

Vertical Heavy Duty Pumps



A RUTHMAN COMPANY
www.gusher.com

7550 Series
Vertical End Suction



7600 Series
Top Pull Out



Vortex
Non Clog



Enclosed Column
Centrifugal



Slurry
Cantilever



R
RUTHMAN
COMPANIES

Quality
Under
Pressure
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Why Vertical?



For all process services and applications, the Gusher line of **Vertical Heavy Duty Pumps** provide the most complete, reliable and most economical solution.

The Gusher **Heavy Duty Series Vertical Pumps** are virtually maintenance-free, come with the added benefit of substantially reduced operational costs, and are backed by Gusher's award winning service.

The Vertical Advantage...

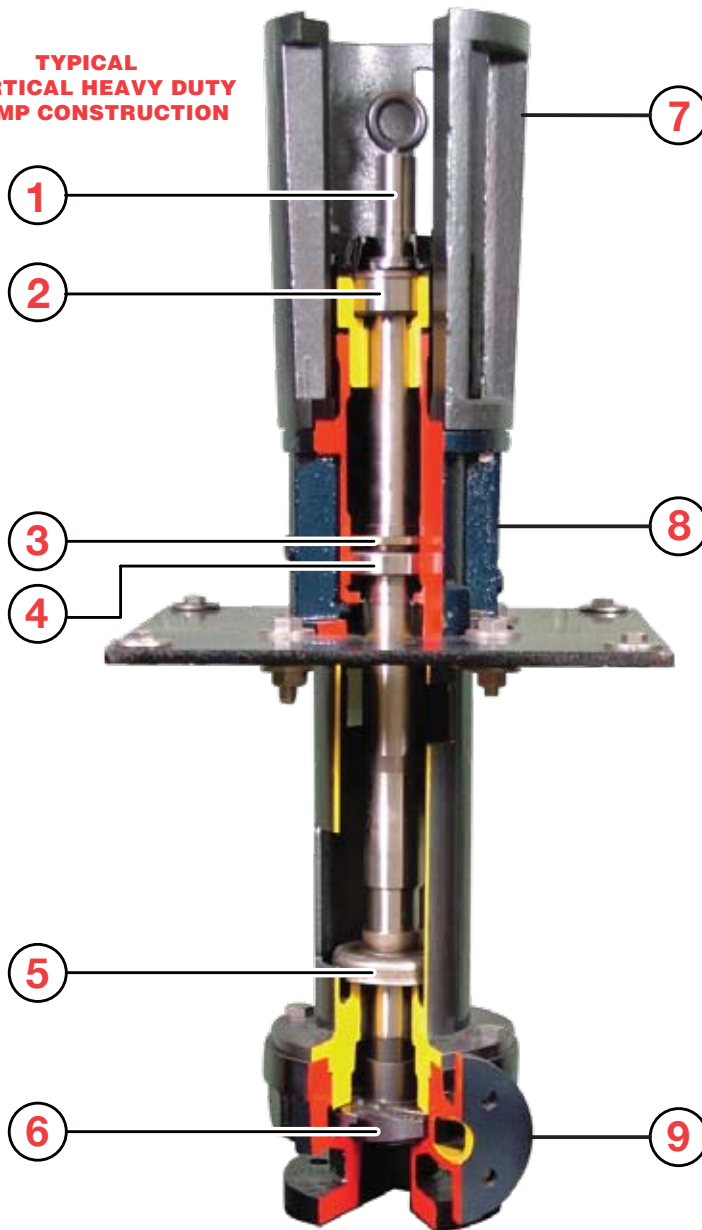
- No Suction Piping, Strainers or Valve.
- No Suction Flex Joints required.
- No Grouting or Foundation required.
- **NO ALIGNMENT REQUIRED!**
Automatic Pump to Motor alignment
- No Mechanical Seals required.
- Mechanical Seal Flush Plans eliminated.
- Less HP draw because there is no Mechanical Seal.
- Less floor space required.
- Less Suction condition problems virtually eliminates problems with Cavitation and Air Entrainment.

Design Features...

- Vertical Design eliminates The Mechanical Seal thereby eliminating the most common service item on most pumps.
 - Mechanical Seal is replaced with a non-contacting carbon Throttle Bushing. This Throttle Bushing is used for two reasons:
 - Slows down flow exiting the pump through the Shaft opening in the Stem Plate.
 - Helps protect Shaft and Impeller as the Bearings wear.
- Less downtime and lower labor costs to repair than Horizontal pumps.



TYPICAL VERTICAL HEAVY DUTY PUMP CONSTRUCTION



- 1. HEAVY DUTY SHAFT** - Minimum Deflection Increases Life for less Maintenance.
- 2. HEAVY DUTY THRUST BEARING** - Double Row Thrust Bearing Minimizes Shaft End Play for more Effective Stuffing Box Sealing, Longer Mechanical Seal Life and withstands greater Axial and Radial Thrust Loads.
- 3. GREASE RETAINER** - Deflects Lubrication to the Bearing Races.
- 4. RADIAL BEARING** - Designed to withstand total Radial load of the Impeller.
- 5. SLINGER** - Controls Pumpage from climbing the shaft.
- 6. IMPELLER** - Semi-Open, Designed with back Pump-Out Vane to minimize axial Thrust. Designed to handle Solids and Stringy Material.
- 7. BARREL** - Maintenance Free Coupling Alignment.
- 8. BEARING HOUSING** - Different Sizes for Maximum Capability.
- 9. VOLUTE** - Centerline Design. Self Venting.

- **Capacities** up to 10,000 GPM
- **Heads** to 540 ft.
- **Temperatures** to 1000°F (537°C)
- **Pressures** to 230 PSIG

Pump Reliability

- Heavy Duty Construction
- Cast Iron and Stainless Steel Construction

Ease of Maintenance

- Sealless
- Top Pull-Out Design Available

Simple Installation

- C-Faced Motors
- No Coupling Alignment

Services

- Spray Booths
- Filtration Systems
- Spray Washers
- Phosphate Systems
- Paint Systems
- Coolant Systems

...and Many More

Custom Design

- May be Designed and Manufactured to your Application Needs



Vertical End Suction Pumps

**Design &
Performance
Features**

Proven Design...

The Gusher 7550 Vertical Heavy Duty has been designed to give Heavy Duty Pumping Service in a wide range of applications, after decades of Application-Tested and Time-Proven reliability.

Design Features Include...

- **Bearings** - Oversize Heavy Duty Type, supplied with grease fittings and located above base plate out of corrosive area.
- **Shaft** - Extra Heavy, made of High Strength Steel.
- **Impeller** - Proven Design and external adjustable clearance increases Efficiency and Performance. Enclosed and Semi-Enclosed available.
- **Air Space** - This feature is a real advantage when pumping Paint or other liquids that have a tendency to foam and overflow your tank. Overflow will not damage ball bearings in power frame.
- **Motor Alignment** - Exclusive Motor Mounting Arrangement allows easy motor alignment in the field.

Capacities...

Sizes in the 7550 Vertical Heavy Duty range from 1" to 8" discharge with heads up to 275 feet @ 1750 RPM. Capacities up to 10,000 GPM. (3600 RPM Pumps are available by selection through a distributor or factory).

Materials of Construction...

The Gusher 7550 Vertical Heavy Duty is available with a selection of materials to meet any need. Pumps can be furnished with Cast Iron, Stainless and Stainless Fitted Construction.



Options...

- **Barrelmount Style (CDM)**
- **Jacketed Ball Bearing Housing** for High Temperature applications, without adjustment.
- **Discharge Pipe** extending through Mounting Plate.
- **Couplings**
- **OSHA Approved Coupling Guards**
- **Electric Motors**
- **Extended Lengths**



Top Pull Out Design

The 7600 Vertical Heavy Duty Pump.. It's our super reliable 7550 with easier and faster maintenance features! We incorporate the same primary parts as our 7550 series pumps, but with ingenuity in design, we created a pump that helps you reduce down time while performing normal maintenance, such as replacing bearings. With this pump, when maintenance is required, the Rotating Element can easily be removed, without disturbing any piping, simply by removing the motor and four nuts on the base plate! Then you simply pull out the rotating assembly and drop in a replacement spare rotating assembly. An operation that takes several hours on most pumps can be performed in minutes. In a very short time the pump is back up and running and all of the standard wear parts are removed from the pump for replacement. Your system is back up with minimal impact and labor. Quick and Simple! That's our 7600 series, Designed with your operations in mind.

Unique 7600 Features Include...

- **Top Pull Out Design**-Offers easy removal of the working components while leaving the Motor, Impeller Casing and All Piping connected and in place.
- **Rotating Assembly**-Allows for quick change out of all key Wear Parts in one Neat Package. Rotating Assembly includes Bearing Housing, Bearings, Grease Seals, Shaft, Throttle Bushing and Impeller...(All the working mechanical parts of the pump with the exception of the Impeller Casing)... in one step.
- **Efficient Replacement of Rotating Assembly**-Minimizes Inventory while maximizing Equipment Availability. Repairs can be made in-house, or as a cost saving feature, can be sent to an Authorized Gusher Service Center where repairs can be expertly made backed by the security and confidence of a Gusher Factory Warranty.

Materials of Construction...

The Gusher 7600 Vertical Heavy Duty is available with a selection of materials to meet any need. Pumps can be furnished with Cast Iron, Stainless and Stainless Fitted Construction.

Capacities...

Sizes in the 7600 Vertical Heavy Duty range from 1" to 8" discharge with headsup to 275 feet @ 1750 RPM. Capacities up to 10,000 GPM. (3600 RPM Pumps are available by selection through a distributor or factory).

Design & Performance Features



Options...

- **Jacketed Ball Bearing Housing** for High Temperature applications, without adjustment.
- **Discharge Pipe** extending through the Mounting Plate
- **Couplings**
- **OSHA Approved Coupling Guards**
- **Electric Motors**
- **Extended Lengths**



Typical Applications



Top Pull Out Vertical End Suction Pumps for Heavy Duty Applications....

With thousands of uses worldwide, The Gusher 7550 and 7600 Vertical Series are the best solution to any Heavy Duty Pumping challenge imaginable.

Have a unique application? Contact Gusher...*"We Can Do That"*

Typical Applications Include...

- **Automotive Paint Systems**
- **Industrial Filters**
- **Auto Body Washers**
- **Industrial Spray Washers**
- **Industrial Parts Washers**
- **Central Coolant Systems**
- **Spray Booths**
- **Filtration Systems**
- **Phosphate Systems**
- **Wood Reclamations**
- **Agricultural By-Products**





Vertical End Suction Centrifugal Pumps

Design Features & Applications

**Eliminates
Mechanical
Seal Failure Problems**

Features and Options...

- **Enclosed Column** for external Tank Mounting
- **Flow Rates** up to 10,000 GPM
- **Heads** up to 400 TDH
- **Jacketed Ball Bearing Housing** for High Temperature Applications
- **Discharge Pipe, Extended Column Length** Available
- **Long Coupled or Integral Shaft Electric Motors**
- **50/60 Hertz Operation**
- **1750/3450 RPM**



Applications...

- **Spray Booths**
- **Industrial Spray Washers**
- **Filtration Systems**
- **Chemical Phosphate Systems**
- **Paint Systems**
- **Coolant Systems**
- **Machine Tool Industry**
- **Municipal Systems**
- **E-Coat Systems**
- **Recreation Parks**
- **Agricultural By-Products**



Non-Clog Construction

Design & Performance Features

Pumps Designed to handle Solids

Caution: Not All Pumps Are Designed To Handle Bulky/Fibrous Solids or Shear Sensitive Solids

When handling certain bulky, fibrous solids, clogging can occur. Standard end suction pumps have close clearances between the impeller and casing to maintain efficiency and performance. High velocities in the casing will cause increased wear, and can degrade or shear pumpage.

Trouble-Free Operation At Low Flows

Recessed impeller pumps are reliable when operating at low flows. Gusher's Vertical Heavy Duty Vortex Non-Clog Pumps use a concentric casing reducing radial loads up to 85%. Bearing, seal and overall pump life are optimized.

Non-Clog Pumping With Minimum Solids Degradation

With the induced flow of a Non-Clog Vortex Impeller being recessed from the casing, velocities are low. Contact by solids with the impeller is reduced. Wear rate, solids degradation and shearing of liquid are greatly minimized. The Vortex Non-Clog casing design is able to handle solids in liquid suspension. Any substance that can exit the discharge will pass through the pump without clogging.

Features...

- **Impeller**
Designed to handle Large Diameter Solids and Fibrous Material without Clogging.
- **Handles Solids**
Up to the same diameter as the Discharge.
- **Tangential Discharge, Concentric Volute Casing**
For Minimal Wear and Clog-Free operation.
- **Reduced Radial Loading**
for Trouble-Free operation, even with low flows, our Vortex design allows throttling to a low performance range unacceptable to many Centrifugal Pumps.
- **Top Pull Out**
Design Option for Quick and Easy Repairs or Switch-Outs. All "Wear" items can be Very Quickly Replaced.
- **Materials**
Choice of Casing and Impeller Materials including Cast-Iron, Hardened Ductile Iron, CD4MCu or Alloy-20 for Chemical Compatibility and significantly lower wear.
- **Sizing**
From 2x2-8 through 6x8-15 offering Flow Range to 2600 GPM and Heads up to 440 TDH (190 psi).
- **Designed**
To Pump various Liquids and Oils containing 30% or better entrained air.
- **Operates**
23% below its first Critical Speed at any point of Operation.
- **Shaft**
is designed to have a Maximum Total indicated Run-Out not to exceed .008 inches.



Options...

- **Top Pull Out Design Available**
- **Vapor Proof Construction**
- **Wide Selection of Bearing Materials**
- **Tungsten Carbide Sleeve & Throttle Bushing**
- **SEV Style "Closed Coupled" Design**
- **Wide Array of Construction Materials for Component Parts**
- **Water Cooled Power Frame for High Temperature Applications**



Typical Applications



Vertical Non-Clog Pumps for Heavy Duty Applications....

Many of the same great features as our 7550 and 7600 series pumps, with the added benefit of a Non-Clog feature for increased Solids Handling capabilities. Have a unique Solids pumping challenge?

Call Gusher...*"We Can Do That"*

Typical Applications Include...

- **Fruit and Vegetable Suspensions**
- **Latex**
- **Machining Chips**
- **Agricultural Waste**
- **Paper Pump**
- **Fibrous Waste**
- **Filter Slurries**
- **Polystyrene Beads**
- **Crystal Suspensions**
- **Screen Rejects**
- **Hydropulper Pump**
- **Sodium Chlorate Slurry**
- **Dye Liquor**
- **Long Fiber White Water**
- **Primary Cleaner Pump**



High Performance for Slurries with up to 70% Solids

**Design &
Performance
Features**

Endurance Engineered for Maximum Service

Capable of handling Slurries with up to 70% solids
The Gusher Slurry Pumps can tolerate a wide range
of abrasive and corrosive applications. The elimina-
tion of submerged bearings and bushings greatly
extend the service life of this pump..

Design Features Include...

- **Large Impeller Passages** to reduce wear, allow maximum solids handling.
- **Wider Sealing Areas** eliminate the need for wear rings.
- **Progressive Casting Wall Thickness** for maximum service life.
- **Sizes 1" through 16"**, capacities to 10,000 USGPM.
- **Open By-Pass** design feature will tolerate pump shut-off.
- **Single Volute, Single Discharge** to allow maximum solids passage eliminates need for hydraulic balancing, allows dry-running.
- **Cantilever Pump** has no packing, seals or bearings below the mounting plate.



Options...

- **Drive Options** include direct v-belt, right angle and variable frequency.
- **Spacer Pedestal** available to raise bearings from splashing or heat.
- **Suction Strainer** available.
- **Hard Iron Discharge Elbow** available.



Typical Applications



Vertical Cantilever Slurry Pumps for Heavy Duty Applications....

Thousands of installations in Power, Chemical, Petrochemical, Steel, Water Treatment, Foundry, Ceramic, Metalworking, Mining, and other process industries rely on the Gusher Heavy Duty Vertical Cantilever Slurry Pumps for longer service life with minimum maintenance.

Typical Applications Include...

- **Power**
 - FGD Service
 - Ash Removal
 - Ash Sluice
 - Coal Handling
 - Coal Pile Runoff
 - Pond Return Water
 - Scrubber Water
- **Steel**
 - Scale Removal
 - Slag Quench
 - Coal or Coke Slurry
- **Mining**
 - Heavy Media
 - Crusher Wash
 - Tailings Removal
 - Dredging
 - Dewatering
- **Sand and Gravel**
 - Dredging
 - Dewatering
 - Wash/Prep Pumps
- **Petroleum**
 - Coke Breeze
 - Separator Pumps
 - Filter Feed
- **Chemical**
 - Corrosive Pumping
 - Molten Salts
 - Ammonium Nitrate
 - Waste Disposal
 - Metal Process
- **Other Industries**
 - Sewage
 - Ceramic
 - Paper
 - Sugar
 - Phosphate



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Ruthman... Another Word for Innovation



It began in 1913, servicing mechanical components of the steamboats on the Ohio River. The company founder, Alois Ruthman, was a man of vision and saw part of the future of the company was in the development of a reliable industrial pump.

In 1924, with the conception of the first vertical ball bearing sealless centrifugal pump, Ruthman Pump and Engineering furthered the design on a unit with a one piece motor driven shaft. The pump was called "Gusher", giving birth to the trade name Gusher Pumps, and the coining of the term "coolant pump".

Wanting to carry on the tradition of quality and reliability started by his father, Thomas R. Ruthman joined the company in 1949. In the early 1990's Thomas R. Ruthman's son, Thomas G. Ruthman joined the company, continuing this same tradition. Maintaining the reputation of Gusher Pumps by innovation and customer service, the company has grown to service companies worldwide.

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