

## **INSTRUCTION BULLETIN**

No. DM20043 Machine: os3 Published: 03-2019 Rev. 08

### 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 AT20024 / AT20026

#### SYNOPSIS:

This kit contains the parts needed to install the os3 Cleaning Solution Generator. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: Ambient temperature must be between 50-110° F (10-43° C) in area where os3 is installed.

Site survey <u>must</u> be completed and available before installing the os3 Cleaning Solution Generator. The site survey contains additional information pertaining to the installation at that particular location. <u>Always</u> consult the site survey <u>before</u> beginning installation.

#### Have os3 service bag on hand prior to beginning the os3 install.

Refer to schematic on the last page of this document for system level plumbing reference.

(Estimated time to complete: 3 hours)



### PROTECT THE ENVIRONMENT

Please dispose of packaging materials, used machine components such as batteries and fluids in an environmentally safe way according to local waste disposal regulations.

Always remember to recycle.

*North America Installs:* Account number for labor charges related to installing the os3 Cleaning Solution Generator: **63012.** Authorizing Name: **Orbio** 

*Europe (CE) Installs:* Account number for labor charges related to installing the os3 Cleaning Solution Generator: **609040.** Authorizing Name: **Orbio** 

# os3 CLEANING SOLUTION GENERATOR INSTALLATION:

#### GENERAL INSTALLATION NOTES: (Please Read <u>Before</u> Beginning os3 Cleaning Solution Generator Installation)

When connecting hoses / tubing to the quick connect connectors: To ensure a good connection and avoid leakage, cut tubing even and straight. Always trim all hose / tubing ends before connecting to the connectors. (Fig. 1 / Fig. 2)



FIG. 1



**FIG. 2** 

When connecting tubing to the quick connect connectors: Completely insert the tubing into the quick connect connector until the tubing locks tightly into place inside the connector. (Fig. 3)





*pH Probe Installation: <u>Do Not</u> remove the cap from / install the pH probe unless the os3 Cleaning Solution Generator is going to be assembled / installed and tested in its entirety. The pH probe will be damaged if it is exposed to air for an extended period and / or allowed to dry.* (Fig. 4)



FIG. 4

# INSTALLATION (os3 WATER SOFTENER ASSEMBLY):

NOTE: Before beginning installation procedure, be sure the os3 power cord is not plugged into an electrical outlet. **Do Not** plug in os3 power cord before instructed to do so.

- 1. Consult the Site Survey (Evaluation) document to determine location for os3 dispenser and any other site specific installation requirements.
- 2. Inspect boxes on pallet for damage / or if boxes have been opened. If boxes are damaged / been opened, inspect for damage and to ensure no parts are missing.
- Remove the shrink wrap from around the pallet / boxes. Discard the shrink wrap. (Fig. 5)



FIG. 5

4. Open the os3 softener box (the smaller of the two boxes on the pallet) and remove the documents and os3 water softener from the box. Set the documents aside. Place the os3 softener / os3 generator on the floor near the installation location. (Fig. 6)



FIG. 6

5. Remove all loose parts and components from inside the os3 softener enclosure and set them on top the enclosure. (Fig. 7)





 Insert the black elbow fitting into the white straight fitting and then insert the black elbow fitting / white straight fitting into the grommet in the hole in the os3 softener brine overflow tank. (Fig. 8)



**FIG. 8** 

7. Open the larger remaining box on the pallet and remove all tubing from the box. Since the box does not have a bottom, do not lift the box from the pallet. Remove the Operator Manual and all other documentation and set these items aside.

- 8. Connect the larger black elbow fitting onto the end of the 0.50 in. white tubing.
- 9. Install the 0.50 in. white tubing into the os3 water softener IN port. (Fig. 9)



FIG. 9

- 10.Connect the smaller fitting to the 0.375 in. black tubing.
- 11. Connect 0.375 in. black tubing to the water softener regeneration discharge port. (Fig. 10)



FIG. 10

12. Place the cover onto the os3 water softener enclosure opening. (Fig. 11)



FIG. 11

13. Place the water softener PCB enclosure and cable on top the cover on the os3 water softener. (Fig.12)



FIG. 12

### QUALITY CONTROL CHECKPOINTS:

Check all push- to- connect fittings before proceeding. Push each fitting to ensure it is completely seated.

# INSTALLATION (os3 GENERATOR ASSEMBLY):

1. Position the os3 generator onto a level stable surface (the box it was shipped in). (Fig.13)



FIG. 13

2. Use the provided key to remove the access cover from the os3 generator. Set the access cover and key aside. (Fig. 14)



FIG. 14

3. Use fingers to remove the two thumb screws from the front of the os3 generator and the thumb screw / washer from the back. **Do Not** use tools to remove the thumb screws. Set the thumb screws / washer aside. (Fig. 15)



FIG. 15

 Inspect all fitting / tubing and hose connections on the back of the os3 generator to ensure all connections are tight. The back of the os3 generator should appear as shown. (Fig. 16)



FIG. 16

5. Open the boxes containing the e- cell and manifold and remove the contents from both boxes. (Fig. 17)



FIG. 17

 Carefully apply a small amount of lubricant included with the e- cell onto all four o- rings on the e- cell inner ports. (Fig. 18)



FIG. 18

Do not get any lubricant onto the face of the inner ports. Wipe all lubricant from the faces to prevent lubricant from getting inside the e- cell. (Fig. 19)



FIG. 19

 Install the manifold onto the e- cell. Note port and connector locations. Be sure the snaps hold the e- cell and manifold securely together. It should not be possible to pull the ec- cell from the manifold without disengaging the tabs securing them together. (Fig. 20)



FIG. 20

8. Write the date of install on the e- cell. Write NEW into MSC space since this is a new install. (Fig. 21)





 Position the e- module (e- cell / manifold) assembled in the previous steps onto the mounting bracket rails and slide the module into the os3 generator. Be sure the e- module is fully connected to the connections and the outer edge of the e- module is recessed slightly below the outer edge of the mounting bracket. (Fig. 22 / Fig. 23)



FIG. 22



FIG. 23

10.Connect the ribbon cable to the manifold. (Fig. 24)



FIG. 24

11. Position latch to secure the e-module (e-cell / manifold) into the os3 generator. (Fig. 25)



FIG. 25

12.Place the os3 generator onto the os3 water softener enclosure. (Fig. 26)



FIG. 26

13. Position the os3 water softener PCB enclosure underneath the e-module and against the os3 generator. (Fig. 27)





14. Connect the tubing from the os3 water softener OUT port to the elbow fitting in manifold port 21 on the os3 generator. (Fig. 28)



FIG. 28

15. Install the two thumb screws into the front of the os3 generator to secure the os3 generator onto the os3 water softener enclosure. <u>Do</u> <u>Not</u> use tools to install the thumb screws. Brass inserts inside the os3 generator could be damaged if the thumb screws are overtightened. (Fig. 29)



FIG. 29

- 16. Install the one thumb screw with the flat washer to secure the rear of the os3 generator to the os3 water softener enclosure.
  <u>Do Not</u> use tools to install the thumb screw. The brass insert inside the os3 generator could be damaged if the thumb screw is overtightened.
- 17. Connect the os3 softener DB9 communication cable to the back plane board on the os3 generator. Use fingers to tighten both screws in the DB9 connector to completely secure the cable to the board. (Fig. 30)



FIG. 30

18.TIP: Connect a syringe to the clear hose from the os3 water softener brine pump and use syringe to push fresh water into the brine pump and e- cell and purge the anti- freeze from the system. This helps speed up the start up process. (Fig. 31)



FIG. 31

19. Connect the clear hose from the os3 water softener brine pump to the 0.25 in. tube with the union end connected to the elbow fitting in back the os3 generator. (Fig. 32)



FIG. 32

20. Position the os3 into the area near the power supply and water supply / drain where it will permanently be located. (Fig. 33)



FIG. 33

21. Route the black tubing connected to the os3 water softener regeneration discharge port out toward the floor drain. (Fig. 34)



FIG. 34

- 22. Cut the black tubing connected to the os3 water softener regeneration discharge port to the length necessary to reach the drain.
- 23. Insert approximately 1 in. (25.4 mm) of the 0.50 in. black tubing into the bottom grommet of the air gap assembly. (Fig. 35)



FIG. 35

24.**OPTIONAL:** Connect the 0.375 in. black tubing to the air gap assembly. Twist the tubing while inserting it into the air gap until the black tubing is completely inserted into the air gap. (Fig. 36)



FIG. 36

25. Route the black tubing connected to the air gap assembly toward the drain along the black tubing from the os3 water softener regeneration discharge port. (Fig. 37)



FIG. 37

- 26. Cut the black tubing from the air gap assembly to approximately the same length as the black tubing from the os3 water softener regeneration discharge port.
- 27. Connect the 0.375 in. black tubing to the elbow fitting connected to the brine overflow and route the tubing toward the floor drain. (Fig. 38)



FIG. 38

- 28. Route the white tubing from the os3 water softener IN port to the designated os3 cool water supply.
- 29.Connect a length of 0.50 in. white tubing to the elbow fitting in port 23 of the manifold in back of the os3 generator. (Fig. 39)



FIG. 39

- 30. Route the white tubing connected to the manifold in back of the os3 generator to the area where os3 dispenser will be installed.
- 31. Remove the brine tank cover from the os3 water softener enclosure and pour the included bag of water softener salt pellets into the brine tank. (Fig. 40)



FIG. 40

32. Open the smaller box of miscellaneous parts and remove the brass fitting from the box. (Fig. 41)



FIG. 41

33.Connect the brass fitting to the cold water supply to be used for the os3. (Fig. 42)



FIG. 42

NOTE: Use either included brass fitting and tubing or a clean container to add water to the brine tank. If using a container to add water, proceed to Step 35. Proceed to following step if using the brass fitting and tubing included in this kit to fill the brine tank.

34.Cut a length of 0.50 in. white tubing and connect the white tubing to the os3 cold water supply. (Fig. 43)



FIG. 43

35. Use the tubing connected to the os3 cold water supply to add approximately 3-6 in. (76.2-152.4 mm) of water into the brine tank.
<u>Do Not</u> put more than 6 in. (152.4 mm) of water in the brine tank. (Fig. 44)



FIG. 44

- 36. Disconnect the tubing from the os3 cold water supply / remove the tubing from the brine tank. Reinstall the brine tank cover.
- 37. Route the black tubing connected to the air gap assembly and the black tubing connected to the os3 water softener in a downward slope toward the floor drain and use several cable ties to secure the tubing together. (Fig. 45 / Fig. 46)







FIG. 46

NOTE: The black tubing connected to the air gap assembly and the black tubing connected to the os3 water softener must always be routed in downward slope to the floor drain from os3 generator / os3 water softener so drained solution cannot backup into the os3 generator or become "trapped" in the tubing.

### QUALITY CONTROL CHECKPOINTS:

- Drain is clear / open and drains freely.
- Tubing slopes down from the air gap assembly and is not looped or routed uphill at any point between the air gap assembly and the drain.
- ☐ The water softener overflow tubing slopes down (13 in. or less in height).
- Firmly press all push- to- connect fittings to ensure they are completely seated.
- Ensure manifold / e- cell assembly are completely seated and latch is tightened.

#### INSTALLATION (os3 DISPENSER ASSEMBLY) - BRACKET MOUNTED / WALL MOUNTED:

 Connect the clear hose with the yellow marker to the fitting with the yellow hose and the clear hose with the blue marker to the fitting with the blue hose on the os3 generator. (Fig. 47 / Fig. 48)



FIG. 47



FIG. 48

2. Remove the handle from the os3 dispenser and set the handle aside. (Fig. 49)



FIG. 49

3. Press the white button on top the os3 dispenser and remove the face from the os3 dispenser. (Fig. 50)



FIG. 50

# INSTALLATION (os3 DISPENSER ASSEMBLY) - BRACKET MOUNTED:

NOTE: Refer to INSTALLATION (os3 DISPENSER) - WALL MOUNTED at the end of this Instruction Bulletin if mounting the os3 dispenser onto the wall.

4. Remove the existing hardware (Qty. 3) from the back of the the os3 generator. Set the removed hardware aside. (Fig. 51)



FIG. 51

5. Use the hardware removed in the previous step to install dispenser bracket onto the os3 generator. (Fig. 52)



FIG. 52

 Use additional hardware to secure the dispenser bracket to the os3 generator. (Fig. 53)



 Align the holes in the back of the os3 dispenser with the mounting hardware on the dispenser bracket and install the os3 dispenser onto the dispenser bracket. (Fig. 54 / Fig. 55 / Fig. 56)



FIG. 54



FIG. 55



FIG. 56

FIG. 53 IB DM20043 (03-2019)

8. Tighten the mounting hardware on the dispenser bracket to secure the os3 dispenser to the bracket. (Fig. 57)



FIG. 57

 Carefully pull the clear tube with the yellow marker and the clear tube with the blue marker to the os3 dispenser and cut both tubes to length. Do not stretch the hoses tight, there should be slack in both hoses when they are connected to the dispenser. (Fig. 58 / Fig. 59)



FIG. 58



FIG. 59

10. Connect the clear tube with the yellow marker and the clear tube with the blue marker to the os3 dispenser. (Fig. 59 / Fig. 60) 11. Remove the handle from the dispenser and set the handle aside. (Fig. 60)



FIG. 60

12. Press the white button on top the dispenser and remove the face from the dispenser. (Fig. 61)



FIG. 61

13. Remove the blue tube from inside the dispenser and discard it. (Fig. 62)



FIG. 62

14. Connect white tubing from the elbow fitting in port 23 of the manifold into the fitting in the dispenser assembly. (Fig. 63)



FIG. 63

15.Connect the shorter clear hose onto the os3 bottle fill receptacle. (Fig. 64)



FIG. 64

16.Connect the longer clear hose with the bucket fill handle to the os3 dispenser bucket fill receptacle. (Fig. 65)



FIG. 65

17.Reinstall the cover onto the os3 dispenser. (Fig. 66)



FIG. 66

18. Reinstall the handle onto the os3 dispenser. (Fig. 67)



FIG. 67

19.Connect the 0.50 in. white tubing from the os3 water softener IN port to the designated os3 water supply. (Fig. 68)



FIG. 68

20. Insert the black tubing from the water softener regeneration discharge port and the black tubing from the air gap assembly into the floor drain. Use a cable tie to secure the the 0.375 in. black tubing from the os3 water softener brine overflow to the black tubing. (Fig. 69)



FIG. 69

### QUALITY CONTROL CHECKPOINTS:

Check all dispenser hose / tubing connections for leaks. There must be no leaks.

# INSTALLATION (os3 INITIALIZATION / TESTING PROCEDURE):

1. Remove the protective cap from the sensor end of the pH probe. (Fig. 70)



FIG. 70

2. Insert the pH probe into the os3 generator. (Fig. 71)



FIG. 71

3. Connect the pH probe to the main harness. (Fig. 72)



FIG. 72

4. Neatly bundle the pH probe cable and main harness and use a cable tie to secure the bundled cables. (Fig. 73)





- 5. Turn on the cold water supply to the os3 Cleaning Solution Generator. Observe fitting / hose / tubing connections for leaks. Correct all leaks.
- 6. Connect the power cable to the os3 generator power supply. (Fig. 74)



FIG. 74

 Plug the os3 generator power cable into the wall outlet. A hand / status bar should appear in the display. (Fig. 75)



FIG. 75

 The Add Salt screen appears on the display. Touch Reset button to continue. Touch Reset button again if Add Salt screen appears on the display more than once. (Fig. 76)



FIG. 76

 Press the right or left arrow icon(s) to access the conductivity probe screen. Conductivity Probe 2 number must be 9000 greater than the Conductivity Probe 1 number to initialize the unit. May be necessary to touch **Reset button** several additional times if **Add Salt screen** continues to appear on the display. (Fig. 76, 77 & 78)







FIG. 78

10. The **Wait To Dispense screen** appears after initialization is complete. Wait for the multi- micro concentrate tank to fill to the minimum level for dispensing. The hand will no longer appear in the MM200 side. Should take approximately 20 minutes. While waiting proceed to the following steps to install the bucket fill dispensing hose and the bottle fill dispensing hose onto the dispenser. (Fig. 79)



FIG. 79

11. Wait for the MSC concentrate tank to fill to the minimum level for dispensing. The hand will no longer appear in the MSC concentrate side after the approximately 40- minute service initialization is completed. The MSC solution is ready for testing. (Fig. 80)



FIG. 80

12.Place the dispenser handle into the multi-micro bucket fill setting. (Fig. 81)



FIG. 81

13. Press the os3 dispensing button. Solution should start flowing through the clear line for dispensing multi- micro solution. Point the bucket fill dispensing nozzle into the sink / drain and allow solution to flow until air pockets no longer appear in the solution flow. (Fig. 82)



FIG. 82

- 14. Release the os3 dispensing button.
- 15. Tear off 2-3 in. (50.8-76.2 mm) of chlorine test paper and place the chlorine test paper in the bucket dispensing hose and onto the solution inside the hose. Allow chlorine test paper to set for approximately 1 second.

16. Remove the chlorine test paper from the bucket fill hose and hold the test strip next to the color code key on the chlorine test paper container. The chlorine test paper should be the same shade / color purple as on the chlorine test paper container. (Fig. 83)



FIG. 83

17. Place the dispenser handle into the multi- micro bottle fill setting and repeat the previous steps for testing the bottle fill. (Fig. 84)



FIG. 84

18. Remove the chlorine test paper from the bottle fill hose and hold the test strip next to the color code key on the chlorine test paper container. The chlorine test paper should be the same shade / color purple as on the chlorine test paper container. 19. Place the dispenser handle into the MSC bucket fill setting. (Fig. 85)



FIG. 85

20. Press the os3 dispensing button. Water should start flowing through the clear line for dispensing MSC solution. Point the bucket fill dispensing nozzle into the sink / drain and allow solution to flow until air pockets no longer appear in the solution flow. (Fig. 86)



FIG. 86

- 21. Release the os3 dispensing button.
- 22. Tear off 2-3 in. (50.8-76.2 mm) of pH test paper and place the pH test paper in the bucket dispensing hose and onto the solution inside the hose. Allow pH test paper to set for approximately 1 second.

23. Remove the pH test paper from the bucket fill hose and hold the test strip next to the color code key on the pH test paper container. The pH test paper should be the same dark green as on the pH test paper container. (Fig. 87)



FIG. 87

24. Place the dispenser handle into the MSC bottle fill setting and repeat the previous steps for testing the bottle fill. (Fig. 88)



FIG. 88

25. Check all hoses, tubing, fittings, located inside the os3 generator one more time for leaks. Repair all leaks. 26. Install the front cover onto the os3 Cleaning Solution Generator. (Fig. 89)



FIG. 89

27. Install the top cover onto the os3 Cleaning Solution Generator. (Fig. 90)



FIG. 90

- 28. Gather the os3 Cleaning Solution Generator wall charts, operators manual, and safety data sheet and give these items to the site manager to be posted / stored in the proper site locations.
- 29. Touch anywhere on the display to access the service information screen.
- 30. Touch the wrench icon and then press the right arrow icon to scroll to the cell signal strength screen.

31. Check for cell signal strength, ensure serial number on screen matches the serial number labeled on the os3 Cleaning Solution Generator label, and cell number. (Fig. 91 & 92)



FIG. 91



FIG. 92

- 32.Press right / left arrow icons to access the water temp screen.
- 33. Note the water temperature, manifold wear, cell wear, and probe wear. Since this is a new install all wear percentages should be 99%.
- 34. Press right / left arrow icons to access the software revision screen. The os3 Cleaning Solution Generator should have the latest software revision.
- 35.Press the home icon to return to the home screen.
- 36. Neaten the work area where the os3 Cleaning Solution Generator was installed. Put away tools used to install the os3. Properly dispose of any remaining hoses, tubing, boxes, packing material, etc...

### **QUALITY CONTROL CHECKPOINTS:**

- With the os3 Cleaning Solution Generator turned ON and operating, use a flashlight to check the water softener and the following items behind the os3 Cleaning Solution Generator for leaks:
  - A. Lower float switches
  - B. Brass inserts (Qty. 3)
  - □ C. White 0.5 in. tubing connections from the water supply to the water softener and from the water softener to the generator.
  - D. All fitting connections to the yellow and blue tubing.

#### OPTIONAL - INSTALLATION (os3 DISPENSER ASSEMBLY) - WALL MOUNTED - OPTION:

 Hold the os3 dispenser up to the os3 generator. The check valves inside the dispenser must be above the high water line on the os3 generator. <u>Never</u> install the os3 dispenser lower than the high water line. Move dispenser to area over sink / drain where it will be installed and mark area for reference. (Fig. 93)



FIG. 93

2. Open the packet of miscellaneous mounting hardware in the Orbio supplies kit, remove the drill bit from the packet, and install the drill bit into a drill. (Fig. 94)

NOTE: Hardware provided with the dispenser can also be used to mount the dispenser onto the wall.



FIG. 94

 Drill a hole into the marked area on the wall where the os3 dispenser will be installed. (Fig. 95)



FIG. 95

4. Carefully tap an insert into the hole drilled into the wall in the previous step. (Fig. 96)



FIG. 96

5. Mount one side of the os3 dispenser mounting bracket onto the wall. (Fig. 97)



FIG. 97

6. Hold the dispenser mounting bracket level (use level or phone application level to ensure mounting bracket is level) and mark a location for the second hole needed to secure the bracket to the wall. (Fig. 98)



FIG. 98

 Drill a hole into the wall, carefully tap another insert into the wall, and completely secure the os3 dispenser mounting bracket to the wall. (Fig. 99 - 100)







FIG. 100

 Neatly route the clear hose with the blue marker and the clear hose with the yellow marker down and then up along the hose from the os3 water softener IN port, and secure the hoses snugly together with three cable ties.
 <u>Do Not</u> over tighten the cable tie so it pinches either of the clear hoses. Note the loop in both clear hoses. (Fig. 101



FIG. 101

9. Route the 0.50 in. white tubing from port 23 of the manifold in back of the os3 generator into the dispenser. (Fig. 102)



FIG. 102

10. Carefully pull the clear tube with the yellow marker and the clear tube with the blue marker to the os3 dispenser and cut both tubes to length. Do not stretch the hoses tight, there should be slack in both hoses when they are connected to the dispenser. (Fig. 103)



FIG. 103

- 11. Cut both clear tubes approximately 3 in. (76.2 mm) from the y- connections to the os3 dispenser.
- 12. Connect the 0.50 in. white tubing from port 23 of the manifold in back of the os3 generator to the dispenser. (Fig. 104)



FIG. 104

13.Connect the shorter clear hose onto the os3 bottle fill receptacle and the longer clear hose onto the bucket fill receptacle. (Fig. 105)



FIG. 105

14. Connect the bucket fill handle onto the longer clear hose installed on the bucket fill receptacle. (Fig. 106)



FIG. 106

15.Reinstall the cover onto the os3 dispenser. (Fig. 107)



FIG. 107

16.Reinstall the handle onto the os3 dispenser. (Fig. 108)



FIG. 108

17. Proceed to Step 19 in *INSTALLATION (os3 DISPENSER ASSEMBLY) - BRACKET MOUNTED* to complete installation.

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