



T7 Disk Model ec-H2O NanoClean Affiliate Kit



This kit includes the necessary parts to convert a standard disk model into an ec-H2O™ NanoClean model. The kit is intended for T7 models manufactured after serial number 10740597 (March 31, 2015).

INSTALLATION INSTRUCTIONS:

Installation Time: 4 Hours

Special Tools Required: Cartridge By-Pass Tool to test machine for leaks after install (provided separately).

PREPARE MACHINE FOR KIT INSTALL:

1. Drain the solution and recovery tanks.
2. Park the machine on a level surface, lower the scrub head and remove the key.
3. Disconnect the seat wire harness connector and lift seat from machine (Figure 1).

FOR SAFETY: When servicing machine wear personal protection equipment as needed.



Fig. 1

3. Remove the small box from the battery compartment shroud to access the two mounting screws that secures shroud. Remove screws and lift battery compartment shroud from machine (Figure 2).

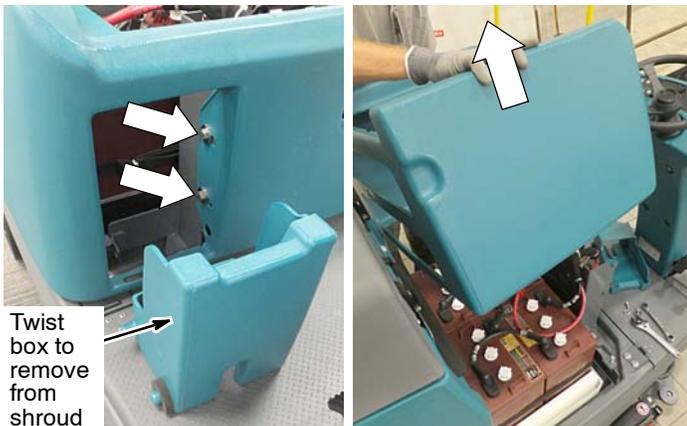


Fig. 2

4. Remove batteries and battery tray from the machine.

5. Disconnect steering wheel and instrument panels from steering column. Remove four screws and lift steering column housing from column (Figure 3).



Fig. 3

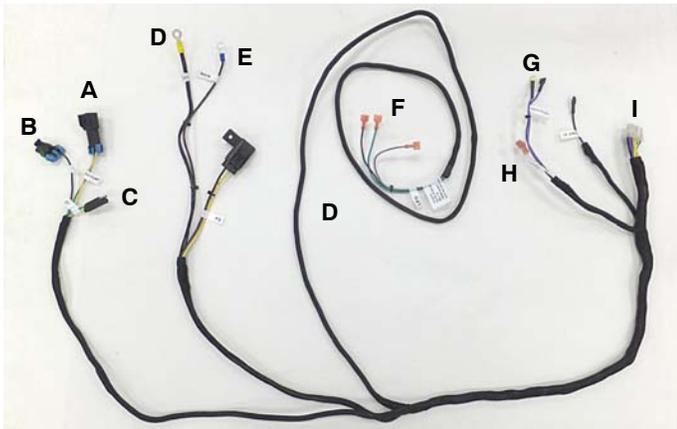
6. Remove scrub head from machine. To remove, pull 4 pins from scrub head assembly as shown. Disconnect brush motor wire connectors, solution hose connection, solution valve wires and ground wire from scrub head. Carefully slide scrub head out from under machine (Figure 4).



Fig. 4

INSTALL ec-H2O WIRE HARNESS:

- Using the below wire code diagram for reference, route the ec-H2O wire harness [p/n 1074374] as described in following steps (Figure 5).



A = ec-H2O Pump
 B = Main Harness
 C = C1 Capacitor
 D = Negative Stand-off - Control Board
 E = Main - Control Broad Contractor
 F = ec-H2O LED
 G = ec-H2O Water Conditioning Module Pump
 H = Pressure Switch
 I = ec-H2O Module

Fig. 5

- Starting from inside the battery compartment, route the LED wires (F) under the solution tank and up the steering column as shown. Route the wires through the existing wire harness clamps (Figure 6).



Fig. 6

- Re-install the steering column housing using the 4 mounting screws. Route the LED wires through the small round hole as shown (Figure 7).

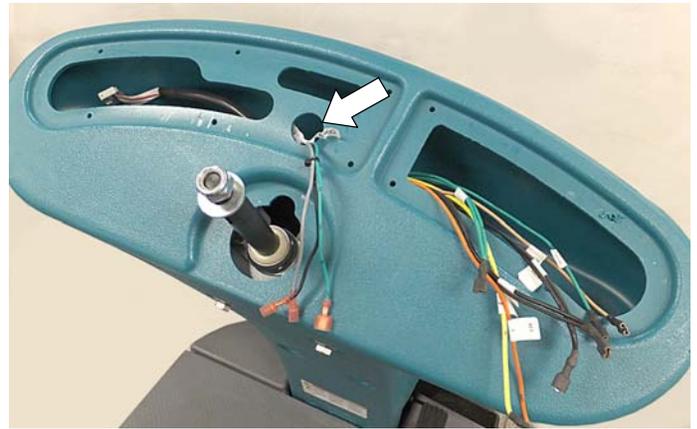


Fig. 7

- Using the control panel cover from the existing instrument panel, assemble the following parts as shown (Figure 8).



Fig. 8

- Connect the ec-H2O harness wires to LED light (green to green, black to black and red to gray) (Figure 9). Plug the existing wire connector into new panel as shown. Using the existing mounting screws, fasten new instrument panel to steering column housing

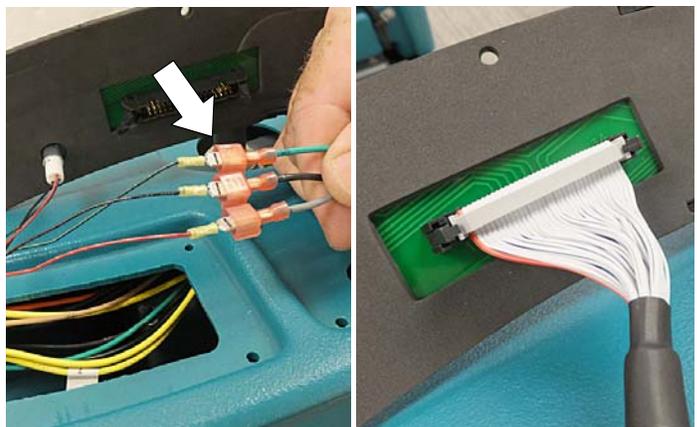


Fig. 9

6. Reconnect wires to key switch panel components as shown and replace panel (Figure 10).

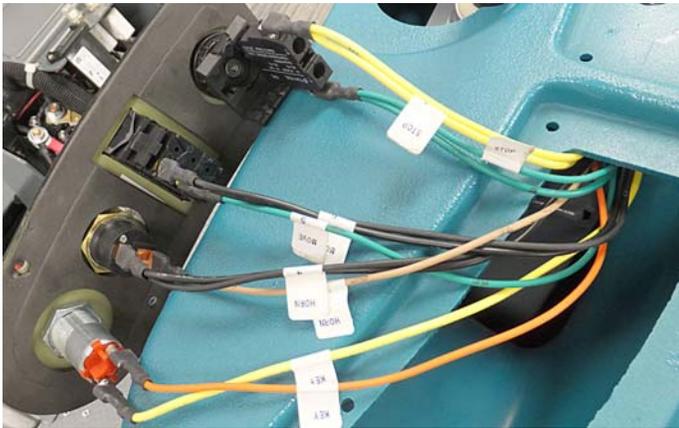


Fig. 10

7. Replace steering wheel.
8. Route the main and negative stand-off wires (D, E) under machine frame to control board area as shown (Figure 11).

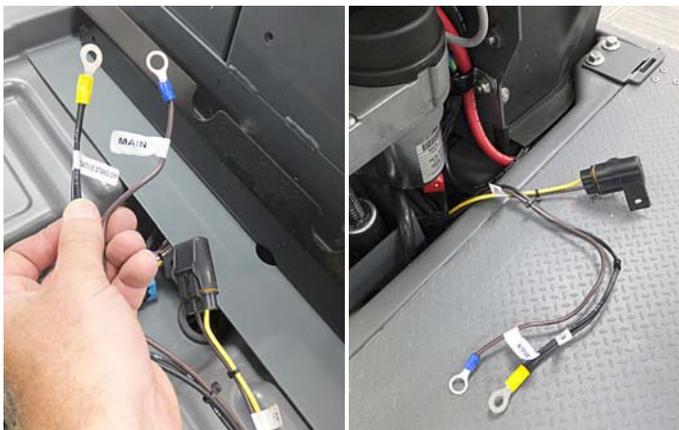


Fig. 11

9. Route the two wires up through control panel grommet. Connect brown wire to main contactor and black wire to negative stand-off terminal (Figure 12).

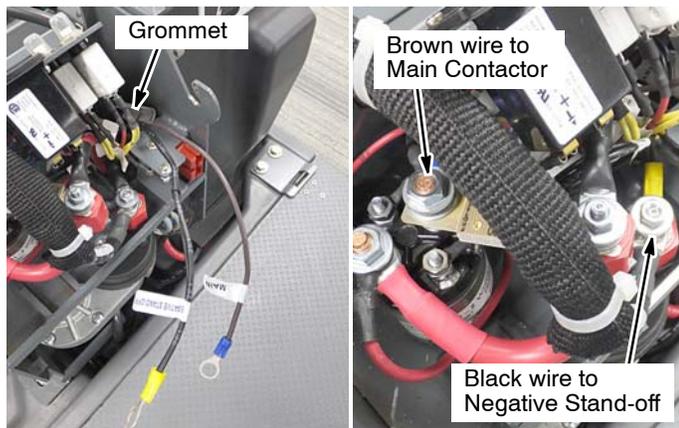


Fig. 12

10. Route the ec-H2O module, pressure switch and cartridge pump wires (G, H, I) under machine frame as shown (Figure 13).



Fig. 13

11. Route the main harness connector, ec-H2O pump connector and capacitor plug (A, B, C) through grommet as shown (Figure 14).



Fig. 14

INSTALL ec-H2O PUMP ASSEMBLY:

1. On a level non-marring surface, with assistance, carefully lay the machine on its right side (Figure 15).



Fig. 15

- Continue routing the main harness connector, ec-H2O pump connector and capacitor plug (A, B, C) through frame grommet as shown (Figure 16).

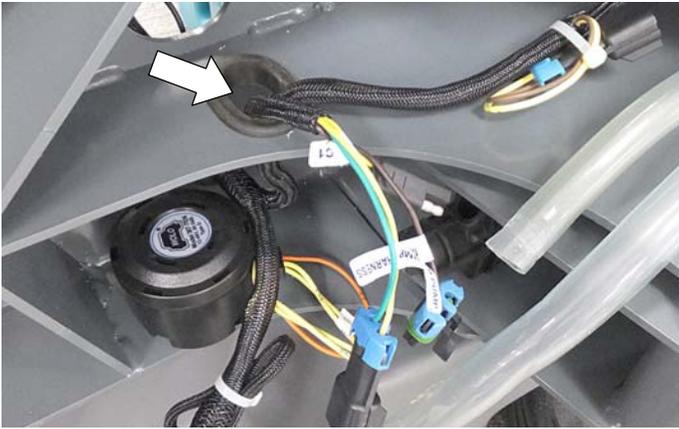


Fig. 16

- Locate the factory installed plug connector wire-tied to machine harness as shown. Cut wire-tie and connect the main harness connector (B) into machine harness (Figure 17). Secure with wire-tie.

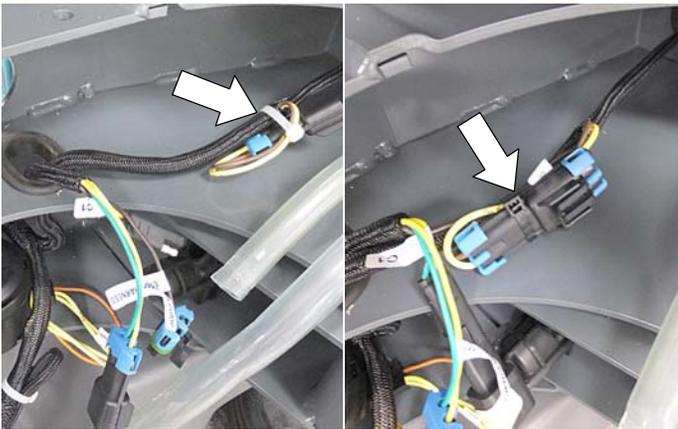


Fig. 17

- Using two M8x1.25x20 hex sems screws, connect the ec-H2O pump assembly to machine frame as shown (Figure 18).

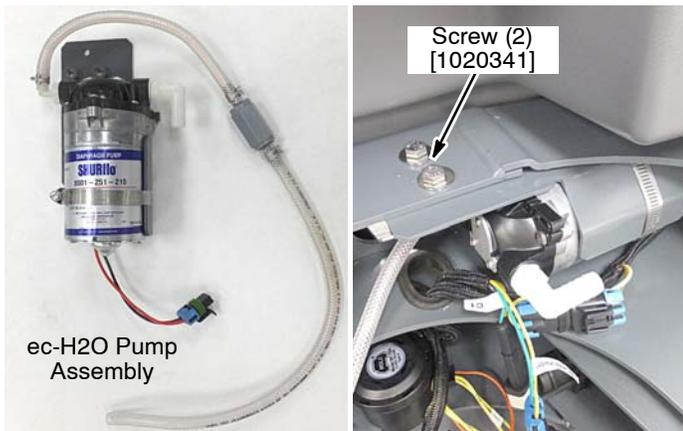


Fig. 18

- Connect the ec-H2O wire harness pump connector to pump (Figure 19). Connect the capacitor plug into ec-H2O harness connector (C).

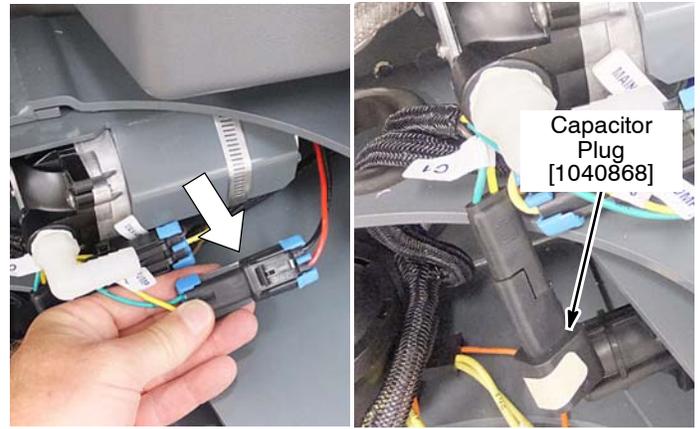


Fig. 19

- Cut end of solution hose to remove hose plug. Using clamp, connect solution hose to pump as shown (Figure 20).

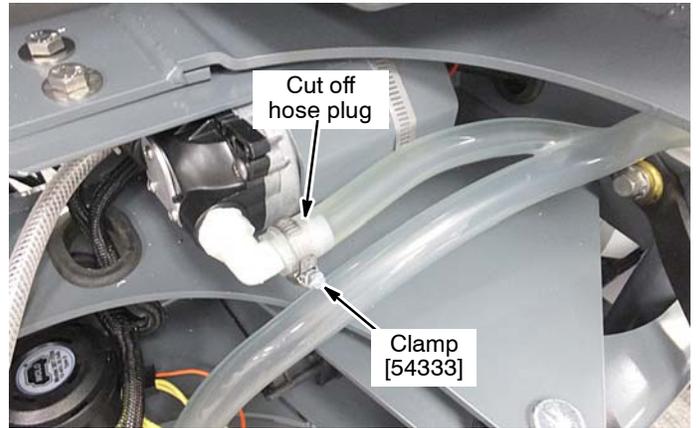


Fig. 20

- Install grommet into machine frame and route the solution hose from pump up through grommet (Figure 21). Make sure the arrow located on the check valve points towards the grommet.

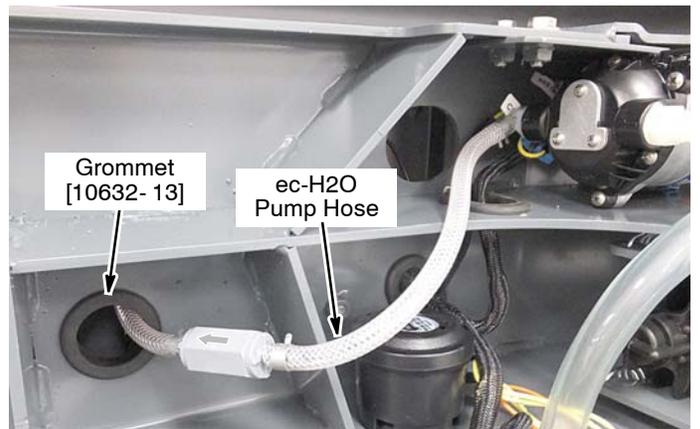


Fig. 21

- Carefully stand machine upright.

9. After machine is turned upright, continue routing the ec-H2O pump solution hose as shown (Figure 21).

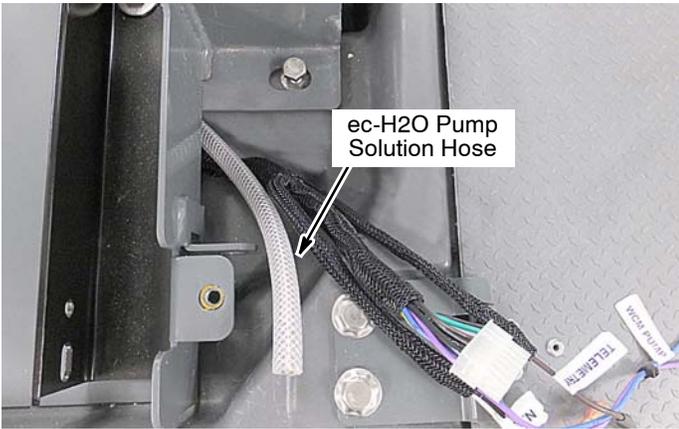


Fig. 22

10. Using clamp [607775], connect hose fitting [20950] to solution hose [376720] (Figure 23). Route the solution hose towards the scrub head area following the same path as the ec-H2O pump solution hose as shown in Figure 22. The hose fitting end goes towards scrub head area.

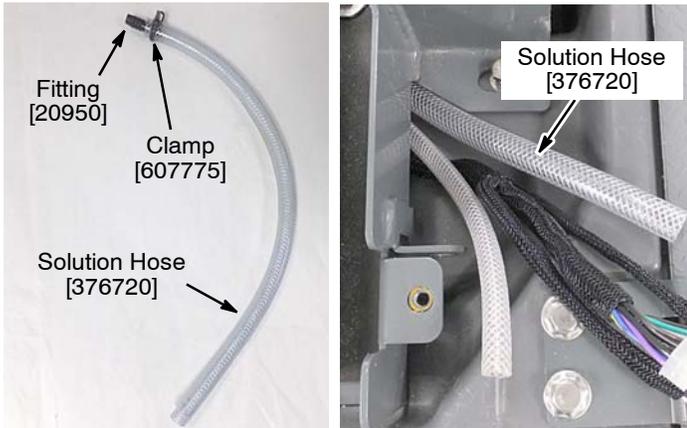


Fig. 23

PREPARE SCRUB HEAD:

1. Carefully turn scrub head over and install hose support brackets at each motor hub location as shown (Figure 24).



Fig. 24

2. Cut the hose plug off from the manifold hose as shown (Figure 25).

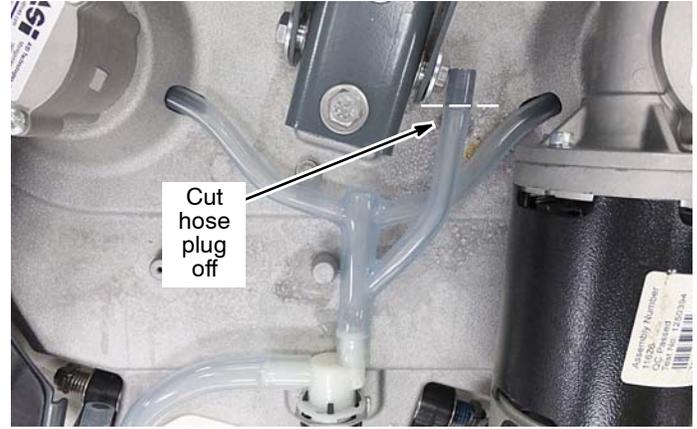


Fig. 25

3. Re-install the scrub head on machine with four pins (Figure 25). Reconnect brush motor wire connectors, solution hose connection, solution valve wires and ground wire to scrub head.

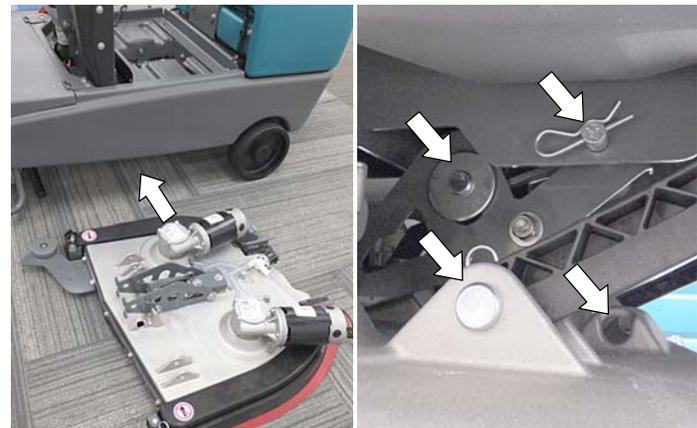


Fig. 26

INSTALL ec-H2O MODULE ASSEMBLY:

1. Remove the two screws shown from machine frame to mount ec-H2O module assembly (Figure 27).



Fig. 27

- Before mounting the ec-H2O module assembly to machine, connect the solution hoses and ec-H2O harness wires to module as described in following steps (Figure 28).

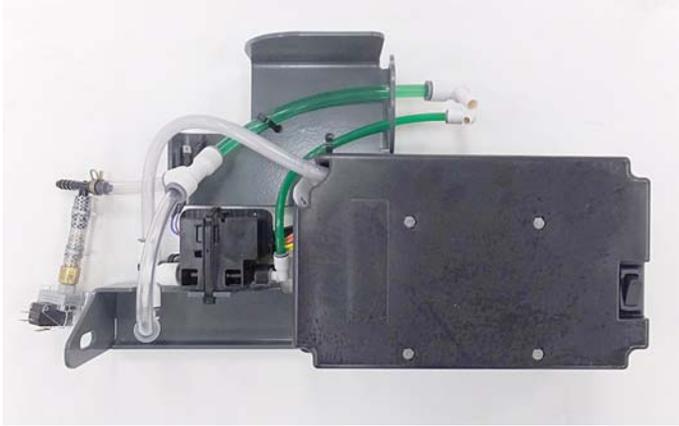


Fig. 28

- Plug the ec-H2O wire harness connector (I) into module (Figure 29).



Fig. 29

- Connect the ec-H2O harness wires (G, H) to cartridge pump and pressure switch as shown (Figure 30).

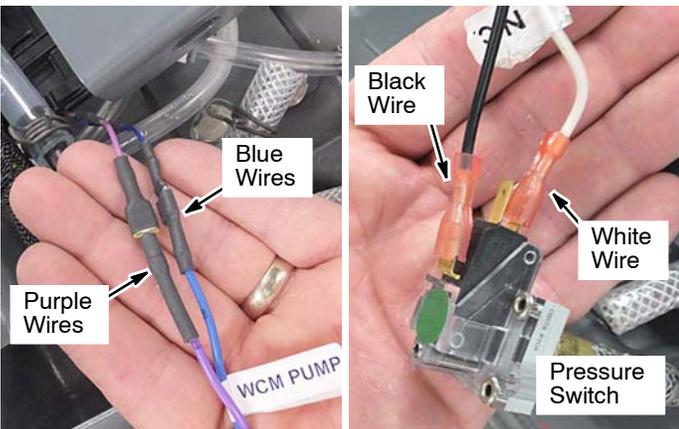


Fig. 30

- Connect the two routed ec-H2O solution hoses to module as shown (Figure 30).

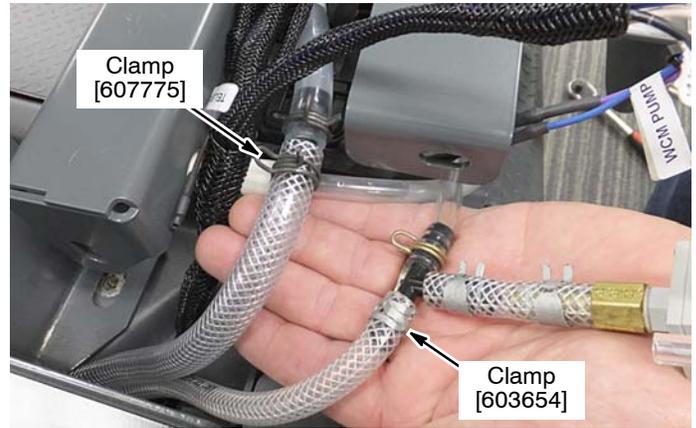


Fig. 31

- Mount the ec-H2O module assembly to machine frame with hardware as shown (Figure 32).

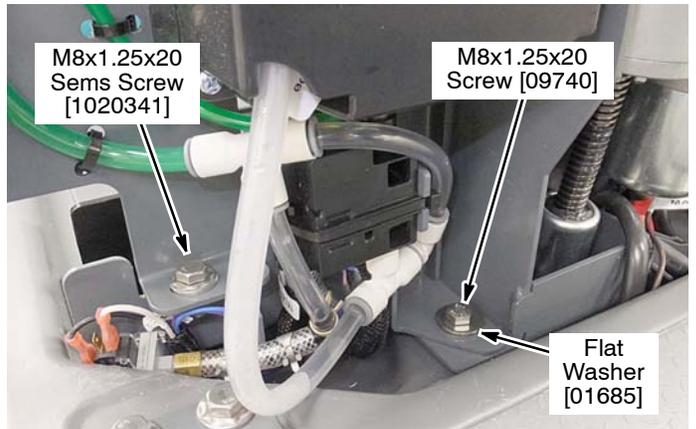


Fig. 32

- At scrub head, connect the routed solution hose from ec-H2O module to the solution hose manifold using clamp as shown (Figure 33)

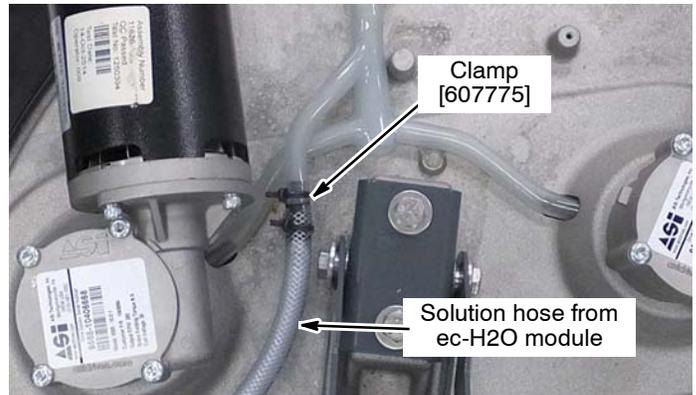


Fig. 33

PREPARE THE BATTERY COMPARTMENT SHROUD AND SEAT PANEL FOR INSTALLATION:

1. Install cover bracket into the battery compartment shroud opening using hardware as shown (Figure 34).



Cover Bracket [1051138]
2 Screws [09740]
4 Washers [1017218]
2 Nuts [08713]

Fig. 34

2. Cut the foam adhesive strip [376784] into four 10cm/4 inch pieces (Figure 35).



Fig. 35

3. Apply the four foam strips to bottom of seat panel as shown (Figure 36).



Fig. 36

4. Re-install the battery tray and batteries in machine.
5. Re-install the seat panel and reconnect the seat wire harness. **Do not** re-stall and the battery compartment shroud at this time, the ec-H2O system will need to be tested for leaks first as described later in the instructions.

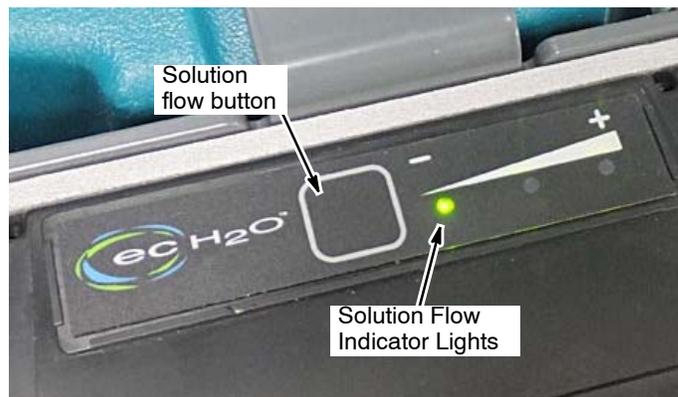
PROGRAM THE ec-H2O MODULE:

Set Machine Configuration:

Refer to table below for proper machine configuration.

1. Turn key to the on position.
2. To view the current machine configuration, press and hold the solution flow button on the ec-H2O module. The solution flow lights will momentarily turn off after 2 seconds. Release the button when the **LEFT** solution flow indicator light turns on, in approximately 4 seconds (Figure 37). When the button is released, the solution flow indicators will blink the current machine configuration for 10 seconds (see Table). After the 10 second window, the lights will revert back to normal operation. Repeat step to re-enter program.

Attention: If you hold the solution flow button too long, you may enter the firmware mode. To exit from this mode, press the solution flow button and repeat step 2.



Solution Flow Indicator Lights (Machine Configuration)	Machine/Scrub Head Size
★ ★ ●	T5/T5e/A5 (600/650mm)
● ● ★	T5/T5e/A5 (700/800mm)
★ ● ★	T7
★ ● ●	5680/5700/XP (900mm)
● ★ ●	5680/5700/XP (700mm/800mm)

Fig. 37

3. To change the machine configuration, repeat step 2. While the indicator lights are blinking (within the 10 second window), press the solution flow button to cycle through the machine configurations as shown in Table (Figure 37). Each press will advance to next setting. After selecting the desired setting, wait 5 seconds for module to save setting and revert back to normal operation.
4. Turn key to the OFF position.

Operate the Self-Test Mode to Recognize the ec-H2O System:

1. Press and **hold** down the ec-H2O button and Vacuum button (Figure 38).
2. Turn the key switch to the ON (I) position.
3. Wait 10 seconds then release the two buttons.

The self- test mode will take approximately 40 seconds to run.

After the self- test mode is complete, the *One-Step* button LED should be lit solid.

If a LED is blinking, an open wire connection was found. Check all wire connections and repeat test.

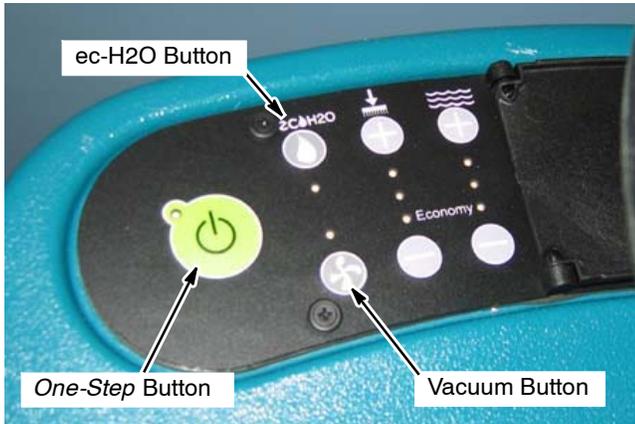


Fig. 38

CHECK THE ec-H2O NanoClean SYSTEM FOR PROPER OPERATION:

To ensure the ec-H2O NanoClean system is operating properly, perform the following.

1. Connect the cartridge by-pass tool, provided separately, to the two green hoses as shown. Route the clear discharge hose to the floor. The use of the cartridge by-pass tool is to prevent activating the ec-H2O water conditioning cartridge during the check process (Figure 39).

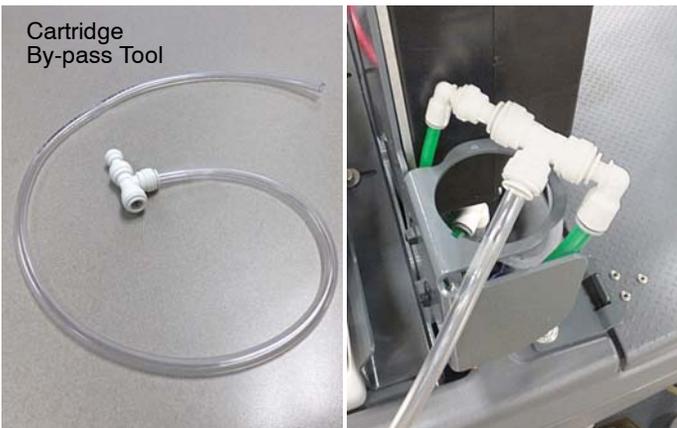


Fig. 39

2. Fill solution tank with cool clean water (less than 21°C/70°F). Do not add any conventional floor cleaning detergents, system failure may result.

3. Turn the key to the on (I) position. Verify that the 4 LED's on the module flash on for one second and then turn off, followed by displaying the current flow rate setting (Figure 40).



Fig. 40

4. Press the ec-H2O system button to the on (I) position.
5. The ec-H2O system indicator light will turn on when the propel pedal is pressed (Figure 41).

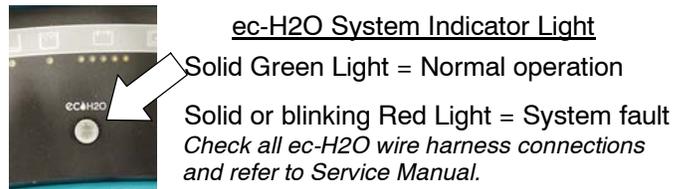


Fig. 41

6. Operate the ec-H2O module in Manual Mode (See NOTE below). Verify that the ec-H2O system is putting water on the floor at the scrub head and at the By-Pass Tool hose.
7. Check all ec-H2O system hose connections for water leaks.

NOTE: To enter the module's Manual Mode, depress and hold the service switch for 20 seconds and release (Figure 42). The first and third green LEDs will alternate on and off indicating that you are in the Manual Mode and the ec-H2O pump will be operating. To exit the Manual Mode, depress the Service Switch for one second and release. The module will also exit the manual mode automatically after 7 minutes.

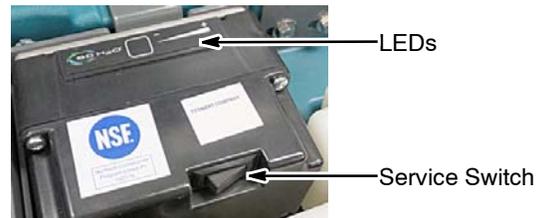


Fig. 42

8. After checking machine for proper operation or possible leaks, drain all tanks and vacuum out any residual water. With the ec-H2O module in Manual Mode, attach the hose from from the By-pass Tool to a vacuum unit and vacuum out any remaining water from module.
9. Exit the Manual Mode and remove the Cartridge By-pass Tool from machine. To exit Manual Mode, depress the Service Switch for one second and release.

INSTALL ec-H₂O WATER CONDITIONING CARTRIDGE:

1. Check the manufacture date on the Water Conditioning Cartridge before installing. The shelf-life of an un-installed cartridge is one year from manufacture date. Discard cartridge if shelf-life has expired. For replacement Cartridge, order p/n 9013646.
2. Fill in the installation date on the Water Conditioning Cartridge label (Figure 43).



Fig. 43

3. Remove the two plugs from cartridge. Press the gray collars inward and pull plugs outward to remove (Figure 44). Position the cartridge in the cartridge holder bracket as shown and connect green hoses to cartridge (Figure 44). Make sure the hose connectors are fully inserted.



Fig. 44

Set Timer for Water Conditioning Cartridge:

Carefully read and understand the following steps before performing procedure.

1. Turn key to the on position (Figure 45).
2. Press and hold the service switch on the module for 10 seconds. After releasing the service switch, the three solution flow indicator lights will begin to (ripple) move back and forth.

Attention: If you hold the service switch too long, the 1st and 3rd lights will alternate on and off. If this happens, press and release the service switch and repeat step 2.

3. Within 5 seconds after releasing the service switch, while the three indicator lights are still moving back and forth (ripple), press the quickly release the solution flow button located on ec-H₂O module.
4. The indicator lights will then blink three times to confirm timer has been set. Repeat process if the three indicator lights do not blink three times.



Fig. 45

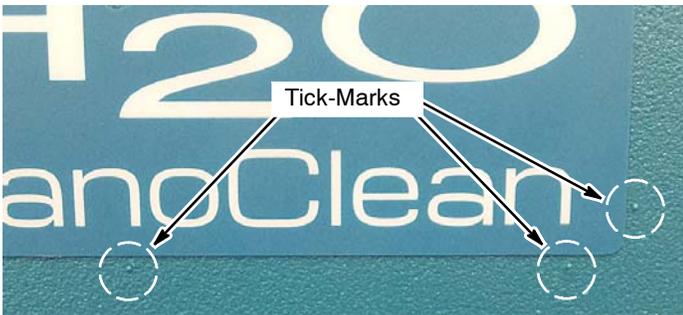
5. Replace the battery compartment shroud.

INSTALL ec-H₂O NanoClean LABELS

Apply the new ec-H₂O NanoClean labels on machine as described below (Figure 46).



ec-H₂O NanoClean Label [1216520] Qty2



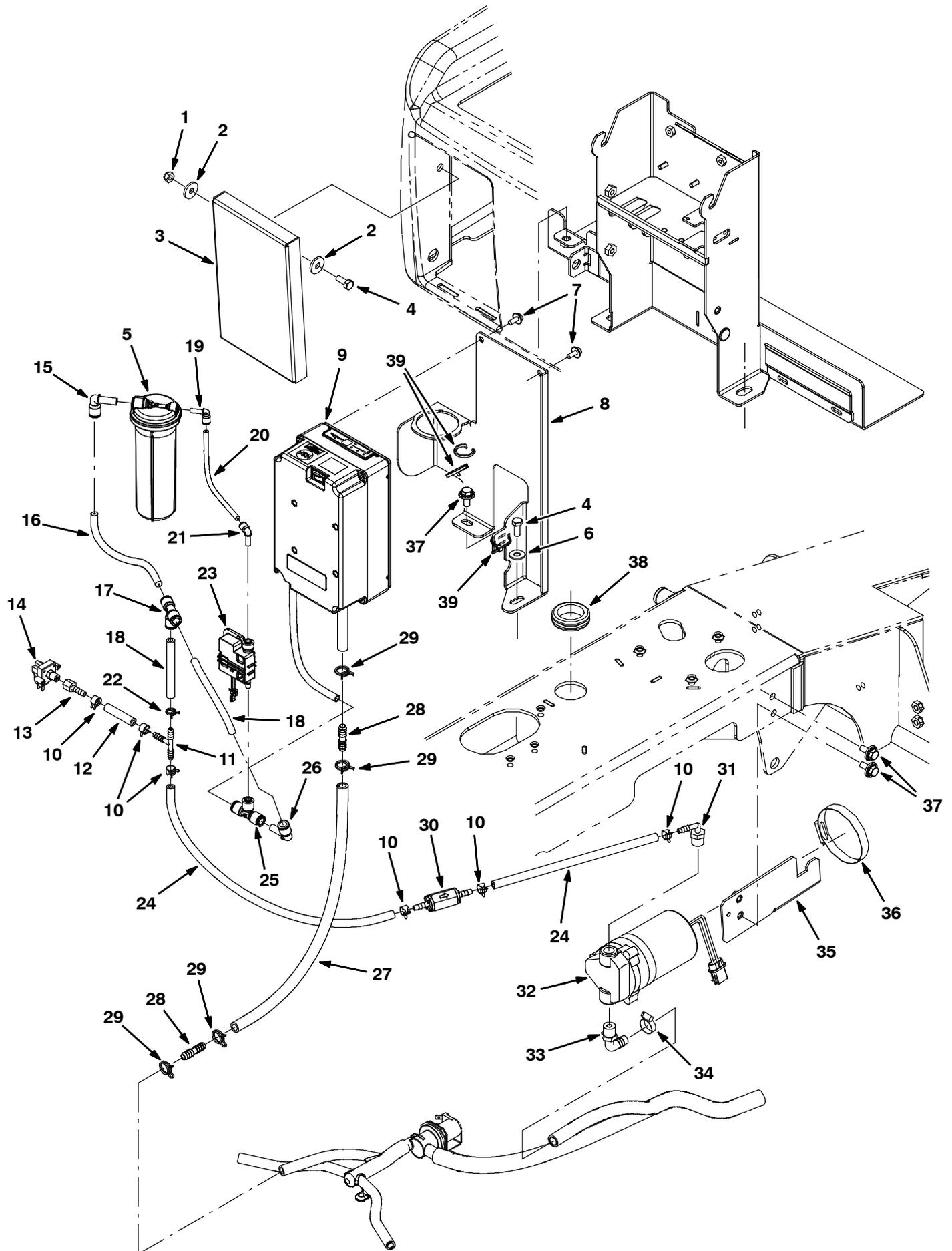
To properly position labels, align label with tick-marks in rotomold tank.



Attention, Solution Fill, ec-H₂O Label [1050003]

Fig. 46

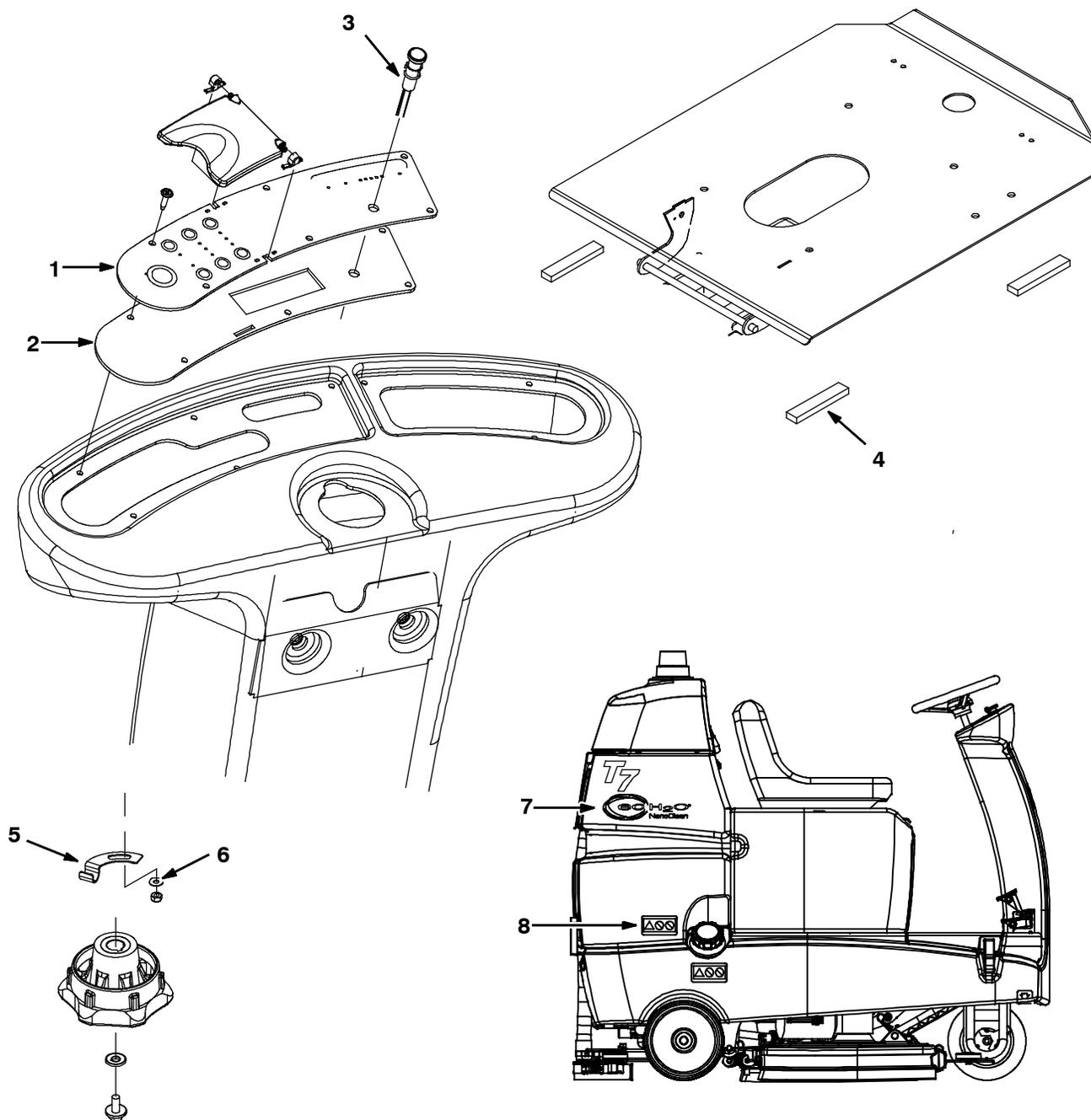
T7 ec-H2O NanoClean Affiliate Kit Parts List



T7 ec-H2O NanoClean Affiliate Kit Parts List

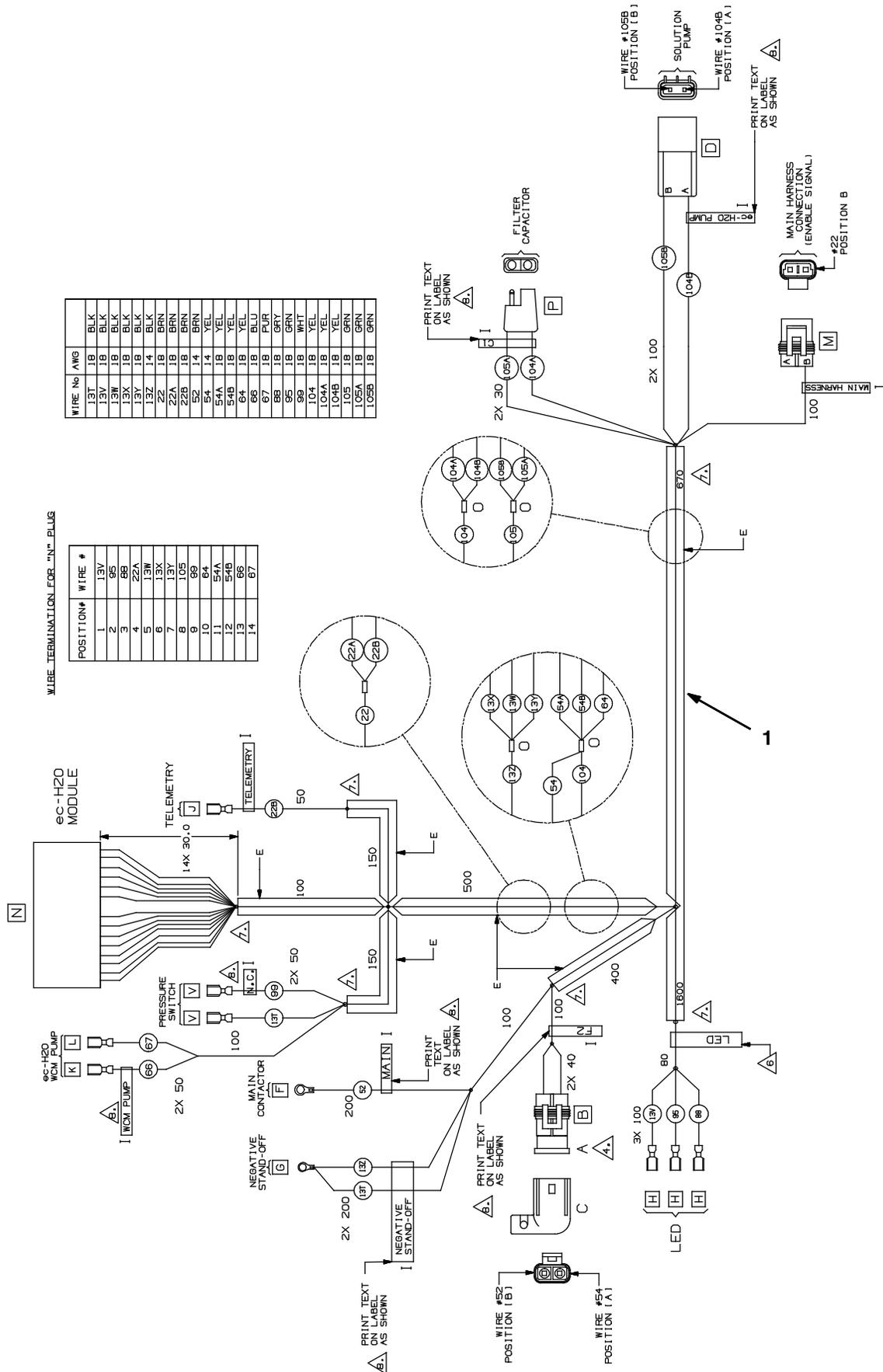
Ref.	Part No.	Description	Qty.
1	08713	Nut, Hex, Lock, M8 X 1.25, NI, Ss	2
2	1017218	Washer, Flat, 0.32b 1.00d .12, Ss	4
3	1051138	Bracket, Cover, Fast Opng [T7 Ec- H2o]	1
4	09740	Screw, Hex, M8 X 1.25 X 20, Ss	3
5	9013646	Cartridge, Ec- H2o Nanoclean Wcm, 270ml	1
6	01685	Washer, Flat, 0.38b 0.88d .08, Ss	1
7	1034731	Screw, Hex, M6 X 1.00 X 16, Ss, Sems	2
8	1216192	Bracket, Module, Ec- H2O [T7]	1
9	9011810	Module Kit, Replmt [Ec- H2o, B 02] (See Breakdowns)	1
10	603654	Clamp, Hose, Ear, .44d [Ctb]	6
11	150713	Fitting, Plstc, Tee, Bm04/Bm04/Bm04	1
12	575523000	Hose, Pvc, Brd, 0.25id 0.44od 043.5l,Clr	1
13	150520	Fitting, Brs, Str, Bm04/Pf02	1
14	1044415	Switch, Press, 20psi, Pm02	1
15	1215186	Fitting, Plstc, E90, Qf06/Qm06	1
16	9014146	Hose, Afmkt, Pvc, 0.06id .38od, 05ft	1
17	1212573	Fitting, Plstc, Tee, Qf06/Qf06/Qf06	1
18	1014987	Hose, Afmkt, Pvc, Clr, 0.25id, 01ft	1
19	1214339	Fitting, Plstc, E90, Qfo4/Qm04	1
20	9014147	Hose, Afmkt, Pvc, 0.06id .25od, 05ft	1
21	1214339	Fitting, Plstc, E90, Qfo4/Qm04	1
22	613735	Clamp, Hose, Wir, .40 - .42, Yel	1
23	1216973	Pump Assy, Dispenser	1
24	9014210	Hose, Afmkt, Pvc, Brd .25id .44od, 05ft	1
25	1212855	Fitting, Plstc, Tee, Qf04/Qf06/Qf06	1
26	1215186	Fitting, Plstc, E90, Qf06/Qm06	1
27	1006400	Hose, Afmkt, Pvc, Brd, 0.38id, 03ft, Clr	1
28	20950	Fitting, Plstc, Str, Bm06/Bm06	2
29	607775	Clamp, Hose, Wir, .63 - .66, Blk	4
30	1216879	Valve, Check, 0005psi Bm04/Bm04	1
31	150417	Fitting, Plstc, E90, Bm04/Pm06	1
32	1042495	Pump, Soltn, Ele, 24vdc, 35psi	1
33	64778	Fitting, Plstc, E90, Bm08/Pm06	1
34	54333	Clamp, Hose, Wormdrive, 0.31- 0.88d, .31w	1
35	1014617	Bracket, Pump, Soltn	1
36	43555	Clamp, Hose, Wormdrive, 2.50- 3.50d, .50w	1
37	1020341	Screw, Hex, M8 X 1.25 X 20, Ss, Sems	3
38	10632- 13	Grommet, Rbr, 1.50id, F/1.8h, .19 Matl	1
39	130773	Tie, Cable, Nyl, 11.0l, .14w, 3.0 Max. D	3

T7 ec-H2O NanoClean Affiliate Kit Parts List



Ref.	Part No.	Description	Qty.
1	1050592	Panel, Instmt, Lh [Ec- H2o]	1
2	1052607	Gasket, Panl, Instmt, Lh, .13, Foam, Adh	1
3	1041822	Light, Led, .312d, 2 Volt [Tri- Color] (ec-H2O Model)	1
4	1046428	Seal, Afmkt, Rbr, Clsd, Adh, 02ft (ec-H2O Model)	1
5	1052298	Bracket, Support, Hose [T7] (ec-H2O Model)	2
6	01684	Washer, Flat, 0.27b 0.69d .05, Ss (ec-H2O Model)	2
7	1216520	Label, Logo [Ech2o Nano]	2
8	1050003	Label [User, Attention, Ec- H2o]	1

T7 ec-H2O NanoClean Wire Harness



WIRE No.	AWG
13T	18
13W	18
13X	18
13Y	18
13Z	18
13A	18
13B	18
13C	18
13D	18
13E	18
13F	18
13G	18
13H	18
13I	18
13J	18
13K	18
13L	18
13M	18
13N	18
13O	18
13P	18
13Q	18
13R	18
13S	18
13T	18
13U	18
13V	18
13W	18
13X	18
13Y	18
13Z	18
22A	18
22B	18
22C	18
22D	18
22E	18
22F	18
22G	18
22H	18
22I	18
22J	18
22K	18
22L	18
22M	18
22N	18
22O	18
22P	18
22Q	18
22R	18
22S	18
22T	18
22U	18
22V	18
22W	18
22X	18
22Y	18
22Z	18
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54E	18
54F	18
54G	18
54H	18
54I	18
54J	18
54K	18
54L	18
54M	18
54N	18
54O	18
54P	18
54Q	18
54R	18
54S	18
54T	18
54U	18
54V	18
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54Y	18
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64G	18
64H	18
64I	18
64J	18
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64M	18
64N	18
64O	18
64P	18
64Q	18
64R	18
64S	18
64T	18
64U	18
64V	18
64W	18
64X	18
64Y	18
64Z	18
67	18
67A	18
67B	18
67C	18
67D	18
67E	18
67F	18
67G	18
67H	18
67I	18
67J	18
67K	18
67L	18
67M	18
67N	18
67O	18
67P	18
67Q	18
67R	18
67S	18
67T	18
67U	18
67V	18
67W	18
67X	18
67Y	18
67Z	18
68	18
68A	18
68B	18
68C	18
68D	18
68E	18
68F	18
68G	18
68H	18
68I	18
68J	18
68K	18
68L	18
68M	18
68N	18
68O	18
68P	18
68Q	18
68R	18
68S	18
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68V	18
68W	18
68X	18
68Y	18
68Z	18
69	18
69A	18
69B	18
69C	18
69D	18
69E	18
69F	18
69G	18
69H	18
69I	18
69J	18
69K	18
69L	18
69M	18
69N	18
69O	18
69P	18
69Q	18
69R	18
69S	18
69T	18
69U	18
69V	18
69W	18
69X	18
69Y	18
69Z	18
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104F	18
104G	18
104H	18
104I	18
104J	18
104K	18
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104Q	18
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104X	18
104Y	18
104Z	18
105A	18
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105I	18
105J	18
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105S	18
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105V	18
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105X	18
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105Z	18
109A	18
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109S	18
109T	18
109U	18
109V	18
109W	18
109X	18
109Y	18
109Z	18

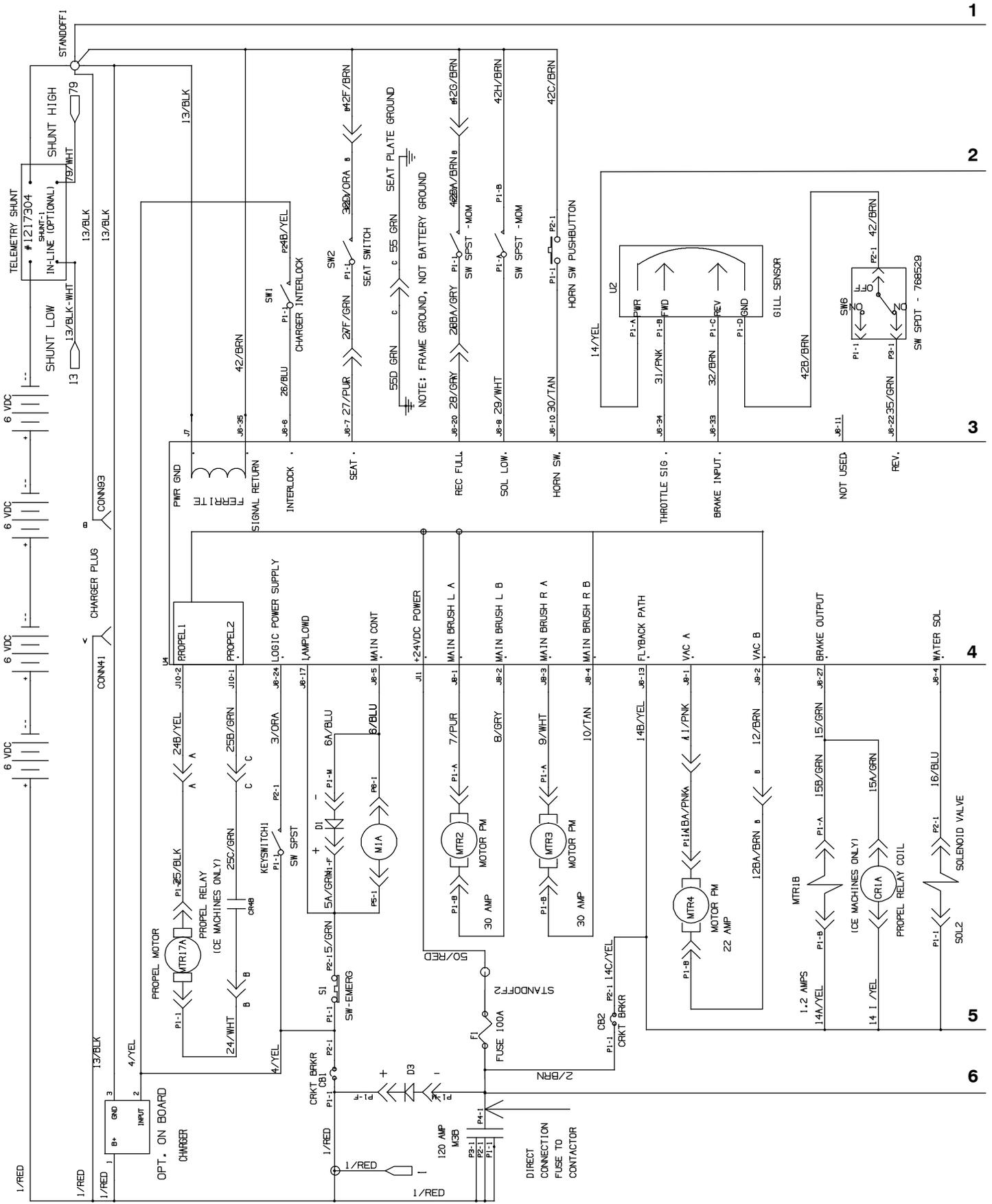
WIRE_TERMINATION FOR "N" PLUG

POSITION#	WIRE #
1	13V
2	65
3	66
4	22A
5	13W
6	13X
7	13Y
8	105
9	99
10	64
11	54A
12	54B
13	68
14	67

Ref.	Part No.	Description
1	1074374	Harness Assy, Wire [T7 Ec- H2o G2]

Qty.
1

T7 ELECTRICAL DIAGRAM



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T7 ELECTRICAL DIAGRAM

