Pump Selection Guide
# Pump Selection Guide

Goulds Pumps presents this *Pump Selection Guide* to assist users in making an easy initial selection of the best pump for a particular service. To do this, simply refer to the selection chart on page 3 where the full line of Goulds pumps are listed by pump type. For more details about your selection, refer to the page indicated.

Contact your nearest Goulds, sales office or representative for a complete data package on any pump(s) in which you are interested. They will also furnish you with any information you require to assure proper pump selection for optimum reliability and performance.

## Goulds Pumps...Serving The World’s Industries

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<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Example</th>
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<tr>
<td><strong>Chemical</strong></td>
<td>The family of chemical process pumps includes both ANSI and ISO models. Goulds specializes in high alloys for our chemical pumps ranging from 316SS to Zirconium and even special alloys if needed. Unique non-metallic pumps offer distinct advantages when handling severe corrosives.</td>
<td>Magnetic drive pumps are designed for services where leakage cannot be tolerated. Our complete understanding of chemical processing and related industries gives us a clear advantage in finding solutions to these particular pumping problems.</td>
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<tr>
<td><strong>Pulp and Paper</strong></td>
<td>Goulds leadership in the pulp and paper industry has been largely due to the success of our comprehensive range of pumps that stand up to the harsh operating requirements of this industry. The Model 3175 has been prized for performance since its introduction in 1968. Goulds latest 3180/3185 paper stock/process pump line extends the offering further for users with a preference for a metric pump. Other superior pumps include the 3500XD enhanced performance medium consistency stock pump and a complete line of double suction and LoPulse fan pumps.</td>
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<td><strong>Mining And Minerals</strong></td>
<td>Goulds dominance in the mining industry dates back to the latter 1800s. Designed for the most severe applications, our pumps can be found in coal, aluminum, copper, iron, clay, phosphate, potash, soda ash, salt, gold and aggregate industries throughout the world. Goulds offers the widest range of corrosion and abrasion-resistant slurry pumps in the industry, including vertical, horizontal and submersible designs for cyclone feed, tailings disposal, minerals processing, mine dewatering, clarifier underflow, oil sands and sump services.</td>
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<td><strong>Power Generation</strong></td>
<td>Goulds offers a wide variety of pumps designed specifically for uses within this industry. The Model 3600, the most modern axially split multi-stage pump in the world, is ideally suited for boiler feed service. The 3310H segmented multi-stage pump is proven in over 1200 installations worldwide. Vertical turbine and double suction pumps can handle the most demanding condensate or circulating water needs. Sumps can be cleared with Goulds line of vertical or submersible sump pumps. Heavy duty slurry pumps like the SRL and 5500 are specially designed for Flue Gas Scrubbers and ash handling services.</td>
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<td><strong>Oil Refining and Gas Processing</strong></td>
<td>Goulds offers a full range of API-610 pumps to meet your demanding applications: BB2 Between Bearing radially split pumps, BB3 Multi-Stage axially split pumps, and Overhung OH2/OH3 process pumps. Vertical turbine pumps are available in any configuration including can pumps for low NPSH, fire pumps and submersibles. Design and manufacturing capabilities include standard commercial grades, ASME Section VIII, and API-610 for total line capability.</td>
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<td><strong>Primary Metals</strong></td>
<td>The wide range of products makes Goulds the ideal choice for the demanding services of this industry. Vertical and submersible abrasives handling, slurry pumps for scale pits, chemical pumps for pickle liquor and leaching solutions, vertical turbines and double suction pumps for cooling tower and dewatering applications. Also, pumps for waste acid, scrubber service, and quench.</td>
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<td><strong>Water and Wastewater</strong></td>
<td>Goulds offers the most comprehensive line of double suction, end suction, multi-stage, non-clog and vertical turbine pumps for chemical feed, water supply, booster, low lift, and high lift. For non-clog solids handling, a range of horizontal, vertical sump and submersible pumps have helped professional engineers solve pollution problems around the world.</td>
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<td><strong>Food And Beverage</strong></td>
<td>Adhering to strict process requirements is only one of the reasons for Goulds entry into the forefront of these industries. Goulds pumps handle a wide variety of grain processing, water, wastes, bioluels, corrosives, and erosives. Ethanol breweries, bottling companies, canneries and a multitude of food and liquid industries rely on Goulds for successful operations.</td>
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# Pump Selection Chart

Goulds makes the widest range of pumps in the industry — pumps to handle virtually any service. This selection chart is designed to help you find and specify the best pump for your service.

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<th>Drilling &amp; Gas Processing</th>
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<th>Wastewater</th>
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* TEFZEL® and TEFLO® are registered trademarks for fluoropolymer resins, films and fibers made by DuPont.
PRO Services®
Extending Equipment Life...

Product Repair (all types and brands of rotating equipment)
- Service Center Repair
- Turnkey Repair/Installation
- Field Service
- Emergency Service

Reliability Improvement
- Predictive Condition Monitoring
- Root Cause Failure Analysis
- Machine & System Assessment
- Engineered Upgrades

Optimization of Assets
- Inventory Management
- Replacement/Exchange
- Training
- Maintenance Management

- Technical Expertise
- Factory Trained Service Personnel
- Quality
- Fast Turnaround
- Emergency Service – 24 hours/day, 7 days/week
- ISO and Safety Certified

PromSmart™ encompasses the latest technology in condition monitoring to transform your Predictive Maintenance program into a Plant Profitability program. It provides a cost-effective solution to maintaining uptime on all of your rotating equipment. PromSmart continuously monitors, analyzes and annunciates an alarm when critical criteria is not met. By identifying, diagnosing, and sounding an alert to potential equipment problems before they have a chance to manifest into unexpected downtime or catastrophic failure, PromSmart helps to assure plant profitability.

PromSmart delivers benefits that go right to the bottom line.
- Extends equipment life
- Optimize costly “walk arounds” by skilled personnel

- Can help reduce overall equipment failures and the cost of downtime
- Sends alerts prior to potential catastrophic process failures
- Automatically alerts personnel to machine problems
- Consolidates data for equipment optimization (*Patent pending)

PromSmart is a wireless machinery monitoring system that collects and analyzes operating data automatically every 5 seconds. Integrated analysis capabilities provide enhanced data and reporting functions.

PUMP SMART

PromSmart® is the latest advancement in pump control and protection to reduce energy consumption, increase uptime and decrease maintenance cost. It allows the pump to be right-sized to the application by dialing in the speed and torque which increases flow economy, reduces heat and vibration and improves overall system reliability.

- Simplified Pump Control — PromSmart was designed specifically to optimize pumping applications and can be used to control a single pump or coordinate between multiple pumps with out the need for an external controller.
- Pump Protection — PromSmart guarantees to protect the pump from upset conditions with patented sensorless pump protection algorithms.
- Smart Flow — PromSmart features a sensorless flow function for centrifugal pumps that can calculate the flow of the pump with ±5% accuracy of the pump rated flow.
- Drive for the DCS — While most VFDs can only provide basic information PromSmart offers unparalleled insight to the pump operation which allows for smoother process control and efficiency.
- Pump Experts — PromSmart is a variable speed drive with pump specific algorithms imbedded into the drive. With over 150 years of pump knowledge let the pump experts take responsibility of your pump system.
Model 3175

Paper Stock/Process
For the toughest services. Thousands of installations handle stock, solids, fibrous/stringy materials, abrasive slurries, and corrosives. Patented dynamic seal option eliminates mechanical seal problems.

- Capacities to 28,000 GPM (6360 m³/h)
- Heads to 350 feet (107 m)
- Temperatures to 450°F (232°C)
- Pressures to 285 PSIG (1965 kPa)

Materials: All Iron/316SS Trim, 316SS, 317SS, CD4MCuN

27 Sizes

Model 3500XD

Medium Consistency Systems
Thick stock pulp is pumped with the model 3500XD enhanced performance medium consistency pumping system. System includes engineered standpipe, control valve, dilution system and level transmitter. A patented air separation device removes air from the pulp to improve mixing effectiveness. Bleaching chemicals and oxygen are mixed in-line with the model 3501 mixer with Double Shear™ rotor, optimized injection port, and unique low pressure drop casing design.

- Consistencies from 8% to 16%
- Capacities to 1,500 (pump) and 2,000 adstpd (mixer)
- Pressures to 325 PSIG (2240 kPa)

Materials from 316SS to Titanium

Model 3180/3185

Paper Stock/Process
All customer requirements were considered in this line of paper stock/process pumps... excellent hydraulic coverage, high efficiency, extreme ease of maintenance, and mechanical reliability.

The Model 3185 pump furnished with ISO or JIS flange drilling, metric fasteners, dimensions. Open, enclosed or Shearpeller™ impellers available. Labyrinth seals standard.

Model 3180 standard with ANSI flanges.

Materials: All Iron/316SS Trim, 316SS, 317SS, CD4MCu

33 Sizes

Model CV 3171

Vertical Sump and Process
The CV 3171 is a recessed impeller, circular volute type sump pump. Ideal for large solids and shear sensitive fluids. Circular volute minimizes radial loads making this the ideal pump for low flow process applications.

- Capacities to 2,700 GPM (610 m³/h)
- Heads to 320 feet (126 m)
- Temperatures to 450°F (232°C)
- Pit Depths to 20 feet (6 m)

Materials: Cast Iron, Duplex SS, 316SS, Alloy 20, Hastelloy B and C

6 Sizes

Model 3181/3186

High Temperature Paper Stock/Process
End suction, top centerline discharge, self-venting. Centerline mounted for high temperature services. High efficiency enclosed impeller. TaperBore™ seal chamber standard with mechanical seal arrangement.

- Capacities to 13,000 GPM (3,000 m³/h)
- Heads to 410 feet (125 m)
- Temperatures to 572°F (300°C)
- Pressures to 360 PSIG (25 bar)

Materials: Duplex SS

23 Sizes
ANSI Process

Model 3196

This is the original ANSI pump that has become the standard of the industry. Over 1,000,000 installations attest to the remarkable performance of the 3196. Available with a wide range of features for handling difficult applications. i-FRAME power ends maximize reliability and MTBF (Mean Time Between Failure).

- Capacities to 6,000 GPM (1364 m³/h)
- Heads to 730 feet (222 m)
- Temperatures to 500° F (260° C)
- Pressures to 375 PSIG (2586 kPa)

Materials: Ductile Iron, 316SS, CD4MCu, Alloy 20, Monel, Nickel, Hastelloy B and C, Titanium

29 Sizes

Model HT 3196

ANSI High Temperature Process Pump

Centerline mounted in a heavy duty fabricated steel casing support, the Model HT 3196 minimizes shaft misalignment and piping strain associated with elevated temperatures up to 700° F. This eighth member of the ANSI pump family features Goulds’ premier i-FRAME power end, multiple seal chamber options including the Taper Bore™ Plus, and a wide variety of rigid and rugged mounting systems.

- Capacities to 4,500 GPM (1,023 m³/h)
- Heads to 925 feet (282 m)
- Temperatures to 700° F (372° C)
- Pressures to 450 PSIG (3102 kPa)

Materials: Carbon Steel, 316SS, CD4MCu, Alloy 20, Hastelloy C

28 Sizes

Model LF 3196

Low Flow ANSI Process

Designed specifically to provide superior performance for low flow services. Features a concentric (circular volute) casing and open radial vane impeller to eliminate hydraulic and mechanical problems at low flows. i-FRAME power ends.

- Capacities to 220 GPM (50 m³/h)
- Heads to 925 feet (282 m)
- Temperatures to 700° F (372° C)
- Pressures to 450 PSIG (3102 kPa)

Materials: Ductile Iron, 316SS, CD4MCu, Alloy 20, Monel, Nickel, Hastelloy B and C, Titanium

4 Sizes

Model CV 3196

Non-Clog ANSI Process

Perfect solution for handling bulky, fibrous, or shear-sensitive liquids. Recessed impeller design provides non-clog pumping with minimum solids degradation. Capability to handle liquids containing 10 to 20 percent air/gas. i-FRAME power ends.

- Capacities to 2,700 GPM (610 m³/h)
- Heads to 440 feet (134 m)
- Temperatures to 500° F (260° C)
- Pressures to 285 PSIG (1965 kPa)

Materials: Ductile Iron, CD4MCu, Alloy 20, Monel, Nickel, Hastelloy B and C

7 Sizes

Model 3796

Self-Priming ANSI Process

One-piece casing eliminates need for separate priming chamber, air separator, valves, or by-pass line. Fully open impeller can be trimmed to meet specific hydraulic requirements. i-FRAME power ends.

- Capacities to 1,250 GPM (284 m³/h)
- Heads to 430 feet (131 m)
- Temperatures to 500° F (260° C)
- Suction Lifts to 25 feet (7.6 m)

Materials: Ductile Iron, 316SS, CD4MCu, Alloy 20, Hastelloy B and C, Titanium

8 Sizes

Model 3996

In-Line ANSI Process

For corrosives, abrasives, and high temperature. Fully open impeller, back pull-out design, heavy duty construction. Field alignment not required.

- Capacities to 1,500 GPM (340 m³/h)
- Heads to 700 feet (213 m)
- Temperatures to 500° F (260° C)
- Pressures to 375 PSIG (2585 kPa)

Materials: Ductile Iron, 316SS, Alloy 20, Monel, Nickel, Hastelloy B and C, CD4MCu, Titanium

13 Sizes
**SEALED LINED & NON-METALLIC PUMPS**

### Model SP 3298
**Self-Priming Lined**
When suction pressure is negative and air or gases must be evacuated to accomplish pump priming, the SP 3298 has a self-priming dual volute that primes on demand with only an initial charge of liquid in the casing. Priming is accomplished within the casing, eliminating the need for auxiliary priming systems.
- Capacities to 275 GPM (63 m³/h)
- Heads to 150 feet (46 m)
- Temperatures to 250°F (121°C)
- Pressures to 175 PSIG (1207 kPa)
- Lining Material: Tefzel® (ETFE)

### Model 3298
**Magnetic Drive ANSI Lined**
Designed to handle moderate to severe corrosives with or without solids. Sealless design provides effective alternative to pumps with mechanical seal problems. Thick linings for extended pump life.
- Capacities to 1200 GPM (270 m³/hr)
- Heads to 530 feet (162 m)
- Temperatures to 250°F (121°C)
- Pressures to 225 PSIG (1551 kPa)
- Lining Material: Tefzel® (ETFE)

### Model 3296 EZMAG
**Magnetic Drive ANSI Process**
Robust, simple sealless design ideal for difficult liquids, such as corrosives, pollutants, ultra-pure liquids and toxics. Meets ANSI dimensional specifications. Features a bearing cartridge for ease of maintenance and improved reliability.
- Capacities up to 700 GPM (159 m³/h)
- Heads to 550 feet (168 m)
- Temperatures to 536°F (280°C)
- Pressures to 275 PSIG (1896 kPa)
- Materials: 316SS Others upon request

### Model V 3298
**Vertical ANSI Lined Process**
Ideal for moderate to severe corrosives. With or without solids, the 3298 can handle the tough chemical services. As a sealless design, it’s an effective alternative to pumps with mechanical seal problems. Meets strictest EPA regulations.
- Capacities to 320 GPM (270 m³/h)
- Heads to 460 feet (129 m)
- Temperatures to 250°F (121°C)
- Pressures to 225 PSIG (1551 kPa)
- Lining Material: Tefzel® (ETFE) Construction

### Model 3299
**Magnetic Drive ANSI Lined**
Designed to handle moderate to severe corrosives with or without solids. Sealless design provides effective alternative to pumps with mechanical seal problems. Thick linings for extended pump life.
- Capacities to 425 GPM (95 m³/hr)
- Heads to 490 feet (150 m)
- Temperatures to 360°F (180°C)
- Pressures to 275 PSIG (1896 kPa)
- Lining Material: PFA

### Model 3198
**PFA Process ANSI Lined**
Virgin PFA TEFLO® for handling a wide range of severe corrosive liquids, trace contaminants, and mixtures. The 3198 features ANSI B73.1 design, i-FRAME power ends. TEFLO® molded in place by high pressure technique and mechanically locked.
- Capacities to 800 GPM (182 m³/h)
- Heads to 450 feet (137 m)
- Temperatures to 300°F (150°C)
- Pressures to 225 PSIG (1550 kPa)
- Material: PFA Teflon®

### Model 4150
**FRP ANSI Process**
All liquid end parts are constructed with Thermoset Fiberglass Reinforced Plastic (FRP). The position of the glass reinforcement is engineered to provide maximum strength and corrosion resistance within each FRP part. Sizes with larger flow rates utilize dual volute casings to reduce radial loads. The standard one piece impeller and sleeve eliminates the need for an impeller o-ring. Conforms to ANSI dimensional standards.
- Capacities to 5000 GPM (1130 m³/h)
- Heads to 490 feet (150 m)
- Temperatures to 212°F (100°C)
- Pressures to 200 PSIG (1379 kPa)
- Material: High Strength, Corrosion-resistant, Glass-reinforced Vinyl Ester

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**Model Information**
- **Model SP 3298**: Self-Priming Lined
  - Capacities: 275 GPM (63 m³/h)
  - Heads: 150 feet (46 m)
  - Temperatures: 250°F (121°C)
  - Pressures: 175 PSIG (1207 kPa)
  - Lining Material: Tefzel® (ETFE)
- **Model 3298**: Magnetic Drive ANSI Lined
  - Capacities: 1200 GPM (270 m³/hr)
  - Heads: 530 feet (162 m)
  - Temperatures: 250°F (121°C)
  - Pressures: 225 PSIG (1551 kPa)
  - Lining Material: Tefzel® (ETFE)
- **Model 3296 EZMAG**: Magnetic Drive ANSI Process
  - Capacities: up to 700 GPM (159 m³/h)
  - Heads: 550 feet (168 m)
  - Temperatures: 536°F (280°C)
  - Pressures: 275 PSIG (1896 kPa)
- **Model V 3298**: Vertical ANSI Lined Process
  - Capacities: to 320 GPM (270 m³/h)
  - Heads: 460 feet (129 m)
  - Temperatures: 250°F (121°C)
  - Pressures: 225 PSIG (1551 kPa)
- **Model 3299**: Magnetic Drive ANSI Lined
  - Capacities: to 425 GPM (95 m³/hr)
  - Heads: 490 feet (150 m)
  - Temperatures: 360°F (180°C)
  - Pressures: 275 PSIG (1896 kPa)
- **Model 3198**: PFA Process ANSI Lined
  - Capacities: to 800 GPM (182 m³/h)
  - Heads: to 450 feet (137 m)
  - Temperatures: to 300°F (150°C)
  - Pressures: to 225 PSIG (1550 kPa)
  - Material: PFA Teflon®
- **Model 4150**: FRP ANSI Process
  - Capacities: to 5000 GPM (1130 m³/h)
  - Heads: to 490 feet (150 m)
  - Temperatures: to 212°F (100°C)
  - Pressures: to 200 PSIG (1379 kPa)
  - Material: High Strength, Corrosion-resistant, Glass-reinforced Vinyl Ester

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**Additional Information**
- Capacities: 275 GPM (63 m³/h)
- Heads: 150 feet (46 m)
- Temperatures: 250°F (121°C)
- Pressures: 175 PSIG (1207 kPa)
- Lining Material: Tefzel® (ETFE)
**ISO Process Pumps**

**Model ICM**

ISO Metallic Magnetic Drive Process

The ICM pump is the optimum metallic sealless pump for process fluid services in the chemical, paper, and general industries where ISO dimensions are preferred. The ICM is specifically designed to pump difficult fluids such as corrosives, pure, and toxic liquids. Its sealless, sturdy design combines with a wide variety of wet end materials. The bearings are chemical and abrasion resistant Silicon Carbide (SiC).

- Capacities to 1,980 GPM (450 m³/h)
- Heads to 482 feet (150 m)
- Temperature ranges from -40° F to 350° F (-40° C to 177° C)
- Pressures to 232 PSIG (16 bar)

**Materials:** Ductile Iron, Carbon Steel, 316SS, Duplex SS, Alloy 20, Hastelloy C and Titanium.

**Model ICMP**

High Temperature ISO Metallic Magnetic Drive Process

The ICMP is a heavy-duty metallic sealless pump designed for extreme temperatures and pressures. The ICMP complies with ISO standards and features the patented Cyclone Seal Chamber for extended seal service life. Centerline casing design is self venting. Large capacity oil sump provides maximum bearing cooling. Optional inducer reduces NPSHr.

- Capacities to 1,760 GPM (400 m³/h)
- Heads to 492 feet (150 m)
- Temperature ranges from -40° F to 535° F (-40° C to 280° C)
- Pressures to 363 PSIG (25 bar)

**Materials:** Stainless Steel, Hastelloy, Cast Iron and Alloy 20

**Model ICB**

Close-coupled ISO Process Pump

The ICB Series is an extension to the IC series ISO 5199 frame mounted chemical pump series. These new pumps provide a compact and economical pumping solution ideal for OEM applications and confined spaces in industrial processes. No spacer coupling or alignment is required, reducing capital equipment costs and simplifying installation and maintenance. ICB pumps are fitted with our patented Cyclone Seal Chamber, proven to provide the optimum sealing environment for extended mechanical seal life.

- Capacities to 1,980 GPM (450 m³/h)
- Heads to 492 feet (150 m)
- Temperature ranges from -40° F to 284° F (-40° C to 140° C)
- Pressures to 230 PSIG (16 bar)

**Materials:** Ductile Iron, Carbon Steel, 316SS, Duplex SS

**Model IC**

ISO Process

This series is designed in accordance with ISO 5199 and ISO 2858, making it ideal for worldwide chemical or industrial process applications. IC pumps are fitted with a patented seal chamber design called the Cyclone seal chamber, which has been proven to provide the optimum sealing environment for extended mechanical seal life. Optional inducer reduces NPSHr.

- Capacities to 1,980 GPM (450 m³/h)
- Heads to 482 feet (150 m)
- Temperature ranges from -40° F to 350° F (-40° C to 177° C)
- Pressures to 232 PSIG (16 bar)

**Materials:** Ductile Iron, Carbon Steel, 316SS, Duplex SS, Alloy 20, Hastelloy C and Titanium.

**Model ICP**

High Temperature ISO Process Pump

The ICP is a heavy duty chemical process pump designed for extreme temperatures and pressures. The ICP complies with ISO standards and features the patented Cyclone Seal Chamber for extended seal service life. Centerline casing design is self venting. Large capacity oil sump provides maximum bearing cooling. Optional inducer reduces NPSHr.

- Capacities to 1,980 GPM (450 m³/h)
- Heads to 492 feet (150 m)
- Temperature ranges from -40° F to 535° F (-40° C to 280° C)
- Pressures to 236 PSIG (25 bar)

**Materials:** Carbon Steel, 316SS, Alloy 20, Duplex SS and Hastelloy C

**Model ICMP**

High Temperature ISO Metallic Magnetic Drive Process

The ICMP is a heavy-duty metallic sealless pump for applications with high temperature and pressure conditions. It is designed for aggressive, toxic and pure media. The centerline casing is optimal for the compensation of dimensional changes due to temperature fluctuations. SSIC silicon carbide plain bearings, optionally with Dryguard™ dry run protection. Unique cartridge plain bearing design. Inducer option.

- Capacities to 1,760 GPM (400 m³/h)
- Heads to 685 feet (210 m) at 3,500 rpm
- Temperature ranges from -40° F to 535° F (-40° C to 280° C)
- Pressures to 365 PSIG (25 bar)

**Materials:** Stainless Steel, Hastelloy, Cast Iron and Alloy 20
API 610 Process Pumps

Model 3700 & 3710 API 610 OH2
Overhung Process
High temperature and high pressure process pumps designed to fully meet the requirements of API-610. Centerline support for high temperature stability, maximum rigidity. Tangential discharge for maximum hydraulic efficiency.

- Available in top suction design (Model 3710).
- Capacities to 6,500 GPM (1,475 m³/h)
- Heads to 1,200 feet (360 m)
- Temperatures to 800° F (427° C)
- Pressures from full vacuum to 870 PSIG (50 kg/cm²)

Materials: All API materials, custom materials available

Models 3620 & 3640 API 610 BB2
Single and Two-Stage Between Bearings
Between bearings, radially split process pumps designed for smooth, reliable operation. Fully meets requirements of API-610.

- Capacities to 19,300 GPM (4,380 m³/h)
- Heads to 2,500 feet (760 m)
- Temperatures to 850° F (455° C)
- Pressures to 1,000 PSIG (70 kg/cm²)

Materials: All API materials, custom materials available

Model 3600 API-610 BB3
Heavy Duty Multi-Stage
Advanced design with proven operating history. Axially split, with many enhanced features that make it an extremely reliable, high performance pump well-suited to a wide range of services.

- Capacities to 4,500 GPM (1,020 m³/h)
- Heads to 6,000 feet (1,825 m)
- Temperatures to 400° F (205° C)
- Pressures to 2,500 PSIG (175 kg/cm²)

Materials: All API materials, custom materials available

Model 3910 API-610 OH3
Vertical In-Line with Bearing Frame
High pressure, high temperature services meet API-610 requirements. Back pull-out for ease of maintenance. Bearing frame carries pump loads.

- Capacities to 7,500 GPM (1,700 m³/h)
- Heads to 750 feet (225 m)
- Temperatures to 650° F (343° C)
- Pressures to 595 PSIG (40 kg/cm²)

Materials: All API materials, custom materials available

API 610 Vertical Sump and Process
For all refinery services requiring tank mount or sump duties. Fully compliant with 9th and 10th editions ISO 10749

- Capacities to 3,180 GPM (722 m³/h)
- Heads to 525 feet (160 m)
- Temperatures to 450° F (232° C)
- Pit depths to 20 feet (6 m)

Materials: Carbon Steel, 12% Chrome Fitted, 316SS, Duplex SS
Model HSU, HSUL & JCU

Submersible
Three different models allow selection of the very best pump for the service conditions whether large, stringy, fibrous solids, or abrasive slurries.
- Capacities to 4,000 GPM (910 m³/h)
- Heads to 220 feet (67 m)
- Temperatures to 194°F (90°C)
- Solids to 6 inches (152 mm)

Materials: Cast Iron, High Chrome Iron, CD4MCu, 316SS

Model VHS & VJC
Vertical Cantilever
Ideal for range of tough sump services... abrasive slurries — mine slurry, fly ash, foundry sand, clay, coal prep, power plants, or large solids handling.

Models VJC – 10 Sizes
- Capacities to 7,500 GPM (1,703 m³/h)
- Heads to 240 feet (73 m)
- Solids to 2.25 inches (57 mm)

Materials: Cast Iron, High Chrome Iron, 316SS

Model VHS – 7 Sizes
- Capacities to 7,000 GPM (1,590 m³/h)
- Heads to 140 feet (43 m)
- Solids to 10 inches (254 mm)

Materials: Cast Iron, High Chrome Iron, 316SS

Trash Hog®
Solids Handling Self-Priming
Goulds Trash Hog is designed for superior solids handling capability, optimum pump performance, and extreme ease of maintenance for a wide range of industrial, pulp and paper, mining, and wastewater services. Whether handling sludge, debris or plant wastes, there’s no other pump that compares to the Trash Hog.
- Capacities to 6,000 GPM (1,363 m³/h)
- Heads to 140 feet (43 m)
- Temperatures to 225°F (107°C)
- Pressures to 85 PSIG (586 kPa)
- Suction Lifts to 25 feet (7.6 m)
- Spherical solids to 3 inches (76 mm)

Materials: Cast Iron, Stainless Steel, CD4MCu, High Chrome Iron Fitted
### ABRASIVES/SOLIDS HANDLING

#### Medium Duty Slurry
Ideal for most medium duty abrasive and/or corrosive slurry services. Extra thick wet end components extend wear life. Replaceable wear liner for low maintenance cost. Available with dynamic seal for elimination of seal problems, reduced maintenance. Variety of drive arrangements available for application flexibility.
- Capacities to 7,000 GPM (1,600 m³/h)
- Heads to 240 feet (73 m)
- Temperatures to 250° F (120° C)
- Pressures to 150 PSIG (1,034 kPa)
- Solids to 2.25 inches (57 mm)

**Materials:** Cast Iron, High Chrome Iron, 316SS, CD4MCu, Endura Chrome

#### Abrasive Slurry Handling
The CW is a chrome iron, abrasive duty slurry pump with a back pull-out design. The CWX is a Model CW using a “Shearpeller” to enable pumping of stringy materials and slurries with entrained air. Both pump options are available with a dynamic seal.
- Capacities to 13,000 GPM (2,950 m³/h)
- Heads to 300 feet (90 m)
- Temperatures to 250° F (120° C)
- Solids to 5 inches (127 mm)

**Materials:** High Chrome Iron only

#### Severe Duty Slurry
The “Workhorse” of severe duty slurry pumps. It’s not only built to stand up to the toughest services, but the Model 5500 is also designed for extreme ease of maintenance. A heavy duty power end, extra thick wall sections, and easily replaceable wear parts add up to long, reliable operation.
- Capacities to 11,000 GPM (2,500 m³/h)
- Heads to 370 feet (113 m)
- Temperatures to 250° F (121° C)
- Pressures to 500 PSIG (3,448 kPa)
- Solids to 4 inches (102 mm)

**Materials:** High Chrome Iron, CD4MCu, Endura Chrome

#### Hydro-Solids
For handling sludges and slurries containing large solids, entrained air, fibrous materials, corrosives and abrasives. Features recessed, non-clog impeller.
- Capacities to 7,000 GPM (1,590 m³/h)
- Heads to 140 feet (43 m)
- Temperatures to 200° F (93° C)
- Pressures to 100 PSIG (690 kPa)
- Solids to 10 inches (254 mm)

**Materials:** Cast Iron, High Chrome, Iron, 316SS, CD4MCu

#### Abrasive Slurry Handling
The VRS is designed using the proven reliability of the SRL and Goulds cantilever pumps. VRS offers higher efficiencies, with maximum reliability and interchangeability. Offered in standard lengths and a variety of elastomers.
- Capacities to 1,500 GPM (341 m³/h)
- Heads to 120 Feet (37m)
- Temperatures to 250° F (121° C)
- Pressures to 75 PSIG (517 kPA)

**Lining Materials:** Natural Rubber, Neoprene, Nitrile, Polyurethane, Chlorobutyl, Hypalon, EPDM, Ceramic Composites and Metal Alloys

#### Abrasive Slurry Handling
The SRL pumps are designed to handle the toughest abrasive slurry. Features include wear-resistant rubber liners for maximum life and engineered for ease of maintenance. The SRL-S uses a “Shearpeller” for froth applications.
- Capacities to 20,000 GPM (4,540 m³/h)
- Heads to 150 feet (46 m)
- Temperatures to 250° F (121° C)
- Pressures to 400 PSIG (2758 kPa)

**Lining Materials:** Natural Rubber, Neoprene, Nitrile, Polyurethane, Chlorobutyl, Hypalon, EPDM, Ceramic Composites and Metal Alloys

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**Model CW/CWX**
- 11 Sizes

**Model JC**
- 15 Sizes

**Model HS**
- 7 Sizes

**Model 5500**
- 24 Sizes

**Model VRS**
- 11 Sizes

**Models SRL/SRL-C/SRL-S/SRL-XT**
- 16 Sizes
High Pressure Multi-Stage
Radially split, segmented multi-stage pump; a proven state-of-the-art design for the most demanding high pressure services. Many special features for application flexibility. Ideal for cogeneration, boiler feed, reverse osmosis, booster, water and oil.

- Capacities to 1,200 GPM (272 m³/h)
- Heads to 6,000 feet (1,825 m)
- Temperatures to 374° F (190° C)
- Pressures to 2,465 PSIG (17,000 kPa)

Materials: 12% Chrome/Cast Iron and 12% Chrome/316ss
10 Sizes

Centrifugal Diffuser Multi-Stage
Centrifugal diffuser type multi-stage pumps well suited for boiler feed, reverse osmosis, petrochemical and hydrocarbon services.

- Capacities to 140 GPM (32 m³/h)
- Heads to 2,600 feet (792 m)
- Temperatures to 400° F (204° C)
- Pressures to 1,500 PSIG (10,340 kPa)

Material: Carbon Steel
4 Sizes

Heavy Duty Multi-Stage
Advanced design with proven operating history. Axially split, with many enhanced features that make it an extremely reliable, high performance pump well-suited to a wide range of services.

- Capacities to 4,500 GPM (1,020 m³/h)
- Heads to 6,000 feet (1,825 m)
- Temperatures to 400° F (205° C)
- Pressures to 2,500 PSIG (175 kg/cm²)

Materials: All API materials, custom materials available

Axial Flow
For continuous circulation of corrosive/abrasive solutions, slurries, and process wastes. Fabricated elbow or cast elbow designs available. Most suitable for low head, high capacity pumping.

- Capacities to 200,000 GPM (35,000 m³/h)
- Heads to 30 feet (9 m)
- Temperatures to 350° F (180° C)
- Pressures to 150 PSIG (1034 kPa)
- Solids to 9 inches (228 mm)


Multi-Stage
Multi-stage ring section pump designed for high pressure services including: boiler feed, reverse osmosis, shower service, and much more.

- Capacities to 1,500 USGPM (340 m³/h)
- Heads to 1,640 feet (500 m)
- Max. speed to 3,600 rpm (3,600 min⁻¹)
- Discharge from 1¹/₂” to 5”
- Temperatures to 280° F (140° C)
- Pressures to 800 PSIG (55 bar)

Materials: Cast Iron, Stainless Steel, Stainless Fitted
8 Sizes
Two-Stage Splitcase
Horizontal splitcase pumps are ideally suited for boiler feed, mine dewatering, and other services requiring moderately high heads with a wide range of operating conditions.

- Capacities up to 3,000 GPM (681 m³/h)
- Heads to 1,000 feet (305 m)
- Temperatures to 350° F (177° C)
- Pressures to 550 PSIG (3,792 kPa)

**Materials:** Bronze-fitted, Cast Iron, Bronze, 316SS

9 Sizes

---

3400 Series

Horizontal Split Case, Double Suction
Designed for a wide range of industrial, municipal, and marine services.

- Capacities to 225,000 GPM (51,098 m³/h)
- Heads to 900 feet (274 m)
- Suction sizes to 78" and discharge sizes to 66"
- Working pressures to 400 PSIG (2,758 kPa)
- Temperatures to 350° F (177° C)

**Materials:** Cast Iron/Bronze, All Iron, All Bronze, Cast Iron/Stainless Steel, All Stainless Steel

**SMALL CAPACITY**
- Model 3410 (to 7,000 GPM/1,590 m³/h)
  - 26 Sizes

**MEDIUM CAPACITY**
- Model 3409 (to 12,000 GPM/2,725 m³/h)
  - 11 Sizes

**LARGE CAPACITY**
- Model 3420 (to 65,000 GPM/14,762 m³/h)
  - 29 Sizes

**EXTRA LARGE CAPACITY**
- Model 3498 (to 225,000 GPM/51,098 m³/h)
  - 53 Sizes

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Model 3316

Two-Stage Splitcase
Horizontal splitcase pumps are ideally suited for boiler feed, mine dewatering, and other services requiring moderately high heads with a wide range of operating conditions.

- Capacities up to 3,000 GPM (681 m³/h)
- Heads to 1,000 feet (305 m)
- Temperatures to 350° F (177° C)
- Pressures to 550 PSIG (3,792 kPa)

**Materials:** Bronze-fitted, Cast Iron, Bronze, 316SS

9 Sizes
**Model NSW**

Small Capacity Sewage Pump

Single stage – enclosed non-clog type impeller for pumping wastewater and other non-corrosive liquids with soft solids.

- Capacities to 9,000 GPM (2,044 m³/h)
- Heads to 275 feet (84 m)
- Solids to 6.38 inches (162 mm)

Materials:
- Cast Iron, 2-3% Nickel
- Cast Iron, Ductile Iron

*Also available in vertical configurations (NSWV)*

---

**Model NSX**

Small Capacity Sewage Pump

Single stage – open Shearpeller impeller specially designed for pumping wastewater, with fibrous or stringy solids.

- Capacities to 4,000 GPM (908 m³/h)
- Heads to 100 feet (30 m)
- Solids to 5.31 inches (133 mm)

Materials:
- Cast Iron / 431SS Fitted

*Also available in vertical configurations (NSXV)*

---

**Model NSY**

Medium Capacity Sewage Pump

Single stage – enclosed mixed flow type impeller for pumping wastewater and other non-corrosive liquids with soft solids.

- Capacities to 23,000 GPM (5,223 m³/h)
- Heads to 85 feet (26 m)
- Solids to 9 inches (229 mm)

Materials:
- Cast Iron, 2-3% Nickel Cast Iron, Ductile Iron

*Also available in vertical configurations (NSYV)*

---

**Models SSE, SSF & WSY**

Large Capacity Sewage Pumps

The pumps are designed with large, unobstructed passages through the impeller and volute which make them ideally suited for pumping sewage, waste water, and storm water.

- Capacities to 140,000 GPM (31,800 m³/h)
- Heads to 230 feet (70 m)

Materials:
- Cast Iron, 2-3% Nickel
- Cast Iron, Ductile Iron

*Also available in vertical configurations (SSEV, SSFV, WSYV)*

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**Model WCAX, YDD, WCA, WCB, WMCC & WMCE**

Wet Pit Column Pumps

Wet Pit Column Pumps are custom designed for maximum reliability and high efficiency.

- Capacities to 500,000 GPM (114,000 m³/h)
- Heads to 600 feet (185 m)

Materials:
- Bronze Fitted, All Bronze, SS Fitted, Ni Resist, All SS
Model VMP

**Vertical Marine**

Goulds Model VMP pump is an automatically self-priming unit designed specially for efficient unloading and stripping of product tankers and barges.

- Capacities to 20,000 GPM (4,542 m³/h)
- Heads to 635 feet (194 m)
- Temperatures to 250° F (120°C)

Materials: Any Machinable Alloy

10” to 20”

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Model VIS

**Vertical Submersible**

For deep settings or where use of lineshaft pumps is impractical. For irrigation, service water, deep well supply, offshore and mine dewatering.

- Capacities to 7,000 GPM (908 m³/h)
- Heads to 1,400 feet (427 m)

Materials: Any Machinable Alloy

6” to 20”

---

Model VIT

**Vertical Industrial Turbine**

A wide range of hydraulic conditions allows meeting requirements of virtually every pumping service. Designed to meet custom specifications of the user. Model VIT can-type turbine meets API-610 specifications.

- Capacities to 65,000 GPM (14,762 m³/h)
- Heads to 3,500 feet (1,070 m)
- Temperatures to 500° F (260°C)

Materials: Any Machinable Alloy

6” to 55”

---

Model VIC

**Vertical Can-Type**

A wide range of hydraulic conditions allows meeting requirements of virtually every pumping service. Designed to meet custom specifications of the user. Model VIC can-type turbine meets API-610 specifications.

- Capacities to 65,000 GPM (18,168 m³/h)
- Heads to 3,500 feet (1,070 m)
- Temperatures to 500° F (260°C)

Materials: Any Machinable Alloy

6” to 55”
Whether it’s for severe corrosives, abrasive slurries, fibrous/stringy solids, high temperature liquids, hazardous fluids, low flow or high capacity services – Goulds has a perfect, reliable solution. The Goulds selection of fluid solutions includes horizontal and vertical configurations in a range of alloy and non-metallic constructions, sealed and sealless. Goulds wide range of products ensures that we have the right pump for virtually every application.

Pump Selection Checklist

The following Pump Selection Checklist is designed to assist users in reviewing most pump requirements for ultimate selection of the best pump. Your Goulds representative has been specially trained in pump application and should be contacted to assist in final pump selection for optimum reliability and safety.

<table>
<thead>
<tr>
<th>1A SYSTEM</th>
<th>2A LIQUID PROPERTIES</th>
<th>3A SAFETY ENVIRONMENTAL</th>
<th>4A ECONOMY RELIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service:</td>
<td>Liquid:</td>
<td>UL label (explosion-proof enclosures)</td>
<td>MTBF requirements</td>
</tr>
<tr>
<td>Capacity:</td>
<td>Vapor Pressure:</td>
<td>Regulations (government, local, plant)</td>
<td>Lubrication</td>
</tr>
<tr>
<td>Total Dynamic Head:</td>
<td>Specific Heat:</td>
<td>Temperature limits</td>
<td>Cooling Heating</td>
</tr>
<tr>
<td>NPSH Available:</td>
<td>Viscosity:</td>
<td>Fugitive emission limits</td>
<td>Operator experience</td>
</tr>
<tr>
<td>Suction Pressure:</td>
<td>Solids Size/Content:</td>
<td>Product purity</td>
<td>Operator maintenance</td>
</tr>
<tr>
<td>Minimum Flow Rate:</td>
<td>Specific Gravity:</td>
<td>Best Available Control Technology</td>
<td>Extra product filtering</td>
</tr>
<tr>
<td>Total Working Pressure:</td>
<td>Temperature:</td>
<td>Reporting requirements</td>
<td>Ease of installation</td>
</tr>
<tr>
<td></td>
<td>Characteristics:</td>
<td>(flammable, explosive, carcinogenic, toxic, noxious, regulated, etc.):</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1B PUMP</th>
<th>2B MATERIALS OF CONSTRUCTION</th>
<th>3B EXPLOSION PROOF ENCLOSURES</th>
<th>4B TYPE OF LUBRICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Size</td>
<td>Materials of Construction</td>
<td>Explosion-proof enclosures</td>
<td>Type of lubrication</td>
</tr>
<tr>
<td>Impeller diameter</td>
<td>Bearing cooling</td>
<td>Safety protection options</td>
<td>Start-up assistance</td>
</tr>
<tr>
<td>HP efficiency</td>
<td>Sealing flushing requirements</td>
<td>Coupling guard options</td>
<td>Operator training</td>
</tr>
<tr>
<td>NPSHR</td>
<td>Jacketing for cooling heating</td>
<td>Casing drainage</td>
<td>Maintenance training</td>
</tr>
<tr>
<td>Minimum Pump Flow</td>
<td></td>
<td>Flange options</td>
<td>Baseplate options</td>
</tr>
<tr>
<td>Speed (RPM)</td>
<td></td>
<td>O-ring materials</td>
<td>Oil seal options</td>
</tr>
</tbody>
</table>

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