

Environment/One (E/One) Grinder Pump Units **Operation & Maintenance Questions and Answers**

Q. What is an Environment/One (E/One) grinder pump?

A. The Environment One grinder pump is a self-contained appliance that consists of a wastewater-holding basin, a 1-hp pump, on-off controls and a high water alarm. The pump collects all of the wastewater from the home, grinds it into a slurry and pumps it to the main sewer line in the street.

Q. Why does my lot need a grinder pump?

A. Because of difficult terrain (flat, wet, rocky or hilly) or a failing cesspool or septic system, using an E/One system is more practical for moving wastewater from the lot to the public sewer system. Conventional sewer systems are impractical, if not impossible, for this location.

Q. What is the average yearly cost of electricity to operate a unit servicing the typical single family home?

A. A typical single family home will use 250 gallons of water per day. The E/One pump for this home will consume about 200 KWh of electricity per year. At \$.011 KWh x 200 KWh = \$22.00 per year cost of electricity to operate the E/One pump.

Q. What is the maintenance schedule?

A. There is no required maintenance schedule. All pump components used are designed to provide years of trouble free-service without maintenance. The storage tank is designed to be self-scouring, eliminating the need to wash down the tank periodically.

Q. What if my home is vacant for a period of time?

A. If you are planning to be away for more than two weeks, run clean water into the tank until the pump activates. Shut the water off and allow pump to run until it shuts off. If possible, leave the power on. This will insure that if somehow water from your home (such as a leaky faucet) gets into the tank it will be pumped out.

Q. What materials or objects will clog the pump?

A. As with conventional systems, DO NOT allow plastic, glass, diapers, sanitary napkins or seafood shells to enter the pump or pressure sewer system. The E/One pump is capable of accepting and pumping all materials commonly found in domestic wastewater. Introducing large amounts of grit such as fish tank gravel is not recommended and will increase wear on the grinding components of the pump. The E/One pump unit has a low inlet velocity; metal (such as a bolt or nut) should not enter the grinding shroud.

The following materials should never be introduced into any sewer and may damage the pump components:

Explosives - Flammable materials - Strong chemicals - Gasoline
Please contact the City of Warwick's Department of Public Works
(401/738-2000) for proper disposal methods.

Q. Can I use a garbage disposal?

A. Yes. The E/One pump is not affected by material passing through a garbage disposal. Check local regulations about the use of garbage disposals.

Q. What type of Warranty does this pump unit have?

A. The Warwick Sewer Authority (WSA) has negotiated with the distributor of the E/One pumps for an extended three-year limited warranty. The warranty is for the entire pump unit (no pass through warranties) and includes parts and service, which is done on-site. Contact the manufacturer's representative, F.R. Mahony & Associates, Inc. (508/765-0051) for warranty information. A start-up inspection is required at the time of installation to activate the warranty. Contact the WSA (401/468-4710) for more information about this inspection.

Q. How long will my pump last before I need to repair or replace it?

A. The E/One pump unit has been providing sewer service to homes and businesses since 1970. Service providers and the Environment/One Corporation have kept excellent service records. The mean time between service calls has proven to be 8 to 10 years. The need for a major pump rebuild has proven to be 15 to 20 years.

Q. What is the cost for a repair or rebuild when needed?

A. This will depend on what pump component was responsible for the service call, but again, well kept service records show the most common service call is related to wear of the rubber stator (boot) around the stainless steel rotor. The stator (cost \$60.00) can be changed at your home. A rebuild of the pump unit after fifteen to twenty years in today's dollar will be about \$800.00. The service records show operation and service costs of the grinder pump units to be less than \$35.00 per year (over the life of the unit).

The E/One pump units you receive today have many upgrades, including solid state relays which should increase the Mean time between service calls and extend the overall life of the pump unit, both of which are already the best in the industry.

Q. If I get an alarm what should I do?

A. An alarm panel, located outside your home or inside your garage, has an audible and visual alarm that indicates high water levels in your grinder pump's tank. If the alarm sounds, use the silence switch to silence the alarm and call F.R. Mahony's 24-hour service department (508/765-0051) immediately.

F.R. Mahony & Associates Inc. is and has been the New England representative for the Environment/One Corporation for the past 20 years. A trained service technician will respond to your home to repair the pump. The occupants of the home should keep water use to a minimum until a technician arrives. If you need to shower, close the drain so you won't overwhelm the unit. Use your toilet sparingly.

Most repairs are completed on site. Should the service technician decide that the pump must be repaired at the service shop, they will place a replacement core (at no cost to you) in your wet well. This insures that your sewer system will work while the pump core is being repaired.

Q. *Why can't I just call my plumber?*

A. Because the pumps (which are designed and engineered specifically to operate in a domestic wastewater environment) are providing a very important function for the homeowner, Environment/One Corporation requires a commitment from the people and companies they approve for service. This commitment includes providing 24-hour service and charging no more per hour than other providers of similar service in the area. The approved service representatives also receive product specific training, insuring the customer gets professional service in a timely fashion. This policy has proven to be cost effective and appreciated by our thousands of customers. F.R. Mahony & Associates, Inc. is the authorized service representative for the WSA's customers.

Q. *What happens if there is a power outage?*

A. The pump does require electricity to operate. When the electricity is out the pump will not run. During a power outage, water usage drops significantly because the appliances which account for much of the water we use are not working. There is adequate storage in the wet well to continue using water for necessities for a period of several days. The pump will automatically come on when power is restored. The E/One now uses a NEMA 6 electrical quick disconnect instead of troublesome junction boxes. This feature allows a generator to be connected to provide power to the pump. Since most power outages are of short duration you will probably never have an occasion to take advantage of this feature.

As a proactive measure, if a storm is expected that may lead to a power outage, plan to empty your pump prior to the power outage by running clean water into the unit until the pump activates and ejects the wastewater into the City's sewer system. This will provide maximum storage capacity in the unit while power is out.

Q. *What happens when the power comes back on and all the pumps try to turn on at once when power is restored?*

A. In such a situation, the pipe friction losses go far above the calculated values, which are based on simultaneous operation of a small fraction of the pumps at any given time. Under such circumstances, those pumps with the highest total dynamic head losses will turn on momentarily but will be automatically tripped off the line in a few seconds by the built-in thermal overload protector. Meanwhile, those pumps nearest the discharge point and with the lowest static heads will see lower pressures, will pump out normally, and shut off in three or four minutes.

Meanwhile, the other pumps will have cooled down enough to come back on a second time and try again. Some will still see high enough heads to be tripped back off again. Others will find the line pressure has reduced enough to permit them to pump out and shut off. In this way, the system completely and automatically restores itself to normal operation within 30 to 45 minutes following restoration of power. No one must visit the pumps because they reset automatically.

For more details, visit WSA's website (www.warwicksewerauthority.com) and review the "What Happens When the Lights Go Out" document under WSA RESOURCES, Grinder Pumps.

Q. *How noisy is the pump?*

A. With an outdoor unit buried in the ground, you will not hear it at all if you're 10 or 15 feet away. If you're standing on top of it, it sounds like your washing machine when it's running – just a hum.

Q. *What will this look like in my yard?*

- A. The system will be buried and the only thing you'll see is the top cover, which is less than 30 inches in diameter. The cover is designed to blend into your yard as much as possible. Do not cover the unit with landscaping or decking as the service technician must access the unit through the top cover.

Q. *Does the E/One grinder pump emit any unpleasant odors?*

- A. Odors can be a problem from time to time in all types of sewer systems. Large-diameter, long-distance gravity mains have been a classic source of gas generation and odor. The closed network of small-diameter pipelines of a pressure sewer system is inherently less susceptible to odor problems.

Well designed pressure sewer systems minimize the potential for odor by designing for short retention time. When pressure sewers discharge a short distance, as in a typical service line to a receiving gravity sewer, the residence time in the pipeline is usually short enough for the wastewater to be relatively fresh or even stale, but not so septic as to present a problem of odors or corrosion at the receiving sewer. With increased retention time the wastewater becomes totally septic. Corrosive gases tend to deteriorate capital equipment and have a negative impact on treatment. Long lines, oversized piping, seasonal occupancy and slow build-out are among the causes for excessive retention times, but properly designed systems can minimize excessive retention times.

Q. *Is there a chance of backflow into my home from my unit or the whole system?*

- A. No. Check valves on the grinder pump and at the street prevent the street main sewage from entering your pump and home. If installed properly, any serious malfunction will result in sewage discharging outside the home.

Q. *Who can install my E/One grinder pump?*

- A. Homeowners can contract with a licensed drain layer or Rhode Island master plumber to connect the property to the public sewer line in the street. The plumber or drain layer, in conjunction with a master electrician, will install the grinder pump. Your contractor will schedule a mandatory start-up inspection at the time of connection.

Q. *Who can I call for more information about E/One grinder pumps?*

- A. Call your local distributor, F.R. Mahony & Associates, Inc. for complete information about E/One grinder pumps: (800) 791-6132. Information can also be found at Environment One's website: www.eone.com. You may call the Warwick Sewer Authority (401/468-4710) if you have any questions about your sewer service or are experiencing a problem with your service.

FOR MORE INFORMATION, VISIT THE WARWICK SEWER AUTHORITY'S WEBSITE AT:
www.warwicksewerauthority.com, WSA RESOURCES Grinder Pumps,
OR CALL OUR BILLING OFFICE AT (401) 468-4710.