



**BARNES**<sup>®</sup>  
BY CRANE PUMPS & SYSTEMS

# PRESSURE SEWER

# OLD TECHNOLOGY MAKES WAY FOR NEW



## INEFFICIENT Old Technology

The old technology of gravity sewer systems involve extensive digging of wide sloping trenches, which can be quite challenging with uncooperative terrain. A more costly solution, the sewage in these systems have to be periodically raised to keep gravity flowing. Digging through rocky or sandy soil, and traveling over long distances can make this system very expensive and environmentally disruptive.

## THE SOLUTION for Old Technology

Rather than using gravity, the pressure sewer system uses a submersible grinder pump that cuts sewage particles into a slurry for easier transportation. Overall, this system uses smaller diameter pipes that are less expensive to help mitigate the impact it has on the surrounding terrain. It requires a depth just below the frost line, and moves directionally to avoid obstructions.

## Barnes Pressure Sewer Systems REDUCE COST

With a new construction, developers must install water, sewer and utilities well in advance. This is a large capital expense with a long payback cycle. It squeezes cash flow with a slow build-out rate. Where time is money, having a pressure sewer system gives you a financial boost.

Pressure sewer system's lower up front cost represents a true cost savings. The deferred installation closer to closing and the overall cost of the grinder pump station reduces cash outlay. Time between initial expenses and ultimate profit from the sale of the house is greatly reduced.

Not only does the pressure sewer system cost less to install, but the cost savings proportionally grows as the number and size of lots increase. Since it is built for durability, the system will efficiently run for years with little maintenance.



*"We saved almost \$2.2 million in our installation cost simply by using a pressure sewer system rather than gravity."*

# INCREASED FLEXIBILITY



## Homeowner Needs of Today

The homeowners of today want a variety of options when it comes to their place of residence. Having the flexibility to build lakeside cottages, homes nestled into hillsides, and secluded getaways, it is imperative to the residential and real estate markets. Gravity sewer systems can't provide this flexibility.

## Barnes Pressure Sewer Systems INCREASE FLEXIBILITY

They are capable of traveling long distances at the fraction of the cost of a gravity system, hug the terrain, and move up, down, and sideways. It is the perfect solution for all of the unique site challenges that builders face.



### Replacing Septic Systems:

When a worn out Septic System is at the end of its useful life, a Pressure Sewer System will provide a cost effective method to connect to a municipal system.

### High Ground Water:

Both the construction and operation of a Gravity Sewer System are more costly under this condition. Furthermore, the potential infiltration of ground water into the system is a contamination risk. The extra burden can overload treatment plants.

### Lakeside or Ocean Front:

A residence next to water is a prime location, but the sandy, downward sloping terrain makes trenching for gravity systems difficult and expensive. Septic Systems are a popular second choice, but they pose an environmental and health threat. A Pressure Sewer System offers a safe, secure alternative.

### Surmounting Barriers:

Roads and streams that separate lots from an existing sewer system are no problem for the Barnes Pressure Sewer System. Directional boring of the small diameter piping can greatly reduce the need for road repairs and traffic disruptions.

### Homes & Gravity Systems that don't Match:

When new homes added to a development are too low for basement sewer connections, a grinder pump and pressure sewer line is a simple solution for connecting to the nearest gravity main.

# PROTECTS THE ENVIRONMENT

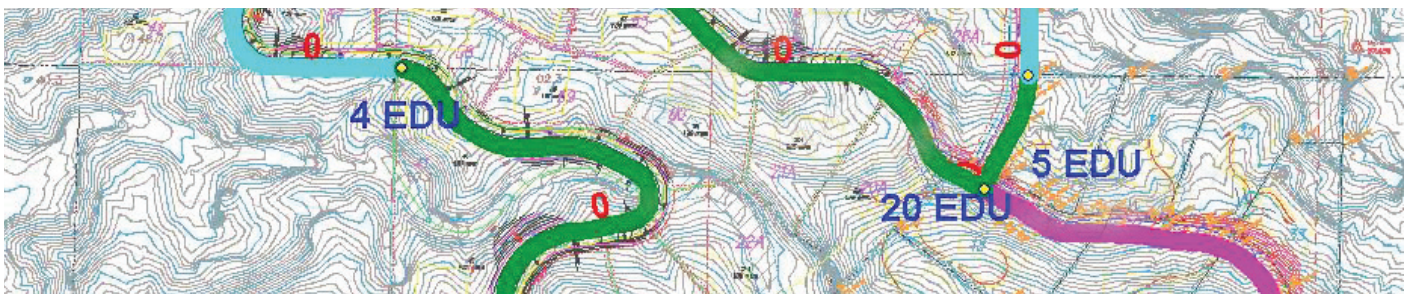
## *Defy gravity and soar with the advanced technology of a Barnes Pressure Sewer System*

Being open systems, gravity sewers take on an excess inflow of water after heavy storms. The increase in water risks spillage that can contaminate the environment, and overwork treatment plants.

Pressurized systems are sealed so they prevent infiltration and excess plant inflow. Treatment plants don't have to deal with increased water therefore they can be built smaller for less cost.

Septic systems are another potential hazard to the environment. Especially as they age, these systems leak and contaminate ground water, streams and lakes. According to the EPA, around 10% of the current septic systems fail each year. The US Public Health Service estimates that over 50% of available land in the US is unsuitable for septic tanks, a pressure sewer system is a safe, reliable and cost-effective alternative.

**A Barnes Pressure Sewer System provides higher cost-savings, flexibility and environmental protection.**



### **Pressure Sewer System Design By Barnes**

The Barnes Pressure Sewer System is a cost-effective and flexible solution. As a value-added service, Crane Pumps & Systems designs pressure sewer systems by employing KYPipe hydraulic modeling tools. These powerful tools accelerate the design of your project's sewer system and data generated in the verification process helps minimize infrastructure costs.

Barnes Pressure Sewer Specialists will provide design advice on sewage projects helping to minimize up front infrastructure cost by as much as 60%. E-mail topographical CAD plans to receive detailed piping designs and a comprehensive presentation outlining the positive impact of pressure sewer technologies free of charge.

The Barnes plumbing products include sump, fountain, effluent, sewage, grinder and package systems. So whether you're dewatering basements, installing lift stations for lower level bathrooms, upgrading septic systems, or completely outfitting a home with a pressure sewer system, we provide a level of value and superior, long-lasting performance.



# PRESSURE SEWER SOLUTIONS

COMING OCTOBER 2020



# RAZOR

## CUTTING EDGE DESIGN FOR A NEW-AGE WASTESTREAM

RAZOR Grinder pumps are the ideal 2 HP pump for light commercial and residential solids handling applications, thoughtfully designed with innovative axial cutting technology to efficiently reduce solids like flushable wipes, diapers, and other non-biodegradable items commonly found in the modern waste stream. The Razor is the perfect pump for your pressure sewer needs.



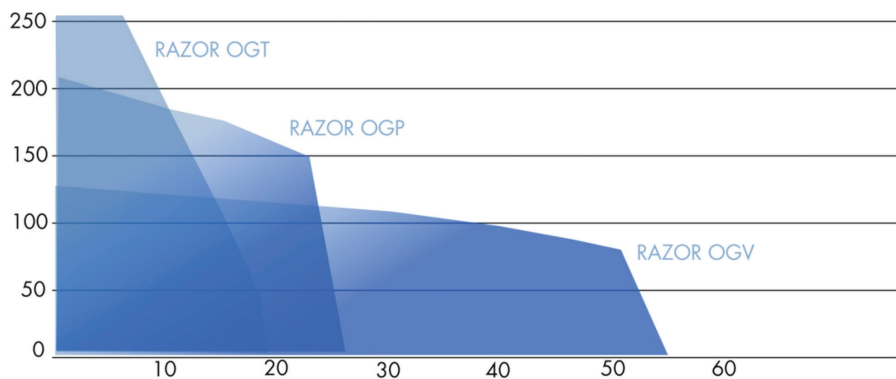
- 1 Plug-n-play cord simplifies service
- 2 Oil-Filled Motor for optimal motor cooling and maximum bearing life
- 3 Stainless steel hardware provides resistance against corrosion to extend pump life
- 4 Simplified hardware requires only one standard tool for service
- 5 Axial Cutter design greatly reduces clogging issues due to troublesome objects
- 6 Available in multiple discharge configurations for simple installation and replacement
- 7 Heavy duty, oil-lubricated bearings extend pump life
- 8 Smooth oversized lifting bail and light weight allows for easy installation by hand or hoist
- 9 Two stage impeller design ideal for pressure sewer applications

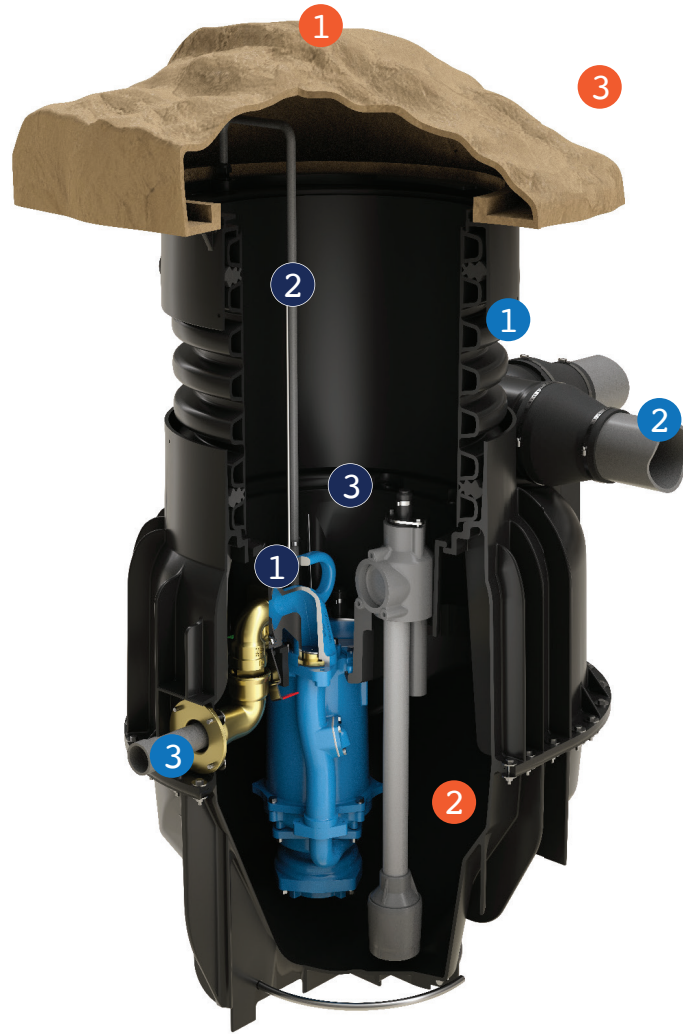
## FEATURES

- Patented Axial Cutter
- Light Weight
- Dual Voltage Motor
- Retrofit
- Float and Pressure Switch protection
- Convenient Maintenance
- Non-Overloading
- Designed for Pressure Sewer
- Serviceability
- 3 Year Warranty

## RAZOR PERFORMANCE RANGE

OGT - OGP - OGV





## INSTALLATION

- 1 Adjustable Riser Pipe for easy installation
- 2 3 inlet port positions provided for piping flexibility
- 3 Installed using directional boring allowing for faster installation and limited landscape disruption

## AESTHETICS

- 1 Rock shape cover for less disruption of landscape
- 2 Durable Polyethelene Basin for extended life
- 3 Technology requires smaller pipe diameter allowing for lower environmental interference

## SERVICE

- 1 Discharge valve is accessible from top of pod without the need for basin entry
- 2 Waterproof connector eliminates need for conduit box allowing for quick disconnect
- 3 Basin engineered to perfectly fit pump for easy installation and removal





**ECOTRAN**

# **SAFER WASTESTREAM WITH BARNES ECOTRAN SYSTEM**

The Barnes EcoTRAN Pressure Sewer System preserves groundwater ecology by collecting and grinding residential sewage in an underground basin and transmitting the waste under pressure to a remote private or municipal waste treatment plant.



**UPGRADE CORE**

# **UPGRADE TO PERFORMANCE WITH RAZOR GRINDER PUMPS**

The Barnes Upgrade Cores allow operators and service providers to upgrade competitor's grinder pump stations with a Barnes Razor grinder pump with a quick and easy drop in replacement.



### Fixed Discharge Upgrade Core

The Barnes Fixed Discharge Upgrade Core uses the Barnes RAZOR ZOGP Grinder Pump and provides a drop-in ready package that fits directly into E/One 200, 2000 and Extreme D-Series stations.



### Universal Upgrade Core

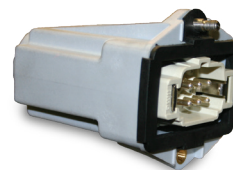
The Barnes Universal Upgrade Core uses the Barnes RAZOR ZOGP Grinder pump and is designed to fit into a variety of grinder pump stations with a versatile 1.2" NPT discharge connection.

#### Features:

1. **Three Year Warranty**
2. Drop-in discharge connection easily fits into fixed discharge, flex hose or hard piped connection.
3. Patented axial cutter won't jam or clog.
4. Flap style check valve with anti-siphon
5. Grinder pump is powder coated cast iron with all stainless hardware, providing resistance to corrosion.
6. 2 HP Centrifugal pump design empties basin in half the time with greater life than progressive cavity design.
7. Independent level control and pump allow for easy removal and inspection of either item.
8. Quick-connect fittings simplify electrical connection.
9. ESPS sealed pressure switch controls pump with no exposed electrical components. Float controls also available.

#### Why a Barnes Upgrade Core for your system?

- Reliability you can count on
- Reduces operational and maintenance costs
- Higher discharge pressure and increased flows improve force main scouring
- Reduced pump weight for easier installation
- Increased pump life
- Basin mixing capabilities eliminate odor problems and solids settling
- Third party NSF 46 rating ensures market leading grinding capabilities



\* E/One® is a registered trademark of Environment One Corporation and is not affiliated with Barnes Pumps.



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