

# ***norweco***® SERVICE PRO®

## CONTROL CENTER WITH MCD TECHNOLOGY

# ELECTRICAL WIRING & CONTROL CENTER INSTALLATION

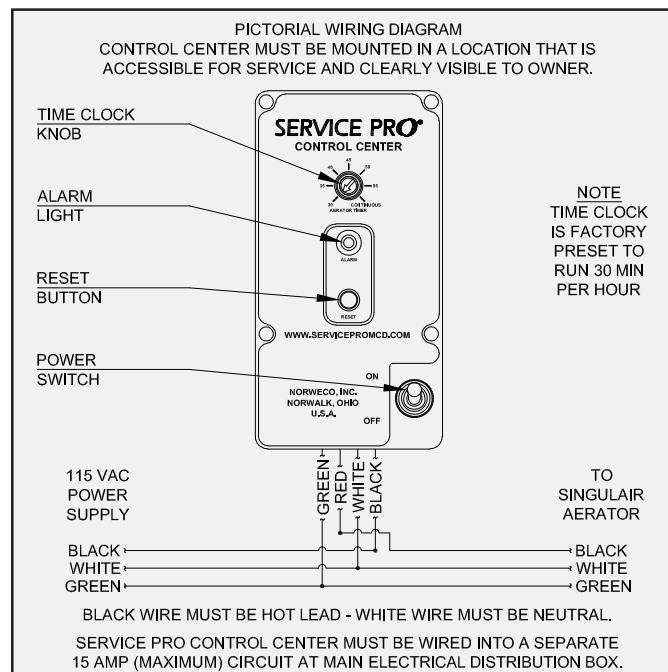
The underground electrical service cable for the Service Pro control center should be installed by the tank delivery truck driver or electrician as soon as the Singlair tankage has been installed in the prepared excavation. Usually it is best to begin with the underground service cable so that backfilling of the Singlair tankage and influent sewer line is not delayed. The information contained in these instructions is not intended to be a complete electrical installation reference, as code requirements vary according to geographic area. Always insure safe working procedures are followed whenever electrical work is performed on the Singlair system.

### UNDERGROUND ELECTRICAL CABLE INSTALLATION

To insure proper electrical system protection and uninterrupted service to the Singlair aerator and control center, be sure to follow these instructions carefully. Always double check all work before leaving the job site.

1. Electrical work must be performed in accordance with the latest edition of the National Electrical Code as well as all applicable local codes.
2. Underground electrical service cable used with the Singlair system must be UL and CSA approved, type UF, #14/2 AWG minimum and must have a full-size center ground. Larger cable is required if the underground service needs to be run more than 80 feet. Consult your electrician for details.
3. The underground cable installation must be unspliced from the location of the Service Pro control center into the aerator mounting riser above the aeration chamber of the Singlair tank.
4. Install a watertight conduit fitting into the power cable entrance in the side of the aerator mounting riser. Insert the free end of the power cable through a pre-formed two foot by one foot conduit ell, then into the watertight conduit fitting in the power cable entrance of the aerator mounting riser. Guide the power cable up into the aerator mounting riser. Pull enough cable through the riser to reach thirty-six inches above the riser opening. Coil and secure the cable in the mounting riser so that it will not hang down into the tank while the system is being filled with water.

5. Lay the conduit ell with cable directly across the top and down the tank side. Do not allow the power cable to be laid across the end of the tank or any removable access cover. Insure the conduit and cable entrance openings are sealed.
6. Check the excavation and sewer line trench to be sure they are free of debris, rocks and any sharp or abrasive objects.



7. Uncoil the electrical service cable into the excavation and influent sewer line trench. Leave sufficient slack in the cable so that it will not be stressed or pulled tight during backfilling or settling.
8. Backfill around the underground electrical cable with fine granular material.
9. The underground electrical cable should have at least two feet of earth cover. If the proposed finished grade will not permit this coverage, the cable should be installed in approved conduit from the tank to the building foundation.
10. Always encase the electrical cable in conduit any time it is above finished grade. Route the conduit and cable as directly as possible to the control center mounting location.

### INSTALLATION OF ELECTRICAL CONTROL CENTER

Although the aerator is not installed until system start-up, the control center should be wired for operation when the tank and underground electrical cable are installed. The control center should be located so the red warning light can be seen and the audible alarm heard. The mounting location should minimize exposure to direct sunlight,

# ELECTRICAL WIRING & CONTROL CENTER INSTALLATION (Cont.)

freezing rain or conditions that might prevent routine inspection or access. The control center should always be mounted out of the reach of children.

Detach the control center cover from the enclosure and remove the insert from the mounting posts. Set the control center insert aside. Remove two of the three  $\frac{1}{2}$ " knockouts in the bottom of the control center enclosure. Install a conduit connector into each of the openings. For installations requiring a NEMA 3R rated enclosure, remove the  $\frac{1}{8}$ " drain opening knockout to vent moisture from the enclosure. Exposed wiring to or from the control center should always be enclosed in conduit. NOTE: Be sure to assemble the hub to the conduit before connecting the hub to the enclosure. Mount the enclosure securely using masonry nails, wood screws or common nails as appropriate. The following steps should be performed by the installing electrician to complete system wiring:

1. Use a dedicated 115 volt AC, single-phase, 15 amp (maximum) circuit breaker in the main electrical panel for service to the Singulair aerator.

**CAUTION: Make sure the circuit supplying power to the Singulair system is de-energized. Check it with an electrician's test light before proceeding. Remember that other circuits in the main electrical service panel may remain energized as you are working. Use only tools with insulated handles, stand in a dry location and work with extreme care.**

2. Run the black wire from the dedicated breaker in the main electrical service panel to the black wire attached to the Service Pro control center. Use at least #14 AWG black solid copper wire. To connect the wire leads, strip off the insulation jacket  $\frac{7}{16}$ " from the end of each insulated wire lead. Twist the stripped leads together and secure the connection with a yellow wire nut connector.
3. Wire from the neutral in the main service panel to both the white wire in the underground electrical cable from the Singulair aerator and the white wire attached to the Service Pro control center. Use at least #14 AWG white solid copper wire. Strip off the insulation jacket  $\frac{7}{16}$ " from the end of each insulated wire lead. Twist the three stripped leads together and secure the connection with a yellow wire nut connector.
4. Install a grounding conductor from the ground lug in the main service panel to the control center. This wire must be attached to the non-insulated ground lead in the aerator underground electrical cable and the green wire attached to the Service Pro control center. Strip off the insulation jacket  $\frac{7}{16}$ " from the end of the insulated wire lead. Twist the three stripped leads together and secure the connection with a yellow wire nut connector.

**CAUTION: Never allow the white neutral leads and ground leads to be spliced together or connected to common terminals. Failure to connect the Service Pro**

**control center to a proper ground will void the Singulair system warranty.**

5. Connect the black lead of the underground electrical cable from the aerator to the red wire attached to the Service Pro control center. Use at least #14 AWG black solid copper wire. To connect the wire leads, strip off the insulated jacket  $\frac{7}{16}$ " from the end of each insulated wire lead. Twist the stripped leads together and secure the connection with a yellow wire nut connector.
6. Inspect your work to make sure all wires are connected to the appropriate locations, there are no breaks in the wiring insulation and that all connections are secure.
7. Before installing the control center insert, energize the circuit breaker in the main electrical service panel and, with your electrical multi-meter, test the voltage being supplied. It should read between 109 volts and 121 volts supplied between the black and white wires attached to the control center. Once the voltage has been confirmed, place the dedicated circuit breaker in the main service panel in the "off" position. The conduit openings in the control center must now be sealed using duct seal. **IMPORTANT:** The conduit openings must be sealed to prevent corrosive gas from entering the control center enclosure which could result in a fire or explosion. Failure to properly seal all conduit openings will void the warranty.
8. Close the insulator and snap into position.
9. Clearly label the dedicated circuit used for the Singulair system on the door of the main service panel. Replace the service panel dead front and enclosure cover.
10. Make sure the selector switch in the control center is in the "off" position.

## BEFORE LEAVING

Tear off the bottom portion of the three-part Warranty Registration Card entitled Singulair Bio-Kinetic System Service and Warranty Record. Record the tank setting date and owner's name, address and telephone number. Fill in the contractor's name, directions to and description of the job site, optional equipment installed and location of the Singulair tank and control center. On the back side of the card list the date the owner and/or contractor anticipates the system will be ready for start-up. Take this portion of the card with you for your permanent record of this installation, leaving the remaining two portions intact and attached to the control center. Place the remaining portions of the Warranty Registration Card and Owner's Manual in a secure location inside the facility.

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