Goulds Model 3196

Chemical Process Pumps
Designed for Total Range of Industry Services

- Capacities to 7000 GPM (1364 m³/h)
- Heads to 730 feet (223 m)
- Temperatures to 700°F (371°C)
- Pressures to 375 PSIG (2586 kPa)

Outstanding Features for Outstanding Performance

Extended Pump Life
- X-Series Power Ends
- Patented TaperBore™ PLUS Seal Chamber
- BigBore™ Seal Chambers
- ANSI PLUS™ Features

Ease of Maintenance
- Back Pull-out Design
- External Impeller Adjustment
- Maximum Interchangeability
- Optional C-Face Motor Adapter

Optimum Hydraulic Performance
- Fully Open Impeller
- Full 50/60 Hz Coverage
- 29 Sizes
- Computerized Pump Selection

Safety
- ANSI B15.1 Coupling Guard
- Ductile Iron Frame Adapter
- Optional Shaft Guard

Proven Performance

Every day in over 500,000 installations, the Goulds 3196 ASME/ANSI (B73.1M) process pump proves why it’s the industry standard for performance. Users in chemical, petrochemical, pulp & paper, primary metals, food & beverage and general industries know they can make no better choice than the best.
Model 3196 Chemical Process Pumps
Heavy Duty Design Features for Total Range of Process Services

STANDARD LABYRINTH OIL SEALS
Carbon-filled TEFLON® for chemical resistance. Prevent premature bearing failure caused by lubricant contamination and loss of oil.

LUBRICATION FLEXIBILITY
X-Series power ends pre-drilled for choice of lubrication. Easy field conversion from standard flood oil to oil mist or grease.

HEAVY DUTY SHAFT AND BEARINGS
Shaft designed for minimum deflection—less than .002 in. (.05 mm)—at seal faces. Bearings sized for 2-year minimum and 10-year average life under tough operating conditions.

SERRATED FLANGES
For positive sealing against leakage. Meets ANSI B16.5 requirements. Class 150 flanges standard, optional Class 150 RF, 300 FF/RF.

CASING
• Top centerline discharge for air handling, self-venting.
• Class 150 pumps have Class 300 wall thickness as standard.
• Back pull-out design.
• Integral feet.

ONE-INCH OIL SIGHT GLASS
For easy monitoring of actual oil level and condition.

RIGID FRAME (AND CASING) FEET
Reduce effect of pipe loads on alignment.

SEALING FLEXIBILITY
Wide range of sealing arrangements available to meet service conditions.

ENGINEERED SEAL CHAMBERS
Designed to provide best seal environment for selected sealing arrangements/services. Standard choices are patented TaperBore™ PLUS, BigBore™, standard bore or jacketed seal chambers.

FULLY OPEN IMPELLER
Acknowledged best design for CPI services—solids handling, stringy material, corrosives, abrasives. Back pump-out vanes minimize sealing chamber pressure.

®TEFLON is a registered trademark of E.I. DuPont.
## Design Features for Extended MTBF

### Component

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Shaft</td>
<td>Optimum overhang vs diameter. Low deflection (less than 0.002 in.) at seal faces for longer seal and bearing life.</td>
</tr>
<tr>
<td>B Bearings</td>
<td>Optimized size and configuration. Provide 10-year average bearing life within design operational range.</td>
</tr>
<tr>
<td>C Oil Seals</td>
<td>Carbon–filled Teflon® labyrinth seals. Prevent primary cause of premature bearing failure—lubricant contamination. Also prevent loss of oil.</td>
</tr>
<tr>
<td>D Bearing Frame</td>
<td>Larger oil sump. Bearings run cooler, last longer.</td>
</tr>
<tr>
<td></td>
<td>Frame foot. Rigid design reduces effects of pipe loads on pump/motor shaft alignment. Bearings and seals last longer.</td>
</tr>
<tr>
<td></td>
<td>One-inch oil sight glass. Allows maintenance of proper oil level.</td>
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<td></td>
<td>Mounting flange. Allows use of C-Face adapter for factory alignment; eliminates possibility of field misalignment.</td>
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<tr>
<td></td>
<td>Condition monitoring sites. Allow use of temperature/vibration sensors for predictive maintenance.</td>
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<td></td>
<td>Pre-drilled lubrication ports. Provide lubrication flexibility. Easy conversion to flood oil lubrication, grease, oil mist as conditions require.</td>
</tr>
<tr>
<td>E Casing</td>
<td>Extra corrosion allowance. Bonus thickness—Class 150 pumps feature Class 300 wall thickness—longer life under corrosive/erosive conditions.</td>
</tr>
<tr>
<td></td>
<td>Heavy duty design. Superior resistance to pipe loads. Available with Class 150 or 300 flanges.</td>
</tr>
<tr>
<td>F Impeller</td>
<td>Fully open design. Best design for handling corrosives, erosives and stringy material.</td>
</tr>
<tr>
<td></td>
<td>Two times wear area of enclosed impeller.</td>
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<td></td>
<td>Back pump-out vanes. Reduces positive stuffing box/seal chamber pressure.</td>
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<tr>
<td></td>
<td>Balancing to ISO 1940 Standards. Reduced vibration extends seal and bearing life.</td>
</tr>
<tr>
<td>G Seal Chamber</td>
<td>Expanded (BigBore™ and TaperBore™ PLUS) bores designed specifically for mechanical seals. Improved lubrication and cooling of seal faces extend mechanical seal life.</td>
</tr>
<tr>
<td></td>
<td>Accommodate larger diameter mechanical seals allowing use of &quot;new generation&quot; seal designs.</td>
</tr>
<tr>
<td>H High Performance Gland</td>
<td>Tangential flush connections. Prevent solids impingement on seal faces.</td>
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<tr>
<td></td>
<td>Metal-to-metal fit with seal chamber. Assures concentricity and perpendicularity for extended seal life.</td>
</tr>
</tbody>
</table>

### Construction Details

All dimensions in inches and (mm).

<table>
<thead>
<tr>
<th>Feature</th>
<th>STX</th>
<th>MTX</th>
<th>LTX</th>
<th>XLT-X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter at Impeller</td>
<td>.75 (19)</td>
<td>1 (25)</td>
<td>1.25 (32)</td>
<td>1.5 (38)</td>
</tr>
<tr>
<td>Diameter in Stuffing Box/Seal Chamber (Less Sleeve)</td>
<td>1.375 (35)</td>
<td>1.75 (45)</td>
<td>2.125 (54)</td>
<td>2.5 (64)</td>
</tr>
<tr>
<td>(With Sleeve)</td>
<td>1.125 (29)</td>
<td>1.5 (38)</td>
<td>1.875 (48)</td>
<td>2 (51)*</td>
</tr>
<tr>
<td>Diameter Between Bearings</td>
<td>1.5 (38)</td>
<td>2.125 (54)</td>
<td>2.5 (64)</td>
<td>3.125 (79)</td>
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<tr>
<td>Diameter at Coupling</td>
<td>.875 (22)</td>
<td>1.125 (29)</td>
<td>1.875 (48)</td>
<td>2.375 (60)</td>
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<tr>
<td>Overhang</td>
<td>6.125 (156)</td>
<td>8.375 (213)</td>
<td>8.375 (213)</td>
<td>9.969 (253)</td>
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<tr>
<td>Maximum Shaft Deflection</td>
<td>0.002 (0.05)</td>
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<tr>
<td>Shaft Deflection Index (L/D)&lt;sup&gt;4&lt;/sup&gt; (Less Sleeve)</td>
<td>143</td>
<td>116</td>
<td>48</td>
<td>62</td>
</tr>
<tr>
<td>(With Sleeve)</td>
<td>64</td>
<td>63</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Sleeve O.D. thru Stuffing Box/Seal Chamber</td>
<td>1.375 (35)</td>
<td>1.75 (45)</td>
<td>2.125 (54)</td>
<td>2.5 (64)*</td>
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<tr>
<td>Bearings</td>
<td>Radial</td>
<td>SKF 6307</td>
<td>SKF 6309</td>
<td>SKF 6311</td>
</tr>
<tr>
<td></td>
<td>Thrust</td>
<td>SKF 5306 A/C3</td>
<td>SKF 5309 A/C3</td>
<td>SKF 7310 BECBM</td>
</tr>
<tr>
<td></td>
<td>Bearing Span</td>
<td>4.125 (105)</td>
<td>6.75 (171)</td>
<td>6.875 (164)</td>
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<tr>
<td>Average L'10 Bearing Life</td>
<td>50,000 Hours</td>
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<td></td>
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</tr>
<tr>
<td>BigBore™ Seal Chamber Bore</td>
<td>2.875 (73)</td>
<td>3.5 (89)</td>
<td>3.875 (98)</td>
<td>4.75 (120)*</td>
</tr>
<tr>
<td>Stuffing Box Bore</td>
<td>2 (51)</td>
<td>2.5 (64)</td>
<td>2.875 (73)</td>
<td>3.375 (86)*</td>
</tr>
<tr>
<td>Power Limits HP (kW) per 100 RPM</td>
<td>1.1 (.82)</td>
<td>3.4 (2.6)</td>
<td>5.6 (4.2)</td>
<td>14 (10.5)**</td>
</tr>
<tr>
<td>Maximum Liquid Temperature</td>
<td>Oil/Grease Lubrication without Cooling</td>
<td>350° F (177° C)</td>
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<tr>
<td></td>
<td>Oil Lubrication with High Temp. Option</td>
<td>700°F (370° C)</td>
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<tr>
<td>Casing Corrosion Allowance</td>
<td>.125 (3)</td>
<td></td>
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</tbody>
</table>

*17 inch sizes have 2½ inch (57) shaft diameters in stuffing box/seal chamber with sleeve. Shaft sleeve O.D. is 2½ inches (70) for packing and 2½ inches (64) for mechanical seals. Seal chamber bore is 4½ inches (112). Stuffing box bore is 3½ inches (89). **17 inch sizes power limit per 100 RPM is 25 HP (19kW).
X-Series Power Ends
Lubrication Flexibility

Goulds X-Series Power Ends are designed for any lubrication system of user preference. Choice of flood oil, oil mist, grease lubrication. ANSI PLUS™ sealed power end with magnetic oil seals available as an option. Pre-drilling at factory allows easy field conversion (flood oil to oil mist back to flood oil lubrication) without modifying parts. Flexible design accommodates oil mist configurations to meet users practices.

ANSI PLUS™ SEALED POWER END

MAGNETIC OIL SEALS

MTX POWER END WITH OIL MIST

LTX Power End
For High Load Applications

Although Goulds X-Series Power Ends are designed for tough conditions, some applications push a power end beyond ANSI design limits. Three examples are: 1) a pump is operated at reduced flows, 2) pumping high specific-gravity liquids, 3) overhung belt drive applications. These cause excessive loads which result in increased shaft deflection. This leads to premature bearing and seal failure.

Goulds ANSI PLUS™ LTX Power End is a practical solution. An oversized shaft and bearing assembly significantly expands the limits for long, trouble-free bearing and seal life.

OVERSIZED SHAFT
Minimizes shaft deflection, extends seal life. BHP limit extended to 200 HP (149 kW).

DUPLEX THRUST BEARINGS
Ideally sized for high-load applications. Standard on LTX.

FLINGER/CHANNEL OIL LUBRICATION SYSTEM
Directs oil to thrust bearings for efficient cooling, improved lubrication.
Goulds X-Series Power Ends

Designed for Reliability, Extended Pump Life


X-Series power ends are interchangeable with 7 different Goulds models: 3196 (CHEM-1A), LF 3196 (CHEM-1B), CV 3196 (CHEM-1C), 3796 (CHEM-1D), 3996 (CHEM-1E), NM 3196 (CHEM-2A) and 3198 (CHEM-2B).

CARBON-FILLED TEFLON® LABYRINTH OIL SEALS
Prevent contamination of lubricant, the primary cause of premature bearing failure.

EXTRA LARGE OIL SUMP
Large oil capacity provides optimum heat transfer for cooler running bearings.

SHAFT/BEARINGS ASSEMBLY

LARGE OIL SIGHT GLASS
Allows for viewing condition and level of oil—critical for bearing life. Frame pre-drilled for optional bottle oiler.

RIGID FRAME FOOT
Reduces effect of pipe loads on shaft alignment. Pump/driver alignment is better maintained for extended bearing and seal life.

CONDITION MONITORING SITES
Allow easy and consistent monitoring of temperature and vibration for preventive maintenance. Optional installation of sensors.

C-FACE ADAPTER
X-Series Power Ends accommodate optional C-Face motor adapter—simplifies pump/motor alignment.

FRAME ADAPTER
Ductile iron standard for safety and strength.

*E.I. DuPont reg. trademark
### Parts List and Materials of Construction

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Part Name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy B &amp; C Titanium</td>
</tr>
<tr>
<td>100</td>
<td>Casing</td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>101</td>
<td>Impeller</td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>105</td>
<td>Lantern Ring</td>
<td>Glass-Filled Teflon*</td>
</tr>
<tr>
<td>106</td>
<td>Stuffing Box Packing</td>
<td>Teflon* Impregnated Fibers</td>
</tr>
<tr>
<td>108</td>
<td>Frame Adapter</td>
<td>Ductile Iron</td>
</tr>
<tr>
<td>112</td>
<td>Thrust Bearing</td>
<td>Double Row Angular Contact**</td>
</tr>
<tr>
<td>122</td>
<td>Shaft—Less Sleeve (Optional)</td>
<td>SAE4140 316SS Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>122</td>
<td>Shaft—With Sleeve</td>
<td>SAE4140 316SS</td>
</tr>
<tr>
<td>125</td>
<td>Shaft Sleeve</td>
<td>316SS Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>136</td>
<td>Bearing Locknut and Lockwasher</td>
<td>Steel</td>
</tr>
<tr>
<td>168</td>
<td>Radial Bearing</td>
<td>Single Row Deep Groove</td>
</tr>
<tr>
<td>184</td>
<td>Stuffing Box Cover (Packed Box)</td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>184M</td>
<td>Seal Chamber (Mechanical Seal)</td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>228</td>
<td>Bearing Frame</td>
<td>Cast Iron (Ductile Iron for STX Group)</td>
</tr>
<tr>
<td>250</td>
<td>Gland</td>
<td>316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>262</td>
<td>Repeller/Sleeve (Dynamic Seal Option)</td>
<td>CD4MCu Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>264</td>
<td>Gasket, Cover to Backplate (Dynamic Seal)</td>
<td>Teflon*</td>
</tr>
<tr>
<td>265A</td>
<td>Stud/Nut, Cover to Adapter</td>
<td>304SS</td>
</tr>
<tr>
<td>319</td>
<td>Oil Sight Glass</td>
<td>Glass/Steel</td>
</tr>
<tr>
<td>332A</td>
<td>Labyrinth Oil Seal (Outboard)</td>
<td>Carbon-Filled Teflon* with Viton O-ring</td>
</tr>
<tr>
<td>333A</td>
<td>Labyrinth Oil Seal (Inboard)</td>
<td>Carbon-Filled Teflon* with Viton O-ring</td>
</tr>
<tr>
<td>351</td>
<td>Casing Gasket</td>
<td>Aramid Fiber with EPDM Rubber</td>
</tr>
<tr>
<td>358A</td>
<td>Casing Drain Plug (Optional)</td>
<td>Steel 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>360</td>
<td>Gasket, Frame-to-Adapter</td>
<td>Manila Paper</td>
</tr>
<tr>
<td>360A</td>
<td>Gasket, Bearing End Cover</td>
<td>Vellumoid</td>
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<tr>
<td>370</td>
<td>Cap Screw, Adapter-to-Casing</td>
<td>Steel 304SS</td>
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<tr>
<td>418</td>
<td>Jacking Bolt</td>
<td>Steel 304SS</td>
</tr>
<tr>
<td>444</td>
<td>Backplate (Dynamic Seal Option)</td>
<td>Ductile Iron 316SS CD4MCu Alloy 20 Monel Nickel Hastelloy Titanium</td>
</tr>
<tr>
<td>496B</td>
<td>Dowel Pin</td>
<td>Steel</td>
</tr>
<tr>
<td>496</td>
<td>O-ring, Bearing Housing</td>
<td>Buna Rubber</td>
</tr>
<tr>
<td>496A</td>
<td>O-ring, Impeller</td>
<td>Glass-Filled Teflon*</td>
</tr>
</tbody>
</table>

*E.I. DuPont reg. trademark  
**LTX Power End features Duplex Angular Contact

### Sectional View

**Model 3196 STX**

Illustrated:
- BigBore™ Seal Chamber
- Flood Oil Lubrication

![Diagram of Model 3196 STX with parts listed]
Model 3196 MTX
Illustrated:
- BigBore™ Seal Chamber
- Oil Mist Lubrication

Model 3196 XLT-X
Illustrated:
- BigBore™ Seal Chamber
- Grease Lubrication
Stocked Options

Goulds offers a variety of options to meet users’ specific plant and process requirements. All are stocked for minimum delivery time.

High and Low Temperature Capability

For high and low temperature applications or where pumpage temperature must be controlled, these options are readily available.

CONTROL HEAT JACKET
Economical clamp-on jacket provides practical method of heating or cooling the casing. Excellent heat transfer characteristics. Easy to install or remove for pump servicing.

JACKETED STUFFING BOX OR SEAL CHAMBER
Maintains proper temperature control of sealing environment. Ideal for maintaining temperature for services such as molten sulphur and polymerizing liquids.

FINNED COOLER
Directly cools oil for lower bearing temperature. Requires minimum cooling water. Corrosion resistant construction. Recommended for temperatures over 350°F (177°C).

JACKETED CASING
Cast-in jacket for heating or cooling pumpage.

Safety Features

Goulds recognizes users’ concern for safe pump operation and offers options to meet plant safety requirements.

ANSI COUPLING GUARD
Meets all requirements of ANSI B15.1 specifications.

CLASS 150 & 300 RAISED FACE FLANGES
Serrated raised face flanges for positive sealing against leakage.

SHAFT GUARD
When a guard around all rotating shaft parts is preferred.

HIGH TEMPERATURE OPTION
[For operation to 700°F (371°C)]
* Jacketed Stuffing Box
* Finned Cooler
* 316 Shaft
* Graphite Impeller O-ring
* Graphite Casing Gasket
Special Surface Preparations

Although Goulds cast parts provide exceptionally smooth finish for superior hydraulic performance, many users require special surface finishes including:

- Passivation
- Electropolishing
- Hard Metal Coatings
- Surface Finish Less Than SIS Grade 2
- Fusion Bonded, Epoxy Coated Power End
- Special Paint Systems

Seal Flush Plans

To control emission levels and meet seal installation requirements, all ANSI B73.1 seal flush and cooling plans are available. Goulds can also provide other special arrangements of user preference.

CPI PLAN 7311
By-pass flush lubricates single seal faces.

CPI PLAN 7353
Pressurized circulation lubricates double seal faces.

Baseplate Options

Inadequate pump mounting can lead to a host of maintenance problems. If not rigid, a baseplate can distort, causing pump/motor misalignment leading to coupling, shaft, bearing and mechanical seal failures.

For severe environments, a baseplate must be corrosion resistant or it will have to be replaced periodically. A baseplate must also be able to withstand forces and moments of plant piping systems.

Goulds offers a complete range of mounting systems to meet plant requirements, and to make maintenance easier.

BASEPLATE SELECTION GUIDE

<table>
<thead>
<tr>
<th>PLANT REQUIREMENTS</th>
<th>TYPE 1 Camber Top Cast Iron</th>
<th>TYPE 2 PERMABASE™ FRP Baseplate</th>
<th>TYPE 3 Fabricated Steel</th>
<th>TYPE 4 Enhanced Feature Fabricated Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosion Resistance (mild/moderate)</td>
<td></td>
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<tr>
<td>Corrosion Resistance (severe)</td>
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<tr>
<td>Machined Pump &amp; Motor Pads</td>
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<tr>
<td>Circular Grout Holes (4 in. min.)</td>
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<td>Vent Holes (1 in. min.)</td>
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<td>Vent Holes (1/2 in. min.)</td>
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<tr>
<td>Non-Overhang</td>
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<tr>
<td>Full Drain Rim</td>
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<tr>
<td>Built-in Drain Pan (under pump)</td>
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<tr>
<td>Drain Pan Under Pump</td>
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<tr>
<td>Baseplate Leveling Screws</td>
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<tr>
<td>Motor Alignment Adjusters</td>
<td></td>
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<tr>
<td>Lifting Eyes</td>
<td></td>
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<tr>
<td>Continuous Welding Used</td>
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<tr>
<td>Flexibly Mounted</td>
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<tr>
<td>Spring-Loaded*</td>
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<tr>
<td>Available in 304 and 316 SS</td>
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<tr>
<td>ANSI B73.1-1991 Conformance</td>
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<tr>
<td>API-610 Features</td>
<td></td>
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</tbody>
</table>

*Engineered option—requires special baseplate
On tough pumping services, especially corrosives and slurries, mechanical seals require outside flush and constant, costly attention. Even then, seal failures are common, resulting in downtime.

Goulds offers the ANSI PLUS™ Dynamic Seal which, simply by fitting a repeller between the stuffing box and impeller, eliminates the need for a mechanical seal.

Benefits of Goulds Dynamic Seal:
- External seal water not required
- Elimination of pumpage contamination and product dilution
- Reduces utility cost
- No need to treat seal water
- Eliminates problems associated with piping from a remote source

At start-up, the repeller functions like an impeller, and pumps liquid and solids from the stuffing box. When pump is shut down, packing (illustrated) or other type of secondary seal prevents pumpage from leaking.

Besides being available as a complete unit, any Goulds 3196 can be easily field-converted to Dynamic Seal. Retrofit kits are readily available.
### Dimensions Model 3196

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

![Diagram of a pump with dimensions](image)

#### Dimensions

<table>
<thead>
<tr>
<th>Group</th>
<th>Pump Size</th>
<th>ANSI Designation</th>
<th>Discharge Size</th>
<th>Suction Size</th>
<th>X</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>SP</th>
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50 Hz Performance Curves Model 3196

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<td>CENTRIFUGAL PUMP CHARACTERISTICS RPM</td>
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</table>

**STX**

1 x 1½-6 AA

1½ x 3-6 AB

2 x 3-6

1 x 1½-8 AA

CAPACITY

0 4 8 12 16 20 24 28 32 m³/h

1.8m

300 GPM

45 GPM

120 GPM

110 GPM

90 GPM

50 Hz Performance Curves Model 3196

CHEM-1A
50 Hz Performance Curves  Model 3196

2900 RPM  CDS 1591-3

MTX  3 x 4-8G  A70

2900 RPM  CDS 5018-1

MTX  1 x 2-10  A05

2900 RPM  CDS 5022-1

MTX  1½ x 3-10  A50

2900 RPM  CDS 5026-1

MTX  2 x 3-10  A60

1450 RPM  CDS 2321-4

1450 RPM  CDS 5019-1

1450 RPM  CDS 5023-1

1450 RPM  CDS 5027-1
50 Hz Performance Curves  Model 3196

1470 RPM  CDS 4365-2

960 RPM  CDS 4367-2

X-17  8 x 10-17
60 Hz Performance Curves  Model 3196

MTX 3 x 4-8G A70

MTX 1 x 2-10 A05

MTX 1½ x 3-10 A50

MTX 2 x 3-10 A60

Imp. Dwg. 100-596 / 100-595

Imp. Dwg. 100-593

Imp. Dwg. 100-166 / 100-165

Imp. Dwg. B10009

Model: 3196

FOR ALLOY CONSTRUCTION

Eye Area: 6.5 in²
Pattern 54017
Imp. Dwg. 100-593
Size: 1.5X3-10
Pattern 56381
Imp. Dwg. B10009
Model: 3196

FOR ALLOY CONSTRUCTION

Eye Area 11.03 in²
Pattern 53816 / 53815
Imp. Dwg. 100-166 / 100-165

Eye Area 7.7 in²
Pattern 54020 / 54019
Imp. Dwg. 100-596 / 100-595
Model: 3196MT

Eye Area 4.9 in²
Pattern 56381
Imp. Dwg. B10009
Size: 1X2-10
Model: 3196MT

Eye Area 11.03 in²
Pattern 53816 / 53815
Imp. Dwg. 100-166 / 100-165
Model: 3196MT

Eye Area 7.7 in²
Pattern 54020 / 54019
Imp. Dwg. 100-596 / 100-595
Model: 3196MT
60 Hz Performance Curves  Model 3196

MTX 3 x 4-10 A70

MTX 3 x 4-10H A40

MTX 4 x 6-10G A80

MTX 4 x 6-10H A80
60 Hz Performance Curves Model 3196

MTX/LTX 1½ x 3-13 A20

MTX/LTX 2 x 3-13 A30

MTX/LTX 3 x 4-13 A40

MTX 4 x 6-13 A80

CENTRIFUGAL PUMP CHARACTERISTICS CDS 3830-3RPM 3570 RPM CDS 3830-3

CENTRIFUGAL PUMP CHARACTERISTICS CDS 2335-3RPM 1770 RPM CDS 2335-3

CENTRIFUGAL PUMP CHARACTERISTICS CDS:4996-1RPM 1750 RPM CDS 4996-1

CENTRIFUGAL PUMP CHARACTERISTICS CDS 1784-4RPM 1150 RPM CDS 1784-4

Eye Area: 7.66 in²
Pattern 56693 /56849
Imp. Dwg. B10541/B10542
Size: 3x4-13
Model: 3196

Eye Area: 4.9 in²
Pattern 68720
Imp. Dwg. 100-537
Model: 3196

FOR ALLOY CONSTRUCTION
60 Hz Performance Curves Model 3196

XLT-X
8 x 10-15G
A120

X-17
8 x 10-16H
A120

X-17
4 x 6-17

X-17
6 x 8-17

CHEM-1A
60 Hz Performance Curves Model 3196

Centrifugal Pump Characteristics

Model: 3196XLT
Size: 8X10-17
Imp. Dwg. D04568A
Pattern 68028 / 68031
Eye Area: 70.9 in²

CAPACITY

16.375”
15.0625”
14.0625”
13”

83
83
80
80
75
75
70

12’
15’
17’
20’
25’
35’

1780 RPM
CDS 4364-2

X-17
8 x 10-17

1180 RPM
CDS 4366-2