



T350 ec-H2O NanoClean® & Severe Environment™ Affiliate Kit



This kit includes the necessary parts to add ec-H2O NanoClean and Severe Environment technology to a standard model. Kit installation is intended for affiliate distributors only.

INSTALLATION INSTRUCTIONS:

Installation Time: 2.5 Hours

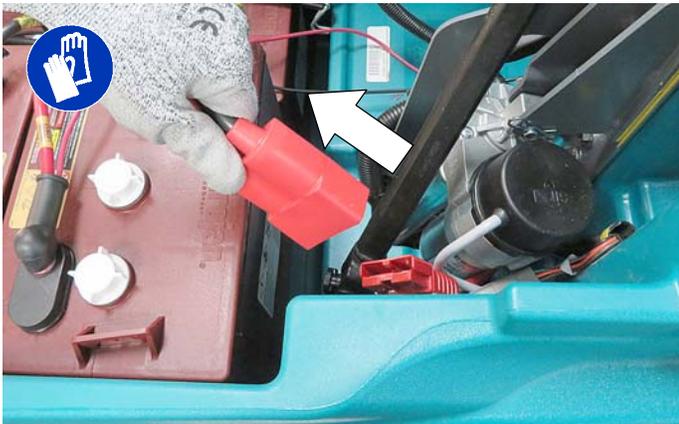
Kit Installation Requirements: Tennant Service Application Software and USB cable.

Special Tools Required: None.

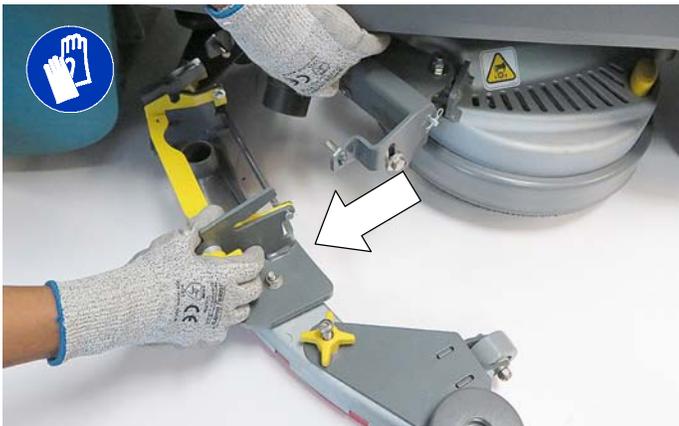
PREPARE MACHINE FOR KIT INSTALL:

1. Drain the solution and recovery tanks.
2. Park the machine on a level surface and remove the key.
3. Lift the recovery tank and disconnect the battery connector from the machine.

FOR SAFETY: Before servicing machine, stop on level surface, remove key and disconnect battery connection



4. Remove the squeegee assembly from the machine.

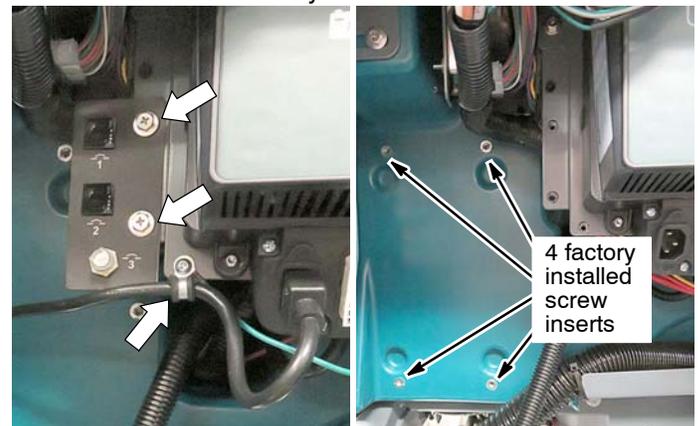


INSTALL THE ec-H2O MODULE/PUMP ASSEMBLY:

1. Using four M6 x 1.00 x16 sems hex screws [1034731], attach the pre-assembled ec-H2O module/pump assembly to machine as described below.



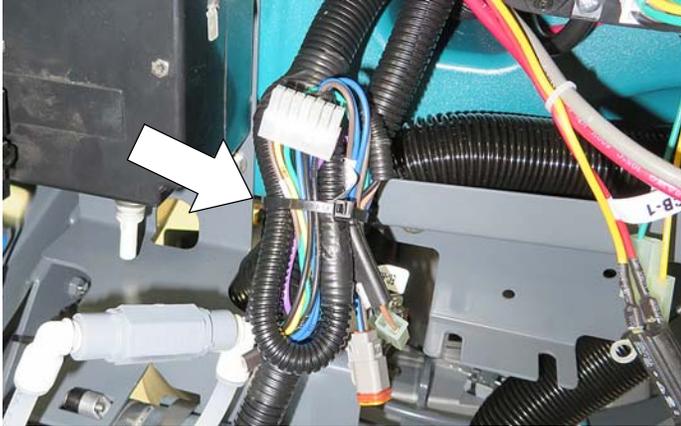
2. Open the rear door to access the area where the module/pump assembly will be installed. To allow clearance for installation, disconnect the circuit breaker panel and the charger cord clamp as shown. Locate the four factory installed screw inserts.



3. Attach the module/pump assembly to the machine as shown.



- 4. Locate the factory installed ec-H2O harness connectors wire-tied to the machine's main wire harness. Cut cable-tie to free up harness connectors.



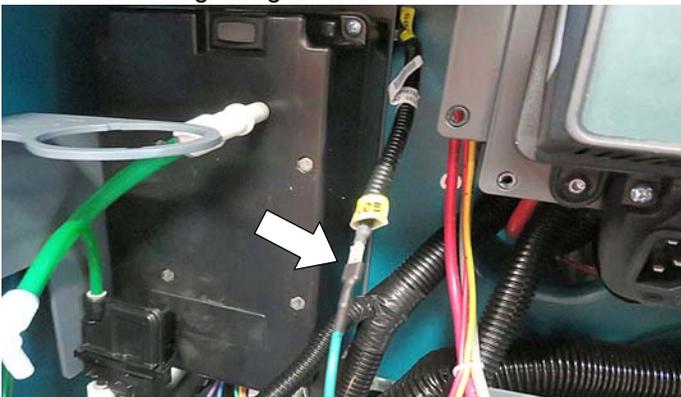
- 5. Connect the large white harness connector to the ec-H2O module as shown.



- 6. Connect the blue and purple wires to the water conditioning module as shown.



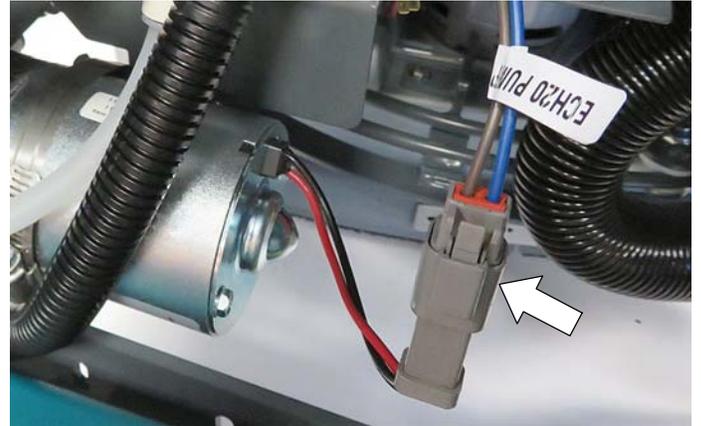
- 7. Connect the green ground wire to the ec-H2O module.



- 8. Plug the capacitor [1040868] into the capacitor wire connector as shown.



- 9. Connect the pump connector to the ec-H2O pump



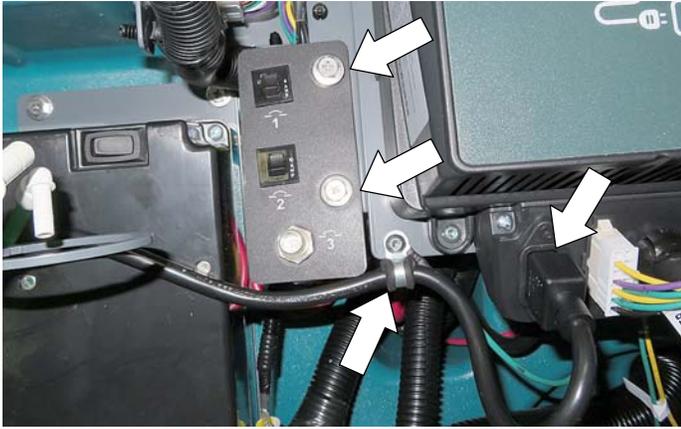
- 10. Connect the pressure switch harness connector to the pressure switch as shown.



- 11. Secure the wire connections with wire-tie as shown.

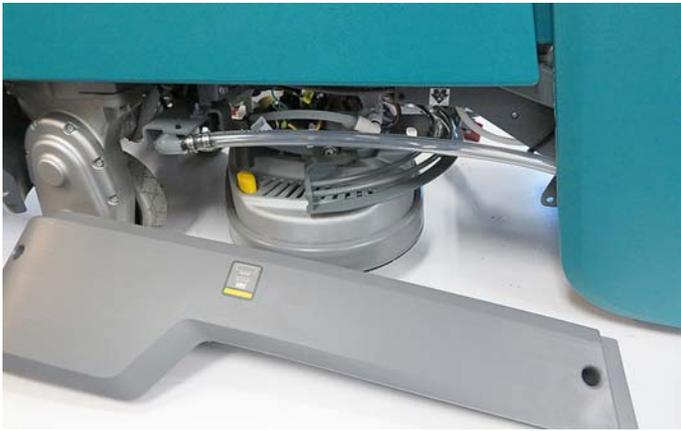


12. Reconnect the circuit breaker panel and charger cord clamp. Replug the cord into the charger.

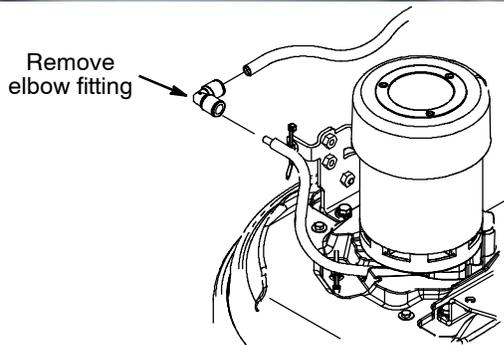
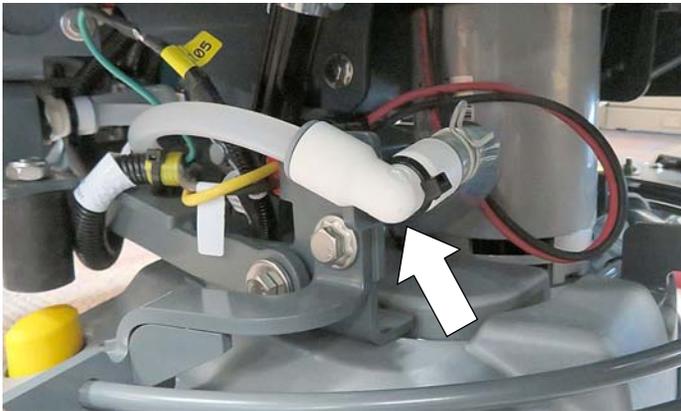


INSTALL THE ec-H2O NanoClean SOLUTION HOSE SYSTEM:

1. Remove the lower panel from left side of machine.



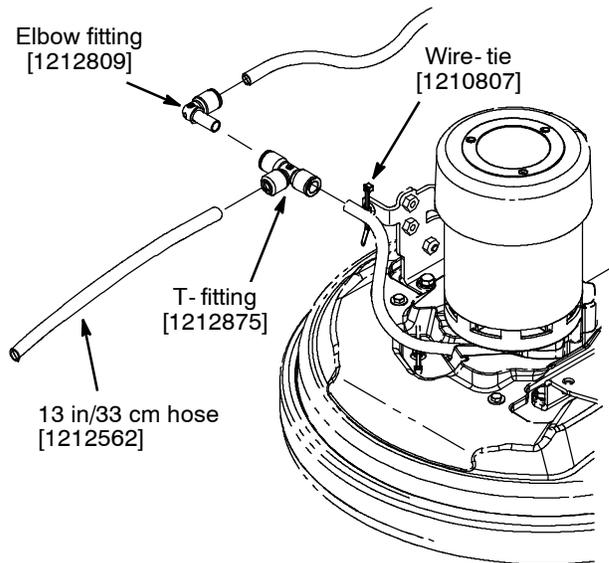
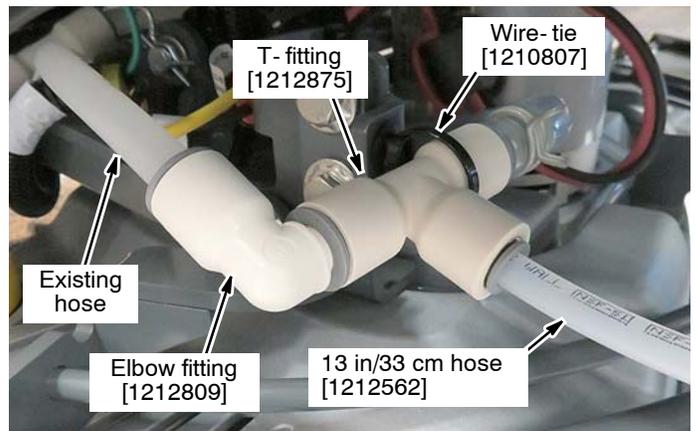
2. Cut the wire-tie from elbow fitting shown and remove elbow fitting.



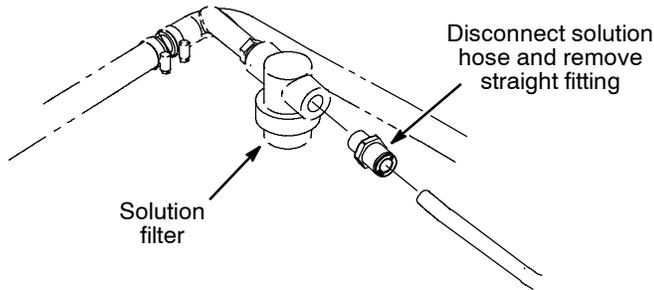
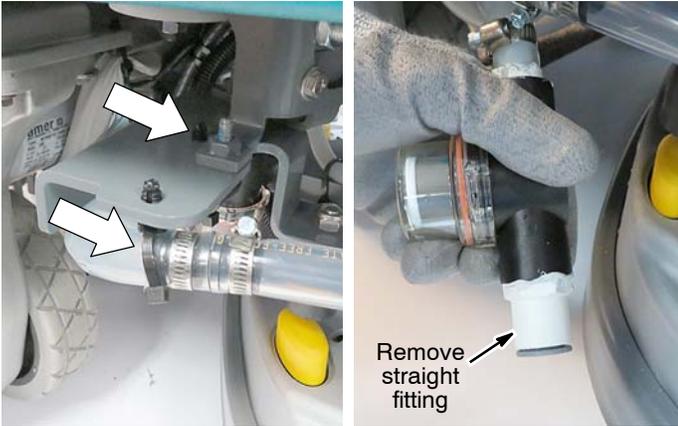
3. Install new wire-tie [1210807] into existing tree clip.



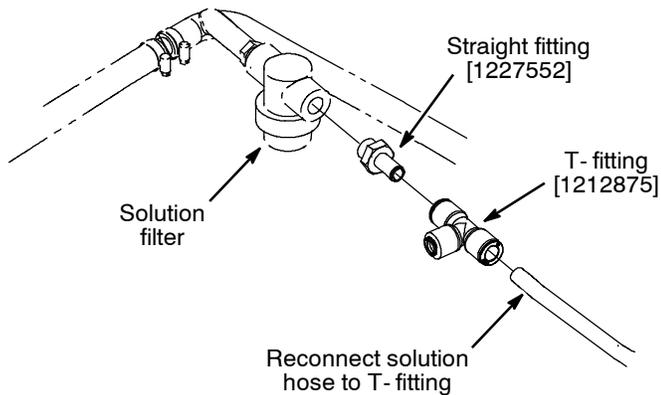
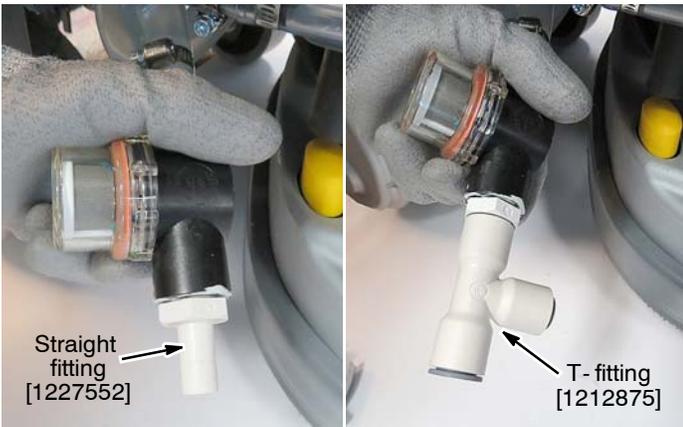
4. Install T-fitting [1212875], elbow fitting [1212809] and the 13 in/33 cm length solution hose [1212562] as shown. Secure the T-fitting with wire-tie [1210807].



5. Cut the two wire-ties from the solution tank filter and remove the straight fitting as shown.



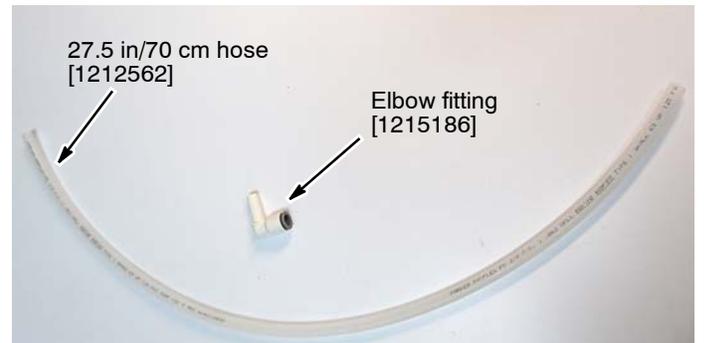
6. Install straight fitting [1227552] and T-fitting [1212875] to the solution filter as shown. Use a thread sealer on the straight fitting. Then reconnect the solution hose into T-fitting as shown.



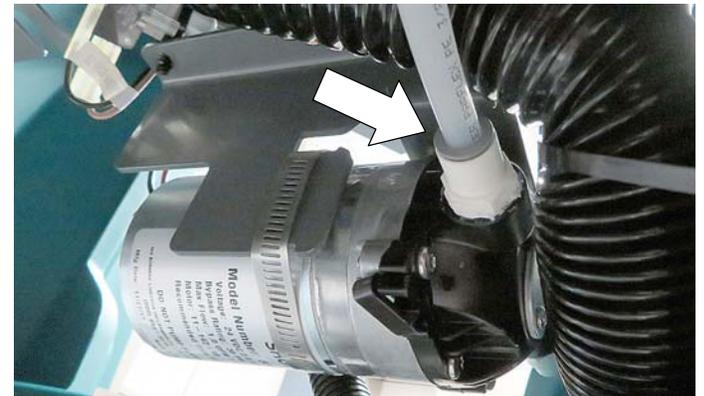
7. Using two wire-ties [1210807], reconnect the solution filter to the machine frame.



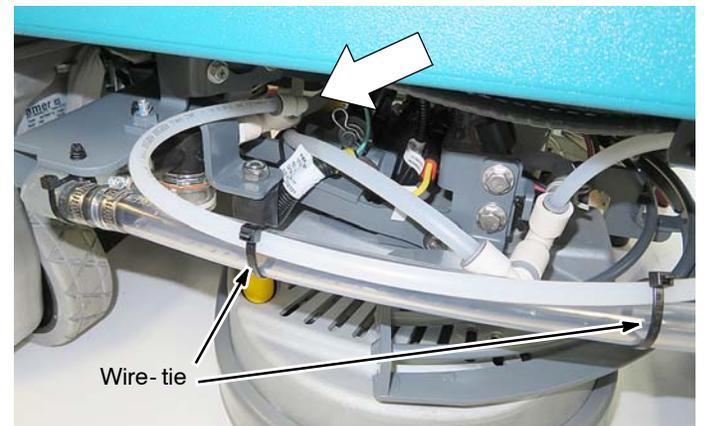
8. Connect elbow fitting [1215186] to the 27.5 in/70 cm length hose [1212562].



9. Connect the hose assembly into the ec-H2O pump as shown.

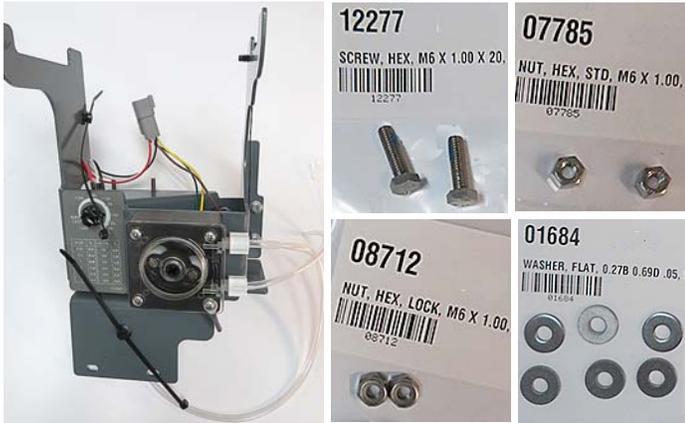


10. Connect the opposite side of the hose assembly into the T-fitting near the solution filter. Wire-tie hose as shown.

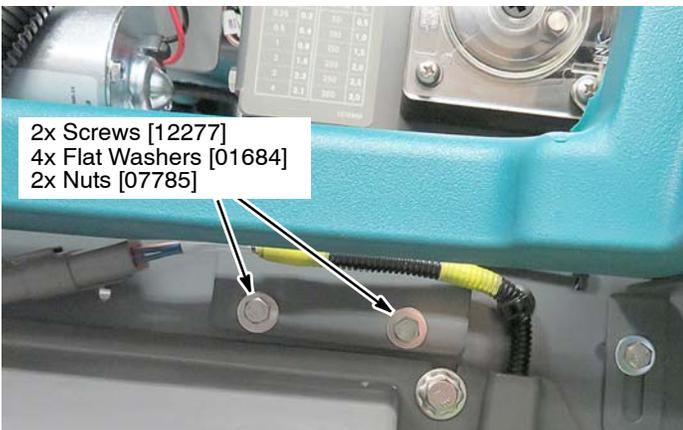
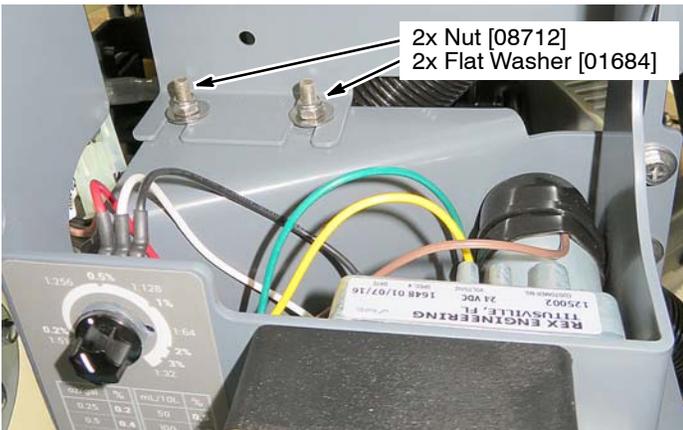
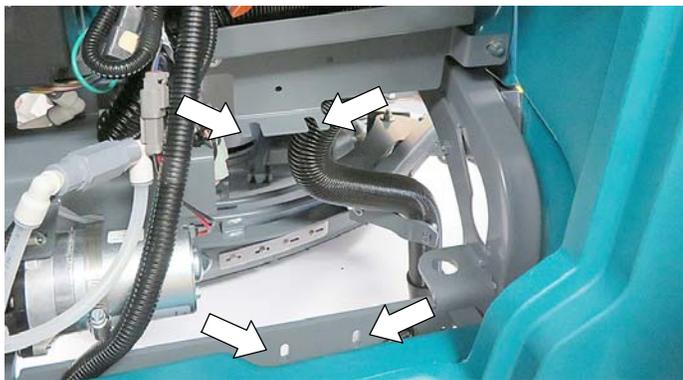


INSTALL THE SEVERE ENVIRONMENT (SE) DETERGENT DISPENSER ASSEMBLY:

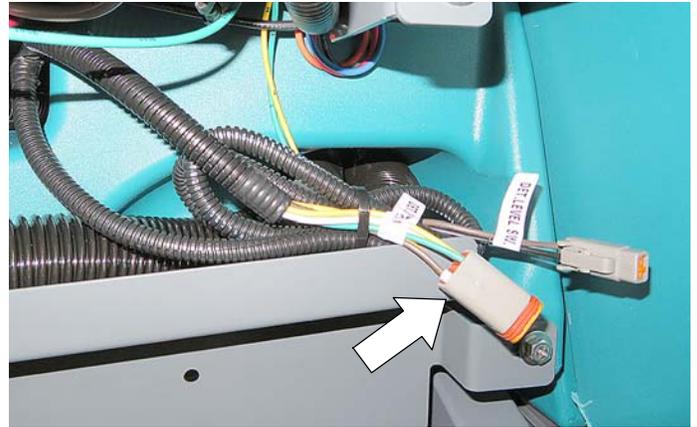
1. Using hardware shown, attach the pre-assembled severe environment detergent dispenser assembly to the machine as described below.



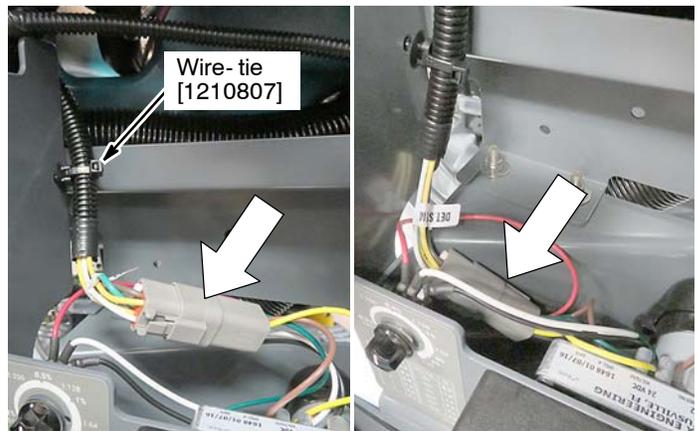
2. Attach the dispenser assembly to machine as shown.



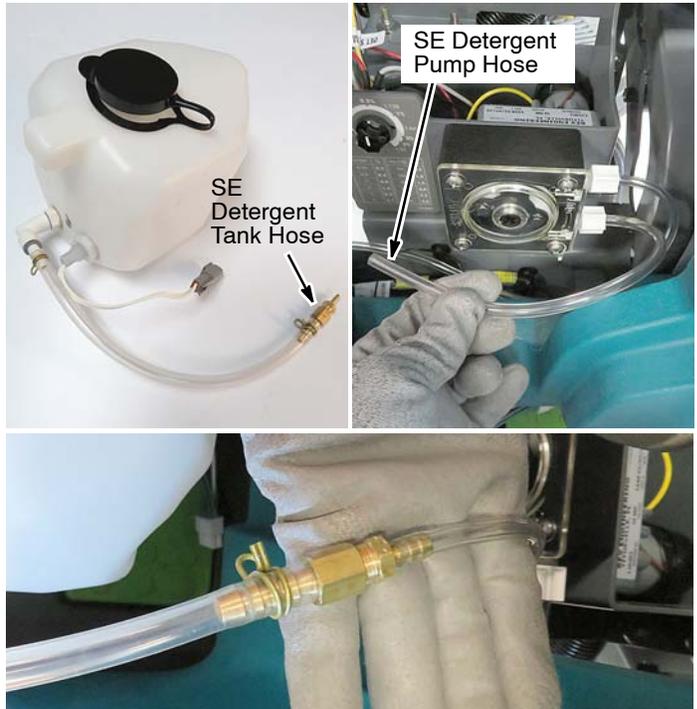
3. Locate the factory installed Severe Environment wire harness connectors stored above the SE dispenser assembly. Cut wire-tie from harnesses.



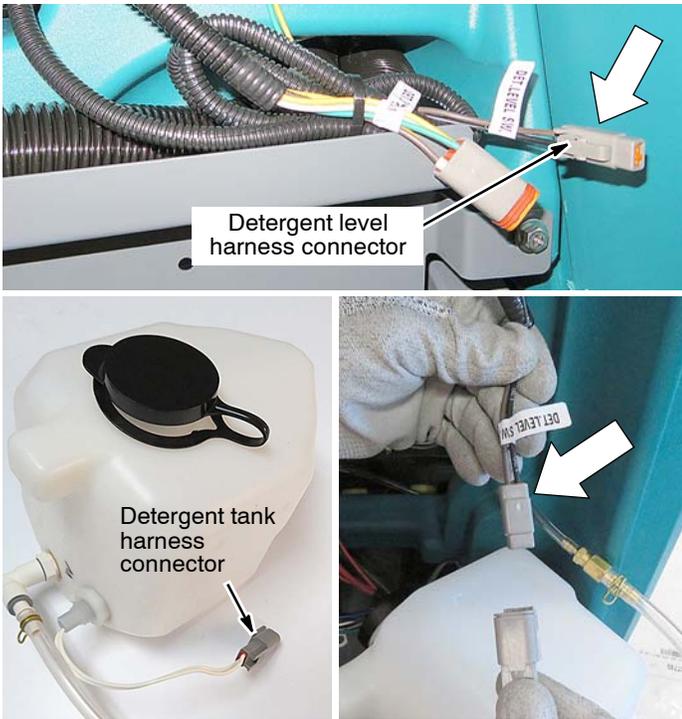
4. Connect the larger harness connector to the dispenser assembly. Secure harness with wire-tie [1210807] as shown. Store the wire connection down near the SE pump as shown.



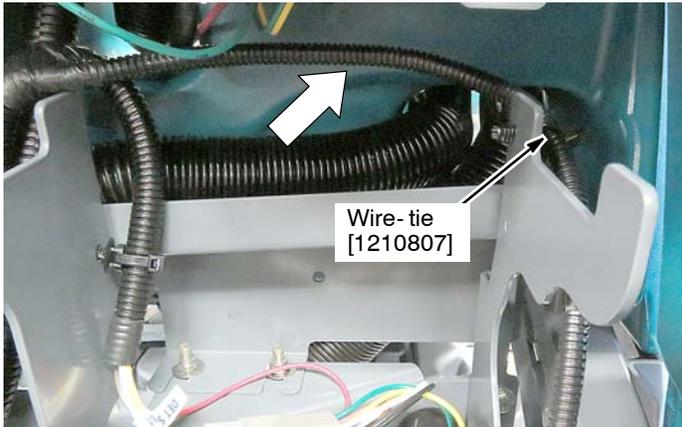
5. Connect the detergent tank hose into the shorter detergent pump hose as shown.



6. Locate the factory installed detergent level harness connector and connect it to the detergent tank harness connector.



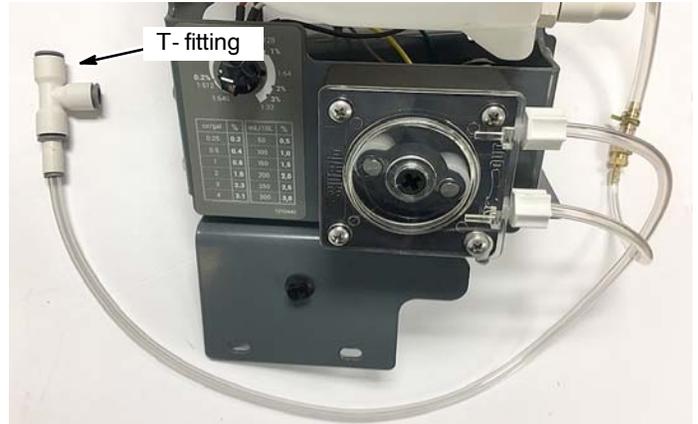
7. Route the detergent tank harness as shown and secure with wire-tie [1210807].



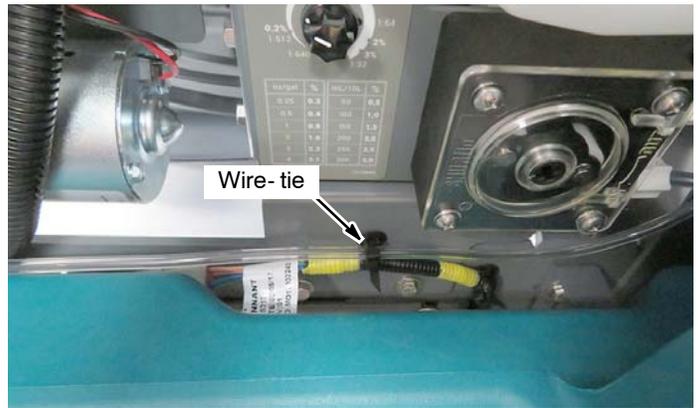
8. Hang the SE detergent tank on the SE assembly bracket as shown. Adhere label [1224989] to tank cap.



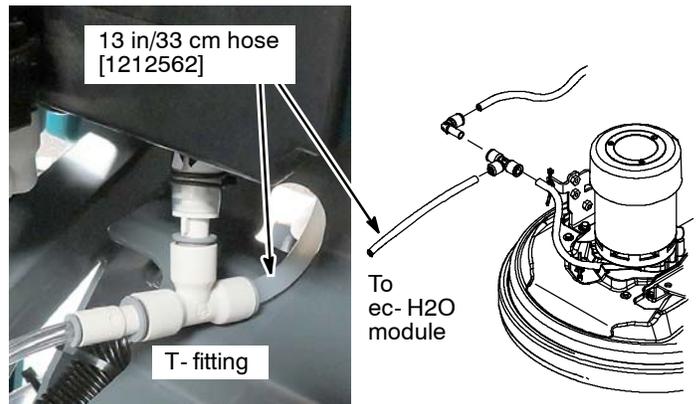
9. Connect the hose with T-fitting to the ec- H2O module as shown.



10. Route the detergent hose as shown and secure with wire-tie.



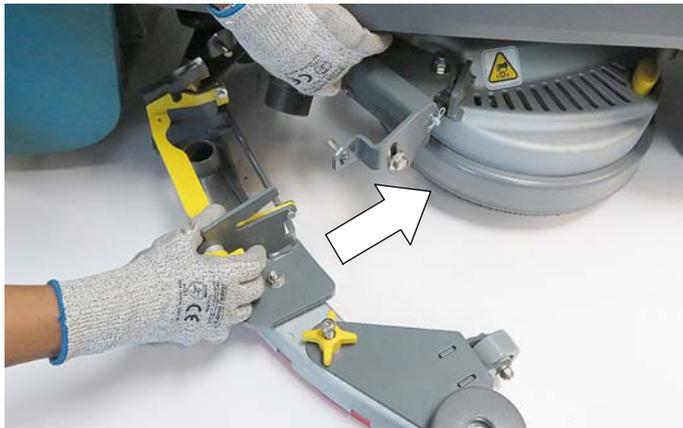
11. Connect the 13 in/33 cm length hose to the T-fitting on the ec- H2O module as shown.



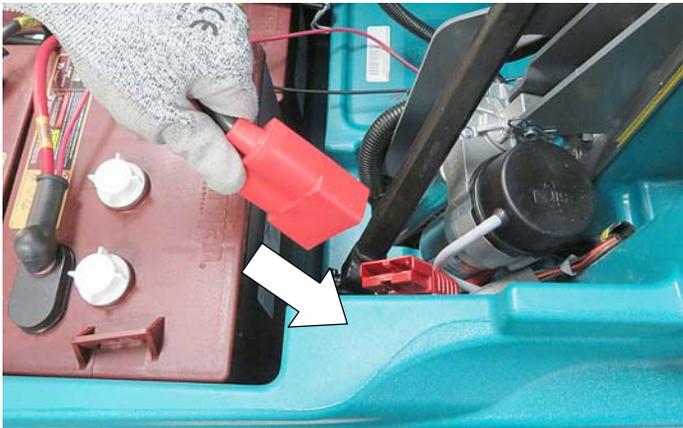
12. Re-install the side panel on the machine.



13. Re-install the squeegee assembly.

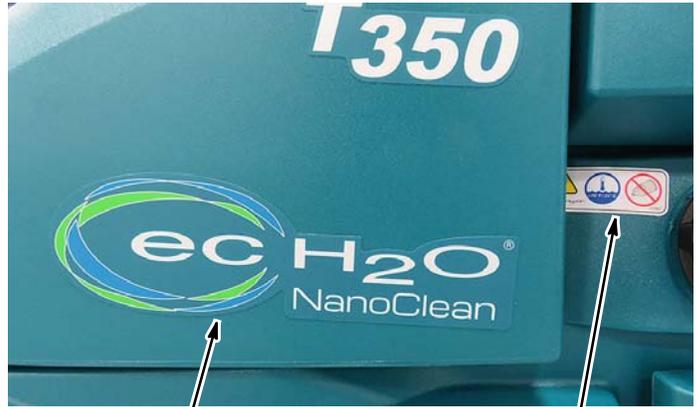


14. Reconnect the battery cable connector.



ADHERE THE ec-H2O NanoClean LABELS ON THE MACHINE

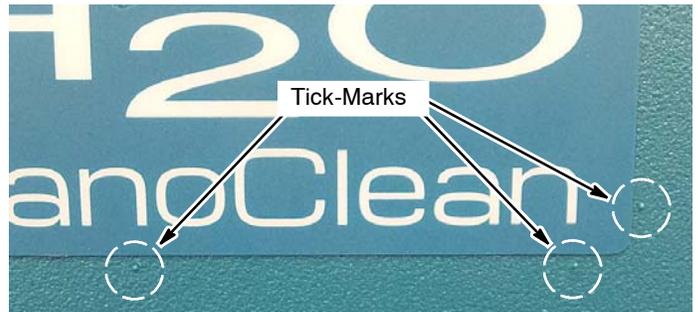
Position the new ec-H2O NanoClean labels on machine as described below.



ec-H2O NanoClean Label [1216520] Qty 2

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

To properly position the ec- H2O NanoClean labels, align label with tick-marks in rotomold tank.



RECONFIGURE THE MACHINE’S CONTROL BOARD TO ADD ec-H2O NanoClean AND SEVERE ENVIRONMENT TECHNOLOGY:

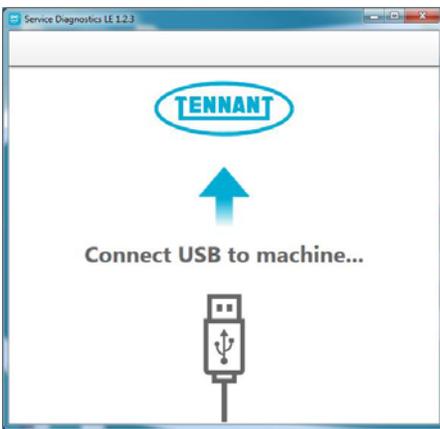
Tennant Service Application Software is required to reconfigure the machine’s control board.

NOTE: If the Service Application Software is currently installed on your computer, confirm or re-install the software to ensure latest software version is installed.

Icon on Desktop



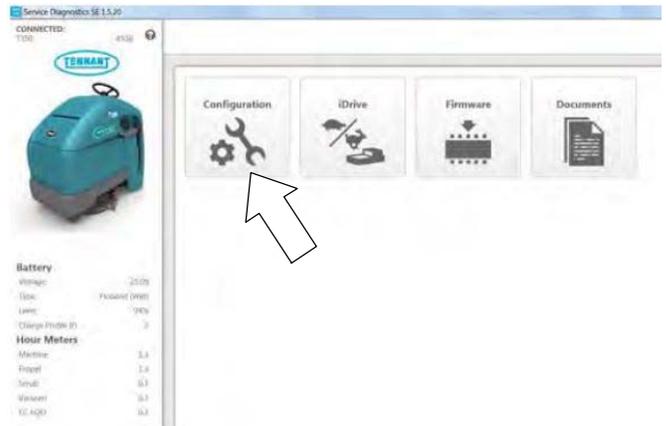
1. Start the Service Software Application program. After start up, the following screen will appear.



2. Connect the USB cable to the USB port on the machine as shown. Turn the key switch to the on position.

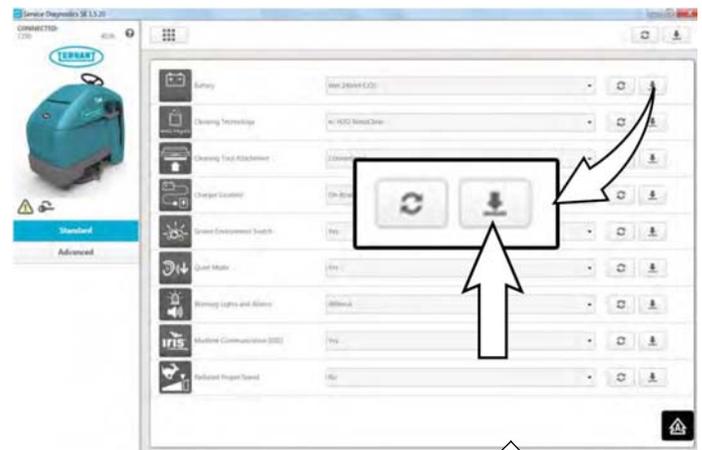


3. From the Home screen, select the “Configuration” button.



4. Change the Cleaning Technology to “**ec-H2O NanoClean**” from the pull-down menu . Then press the down arrow button to program the machine. A green check will appear next to the down arrow button when programmed.

Change the Severe Environment Switch to “**Yes**” from the pull-down menu . Then press the down arrow button to program the machine. A green check will appear next to the down arrow button when programmed.



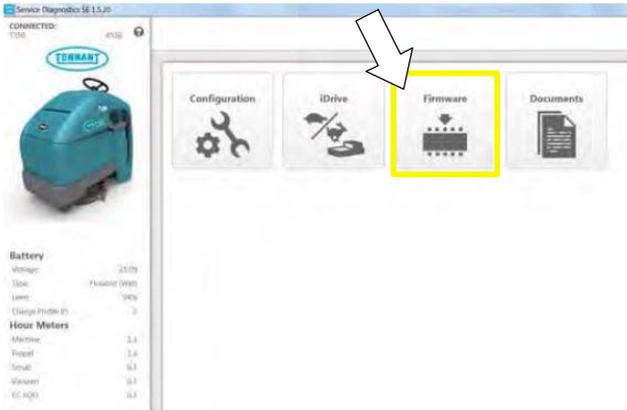
5. Cycle the key to apply the new machine configuration. Disconnect the USB cable.

FIRMWARE VERSION UPDATE:

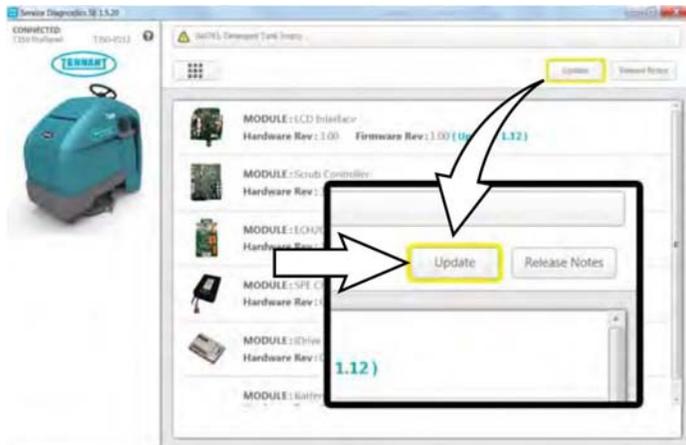
To ensure the machine is equipped with latest FIRMWARE VERSION, perform the following procedure.

NOTE: If the Service Application Software is currently installed on your computer, confirm or re-install the software to ensure latest software version is installed.

1. Start the Service Software Application program and connect the USB cable to the USB port on machine.
2. If firmware updates are required, the "Firmware" button on the home screen will be highlighted in yellow as shown. Press the button to update the machine's firmware.



Continue with the firmware update by pressing the yellow "Update" button as shown.



3. Cycle the key to apply the new firmware updates. Disconnect the USB cable.

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, offered 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.



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 LEDs on the ec- H2O module ripple left to right and then turn off, followed by displaying the current flow rate setting.



4. The ec- H2O system will automatically turn on at key start up. The ec-H2O button will appear on the control panel as shown below. To turn off the ec- H2O system, press the ec- H2O button.

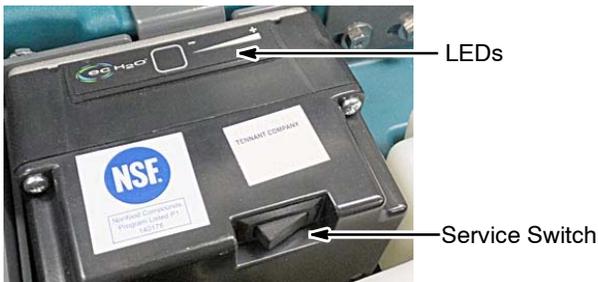


Pro- Panel Model

Pro- Membrane Model

- Operate the ec-H2O module in the Manual Mode to verify that the ec-H2O system is putting water on the floor at the scrub head and at the By-Pass Tool hose.

NOTE: To enter the module's Manual Mode, depress and hold the service switch for 20 seconds and release. 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.



- Check all ec-H2O system hose connections for water leaks.
- 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.
- 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 THE ec-H2O NanoClean WATER CONDITIONING CARTRIDGE:

- 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.
- Fill in the installation date on the Water Conditioning Cartridge label.



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



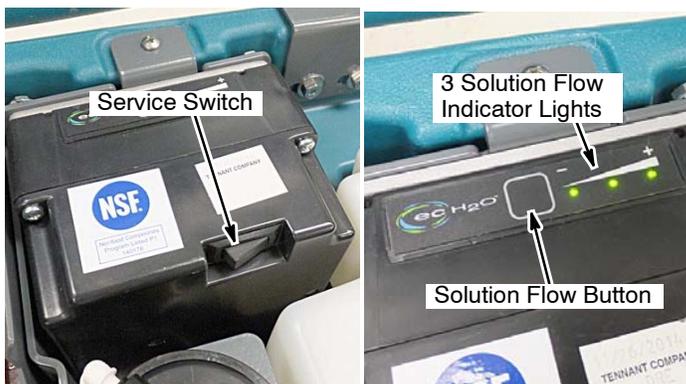
Set Timer for Water Conditioning Cartridge:

Carefully read and understand the following steps before performing procedure.

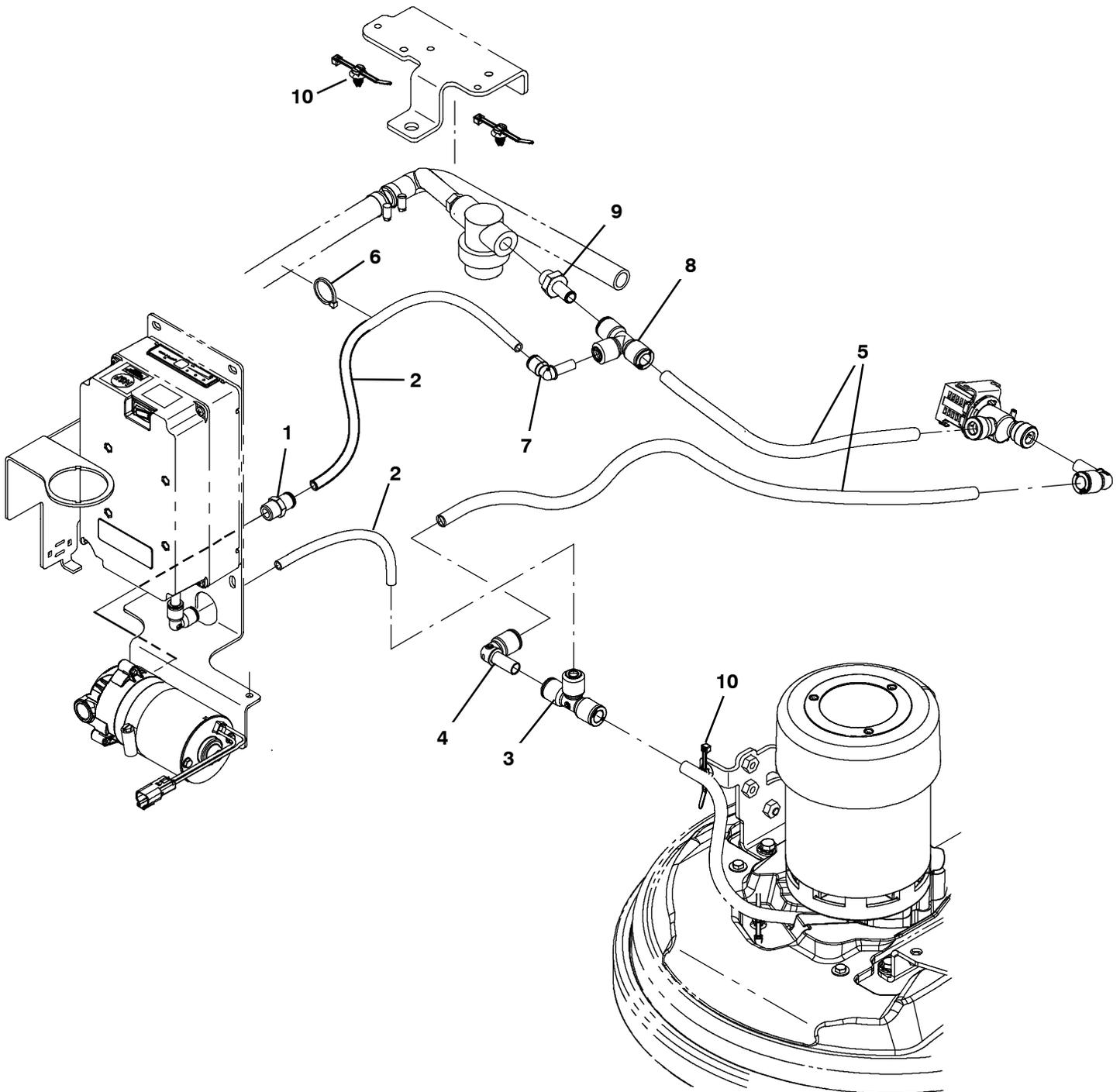
- Turn key to the on position.
- Press and hold the service switch on the module for 10 seconds. After releasing the service switch, the three solution flow indicator lights will begin to (ripple) move back and forth.

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.

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

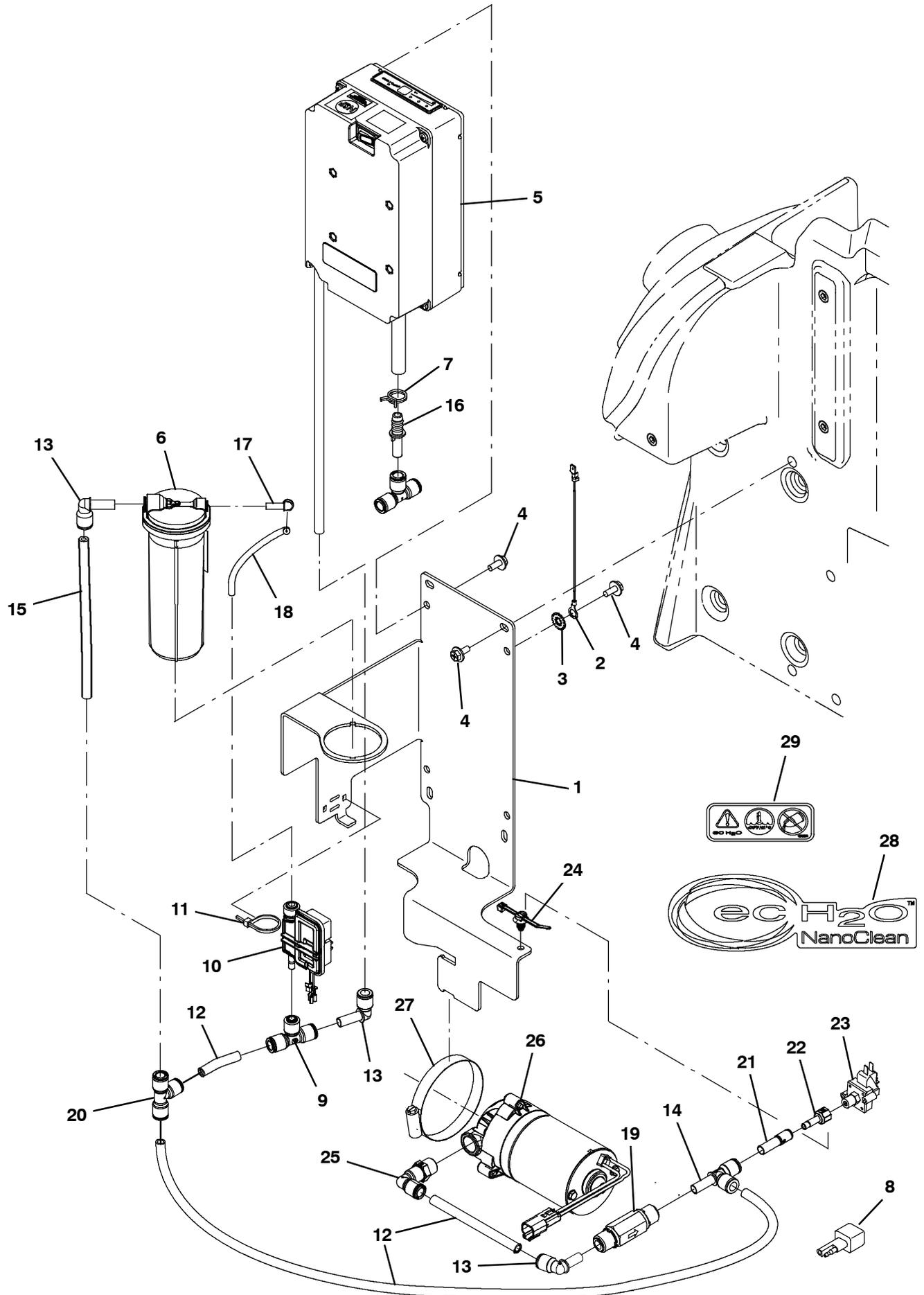


T350 ec-H2O NanoClean Solution Supply Group



Ref.	Part No.	Description	Qty.
1	1231160	Fitting, Plstc, Str, Qf06/Pm06	1
2	9014148	Hose, Afmkt, Nat, 0.25Id 0.375Od, 06Ft (included in kit, 1212562 - 13 in & 27.5 in)	1
3	1212875	Fitting, Plstc, Tee, Qf06/Qf08/Qf08	1
4	1212809	Fitting, Plstc, E90, Qf08/Qm08	1
5	9014145	Hose, Afmkt, Pe, .375Id .50Od, 05Ft	1
6	49263	Tie, Cable, Nyl, 11.4l .19w 3.0 Max D	3
7	1215186	Fitting, Plstc, E90, Qf06/Qm06	1
8	1212875	Fitting, Plstc, Tee, Qf06/Qf08/Qf08	1
9	1227552	Fitting, Plstc, Str, Qm08/Pm06	1
10	1210807	Wire, Tie [W/.25" Fir Tree Clip]	3

T350 ec-H2O NanoClean Module/Pump Group



T350 ec-H2O NanoClean Module/Pump Group

Ref.	Part No.	Description	Qty.
1	1231135	Plate, Mtg, Ech2o	1
2	1074344	Harness, Ele [Ring With .250m Tail]	1
3	41140	Washer, Lock, Int- Ext, 0.25	1
4	1034731	Screw, Hex, M6 X 1.00 X 16, Sems, Ss	8
5	9011810	Module Kit, Replmt [Ec- H2o, B 02] (includes item 6)	1
6	1215274	Cartridge, Ec- H2o Nanoclean Wcm, 270ml (aftermarket replacement p/n 9013646)	1
7	607775	Clamp, Hose, Wir, .63 - .66, Blk	1
8	1040868	Capacitor, Plug [.01 Uf, 200v]	1
9	1212855	Fitting, Plstc, Tee, Qf04/Qf06/Qf06	1
10	1216973	Pump Assy, Dispenser	1
11	130773	Tie, Cable, Nyl, 11.0l, .14w, 3.0 Max. D	1
12	9014148	Hose, Afrmkt, Nat, 0.25id 0.375od, 06ft	1
13	1215186	Fitting, Plstc, E90, Qf06/Qm06	3
14	1224323	Fitting, Plstc, Tee, Qf06/Qf06/Qm06	1
15	9014212	Hose, Afrmkt, Pvc, Grn 0.06id .38od, 02ft	1
16	1223948	Fitting, Plstc, Str, Qm06/Bm06	1
17	1214339	Fitting, Plstc, E90, Qfo4/Qm04	1
18	9014211	Hose, Afrmkt, Pvc, Grn .06id .25od, 02ft	1
19	1215527	Valve, Check, 1.0 Psi Qf06/Qf06	1
20	1212573	Fitting, Plstc, Tee, Qf06/Qf06/Qf06	1
21	1212934	Fitting, Plstc, Str, Qf04/Qm06	1
22	1231855	Fitting, Plstc, Str, Qm04/Pf02	1
23	1044335	Switch, Press, 6psi, Pm02	1
24	1210807	Wire, Tie [W/.25" Fir Tree Clip]	1
25	1212812	Fitting, Plstc, E90, Qf06/Pm06, Swivel	1
26	1210517	Pump, Soltn, Ele, 24vdc, 35 Psi	1
27	43555	Clamp, Hose, Wormdrive, 2.62- 3.50d	1
28	1216520	Label, Logo [ec- H2O NanoClean Tennant]	2
29	1050003	Label, User, Attention, Ec- H2o	1

T350 Severe Environment Detergent Dispenser Group

Ref.	Part No.	Description	Qty.
1	1230864	Bracket Wldt, Sevr Env	1
2	1230470	Bracket, Sevr Env	1
3	1034731	Screw, Hex, M6 X 1.00 X 16, Sems, Ss	4
4	1210807	Wire, Tie [W/.25" Fir Tree Clip]	3
5	1210440	Label, Opertnl, Detergent Metering	1
6	1215698	Pump Assy, Detgt, 24 Vdc [T300]	1
8	609980	Screw, Trs, Phl, 08- 32 X 0.38, Sems	4
7	1211775	Potentiometer [5k, W/Leads and Conn.]	1
9	17185	Screw, Pan, Phl, M5 X 0.80 X 40, Ss	2
10	630265	Knob, Rnd, 0.75d 0.50l 0.25b, Plstc	1
11	1217453	Tank [2.5 Liter]	1
12	1212430	Sensor, Level, Liq, 30watt, Spst	1
13	1212812	Fitting, Plstc, E90, Qf06/Pm06, Swivel	1
14	1057372	Cap, Snap, 2.17d	1
15	1224989	Label, Detergent Metering Tank	1
16	150520	Fitting, Brs, Str, Bm04/Pf02	1
17	150524	Fitting, Brs, Str, Bm02/Pm02	1
18	1235746	Hose, Afrmkt, Pvc, Clr 0.12ld 03Ft	1
19	1212934	Fitting, Plstc, Str, Qf04/Qm06	1
20	1212573	Fitting, Plstc, Tee, Qf06/Qf06/Qf06	1
21	08712	Nut, Hex, Lock, M6 X 1.00, NI, Ss	2
22	01684	Washer, Flat, 0.27b 0.69d .05, Ss	6
23	12277	Screw, Hex, M6 X 1.00 X 20, NI, Ss	2
24	07785	Nut, Hex, Std, M6 X 1.00, Ss	2
25	1212857	Fitting, Plstc, Str, Qm06/Bm04	1
26	613735	Clamp, hose, Wir, .40- .42, Yel	2
27	1014986	Hose, Afrmkt, Pvc, Clr, 0.25id, 02ft	1
28	605064	Cap, Vinyl, 1.38 D 1.6L	1