

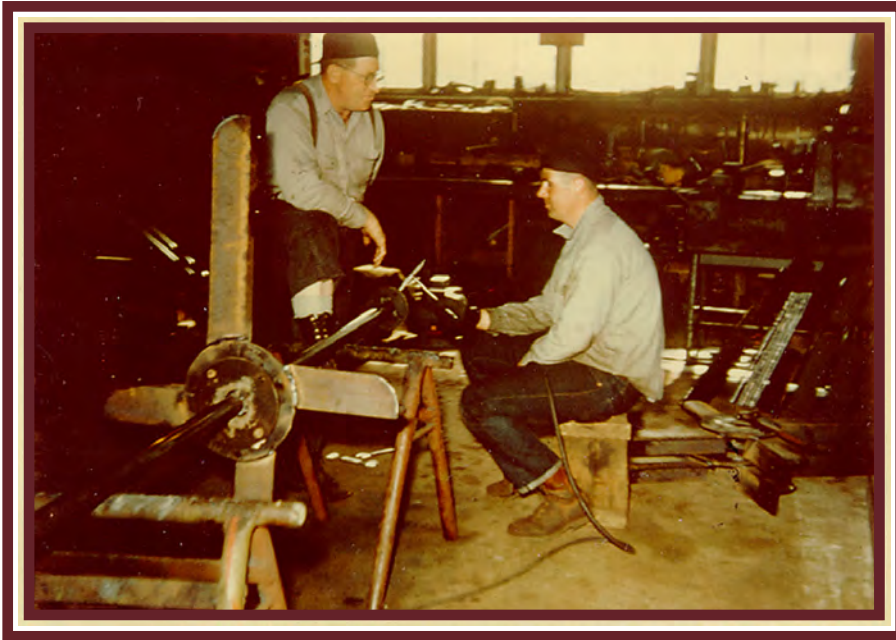
# **Chopper**

*Guaranteed Non-Clog*



*Unmatched Reliability*  
**Vaughan**<sup>®</sup>

## Over 50 Years of Tradition



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

Since 1960, 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 vision 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 over 30,000 units sold, 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, Vaughan's UNMATCHED RELIABILITY has allowed Vaughan® to **GUARANTEE** the performance of all chopper pumps. This guarantee is your assurance of clog-free solids-handling performance.

Vaughan® continues its dedication to innovation 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".



# 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



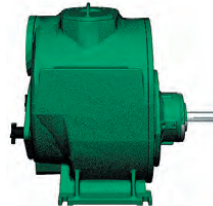
### Electric Submersible

- Popular for sewage lift stations
- Retrofits to most guide rail systems
- Ideal for deep sumps
- Available with rail system or portable
- Triple seal design



- Traditional sub-design
- Upgraded lower seal is standard

## Self-Priming



### 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



### Pedestal

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



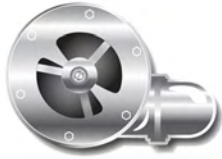
### Hydraulic Submersible

- Portable pump for tank cleaning
- Lighter weight than other submersibles
- Ideal for mobile equipment

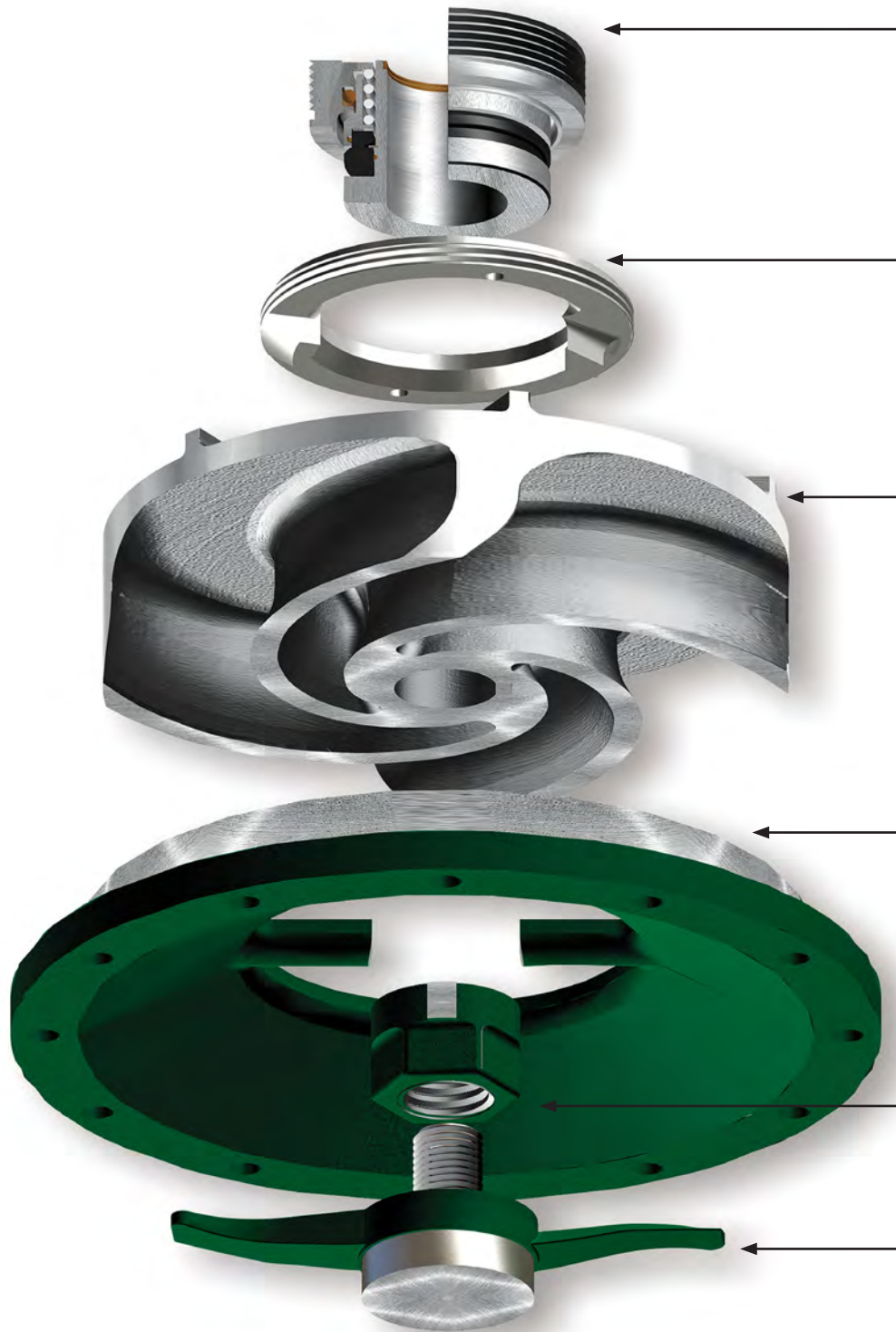


### Cantilever

- Eliminates submerged seals and bearings



# Chopper



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

*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.*

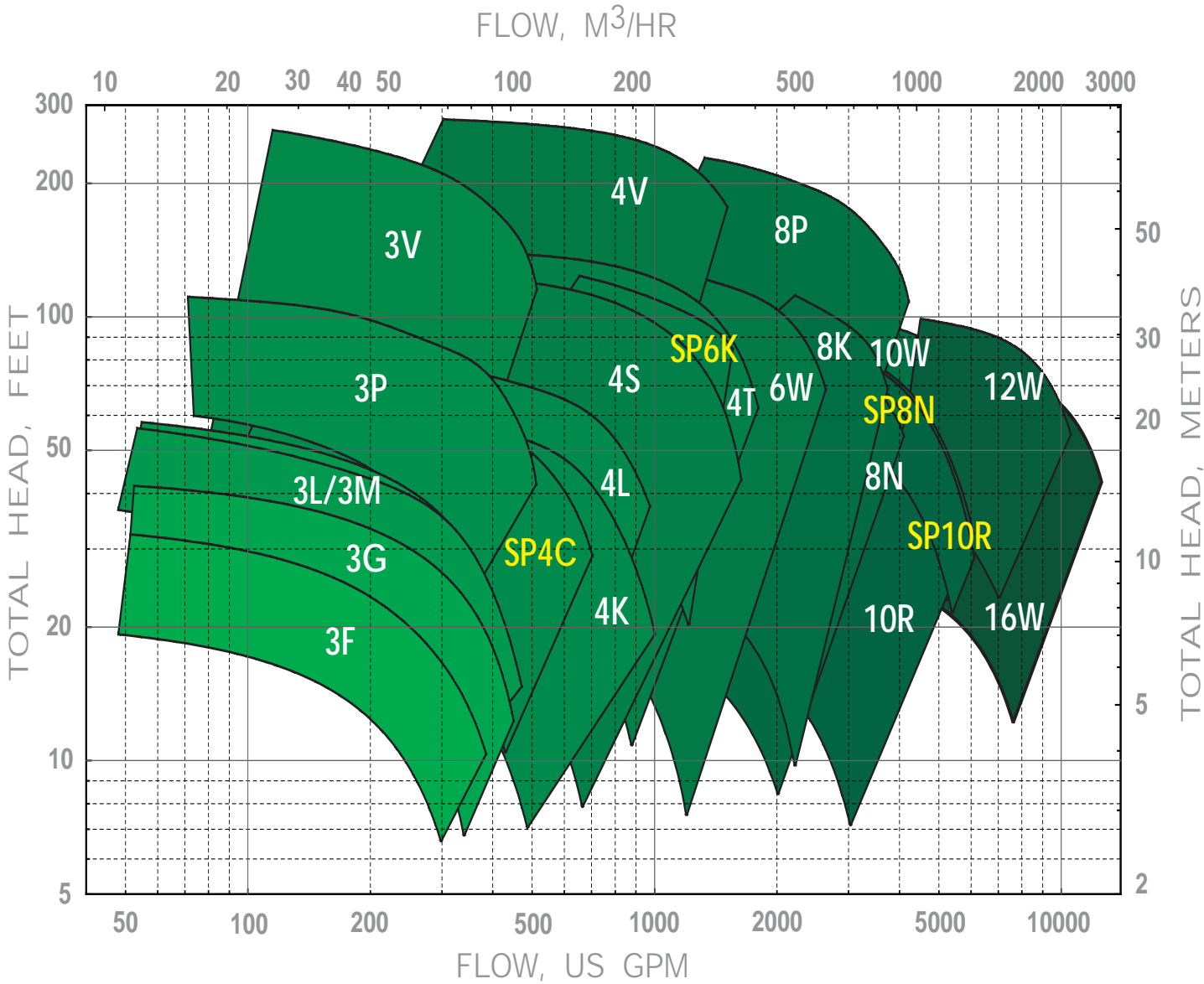
*Auxiliary cutters above and below the impeller create a more efficient cutting system which binds less on high fiber slurry reducing motor overloads and nuisance tripping. These additional, hardened steel, patented cutters are one of the critical differences between Vaughan and the competition.*

*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.*

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

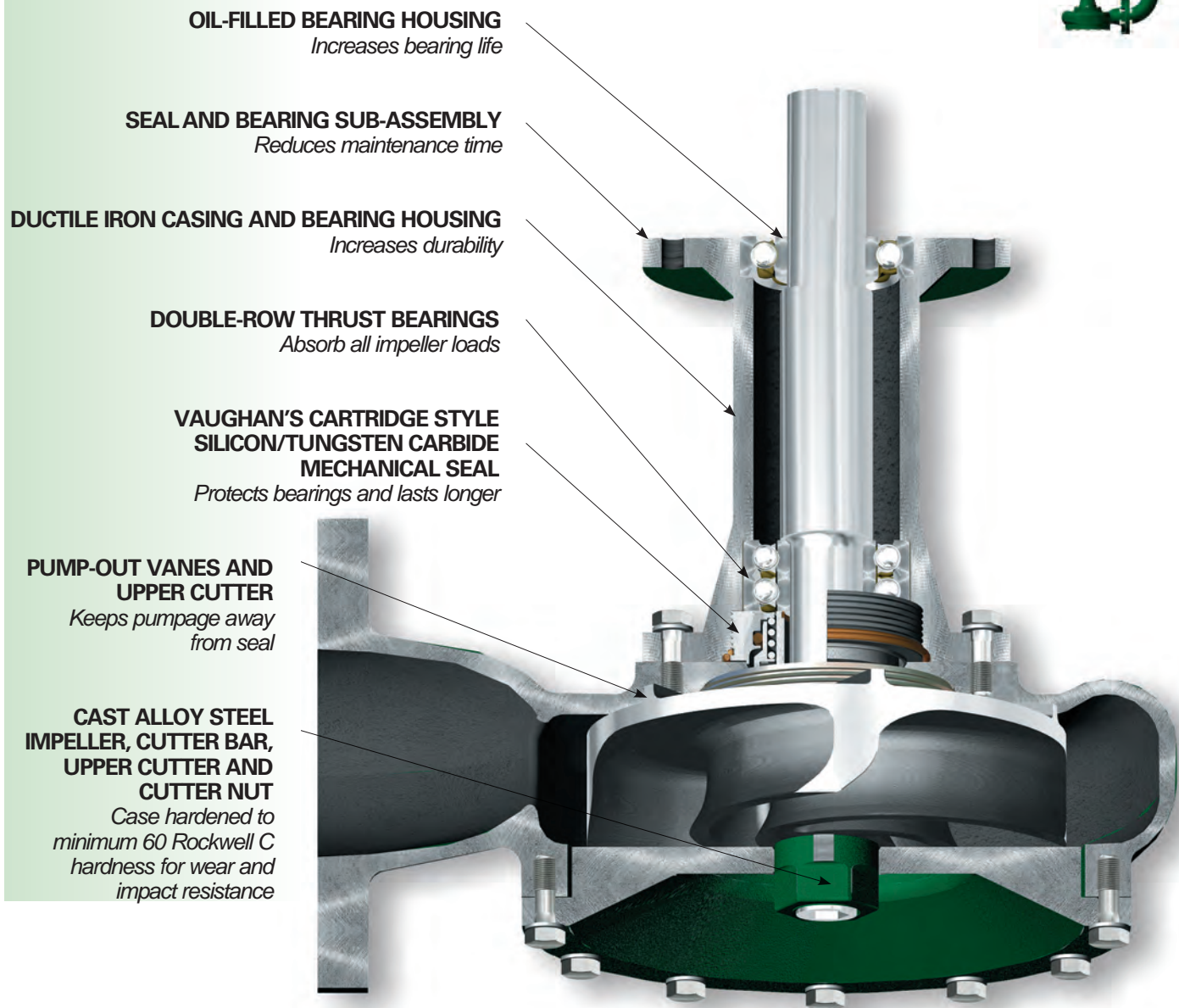
*Optional disintegrator tool helps break down large debris prior to the pump inlet.*

## Performance Map - 60 Hz



## Vertical Wet Well

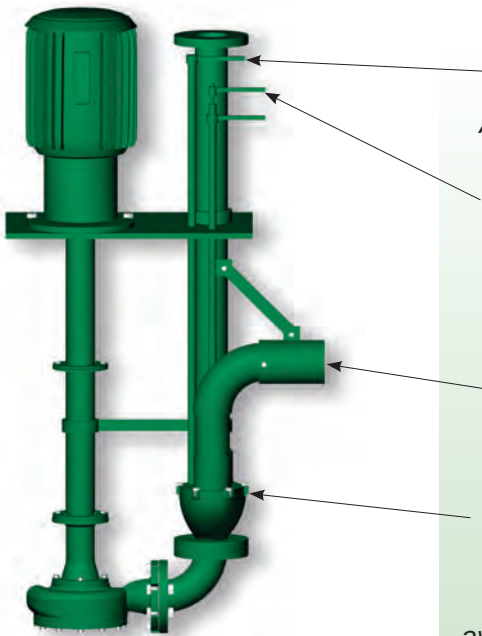
- Oil lubricated ball bearings eliminate unreliable sleeve bearings
- Capable of running dry for short periods



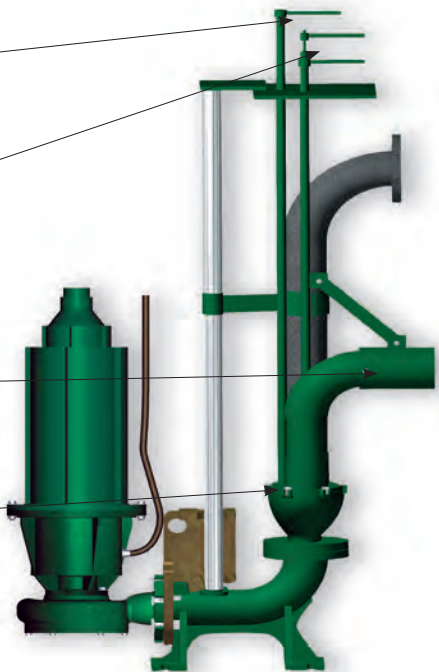
## Recirculator Chopper Pumps

- 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



**VALVE OPERATOR**  
Allows ease of valve control

**NOZZLE OPERATOR**  
Adjusts nozzle direction horizontally and vertically

**MIXING NOZZLE**  
Hydraulically mixes liquids & solids

**DUCTILE IRON VALVE**  
Allows recirculation or discharge

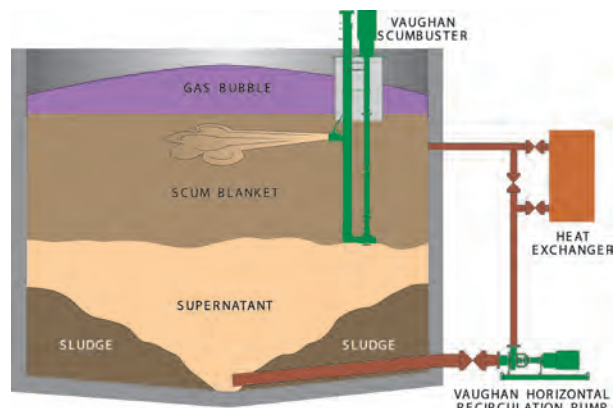
Recirculation feature also available with Horizontal and Self-priming configurations

## 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 helps generate 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.





## 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

### CARTRIDGE SEALS

Vaughan cartridge seal in lower housing

### PUMP OUT VANES AND UPPER CUTTER

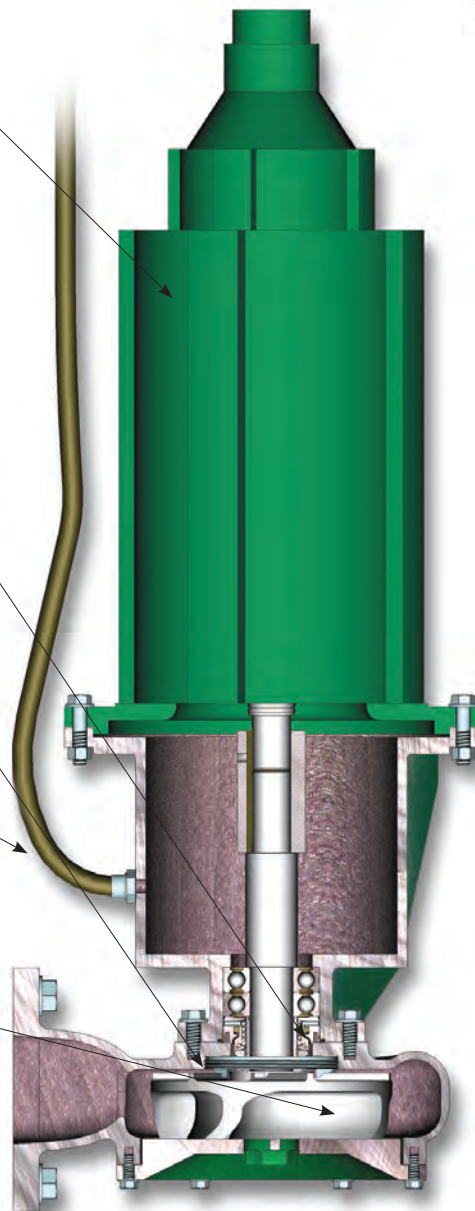
Keeps pumpage away from the seal

### 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*

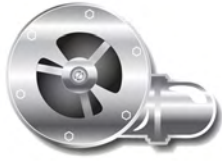
**TANDEM MECHANICAL SEALS**  
*Includes lower tungsten carbide mechanical seal for maximum motor protection*

**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*



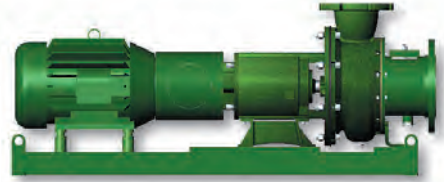


# Chopper

## HORIZONTAL

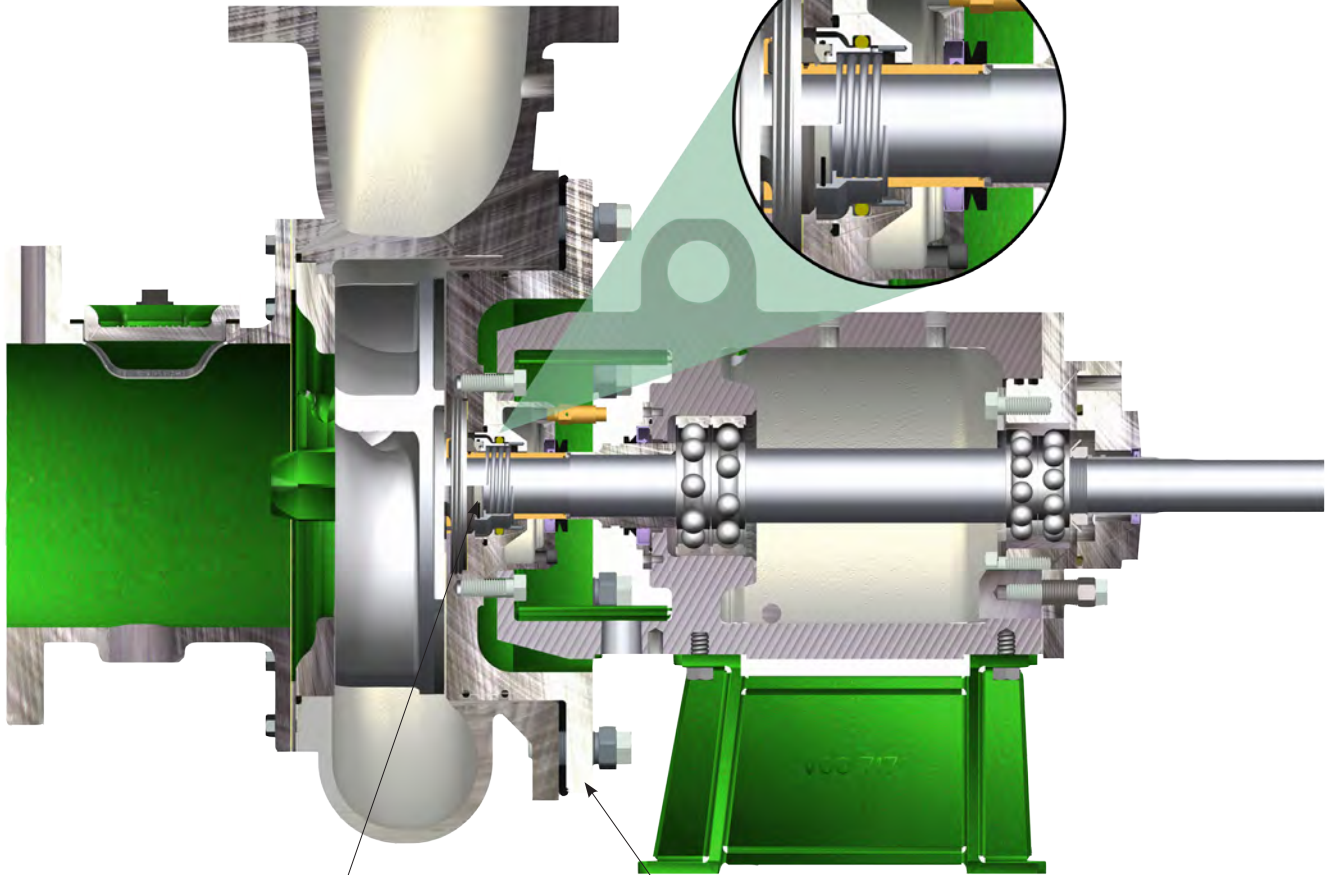
### E-Series "Flushless"

- Flushless design, no 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, no 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*

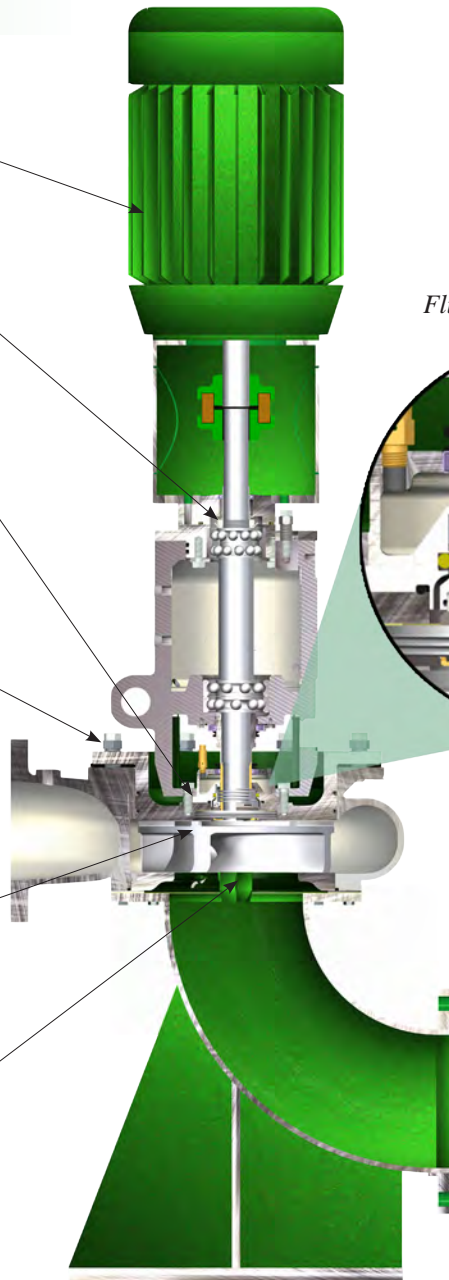
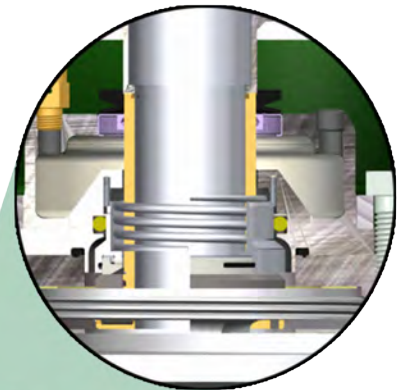
**FLUSHLESS VAUGHAN® CARTRIDGE MECHANICAL SEAL**  
*Heavy duty design provides reliable long-term operation without the need for flush water*

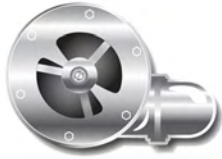
**BACK PULL-OUT CASING**  
*Allows external adjustment of BOTH impeller-to-cutter bar and impeller-to-upper cutter clearances without disconnection from piping*

**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*



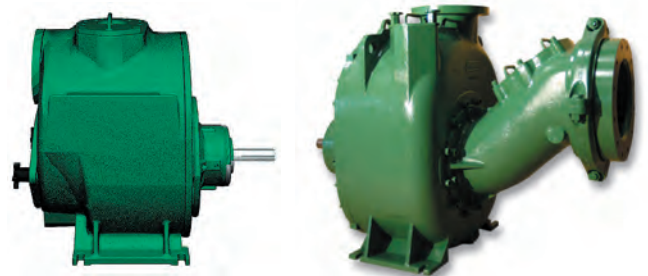


# Chopper

## SELF PRIMER

### Features

- *Self-priming up to 24'*
- *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  
SILICON/TUNGSTEN CARBIDE  
MECHANICAL SEAL**

*Isolates pumpage from bearings and  
motor*

**THRUST BEARINGS**

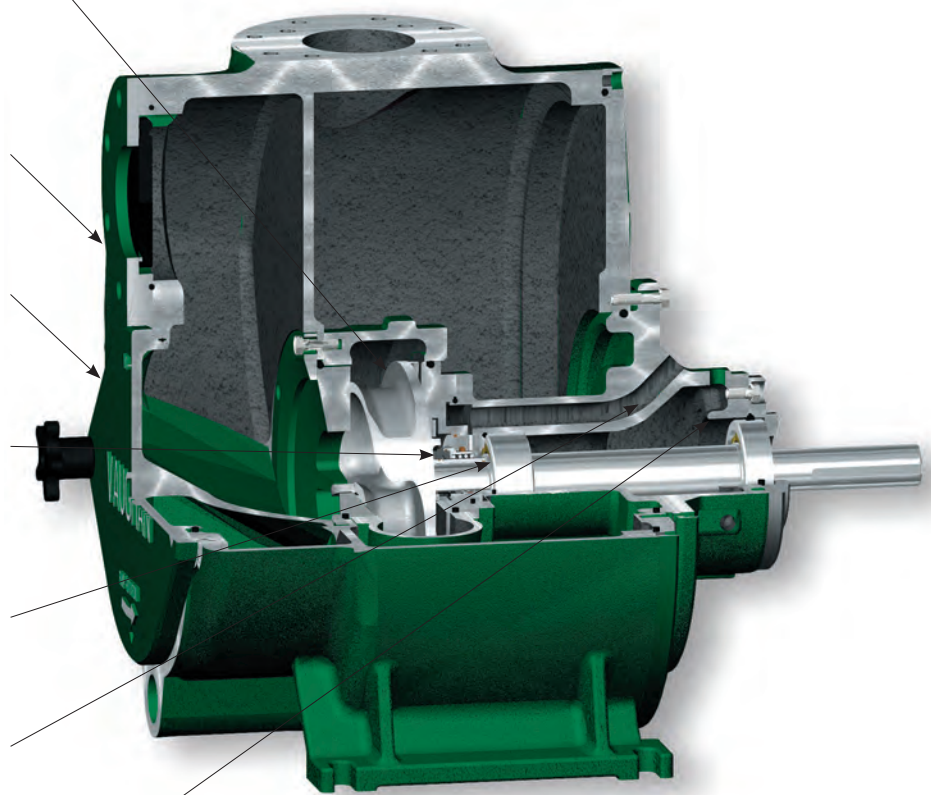
*Absorb all loads*

**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

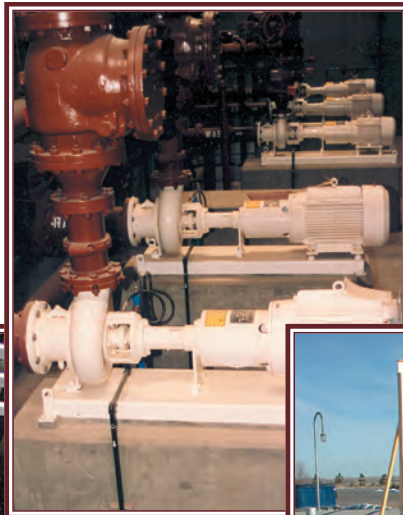




## Wastewater Applications

- 1 **RAW SEWAGE** - Used in Lift stations, CSO facilities, headworks, prisons, hospitals, restaurants
- 2 **SCREENINGS / SEPTAGE** - Easily chops raw concentrated solids including rags, plastics and hair
- 3 **CLARIFIER SCUM PITS** - Transfers or conditions Primary & Secondary scum without plugging or air binding
- 4 **SLUDGE TRANSFER** - Eliminates "roping" and clogging in clarifier underflow to thickeners
- 5 6 **RAS / WAS** - Continuously conditions Return and Waste Activated Sludges
- 7 8 **THICKENED SLUDGE / DIGESTED SLUDGE TRANSFER** - Handles high sludge consistencies
- 8 9 **TANK MIXING** -  **Rotamix** System conditions and mixes in a dual-zone rotational flow pattern
- 10 **DIGESTER RECIRCULATION** - Eliminates heat exchanger clogging while conditioning sludge
- 11 **F.O.G - (Fats, Oils, and Grease)** - Uses organic waste to enhance methane production

*Sludge Transfer*



*Digester Mixing*

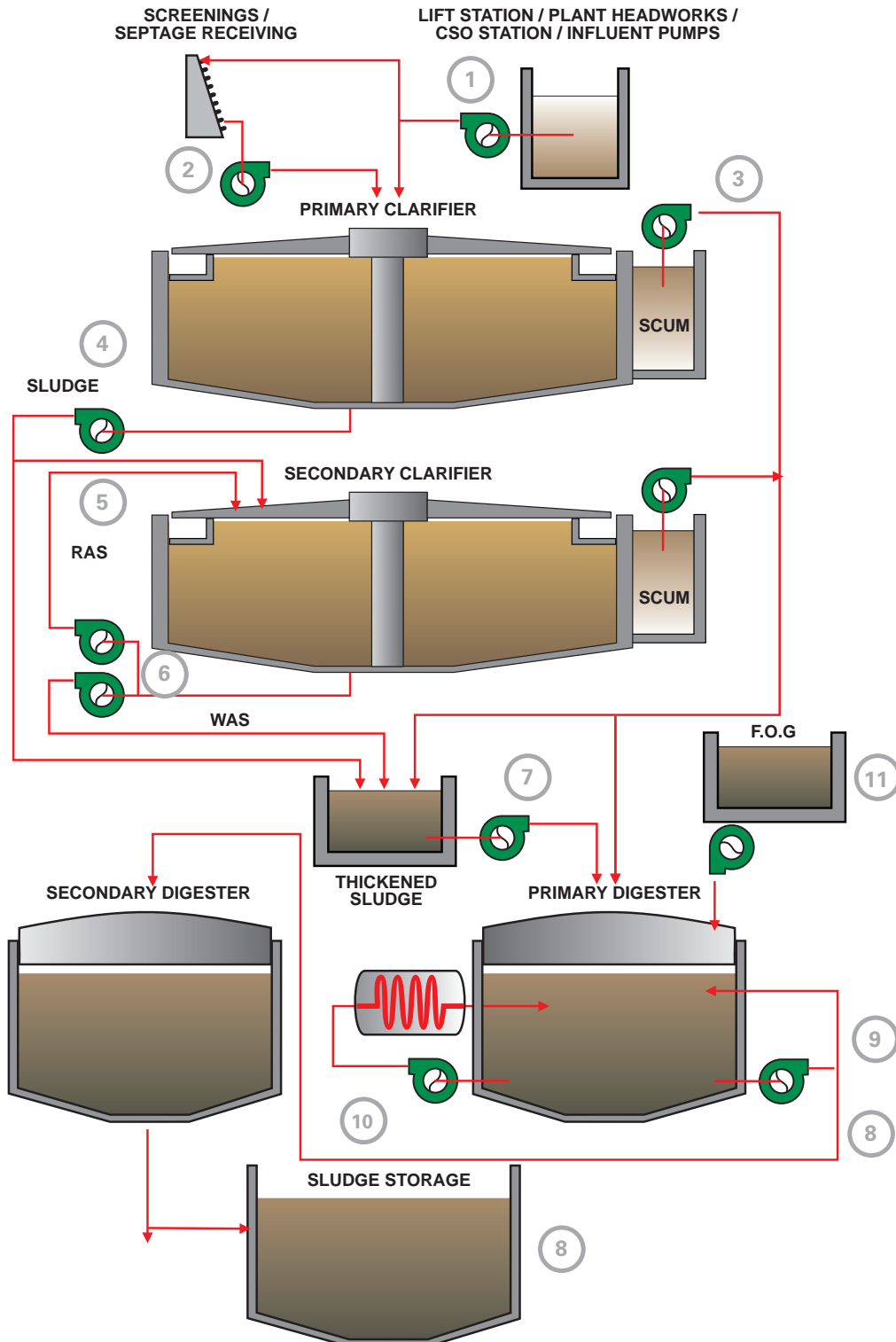


*CSO screenings*



*Primary Clarifier Scum*

## Typical Municipal Flow Diagram





**Chopper**

**CHOPPER PUMPS**

Wet Wells, Dry Wells, Submersibles,  
Self-Primers, Recirculators



**Rotamix**

**PROCESS MIXING SYSTEM**

Tank and Digester Mixing



**Triton**

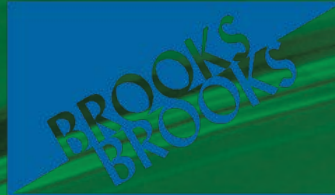
**SCREW CENTRIFUGAL PUMPS**

Wet Wells,  
Dry Wells, Submersibles

**Specialty Products**

Foambuster®, Floor Washer System, Seafood Pre-Grinder Kit, Small Tank Mixing,  
Model 240, Hopper Chopper, Vortex Chopper, Turbo Mixer, Floating Prop Mixer,  
Unmanned Floating Platform, Vaughan 3-Way Valve

**AUTHORIZED FACTORY REPRESENTATIVE**



**SPRAYING  
PUMPING  
FILTERING  
AND VALVES**

**1-877-624-5757**



**AUTHORIZED REPRESENTATIVES LOCATED WORLDWIDE**



**VAUGHAN CO., INC.**

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Web Site: [www.chopperpumps.com](http://www.chopperpumps.com) | [www.rotamix.com](http://www.rotamix.com)

Company E-mail: [info@chopperpumps.com](mailto:info@chopperpumps.com)

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USA**

For all current patents, please see <http://www.chopperpumps.com/patents.htm>