Goulds 3700LFI
API OH2 Overhung, Single Stage, Radially Split
High-Temperature and Pressure Process Pumps That Meet or Exceed ISO 13709 and API 610 11th Edition
Safety, reliability and versatility are the key words for our end-suction, centerline-mounted, overhung (OH-2) API 610 process pump.

Safety and Reliability
We provide engineered solutions with true conformance to the latest API specifications including the stringent emissions containment per API 682. The result is a safe and rugged overhung API process pump designed for a 20-year life.

Serviceability
- Capacity to 390 GPM (88 m³/h)
- Total dynamic head to 1650 feet (503 m)
- Temperature to 800° F (425° C)
- Pressure to 1100 PSIG (75 bar)

Materials: Available in a wide range of materials including all API 610 constructions and custom application needs.

Engineered Packaging with a wide range of drivers, seals, piping, nozzle configurations, flanges, baseplates and QC testing.

Applications
Column reflux, hot oil, stabilizer overhead, column bottoms, reboiler, stripper overhead, column charge, reactor feed, heat transfer, injection, tower bottoms, slop gas oil, fuel blending, heavy gas oil, scrubber circulation, offsite hydrocarbon transfer
3700LFI Design for Low-Flow Services

Not All Pumps are Designed for Low Flows
Many users throttle pumps to attain low flow rates, which creates bearing and seal issues. The traditional enclosed impeller passageways would be too small to properly manufacture at these low flow rates.

3700LFI Low-Flow Solution - Fully API compliant
The 3700 LF semi-open radial vane Barske type impeller eliminates these enclosed impeller limitations. The unique circular volute casing eliminates diffusers, thus reducing the pump size, footprint and lifetime costs.

Improved Bearing Environment

- Bearing frame fins provide optimum heat dissipation.
- Condition-monitoring sites allow easy and consistent monitoring of temperature and vibration. Provision for instrumentation mounting per API 670 available.
- Extra-large oil sump means cooler-running bearings.
- Proven channeled oil lubrication system ensures flow-through of cooled oil to thrust and radial bearings.
- Standard dual oil rings, positively located, provide oil flow to channeled oil lubrication system and prevent oil foaming.

Standard Features for Optimum Reliability

- Proven API 610 Nozzle-Load Design
  Rugged casing and baseplate/pedestal support system provides flange-loading capability exceeding API 610 / ISO 13709 requirements without the use of a bearing frame support.

- Full Flange Rating Pressure Capability
  All pumps designed to operate at two pole running speeds have casings designed for the full pressure capability of a 300 RF flange.

- Spiral-Wound Casing Gasket
  Casing to cover joint sealed with a spiral-wound, controlled-compression gasket required by API 610. Provides positive sealing up to the maximum design pressure and temperature.
3700 LFI Designed Specifically for Trouble-Free Operation At Low Flows

Goulds 3700 LFI concentric (circular volute) casing and open radial vane impeller are designed to eliminate hydraulic and mechanical problems at throttled low flows.

Reduced Radial Loads for Optimum Reliability

Radial loads are reduced by as much as 85% compared to end suction expanding volute pumps at low flows. Bearing, mechanical seal and overall pump life are optimized.

The 3700LFI is dimensionally interchangeable with the 3700LF. For Installations where the existing 3700LF requires a rerate or casing upgrade, a simple replacement casing with insert and metal spiral wound gasket is all that is required.
Optional Features for Application Flexibility

Goulds offers a range of options to meet specific plant and process requirements.

High-Temperature Capability
For high-temperature applications, these options are available:

Heat Flinger
Heat flinger dissipates shaft-conducted heat and circulates air to reduce heat buildup.

Air Cooling
High-capacity fan and shroud mounted on power end effectively reduce bearing frame temperature for cooler-running bearings without using cooling water.

Water Cooling
Finned cooler for maintaining oil/bearing temperature. Corrosion-resistant material.

Lubrication Flexibility
Oil Mist Lubrication System
Connections for pure or purge oil mist lubrication can be provided for immediate use or future requirements.

Sealed Power End
Designed with magnetic end face seals and expansion chamber to prevent contaminants from entering the power end.

Lubricant Sight Glass and Sampling Bottle
For visual inspection and sampling of oil.
TANGENTIAL DISCHARGE DESIGN
Maximizes hydraulic efficiency.

CONFINED CONTROLLED-COMPRESSION GASKETS
Spiral-wound gaskets assures positive sealing with no chance of misalignment for casing and insert.

GOULDS LOW FLOW IMPELLER
Multiple open radial vanes reduce pulsations, vibration and vane stress. Full shroud for superior vane strength when operating at extreme low flows. Balance holes reduce axial thrust, minimize stuffing box/seal chamber pressure for longer bearing and seal life. They do not utilize impeller or casing wear rings.

NOZZLE LOAD CAPABILITY
Casing/baseplate design optimized to exceed toughest API/ISO nozzle load criteria.

CIRCULAR VOLUTE CASING
Reduces radial loads during low flow operation. Mechanical seal and bearings last longer. Fully machined discharge and volute provide maximum efficiency and precise control of hydraulics at low flows.

INTEGRAL CASE FLANGES
Drain (std) & Vent (optional) connection.
**RIGID, HEAVY-DUTY SHAFT**
Minimizes shaft deflection, maximizes bearing and mechanical seal life.

**Bearing Frame**
Piloted and metal-to-metal fits assure runouts and concentricities well within limits specified in API 610 / ISO 13709. Large oil sump capacity. Cast fins enhance cooling.

**LUBRICATION SYSTEM**
Proven, engineered ring-oiled flow-through bearing lubrication optimizes MTBPM.

**BEARINGS**
Duplex 40° angular contact thrust bearings and deep-groove (Conrad) radial bearings sized for minimum three-year bearing life under most severe operating conditions. Exceeds API 610 / ISO 13709 requirements.

**API-682 SEAL CHAMBER**

**INPRO VBXX-D HYBRID LABYRINTH SEALS**
Prevents premature bearing failure caused by lubricant contamination or loss of oil. Made from non sparking metal.

**i-ALERT2® CONDITION MONITOR**
Constantly measures vibration and temperature at the thrust bearing. Colored LED’s indicate general pump health. Provides early warning of improper operation before catastrophic failure occurs.
i-ALERT® Monitoring Solution
Sensor | App | Ai Platform

What it Does:

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

Alarm
Takes high resolution data when an alarm condition occurs and stores it for later analysis.

Trend
Captures data every 1-60 minutes and has up to 170 days of hourly on-board storage.

Analyze
Diagnose machine faults with vibration tools
Fast Fourier Transform (FFT) & Time Wave Form Analysis.

Environment
Rated for any industrial environment. water & dust resistant.
Intrinsically Safe with a 3-year battery life (use dependent).
• ATEX Zone 0 AEx ia IIB Ga (Groups C & D)

Wireless
Sync data via Bluetooth Smart enabled smartphones and tablets.

Online Monitoring
Monitor and manage all of your i-ALERT enabled machines in one place - i-ALERT Ai Online Platform. This subscription service requires no software to download or dedicated hardware to run.

How it Works:

1. ACTIVATE
The i-ALERT2 devices are light activated by removing the sticker. The sensor begins wirelessly broadcasting once activated.

2. AUTO CONFIGURATION
The i-ALERT device averages the vibration over 25 hours of run-time and sets the alarm levels to 2 x average (0.1-1.5ips minimum). Temperature alarm default to 80°C (176°F)

OR

2. MANUAL CONFIGURATION
User manually sets the alarm thresholds via the i-ALERT mobile application.

3. Monitor
The i-ALERT2 sensor is configurable to check every 1-5 minutes. If two consecutive readings are above alarm threshold the i-ALERT device will go into alarm.

Dashboard
Simple, intuitive dashboard to track vibration, temperature, run-time & battery life.

Trending
Trend vibration, temperature, & kurtosis to monitor any changes in the equipment operation.

BOM
Load the as built of materials based on the pump serial number.

Spend less time collecting data and more time fixing problems. The i-ALERT mobile app has the ability to scan multiple i-ALERT2 sensors within range to quickly and safely inspect multiple machines.
Parts List and Materials of Construction

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Name</th>
<th>S-6</th>
<th>S-8</th>
<th>C-6</th>
<th>A-8</th>
<th>D-1</th>
<th>D-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Casing</td>
<td>Carbon Steel</td>
<td>12% Chrome</td>
<td>316L SS</td>
<td>Duplex SS</td>
<td>S. Duplex SS</td>
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<tr>
<td>100W</td>
<td>Venturi Insert</td>
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<td>Duplex SS</td>
<td>S. Duplex SS</td>
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<tr>
<td>101</td>
<td>Impeller</td>
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<td>122</td>
<td>Shaft</td>
<td>ANSI 4140*</td>
<td>316L SS</td>
<td>410 SS</td>
<td>316L SS</td>
<td>Duplex SS</td>
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<tr>
<td>125</td>
<td>Throat Bushing</td>
<td>410 SS</td>
<td>316L SS</td>
<td>410 SS</td>
<td>316L SS</td>
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<td>S. Duplex SS</td>
</tr>
<tr>
<td>184</td>
<td>Seal Chamber Cover</td>
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<td>S. Duplex SS</td>
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<tr>
<td>304</td>
<td>Impeller Nut</td>
<td>316 SS</td>
<td>12% Chrome</td>
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<td>Duplex SS</td>
<td>S. Duplex SS</td>
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<tr>
<td>356A,425</td>
<td>Casing Studs / Nuts</td>
<td>ANSI 4140*</td>
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</table>

* 410 SS on S-6 when temperature exceeds 350°F (175°C)
** Not utilized on 3700LF low flow pumps.
PRX-OH2 Back Pull-Out Upgrade

Description
The PRX-OH2 is a back pull-out assembly which provides a complete replacement to your existing equipment while keeping the existing impeller and casing.

The replacement scope consists normally of bearing housing assembly, shaft, seal chamber cover with wear ring, throat bushing, keys and impeller nut. It is available in 4 API seal chamber sizes (#2/4/6/8) and 3 materials classes (S-6/C-6/A-8).

PRX-OH2 Heritage
The PRX-OH2 is developed from the long established Goulds Pumps 3700 model, a centerline-supported, flexibly coupled horizontal overhung (OH) high temperature and pressure process pump designed to meet or exceed latest API 610 edition.

ITT Goulds Pumps has 40+ years of API experience. More than 17,000 OH units are installed worldwide for various applications in the Petroleum, Petrochemical and Natural Gas industries.

Benefits of Upgrading your OH2 Pumps with PRX-OH2
- Increased Reliability
  - Robust design
  - Low shaft flexibility index (L3/D4) increasing stiffness and MTBR
  - Upgrade to latest edition API mechanical seals, reducing emissions
- Minimal Site Disruption & Reduced installation costs
  - Pipework remains in same position/No driver movement in the majority of cases
  - Inventory for building PRX-OH2 held at PRO Shops ensuring quick turnaround for upgrade and minimal downtime
- Reduction in Site Inventory & Lead Time
  - 4 frame sizes available maximizing flexibility and minimizing inventory
A Leader in API Engineered Pump Package Solutions

API Family of Pumps

<table>
<thead>
<tr>
<th>API Type</th>
<th>Goulds Model</th>
<th>Capacity (GPM/MPH)</th>
<th>TDH Feet (Meters)</th>
<th>Temperature (°F/°C)</th>
<th>Pressure (PSG/ag/cm2)</th>
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</thead>
<tbody>
<tr>
<td>OH-2</td>
<td>3700</td>
<td>8500 (1930)</td>
<td>1200 (360)</td>
<td>800 (425)</td>
<td>870 (60)</td>
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<tr>
<td>OH-3</td>
<td>3910</td>
<td>6000 (1360)</td>
<td>750 (230)</td>
<td>650 (340)</td>
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<td>BB-1</td>
<td>3610</td>
<td>56000 (11355)</td>
<td>700 (215)</td>
<td>300 (150)</td>
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<td>BB-2</td>
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<td>7500 (1700)</td>
<td>2500 (760)</td>
<td>850 (455)</td>
<td>1130 (75)</td>
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<td>BB-2</td>
<td>3620</td>
<td>20000 (4540)</td>
<td>1500 (455)</td>
<td>850 (455)</td>
<td>1000 (70)</td>
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<tr>
<td>BB-3</td>
<td>3600</td>
<td>8500 (1930)</td>
<td>9000 (2740)</td>
<td>400 (205)</td>
<td>4000 (275)</td>
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<td>BB-5</td>
<td>720DC3</td>
<td>4000 (910)</td>
<td>9000 (2740)</td>
<td>800 (425)</td>
<td>4000 (275)</td>
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<tr>
<td>VS4</td>
<td>API 3171</td>
<td>3180 (720)</td>
<td>525 (160)</td>
<td>450 (232)</td>
<td>750 (50)</td>
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<td>VS1</td>
<td>VIT</td>
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<td>3500 (1060)</td>
<td>500 (260)</td>
<td>2500 (175)</td>
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<tr>
<td>VS6</td>
<td>VIC</td>
<td>70000 (14760)</td>
<td>3500 (1060)</td>
<td>500 (260)</td>
<td>2500 (175)</td>
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