norweco® SINGULAIR®

NPDES TREATMENT SYSTEM — CHEMICAL TREATMENT WITH TANK MOUNTED EQUIPMENT

INSTALLATION INSTRUCTIONS

All National Pollutant Discharge Elimination System (NPDES) installations in Ohio must be remotely monitored or equipped with a failsafe pump lock out. Service Pro telemetry is designed for use with standard residential telephone lines. Digital Subscriber Line (DSL) phone service requires the use of a low-cost optional DSL filter. Voice Over Internet Protocol (VOIP) is not reliable with any telemetry system and not recommended. System information must be entered into the Service Pro MCD database with a valid monitoring agreement to meet the Ohio Health Department and Ohio EPA permit requirements.

INTRODUCTION

The Chemical Accessory package works together with Singulair systems to meet State of Ohio NPDES treatment requirements. When the components of this package are properly installed and maintained, Singulair Model TNT systems are approved for direct discharge into waters of the State of Ohio, except for Lake Erie, and/or a two (2') foot soil credit for subsurface disposal fields. The Singulair Model TNT system with ultraviolet (UV) disinfection and external reaeration basin is available for installations involving direct discharge into Lake Erie.

COMPONENTS

This package must be used with a properly installed 500/600 GPD Singulair Model TNT treatment system, with both chlorination and dechlorination feed tubes installed. Reference the LF 1000 and Singulair Bio-Kinetic System Installation Manuals for information specific to installation and start-up. The sampling port must be properly located and installed according to the manufacturer's instructions.

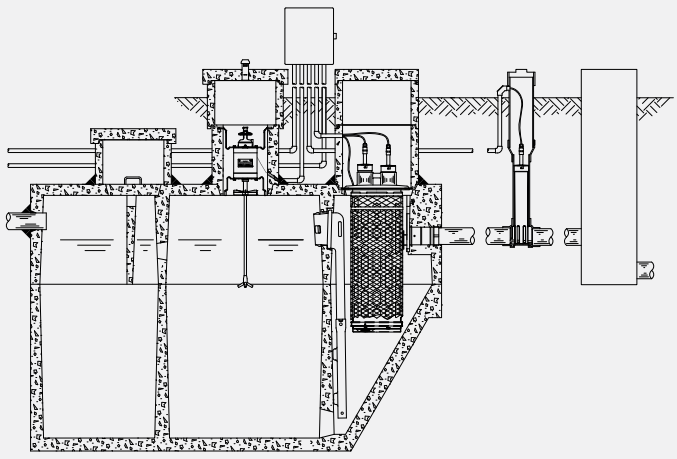
The Chemical NPDES accessory package consists of the following components:

1) 1 Pre-wired NEMA 4X equipment enclosure containing the Singulair TNT Service Pro panel, air pump, external red alarm light, audible alarm, phone jack and pressure switch
2) 1 LF 1000 tablet feeder with a green feed tube
3) 1 Air diffuser
4) 3 ChemCheck chemical tablet detection systems

The following items should be supplied by the distributor or installer:

1) Sampling Port
2) 1/8" drill bit
3) Panel mounting bracket*
4) Electrical conduit
5) Solvent cement*
6) Razor knife
7) Chemical tablets*
8) 4" PVC pipe
9) 6" x 4" PVC reducer
10) 6" PVC pipe with cap

***** Available for purchase from Norweco



NPDES TREATMENT SYSTEMS WITH CHEMICAL TREATMENT

SYSTEM OPERATION

Liquids displaced from the clarifier enter the Bio-Kinetic and immediately contact a feed tube containing Blue Crystal residential disinfecting tablets. These tablets release chlorine which destroys any bacteria present in the stream. As the chlorinated stream passes through the Bio-Kinetic , additional dissolved oxygen is added by an air pump and diffuser. Now fully aerated and disinfected, any residual chlorine is removed by the two feed tubes of Bio-Max; one located in the Bio-Kinetic and the second in the LF 1000 feeder. After the LF 1000, the liquids pass through a sample port and are safely returned to the environment.

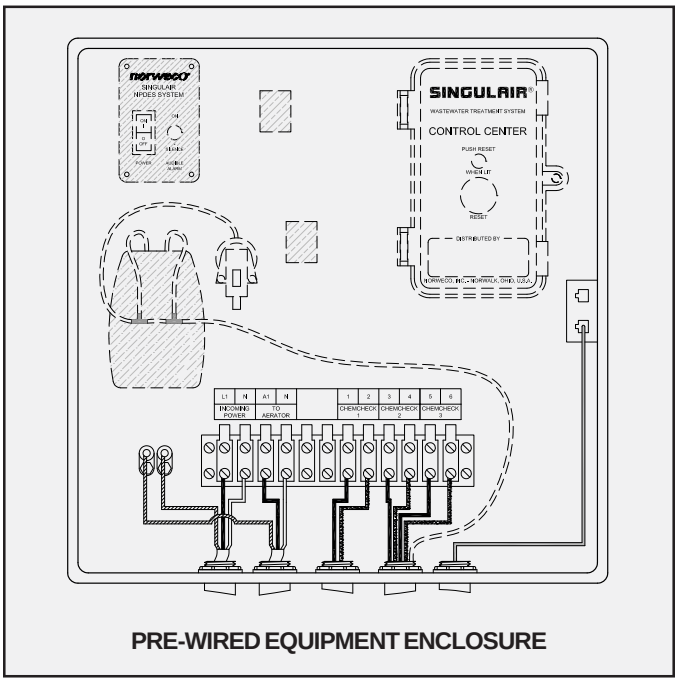
INSTALLING THE LF 1000

To accommodate the ChemCheck system wiring, the size of the LF 1000 riser to grade must be enlarged from 4" to 6" PVC pipe. Begin by connecting at least a 10" long section of 4" diameter PVC pipe to the LF 1000 riser hub using solvent cement. Then, connect a 6" by 4" PVC reducer to the top of the 4" pipe and install 6" pipe from the adapter to 3" above grade. Drill a hole in the 6" pipe for the conduit and install a tamper proof cap.

SINGULAIR® NPDES SYSTEM INSTALLATION INSTRUCTIONS (Cont.)

INSTALLING THE ELECTRICAL CONNECTIONS

Make sure power to the main service panel is off. Use a dedicated 115 VAC, single-phase, 15 amp (minimum) circuit in the main panel for service to the system. A wiring diagram is provided inside the equipment enclosure. Connect the incoming power wires, outgoing aerator power wires and ChemCheck system wires to the terminal block provided as shown in the wiring diagram. Install individual conduits for the power lines and the alarm lines. **Caution: Power lines should never be installed in the same conduit as the phone line or low voltage alarm lines.** Seal the conduit connections to ensure watertight integrity.



PRE-WIRED EQUIPMENT ENCLOSURE

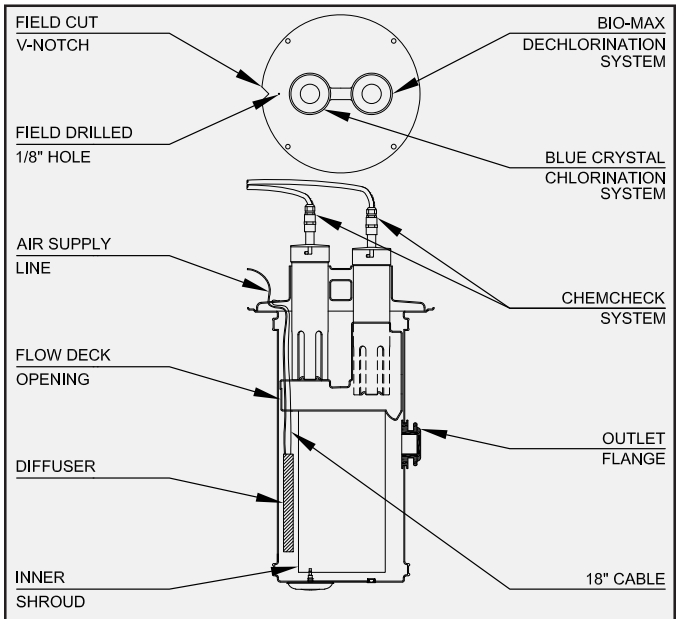
INSTALLING THE DIFFUSER

The moisture/vapor shield of the Bio-Kinetic system must be modified prior to the installation of the diffuser. Refer to the "DIFFUSER INSTALLATION" drawing for further details.

1. Cut a 1" wide, 1" deep V-notch in the edge of the moisture/vapor shield closest to the chlorine feed tube.
2. Drill a 1/8" hole in the moisture/vapor shield midway between the V-notch and chlorine feed tube.
3. Turn the moisture/vapor shield over and attach the cable holding the diffuser using the supplied screw and nut. This cable ensures that the diffuser is at the proper depth.
4. Slide the diffuser into the opening in the flow deck, placing the plastic base of the diffuser against the inner shroud of the Bio-Kinetic system.
5. Push the diffuser into the Bio-Kinetic system while reinstalling the moisture/vapor shield. Verify the attached cable is taut to ensure proper location of the diffuser. Ensure the airline is positioned within the V-notch cut into the moisture/vapor shield. Remove any kinks from the air supply line.

SERVICING THE DIFFUSER

Slowly remove the moisture/vapor shield from the Bio-Kinetic system. As the moisture/vapor shield is removed, the diffuser will also be removed from the Bio-Kinetic system. Clean the diffuser with a nylon bristled brush and water before reinstalling. Service the Singulair and Bio-Kinetic system as outlined in the standard Norweco service instructions.



DIFFUSER INSTALLATION

REFILLING THE CHEMICAL FEED TUBES

Turn the breaker in the equipment enclosure off. Refill the chlorine feed tube with either Blue Crystal or Bio-Sanitizer disinfecting tablets. Refill both dechlorination tubes with Bio-Max tablets. Reinstall the feed tubes and turn on the breaker.

ESTIMATING TIME BETWEEN TABLET REFILLS

A feed tube filled with Blue Crystal residential disinfecting tablets will treat approximately 20,000 gallons of wastewater, and a feed tube filled with Bio-Sanitizer disinfecting tablets will treat approximately 62,000 gallons of wastewater, at a residential flow rate. Each of the two Bio-Max dechlorination feed tubes will treat approximately 32,000 gallons of wastewater. To estimate tablet consumption, divide the appropriate preceding numbers by daily flow. During the first few months of operation, the homeowners should check the tablet levels in all three feed tubes every other week. If tablet levels are low, contact the Norweco distributor.

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