



E/ONE
EXTREME
S E R I E S

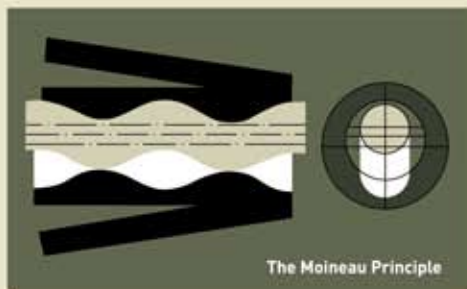
**PRESSURE
SEWER
SYSTEMS**

ENGINEERED TO DO ONE JOB PERFECTLY.

At the heart of the E/One Sewer System is the toughest, hardest working pump in the industry. The new standard in excellence, durability, and longevity, the E/One Extreme Series Grinder Pump. Its evolution reflects everything we've learned in nearly 40 years as the originator and leader in the category of low pressure sewer systems.

The pump stations incorporate the grinder pump, motor controls and level sensing device integrated into a compact unit, easily removable for servicing when necessary.

And, the geometry of the pump not only produces a near-vertical pump curve, but allows passage of ground solids without clogging. Because of the low rpm and highest quality components, we experience the lowest service call rate in the industry. An average mean time of 10 years between service calls is typical.



The progressing cavity pump itself is based on the Moineau principle. A rotor turns within a stator, creating a sequence of sealed chambers. The precision-cast and polished stainless steel rotor moves wastewater through these chambers at a nearly constant flow, over a wide range of conditions - from negative to abnormally high heads. Turning at just 1425 rpm, the 0.75kW motor can pump fluid through more than 4 km of small diameter piping or elevation changes of over 56 metres.

Rugged, Ready, and Reliable – To The Extreme

EXTREME DESIGN

- Enhanced pump controls: expanded diagnostics, protection, and communications capabilities
- "Core" concept with integral level and motor controls
- Radial O-ring seals on all joints
- Thermally welded discharge assembly for high-pressure performance
- Differential pressure switch level control in separate, removable assembly
- Equalizer compensates for fluctuations in atmospheric pressure while providing a sealed, water-tight level control system
- Integral check valve and anti-siphon valve assembly
- New, more resilient stator material enables higher pressure rating of 80 psi, using E/One proprietary stator chemistry
- All fasteners and hardware are 300 series stainless steel

EXTREME RELIABILITY

- Huge double O-rings used for casting joint seals
- Casting joints designed for corrosive environment
- Indestructible level sensor housing
- Ultrasonically welded check valve assembly
- Superior corrosion protection – wet-applied coating on Class 30 cast iron vs. industry-standard powder coating
- Weld-free stainless steel stand

EXTREME PERFORMANCE

- Design pressures to 80 psi (185 feet total dynamic head)
- Progressing cavity pump provides predictable flow over varying system pressure
- 0.75kW 1425 rpm, air-cooled motor provides low speed, high torque operation, eliminating jams
- Field-proven, large-diameter grinding mechanism provides low inlet velocity, eliminating pump blinding or clogging
- Integral check valve protects against system back pressure; anti-siphon valve facilitates downhill pumping applications

EXTREME SERVICEABILITY

- No preventive maintenance required
- Quick-release core latch on D-Series – no mounting bolts required
- Electrical quick disconnect (EQD) seals and connects without tools; uses single turn locking ring
- Detachable level sensor assembly; wireless design available using inductive coupling
- Discharge plumbing quickly disconnects from grade level
- Backward compatibility to all earlier generations/designs
- Air-filled motor more efficient than oil-filled motors and eliminates need to change and dispose of oil
- One pump for all series
- Backward-compatible EQD

WHY YOU SHOULD BUY THE BEST

Engineered Tank.

The robust tank has been designed for seismic and drag down loads. It also features a tapered base which increases turbulence for self cleaning. The tapered base also reduce the residual volume which reduces odours. Most importantly it has been designed and manufactured to the AS/NZS1546.1 standards for under ground sewer tanks.

High Grinding Torque.

Our unique pump system, driven by a 0.75kW motor turning at 1425 rpm, produces greater grinding torque, eliminating jams.

Energy Efficient.

The pump is activated automatically and runs for short periods. Typically annual energy consumption is comparable to a 40 watt light bulb.

Low Maintenance Submersible Motor.

Low maintenance and long life are the hallmarks of our air filled motor. Permanently lubricated ball bearings and Class F insulation eliminates the need for periodic oil changes and oil disposal costs required by oil filled submersible motors.

Large Diameter Grinder Assembly.

Almost twice the diameter of most other types of grinder pumps, contributing to a dramatic reduction of inflow for less wear and no binding, clogging or jamming.

No Preventative Maintenance.

EOne are the only Pressure Sewer Manufacturer to be able to boast nearly 40 years experience. This experience has resulted in a mean time between service calls in excess of 10 years. Whilst other suppliers may claim this length of time between calls, they can not back it up with real operating systems.

Integrated Valves.

The integral check valve protects against system back pressure and the anti-siphon valve facilitates downhill pumping applications.

Corrosion Resistance.

E/One's stainless steel ball type discharge valve and piping won't corrode like copper or galvanized steel, and holds up years longer. No corrosion, no maintenance with casting joints that have been designed for corrosive environments, superior corrosion protection wet coatings, Class 30 cast iron and all fasteners of 300 stainless steel.

Submersible Grinder

Unlike other dry mounted units available, the EOne submersible grinder does not have issues with:

- solids build up in the tank and the requirement to periodically suck the solids out.
- The need to always have the rubber stator primed, and burning out of the stator if the prime is lost.
- Inability to work in frozen environments.

Pressure Switches.

EOne are the only unit on the market with a single joint in the pressure switch assembly. This greatly reduces the possibility of sensor failure and maintenance calls. Pressure switches require no maintenance, unlike floats which need to wash down periodically to remove fats and fibres.

Serviceability.

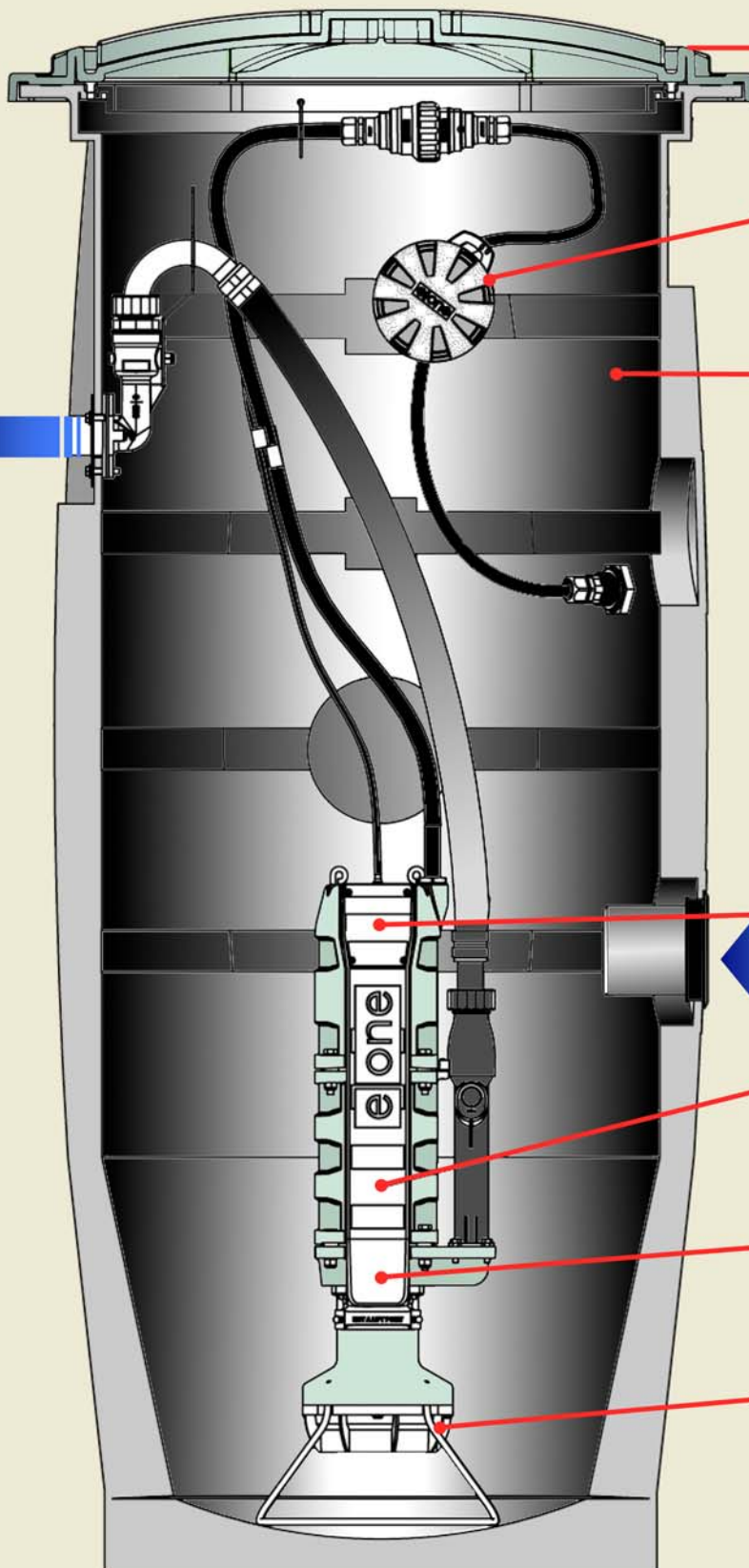
Our unique design eliminates the need for in field trouble shooting and pump servicing. This means lower maintenance costs and minimum home owner inconvenience. The indestructible and removable level sensor housing allows for rapid change out of level sensors. Quick release core latch, no mounting bolts, electrical quick disconnect that requires no tools, allow for easy wash down / removal within the tank, on the rear occasion that maintenance needs to be performed And a one pump for all approach all adds up to the easiest unit to service on the market.



GRAVITY SEWERS ARE NO LONGER THE RULE FOR SOLVING WASTEWATER PROBLEMS.

At the heart of the systems is the E/One progressing cavity grinder pump – with high heads that can eliminate costly lift stations, and a robust, powerful design that translates into the industry's highest levels of reliability, availability and maintainability.

ENGINEERED PRESSURE SEWER SYSTEMS



LOW-PROFILE COVER: Aesthetically pleasing. Provides easy access for service while blending with surroundings.

E/ONE EQUALIZER: Compensates for fluctuations in atmospheric pressure to enable accurate level sensing while assuring the level sensing system is watertight.

PURPOSE-DESIGNED TANK: Constructed from polyethylene or FRP for rugged reliability. All vessels are designed with a tapered base to reduce the volume of retained wastewater.

STAINLESS STEEL HARDWARE (not shown): E/One's SS discharge ball valve won't corrode. No corrosion, no maintenance, no tools required.

DOUBLE O-RING SEALS (not shown): Make assemblies waterproof and novel joint geometry minimizes the effects of crevice corrosion.

UNIQUE CORE DESIGN: Eliminates the need for in-field troubleshooting and service. Modular controls simplify service.

PROGRESSING CAVITY PUMP: A deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.

PRESSURE SWITCH LEVEL CONTROL: Self-cleaning level sensors require no preventive maintenance.

GRINDER WHEEL AND SHREDDER RING: Forged alloy cutter wheel with induction-hardened teeth. Proven cast shredder ring with offset tooth pattern.

NOBODY CAN TOUCH OUR CURVE.

In a low pressure system, constant, predictable pump output is the foundation for proper hydraulic design. It enables the engineer to minimize retention time, pump wear, and keep scouring action at effective levels.

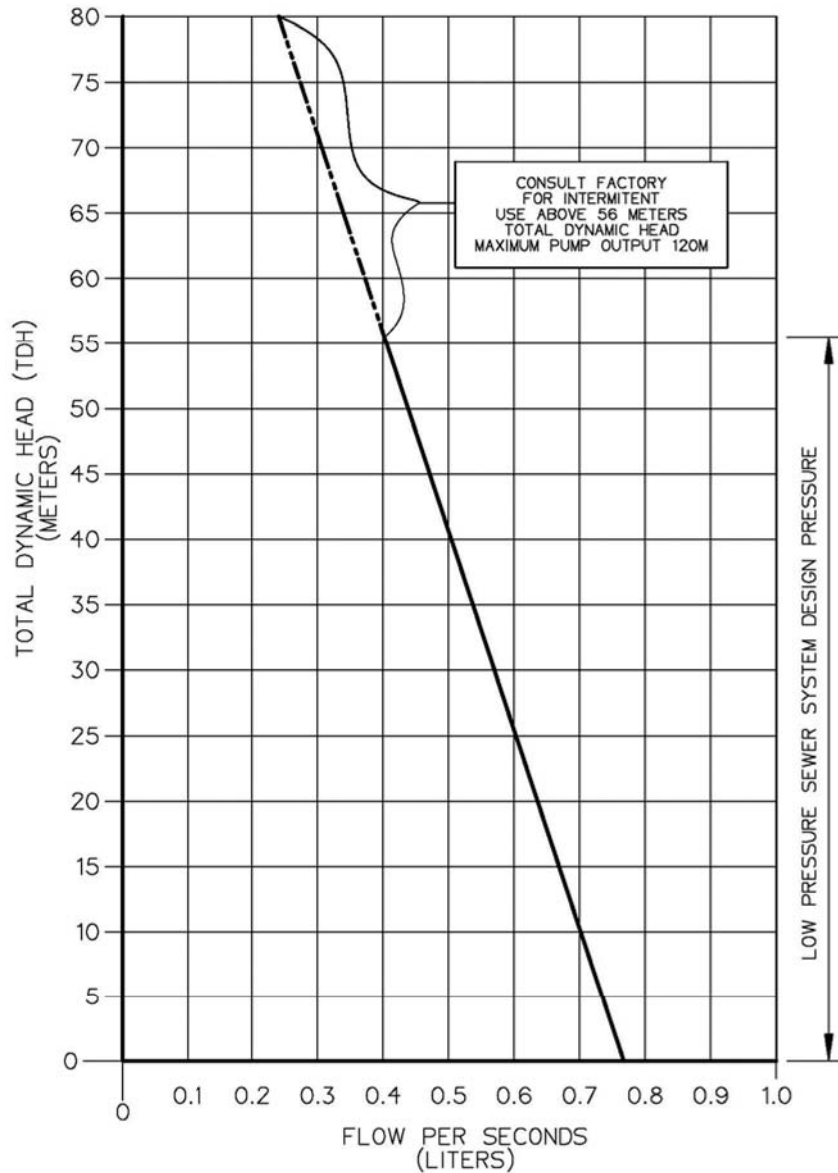
Environment One's semi-positive displacement, progressing cavity pump has a nearly vertical H-Q curve. Its is by far the most "forgiving" pump design - providing predictable flow over the full range of typical system pressures; strengths critical in a large-scale, low pressure sewer.

E/One's superior high head capability allows a system with few, if any, lift stations. And, it easily accommodates additional future connections without compromising system performance.

These E/One pump characteristics translate into:

- predictable hydraulic design
- lower collection system capital costs
- less maintenance
- lower operating costs

GRINDER PUMP PERFORMANCE CHARACTERISTICS



Sewer Anywhere and Save

E/One Sewer Systems give engineers, builders, developers, municipal sanitarians and land planners unprecedented new freedom in land usage and sewer rehabilitation.

Easy to install. Easy to operate. And easy to maintain.

The sensible sewer solution that defies gravity and saves up to 50% - the E/One sewer system.

Environmentally sensitive. Economically sensible.



e/one Sentry

Custom Alarm Panels for E/One Low Pressure Sewer Systems

The following features are included or available with the E/One Sentry Protect Plus to maximize reliability and convenience:



- 1** Visual Alarm Indicator
- 2** Audible Alarm
- 3** Alarm Silence Switch
- 4** Main Service Disconnect Breaker (available option, not shown)
- 5** Easy-Access Terminal Strips Interface
- 6** Display Panel Operating Indicators
 - Ready (AC Power) Indicator
 - Pump Running Indicator
 - Trouble Indicator
 - High Level Alarm Indicator
- 7** LCD Display
 - Manual Run Switch/Enter Switch
 - Scroll Switch
 - Trouble Indications: Brown-out Condition
 - Run-dry Condition
 - System Over-pressure Condition
 - Voltage Problem
 - Amperage Problem
 - Run-time Limit Exceeded
- 8** Diagnostic Mode Switch (For system setup/service)
 - Diagnostic Mode Indicators
 - Pump Performance provides access to performance statistics including:
 - Real-time Voltage
 - Real-time Amperage
 - Real-time Wattage
 - Minimum Voltage
 - Maximum Voltage
 - Minimum Amperage
 - Maximum Amperage
 - Minimum Run-time
 - Maximum Run-time
 - Average Run-time
 - Last Run-time
 - Event Counter
 - Hour Meter
 - Initialize System
 - Run Limit
 - Alarm Delay
 - Power Delay
- 9** Generator Receptacle (available option)
- 10** Manual Transfer Switch AC Mains to Portable Generator (available option)

The World's Best Low Pressure Sewer System Sets a New Standard in Reliability and Convenience



Now Available in Two Upgrades

E/ONE SENTRY PROTECT

The E/One Sentry Protect panel provides important protection from external conditions that could otherwise prove damaging to the E/One grinder pump station.

Adding the Protect option to the E/One Sentry panel provides a Trouble indication and shuts down the pump/core temporarily in the event of an unacceptable operating condition.

The pump/core will automatically return to Normal operation when the condition is resolved. The Protect feature provides monitoring of:

- Brownout conditions with the electrical power supply
- System over-pressure condition such as with a closed valve
- Run-dry operation of the pump/core



The basic E/One Sentry panel provides features essential to any installation:

- Circuit breakers for pump power and alarm circuits
- Audible high level alarm indication
- Visual high level alarm indication
- High level alarm silence switch
- Manual Run switch
- Redundant "Start" function with high level alarm
- Run indicator to show when pump is operating

e/one sentry

The Sentry line of alarm panels is custom designed for use with E/One grinder pump systems. The E/One Sentry™ alarm panels provide the latest technology and the greatest flexibility in customizing features to satisfy individual needs. The new alarm panels can be configured to provide functions ranging from basic alarm indication to advanced warning of pending service requirements.

In between, there are numerous features available including an event counter; run-time meter; service disconnect capability; and remote alarm indication.

Like the E/One grinder pump station, all panels are ITACS listed and meet all applicable AS/NZ 2000/3000 codes and standards. Furthermore, all E/One Sentry alarm panels are housed in IP 65 lockable enclosures, suitable for mounting on a wall or a post.

THE E/ONE REMOTE SENTRY DISPLAY MODULE provides visual and audible indication when the water level inside the grinder pump tank reaches a predetermined "high" level during normal operation, or in the event of a power outage (with hard-wired version of Extreme core and optional contacts in panel). It is ideally suited for installations where the outdoor alarm panel location is obstructed from view.

The Remote Sentry includes:

- A low profile attractive case (137mmW x 93mmH x 32mmD)
- Lithium battery
- Audible alarm (70dB)
- Push-to-silence audible alarm switch
- Push-to-test visual and audible alarm



E/ONE SENTRY PROTECT PLUS

Taking it to the next level, the E/One Sentry Protect Plus includes the benefits of the Protect option as well as a diagnostics package that provides advance warning of pending service needs by monitoring major operating conditions and

providing a Trouble indication when these conditions fall outside of normal ranges. Depending upon the severity of the abnormal condition, the grinder pump station may continue to operate. The Protect Plus feature provides monitoring of:

- AC input voltage – if input voltage falls below 88% or above 112% of normal line voltage a Trouble indication is provided
- Amperage – if amperage exceeds preset limits a Trouble indication is provided
- Pump run-time – if the pump operates for extended periods (adjustable) a Trouble indication is provided



LEADING THE INDUSTRY WE INVENTED.

Environment One not only pioneered the low pressure sewer system, but consistently leads the industry both in system deployment and innovation. The company is dedicated to Total Quality, Continuous Improvement, and Customer Satisfaction, as evidenced by the E/One Extreme Series. Today, there are nearly a million end users, worldwide.

SEWER ANYWHERE

Driven by the remarkable E/One Extreme grinder pump, E/One Sewers give engineers, developers, municipal sanitarians, and land planners unprecedented new freedom in land usage and septic tank replacement.

With a smaller footprint and a softer touch on the land, they're so much easier to install. Front-end costs can be reduced by as much as 80%. Total installed costs by half. And O&M costs by up to 75%.

The E/One Extreme grinder pump reduces all forms of sanitary waste to a non-clogging slurry and pumps it through a network of small-diameter pipes. Since gravity is replaced by the power of the pump, sewer systems need not run downhill nor require large-diameter pipes, deep trenches, multiple booster stations – or their associated costs.

A system powered by the E/One Extreme grinder pump converts formerly cost-prohibitive building sites into cost-effective reality. "Problem areas," with high ground water, elevation changes or impenetrable bedrock, are transformed into valuable, developable real estate.

Of course, E/One's low upfront cost advances apply to conventional building sites, as well.

In addition, E/One units are easy to install and virtually maintenance-free – refined through nearly 40 years experience with the largest installed base in the industry.



SAVE THOUSANDS, VIRTUALLY SERVICE-FREE.

e one
SEWER SYSTEMS

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