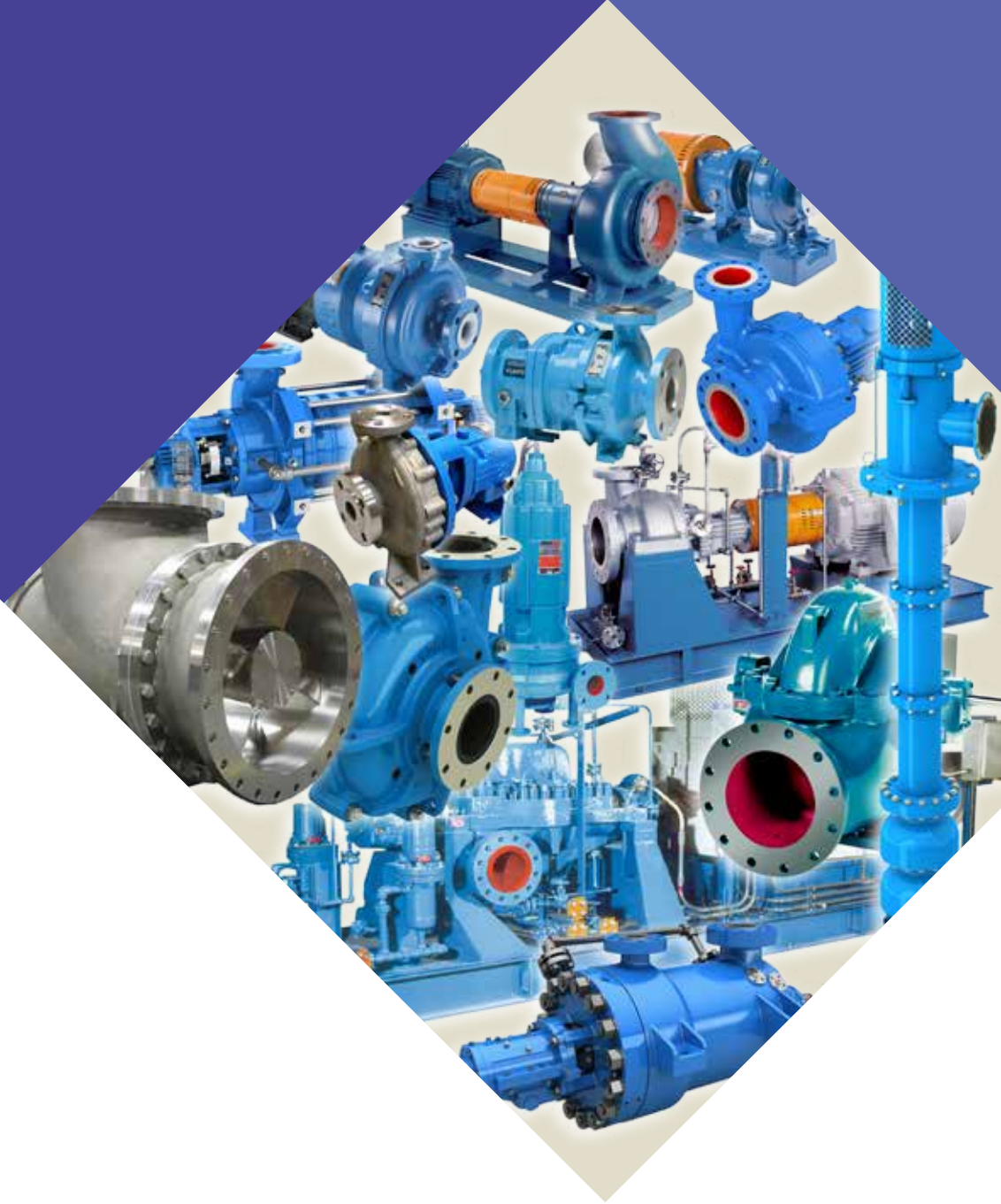


 GOULDS PUMPS

Pump Selection Guide



ITT

ENGINEERED FOR LIFE

Pump Selection Guide

Goulds Pumps... Serving the World's Industries

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 is listed by pump type. For more details about your selection, refer to the page indicated. Contact your nearest Goulds Pumps sales office or representative for a complete data package on any pump(s) in which you are interested. You will be furnished with any information you require to ensure proper pump selection for optimum reliability and performance.

■ Chemical

The family of chemical process pumps includes both ANSI and ISO models. Goulds Pumps specializes in high alloys for our chemical pumps ranging from 316SS to Zirconium and other special alloys as requested. Unique non-metallic pumps offer distinct advantages when handling severe corrosives.

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.

■ Pulp and Paper

Goulds Pumps' leadership in the pulp & 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. Our latest 3180/3185 paper stock/process pump line extends the offering 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.

■ Mining and Minerals

Goulds Pumps' presence in the mining industry dates back to the late 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 Pumps offers the widest range of rubber-lined and metal corrosion/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.

■ Power Generation

We offer a wide variety of pumps designed specifically for uses within this industry. The Model 3600, the most modern axially split multistage pump in the world, is ideally suited for boiler feed service.

Vertical turbine and double suction pumps can handle the most demanding condensate or circulating water needs. Sumps can be cleared with Goulds Pumps' line of vertical or submersible sump pumps. Heavy duty slurry pumps like the XHD, SRL and 5500 are specially designed for flue gas scrubbers and ash handling services.

■ Oil Refining and Gas Processing

We offer a full range of API 610 pumps to meet your demanding applications: BB1 axially-split, between-bearing pumps, BB2 between bearing radially split pumps, BB3 multistage axially split pumps, BB5 barrel multistage radially 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.

■ Primary Metals

The wide range of products makes Goulds Pumps the ideal choice for the demanding services of this industry. We provide pumps for vertical and submersible abrasives handling, slurry pumps for scale pits, chemical pumps for pickle liquor and leaching solutions, vertical turbines, double suction pumps for cooling tower and dewatering applications, and pumps for waste acid, scrubber service, and quench.

■ Water and Wastewater

We offer the most comprehensive line of double suction, end suction, multistage 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.

■ Food and Beverage

Adhering to strict process requirements is only one of the reasons for Goulds Pumps' entry into the forefront of these industries. Goulds Pumps handle a wide variety of grain processing, water, wastes, biofuels, corrosives and erosives.

Breweries, bottling companies, canneries, and a multitude of food and liquid industries rely on Goulds Pumps for successful operations.

Pump Selection Chart

ITT Goulds Pumps 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.

Pump Category	Goulds Model	Pump Type	Chemical	Pulp & Paper	Mining & Minerals	Power Generation	Oil Refining & Gas Processing	Primary Metals	Water & Wastewater	Food & Beverage	Nature of Pumpage				Refer to Page
											Corrosive	High Temperature 260°C(500°F)	Abrasive	Solids	
											Non-Abrasive	Fibrous/Stringy			
PRO Services	PRO Services	Rotating Equipment Services													19
Paper Stock/ Process	3175	Paper Stock/Process													4
	3180/3185	Paper Stock/Process													4
	3181/3186	High Temperature													4
	3500XD	Heavy-Duty Paper Stock													4
Chemical Process	3171	Vertical Sump and Process													5
	CV3171	Non-Clog Vertical Sump Process													5
	NM3171	FRP Vert. Sump/Process													5
	3196	ANSI Chemical Process													6
	LF3196	Low Flow ANSI Process													6
	HT3196	ANSI High-Temperature Process													6
	CV3196	Non-Clog Process													6
	3796	Self-Priming Process													7
	3996	ANSI In-Line Process													7
	3296 EZMAG	ANSI Metallic Sealless Process													7
	NM3196	ANSI FRP Process													8
	3298	ANSI Tefzel® Lined Sealless													8
	SP3298	ANSI Tefzel® Lined Sealless													8
	3198	ANSI PFA Tefzel® Lined Process													8
	V3298	Tefzel® Lined Sealless													8
	3299	ANSI PFA Teflon® Lined Sealless													7
	IC	ISO Chemical Process													9
	ICB	Close-Coupled ISO Process													9
	ICP	High-Temperature ISO Magnetic Drive													10
	ICM	ISO Metallic Magnetic Drive													9
ICMB	Close-Coupled ISO Sealless													9	
ICMP	High-Temperature ISO Magnetic Drive													10	
API 610 ISO 13709	API 3171	Industrial Duty Vertical Sump													11
	3700/3710	1-Stage, Overhung (OH2)													11
	3910	Vertical In-Line (OH3)													11
	3610	Axially Split, 1-Stage (BB1)													10
	3620	Radially Split, 1-Stage (BB2)													10
	3640	Radially Split, 2-Stage (BB2)													10
	3600	Axially Split, Multistage (BB3)													11
7200CB	Barrel Multistage (BB5)													11	
Sump/ Abrasives/ Solids Handling	Trash Hog	Solids Handling, Self-Priming													12
	VHS VJC	Vertical Cantilever													12
	HSU HSUL JCU	Submersible													12
	VRS	Abrasive Slurry R.L. Cantilever													14
Abrasives Slurry/Solids Handling	JC	Medium-Duty Abrasive Slurry													13
	SRL	Rubber-Lined Abrasive Slurry													14
	SRL-C	Rubber-Lined Abrasive Slurry													14
	SRL-S	Rubber-Lined Abrasive Slurry													14
	SRL-XT	Rubber-Lined Abrasive Slurry													14
	5500	Severe Duty Abrasive Slurry													13
	HS	Non-Clog Solids Handling													13
	VRS	Abrasive Slurry R.L. Cantilever													15
XHD	Severe Duty Slurry													13	
Multistage/ Axial Flow/ Double Suction	AF	Axial Flow													16
	3311	High-Pressure Multistage													16
	3393	High-Pressure Multistage													14
	3935	Diffuser-Type Multistage													15
	3400 Series	Single Stage, Double Suction													15/16
	3355	Multistage													15
3316	Two-Stage													14	
Vertical Mixed and Axial Flow	WCAX-GP	Wet Pit Pumps													17
	YDD-GP														17
	WCA-GP														17
	WCB-GP														17
	WCC-GP														17
	WCE-GP														17
	WCL-GP														17
	WMCC-GP														17
	WMCE-GP														17
	WCAG-GP													17	
	VIC	Vertical Turbine/Can Type													17
VIT	Vertical Industrial Turbine													17	
VIS	Vertical Submersible													18	
VMP	Vertical Marine													18	

* TEFEZEL® and TEFLON® are registered trademarks for fluoropolymer resins, films and fibers made by DuPont.



Process Pumps

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. Features *i-ALERT* condition monitoring as standard. Model 3180 standard with ANSI flanges.

3180

- Capacities to 9,000 m³/h | 40,000 GPM
- Heads to 125 m | 410 ft
- Temperatures to 230° C | 446° F
- Pressures to 16 bar | 232 PSIG

3185 with Metric standards

- Capacities to 6,000 m³/h | 26,000 GPM
- Heads to 125 m | 410 ft
- Temperatures to 230°C | 446°F
- Pressures to 16 bar | 232 PSIG

Applications:

- Paper Stock
- Black Liquor
- Chemical Process
- Wastewater



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



Model 3181 / 3186 High Temperature Paper Stock / Process

End suction, top center line discharge, self-venting. Center line mounted for high temperature services. High efficiency enclosed impeller. TaperBore™ seal chamber standard with mechanical seal arrangement. Features *i-ALERT* condition monitoring as standard.

3181 with ANSI flanges

- Capacities to 3000 m³/h | 13,000 GPM
- Heads to 125 m | 410 ft
- Temperatures to 300°C | 508°F
- Pressures to 25 bar | 360 PSIG

3186 with ISO or JIS flanges

- Capacities to 3,000 m³/h | 13,000 GPM
- Heads to 125m | 410 ft
- Temperatures to 300°C | 508°F
- Pressures to 25 bar | 360 PSIG

Applications:

- Digester Recirculation
- Make-Up Liquor
- White Liquor
- Black Liquor
- High Pressure/High Temperature Pulp Mill Services
- Hot Oil



Materials: Duplex SS



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 900 m³/h | 4,000 GPM
- Pressures to 22 bar | 325 PSIG

Applications:

- O² Delignification Reactor
- D Stage Feed Pumping
- EOP Stage Pumping
- High Density Tower

Materials: From 316SS to Titanium



Model 3175 Paper Stock / Process

For the toughest services. Thousands of installations handle stock, solids, fibrous / stringy materials, abrasive slurries, and corrosives. Dynamic seal option eliminates mechanical seal problems. Features *i-ALERT* condition monitoring as standard.

- Capacities to 6,360 m³/h | 28,000 GPM
- Heads to 107 m | 350 ft
- Temperatures to 232° C | 450°F
- Pressures to 20 bar | 285 PSIG

Applications:

- Pulp & Paper Paper stock through 6% Consistency, Black Liquor, Hydropulper and Broke Service, Low NPSH Digester Circulation, Blow tank to Screens, Primary Screens Rejects, High Density Chlorine Tower to Washer, Flotation Cell Circulation
- Chemical Evaporator and Reboiler Circulation, Slurry Services
- Petroleum Corrosive/Abrasive Crude, Catalyst Slurry, Coke fines
- Steel Mill Descaling, Waste Treatment, Venturi Scrubber, Electro-Galvanizing Recirculation
- Food Fruit Pulps, Grain mash and Spent Grains, Evaporator Recirculation, Beet and Cane Sugar, Corn Products
- General Waste Treatment, Air Pollution Abatement, Acid Mine Water, Textile Slurries



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



Vertical Sump & Process

Model 3171

Vertical Sump and Process

The "Veteran" vertical sump and process pump. Thousands of installations – industrial process, sump drainage, corrosive liquids, pollution control, molten sulfur. Rugged, heavy construction. Simple mounting.

- Capacities to 722 m³/h | 3,180 GPM
- Heads to 95 m | 344 ft
- Temperatures to 232° C | 450° F
- Pit Depths to 6 m | 20 ft

Applications:

- Industrial Process
- Industrial Sump Wastes
- Molten Sulfur
- Tank Unloading
- Corrosive and Non-Corrosive Liquids

Materials: Cast Iron, Bronze-fitted, Carbon Steel, 316SS, Alloy 20, Hastelloy B and C, Duplex SS



Model NM3171

FRP Vertical Sump and Process

Designed for tough chemical sump pump applications. The fiberglass reinforced Vinyl Ester construction provides excellent corrosion resistance in aggressive acidic and caustic services. The true volute design provides the highest efficiencies in the industry for FRP pumps.

- Capacities to 284 m³/hr | 1,250 GPM
- Heads to 92 m | 300 feet
- Temperatures to 93° C | 200° F
- Pit Depths to 5 m | 16 Ft

Applications:

- Chemical/Petrochemical-Waste Acid, Sodium Hydroxide; Ferric Chloride, Sulfuric Acid, Spinfoinish Wastes
- Utility-Coal pile runoff, Sea water, Demineralized water
- Metal Finishing-Spent pickling solutions, Electroplating rinses, Nickel plating bath
- General-Industrial process, Deionized water, Pollution control, Sump services

Materials: Glass reinforced Vinyl Ester, other resins available upon request.



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 295 m³/h | 1,300 GPM
- Heads to 126 m | 230 ft
- Temperatures to 232° C | 450° F
- Pit Depths to 6 m | 20 ft

Applications:

- Fibrous Wastewater
- Industrial Process
- Industrial Sump Wastes
- Tank Unloading
- Corrosive and Non-Corrosive

Liquids

- Food Processing
- Chemical Slurries

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



ANSI Process Pumps

Model 3196 ANSI Process

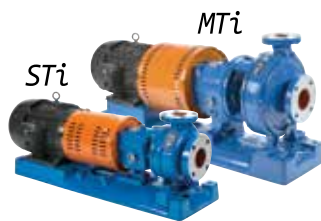
This is the original ANSI pump that has become the standard of the industry. Over 1,000,000 installations attest to the remarkable performance of the 3196. Available with a wide range of features for handling difficult applications. *i-FRAME™* power ends maximize reliability and MTBF (Mean Time Between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

- Capacities to 1,364 m³/h | 7,000 GPM
- Heads to 223 m | 730 ft
- Temperatures to 371° C | 700° F
- Pressures to 26 bar | 375 PSIG

Applications:

- Chemical
- Petrochemical
- Pulp & Paper
- Primary Metals
- Food & Beverage
- General Industries

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



Model HT 3196 ANSI High Temperature Process Pump

Center line 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. As a member of the ANSI pump family the HT3196 features Goulds Pumps' premier *i-FRAME™* power end, multiple seal chamber options including the TaperBore PLUS, and a wide variety of rigid and rugged mounting systems.

- Capacities to 1,023 m³/h | 4,500 GPM
- Heads to 282 m | 925 ft
- Temperatures to 371° C | 700° F
- Pressures to 31 bar | 450 PSIG

Applications:

- Hot Water
- Thermal Oils
- Heat Transfer Fluids
- Die/Mold Pre-Heating Systems
- Pilot Plants
- Electronic Heating and Cooling
- Reactor Heating
- Urea

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



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. Includes *i-FRAME™* power ends.

- Capacities to 50 m³/h | 220 GPM
- Heads to 282 m | 925 ft
- Temperatures to 371° C | 700° F
- Pressures to 31 bar | 450 PSIG

Applications:

- Specialty Chemicals
- Batch Chemical Process
- Reactor Feed
- Seal Water
- Shower Service
- Boiler Feed
- Condensate
- High Pressure Process
- Column Bottoms
- Hot Oil
- Column Reflux

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



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 610 m³/h | 2,700 GPM
- Heads to 134 m | 440 ft
- Temperatures to 260° C | 500° F
- Pressures to 20 bar | 285 PSIG

Applications:

- Filter Slurries
- Latex
- Polystyrene Beads
- Crystal Suspensions
- Screen Rejects
- Hydropulper pump
- Sodium Chlorate Slurry
- Fruit and Vegetable Suspensions
- Dye Liquor
- Fibrous Wastewater
- Long Fibre White Water
- Long Fibre White Water
- Primary Cleaner Pump

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



ANSI/Sealless Process Pumps

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. Includes *i-FRAME™* power ends.

- Capacities to 284 m³/h | 1,250 GPM
- Heads to 131 m | 430 ft
- Temperatures to 260° C | 500° F
- Suction Lifts to 6 m | 20 ft

Applications:

- Industrial Sump
- Mine Dewatering
- Chemical Transfer
- Bilge Water Removal
- Coal Pile Drainage
- Tank Car Unloading
- Filter Systems v Petroleum Transfer
- Column Bottoms and Reflux

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



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 318 m³/h | 1,400 GPM
- Heads to 213 m | 700 ft
- Temperatures to 260° C | 500° F
- Pressures to 26 bar | 375 PSIG

Applications:

- Caustic Transfer
- Acid Unloading
- Monomer/Polymer Transfer
- Liquid Nitrogen
- Liquid Ammonia
- Reflux and Light Tower Bottoms
- Waste Acid Recovery
- Pickle Liquor Circulation
- Chilled Water
- Filter Feed
- Condensate Return

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



Sealless Process Pumps

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 95 m³/hr | 425 GPM
- Heads to 149 m | 490 ft
- Temperatures to 180° C | 360° F
- Pressures to 19 bar | 275 PSIG

Applications:

- Hot Acids
- Acetic Acid
- Chlorinated Solvents
- Chloroform
- Freon 113
- Acetone
- Hydrofluoric Acid
- Sodium Hypochlorite
- Nitric Acid
- Amines
- Carbon Tetrachloride
- Dichloroethylene
- Ethers
- Bromine
- Chlorine Dioxide

Lining Material: PFA



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 159 m³/h | 700 GPM
- Heads to 213 m | 700 ft
- Temperatures to 280° C | 535° F
- Pressures to 19 bar | 275 PSIG

Applications:

- Batch Chemical Process
- Rail Car or Tank Unloading
- Specialty Chemicals

Materials: 316SS, others upon request



Sealless Process Pumps

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 270 m³/hr | 1,200 GPM
- Heads to 162 m | 500 ft
- Temperatures to 121°C | 250° F
- Pressures to 16 bar | 225 PSIG

Applications:

- Rail Car or Tank Unloading
- Batch Chemical Process
- Specialty Chemicals
- Column Reflux or Bottoms
- Reactor Feed

Lining Material: Tefzel® (ETFE)



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 70 m³/h | 310 GPM
- Heads to 42.5 m | 140 ft
- Temperatures to 121° C | 250° F
- Pressures to 12 bar | 175 PSIG
- Effective Static Lift to 6m | 20 ft

Applications:

- Rail Car or Tank Unloading
- Batch Chemical Process
- Specialty Chemicals
- Column Reflux or Bottoms
- Reactor Feed

Lining Material: Tefzel® (ETFE)



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 270 m³/h | 320 GPM
- Heads to 129 m | 425 ft
- Temperatures to 121°C | 250°F
- Pressures to 16 bar | 225 PSIG

Applications:

- Rail Car or Tank Unloading
- Batch Chemical Process
- Specialty Chemicals
- Column Reflux or Bottoms
- Reactor Feed

Materials: Tefzel® (ETFE) Construction



Sealed Lined & Non-Metallic

Model 3198

PFA Process ANSI Lined

Virgin PFA Teflon® for handling a wide range of severe corrosive liquids, trace contaminants, and mixtures.

The 3198 features ANSI B73.1 design, and *i-ALERT* power ends. Teflon® molded in place by high pressure technique and mechanically locked.

- Capacities to 182 m³/h | 800 GPM
- Heads to 137 m | 450 ft
- Temperatures to 149° C | 300° F
- Pressures to 16 bar | 225 PSIG

Applications:

- Hydrochloric Acid
- Hydrofluoric Acid
- Ferric Chloride
- Pickling Acid
- Plating Acid
- Plating Solutions
- Chlorinated Brine
- Chlorinated Hydrocarbons
- Sodium Hypochlorite
- Chlorine Dioxide

Material: PFA Teflon®



Model NM3196

FRP ANSI Process

The Fiberglass reinforced Vinyl Ester construction provides excellent corrosion resistance in many aggressive acidic and caustic services. The random glass orientation and generous ribbing provides flange load ratings equal to a metal pump of the same size. The true volute design provides the highest efficiencies in the industry for FRP ANSI pumps.

- Capacities to 318 m³/h | 1,400 GPM
- Heads to 152 m | 500 ft
- Temperatures to 93° C | 200° F
- Pressures to 15 bar | 220 PSIG

Applications:

- Hydrochloric Acid Unloading
- Ferric Chloride
- Sulfuric Acid Transfer
- Sodium Sulphite
- Sulphate Liquors
- Plating Solutions
- Filter Feed
- Aquarium Water
- Sea Water
- Chlorine Dioxide

Materials: Glass reinforced Vinyl Ester, other resins available upon request



ISO Process Pumps

Sealed

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 450 m³/h | 1,980 GPM
- Heads to 160 m | 525 ft
- Temperature ranges from -40° C to 280° C | -40° F to 530° F
- Pressures to 25 bar | 360 PSIG

Applications:

- Chemical
- Petrochemical
- Pulp & Paper
- Primary Metals
- Food & Beverage
- General Industries

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



Sealless

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, high purity 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 (SSiC). Optional Dryguard™ dry-run protection can be provided.

- Capacities to 400 m³/h | 1,760 GPM
- Heads to 210 m | 685 ft at 3,500 rpm
- Temperature ranges from -40° C to 180° C | -40° F to 360° F
- Pressures to 16 bar | 232 PSIG

Applications:

- Batch Chemical Process
- Rail Car or Tank Unloading
- Specialty Chemicals

Materials: Stainless Steel, Hastelloy, Ductile Iron, 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 340 m³/h | 1,490 GPM
- Heads to 160 m | 525 ft
- Temperature ranges from -40° C to 140° C | -40° F to 280° F
- Pressures to 16 bar | 230 PSIG

Applications:

- Specialty Chemicals
- Batch Chemical Process
- Reactor Feed
- Seal Water
- Shower Service
- Boiler Feed
- Condensate
- High Pressure Process
- Column Bottoms
- Hot Oil
- Column Reflux

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



Model ICMB Close-coupled ISO Magnetic Drive Process Pump

The ICMB is an extension of the ICM series frame mounted sealless process pump. This design provides a compact and economical 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. ICMB pumps are fitted with the same features as all other ICM pumps, including a patented bearing cartridge and a one piece high pressure containment shell.

- Capacities to 100 m³/h | 440 GPM
- Heads to 100 m | 330 ft at 3,500 rpm
- Temperature ranges from -40° C to 180° C | -40° F to 280° F
- Pressures to 16 bar | 232 PSIG

Applications:

- Batch Chemical Process
- Rail Car or Tank Unloading
- Specialty Chemicals

Materials: Stainless Steel, Hastelloy, Ductile Iron, Alloy 20



ISO/API Process Pumps

Sealed

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. Center line casing design is self venting. Large capacity oil sump provides maximum bearing cooling.

Optional inducer reduces NPSHr.

- Capacities to 450 m³/h | 1,980 GPM
- Heads to 150 m | 492 ft
- Temperature ranges from -40° C to 280° C | -40° F to 535° F
- Pressures to 25 bar | 363 PSIG



Applications:

- Hot Water
- Thermal Oils
- Heat Transfer Fluids
- Die/Mold Pre-Heating Systems
- Pilot Plants
- Electronic Heating and Cooling
- Reactor Heating
- Urea

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



Sealless

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

high purity media. The center line casing is optimal for the compensation of dimensional changes due to temperature fluctuations. SSiC Silicon Carbide plain bearings, with optional Dryguard™ dry run protection.

- Capacities to 400 m³/h | 1,760 gpm
- Heads to 210 m | 685 ft at 3500 rpm
- Temperature ranges from -40° C to 280° C | -40° F to 535° F
- Pressures to 25 bar | 365 PSIG



Applications:

- Batch Chemical Process
- Rail Car or Tank Unloading
- Specialty Chemicals

Materials: Stainless Steel, Hastelloy, Ductile Iron, Alloy 20



API 610 Process Pumps

Model 3610 API 610 (BB1)

Horizontal Split Case, Double Suction

Designed for a wide range of industrial, municipal and marine services.

- Capacities to 11,355 m³/hr | 50,000 GPM
- Heads to 215 m | 700 ft
- Temperatures to 150° C | 300° F - optional 205° C | 400° F
- Pressures to 21 bar | 300 PSIG - optional 42 bar | 600 PSIG



Applications:

- Petroleum refining, production, and distribution
- Petrochemical and demanding chemical processing
- High temperature applications including boiler circulation
- General industrial requiring high temperature or high pressures

Materials: All API materials, custom materials available



Models 3620 and 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 4,540 m³/h | 20,000 GPM
- Heads to 455 m | 1,500 ft
- Temperatures to 455° C | 850° F
- Pressures to 70 bar | 1,000 PSIG

Applications:

- Refinery – Tower bottoms, process feed, column reflux, circulation and pump around, process booster
- Power Plant – Boiler feed booster, boiler circulation, ash sluice

Materials: All API materials, custom materials available



API 610 Process Pumps

Model 3600 API 610 (BB3) Heavy Duty Multistage

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 1,930 m³/hr | 8,500 GPM
- Heads to 2,740 m | 9,000 ft
- Temperatures to 205° C | 400° F
- Pressures to 275 bar | 4,000 PSIG

Applications:

- Refineries
- Injection offshore platforms
- Pipeline
- Boiler feed
- Descaling
- Mine dewatering
- Process transfer
- Desalination
- Water injection
- CO₂ injection

Materials: All API materials, custom materials available



7200CB (BB5) Barrel Multistage Pumps

11th edition API compliant, severe service, barrel pumps, in-line diffuser style. For high temperatures, pressures and low specific gravities.

- Capacity: 910 m³/h | 4,000 GPM
- Head: 2,740 m | 9,000 ft
- Temperature: 425° C | 800° F
- Pressure: 275 bar | 4,000 PSIG

Applications:

- Petroleum refining, production, and distribution
- Petrochemical and demanding chemical processing
- High temperature applications including boiler circulation
- General industrial requiring high temperature or high pressures

Materials: All API materials, custom materials available



Model 3700 & 3710 API 610 (OH2) Overhung Process

High temperature and high pressure process pumps designed to fully meet the requirements of API 610. Center line support for high temperature stability, maximum rigidity. Features tangential discharge for maximum hydraulic efficiency. Available in top suction design (Model 3710).

- Capacities to 1930 m³/h | 8,500 GPM
- Heads to 360 m | 1,200 ft
- Temperatures to 425° C | 800° F
- Pressures from full vacuum to 60 bar | 870 PSIG

Applications:

- Column Reflux
- Column Bottoms
- Reboiler
- Injection
- Fuel Blending
- Heat Transfer
- Slop Gas Oil Transfer
- Heavy Gas Oil
- Stripper Overhead
- Hot Oil
- Column Charge
- Reactor Feed
- Stabilizer Overhead
- Scrubber Circulation
- Tower Bottoms
- Offsite Hydrocarbon

Materials: All API materials, custom materials available



Model 3910 API 610 (OH3) Vertical In-Line with Bearing Frame

High pressure, high temperature services meets API 610 requirements. Back pull-out for ease of maintenance. Bearing frame carries pump loads.

- Capacities to 1,360 m³/h | 6,000 GPM
- Heads to 230 m | 750 ft
- Temperatures to 340° C | 650° F
- Pressures to 42 bar | 600 PSIG

Applications:

- Refinery Units – Distillation, Flasher, CCU, Hydrotreater, MTBE, Alkylation, Reformer, Gas Plant, Isomerization
- Petrochemical Plants – Olefins, BTX Recovery, Ethylene Glycol, Vinyl Chloride, Styrene, Phenol, Propylene Glycol, Alcohols, Ketones, Acids, Acrylonitrile, Anhydrides

Materials: All API materials, custom materials available



Model API 3171 (VS4) API 610 Vertical Sump and Process

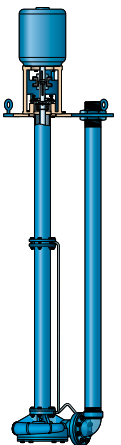
For all refinery services requiring tank mount or sump duties. Fully compliant with 10th and 11th editions ISO 1370/API 610.

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

Applications:

- Industrial Process
- Industrial Sump Wastes
- Molten Sulfur
- Tank Unloading
- Corrosive & Non-Corrosive Liquids

Materials: Carbon Steel, 316SS, 12% Chrome Fitted, Duplex SS



Sump / Abrasives / Solids Handling

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 910 m³/h | 4,000 GPM
- Heads to 67 m | 220 ft
- Temperatures to 90° C | 194° F
- Solids to 152 mm | 6 inches

Applications:

- Waste Treatment Plants
- Sewage Wet Wells
- Reclaim Sumps
- Industrial Waste Sumps
- Sludge Pits
- Drainage Sumps
- Power Plants
- Collection Basins
- General Service Sumps

Materials: Cast Iron, High Chrome Iron, CD4MCu, 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 & 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 1,363 m³/h | 6,000 GPM
- Heads to 43 m | 140 ft
- Temperatures to 107° C | 225° F
- Pressures to 6 bar | 85 PSIG
- Suction Lifts to 7.6 m | 25 ft
- Spherical solids to 76 mm | 3 inches



Applications:

- Pulp & Paper Industry – Black Liquor Sump, Paper Machine Floor Sump, Knotters Discharge Pump, White Water Service
- General Industry – Wash Down Sump, Food Wastes, Fish Farming, Rendering Wastes, Machine Coolant Sump
- Mining & Metal Fabrication – Mine Dewatering, Mill Scale Runoff, Cutting Oil Transfer, Construction Site Dewatering

Materials: Cast Iron, Stainless Steel, CD4MCu, High Chrome Iron Fitted



Models 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.

Model VHS

- Capacities to 1,590 m³/h | 7,000 GPM
- Heads to 42.6m | 140 ft
- Solids to 254 mm | 10 inches
- Lengths to 3.4 m | 11 feet

Materials: Cast Iron, High Chrome Iron, 316SS

Model VJC

- Capacities to 1,590 m³/h | 7,000 GPM
- Heads to 73 m | 240 ft
- Solids to 57 mm | 2 1/4 in
- Lengths to 3.4 m | 11 ft

Materials: Cast Iron, High Chrome Iron, 316SS



Applications: (Model VHS)

- Mill Scale
- Coal Slurry
- Coal Pile Runoff
- Sludge
- Clay Slurry
- Food Pulp
- Washdown Water
- Waste Paper Stock
- Black Liquor
- Plant Waste
- Sewage Treatment
- Ash Slurry

Applications: (Model VJC)

- Coal Prep Plant
- Iron Ore Slurry
- Steel Mills
- Power Plants
- Phosphoric Acid Plants
- Cement Mills
- Mine Slurry
- Foundries
- Alumina Refineries
- Phosphate Mines



Abrasives / Solids Handling

Model XHD

Extra Heavy Duty / Rubber and Metal Lined

The XHD lined slurry pump is designed for extremely tough slurry applications. Using advanced CFD technology for optimal hydraulics, it offers the lowest total cost of ownership features including adjustable suction liner and impeller plus double wall construction with extra wall thickness in high wear areas.

- Capacities to 2,950 m³/h | 13,000 GPM
- Heads to 85 m | 280 ft
- Pressures to 17 bar | 250 PSIG

Applications:

- Primary Metals – SAG/Ball Mill, Cyclone Feed, Tailings
- Mineral Processing – Slurry Transfer, Flotation Cells, Thickener Underflow
- Non-Metallic Mining – Heavy Media, Cyclone Feed, Raw Coal, Clay, Soda Ash and Phosphate Slurries, Slurry Heater, Slurry Digestion, Hydrate
- Power – Absorber Recycle, Gas Cooling, Filter Feed, Lime and Ash Slurries
- Sand & Aggregate – Sand Slurries, Tailings

Materials: HC 600, Endura Chrome



Model JC

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 1,600 m³/h | 7,000 GPM
- Heads to 73 m | 240 ft
- Temperatures to 121° C | 250° F
- Pressures to 10 bar | 127 PSIG
- Solids to 57 mm | 2.25 in

Applications:

- Wet scrubber systems
- Waste sludge
- Fracking slurries
- Paper mill wastes and liquors
- Clay and sand slurries
- Dirty water
- Kaolin water
- Carbon slurry
- Lime mud
- Precipitated CaCO₃

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



Model HS

Hydro Solids

For handling sludges and slurries containing large solids, entrained air, fibrous materials, corrosives and abrasives. Features recessed, non-clog impeller.

- Capacities to 1,590 m³/h | 7,000 GPM
- Heads to 43 m | 140 ft
- Temperatures to 93° C | 200° F
- Pressures to 7 bar | 100 PSIG
- Solids to 254 mm | 10 in

Applications:

- Waste Treatment – Raw Sewage, Sewage Sludge, Water, Resin, Fiber Water & Ashes, Textile Mill Effluent
- Pulp & Paper – Paper Stock, Plant Effluent, Black Liquor, Filtrate
- Food Processing – Beet Pulp, Dirty Water, Vegetable Refuse, Lemons, Tomato Wash Water
- Foundries & Steel Mills – Mill Scale Water & Slag, Grit
- Agriculture – Liquid Manure, Drainage Mulch, Seed, Water, Cane Wash, Sprigs Wood, Fiber
- Manufacturing – Paint Sludge, Plant Sewage & Sludge, Floor Wash, Clay Slip, Clarifier Sludge

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



Model 5500

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 3,861 m³/h | 17,000 GPM
- Heads to 139 m | 425 ft
- Temperatures to 121° C | 250° F
- Pressures to 35 bar | 500 PSIG
- Solids to 127 mm | 5 in

Applications:

- Tailings
- Thickener Underflow
- Pipeline
- Potash
- Mud Disposal

Materials: High Chrome Iron, CD4MCu, Endura Chrome



Abrasives / Solids Handling

Multistage / Axial Flow / Double Suction

Models SRL / SRL-C / SRL-S / SRL-XT Abrasive and Corrosive Slurry Handling

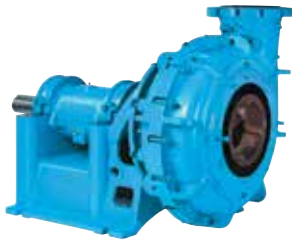
The SRL pumps are designed to handle the toughest abrasive slurry. Features include wear-resistant rubber liners for maximum life and engineered for ease of maintenance. The SRL-S uses a Shearpeller® for froth applications.

- Capacities to 4,542 m³/h | 20,000 GPM
- Heads to 50 m | 164 ft
- Temperatures to 121° C | 250° F
- Pressures to 28 bar | 400 PSIG

Applications:

- Sag Mill
- Rod & Ball Mill
- Primary & Secondary Cyclone
- Thickener Feed
- Flotation Feed
- Tailings

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



Model VRS 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 341 m³/h | 1,500 GPM
- Heads to 37 m | 120 ft
- Temperatures to 121° C | 250° F
- Pressures to 5 bar 75 PSIG
- Standard Lengths: 1.2 m | 4 ft and 1.8 m | 6 ft

Applications:

- Mineral Processing
- Non-metallic Mining Sand & Gravel
- Power Utility
- Pulp & Paper
- General Industry

Lining Materials: Natural Rubber, Neoprene, Nitrile, Polyurethane, Chlorobutyl, Hypalon, EPDM, and Metal / Alloy impeller available



Multistage / Axial Flow / Double Suction

Model 3393 High Pressure Multistage Ring Section Pump

Radially split, segmented casing, multistage pump designed with modular interstage components. Its multiple suction nozzle and discharge nozzle orientations allow adaptation to multiple piping installations. Multiple hydraulics for each pump size optimize efficiency across a vast range of applications. These pumps are particularly well suited for reverse osmosis, boiler feed, cogeneration, shower/spray service, pressure boosting and high pressure cleaning applications.

- Capacities to 750 m³/h | 3,300 GPM
- Heads to 1,000 m | 3,300 ft
- Temperatures to 177° C | 350° F
- Pressures to 114 bar | 1,650 PSIG

Applications:

- Reverse osmosis
- Boiler feed
- Cogeneration
- Shower / spray service
- Pressure boosting
- High pressure cleaning
- Snow making

Materials: 12% chrome, duplex and super duplex stainless steels



Model 3316 Two-Stage Splitcase

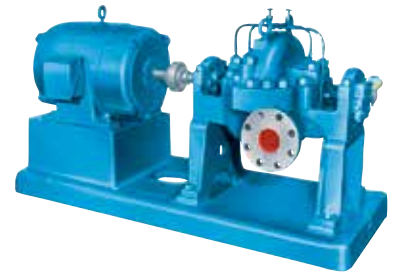
Horizontal split case pumps are ideally suited for boiler feed, mine dewatering and other services requiring moderately high heads with a wide range of operating conditions.

- Capacities up to 681 m³/h | 3,000 GPM
- Heads to 305 m | 1,000 ft
- Temperatures to 177° C | 350° F
- Pressures to 38 bar | 550 PSIG

Applications:

- Boiler Feed
- Mine Dewatering
- Booster
- High Pressure Process
- Condensate
- High Pressure Cleaning

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



Multistage / Axial Flow / Double Suction

Model 3935

Centrifugal Diffuser Multistage

Centrifugal diffuser type multistage pumps well suited for boiler feed, reverse osmosis, petrochemical and hydrocarbon services.

- Capacities to 28 m³/h | 125 GPM
- Heads to 792 m | 2,600 ft
- Temperatures to 204° C | 400° F
- Pressures to 103 bar | 1,500 PSIG
-

Applications:

- Reverse Osmosis
- Boiler Feed
- Descaling
- High Pressure/High Temperature Cleaning
- Spraying Systems
- Hydraulic Systems
- Process Water
- Petrochemical & Hydrocarbon Service Transfer
- All Low Flow Applications – where efficiency is critical

Material: Carbon Steel



Goolds Model 3409

Medium Capacity

- Capacities to 2,725 m³/h | 12,000 GPM
- Heads to 259 m | 850 ft
- Temperatures to 120°C | 250°F
- Working Pressures to 2758 kPa | 400 PSIG

Applications:

- Process – Quench water, Stripper bottoms, Reboiler circulation, Cooling tower
- Pulp & Paper – Primary and secondary cleaner, filtrate, mill water supply Fan pump, Headbox supply, Shower
- Primary Metals – Cooling water, quench and leaching
- Municipal – High lift, low lift, wash water, waste water, raw water
- Power Generation – Cooling tower, Component cooling, Service water, Ash Sluicing, Heater drain
- Marine – Bilge and ballast, cargo, cooling water, fire pump
- General – River water, Brine, Sea water

Materials: Cast Iron / Bronze, All Iron, All Bronze, Cast Iron / Stainless Steel, All Stainless Steel (1724 kPa)



Model 3355

Multistage

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

- Capacities to 340 m³/h | 1,500 USGPM
- Heads to 500 m | 1,640 ft
- Max speed to 3,600 min-1 | 3,600 rpm
- Discharge from 1½ in to 5 in
- Temperatures to 140° C | 280° F
- Pressures to 55 bar | 800 PSIG

Applications:

- Boiler Feed
- Condensate Return
- Deaerator
- Reverse Osmosis
- Shower/Spray Service
- Mine De-watering
- Cleaning Systems
- Seal Water Booster
- Product Transfer
- Reactor Feed
- Pressure Boosting

Materials: Cast Iron, Stainless Steel, Stainless Fitted



Goolds 3410

Small Capacity

- Capacities to 1,817 m³/h | 8,000 GPM
- Heads to 174 m | 570 ft
- Temperatures to 177° C | 350° F
- Pressures to 1,724 kPa | 250 PSIG

Applications:

- Process – Quench water, stripper bottoms, reboiler circulation, cooling tower
- Pulp & Paper – Primary and secondary cleaner, filtrate, mill water supply shower, fan pump
- Primary Metals – Cooling water, quench and leaching
- Municipal – High lift, low lift, wash water, waste water, raw water
- Utilities – Cooling tower, component cooling, service water
- Marine – Bilge and ballast, cargo, cooling water, fire pump

Materials: Cast Iron / Bronze, All Iron, All Bronze, Cast Iron / Stainless Steel, All Stainless Steel (1724 kPa)



Multistage / Axial Flow / Double Suction

Goulds Model 3420

Large Capacity

- Capacities to 14,762 m³/h | 65,000 GPM
- Heads to 122 m | 400 ft
- Temperatures to 135°C | 275°F
- Working Pressures to 1379 kPa | 200 PSIG



Applications:

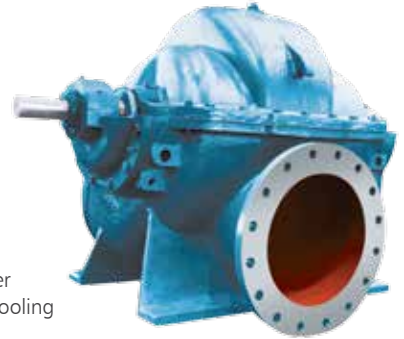
- Process – Quench water, Stripper bottoms, Reboiler circulation, Cooling tower
- Pulp & Paper – Primary and secondary cleaner, filtrate, mill water supply Fan pump, Headbox supply, Shower
- Primary Metals – Cooling water, quench and leaching
- Municipal – High lift, low lift, wash water, waste water, raw water
- Power Generation – Cooling tower, Component cooling, Service water, Ash Sluicing, Heater drain
- Marine – Bilge and ballast, cargo, cooling water, fire pump
- General – River water, Brine, Sea water

Materials: Cast Iron / Bronze, All Iron, All Bronze, Cast Iron / Stainless Steel, All Stainless Steel (1724 kPa)

Goulds Model 3498

Extra Large Capacity

- Capacities to 51,098 m³/h | 225,000 GPM
- Heads to 244 m | 800 ft
- Temperatures to 135°C | 275°F
- Working Pressures to 200 PSIG



Applications:

- Process – Quench water, Stripper bottoms, Reboiler circulation, Cooling tower
- Pulp & Paper – Primary and secondary cleaner, filtrate, mill water supply Fan pump, Headbox supply, Shower
- Primary Metals – Cooling water, quench and leaching
- Municipal – High lift, low lift, wash water, waste water, Raw water
- Power Generation – Cooling tower, Component cooling, Service water, Ash Sluicing, Heater drain
- Marine – Bilge and ballast, cargo, cooling water, fire pump
- General – River water, Brine, Sea water

Materials: Cast Iron / Bronze, All Iron, All Bronze, Cast Iron / Stainless Steel, All Stainless Steel (1724 kPa)



Model Axial Flow®

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 68,000 m³/h | 300,000 GPM
- Heads to 9.2 m | 30 ft
- Temperatures to 176° C | 350° F
- Available in cast iron, austenitic stainless steels, duplex alloys, nickel, nickel-chrome alloys, nickel-chrome-moly alloys, titanium and other alloys as required for the service
- Available in 6 - 66 inch sizes (larger sizes on application)



Materials: Cast Iron, 304SS, 316SS, CD4MCu, Nickel, Monel, Alloy 20, UHB-904L, Titanium, Hastelloy, Sanicro 28

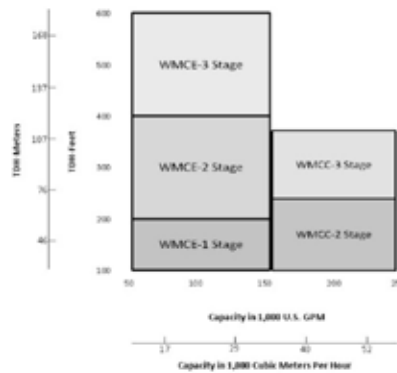
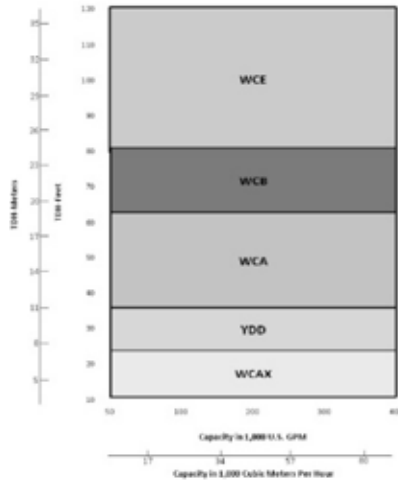


Vertical Mixed & Axial Flow

Models WCAX-GP, YDD-GP, WCA-GP, WCB-GP, WCC-GP, WCE-GP, WCL-GP, WMCC-GP, WMCE-GP, WCAG-GP

Vertical Mixed & Axial Flow

Custom designed for maximum reliability and high efficiency.



Materials: Bronze Fitted, All Bronze, SS Fitted, Ni Resist, All SS

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 15,900 m³/Hr | 70,000 GPM
- Heads to 1,067 m | 3,500 ft
- Pressures to 176 kg/cm² | 2,500 psi
- Bowl sizes from 152.4 mm to 1,400 mm | 6" to 55"
- Temperatures to 260°C | 500° F
- Horsepower to 3730 KW | 5,000 HP

Applications:

- Pipeline Booster
- Product Transfer, Refinery Blending
- Injection-Secondary Recovery
- Chemical Transfer
- Boiler Feed
- Condensate
- Cryogenics
- LNG Transfer
- Light Hydrocarbons
- Water Services

Materials: Any Machinable Alloy



Model VIT Vertical Pumps

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 15,900 m³/Hr | 70,000 GPM
- Heads to 1,067 m | 3,500 ft
- Pressures to 176 kg/cm² | 2,500 psi
- Bowl sizes from 152.4 mm to 1,400 mm | 6" to 55"
- Temperatures to 260°C | 500° F
- Horsepower to 3,730 KW | 5,000 HP

Applications:

- Cooling Water
- Seawater & River Water Intake
- Industrial Process Pumps
- Utility Circulating Water
- Condenser Circulating Water Pumps
- Fire Service
- Reclaimed Water

Materials: Any Machinable Alloy



Multistage / Axial Flow / Double Suction

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 15,900 m³/hr | 70,000 GPM
- Heads to 1,067m | 3,500 ft
- Pressures to 176 kg/cm² | 2,500 psi
- Bowl sizes from 152.4 mm to 1,400 mm | 6" to 55"

Applications:

- Irrigation
- Service Water
- Deep Well
- Sea Water Lift

Materials: Any Machinable Alloy



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 4,542 m³/h | 20,000 GPM
- Heads to 194m | 635 ft
- Temperatures to 120°C | 250° F

Applications:

- Product Stripping
- Ship Fire Pumps
- Ballast Pump
- Bilge
- Fuel Oil Transfer

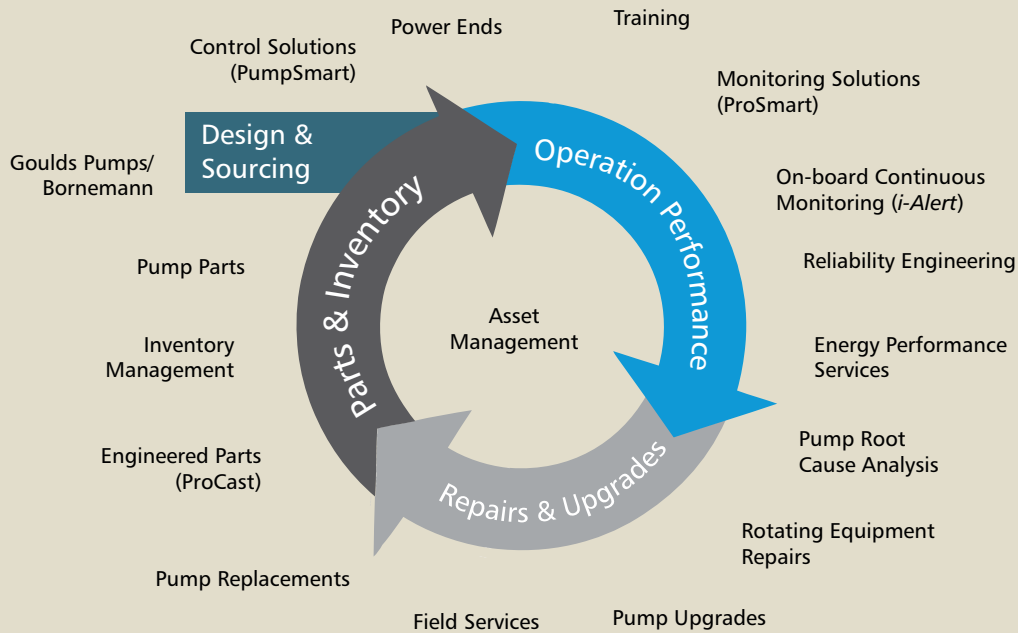
Materials: Any Machinable Alloy



Reliability has no quitting time.

Building on over 160 years of Goulds Pumps experience, **PRO Services** provides an array of services focused on reducing equipment total cost of ownership (TCO) and increasing plant output, including predictive monitoring, maintenance contracts, field service, engineered upgrades, inventory management, and overhauls for pumps and other rotating equipment. www.itproservices.com

Your total Solution For Equipment Life Cycle Optimization



ProSmart[®] Predictive Condition Monitoring

Our ProSmart systems provide continuous, predictive monitoring for all of your rotating equipment at an exceptionally low price. With ProSmart, the focus of your Predictive Maintenance Program can change from data collection to analysis and improvement activities. In addition, by continuously monitoring your equipment, ProSmart can proactively warn you of on setting machinery problems.

Features

- **Minimizing Process Downtime**
Early warning and advanced diagnostics enable maintenance activities to be planned instead of reactive
- **Advanced Diagnostic Tools**
Tying together both machinery health and process conditions, ProSmart speeds your root cause diagnosis.
- **Automatic Notification of Machinery Issues**
Resources focus only on machines in need, maximizing productivity.
- **Continuous Monitoring of Machine Health**
Automated data collection and analysis every 5 seconds; saving you time from routine data collection.

How it Works

Web application

Eliminates software installation and management costs.

Hosted Interface

The ProNet user interface provides the ability to view, analyze, and store data in a secure environment anywhere in the world.

With online reports that range from supervisory overviews to detailed analysis, ProSmart provides benefits to each level of your organization.

Wireless Architecture

Reduces installation costs and complexity.

Communication Module

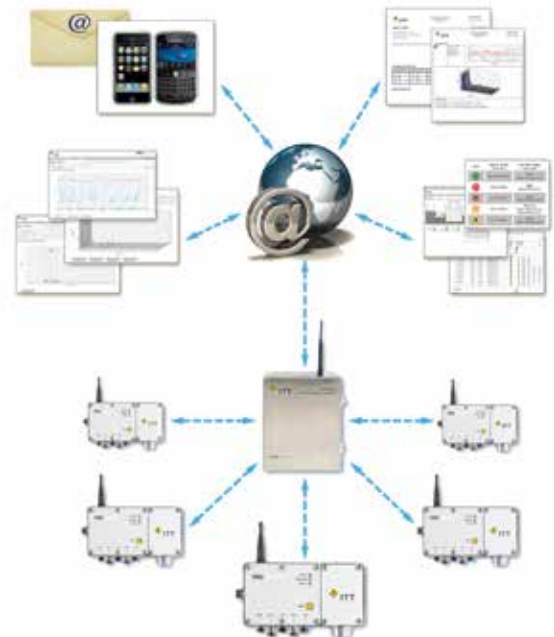
As the gateway to the Internet, ProSmart CM provides a secure connection to the ProNet application via LAN, DSL, cellular, or 802.11 wireless routers.

Data Monitor

Integrated processing capabilities allow 155 channels of information to be collected every 5 seconds, 24/7/365.

Machine Level

ProSmart can be used to provide continuous machinery monitoring of all your rotating equipment. Standard process signals can be integrated for greater diagnostic capabilities.



i-ALERT[®] 2

Bluetooth[®] SMART Equipment Health Monitor

The i-ALERT[®]2 Equipment Health Monitor is a Bluetooth Smart-enabled condition monitor that allows customers to identify potential problems before they become costly failures. It tracks vibration, temperature and run-time hours and wirelessly syncs that data with a smartphone or tablet through the i-ALERT2 mobile app.

- Wirelessly sync real-time and historical data directly to smart mobile device with the i-ALERT2 Mobile App.
- Scan multiple machines at the same time from a safe distance up to 30 meters/100 feet.
- Rugged, Safe & Reliable; IP67 water & dust resistant
- Rated for any industrial environment; Intrinsically Safe, Class 1 Div. 1 ATEX Zone 0

Monitor

Track vibration, temperature, & run-time hours 24/7/365.

Alarm

Checks every five minutes & alarms if equipment is outside normal operating parameters.

Trend

Stores data once per hour & on alarm for 30 days. Stores the weekly average, minimum & maximum up to 5 years.

Analyze

Diagnose machine faults with vibration tools Fast Fourier Transform & Time Waveform analysis.



Bluetooth Smart enabled smartphones & tablets

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PumpSmart[®] Control Solutions

The award-winning PumpSmart is an intelligent flow system that works with any pump, utilizing our smart VFD controller and our proprietary control software to provide advanced process control, enhanced reliability through failure prevention, reduced life cycle costs and significantly lower energy costs - up to 65%. PumpSmart Performance Services can assess your complete pumping systems, units or plant to identify all the ways you can improve your pumping life-cycle costs; from process control strategies to system design to maintenance practices.

Features (LV)

- **Smart Flow**
This patented feature allows PumpSmart to accurately control a process flow WITHOUT a flow meter.
- **Pump Protection**
Provides the operator the ability to set protection for low flow, no flow, run-out and cavitation.
- **Flow Economy**
Calculates process efficiency by flow of product versus energy consumption (gpm/kW).
- **Multi-Pump Control**
Provides control for up to four pumps in a parallel for automatic lead/lag changeover, redundancy back-up and synchronized torque control while still communicating to a field bus or DCS system.
- **Options and Engineered Solutions**
Available in a low-harmonic configuration guaranteed to meet IEEE519 harmonic specifications for industries requiring low-harmonic distortion on the utility line.



Features (MV)

- **Pump Protection & Predictive Monitoring**
Takes intelligent control of your pumping system to ensure it operates within the parameters needed for maximized output PLUS it can also prevent damage due to process upsets which cause critical "downtime".
- **Multi-Pump Control – Load Balancing**
Ability to monitor or control multiple pumps while operating in parallel or series piping plans.
- **Upgrade and Improve your standard Medium Voltage VFD Pumping System!**
Ability to analyze existing VFD controlled systems and give operators visibility of pumping systems.

Provides better operation and less down-time due to process pump visibility.

Patented logic can improve overall system visibility and predictive monitoring.



PumpSmart® Engineered Solutions

Features

- Pre-Engineered or Custom Engineered Solutions for any pump project
- Dedicated Global Resources for design, drawings and site support
- Integrated Solutions for high energy centrifugal or PD type pumps
- ITT PumpSmart takes ownership of a fully integrated efficient pumping solution



Visit our website at
www.gouldspumps.com

Pick Your Perfect Process Pump

Whether it's for severe corrosives, abrasive slurries, fibrous/stringy solids, high temperature liquids, hazardous fluids, low flow or high capacity services – Goulds Pumps has a perfect, reliable solution. Our selection of fluid solutions includes horizontal and vertical configurations in a range of alloy and non-metallic constructions, sealed and sealless. Goulds Pumps' 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 Pumps representative has been specially trained in pump application and should be contacted to assist in final pump selection for optimum reliability and safety.

1A SYSTEM

Service: _____
Capacity: _____
Total Dynamic Head: _____
NPSH Available: _____
Suction Pressure: _____
Minimum Flow Rate: _____
Total Working Pressure: _____

2A LIQUID PROPERTIES

Liquid: _____
Vapor Pressure: _____
Specific Heat: _____
Viscosity: _____
Solids Size / Content: _____
Specific Gravity: _____
Temperature: _____
Characteristics: (flammable, explosive, carcinogenic, toxic, noxious, regulated, etc.): _____

3A SAFETY / ENVIRONMENTAL

- UL label (explosion-proof enclosures)
- Regulations (government, local, plant)
- Temperature limits
- Fugitive emission limits
- Product purity
- Best Available Control Technology
- Reporting requirements

4A ECONOMY / RELIABILITY

- MTBF requirements
- Lubrication
- Cooling / Heating
- Operator experience
- Operator maintenance
- Extra product filtering
- Ease of installation

1B

Pump Size _____
Impeller diameter _____
HP, efficiency _____
NPSHR _____
Minimum Pump Flow _____
Speed (RPM) _____

2B

Materials of Construction _____
Bearing cooling _____
Sealing / flushing requirements _____
Jacketing for cooling / heating _____

3B

Explosion-proof enclosures _____
Safety protection options _____
Coupling guard options _____
Casing drain _____
Flange options _____
O-ring materials _____

4B

Type of lubrication _____
Start-up assistance _____
Operator training _____
Maintenance training _____
Baseplate options _____
Oil seal options _____



ENGINEERED FOR LIFE

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