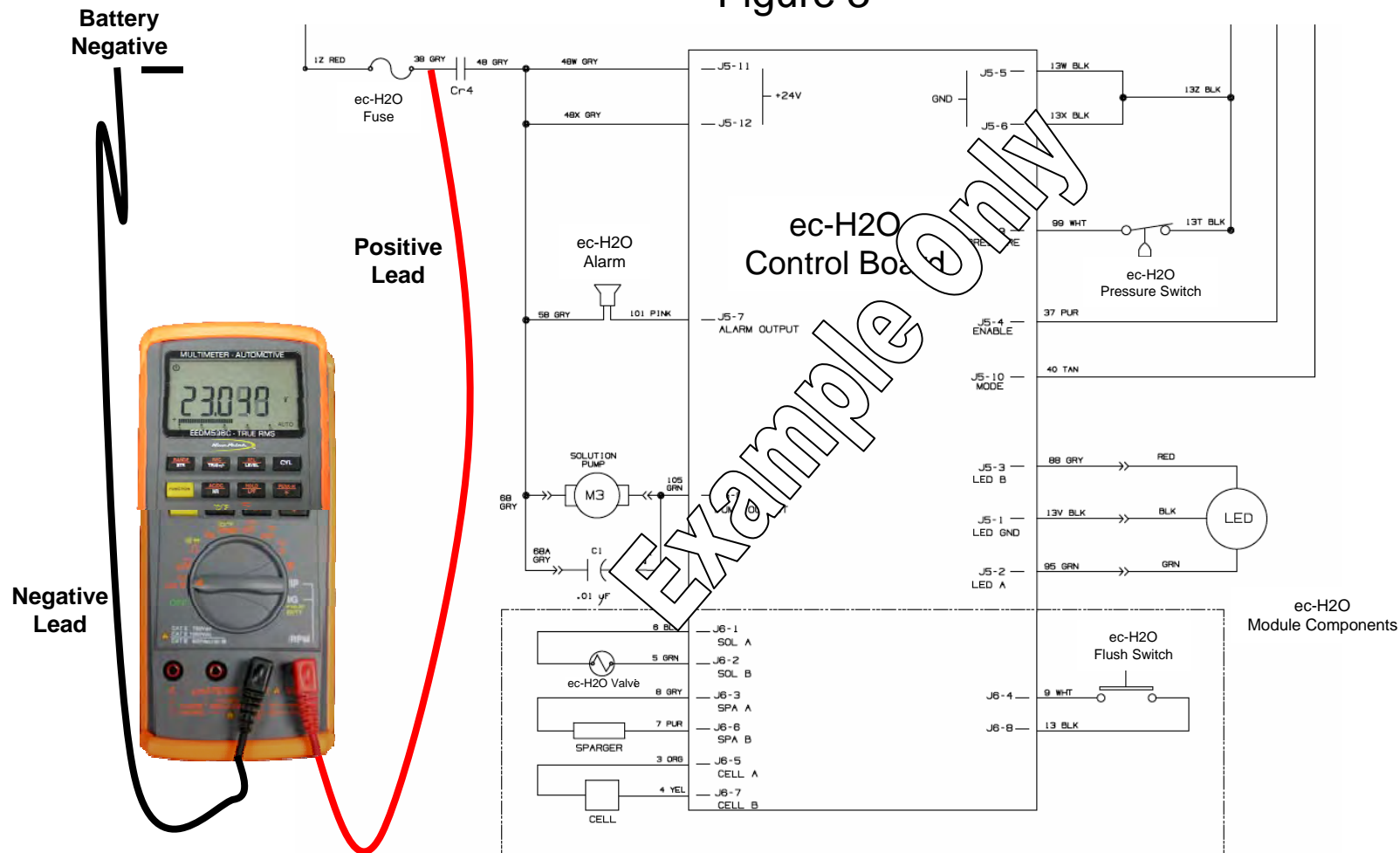
Yes

No

Proceed to Step 4

Test the machine wiring to the ec-H2O system fuse and the fuse / repair as required.

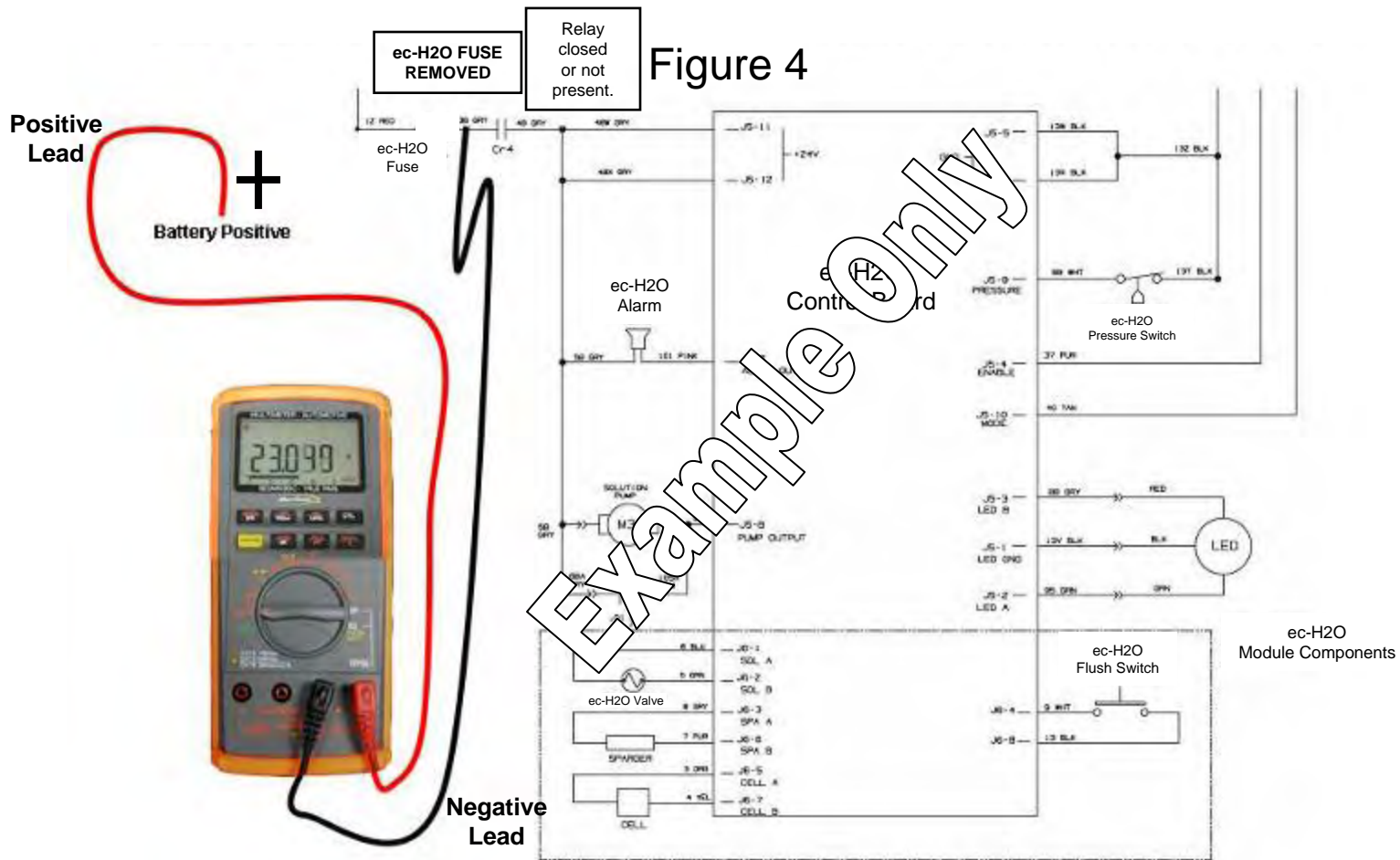
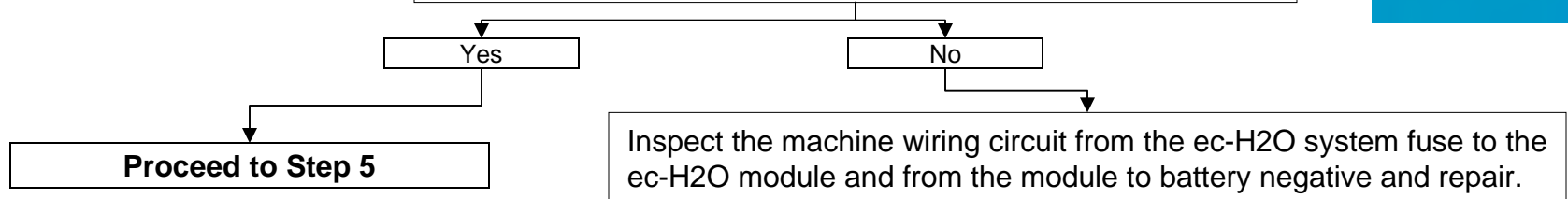
Figure 3



Step 4: Supply Voltage - B



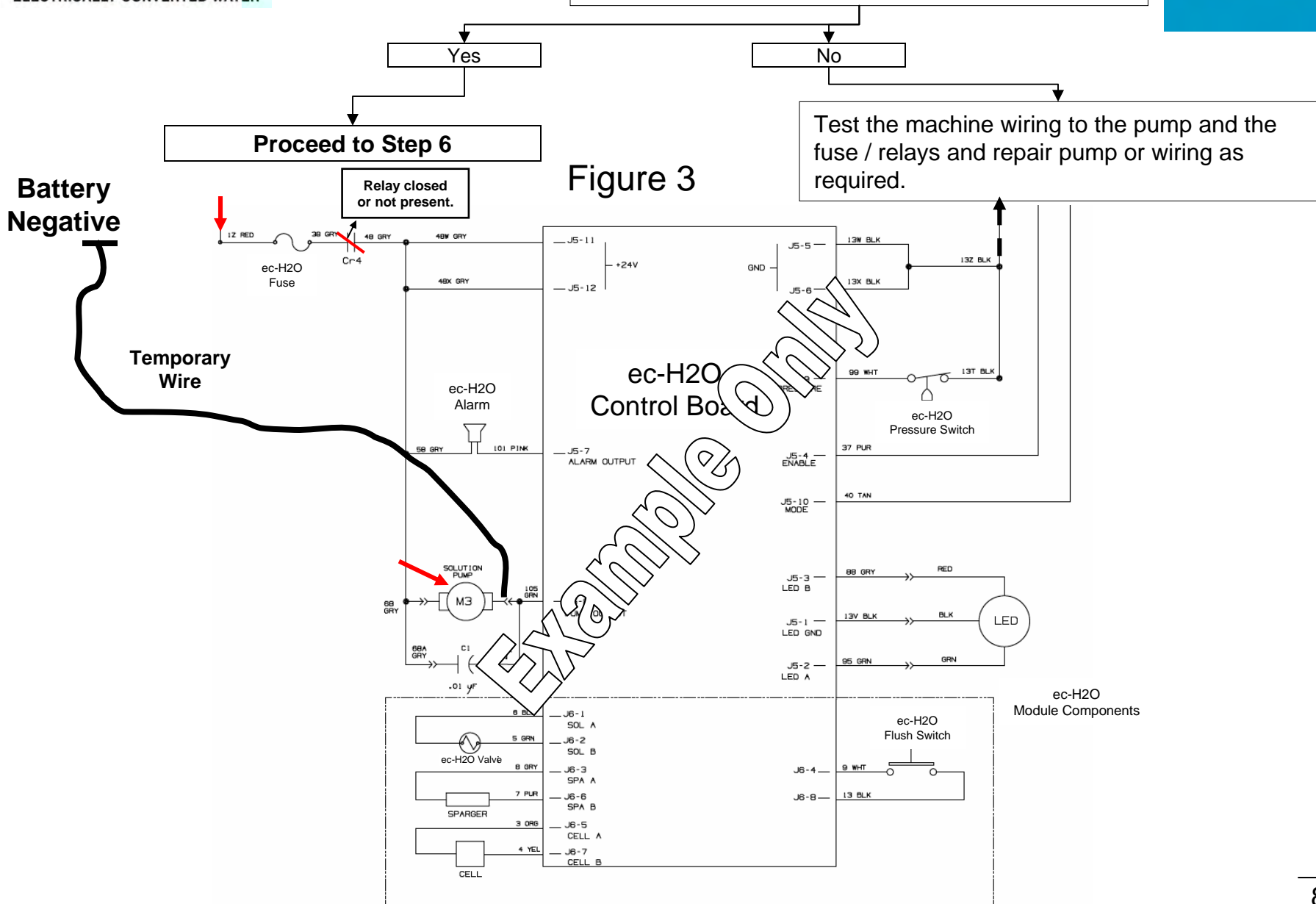
(See Figure 4) **Remove the fuse!** Connect the meter as shown, turn on the key switch, switch ec-H2O on and read the voltage between the ec-H2O side of the fuse and battery positive. Do you read near battery volts DC?



Step 5: Negative Board Switching



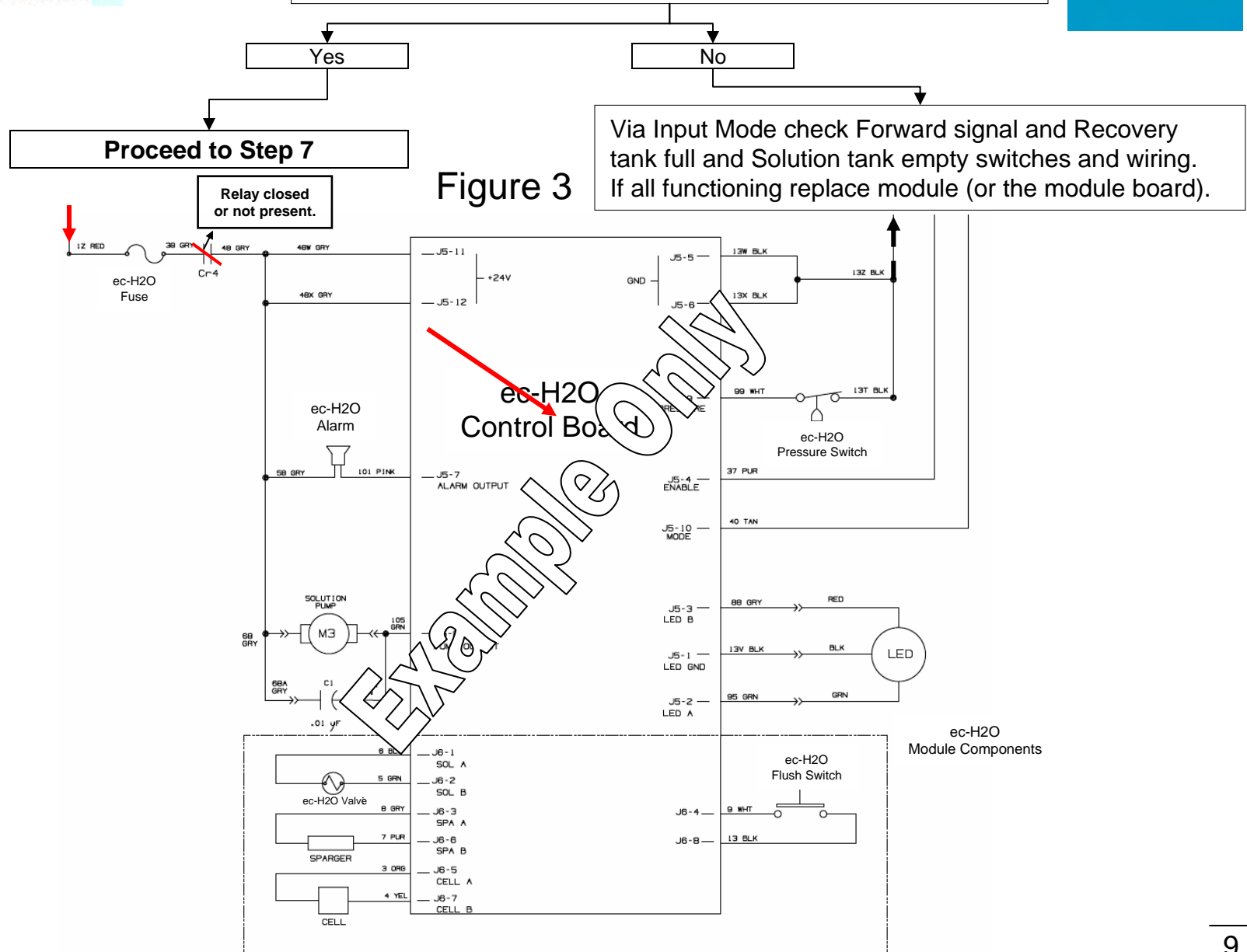
Temporarily! Connect the negative (green) wire from the pump to battery negative, turn on the key switch, switch ec-H2O on. Does the pump run? (See Figure 3)



Step 6: Board Functioning



In manual mode the ec-H2O system should operate as, power is on, ec-H2O switch is activated and Manual mode forward and tank switches signals are eliminated. Does the ec-H2O system function?



Step 8: e-cell Amp Draw



ec-H2O Module Amperage Testing

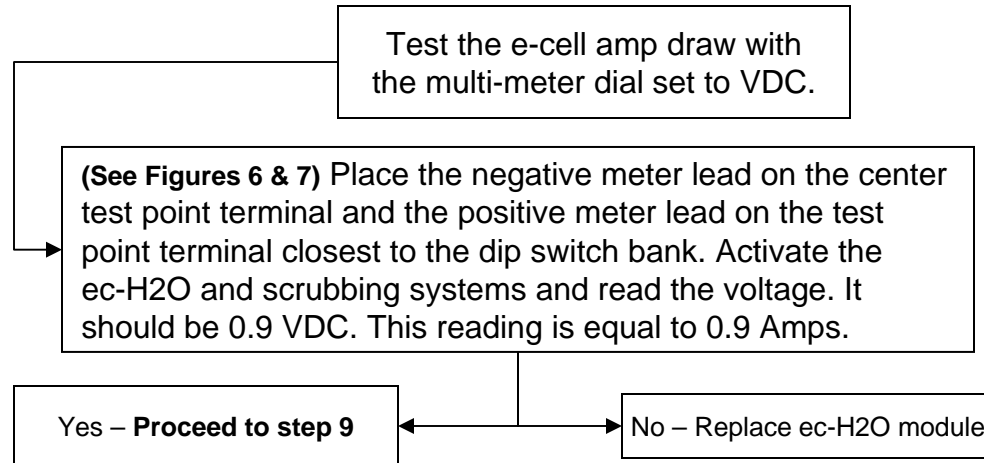


Figure 6

Testing e-cell Amp Draws

The ec-H2O module control board controls the amp draw of the e-cell.
The e-cell amp draw setting is 0.9 Amps.

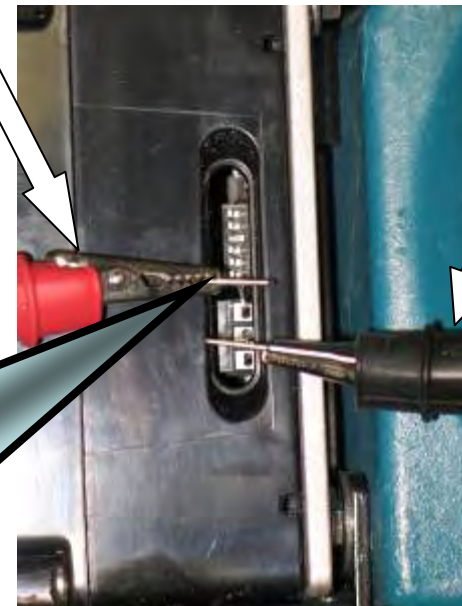
Test points are provided for confirming these amp draws.

NOTE: When measuring e-cell Amp Draw, Volts DC = Amps DC

Positive
Lead

Figure 7

Negative
Lead



Step 9: Oxygenizer (Sparger) Amp Draw



(See Figures 8 & 9) Place the negative meter lead on the center test point terminal and the positive meter lead on the test point terminal far away from the dip switch bank. Activate the ec-H2O and scrubbing systems and read the voltage. It should be 0.3 VDC. This reading is equal to 0.3 Amps.

Yes – **Proceed to step 10**

No – Replace ec-H2O module

Figure 8

Testing Sparger (Oxygenizer) Amp Draws

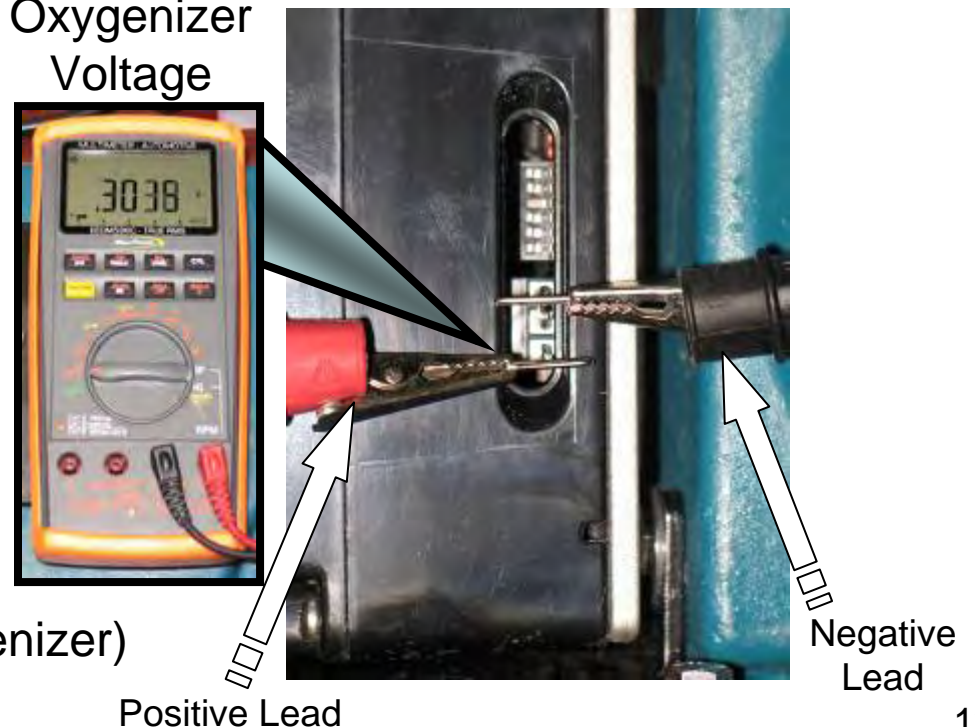
The ec-H2O module control board controls the amp draw of the Sparger (Oxygenizer).

The Sparger (Oxygenizer) amp draw setting is 0.3 Amps.

Test points are provided for confirming these amp draws.

NOTE: When measuring Sparger (Oxygenizer) Amp Draw, Volts DC = Amps DC

Figure 9



Step 10: Pump Voltage Supply

(See Figure 10) To test the voltage output from the ec-H2O controller to the water pump, back probe the electrical pump connector and set your meter to read VDC. With the ec-H2O and the scrubbing systems activated, read the output voltage to the water pump. Depending on the machine model and the flow setting, the voltage reading should be between 6 VDC and 18 VDC. Are the readings correct for the model number and flow setting?



Yes

This confirms that the control board is capable of sending the correct output voltage to the water pump. **Proceed to Step 11**



+/- 5% **Figure 10**

Machine description	FaST flow (gpm)	Setting	Water flow (gpm)	Pump voltage		E-Cell current		Sparger current		Flow		Machine					
				Normal	Bypass	Normal	Error	Normal	Error	1	2	3	4	5	6		
5680/5700 36	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↑		
		Med	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↑		
		High	0.53	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↑		
5680/5700	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↓		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↓		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↓		
T5/SS28-32	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↑		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↑		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↑		
T5/SS24-26	0.15	Low	0.15	6.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↑		
		Med	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↑		
		High	0.30	10.6	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↑		
T3/SS3	0.12	Low	0.12	6.0*	8.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↓		
		Med	0.19	7.5*	8.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↓		
		High	0.25	9.0	8.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↓		
T7	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↓		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↓		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↓		
T15	0.39	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↑		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↑		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↑		
7300/8300	0.55	Low	0.44	11.6	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↓		
		Med	0.62	16.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↓		
		High	0.84	25.5	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↓		
	Operator High	1.00		Battery		0.90	0.40	0.30	0.00	Machine controls pump when operator panel switch is ON							
Voltage flip time	600	seconds															
Flush mode setting				6.5		0.0		0.0									

Default Setting Disk
Default Setting Cylindrical
Default Setting Disk and Cylindrical

*The T3 low and medium flows are set to high for the first 30 seconds of scrubbing after the keyswitch is turned ON.

No

Replace the ec-H2O module.

Step 11: Pump Operation



(See Figure 11) Confirm the pump is operating by activating the ec-H2O and scrubbing systems and watch for water flow to the brushes.

Is there water flow to the brushes?



Figure 11

Machine description	FaST flow (gpm)	Setting	Water flow (gpm)	Pump voltage		E-Cell current		Sparger current		Flow		Machine					
				Normal	Bypass	Normal	Error	Normal	Error	1	2	3	4	5	6		
5680/5700 36	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↑		
		Med	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↑		
		High	0.53	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↑		
5680/5700	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↓		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↓		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↓		
T5/SS28-32	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↑		
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↑		
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↑		
T5/SS24-26	0.15	Low	0.15	6.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↑		
		Med	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↑		
		High	0.30	10.6	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↑		
T3/SS3	0.12	Low	0.12	6.0*	8.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↓		
		Med	0.19	7.5*	8.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↓		
		High	0.25	9.0	8.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↓		
T7	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↓		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↓		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↓		
T15	0.39	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↑		
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↑		
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↑		
7300/8300	0.55	Low	0.44	11.6	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↓		
		Med	0.62	16.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↓		
		High	0.84	25.5	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↓		
		Operator High	1.00	Battery		0.90	0.40	0.30	0.00	Machine controls pump when operator panel switch is ON							
Voltage flip time		600	seconds														
Flush mode setting				6.5		0.0		0.0									

Default Setting Disk
Default Setting Cylindrical
Default Setting Disk and Cylindrical

*The T3 low and medium flows are set to high for the first 30 seconds of scrubbing after the keyswitch is turned ON.

Confirm the flow rate is correct for the model and flow rate setting. Is the flow rate correct?

No

Yes – Proceed to step 12

Check the water supply filter for cleanliness.
Check for pinched hoses.
Clean or repair as needed.

Conversions:

Gallons/Min	=	Ounces/Min
0.12	=	15
0.15	=	19
0.19	=	24
0.22	=	28
0.25	=	32
0.30	=	38
0.33	=	42
0.40	=	51
0.44	=	56
0.50	=	64
0.53	=	68
0.55	=	70
0.62	=	79
0.84	=	108
1.00	=	128

1. Check the pump electrical plug and wiring.
2. Check pump relief valve for any blockage.

If all good, replace the pump.

Conversions:

Gallons/Min	=	Liters/Min
0.12	=	0.45
0.15	=	0.57
0.19	=	0.72
0.22	=	0.83
0.25	=	0.95
0.30	=	1.14
0.33	=	1.25
0.40	=	1.51
0.44	=	1.66
0.50	=	1.89
0.53	=	2.01
0.55	=	2.08
0.62	=	2.35
0.84	=	3.18
1.00	=	3.79

Step 12: Pressure Switch Testing:

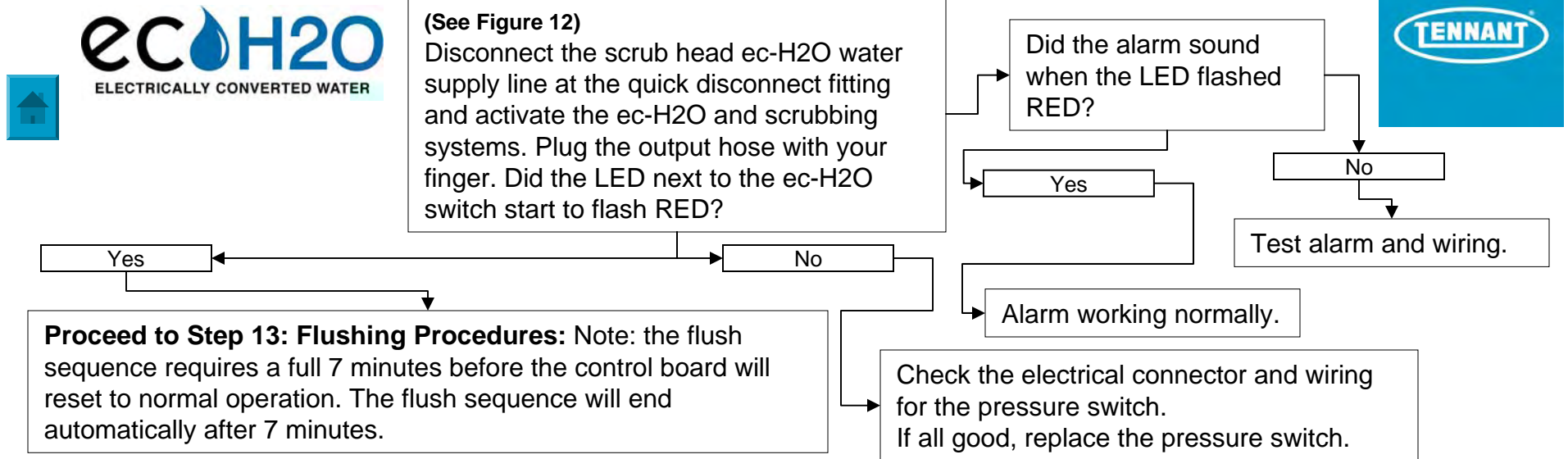


Figure 12



Step 13: ec-H2O Module Flush Procedure Example



Refer to the Machine Maintenance Manual for Specific Directions

ec-H2O MODULE FLUSH PROCEDURE (See Figure 13)

this procedure is only required when the *ec-H2O* system indicator light begins to blink red:

1. Drain the solution tank and recovery tank of all water.
2. Pour maintenance manual recommended amount of white vinegar into the solution tank at full strength. Do not dilute.
3. Remove the brush(es) from the scrub head and position the machine over a floor drain. If no floor drain is available, remove the front cover from the machine, disconnect the quick connect fitting at the scrub head, and place the hose into a bucket.



Figure 13

4. Turn the key to the on (I) position.
5. Lift the recovery tank to access the *echo* system module. Press and release the module flush switch to start the flush cycle (See Figure 14).

NOTE: The module will automatically shut off when the flush cycle is complete (approx. 7 minutes). The module must run the full 7 minute cycle in order to reset the system indicator light and alarm.

6. If the ec-H2O system indicator light continues to flash, repeat the flush procedure.

If the problem persists, check for pinched hoses.

- 7: Turn the key off and then back on to operate the machine.



Figure 14

NOTE: If a bucket is not available, you can place the water delivery hose in the vacuum hose for the rear squeegee and lower the squeegee to turn on the vacuum and contain the water.

Step 14: ec-H2O Module Activation Test



Disconnect the ec-H2O solution hose quick-connector.

Unplug the propel motor and scrub brush(es).

Adjust the sensitivity dial on the detector so that the indicator stops flashing/sounding.

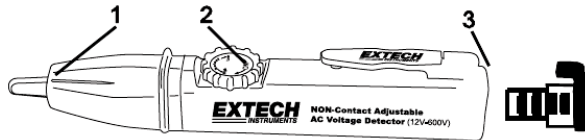
Activate the ec-H2O and scrubbing systems. After a short while, note that the ec-H2O module is activated, as indicated by the tester.

NOTE: 'DO NOT TOUCH THE HOSE'

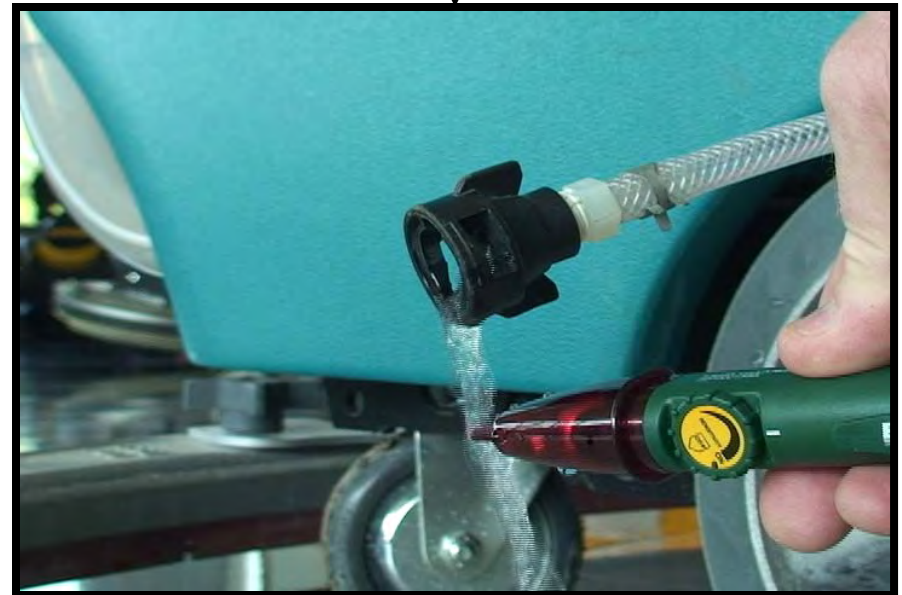
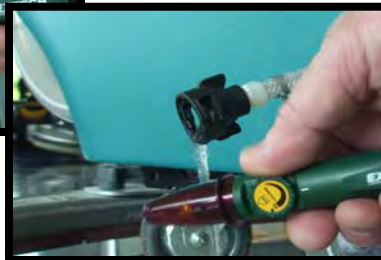
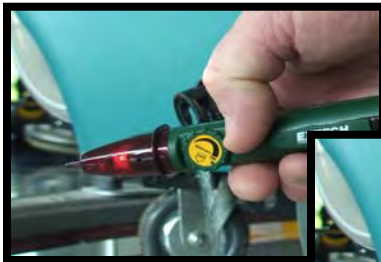
It is also important to have the tester properly placed in a full stream near the quick-connect fitting.



- 1: Turn the On/Off-Sensitivity switch (2) clockwise to turn on the unit.
- 2: Set the Sensitivity adjustment (2) to the high (counterclockwise) position.
- 3: If the detector begins to beep/flash (1) slowly reduce the sensitivity (clockwise) until the indication stops.



Authorized
Detector:
EXTECH
Instruments
Model DV30
12V-600V AC
Non-Contact
Adjustable
Voltage
Detector.



Machine description	FaST flow (gpm)	Setting	Water flow (gpm)	Pump voltage		E-Cell current		Sparger current		Flow		Machine				
				Normal	Bypass	Normal	Error	Normal	Error	1	2	3	4	5	6	
5680/5700 36	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↑	
		Med	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↑	
		High	0.53	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↑	
5680/5700	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↑	↓	
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↑	↓	
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↑	↓	
T5/SS28-32	0.22	Low	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↑	
		Med	0.33	11.8	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↑	
		High	0.44	15.0	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↑	
T5/SS24-26	0.15	Low	0.15	6.5	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↑	
		Med	0.22	8.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↑	
		High	0.30	10.6	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↑	
T3/SS3	0.12	Low	0.12	6.0*	8.0	0.90	0.40	0.30	0.00	↑	↑	↑	↑	↓	↓	
		Med	0.19	7.5*	8.0	0.90	0.40	0.30	0.00	↑	↓	↑	↑	↓	↓	
		High	0.25	9.0	8.0	0.90	0.40	0.30	0.00	↓	↑	↑	↑	↓	↓	
T7	0.30	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↑	↓	
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↑	↓	
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↑	↓	
T15	0.39	Low	0.30	11.2	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↑	
		Med	0.40	14.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↑	
		High	0.50	17.4	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↑	
7300/8300	0.55	Low	0.44	11.6	14.0	0.90	0.40	0.30	0.00	↑	↑	↑	↓	↓	↓	
		Med	0.62	16.5	14.0	0.90	0.40	0.30	0.00	↑	↓	↑	↓	↓	↓	
		High	0.84	25.5	14.0	0.90	0.40	0.30	0.00	↓	↑	↑	↓	↓	↓	
		Operator High	1.00	Battery		0.90	0.40	0.30	0.00	Machine controls pump when operator panel switch is ON						
Voltage flip time	600	seconds			6.5		0.0		0.0							
Flush mode setting					6.5		0.0		0.0							