

# SINGULAIR GREEN®

## BIO-KINETIC® WASTEWATER TREATMENT SYSTEM

# QUICK START SERVICE GUIDE

The Singulair Green system is backed by a three year warranty on system components and a lifetime aerator exchange program. The system requires four prescheduled service inspections at six month intervals which cover the first two years of system operation. Please check your local regulations for service technician qualifications and service requirements. The Singulair Green Tool Kaddy Lite contains a product manual and tools required to service the system. A service inspection checklist, card or door hanger should be completed to record service performed. Service Inspection Cards and Door Hangers are available through Norweco. **CAUTION: Any time an aerator or test equipment is connected or disconnected, first shut off the selector switch in the control center. Failure to do so could result in personal injury or equipment damage.**

### SINGULAIR AERATOR & CONTROL CENTER SERVICE

Service inside the aerator is not required. Unauthorized disassembly will void the warranty. If a problem is suspected with the aerator, return it to Norweco for warranty replacement or exchange. Refer to "SINGULAIR AERATOR SERVICE" document for detailed instructions.

1. Open the control center cover. Confirm the selector switch is in the "on" position and the power indicator light is on.
2. Press the reset button for five seconds to perform an alarm test. The audible and visual alarms will be activated for five seconds to confirm proper operation.
3. As you approach the Singulair system, listen for any excessive noise before removing the vented cover.
4. Remove the vented cover over the aeration chamber and place it aside. The aerator should be operating normally.
5. Make sure the debris screens are in place in the air intake ports. Manually check the aerator brackets for excessive vibration.
6. Check the aeration chamber for odor. A musty odor indicates the presence of aerobic conditions essential for good treatment. A septic odor indicates inadequate aeration, suggesting air passage has been restricted.
7. Carefully remove the air intake debris screens from the air intake ports. Clean or replace the screens. Do not allow dirt or debris to enter the openings.
8. Using the Singulair flowmeter, check the air delivery of the aerator. It should read approximately 3 CFM. Air flow is critical to maintaining a healthy aerobic system. Refer to the "SINGULAIR AERATOR FLOWMETER" document for detailed instructions.
9. Inspect the outside of the electrical connector assembly for worn spots. Uncouple the connector and check for any evidence of moisture inside. If moisture is present, dry out the cap and secure the closure cap over the female half of the connector to keep it clean and dry.
10. Within 2-3 minutes after turning off the aerator, perform a settleable solids test of the aeration chamber contents. Refer to "SINGULAIR GREEN TANK PUMPING" document for detailed instructions.
11. Remove the aerator from the riser using the blue lifting handle. BE CAREFUL when removing the aerator to insure that the aspirator shaft does not come in contact with the riser. The shaft is straightened to a critical tolerance. It must retain this straightness tolerance or vibration may result and can shortened aerator life.
12. Check the rubber bracket bumpers on each bracket and replace any that are missing or worn.
13. Check the power cord from the electrical connector to the aerator. Be sure it is free of nicks or worn spots.
14. Lay the aerator on its side against the aerator access cover. Place the lower brackets on the cover to protect the intermediate and aspirator shafts.
15. Carefully loosen the two stainless steel set screws on the bottom of the intermediate shaft with an allen wrench. Remove the aspirator shaft to clean.
16. Push the aspirator shaft cleaning tool with extension handle through the shaft. Be sure to remove any internal deposits from the four aspirator orifices.
17. Connect the aspirator shaft to a hose to flush the inside of the shaft. Be sure to do this over the aeration chamber and use full water pressure to remove any obstructions in the shaft.
18. Clean the outside of the shaft with a brush or scraper.
19. Push the cleaning brush through the stainless steel intermediate shaft and hollow motor shaft to dislodge any residue. Do not flush the motor shaft with water.
20. Thoroughly clean both the top and bottom surfaces of the foam restrictor with the steel brush.
21. Before reinstalling the aerator, check the aeration chamber for non-biodegradable materials, paper, hair, grease or oil. An accumulation of these materials indicates the pretreatment chamber should be evaluated. Refer to "SINGULAIR GREEN TANKING PUMPING" document for detailed instructions.
22. Reinstall the aspirator shaft into the intermediate shaft. Match the alignment marks on the aspirator shaft and the intermediate shaft to insure proper balance. Tighten set screws with allen wrench.
23. Before reinstalling the aerator lifting handle, wipe the threads clean and apply Bio-Kinetic lubricant to the threads. Carefully reinstall the aerator in the riser. Do not allow the aspirator shaft to touch the riser side walls. Make sure the weight of the aerator is evenly distributed on the upper end of all four mounting brackets.

## SINGULAIR GREEN QUICK START SERVICE GUIDE (Cont.)

24. Using a multi-meter, check the voltage at the electrical connector. It should read 115 volts  $\pm$  5% when the control center selector switch is in the "on" position.
25. Wipe the electrical connector with a clean, dry cloth to remove moisture or dirt accumulated during service. Plug the electrical test pigtail in between the male and female connectors. Turn on the control center and check the amperage of the newly serviced aerator. The aerator should run at 4 amps. Record the amperage on the Service Inspection Card.
26. Plug in the aerator and check the electrical connection to make sure it is securely engaged.
27. Secure the power cord back in the blue clips on the brackets to prevent wear on the aerator electrical cord.
28. Inspect the aerator access cover and clear the fresh air openings of any debris to insure unrestricted passage of air. Replace the vented access cover over the aeration chamber. Make the appropriate notations regarding the aerator on the Service Inspection Card.

### BIO-KINETIC SYSTEM SERVICE

Refer to "CLARIFICATION CHAMBER AND BIO-KINETIC SERVICE" document for detailed instructions.

1. Remove the clarification chamber access cover and set it aside.
2. If the system is equipped with feed tubes, remove the tubes and set them aside. Handle all chemicals with clean rubber gloves. Do not allow chemicals to come in contact with each other, your skin or your clothing. Refer to the Blue Crystal and Bio-Neutralizer handling instructions and container labels for safety procedures and first aid.
3. Remove the moisture vapor shield from system.
4. Use the Bio-Kinetic system outlet sealing tool to prevent loss of liquid from the system. Thoroughly lubricate both sides of the tool with Bio-Kinetic lubricant.
5. Insert the tool between the Bio-Kinetic outlet flange and the receiving flange of the tank. Completely insert the tool to the bottom of the outlet coupling.
6. Remove the pretreatment chamber access cover.
7. Place the safety service guard over the pretreatment chamber access opening. If the Bio-Kinetic system requires a complete cleaning, refer to "CLEANING AND DISASSEMBLY FOR THE BIO-KINETIC SYSTEM" document for detailed instructions.
8. Engage the small handle of the universal tool under the straps on the inner assembly and remove it from the chamber. Place the inner assembly on the safety service guard. Align the four wing nuts on the bottom of the assembly with the grooves in the service guard.
9. Rock the assembly back and forth and side to side several times while spraying water into the discharge opening of the flow deck. This will loosen the deposits on the deck plates. Once complete, set the inner assembly aside and begin working on the outer bucket.
10. To remove the outer bucket from the clarification chamber, turn the four locking lugs clockwise.
11. Use the large handle of the universal tool to lift and remove the outer bucket. The self drain valve will automatically open as the system is lifted. Be careful not to tear the media on the side of the riser. Place the outer bucket on the service guard upside down.
12. Use a hose to wash the media. Spray until all sludge and wastewater has been flushed from the media.
13. Inspect the perimeter settling zone to insure it is clean. Check the flow equalization ports to be sure they are clean and unobstructed. Record the condition of the Bio-Kinetic system on the Service Inspection Card.
14. Scrape the hopper walls of the clarification chamber with the hopper scraping tool. The aerator must be operating while scraping the walls so that settled sludge will be returned to the aeration chamber by the hydraulic currents of the Bio-Static sludge return.
15. Check the surface of the clarification chamber for grease and biologically untreatable material. Insure the Bio-Static sludge return is securely engaged to the chamber wall. Note liquid level and condition of the clarification chamber on your Service Inspection Card.
16. Apply a liberal amount of Bio-Kinetic lubricant to the entire face of the discharge flange of the Bio-Kinetic system and the outlet coupling in the tank.
17. Use the universal tool to lower the outer bucket into the riser. Use the drain valve opening tool to open the drain valve diaphragm, allowing water to quickly enter the chamber. Using the view port, align the discharge flange with the receiving flange.
18. Engage the four locking lugs by turning them clockwise.
19. Insert the inner assembly into the outer bucket, making sure it is pushed all the way to the bottom.
20. Check the bubble level to confirm the flow deck is level. Adjust the four leveling lugs if needed. Leveling the flow deck is essential for proper system operation.
21. Reinstall the moisture vapor shield on the Bio-Kinetic system, insuring all four leveling bolts on the Bio-Kinetic system engage into all four holes in the moisture vapor shield. This does not require fasteners.
22. If a fresh supply of chemical tablets is required, refer to "CLARIFICATION CHAMBER AND BIO-KINETIC SERVICE" document for detailed instructions.
23. Remove outlet sealing tool in the clarification chamber.
24. Reinstall the clarification chamber access cover.
25. Clean the service guard and replace the pretreatment access cover. Secure all covers with bolts provided.
26. Test the control center alarms. Press and hold the reset button for five seconds until alarms are activated.
27. Close the control center cover and secure it with a new tamper evident seal. Complete the Service Inspection Card to provide to the homeowner before you leave.

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