Over 50 Years of Tradition

For over 50 years, Vaughan has been the market leader in manufacturing chopper pumps, solving today’s toughest solids-pumping problems. This family driven tradition all started with Jim Vaughan’s dream of a better, more reliable means of pumping manure.

Today’s third and fourth generation of the Vaughan family continue the tradition of quality, dependability and service.

Performance Guaranteed

With almost 25,000 units in service, the Vaughan® Chopper Pump has not only proven its value in problem solving, but also established itself as the reliable alternative to conventional pumping. Over the years, product reliability has also allowed Vaughan to GUARANTEE the performance of all chopper pumps. This guarantee is your assurance of clog-free solids-handling performance, not just another materials-and-workmanship warranty.

Vaughan celebrates its 50th year and beyond by introducing larger sizes, new configurations, and advances in efficiency, maintainability and performance with the “E” series flushless seal design.

We invite you to study the features in this catalog and compare. Then, we believe you will agree that the Vaughan Chopper Pump is “A Cut Above the Rest”.

The late founder, Jim Vaughan (standing), and his son Larry (sitting), working together in the early days.

Performance Guaranteed
**Chopper Pumps**

### Wet Well

#### Vertical Wet Well
- Vaughan’s most popular sump pump.
- Reliable mechanical seal/oil bath design.
- Eliminates suction piping.
- Keeps motor and wiring out of the pit.

#### Recirculating
- Allows Wet Well and Submersible Pumps to be used for mixing and pumpout.
- Ideal for mixing of floating or settled solids.

### Submersible

#### Electric Submersible
- Popular for sewage lift stations.
- Retrofits to most guide rail systems.
- Ideal for deep sumps.
- Available with rail system or portable.

- Traditional sub-design
- Upgraded lower seal is standard

#### Self-Priming
- Direct or belt drive.
- Adjustable back pull-out design.

### Dry Well

#### Horizontal
- Various sealing systems available.
- Direct or belt drive.
- Adjustable back pull-out design.

### Hydraulic Submersible
- Portable pump for tank cleaning
- Lighter weight than other submersibles.
- Ideal for mobile equipment.

### Pedestal
- Used primarily in dry well applications where floor space is limited.
- Various sealing systems available.
- Adjustable back pull-out design.

### Cantilever
- Eliminates submerged seals and bearings.
- Best for severe abrasive service.
Vaughan Chopper Pumps incorporate increases in efficiency, with improved reliability handling tough stringy solids. Some models also include a new back-pullout casing design, allowing external adjustment of clearances and ease of maintenance.

Vaughan Chopper Pumps are not to be confused with other types or brands of chopper pumps, cutter pumps, grinder pumps or comminutors. Some of the unique patented features specific to Vaughan Chopper Pumps which make the product so dependable are:

**Auxiliary cutters above and below the impeller create a more efficient cutting system which binds less on high-fiber slurries, reducing motor overloads and nuisance tripping. These extra, hardened steel, patented cutters are one of the critical differences between Vaughan and the competition.**

**Stray solids trapped in the mechanical seal area are shredded and removed by the impeller vanes turning against the upper cutter, providing reliable service over the long term.**

**Vaughan’s unique cartridge style mechanical seal handles the toughest slurries, outperforming standard single-spring seals by reducing problems associated with wrapping or abrasion.**

The cutter nut (patented) cuts stringy materials that tend to wrap at the pump inlet.

Solids are chopped by the cupped and sharpened impeller blades turning across the cutter bar, creating a smooth “slicing” effect. The conditioned slurry is easily pumped through the pump and piping system without plugging.

**The Concept - 50 Years in The Making**
Recirculator Chopper Pumps

- Easy above-deck access to valve and nozzle operators
- Manual or fully automated operation available
- Recirculation feature also available with Horizontal and Self-priming configurations

Vertical Recirculator

Submersible Recirculator

Scumbuster

The Vaughan Scumbuster® virtually eliminates the effects of a scum blanket and prevents it from reforming by homogenizing and conditioning through a recirculation nozzle. This type of mixing allows digesters to regain their design capacity, extends the time between cleanouts and generates more methane gas. The Vaughan Scumbuster operating with the Vaughan chopper pump on digester recirculation has proven successful not only to eliminate heat exchanger clogging, but also to replace other failed digester mixing systems.
Vertical Wet Well

- Oil lubricated bearings eliminate water or grease lubricated sleeve bearings
- Capable of running dry

**OIL-FILLED BEARING HOUSING**
Increases bearing life

**SEAL-AND-BEARING SUB-ASSEMBLY**
Reduces maintenance time

**DUCTILE IRON CASING AND BEARING HOUSING**
Increases durability

**DOUBLE-ROW THRUST BEARINGS**
Absorb all impeller loads

**VAUGHAN’S CARTRIDGE STYLE SILICON CARBIDE MECHANICAL SEAL**
Protects bearings and lasts longer

**PUMP-OUT VANES AND UPPER CUTTER**
Keeps pumpage away from seal

**CAST ALLOY STEEL IMPELLER, CUTTER BAR, UPPER CUTTER AND CUTTER NUT**
Case hardened to minimum 60 Rockwell C hardness for wear and impact resistance
Cantilever

- Eliminates submerged seals and bearings
- Best for severe abrasive or corrosive service
- Available up to 5’ in length depending on speed

HEAVY DUTY ROLLER AND BALL BEARINGS
Absorb all loads dependably

LARGE 4” SHAFT
Handles chopping and pumping with minimal shaft deflection

NO SUBMERGED SEAL OR BEARINGS
Reduces contamination

CAST ALLOY STEEL IMPELLER, CUTTER BAR AND CUTTER NUT
Case hardened to minimum 60 Rockwell C hardness for wear and impact resistance
Electric Submersible “S” Series

- Available with rail system or portable
- Adaptable to most guide rail systems

EXPLOSION PROOF MOTOR
UL Listed Explosion Proof or non-Explosion Proof, with moisture sensor and tandem mechanical seals. Also available in Continuous In-Air or Close-Loop Cooled

TANDEM MECHANICAL SEALS
Includes lower silicon carbide mechanical seal for maximum motor protection

PUMP OUT VANES AND UPPER CUTTER
Keeps pumpage away from the seal

OIL LEVEL MONITOR
System constantly monitors oil level in the bearing housing

CAST ALLOY STEEL IMPELLER, CUTTER BAR, UPPER CUTTER AND CUTTER NUT
Case hardened to minimum 60 Rockwell C hardness for wear and impact resistance
Electric Submersible “E” Series

- Traditional submersible design
- Upgraded lower seal is standard
- Hydraulic version also available

EXPLOSION PROOF MOTOR
UL Listed Explosion Proof or non-Explosion Proof, with moisture sensor and tandem mechanical seals. Also available in Continuous In-Air or Close-Loop Cooled

TANDEM MECHANICAL SEALS
Includes lower silicon carbide mechanical seal for maximum motor protection

PUMP OUT VANES AND UPPER CUTTER
Keeps pumpage away from the seal

DUCTILE IRON BACK PULL-OUT CASING
Provides adjustable impeller-to-cutter bar clearance extending parts life

CAST ALLOY STEEL IMPELLER, CUTTER BAR, UPPER CUTTER AND CUTTER NUT
Case hardened to minimum 60 Rockwell C hardness for wear and impact resistance
E-Series “Flushless”

- Flushless design eliminates the need for flush water
- Heavy duty cartridge mechanical seal assures dependability
- Heavy duty combined bearing frame design
- Externally adjustable cutter clearances
- Flushed seals available per request

**FLUSHLESS VAUGHAN CARTRIDGE MECHANICAL SEAL**
Heavy duty design provides reliable long-term operation without the need for flush water

**ELIMINATES STUFFING BOX**
No stuffing box means less chance of solids collecting in seal area

**ADJUSTABLE BACK PULL-OUT CASING**
Allows external adjustment of BOTH impeller-to-cutter bar and impeller-to-upper cutter clearances without disconnection from piping
E-Series “Flushless”

- Flushless design eliminates the need for flush water
- Heavy duty cartridge mechanical seal assures dependability
- Externally adjustable cutter clearances
- Flushed seals available per request

**C-FLANGED MOTOR MOUNT**
Piloted for self-alignment

**DOUBLE-ROW THRUST BEARINGS**
Absorb shaft loads

**FLUSHLESS VAUGHAN CARTRIDGE MECHANICAL SEAL**
Heavy duty design provides reliable long-term operation without the need for flush water

**BACK PULL-OUT CASING**
Allows external adjustment of BOTH impeller-to-cutter bar and impeller-to-upper cutter clearances without disconnection from piping

**PUMP OUT VANES AND UPPER CUTTER**
Keeps pumpage away from the seal

**CAST ALLOY STEEL IMPELLER, CUTTER BAR, UPPER CUTTER AND CUTTER NUT**
Case hardened to minimum 60 Rockwell C hardness for wear and impact resistance

Flushless Mechanical Seal
Features

- Self-priming up to 25’
- Heavy duty cartridge seal design assures dependability
- 4” - 10” discharge available
- Available in direct or belt drive
- 100 - 5000+ GPM

HEAT TREATED ALLOY STEEL

CHOPPER IMPELLER, CUTTER BAR AND UPPER CUTTER
Handles all incoming solids without clogging

DUCTILE IRON HOUSING, CASING AND BEARING HOUSING
Increases durability

OVERSIZED CLEANOUT
Allows easy access

VAUGHAN’S CARTRIDGE STYLE MECHANICAL SEAL
Isolates pumpage from bearings and motor

THRUST BEARINGS
Absorb all loads

OIL LUBRICATION
Keeps bearings and seal cool and running smooth

ADJUSTABLE CASING AND ROTATING ASSEMBLY
For ease of maintenance
## Industrial Applications

### Paper and Wood Products
- Broke Pits
- Carbonized Bark
- Chip Conveyors
- Clarifier Scum
- Coal Pile Runoff
- Conveyor Gallery Sumps
- Drainage Sumps
- Fly Ash
- Knot and Bark Handling
- Log Soaking Vats
- Lime Sludge Transfer
- Underflow to Dewatering
- Woodyard Sumps

### Food Processing
- Blood
- Carrots
- Chickens
- Corn Husks
- Ears, Hair, Hooves, Horns
- Fat
- Feathers
- Fish
- Fleshings
- Hide Pieces
- Potatoes
- Turkeys
- Tomatoes

### Automotive / Steel
- Boiler Blowdown
- Chrome Plating Slurries
- Coke Breeze
- Coke Tar Decanter Sludge
- Glass and Plastic
- Iron Ore Pellets
- Metal, Machine Chips
- Mill Scale
- Oil Washdown
- Paint Overspray Sludge
- Roll Grinder Coolant (Swarf)

### Chemical / Petrochemical
- API Separators
- Coke Slurries
- Detergent Cakes
- Latex Skins
- Lead Oxide Slurries
- Oil Waste
- Plastics
- Pumice Hand Cleaner
- Refinery Mud
- Storm Drains
- Sulfur Froth

### Mining / Sand & Gravel
- Acid Mine Water
- Coal and Sand Washing
- Concrete Batch Plant Sumps
- Sand and Gravel Silt Ponds
- Truck Washdown Sumps

### Contractor Services
- Hazardous Waste Cleanup
- Lagoon Cleaning
- Recycled Solvents
- Sludge Dewatering
- Storage Tank Cleanout
## Wastewater Applications

1. **RAW SEWAGE** - Lift stations, CSO facilities, headworks, prisons, hospitals, restaurants.
2. **SCREENINGS / SEPTAGE** - Raw concentrated solids including rags, plastics and hair.
3. **CLARIFIER SCUM PITS** - Primary or Secondary scum without plugging or air binding.
4. **SLUDGE TRANSFER** - Eliminates “roping” and clogging in clarifier underflow to thickeners.
5. **RAS / WAS** - Continuously conditions Return and Waste Activated Sludges.
7. **DIGESTER MIXING** - System conditions and mixes in a dual-zone rotational flow pattern.
8. **DIGESTER RECIRCULATION** - Eliminates heat exchanger clogging while conditioning sludge.

### Examples:
- **CSO screenings**
- **Primary Clarifier Scum**
- **Sludge Transfer**
- **Digester Mixing**
Typical Municipal Flow Diagram

1. LIFT STATION / PLANT HEADWORKS / CSO STATION / INFLUENT PUMPS
2. SCREENINGS / SEPTAGE RECEIVING
3. PRIMARY CLARIFIER
4. SLUDGE
5. SECONDARY CLARIFIER
6. WAS
7. PRIMARY DIGESTER
8. SLUDGE STORAGE
Features & Benefits:

- High Efficiency - energy savings
- Low Shear - gentle pumping action
- Low NPSH - minimizes suction requirements
- Back-Pullout Casing - for ease of maintenance
- Mechanical Seal or Packing - allows full flexibility

- Upper Cutter - protects mechanical seal
- Replaceable Liner - reduces maintenance
- Optional Materials - for corrosion and abrasion resistance
- Proven severe duty mechanical seals - most dependable sealing system available

For details regarding Vaughan Triton Centrifugal Pumps see Vaughan Literature Form V393.
Rotamix Systems Offer:

- Process mixing for wastewater and industrial applications including Anaerobic Digesters, Storage Tanks, Etc.
- Vaughan Chopper Pump to enhance volatile solids destruction while ensuring reliable operation of the system.
- Dual rotational mixing to provide even distribution of solids throughout the tank.

For details regarding the Rotamix System, see Vaughan Literature Form V361

F.O.G. (Fats, Oils & Grease) Systems By Rotamix Enhanced Digestion Systems

Custom Rotamix F.O.G. Systems:

- Process blending of organic materials with municipal sludge to enhance the reduction of solids.
- Use organics from fats, oils, and greases as well as food waste to create energy.
- Reduce organic waste in landfills by establishing local contracts with restaurants and public recycling programs.

For details regarding the Rotamix F.O.G. System, see Vaughan Literature Form 445
VAUGHAN® Chopper Pumps
Wet Wells, Dry Wells, Submersibles, Self-Primers, Recirculators

TRITON® Screw Centrifugal Pumps
Wet Wells, Dry Wells, Submersibles

ROTAMIX® Process Mixing System
Tank and Digester Mixing

Also Available
Floating Pumps, Lagoon Pumpers, Mixers, Auger Choppers, Vortex Choppers, Produce Disposal Choppers.

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OTHER U.S. AND FOREIGN PATENTS PENDING.

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