

Chopper

Guaranteed Non-Clog

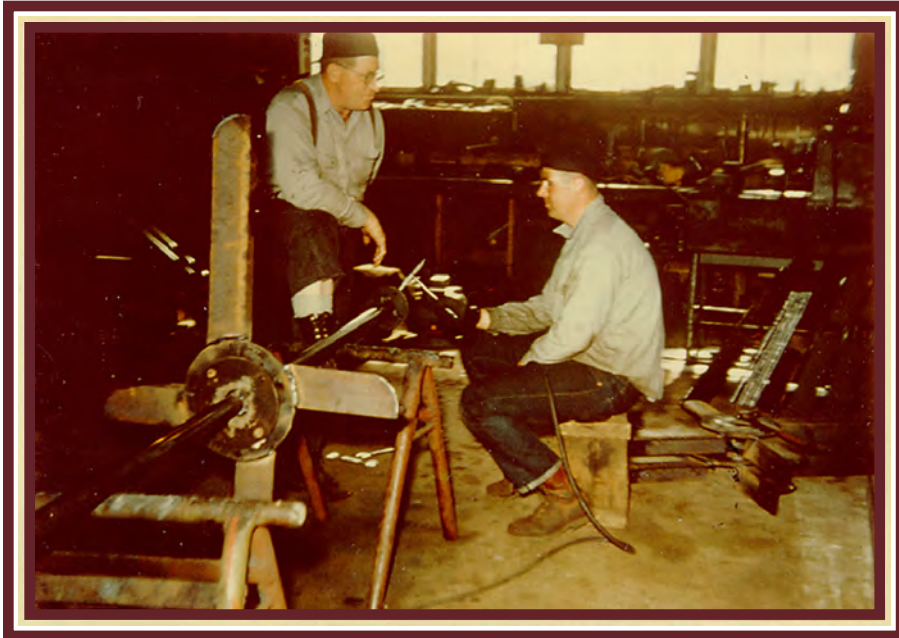


Unmatched Reliability
Vaughan[®]



RELIABILITY

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



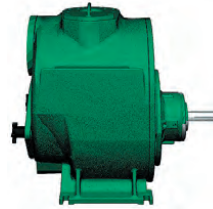
Electric Submersible

- 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

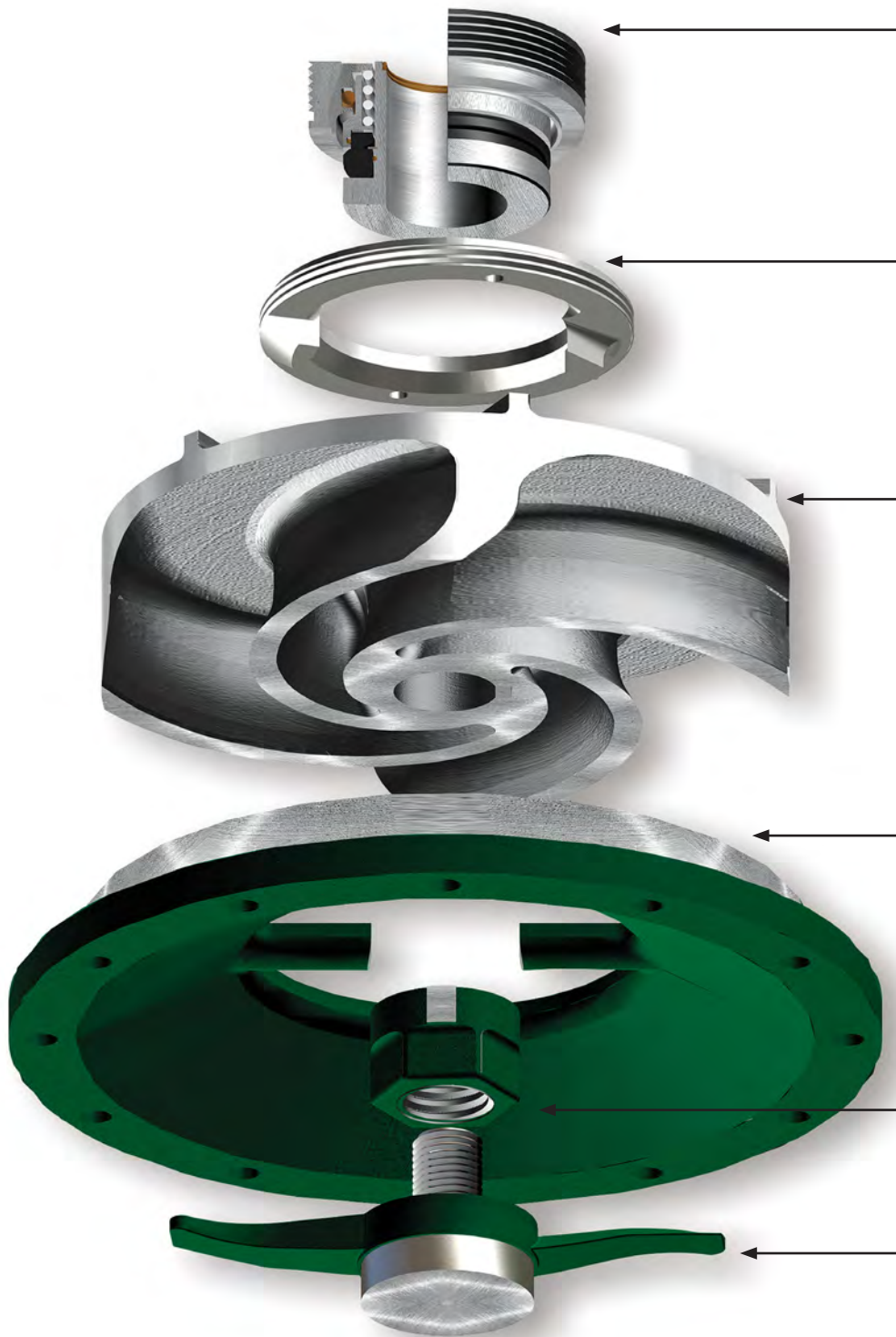


Cantilever

- 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.

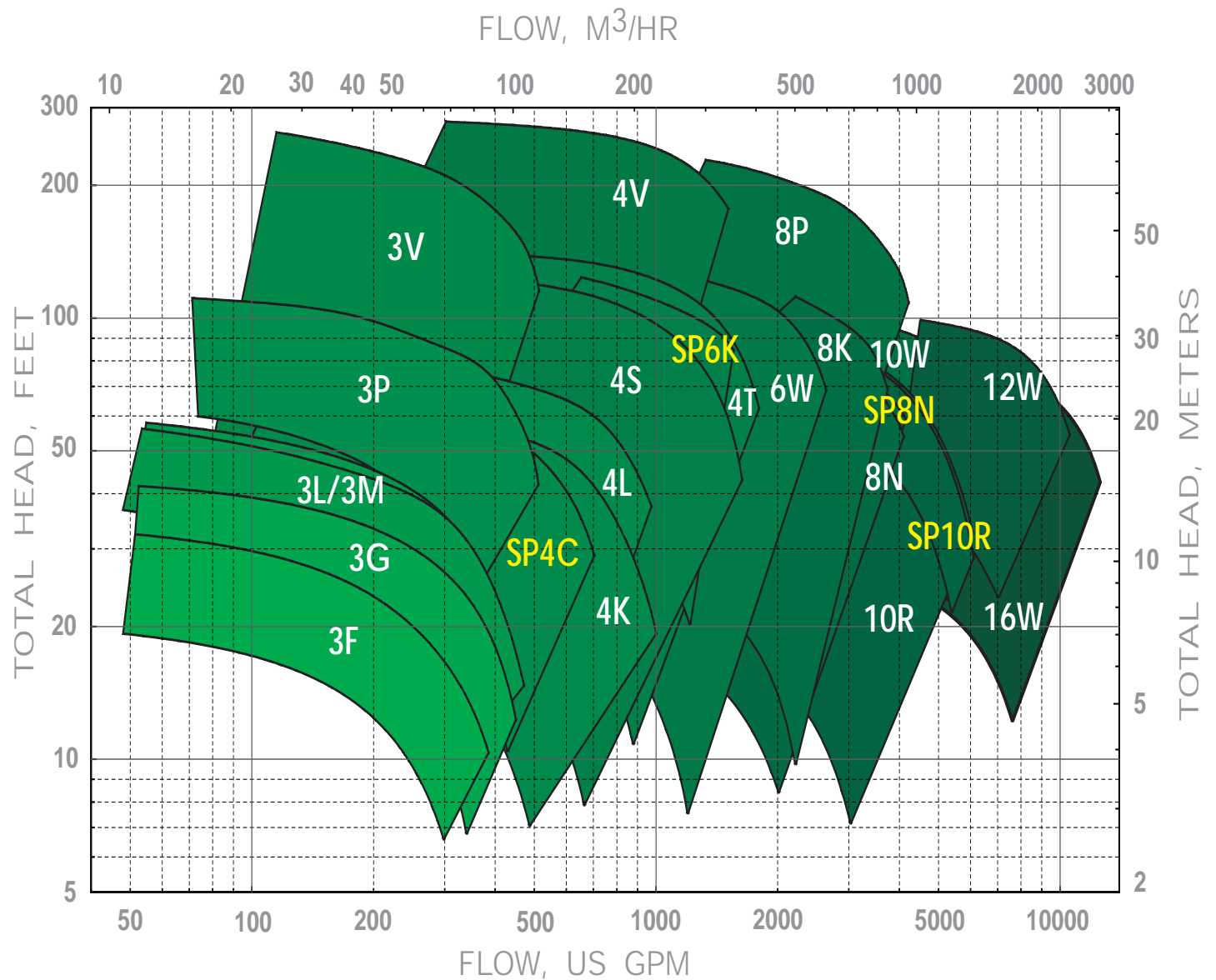
Solids are chopped by the cupped and sharpened impeller blades turning across the cutter bar, creating a smooth "slicing" effect. The conditioned slurry is easily pumped through the pump and piping system without plugging.

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.

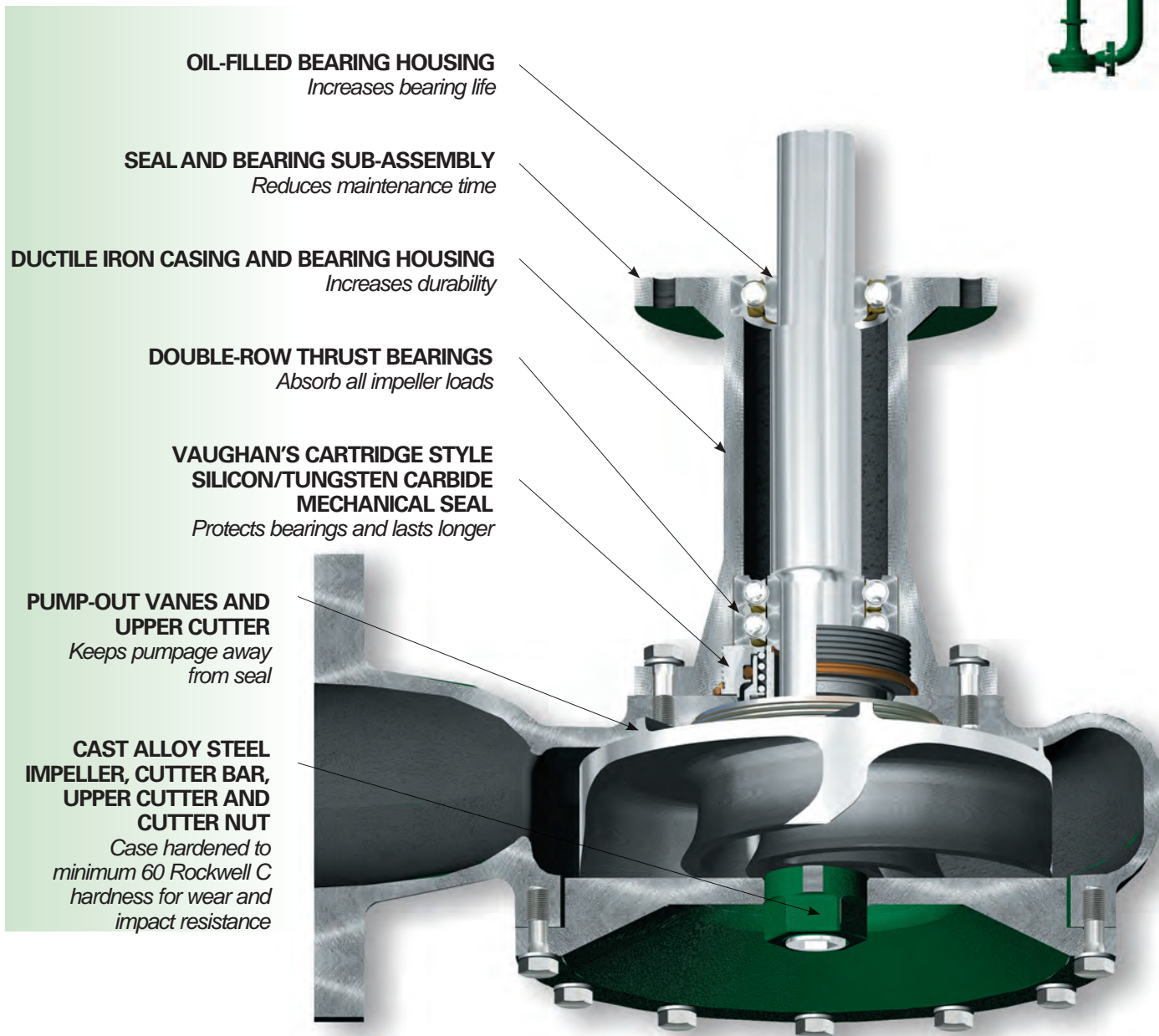
PERFORMANCE

Performance Map - 60 Hz



Vertical Wet Well

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

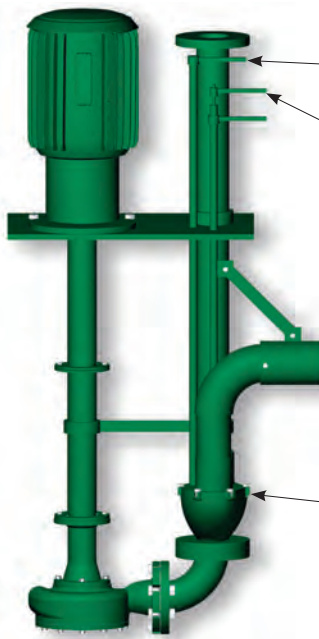


SPECIALTY PUMPS

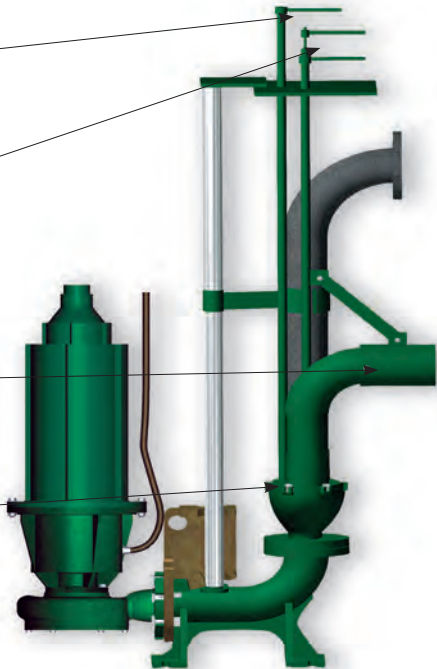
Recirculator Chopper Pumps

- 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

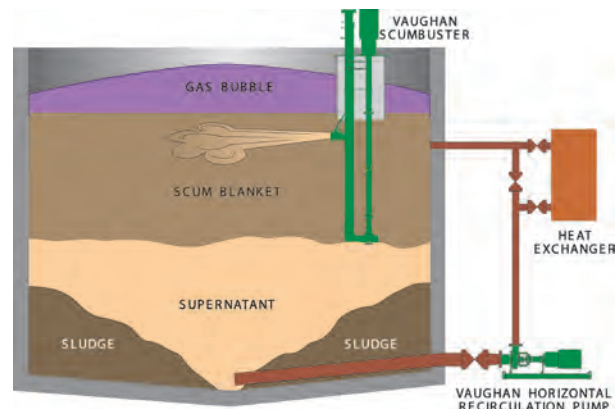
DUCTILE IRON VALVE
Allows recirculation or discharge

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

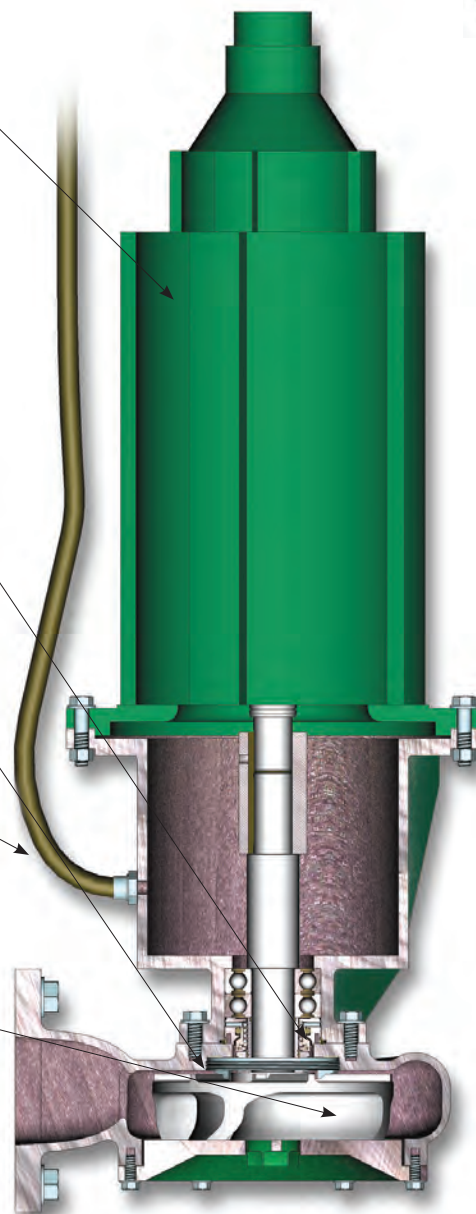
Keeps pumpage away from the seal

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



SUBMERSIBLES

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

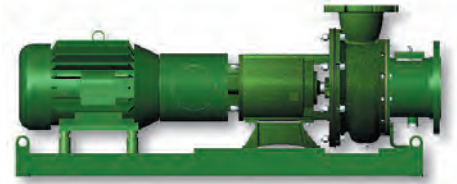




HORIZONTAL

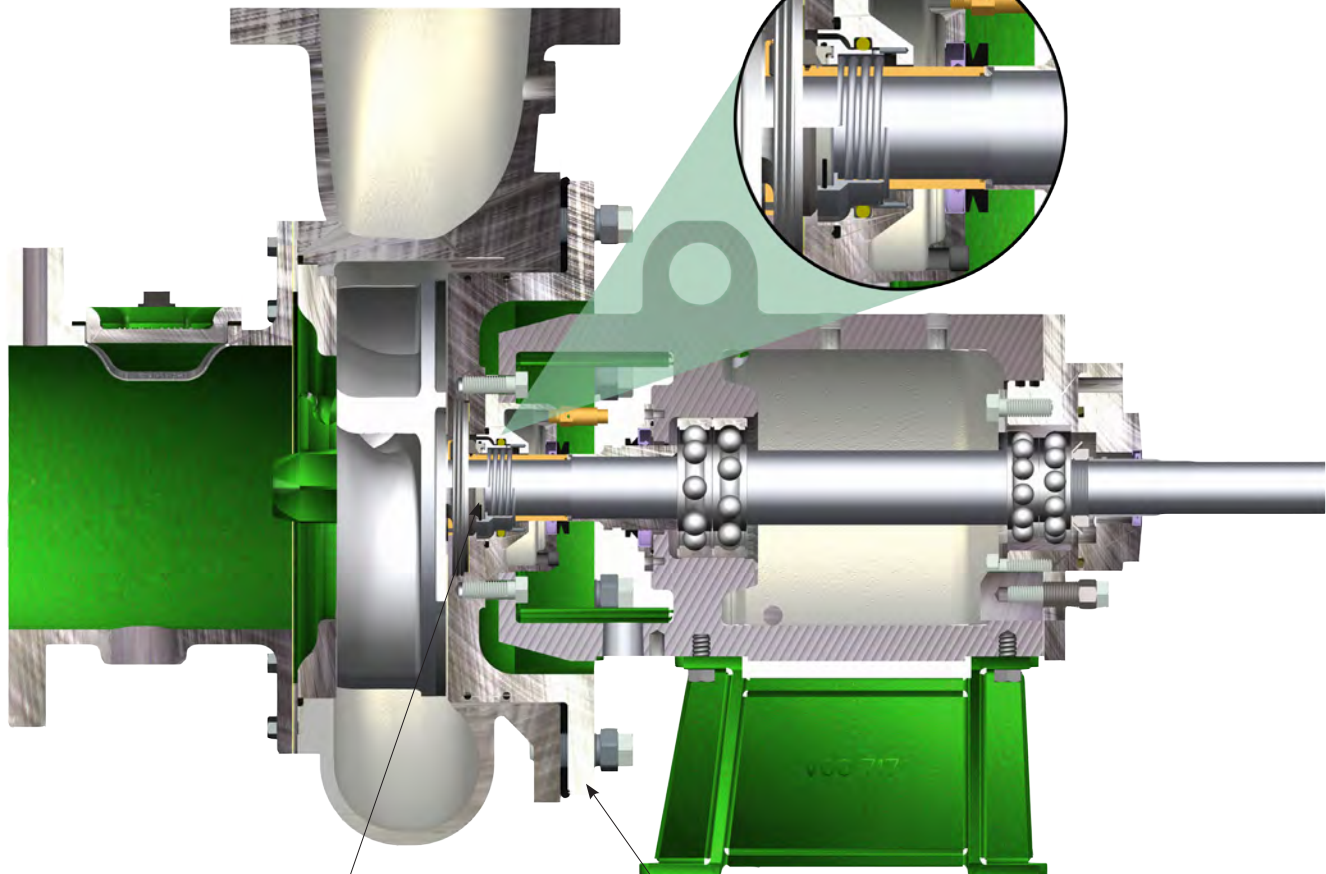
E-Series "Flushless"

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

DOUBLE-ROW THRUST BEARINGS
Absorb shaft loads

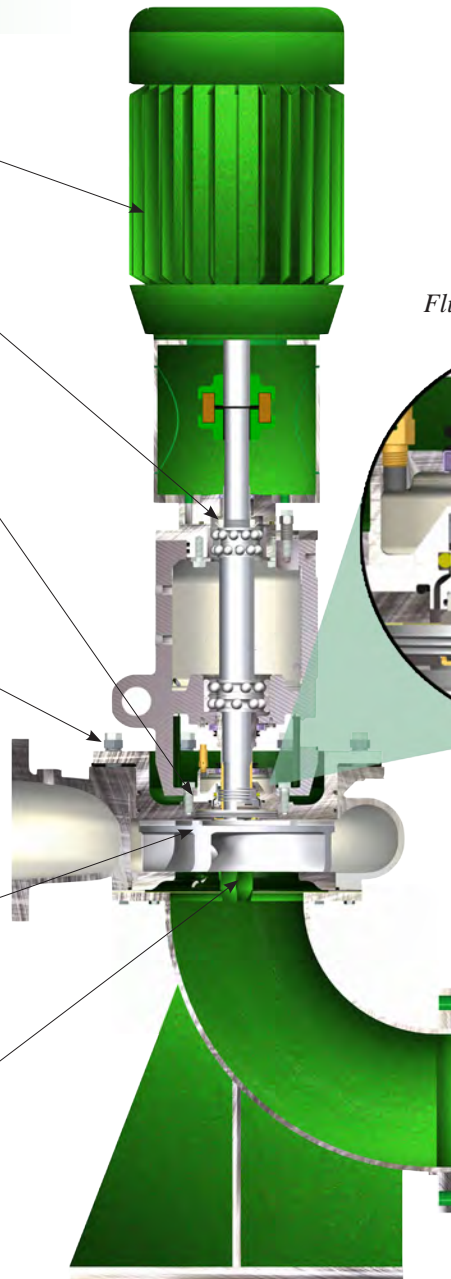
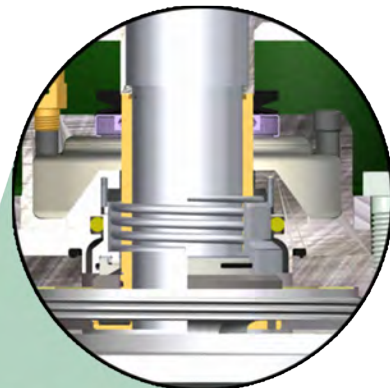
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BACK PULL-OUT CASING
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PUMP OUT VANES AND UPPER CUTTER
Keeps pumpage away from the seal

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

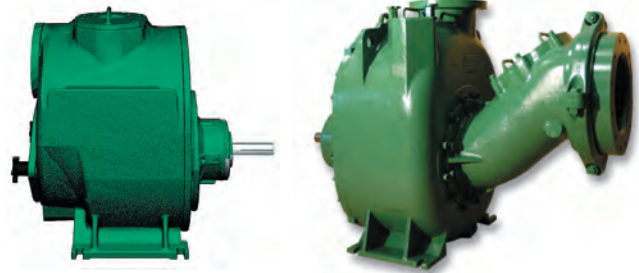




SELF PRIMER

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

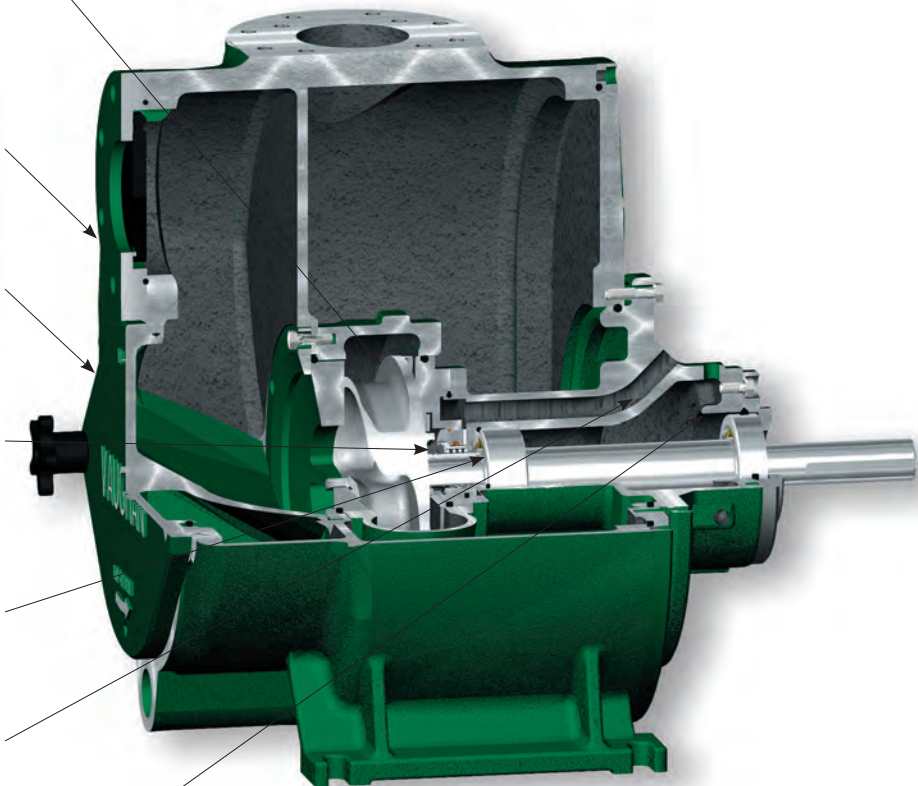
OVERSIZED CLEANOUT
Allows easy access

**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

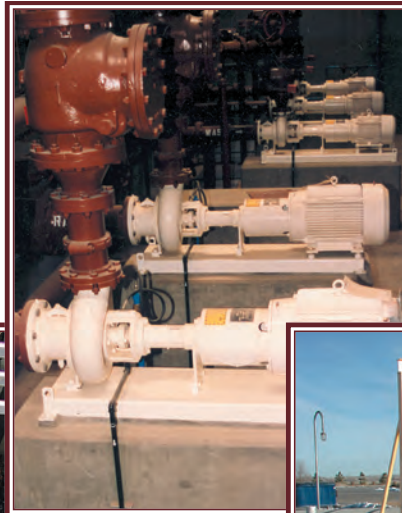




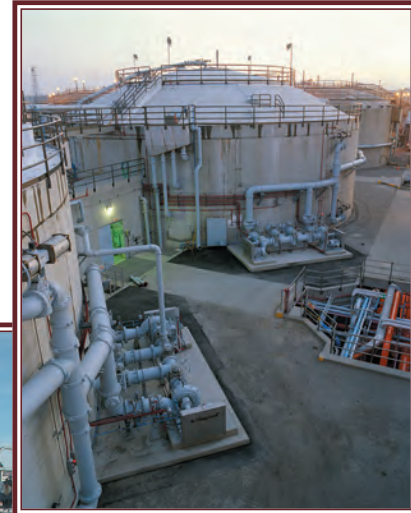
Wastewater Applications

- 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 **RAS / WAS** - Continuously conditions Return and Waste Activated Sludges
- 6 **THICKENED SLUDGE / DIGESTED SLUDGE TRANSFER** - Handles high sludge consistencies
- 7 **TANK MIXING** -  **Rotamix** System conditions and mixes in a dual-zone rotational flow pattern
- 8 **DIGESTER RECIRCULATION** - Eliminates heat exchanger clogging while conditioning sludge
- 9 **F.O.G - (Fats, Oils, and Grease)** - Uses organic waste to enhance methane production

Sludge Transfer



Digester Mixing

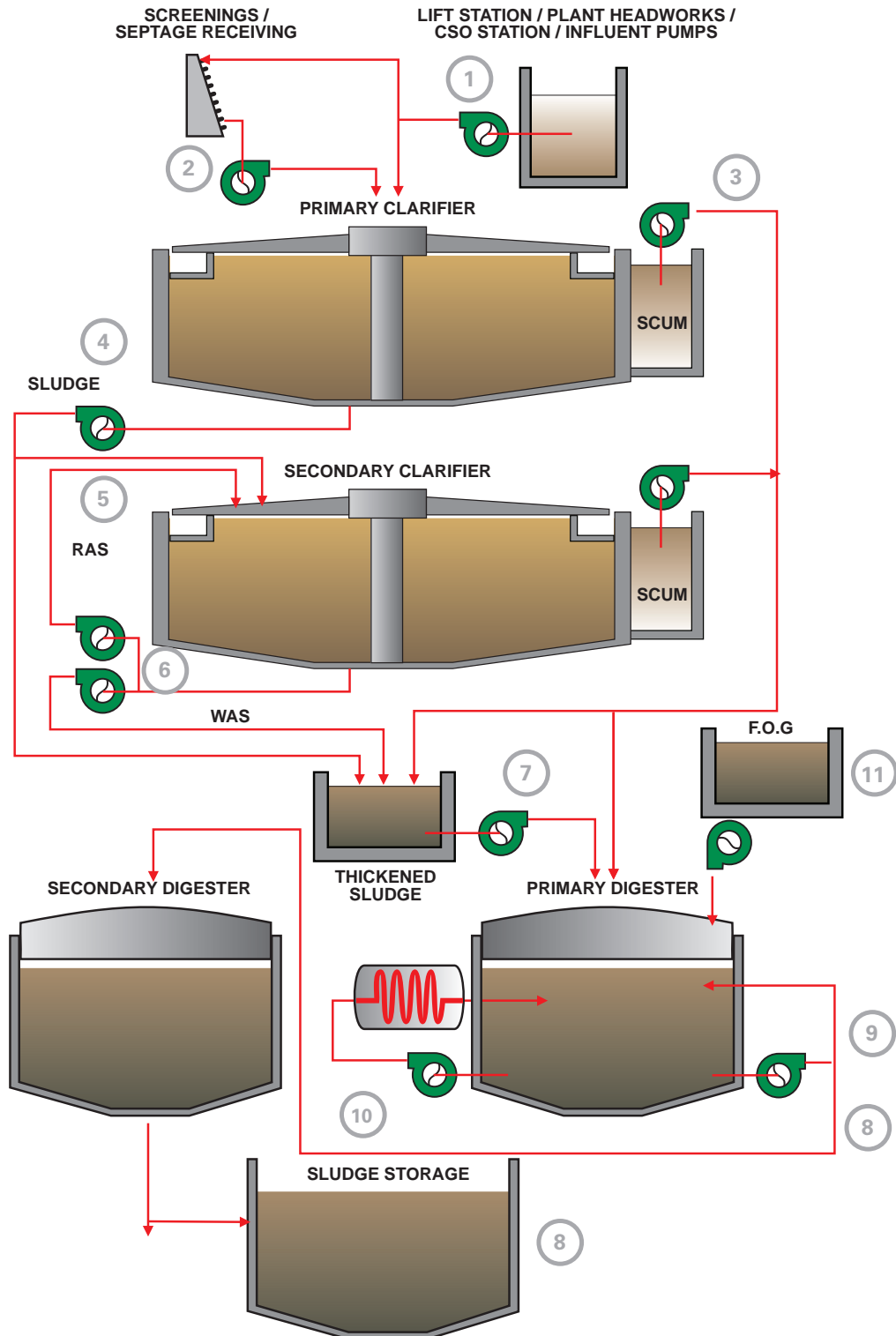


CSO screenings



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



AUTHORIZED REPRESENTATIVES LOCATED WORLDWIDE



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USA

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