

3175

Paper Stock/Process Pump



3175

Designed to Handle the Toughest Jobs in the Pulp & Paper and Process Industries

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

Design Features

- Back Pull-Out
- Fully Open Impeller
- External Impeller Adjustment
- Renewable Wear Parts
- Maximum Sealing Flexibility
- Heavy Duty Construction
- Maximum Parts Interchangeability

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



Wide Range of Materials

Stocked in Cast Iron and 316 Stainless Steel. Available in any machinable alloy including 317SS, 317LSS, 316LSS, Alloy 20, CD4MCuN, 6-7% moly, Titanium, Hastelloy B and C



A Proven Performer

Since its introduction in 1968, the 3175 has proved itself over and over again. Thousands of installations attest to its remarkable performance even under the severest conditions. And for ease of maintenance, it can't be beat. Customers know they can rely on the 3175 for minimum downtime, increased productivity.



A 3175 installed in a major chemical plant.



Black liquor circulation pump (3175 XL) on spring-loaded baseplate.



Model 3175 handling paper stock



Taking suction from a large stock tank... the 3175 is the preferred pump in the Pulp & Paper Industry



3175's on process service such as multi-effect evaporators.

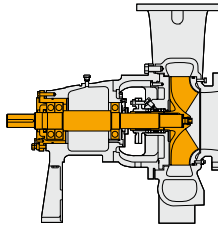


Preventive maintenance is fast and easy on a 3175.

Long Life/Low Maintenance/Reliable Operation

External Impeller Adjustment

Impeller clearance can be easily reset by external adjustment to maintain hydraulic performance. Delivers long time energy savings, while downtime is kept to a minimum.



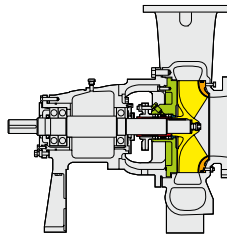
Optional TaperBore™ Seal Chamber

Features an enlarged bore for improved lubrication and cooling of the mechanical seal. The tapered throat keeps solids away from seal faces and from building up in the chamber. Seal life is remarkably extended.



Renewable Wear Parts

Low maintenance costs because all wear parts...suction sideplate, impeller, stuffing box cover, shaft sleeve and throat bushing...are easily replaced.



Fully Open Impeller

Special warped vane, heavy duty open type for paper stock handling. Back pump-out vanes reduce stuffing box pressure, and help prevent solids from entering sealing chamber.



Heavy Duty Shaft

Designed for continuous service under most severe operating conditions—dry end broke, repulper, hydropulper, blowtank. Low deflection at maximum load for long seal and bearing life, extended MTBF.



Standard Labyrinth Oil Seals

Prevent contamination of lubricant for extended bearing life.

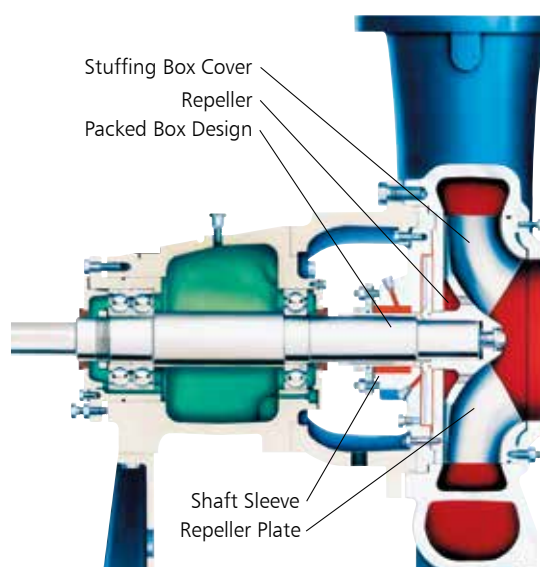


Maximum Sealing Flexibility

Dynamic Seal

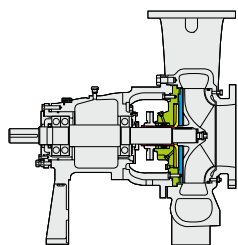
**For elimination of mechanical seal problems;
reduced maintenance**

Goulds Dynamic Seal pumps are designed to handle the tough applications where conventional mechanical seals or packing require outside flush and constant, costly attention. The major advantage is that external seal water is not required, thus eliminating leakage, pumpage contamination, product dilution and problems associated with piping from a remote source.



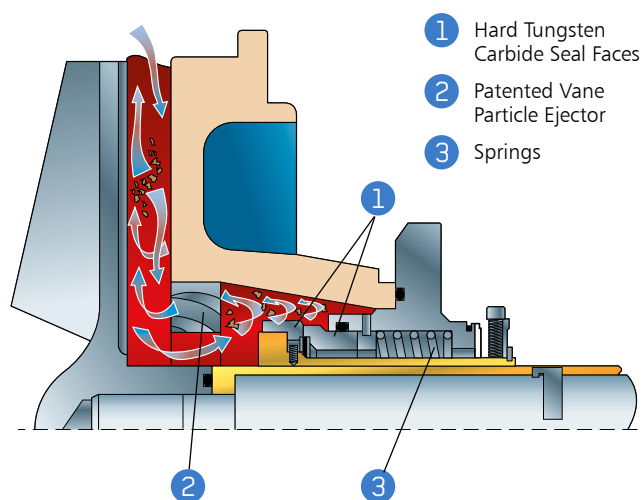
Standard Model 3175 pumps can be fitted with a repeller between the stuffing box and impeller. At startup, the repeller functions like an impeller and pumps liquid from the stuffing box. When the pump is shut down, a conventional static seal prevents pumpage from leaking.

The 3175 is easily field converted to Dynamic Seal. Goulds retrofit kit includes repeller, stuffing box cover, repeller plate, shaft sleeve and choice of static sealing arrangement.



TaperBore™ Seal Chamber

Goulds optional TaperBore™ seal chamber features an enlarged bore for improved lubrication and cooling of the mechanical seal. The design features a tapered throat and a vane particle ejector to keep solids away from seal faces and from building up in the seal chamber. Seal life is remarkably extended.



Goulds TaperBore™ seal chamber and cartridge mechanical seal. A full range of other seal types is available.

Parts List and Materials of Construction

| Item No. | Part Name | Materials Description | | | | | |
|------------------|---|---|-----------|-----------|------------|-------------------------|-------------------|
| | | All Iron/CD4(1) | All 316SS | All 317SS | All CD4MCu | DI/CD4 | 5A Super Duplex |
| 100 | Casing | Cast Iron | 316SS | 317SS | CD4MCu | D.I. | 5A Super Duplex |
| 101 | Impeller | 316SS | 316SS | 317SS | CD4MCu | 316SS | 5A Super Duplex |
| 105 ¹ | Lantern Ring(2) | Glass Filled Teflon | | | | | |
| 106 | Stuffing Box Packing | 1/2" x 1/2" Non-Asbestos; 1" x 1" Non-Asbestos for XL | | | | | |
| 107 | Gland, Packed Box | 316SS | 316SS | 317SS | 316SS | 316SS | 5A Super Duplex |
| 108 | Frame Adapter | Cast Iron | | | | | |
| 109A | Bearing End Cover-Coupling End | Cast Iron | | | | | |
| 112A | Ball Bearing Coupling End | Steel | | | | | |
| 119A | Bearing End Cover-inboard | Cast Iron | | | | | |
| 122 | Shaft | AISI 4140 | | | | | |
| 125 | Stuffing Box Throat Bushing | Cast Iron | 316SS | 317SS | CD4MCu | Cast Iron | 5A Super Duplex |
| 126 ² | Shaft Sleeves (Packed Box) | 316SS Hard Metal Coated | | 317SS | 316SS HMC | 316SS Hard Metal Coated | 2507 Super Duplex |
| 134A | Bearing Housing | Cast Iron | | | | | |
| 136 | Bearing Locknut and Lockwasher | Steel | | | | | |
| 168A | Radial Bearing | Steel | | | | | |
| 174 | Suction Sideplate | Cast iron | 316SS | 317SS | CD4MCu | Cast Iron | 5A Super Duplex |
| 176 | Suction Sideplate | Cast iron | 316SS | 317SS | CD4MCu | Cast Iron | 5A Super Duplex |
| 178 | Impeller Key | AISI 303 | | | | | |
| 178J | Repeller Sleeve Key (Dynamic Seal) | AISI 304 | | | | | |
| 184 | Stuffing Box Cover | Cast Iron | 316SS | 317SS | CD4MCu | D.I. | 5A Super Duplex |
| 198 | Impeller Screw | 316SS | | | | | |
| 228 | Bearing Frame | Cast Iron | | | | | |
| 241 | Frame Foot | Cast Iron | | | | | |
| 496 | O-ring--Bearing Housing | Buna-N | | | | | |
| 264 | Gasket-Backplate to S.B. Cover (Dynamic Seal) | Aramid Fiber with EPDM Rubber Binder | | | | | |
| 265 | 8.52736E+14 | AISI 304 | | | | | |
| 332A | Labyrinth Oil Seal-Coupling End | Bronze | | | | | |
| 333A | Labyrinth Oil Seal-Inboard | Bronze | | | | | |
| 351 | Gasket--S.B. Cover to Casing | 1/16" Non Asbestos | | | | | |
| 353 | Gland Stud/Nut | AISI 304 | | | | | |
| 356E | Stud/Nut--Suction sideplate | AISI 303 | | | | | |
| 360 | Gasket-Inboard Bearing End Cover | Vellumoid | | | | | |
| 360A | Gasket-Outboard Bearing End Cover | Vellumoid | | | | | |
| 360P | Gasket-Sideplate to Casing | 1/16" Non Asbestos | | | | | |
| 412 | O-ring--Shaft Sleeves | Teflon | | | | | |
| 412B | O-ring, Impeller Screw | Teflon | | | | | |
| 412C | O-ring, Suction Sideplate | Buna-N | | | | | |
| 412U | O-ring, Repeller (Dynamic Seal) | PTFE | | | | | |
| 494 | Cooling Coil (Optional) | Copper/Steel | | | | | |

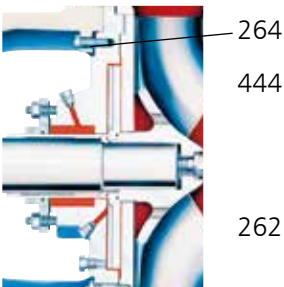
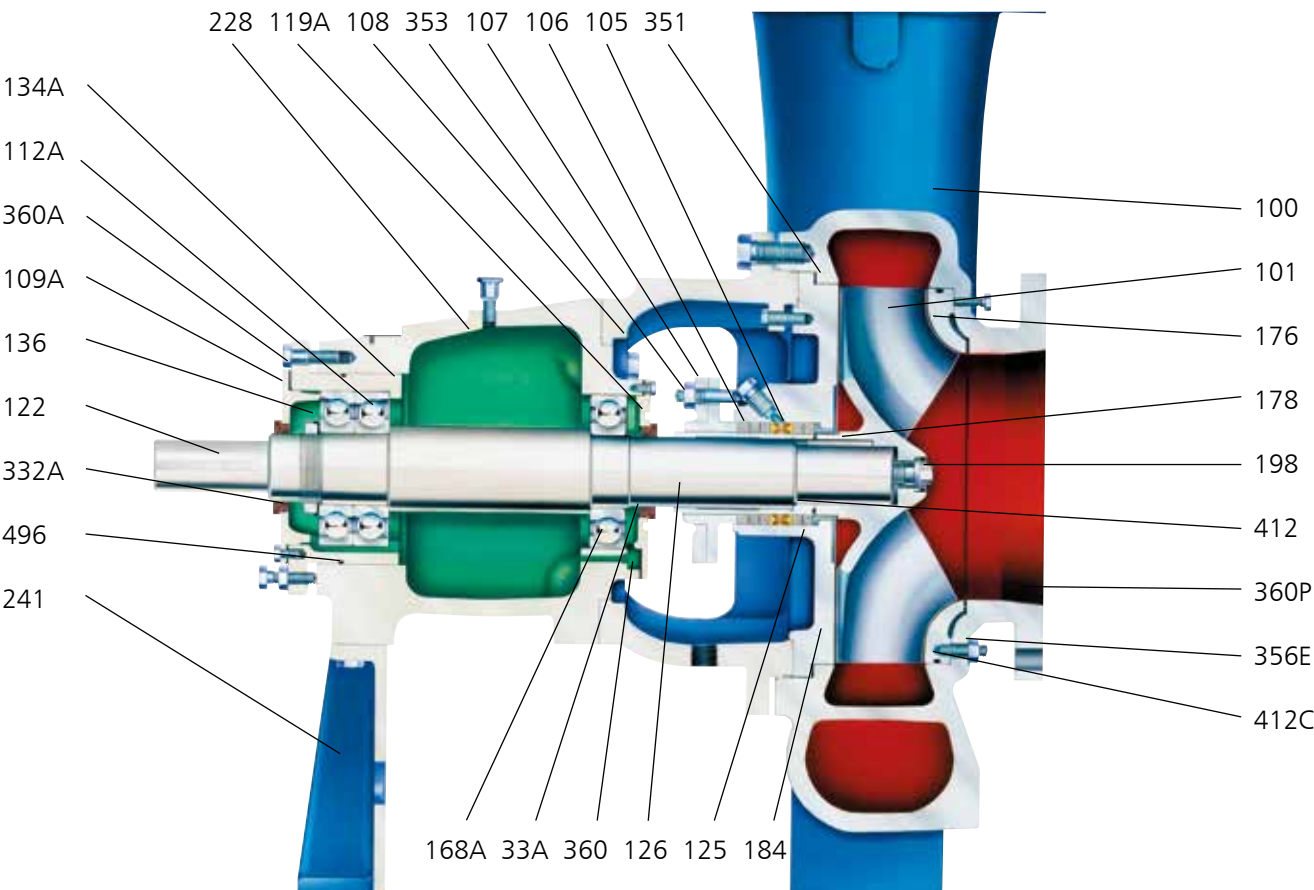
1. Group XL only: Cast Iron for All 316SS trim, 316SS for All 316SS, 317SS for All 317SS, 316SS for All CD4MCu.

2. Standard sleeve for 317SS pumps with packed box is 317SS and is not hard-coated. Standard sleeve for pumps with 2 mechanical seal is 316SS (317SS on all 317SS).

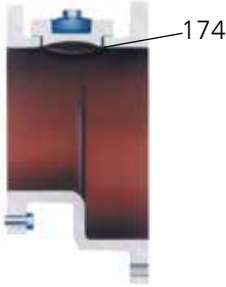
Materials of Construction

| | | | |
|-----------|---|--------|--|
| Cast Iron | Cast Iron—ASTM A48, Class 20, 25, 30 | 303SS | 303 Stainless Steel—ASTM A582 Type 303 |
| 316SS | 316 Stainless Steel— (Cast) ASTM A743 Gr CF-8M (Wrought) ASTM A276 Type 316 | 304SS | 304 Stainless Steel—ASTM A276 Type 304 |
| | | 317SS | 317 Stainless Steel—ASTM A743 Gr CG-8M |
| | | CD4MCu | Iron-Chrome-Nickel Alloy—ASTM A743 Gr CD4MCu |
| | | Steel | Carbon Steel—ASTM A322 Gr 4140 |

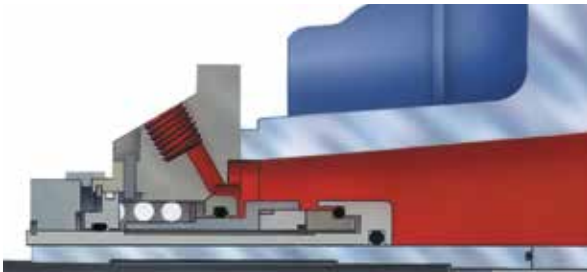
Sectional View



Dynamic Seal Option



Optional Suction Piece



TaperBore™ Seal Chamber and Mechanical Seal Option



Optional High Efficiency Finned Cooler

3175 Paper Stock / Process Pumps

Heavy Duty Design Features for Handling the Toughest Services

LABYRINTH SEALS

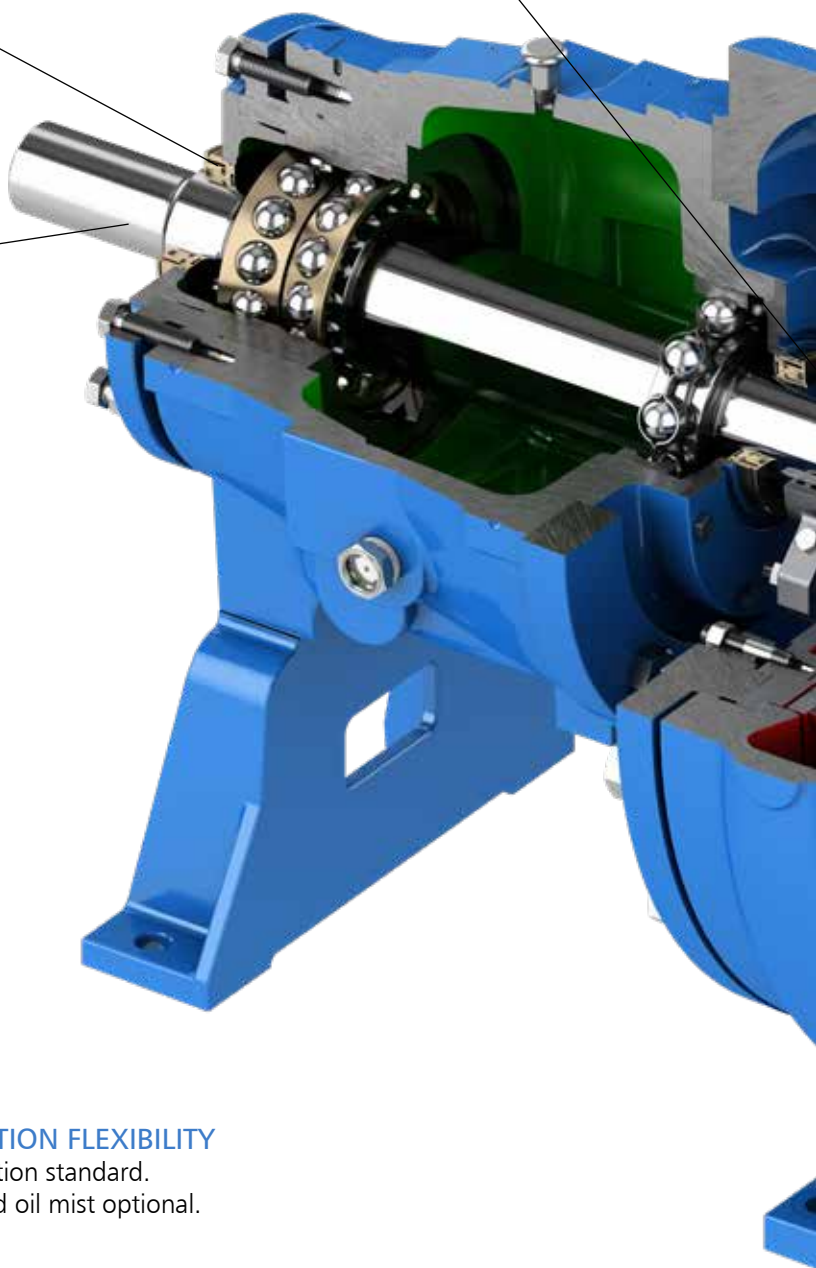
Standard Labyrinth Oil Seals prevent premature bearing failure caused by lubricant contamination and loss of lubricant.

HEAVY DUTY SHAFT

Designed for minimum deflection at maximum load. Dry shaft design—sealed by O-rings at sleeve / impeller hub and impeller bolt.

RENEWABLE SHAFT SLEEVE

Hook-type sleeve is positively driven by impeller key. Free to expand with temperature changes.

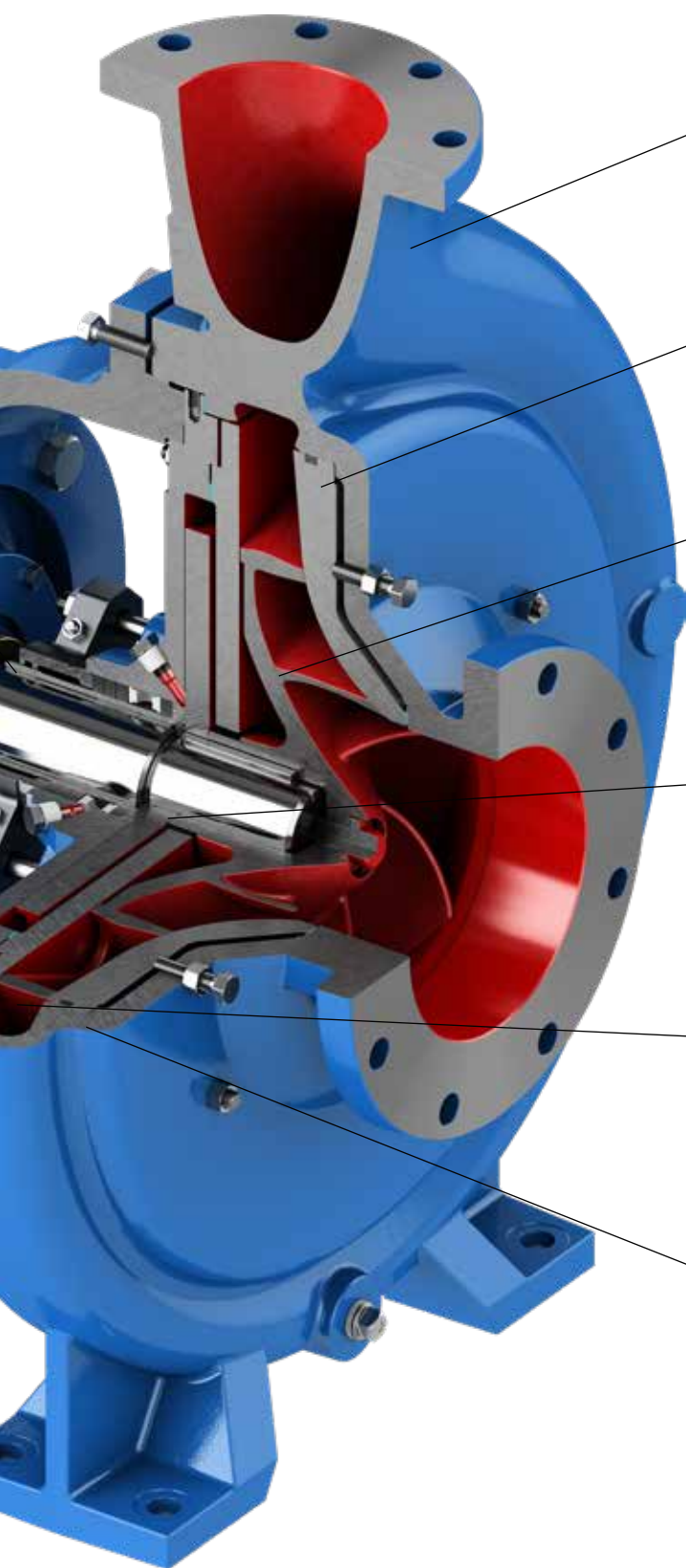


OPTIONAL HIGH EFFICIENCY FINNED COOLER

Requires minimum cooling water; easily cleaned to maintain bearing cooling efficiency. Corrosion resistant materials standard.

LUBRICATION FLEXIBILITY

Oil lubrication standard.
Grease and oil mist optional.



VERTICAL CENTERLINE DISCHARGE

Self-venting design for air handling. Casing provides maximum piping support.

RENEWABLE SIDEPLATE

Heavy suction sideplate minimizes maintenance costs. Positively sealed with O-ring and gasket.

FULLY OPEN IMPELLER

Designed for full range of services. Back pump-out vanes minimize stuffing box pressure, help prevent solids from entering seal chamber.

REPLACEABLE STUFFING BOX BUSHING

Minimizes packing and sleeve maintenance.

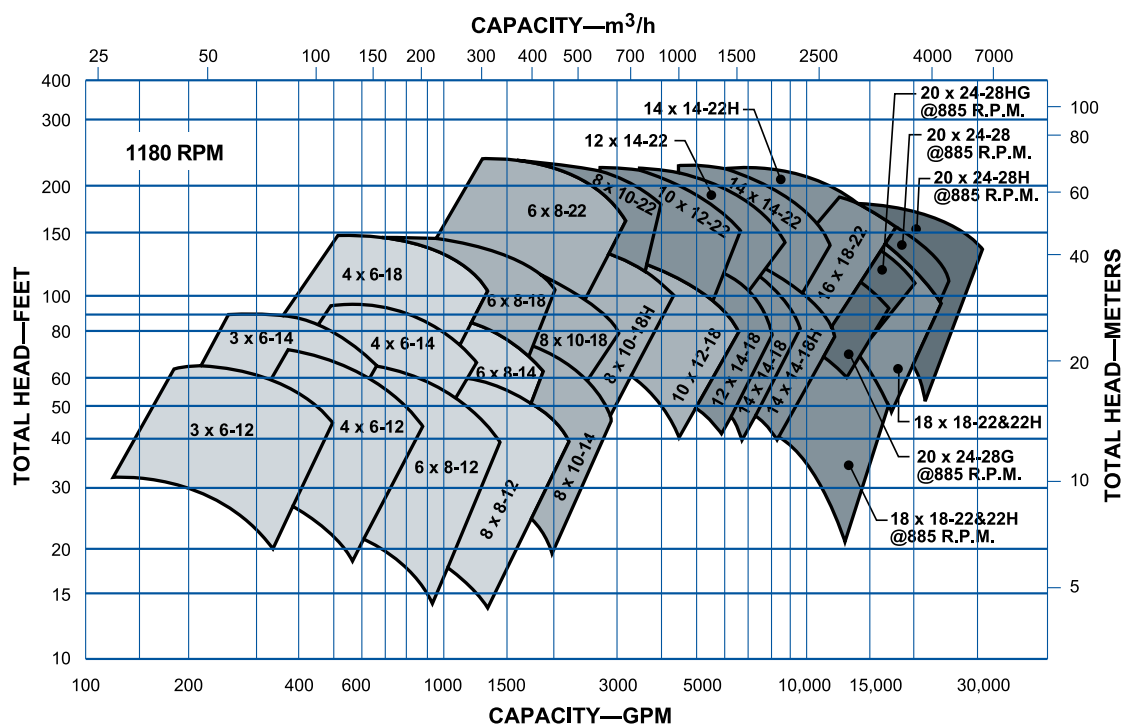
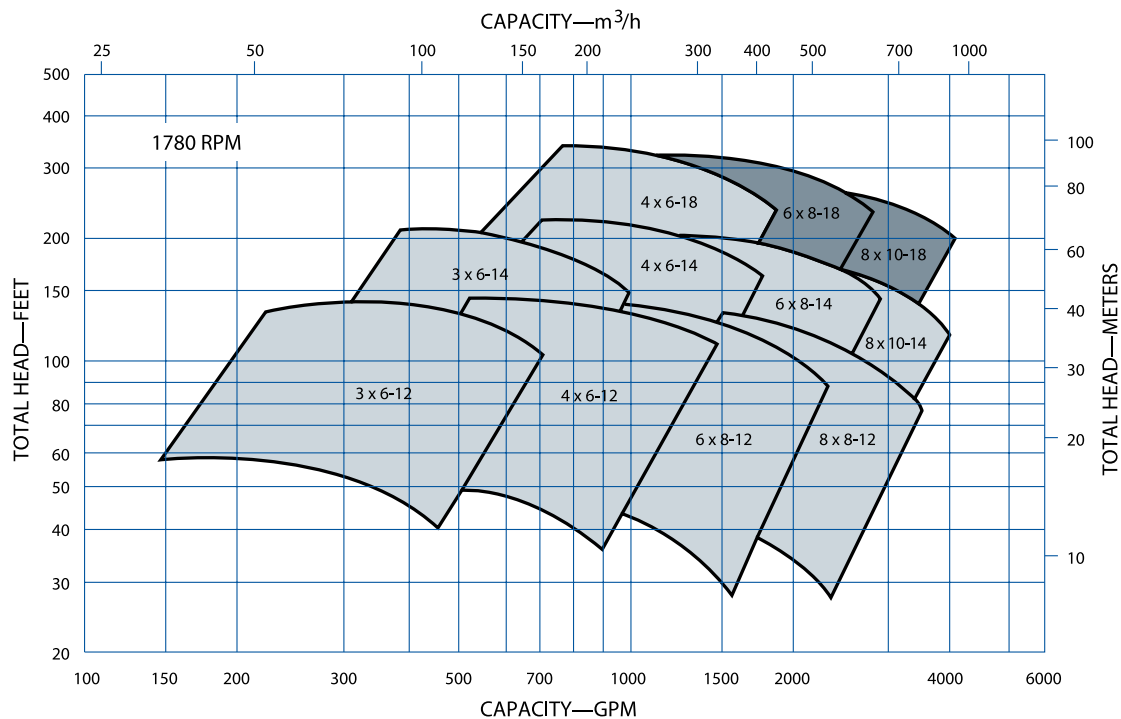
DUAL VOLUTE CASING

Provided on sizes as required to minimize radial unbalance for long packing, mechanical seal and bearing life.

EXTRA THICK WALL SECTIONS

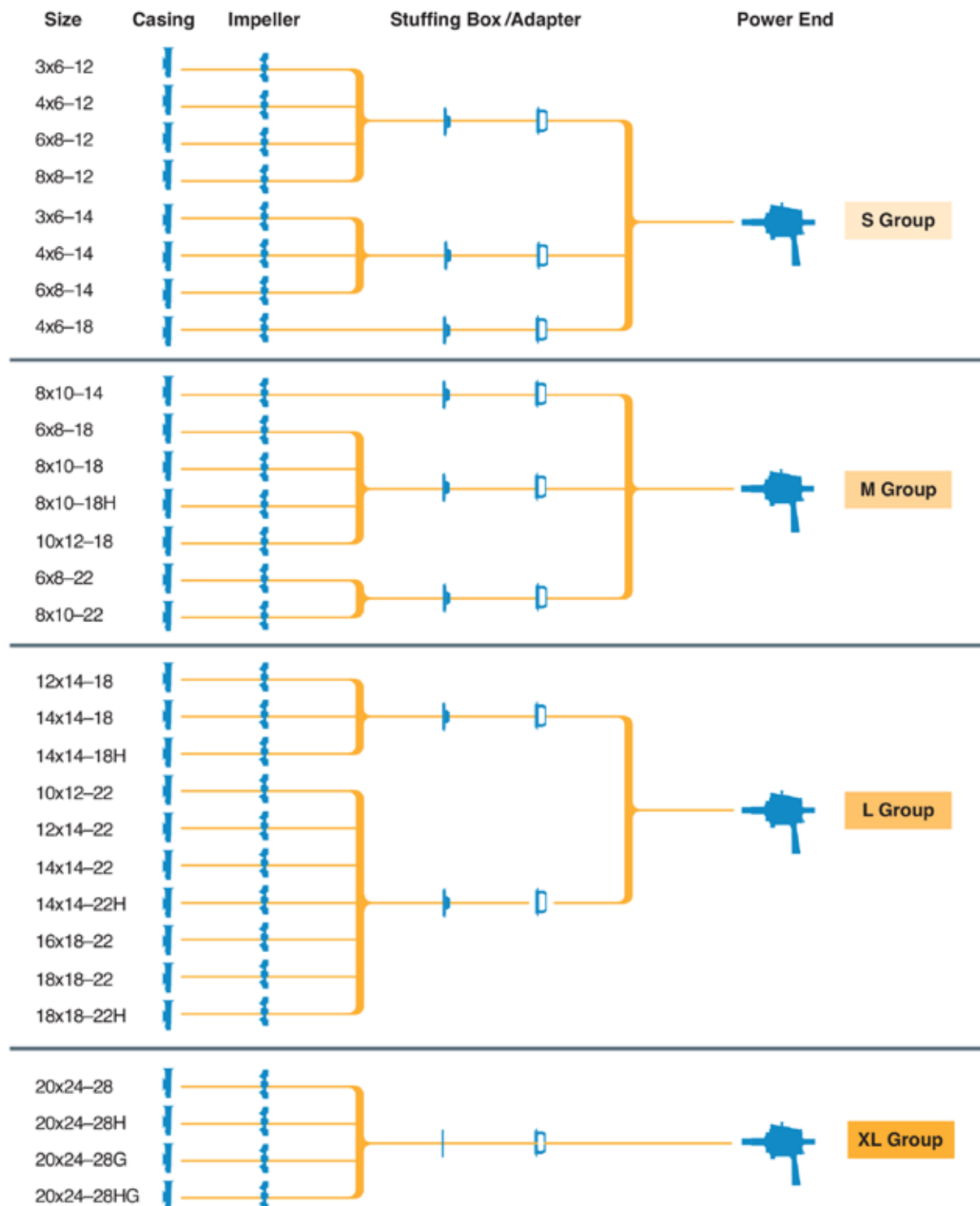
For extended wear life and reduced maintenance.

Hydraulic Coverage

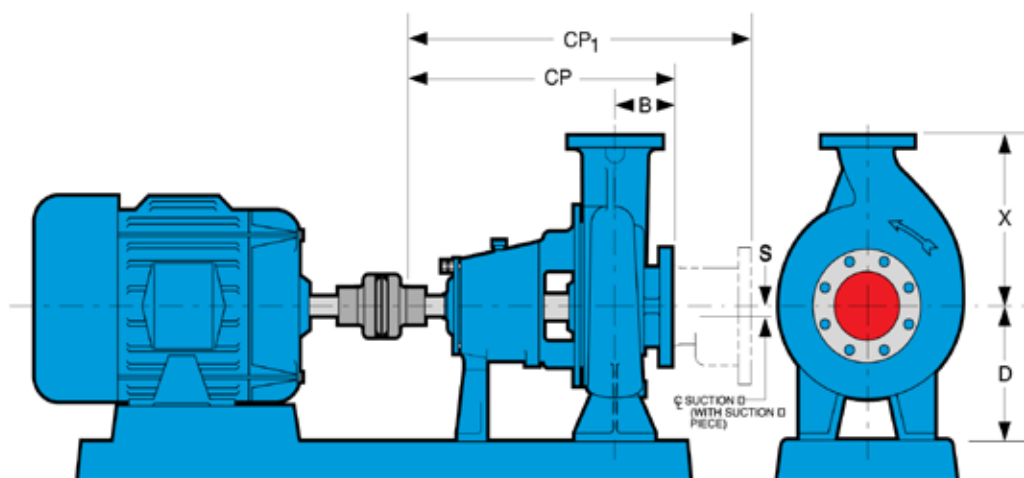


Modular Interchangeability

Minimum Parts Requirements



Dimensions



| DIMENSIONS | | | | | | | | | | | | |
|------------|------------|-------------|------------|-------------|-----------|-----------|-----------|------------|-----------------|------------------|--------------------------------|------------------------------|
| Group | Pump Size | Disch. Size | Suct. Size | Suct. Size* | D | X | B | CP | CP ₁ | S | Shaft Diameter at Coupling | Bare Pump Weight* Lbs. (kg.) |
| S | 3x6-12 | 3 | 6 | 8 | — | 13 (330) | 7¼ (184) | 39¾ (1010) | 51 (1295) | 1 (25) | 1.875 (47.63) 1.874 (47.60) | 745 (338) |
| | 4x6-12 | 4 | 6 | 10 | | 12½ (318) | | | | 14½ (368) | | 810 (367) |
| | 6x8-12 | 6 | 8 | — | | 16 (406) | | | | 975 (442) | | |
| | 8x8-12 | 8 | 8 | 12 | 14½ (368) | 19 (483) | 8⅝ (206) | 41⅞ (1045) | 52⅞ (1330) | 1 (25) 2 (51) | 1.875 (47.63) 1.874 (47.60) | 1205 (547) |
| | 3x6-14 | 3 | 6 | 8 | 12½ (318) | 13 (330) | 7¼ (184) | 39¾ (1010) | 51 (1295) | | | 850 (386) |
| | 4x6-14 | 4 | 6 | 10 | | 14½ (368) | | | | | | 925 (420) |
| | 4x6-18 | 4 | 6 | 10 | | 16 (406) | | | | | | 1050 (476) |
| | 6x8-14 | 6 | 8 | 12 | | 16 (406) | | | | | | 1100 (499) |
| M | 6x8-18 | 6 | 8 | 12 | 14½ (368) | 18 (457) | 7¼ (184) | 39¾ (1010) | 51 (1295) | 2 (51) | 2.375 (60.33) 2.374 (60.30) | 1525 (692) |
| | 6x8-22 | 6 | 8 | 12 | 17 (432) | 21 (533) | | | | | | 1700 (771) |
| | 8x10-14 | 8 | 10 | 14 | 14½ (368) | 19 (483) | | | | | | 1550 (703) |
| | 8x10-18 | 8 | 10 | 14 | 14½ (368) | 21 (533) | 8⅝ (206) | 41⅞ (1045) | 53 (1346) | | | 1600 (726) |
| | 8x10-18H | 8 | 10 | 14 | 17 (432) | 21 (533) | | | | | | 1725 (782) |
| | 8x10-22 | 8 | 10 | 14 | 17 (432) | 23 (584) | | | | | | 1800 (816) |
| | 10x12-18 | 10 | 12 | 16 | 20 (508) | 23 (584) | | | | | | 1900 (862) |
| L | 10x12-22 | 10 | 12 | 16 | 20 (508) | 25 (635) | 8⅝ (206) | 41⅞ (1045) | 53 (1346) | 2 (51) | 3.375 (85.73) 3.374 (85.70) | 2050 (930) |
| | 12x14-18 | 12 | 14 | 18 | 20 (508) | 25 (635) | | | | | | 2000 (907) |
| | 12x14-22 | 12 | 14 | 18 | 20 (508) | 27 (686) | | | | | | 2350 (1066) |
| | 14x14-18 | 14 | 14 | 20 | 20 (508) | 27 (686) | 8⅞ (225) | 42½ (1080) | 55 (1397) | 3 (76) | | 2125 (964) |
| | 14x14-18H | 14 | 14 | 20 | 22 (559) | 30 (762) | | | | | | 2800 (1270) |
| | 14x14-22 | 14 | 14 | 20 | 22 (559) | 30 (762) | | | | | | 3800 (1724) |
| | 16x18-22 | 16 | 18 | — | 28 (711) | 32 (813) | 12¾ (324) | 47⅞ (1205) | — | — | | 4500 (2041) |
| | 18x18-22 | 18 | 18 | — | 28 (711) | 34 (864) | 9⅞ (251) | 43½ (1105) | — | — | | 4300 (less suction piece) |
| | 18x18-22H | 18 | 18 | — | 28 (711) | 34 (864) | 16⅞ (422) | 50¼ (1276) | — | — | | |
| XL | 20x24-28 | 20 | 24 | — | 30 (762) | 40 (1016) | 17½ (445) | 66¾ (1695) | — | — | 3.875 (98.43) 3.874 (98.40) | 5300 (2404) |
| | 20x24-28H | | | | | | | | | | | |
| | 20x24-28G | | | | | | | | | | | |
| | 20x24-28HG | | | | | | | | | | | |

*With Suction Piece

All dimensions in inches and (mm). Not to be used for construction.

Construction Details

| | | S Group | M Group | L Group | XL Group |
|--------------------|---|--|-----------------------------------|---------------------------------|-----------------|
| Temperature Limits | Maximum Liquid Temperature—Oil Lubrication Without Cooling | 250°F (121°C) | | | |
| | Maximum Liquid Temperature—Oil Lubrication with Frame Cooling | 350°F (177°C)—Cast Iron 450°F (232°C)—Steel | | | |
| | Maximum Liquid Temperature—Grease Lubrication | 250°F (121°C) | | | |
| Power Limits | HP (kW) per 100 RPM—904L and Alloy 20 Construction | 9.52 (7.10) | 23.8 (17.8) | 63.5 (47.4) | 113.6 (84.7) |
| | HP (kW) per 100 RPM—Constructions other than Alloy 20 | 17.4 (13.0) | 31.9 (23.8) | 82.2 (61.3) | 129.0 (96.2) |
| Shaft Diameter | At Impeller | 1 7/8 (48) | 2 1/4 (70) | 3 1/8 (86) | 3 7/8 (98) |
| | Under Shaft Sleeve | 2 1/2 (64) | 3 1/8 (84) | 4 1/8 (109) | 5 (127) |
| | At Coupling | 1 7/8 (48) | 2 1/8 (60) | 3 1/8 (86) | 3 7/8 (98) |
| | Between Bearings | 3 1/8 (79) | 4 (102) | 4 1/8 (124) | 6 (152) |
| Sleeve | O.D. through Stuffing Box | 3 (76) | 3 1/8 (95) | 4 1/8 (121) | 5 1/8 (140) |
| Bearings | Thrust (Coupling End) | SKF 7313 BECBY | SKF 7317 BEGAM | SKF 7222 BECBM | SKF 7326 BECBM |
| | Radial (Inboard or Pump End) | SKF 6313 | SKF 6317 | SKF 6222 | SKF 6326 |
| | Bearing Span | 12 1/8 (311) | 11 11/16 (297) | 11 1/8 (283) | 18 (457) |
| | Shaft Overhang | 10 11/16 (271) to 11 1/2 (301) | 11 11/16 (290) to 12 1/8 (319) | 11 1/8 (302) to 13 1/8 (344) | 19 (483) |
| Stuffing Box | Bore | 4 (102) | 4 1/4 (121) | 5 1/4 (146) | 7 1/2 (191) |
| | Depth—to Stuffing Box Bushing | 3 11/16 (94) | | | 6 3/4 (171) |
| | Packing Size | 1/2 x 1/2 (13 x 13) | | | 1 x 1 (25 x 25) |
| | Distance from End of Stuffing Box to Nearest Obstruction | 3 1/8 (79) | | 3 1/8 (83) | 3 3/4 (95) |

All dimensions in inches and (mm). Not to be used for construction.

World Class Service; Value-Added Capabilities

Goulds is much more than a manufacturer and marketer of pumps. Capabilities that extend from project consultation to on-site testing and start-up evaluation are available to every customer. Many specialized services from Goulds are only evident after the sale and installation of the product: parts, repair, training and more.

Research and Development

Goulds continually tests and evaluates every product. The R&D team constantly seeks innovative designs, new materials and system improvements.



Fabrication and Casting

The most advanced foundry and fabrication concepts are utilized to improve quality. We depend on only the best foundries to produce castings from iron to Hastelloy including a wide range of high alloys.



Repair and Overhaul

Goulds PRO (Pump Repair and Overhaul) Services® Centers repair all types of rotating equipment. Each facility also has special diagnostic equipment to facilitate preventive maintenance. Let the nearest PRO Services® Center demonstrate repair as an economical alternative to replacement.



Field Service

A staff of highly specialized installation, training and commissioning engineers is available to insure each projects' successful completion and start-up.

Training

Goulds Pumps provides a comprehensive training program that includes in-depth product education as well as operations and maintenance courses. Each session is designed as a continuous learning opportunity, supporting customers worldwide in building their knowledge and expertise.

Parts Availability

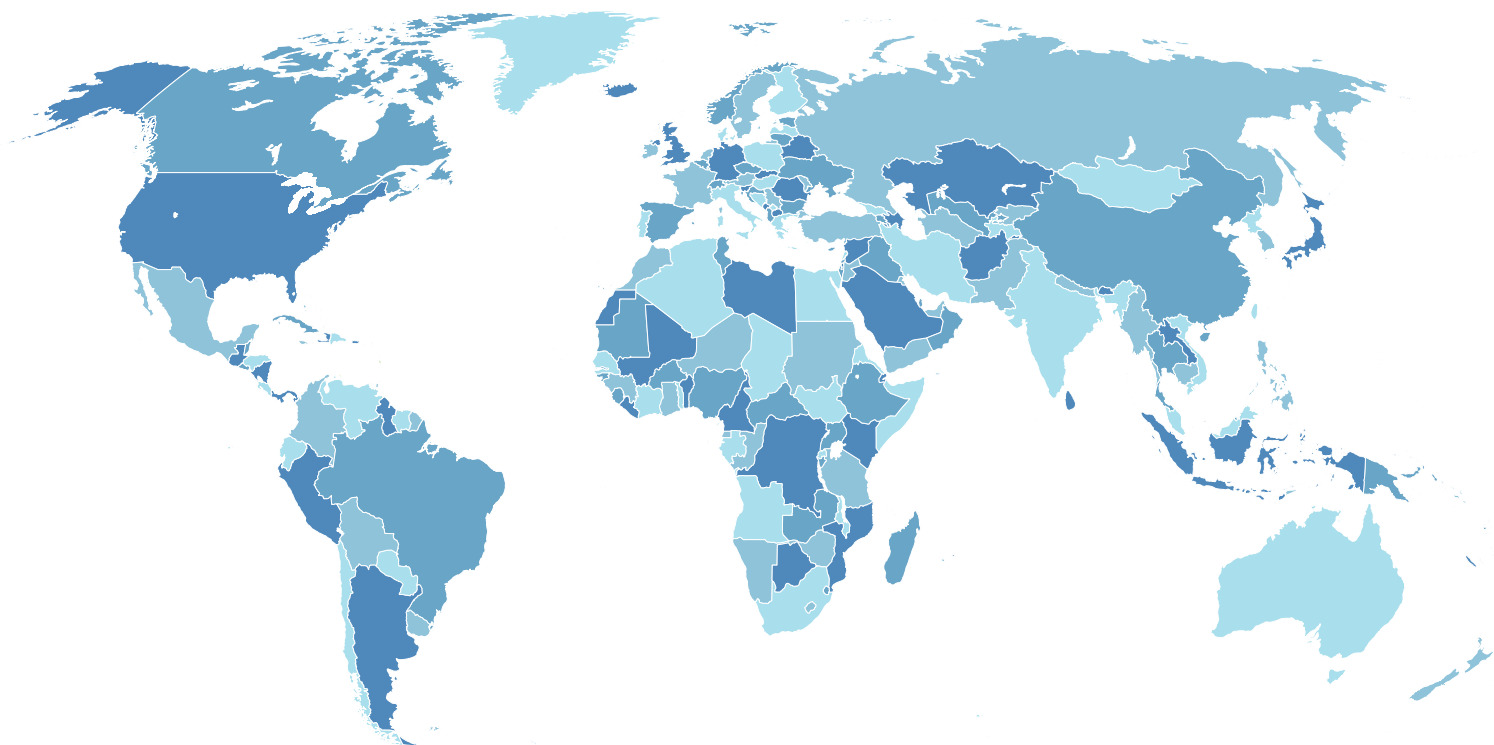
Goulds Pumps Distribution Centers are strategically located worldwide, and are committed to the ready availability of repair parts.

Service and Support

In addition to direct sales offices around the world, over 200 authorized Goulds representatives and distributors are totally committed to meeting customers' requirements.

Notes

Notes



Visit www.ittproservices.com & www.gouldspumps.com to
find nearest service, sales, and manufacturing locations



— An ITT Brand

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