



SINGULAIR GREEN® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM INSTALLATION OF THE BIO-KINETIC® SYSTEM

Installation of the aerator and Bio-Kinetic system should take place when the Singulair Green system is ready for start-up. Refer to the Bio-Kinetic System Installation instructions for additional details regarding the installation of the Bio-Kinetic system. Your delivery truck driver should have instructed the contractor or owner to contact your office and make arrangements for equipment installation to occur after the home is occupied and the sanitary sewer is in use.

The Bio-Kinetic system is installed in the final clarification chamber of the Singulair Green tank. This unique device accomplishes tertiary treatment, flow equalization and, if required by local regulations, effluent disinfection and dechlorination in one compact assembly. The Bio-Kinetic system is recommended for use in direct off-lot discharge applications and any other application where extremely high quality effluent is desirable. Installation of the Bio-Kinetic system can take place as soon as the tank is ready for storage or immediately after the tank is installed in a prepared excavation.

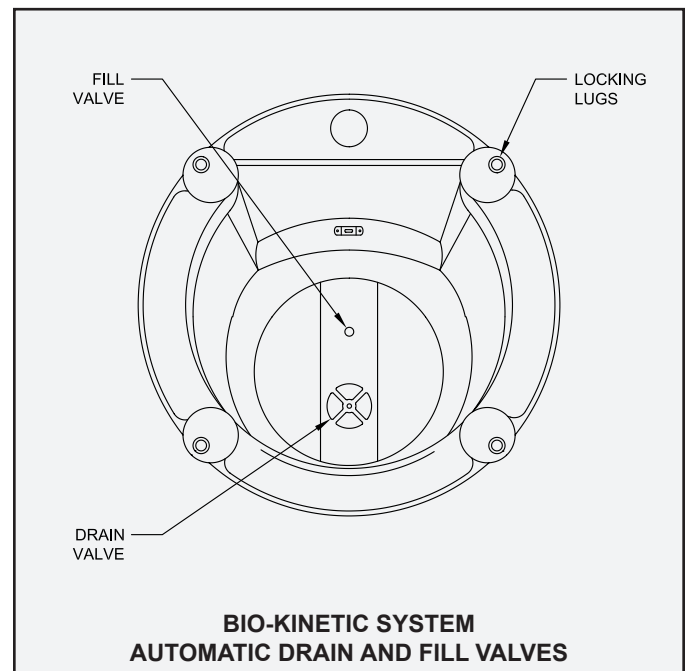
Drain and fill valves built into the Bio-Kinetic system allow it to be installed within the Singulair Green tank any time before or after the tank has been set. This allows faster Singulair Green system installation and less time at the installation site. When installing the Bio-Kinetic system before tank delivery, make sure the tank is stored in a level position to avoid stress on the receiving flange, the Bio-Kinetic discharge flange or to prevent damage to the outer chamber filter media.

BIO-KINETIC® SYSTEM PRE-INSTALLATION CHECKLIST

- ✓ All chambers of the Singulair Green tank should be full to the flow line with clean hold down water as soon as the tank is placed in the excavation and backfilling is complete. When the owner calls for start-up, ask him to check the liquid level in the Singulair Green system. If the liquid level has not reached the outlet invert, have the owner add clean water until full.
- ✓ The service vehicle should be fully stocked, including the Singulair Tool Kaddy, Bio-Kinetic lubricant, Blue Crystal disinfecting tablets and Bio-Neutralizer dechlorination tablets.
- ✓ Make sure the proper model of Bio-Kinetic system for the installation is in the service vehicle. The Bio-Kinetic system may be supplied with or without Blue Crystal and Bio-Neutralizer chemical feed systems. Therefore, check your order and Distributor Service and Warranty Record Card carefully to be sure you have selected the proper Bio-Kinetic system with the correct service cover, flow distribution deck and feed tube(s) and that it is properly labeled for the correct model Singulair Green system.

PREPARING THE SINGULAIR GREEN TANK

1. The Bio-Kinetic system mounting riser should be used for access to the clarification chamber. Additional extension risers may be added as necessary to reach finished grade.
2. The Bio-Kinetic system should only be installed in a mounting riser with a sealed access cover above it. All mounting risers and covers must be in place before backfilling the tank to prevent fill material from entering the Singulair Green tank. The top of each access cover must be located 3" to 6" above finished grade. Check to be sure that a pretreatment tee is installed in the opening in the pretreatment/aeration chamber wall.
3. Check to be sure that a Bio-Static sludge return is properly installed in the opening in the aeration/clarification chamber wall.
4. The Singulair Green tank should be filled with clean water. The water should be free of dirt, mud, leaves, grit, oils or other materials that might possibly interfere with operation of the system. The tank should be filled with



INSTALLATION THE OF BIO-KINETIC® SYSTEM (Cont.)

water immediately after backfilling has been completed to prevent damage to the Singular Green tank. The aeration and clarification chambers will both be filled if the hose is installed in the aeration chamber access opening. The pretreatment chamber should be filled separately through its access opening.

- Influent and effluent sewer lines must be installed and connected to the system as soon as it is set and before backfilling to prevent entry of mud or debris. Follow the procedures outlined in the Singular Green Tank Delivery and Setting instructions when backfilling the installation. Failure to follow proper backfilling procedure may result in damage to the tank and will void the Singular Green warranty.
- When a Singular Green system is being installed to replace a failed onsite wastewater treatment system, the old septic tank need not be abandoned. However, be sure the Singular Green system is installed downstream of the old septic tank and that the entire obsolete system is completely pumped and cleaned before the Singular Green tank is installed. If the owner prefers, the obsolete system may be totally removed or filled in and abandoned in the ground.
- Check to see that roofing down spouts, footer drains, sump pump piping or garage and basement floor drains are not connected to the sanitary sewer. The Singular Green system may not operate properly if hydraulic flows greatly exceed the rated treatment capacity. If the facility is equipped with a water softener, locate the backwash discharge line. The backwash line must not be connected to the Singular Green system.

BIO-KINETIC SYSTEM INSTALLATION PROCEDURE

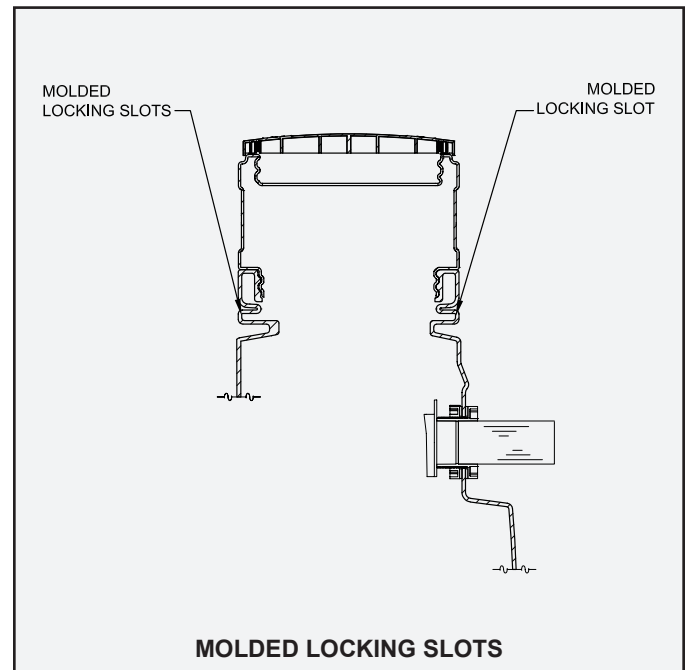
Remove the Bio-Kinetic system from the shipping carton. Lift off the Bio-Kinetic system service cover and set it aside. Rotate the round, black locking lugs inward to allow installation.

The Bio-Kinetic system discharge flange must engage the plastic receiving flange that has been installed in the outlet of the Singular Green tank. Carefully examine the condition of the outlet coupling and receiving flange. Any residue or debris that has accumulated in the grooves of the receiving flange must be removed and the grooves and face of the receiving flange should be wiped clean. Use the swab tool to apply a liberal amount of Bio-Kinetic lubricant to the entire face of the receiving flange and the inside of the grooves. Apply the lubricant evenly until all interior surfaces of the receiving flange and the grooves are thoroughly coated. Locate the gasketed discharge flange assembly installed in the outlet of the Bio-Kinetic system. Check to make sure that the assembly is tight and fully engages the discharge opening of the Bio-Kinetic system. Using the swab tool, apply a liberal amount of lubricant to the exterior surfaces of the gasketed discharge flange. Apply the lubricant evenly over the entire face of both sides and along the edges of the discharge flange.

CAUTION: Bio-Kinetic lubricant has been specially formulated. Use of other lubricants, especially petroleum based lubricants, can cause degradation of the rubber components and will void the warranty.

SELF FILL VALVE

Use the lifting tool to lower the Bio-Kinetic system into the mounting riser. Be careful to align the discharge flange with the receiving flange installed in the outlet of the tank. The Bio-Kinetic system is equipped with a pressure sensitive valve to aid in the filling process for new systems that are not yet filled and the draining process during service or removal.



The fill valve is engineered to open when the pressure outside the Bio-Kinetic system reaches 16" of head. When the tank water level reaches 16" on the outer chamber of an empty Bio-Kinetic system, the fill valve will open. The valve will remain open until the water level inside the filter reaches 4" below the water level outside the filter. At this point, the valve will close. For instructions on the drain valve system, refer to "Clarification Chamber and Bio-Kinetic Service." Carefully guide the system through the center of the opening using the lifting tool. Be sure to maintain the Bio-Kinetic system in a vertical position. If tilted, the system could rub the edge of the opening and be damaged. **NOTE:** Use the viewing port to be sure proper alignment and engagement of the outlet connection takes place. The discharge flange

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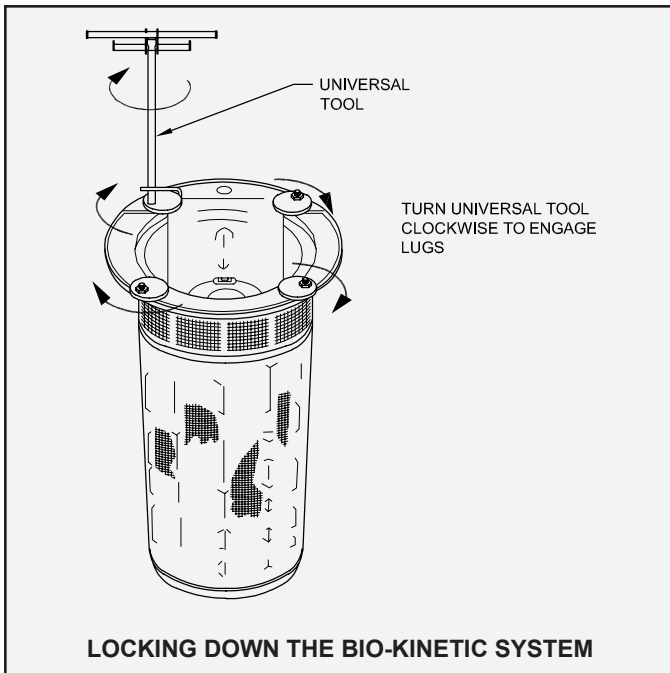
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SINGULAIR GREEN® BIO-KINETIC®

WASTEWATER TREATMENT SYSTEM

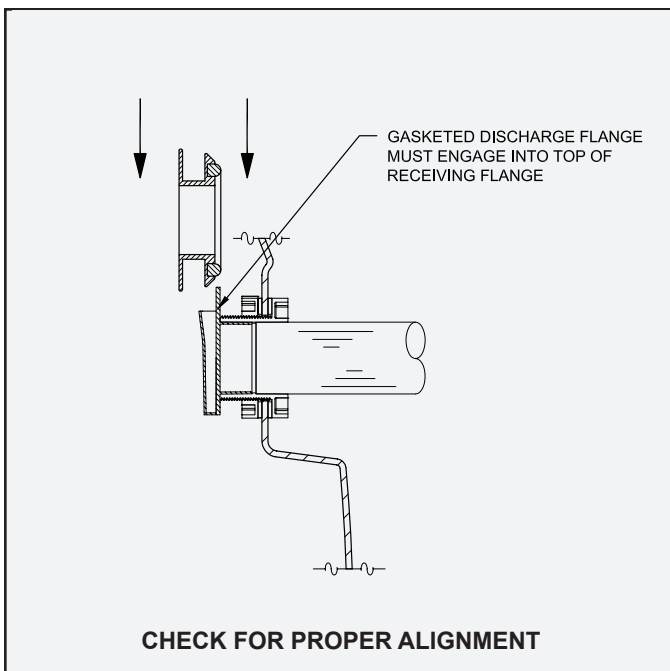
INSTALLATION OF THE BIO-KINETIC® SYSTEM (Cont.)

PLACING THE BIO-KINETIC SYSTEM ON LINE

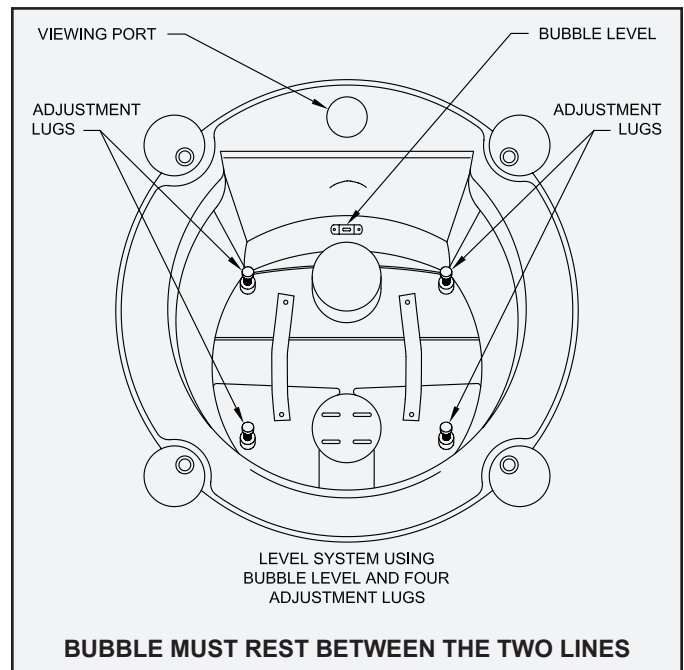


must engage the top of the receiving flange.

Continue to lower the system until the discharge flange fully engages the receiving flange and the top collar of the Bio-Kinetic system rests on the ledge of the clarification chamber access opening. To confirm that the discharge flange and receiving flange are fully engaged, look through the viewing port in the top collar. Use the locking lug tool to twist each of the round, black locking lugs clockwise, so that each locking lug is positioned directly into the molded locking slots of the mounting riser.



Locate the level indicator mounted above the outlet of the Bio-Kinetic system flow distribution deck. The bubble should be resting squarely between the two lines in the clear plastic case. If the location of the bubble indicates the system is not installed in a level position, the flow distribution deck should be leveled using the four adjustment lugs provided for this purpose. With the ratchet drive, extension and $\frac{7}{16}$ " socket from the Tool Kaddy, turn each of the adjustment lugs the minimum amount necessary for the bubble to rest squarely between the two lines in the clear plastic case. Leveling of the flow distribution deck is essential for proper operation of the flow equalization ports, chemical feed tubes and effluent weir within the Bio-Kinetic system.



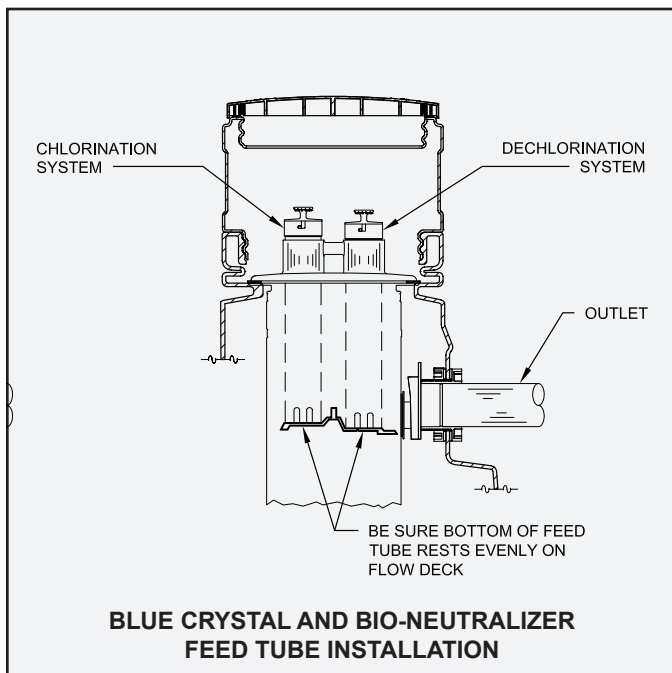
The system service cover can now be placed into position. Install the cover, handle side up, aligning the four holes in the cover with the four locking lug bolts. Be sure the optional chlorination and dechlorination feed tube access openings are in the proper position. The cover will come to rest on the collar of the Bio-Kinetic system. There is no need to add fasteners to the locking lug bolts.

If the installation requires a Blue Crystal disinfection system, the chlorine feed tube opening in the service cover must be positioned on the inlet side of the system nearest the aerator mounting riser. Before handling Blue Crystal disinfecting tablets, carefully read the container label and the "Warning" section of these instructions. To fill the chlorine feed tube, remove the cap, hold the tube (open end down) with one hand and insert Blue Crystal

INSTALLATION OF THE BIO-KINETIC® SYSTEM (Cont.)

disinfecting tablets, one tablet at a time, until the tube is filled. Each tablet must lie flat in the stack. When the feed tube has been completely filled, replace the cap. Twist the cap clockwise until it locks securely into position on the chlorine feed tube. Install the feed tube, slotted end down, through the plastic collar molded into the top of the Bio-Kinetic system service cover. The feed tube will begin to engage the round recess in the flow distribution deck. Rotate the chlorine feed tube clockwise until it locks into position.

NOTE: The chlorine feed tube must always be installed through the mounting collar nearest the aerator mounting riser. If the installation requires disinfection and dechlorination, there will be two openings in the protective cover. The dechlorination feed tube must be installed nearest the system outlet.



WARNING

Blue Crystal disinfecting tablets are a strong oxidizing agent and highly corrosive. Tablets should be stored in a cool, dry, well-ventilated area away from combustible materials such as paper, petroleum products, chemicals, rags or cardboard. Contact with other liquids or chemicals may cause fire. Improper use of this product may cause personal injury or property damage. Always wear rubber gloves and either safety goggles or a face shield when handling Blue Crystal disinfecting tablets or working with the chlorine feed tube. Keep tablets out of the reach of children, as they can cause skin and eye damage, irritate the nose and throat, and may be fatal if swallowed. If on skin, wash with plenty of soap and water for fifteen minutes, call a doctor if irritation persists. If swallowed, immediately drink large quantities of water, do not induce vomiting, avoid alcohol and get medical attention immediately. If inhaled, immediately remove victim to fresh air. In the case of fire, apply liberal quantities of water. It

is a violation of Federal law to use Blue Crystal tablets in a manner inconsistent with the instructions printed on the storage container label.

If the installation requires a Bio-Neutralizer dechlorination system, the Bio-Kinetic system will be supplied with a dechlorination feed tube. Before handling Bio-Neutralizer dechlorination tablets, carefully read the container label and the "Warning" section of these instructions. To fill the dechlorination feed tube, remove the cap, hold the tube (open end down) with one hand and insert the Bio-Neutralizer dechlorination tablets, one tablet at a time, until the tube is filled. Each tablet must lie flat in the stack. When the tube has been completely filled, replace the cap. Twist the cap clockwise until it locks securely into position on the dechlorination feed tube. Insert the dechlorination feed tube, slotted end down, into the mounting collar closest to the system outlet. The bottom of the tube must come to rest evenly on the floor of the flow deck.

WARNING

Bio-Neutralizer dechlorination tablets must be stored in a cool, dry place away from acids and oxidizers. Do not allow Bio-Neutralizer tablets to come into contact with chlorine tablets. Although not rated a hazardous material by the USEPA, exercise caution when handling and wash skin thoroughly with soap and water if contact occurs.

Inspect the Bio-Kinetic system to verify that all four locking lugs are fully engaged into the molded locking slots in the riser, the moisture vapor shield is properly installed over the four locking lug bolts and the feed tubes are properly installed. Reinstall the Bio-Kinetic system access cover on the clarifier riser. Secure the access cover to the riser using the fasteners provided. Now proceed with the steps outlined in the Singularair Green System Final Check and System Start-Up instructions. **DANGER: Make sure the system access cover is in good condition and securely installed on the mounting riser. Never allow access risers to be left uncovered or partially covered. Failure to secure access covers and safety nets could result in bodily injury, illness or death. Riser safety nets are available from Norweco for concrete or plastic risers.**

SERVICING THE BIO-KINETIC SYSTEM

Each installation equipped with the Bio-Kinetic system should be inspected and serviced during each six-month service inspection. Refer to the Bio-Kinetic System Service instructions for service and recordkeeping procedures.

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