

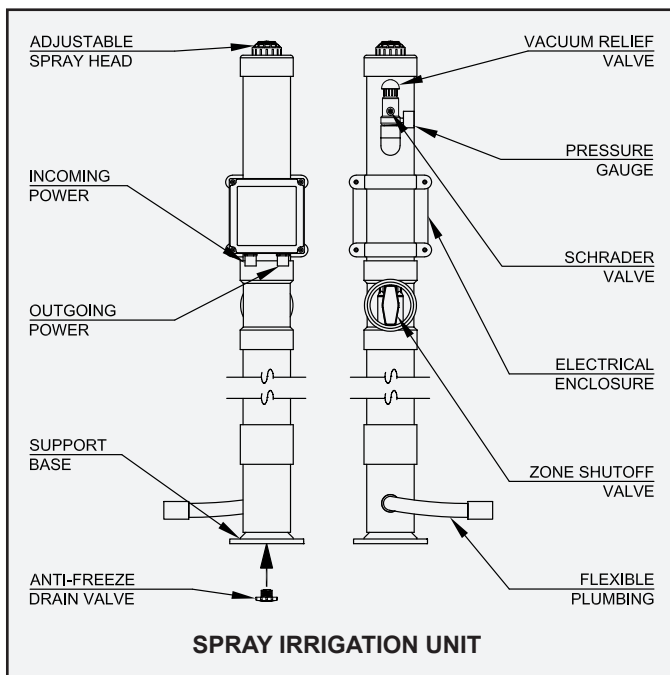
norweco® SINGULAIR®

SPRAY IRRIGATION SYSTEM INSTALLATION INSTRUCTIONS

These instructions focus on the specific requirements for the spray irrigation system. They do not cover all installation aspects of the underground electrical cable and control center, inspection, testing and service of the control center or troubleshooting. Electrical work must be performed in accordance with the latest edition of the National Electrical Code and local codes.

INSTALLATION INSTRUCTIONS

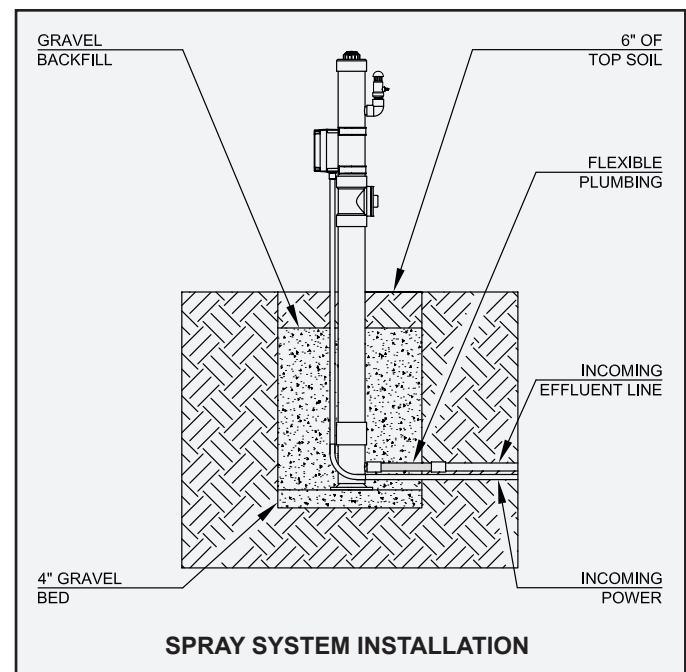
1. Dig a narrow trench 36" deep, extending from the outlet of the installed wastewater treatment system and pump tank to the designated areas where the spray irrigation units will be installed.
2. Install plumbing in the trench and extend it to each spray irrigation unit location. Install tees to split flow between multiple spray irrigation units.



3. Each spray unit is equipped with heat tape. For the heat tape to function, an underground electrical service cable must also be installed in the trench. The electrical service cable must be UL or 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. A dedicated 120 volt AC, single phase, 15 amp (maximum) circuit breaker in the main electrical panel should be provided for the spray system.
4. The underground cable must be continuous and unspliced from the main electrical panel to the spray irrigation system. Each additional unit will get power from the previous spray unit using the same cable that was installed in step 3. Underground cable must be protected

in conduit anytime the cable path passes directly across a tank or underground structure.

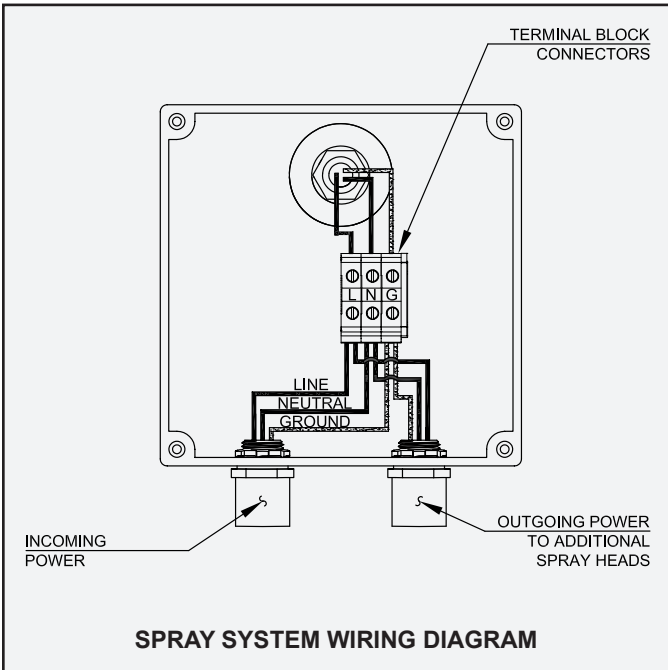
5. Dig a 24" diameter hole 36" deep at each location where a spray unit is to be installed. A 4" inch gravel bed should be laid in the bottom of each hole.



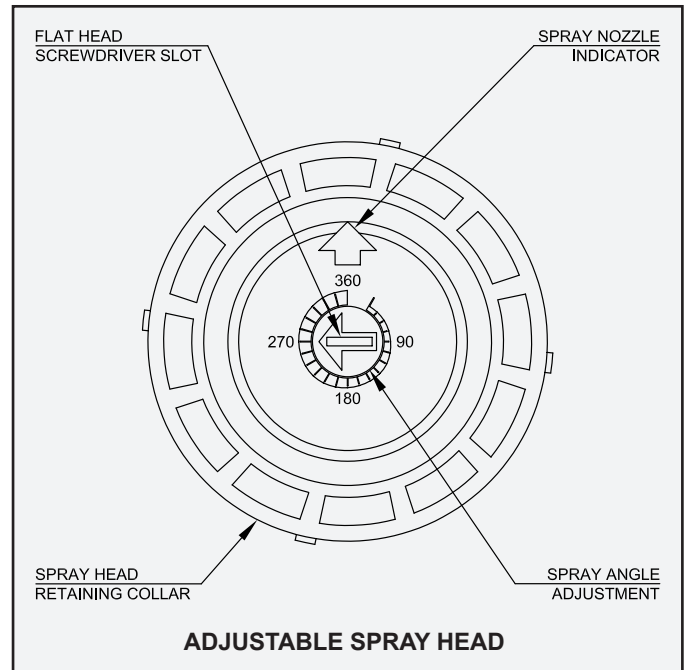
6. Depending on the location, distance and grade from the pump chamber to the spray unit, the $\frac{3}{4}$ " plug in the bottom of the spray unit can be removed and replaced with an anti-freeze drain valve (included), which assists draining during off cycles.
7. Lower the spray unit into the hole, keeping it centered on the gravel pad. Solvent weld the flexible plumbing to the bottom of the spray unit and incoming plumbing.
8. Wiring to or from the spray system electrical enclosure should always be encased in conduit. Solvent weld the conduit into the pre-installed $\frac{1}{2}$ " conduit connector. Plug any unused conduit openings.
9. Backfill each spray unit with gravel, keeping the unit centered in the hole.
10. Once backfilling is complete, remove the control center cover to expose the wiring terminal block.
11. Wire from the main electrical panel to the terminal block connector marked "L" in the spray system enclosure using the copper wire with black insulation.

SPRAY IRRIGATION INSTALLATION INSTRUCTIONS (CONT.)

12. Wire from the neutral in the main electrical panel to the terminal block connector marked "N" in the spray system enclosure using the copper wire with white insulation.
13. Wire from the ground conductor in the main electrical panel to the terminal block connector marked "G" in the spray system enclosure using the bare copper wire.
14. A zone shutoff valve is located under a black threaded cap on the side of each unit. It can be used to adjust the pressure at each spray head or shut off particular zones while performing system maintenance or in the event of system malfunction.



15. Before system activation, the spray head angle of rotation must be set in order to direct spray to the designated areas of the yard. The angle can be adjusted between 40° and 360° by turning the black arrow on top of the spray head using a flat head screwdriver.
16. The spray head starting point can be adjusted by removing the purple retaining collar and the spray head inner assembly from the spray head body. Align the spray nozzle indicator arrow with the counterclockwise limit of the desired spray area.
17. Reinsert the spray head inner assembly into the spray head body, ensuring that the spray nozzle indicator is pointing in the desired direction.
18. Hand tighten the purple retaining collar to the spray head body.
19. A pressure gauge is located on the side of each vacuum relief valve for pressure testing during startup and routine inspections. To check the system pressure, turn on the pump supplying the spray heads and check the pressure gauge located on the side of each vacuum relief valve. Confirm each spray head is receiving equal pressure. Varying pressure could indicate a blockage or break in the supply line.



20. The spray heads come with the nozzle number '3' preinstalled at the factory. Nozzles '1', '4' and '6' (also included) can be installed simply by removing the nozzle '3' and installing another. The pressure (pounds per square inch), radius (feet) and flow (gallons per minute) of each nozzle is outlined in the below chart:

| SPRAY NOZZLE CHART | | | |
|--------------------|----------------|---------------|------------|
| Nozzle | Pressure (PSI) | Radius (Feet) | Flow (GPM) |
| 1 | 30 | 22 | 1.1 |
| | 40 | 24 | 1.0 |
| | 50 | 26 | 0.9 |
| | 60 | 28 | 2.3 |
| 3 | 30 | 29 | 2.0 |
| | 40 | 32 | 1.6 |
| | 50 | 35 | 3.7 |
| | 60 | 37 | 3.2 |
| 4 | 30 | 31 | 2.7 |
| | 40 | 34 | 5.8 |
| | 50 | 37 | 5.0 |
| | 60 | 38 | 4.3 |
| 6 | 40 | 38 | 3.6 |
| | 50 | 40 | 2.5 |
| | 60 | 42 | 2.5 |
| | 70 | 44 | 2.5 |

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