

SOLLECO

VES 250 CFM BLOWER

GENERAL INFORMATION FOR THE VES 250

The VES 250 is used for the remediation of soils with volatile organic compounds (VOC's), which are present.

VES GENERAL DESCRIPTION

The VES contains the following items:

Entrained Liquid Separator – VES Vacuum Pump & 10 H.P. (TYP)
Motor – Electrical Control Panel – Liquid Pump – De-mister Pad.

Soil vapors are extracted with the vacuum pump through the entrained liquid separator, which removes the majority of the water brought up from the soil during the vacuum extraction process. Vapors are pulled through the carbon or pushed through the carbon.

The VES is described more thoroughly in the technical specification section of this document.

TECHNICAL SPECIFICATIONS

Design Specifications

- **Process Flow:** The VES 250 can process 250 SCFM and up to 12" Hg. vacuum of contaminated air on a continual basis.
- **Process Connection:** 3" fnpt.

Major Components

- **Entrainment Separator:** The Entrainment Separator is provided to remove water that is brought up during vapor extraction from the vapor stream. It has a tangential inlet that cyclone separates the water from the vapors with 90% efficiency. It also has a de- mister to remove incoming particulate and water vapor. The Entrainment Separator dimensions are 28 inches in diameter x 60 inches tall.

- **Vacuum Pump:** The Vacuum Pump extracts the vapors from the soil and can produce vacuum levels from 1 inch of water to 170 inches of water at the VES blower inlet. The pump is powered by 10 horsepower motor, which is sized to provide enough horsepower to generate the flow required at the specified vacuum level for the VES system.
- **Control Panel:** The NEMA 4 Control Panel contains a main disconnect, on/off switches, lights, fuses, motor starters, relays and wiring.
- **Auto Drain Pump:** A Liquid Pump is provided to remove the water accumulated in the entrainment separator. The pump is activated when the water reaches the high liquid level switch and shuts off when the timer shuts it off. The pump transfers the water to a receptacle provided by the client at the site.
- **Liquid Level Switches:** Liquid Level Switches are provided on the entrainment separator site glass. A High Liquid Level Switch activates the liquid transfer pump when it is triggered. The High/High Liquid Level Switch turns the entire system off when the switch is actuated.
- **Pitot Tube:** A signal from the pitot tube in the process line sends a differential air pressure signal to the magnahelic gauge. This indicates the volumetric flow rate passing through the VES from the vapor extraction wells.

VES SYSTEM WARNINGS

The VES System utilizes high voltages and flammable vapors when in operation it also utilizes many moving parts. All personnel operating the VES System must be trained in the operation and maintenance of the system as well as the safety devices provided with the system.

- 1. Do not attempt to bypass any of the safety interlocks provided with the unit in an attempt to operate the unit unless authorized by Solleco personnel.**
- 2. Do not modify or bypass the transformers, fuse blocks, in order to make the system operational unless authorized by Solleco personnel.**
- 3. Do not remove any equipment from the unit in order to make the unit operational.**
- 4. Keep all body parts clear of the exhaust stack, air intake valves and moving parts due to burns and possible serious bodily injury situations that may occur as a result of body contact with these parts.**
- 5. Do not restrict, block or close the exhaust stack during operation.**
- 6. Disconnect incoming voltage to the unit control panel before attempting to work on the panel or other electrical components on the unit. Use a voltage meter to determine that the power is off. Have only qualified**

personnel work on the electrical components, preferably a qualified electrician.

SYSTEM INSTALLATION AND START-UP

Follow each step listed here in exactly the order listed. For your safety, do not skip any steps or perform any steps out of order.

Installation:

1. Operate the unit on a level dry surface.
2. Connect the properly rated electrical supply with a ground to the control panel main disconnect using a qualified electrician.
3. Check voltage, wire size and amperage rating of electricity installed, making sure that it matches the manufacturers panel specifications and electrical drawings before proceeding.
4. Check 120-volt power circuit.
5. Check rotation of the VES Blower making sure it is correct.

Start-up Procedures:

1. Verify that the “**Main Disconnect Switch**” on the control panel is in the “**On**” position.
2. Turn the main power “**On**” and check electrical setting is 230 Volt / 3 Phase.
3. Open the system control panel door and have a qualified electrician verify that the voltage at top of the “**Main Disconnect**” is to 230 Volt / 3 phase.
4. With the control panel door closed and latched, turn the “**Main Disconnect**” switch to the “**On**” position.
5. Turn the “**Control Power**” switch to the “**On**” position.
6. Push the “**Blower Start**” button. The Blower should come on.

System Alarms

1. **High Water Alarm:** Water level is above the high/high level switch in the entrained liquid separator.

MAINTENANCE SCHEDULE

- Check VES Blower **Monthly**
(Maintenance procedure in the Roots product bulletins)
- Grease Motor fittings **Monthly**
(Use grease gun on zirk fittings; give two pumps to the fittings)
- Check Panel Wire connections **Monthly**
(Tighten them if necessary)
- Check Entrainment Separator De-Mister **Tri-Yearly**
(Remove Entrainment Separator lid, clean or replace as needed)
- Clean out Entrainment Separator **As Needed**
(Use clean water to rinse sides and remove hand clean out for debris)
- Check level switches **Monthly**
(Insure proper operation)