

 **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' dominance 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 300°F (260°C) and Greater	Abrasive	Solids Non-Abrasive Fibrous/Stringy		
PRO Services	PRO Services	Rotating Equipment Services													4	
	3175	Paper Stock/Process													5	
Paper Stock/ Process	3180/3185	Paper Stock/Process													5	
	3181/3186	High Temperature													5	
Chemical Process	3500XD	Heavy-Duty Paper Stock													5	
	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													6	
	3996	ANSI In-Line Process													6	
	3296 EZMAG	ANSI Metallic Sealless Process													7	
	NM3196	ANSI FRP Process													7	
	3298	ANSI Tefzel® Lined Sealless													7	
	SP3298	ANSI Tefzel® Lined Sealless													7	
	3198	ANSI PFA Teflon® Lined Process													7	
	V3298	Tefzel® Lined Sealless													7	
	3299	ANSI PFA Teflon® Lined Sealless													7	
	IC	ISO Chemical Process													8	
	ICB	Close-Coupled ISO Process													8	
	ICP	High-Temperature ISO Process													8	
	ICM	ISO Metallic Magnetic Drive													8	
	ICMB	Close-Coupled ISO Sealless													8	
	ICMP	High-Temperature ISO Magnetic Drive													8	
	API 610 ISO 13709	API 3171	Industrial Duty Vertical Sump													9
		3700/3710	1-Stage, overhung (OH2)													9
		3910	Vertical In-Line (OH3)													9
		3610	Axially Split, 1-Stage (BB1)													9
3620		Radially Split, 1-Stage (BB2)													9	
3640		Radially Split, 2-Stage (BB2)													9	
3600		Axially Split, Multistage (BB3)													9	
7200CB	Barrel Multistage (BB5)													9		
Sump/ Abrasives/ Solids Handling	Trash Hog	Solids Handling, Self-Priming													10	
	VHS VJC	Vertical Cantilever													10	
	HSU HSUL JCU	Submersible													10	
	VRS	Abrasive Slurry R. L. Cantilever													11	
	JC	Medium-Duty Abrasive Slurry													11	
Abrasives Slurry/Solids Handling	SRL	Rubber-Lined Abrasive Slurry													11	
	SRL-C	Rubber-Lined Abrasive Slurry													11	
	SRL-S	Rubber-Lined Abrasive Slurry													11	
	SRL-XT	Rubber-Lined Abrasive Slurry													11	
	5500	Severe Duty Abrasive Slurry													11	
	HS	Non-Clog Solids Handling													11	
	VRS	Abrasive Slurry R. L. Cantilever													11	
XHD	Severe Duty Slurry													11		
Multistage/ Axial Flow/ Double Suction	AF	Axial Flow													13	
	3311	High-Pressure Multistage													12	
	3393	High-Pressure Multistage													12	
	3935	Diffuser-Type Multistage													12	
	3400 Series	Single Stage, Double Suction													13	
	3355	Multistage													12	
3316	Two-Stage													12		
Vertical Mixed and Axial Flow	WCAX-GP	Wet Pit Pumps													14	
	YDD-GP														14	
	WCA-GP														14	
	WCB-GP														14	
	WCC-GP														14	
	WCE-GP														14	
	WCL-GP														14	
	WMCC-GP														14	
	WMCE-GP														14	
	WCAG-GP														14	
VIC	Vertical Turbine/Can Type													15		
VIT	Vertical Industrial Turbine													15		
VIS	Vertical Submersible													15		
VMP	Vertical Marine													15		

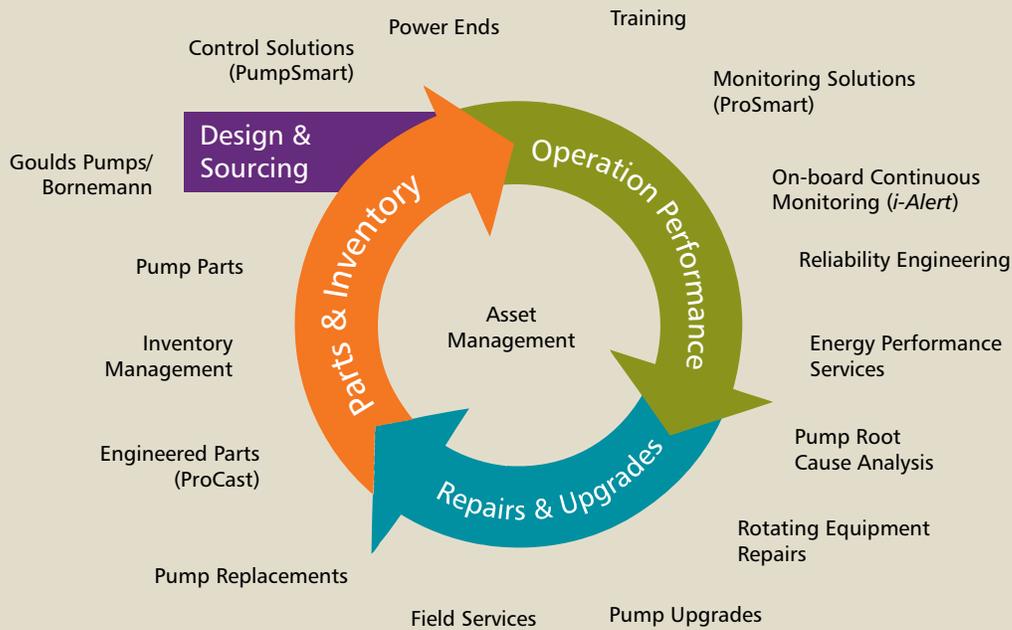
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 Ideally Suited for Service Indicated

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.

Your total Solution For Equipment Life Cycle Optimization



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 45,000 GPM (10,220 m³/h)
- Heads to 410 feet (125 m)
- Temperatures to 446° F (230° C)
- Pressures to 232 PSIG (16 bar)

3185 with Metric standards

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

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



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

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

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



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

3186 with ISO or JIS flanges

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

Materials: Duplex SS



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

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



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 1,300 GPM (295 m³/h)
- Heads to 230 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



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 1,250 GPM (284 m³/hr)
- Heads to 300 feet (92 m)
- Temperatures to 200° F (93° C)
- Pit Depts to 16 Feet (5 m)

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



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

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

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 220 GPM (50 m³/h)
- Heads to 925 feet (282 m)
- Temperatures to 700° F (371° C)
- Pressures to 450 PSIG (31 bar)

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



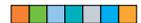
Model CV 3196

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

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



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

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

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



Sealless Process Pumps

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 700 feet (213 m)
- Temperatures to 535° F (280° C)
- Pressures to 275 PSIG (19 bar)

Materials: 316SS, others upon request



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 (149 m)
- Temperatures to 360° F (180° C)
- Pressures to 275 PSIG (19 bar)

Lining Material: PFA



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 1,200 GPM (270 m³/hr)
- Heads to 350 feet (162 m)
- Temperatures to 250° F (121° C)
- Pressures to 225 PSIG (16 bar)

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

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

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 800 GPM (182 m³/h)
- Heads to 450 feet (137 m)
- Temperatures to 300° F (149° C)
- Pressures to 225 PSIG (16 bar)

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

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

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

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 1,490 GPM (340 m³/h)
- Heads to 525 feet (160 m)
- Temperature ranges from -40° F to 280° F (-40° C to 140° C)
- Pressures to 230 PSIG (16 bar)

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 440 GPM (100 m³/h)
- Heads to 330 feet (100 m) at 3,500 rpm
- Temperature ranges from -40° F to 350° F (-40° C to 180° C)
- Pressures to 232 PSIG (16 bar)

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



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 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 363 PSIG (25 bar)

Materials: Carbon Steel, 316SS, Alloy 20, Duplex SS, 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 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 1,760 gpm (400 m³/h)
- Heads to 685 ft (210 m) at 3500 rpm
- Temperature ranges from -40° F to 535° F (-40° C to 280° C)
- Pressures to 365 PSIG (25 bar)

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



API 610 Process Pumps

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

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

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 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, 316SS, 12% Chrome Fitted, Duplex SS



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

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 20,000 GPM (4,540 m³/h)
- Heads to 1,500 feet (455 m)
- Temperatures to 850° F (455° C)
- Pressures to 1,000 PSIG (70 bar)

Materials: All API materials, custom materials available



Model 3610 API 610 (BB1) Horizontal Split Case, Double Suction

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

- Capacities to 50,000 GPM (11,355 m³/hr)
- Heads to 700 feet (215 m)
- Temperatures to 300° F (150° C)
- Pressures to 300 PSIG (21 bar)

Materials: All API materials, custom materials available



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

Materials: All API materials, custom materials available



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 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



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 6,000 GPM (1,363 m³/h)
- Heads to 140 feet (43 m)
- Temperatures to 225° F (107° C)
- Pressures to 85 PSIG (6 bar)
- 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



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

Materials: Cast Iron, High Chrome Iron, 316SS

Model VJC

- Capacities to 7,000 GPM (1,590 m³/h)
- Heads to 240 feet (73 m)
- Solids to 2 1/4 inches (57 mm)
- Lengths to 11 feet (3.4 m)

Materials: Cast Iron, High Chrome Iron, 316SS



Abrasives / Solids Handling

Model XHD Severe Duty Slurry

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 13,000 GPM (2,950 m³/h)
- Heads to 280 feet (85 m)
- Pressures to 250 PSIG (17 bar)

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

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

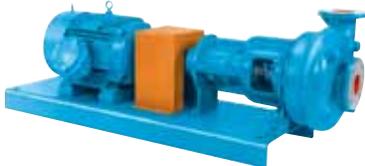


Model HS Hydro Solids

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

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

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 17,000 GPM (3,861 m³/h)
- Heads to 425 feet (130 m)
- Temperatures to 250° F (121° C)
- Pressures to 500 PSIG (35 bar)
- Solids to 5 inches (127 mm)

Materials: High Chrome Iron, CD4MCu, Endura Chrome



Models SRL / SRL-C / SRL-S / SRL-XT 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 (4,542 m³/h)
- Heads to 164 feet (50 m)
- Temperatures to 250° F (121° C)
- Pressures to 400 PSIG (28 bar)

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

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



Multistage / Axial Flow / Double Suction

Model 3311

High Pressure Multistage

Radially split, segmented multistage 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 1,100 GPM (250 m³/h)
- Heads to 5,250 feet (1,600 m)
- Temperatures to 356° F (180° C)
- Pressures to 2,320 PSIG (160 bar)

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



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 3,000 GPM (681 m³/h)
- Heads to 1,000 feet (305 m)
- Temperatures to 350° F (177° C)
- Pressures to 550 PSIG (38 bar)

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



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 and boiler feed applications. Shower services, booster service and other high pressure services are applications where it may be applied.

- Capacities to 3,000 GPM (680 m³/h)
- Heads to 3,300 feet (1,000 m)
- Temperatures to 400° F (204° C)
- Pressures to 1,650 PSIG (114 bar)

Materials: Carbon Steel, Carbon Steel/12% Chrome Fitted, 12% Chrome, Duplex and Super Duplex



Model 3355

Multistage

Multistage ring section pump designed for high pressure services including: reverse osmosis, shower service, boiler feed 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 1½" to 5"
- Temperatures to 280° F (140° C)
- Pressures to 800 PSIG (55 bar)

Materials: Cast Iron, Stainless Steel, Stainless Fitted



Model 3935

Centrifugal Diffuser Multistage

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

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

Material: Carbon Steel



3400 Series
Horizontal Split Case, Double Suction

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



Goulds 3410
Small Capacity

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



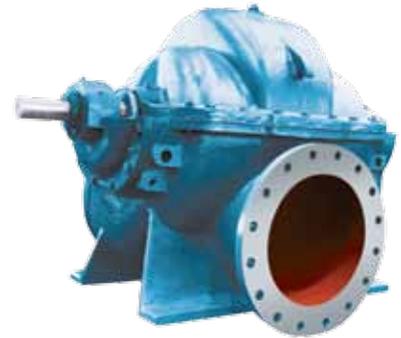
Goulds Model 3409
Medium Capacity

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



Goulds Model 3420
Large Capacity

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



Goulds Model 3498
Extra Large Capacity

- Capacities to 225,000 GPM (51,098 m³/h)
- Heads to 800 feet (244 m)
- Temperatures to 275°F (135°C)
- Working Pressures to 250 PSIG

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 300,000 GPM (68,000 m³/h)
- Heads to 30 feet (9.2 m)
- Temperatures to 350° F (176° C)
- 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



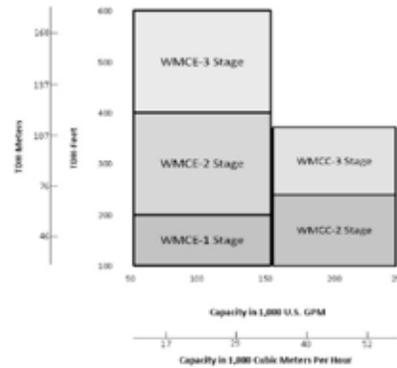
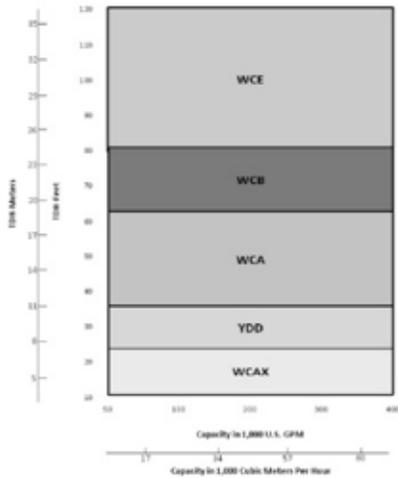
Vertical Mixed & Axial Flow



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

Vertical Mixed & Axial Flow

Custom designed for maximum reliability and high efficiency.



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



Vertical Pumps



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

Materials: Any Machinable Alloy

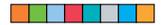


Model VIT Vertical Pumps

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

Materials: Any Machinable Alloy



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

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

Materials: Any Machinable Alloy



Vertical Suspended Double Suction

For power generation, oil pipeline API market, mining, dirty fluids and industrial services. Available in open and enclosed lineshaft.

- Capacities to 60,000 GPM (13,600 m³/hr)
- Heads to 600 feet (183 m)
- Temperatures to 500° F (260° C)
- Horsepower 5,000 HP (3,730 KW)

Materials: Any Machineable Alloy



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 _____



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