



Goulds Model 3700 API-610 8th Edition Process Pumps



Goulds Pumps



ITT Industries
Engineered for life

Goolds Model 3700

High Temperature/High Pressure Process Pumps Designed to Meet the Requirements of API-610 8th Edition

- Capacities to 6500 GPM (1475 m³/h)
- Heads to 1150 feet (350 m)
- Temperatures to 800°F (427°C)
- Pressures from full vacuum to 870 PSIG (6 MPa)

Design Features

- **API-610** Full compliance with 8th Edition.
- **Tangential Discharge** Maximum hydraulic efficiency.
- **Finned Bearing Frame** Accommodates high temperatures without need for cooling water.
- **Seal Chamber** Meets dimensional requirements of API-610 and API-682.
- **Bearing and Seal Chamber Cooling** For extremely high temperature services.
- **Rugged Mechanical Design** Extra heavy shaft and bearings.
- **Back Pull-out Construction** Designed for one craft maintenance.
- **Dual Volute Casings** 3-inch discharge and larger.
- **Impeller** Multiple closed impellers for most casing sizes.
- **Centerline Support** High temperature stability.

Services

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



Model 3700

Model 3700 End Suction API-610 Process Pump

- Designed for optimum reliability.
- State-of-the-art mechanical design features.
- 35 casing sizes—choice of impellers with most casings.



Model 3700 on high temperature service at a U.S. gulf coast refinery.



Model 3700 API-610 Process Pumps

Design Features for Wide Range of High Temperature/High Pressure Services

DUAL VOLUTE CASING

Standard on 3-inch discharge and larger. Minimizes radial load and reduces shaft deflection for increased mechanical seal life.

TANGENTIAL DISCHARGE

Design maximizes hydraulic efficiency.

CONFINED CONTROLLED COMPRESSION GASKET

Spiral wound gasket assures positive sealing with no chance of misalignment.

RENEWABLE WEAR RINGS STANDARD ALL SIZES

Positively locked and set screwed. Front and rear rings control seal chamber flows and pressures.

IMPELLER

Multiple closed impellers for most casings to meet specific hydraulic requirements. Balanced to stringent requirements of API-610.

NOZZLE LOAD CAPABILITY

Casing/baseplate design optimized to meet toughest API nozzle load criteria.

FABRICATED BASEPLATE

Enlarged drain connection to prevent buildup of debris. Anchors welded to deck plate assure positive locking to grout. Extra width sizes available to ease maintenance of seal systems.

BONUS INTERCHANGEABILITY

Bearings, shaft, mechanical seal, impeller and wear rings completely interchangeable with Goulds Model 3910 bearing frame in-line process pumps. Entire back pull-out assembly interchangeable with Model 3710.

RIGID, HEAVY DUTY SHAFT

Minimizes shaft deflection, maximizes bearing and mechanical seal life. Sized for API-682 conformance.

LABYRINTH OIL SEALS

Labrynth seal design prevents oil from leaking out and contaminants from intruding. Made from non-sparking metal.

BEARINGS

Duplex 40° angular contact thrust bearings and deep-groove (Conrad) radial bearings sized for minimum three (3) year bearing life under most severe operating conditions. Exceeds API-610 requirements.

HEAVY DUTY BEARING FRAME

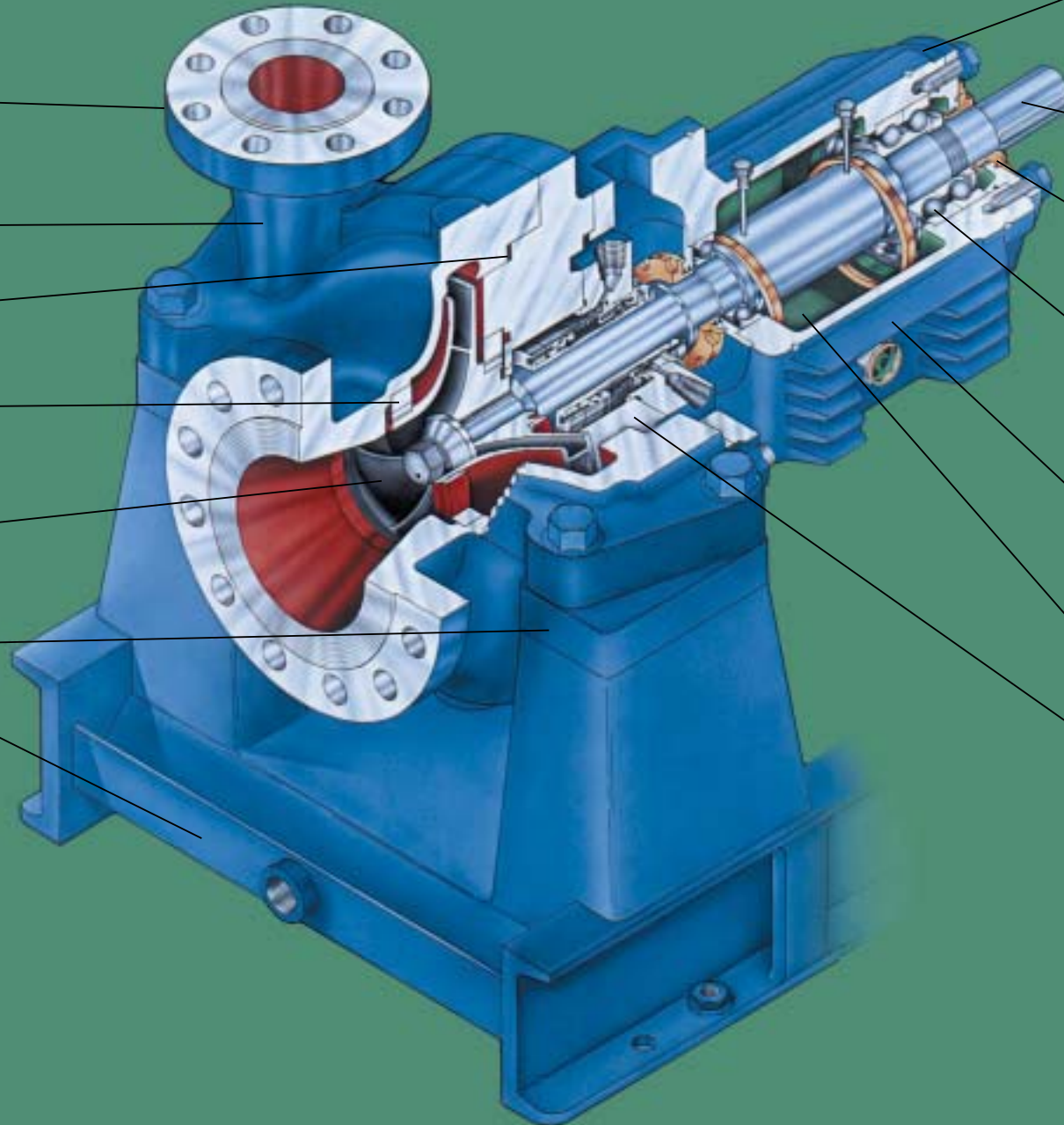
Piloted and metal-to-metal fits assure runouts and concentricities well within limits specified in API-610. Large oil sump capacity. Cast fins enhance cooling.

LUBRICATION SYSTEM

Proven, engineered ring-oiled flow-thru bearing lubrication optimizes MTBPM.

SEAL CHAMBER

Enlarged seal chamber fully conforms to API-610 and API-682 standards. Accepts wide range of cartridge mechanical seals. Renewable throat bushing standard for controlled seal chamber environment.



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 requirements without the use of a bearing frame support.

Full Flange Rating Pressure Capability

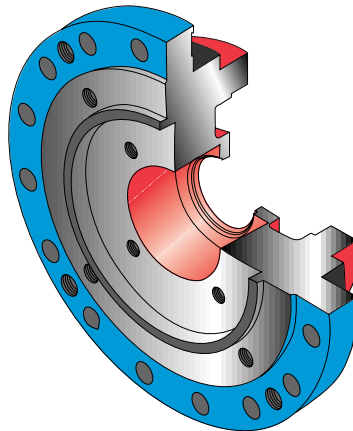
All pumps designed to operate at 2 pole running speeds have casings designed for the full pressure capability of a 300 RF flange.

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.

API-682 Seal Chamber

Designed to provide ideal seal environment for specified sealing arrangements. Full conformance with standardized dimensional requirements of API-682. Accepts full range of cartridge seals.



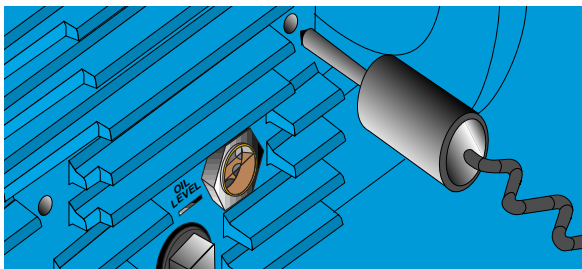
Performance Options

MULTIPLE IMPELLERS

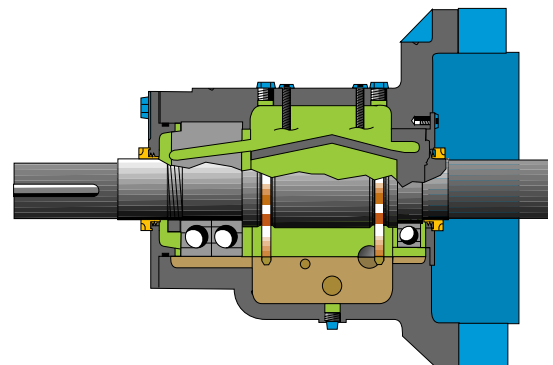
Meet specific user operating requirements. Available for most pump sizes.



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.



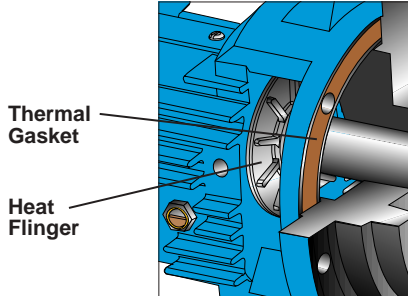
- Extra large oil sump provides cooler running bearings.
- Proven channeled oil lubrication system assures flow-thru of cooled oil to thrust and radial bearings.
- Oil rings, positively located, provide oil flow to channeled oil lubrication system and prevent oil foaming.

Optional Features for Application Flexibility

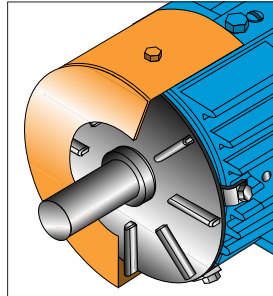
Goolds offers users a range of options to meet specific plant and process requirements.

High Temperature Capability

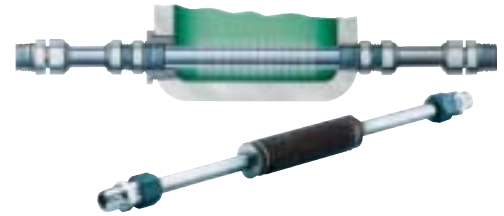
For high temperature applications, these options are available.



HEAT FLINGER AND THERMAL BARRIER
Thermal gasket creates heat barrier between seal chamber and bearing frame. Heat flinger dissipates shaft-conducted heat and circulates air to reduce heat build-up.



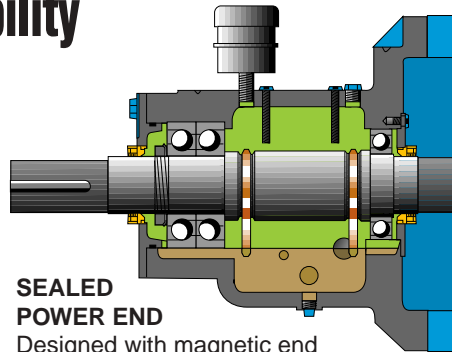
AIR COOLING
High capacity fan and shroud mounted on power end effectively reduce bearing frame temperature for cooler running bearings without using cooling water.



WATER COOLING
Finned cooler for maintaining oil/bearing temperature. Corrosion resistant material.

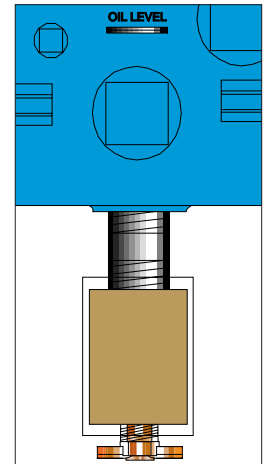
Lubrication Flexibility

OIL MIST LUBRICATION SYSTEM
Connections for pure or purge oil mist lubrication can be provided for immediate use or future requirements.



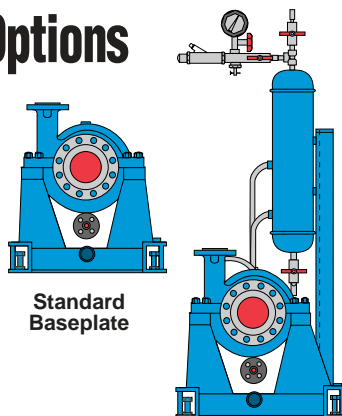
SEALED POWER END
Designed with magnetic end face seals and expansion chamber to prevent contaminants from entering the power end.

LUBRICANT SIGHT GLASS AND SAMPLING BOTTLE
For visual inspection and sampling of oil.

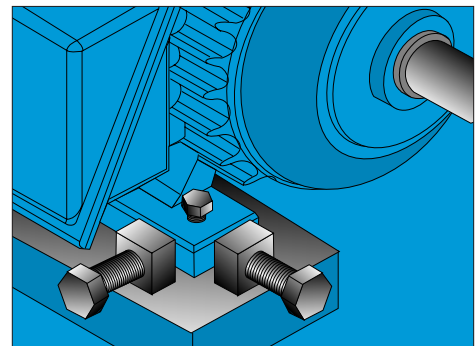


Baseplate Options

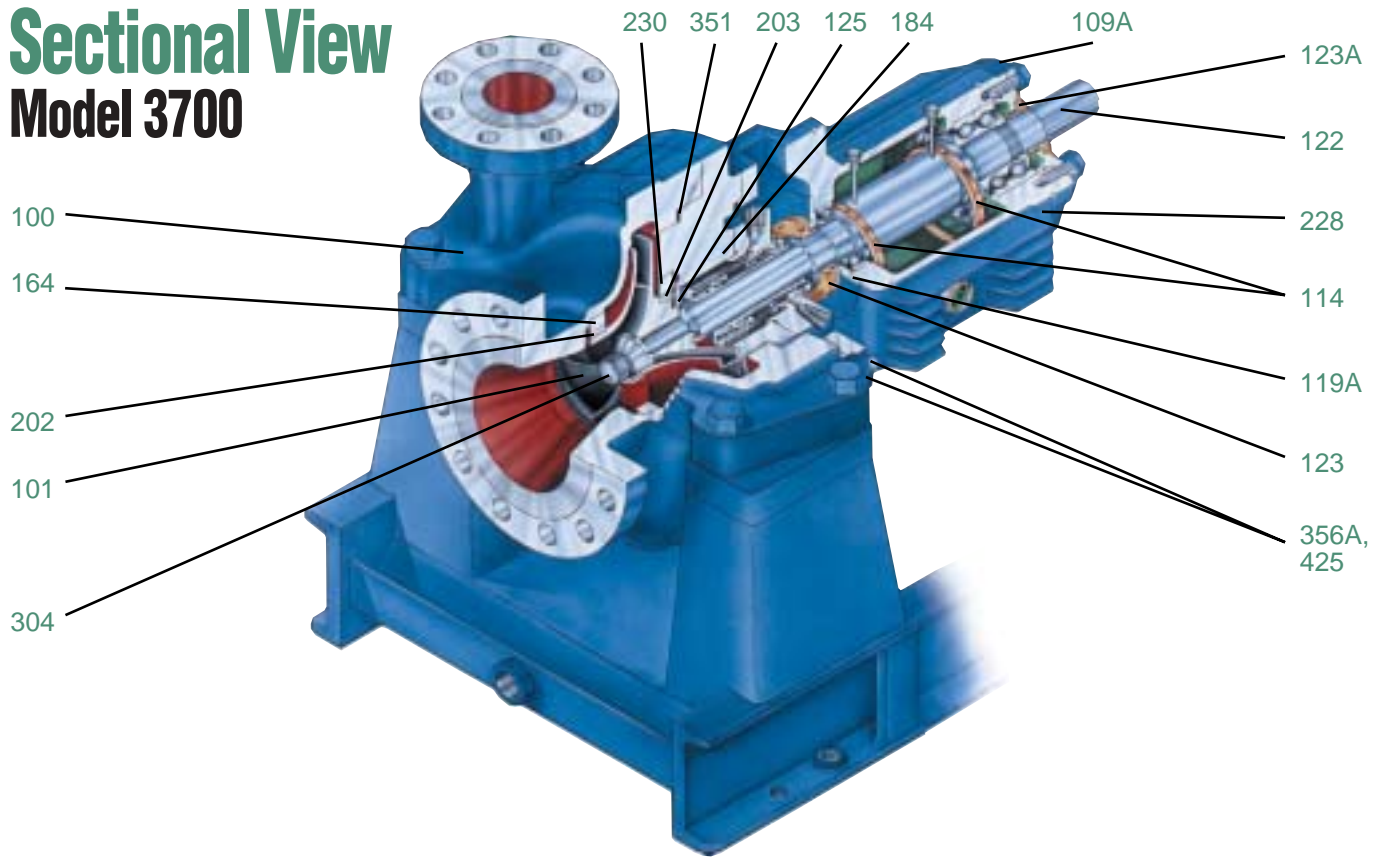
EXTRA WIDE BASEPLATE
Available for seal systems with auxiliary components.



REMOVABLE POSITIONING JACKSCREWS
Standard on larger driver sizes, available for smaller sizes.



Sectional View Model 3700

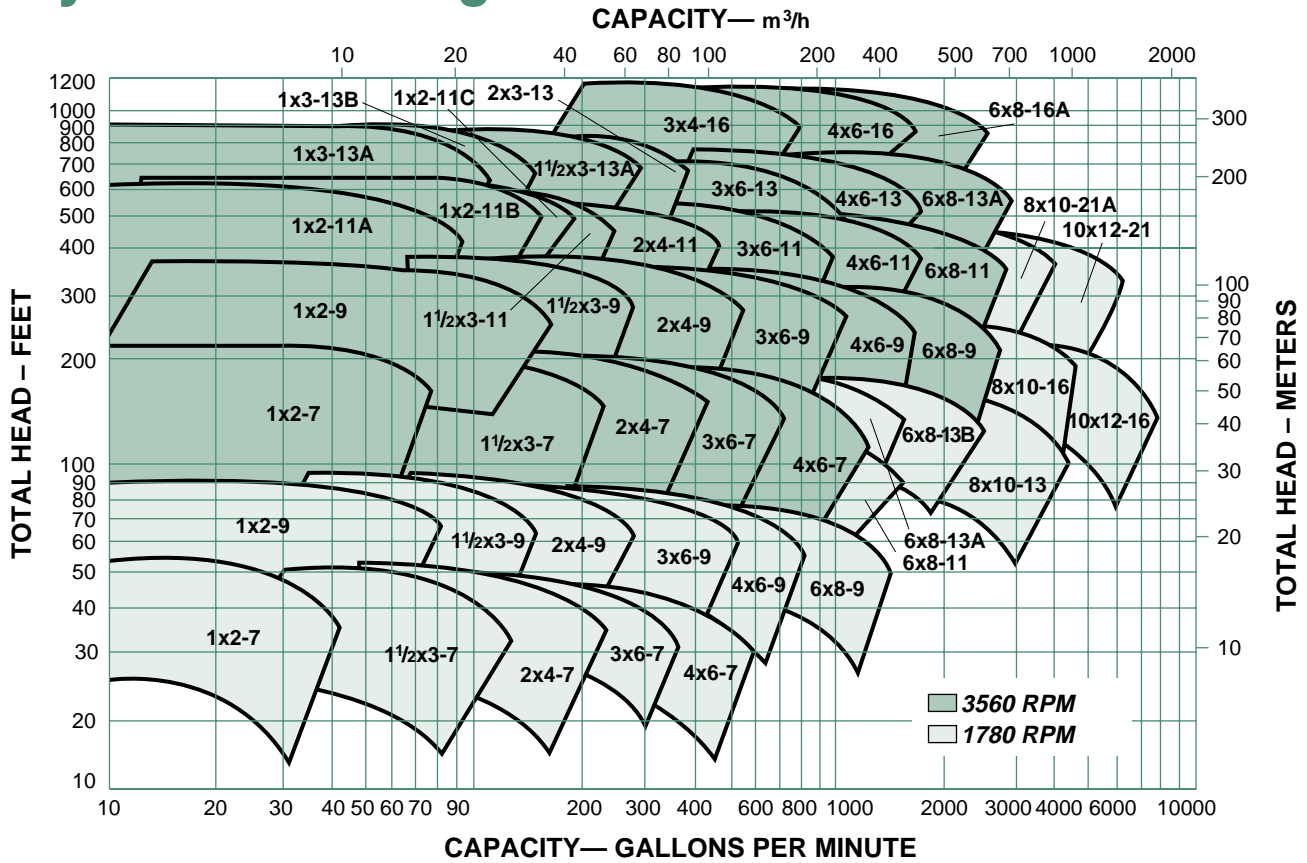


Parts List and Materials of Construction

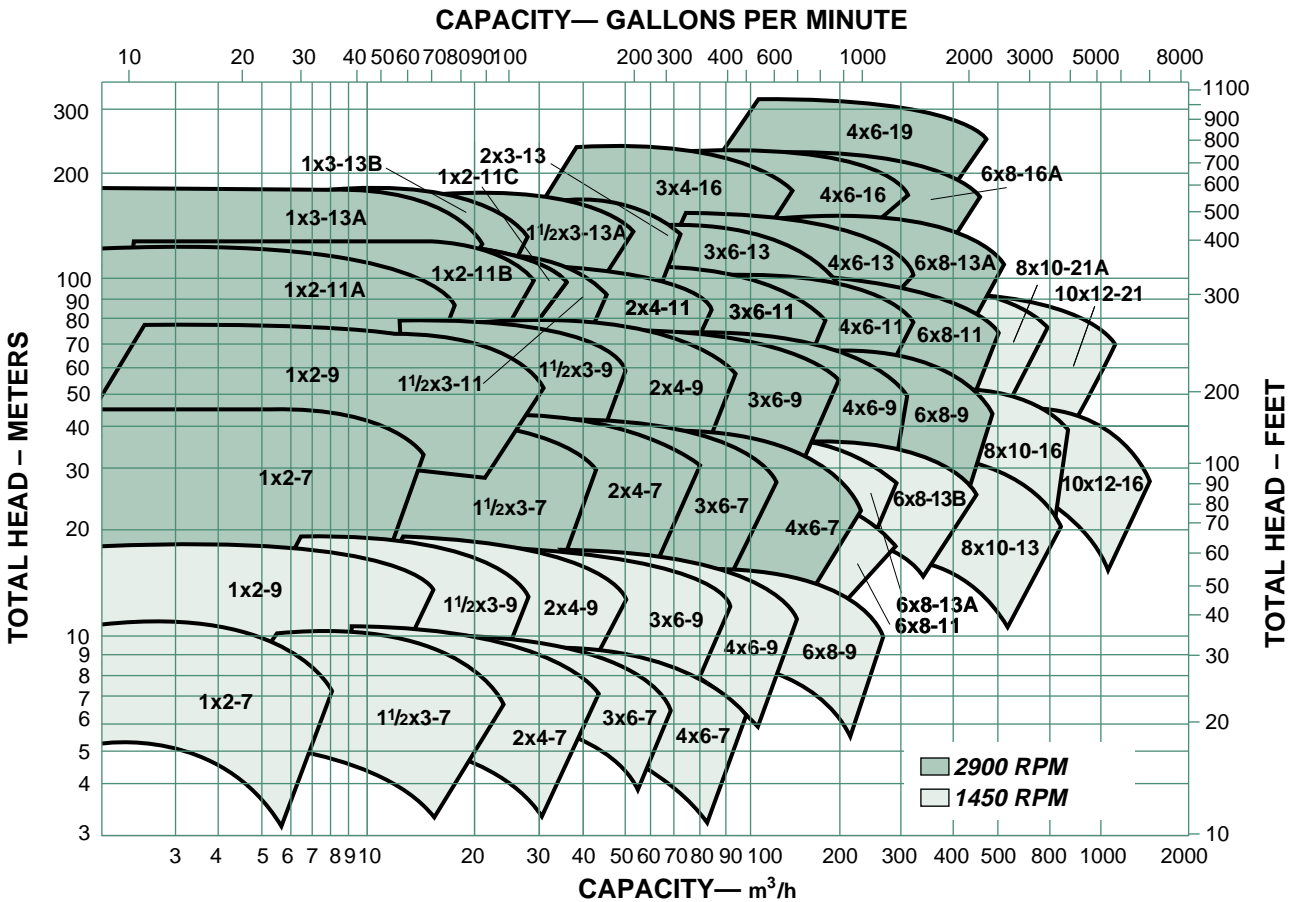
Item Number	Part Name	API-610 Material Classes				
		S-4	S-6	S-8	C-6	A-8
100	Casing	Carbon Steel			12% Chrome	316L SS
101	Impeller	Carbon Steel	12% Chrome	316L SS	12% Chrome	316L SS
109A	Bearing End Cover - Outboard	Carbon Steel				
114	Oil Ring	Bronze				
119A	Bearing End Cover - Inboard	Carbon Steel				
122	Shaft	AISI 4140 *		315L SS	410 SS	316 SS
123	Deflector - Inboard	Bronze				
123A	Deflector - Outboard	Bronze				
125	Throat Bushing	Cast Iron	410 SS	316L SS	410 SS	316L SS
164	Wear Ring - Casing	Cast Iron	12% Chrome	316L SS 12%	Chrome	316L SS
184	Seal Chamber Cover	Carbon Steel			12% Chrome	316L SS
202, 203	Wear Rings - Impeller	Cast Iron	12% Chrome	Nitronic 60	12% Chrome	Nitronic 60
228	Bearing Frame	Carbon Steel				
230	Wear Ring - Seal Chamber Cover	Cast Iron	12% Chrome	316L SS	12% Chrome	316L SS
304	Impeller Nut	Steel	316 SS			
351	Casing Gasket	Spiral Wound 316 SS				
353, 355	Gland Studs and Nuts	AISI 4140				
356A, 425	Casing Studs and Nuts	AISI 4140				

* 410 SS on S-6 when temperature exceeds 350° F (175° C)

Hydraulic Coverage 60 Hz

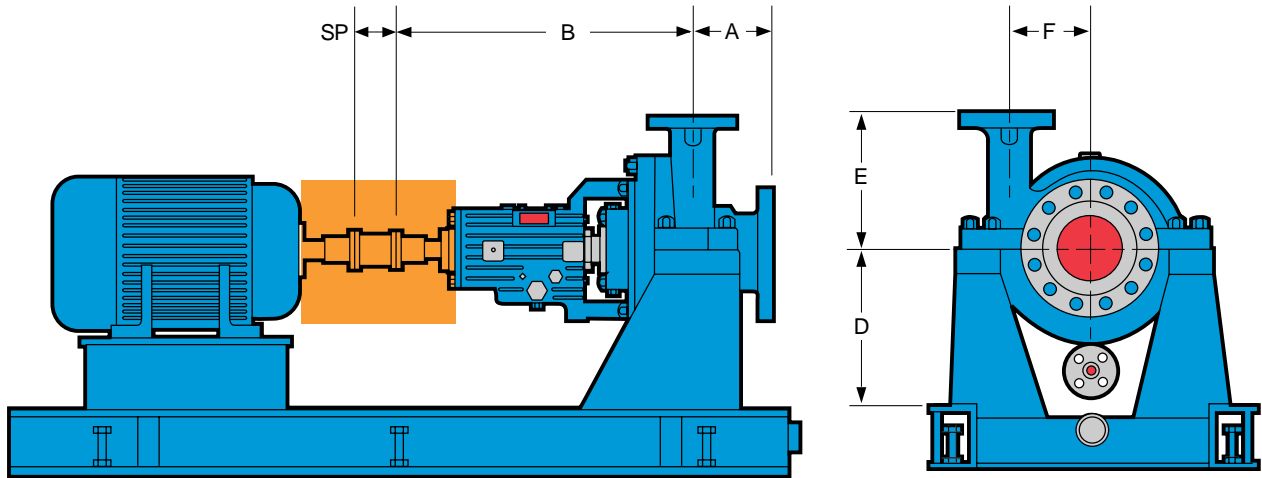


Hydraulic Coverage 50 Hz



Dimensions Model 3700

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



DIMENSIONS								
Group	Pump Size	A	B MAX	D	E	F	SP	Pump Weight lb. (kg)
SA SX	1 x 2-7	6.06 (154)	23.88 (606)	13.00 (330)	10.00 (254)	3.83 (97)	5.00 (127)	282 (128)
	1½ x 3-7	6.69 (170)	24.28 (617)	13.00 (330)	10.00 (254)	4.56 (116)	5.00 (127)	333 (151)
	2 x 4-7	6.69 (170)	24.34 (618)	13.00 (330)	11.00 (279)	5.00 (127)	5.00 (127)	356 (161)
	3 x 6-7	7.00 (178)	24.47 (622)	13.00 (330)	11.25 (286)	5.56 (141)	5.00 (127)	377 (171)
	4 x 6-7	7.16 (182)	24.28 (617)	13.00 (330)	10.50 (267)	5.94 (151)	5.00 (127)	456 (207)
	1 x 2-9	6.97 (177)	23.90 (607)	13.00 (330)	10.00 (254)	5.06 (128)	5.00 (127)	337 (153)
	1½ x 3-9	7.19 (183)	23.94 (608)	13.00 (330)	10.25 (260)	5.47 (139)	5.00 (127)	374 (170)
	2 x 4-9	7.62 (194)	24.00 (610)	13.00 (330)	11.25 (286)	5.84 (148)	5.00 (127)	416 (189)
	3 x 6-9	8.06 (205)	24.06 (611)	13.00 (330)	11.50 (292)	6.83 (174)	5.00 (127)	451 (205)
	4 x 6-9	7.67 (195)	24.28 (617)	14.25 (362)	10.75 (273)	7.31 (186)	5.00 (127)	483 (219)
MA MX	1 x 2-11	6.88 (175)	24.00 (610)	13.00 (330)	11.00 (279)	5.69 (145)	5.00 (127)	399 (181)
	1½ x 3-11	7.25 (184)	23.90 (607)	13.00 (330)	11.00 (279)	6.09 (155)	5.00 (127)	410 (186)
	6 x 8-9	8.75 (222)	27.31 (694)	15.50 (394)	13.00 (330)	8.12 (206)	5.00 (127)	605 (274)
	2 x 4-11	7.56 (192)	26.88 (683)	14.25 (362)	12.50 (318)	6.56 (167)	5.00 (127)	513 (233)
	3 x 6-11	7.45 (189)	26.94 (684)	14.25 (362)	12.75 (324)	7.59 (193)	5.00 (127)	568 (258)
	4 x 6-11	8.25 (210)	27.03 (687)	15.50 (394)	12.00 (305)	8.22 (209)	5.00 (127)	614 (279)
	6 x 8-11	8.50 (216)	27.31 (694)	15.50 (394)	13.00 (330)	8.81 (224)	5.00 (127)	657 (298)
	1 x 3-13	8.21 (208)	27.06 (687)	14.25 (362)	12.25 (311)	6.75 (162)	5.00 (127)	537 (244)
	1½ x 3-13	8.53 (217)	27.12 (689)	14.25 (362)	12.25 (311)	6.75 (162)	5.00 (127)	550 (249)
	2 x 3-13	8.72 (222)	27.06 (687)	14.25 (362)	13.25 (337)	7.25 (184)	5.00 (127)	558 (253)
LA LX	3 x 6-13	8.88 (226)	27.06 (627)	15.50 (394)	13.50 (343)	8.56 (217)	5.00 (127)	624 (283)
	4 x 6-13	8.72 (222)	27.19 (691)	15.50 (394)	13.00 (330)	8.94 (227)	5.00 (127)	696 (316)
	6 x 8-13B	9.25 (235)	27.53 (699)	18.00 (457)	14.00 (356)	10.38 (264)	7.00 (178)	813 (369)
	8 x 10-13	10.25 (260)	27.88 (708)	20.00 (508)	13.50 (343)	11.16 (284)	7.00 (178)	1023 (464)
	6 x 8-13A	9.25 (235)	30.75 (781)	18.00 (457)	14.25 (362)	9.81 (249)	7.00 (178)	826 (375)
	3 x 4-16	8.88 (226)	30.81 (783)	18.00 (457)	15.25 (387)	9.00 (227)	5.00 (127)	784 (356)
LX XLX	4 x 6-16	9.58 (243)	30.81 (783)	18.00 (457)	14.50 (368)	9.97 (253)	5.00 (127)	873 (396)
	6 x 8-16A	11.50 (292)	30.94 (786)	18.00 (457)	16.00 (406)	10.81 (275)	7.00 (178)	970 (440)
	6 x 8-16B	11.50 (292)	31.03 (788)	20.00 (508)	16.00 (406)	11.69 (297)	7.00 (178)	1050 (476)
	8 x 10-16	11.75 (298)	31.34 (796)	20.00 (508)	17.00 (432)	12.50 (318)	7.00 (178)	1125 (510)
	10 x 12-16	12.00 (305)	31.78 (807)	23.00 (584)	18.25 (464)	13.66 (347)	7.00 (178)	1420 (644)
	4 x 6-19	11.31 (287)	31.00 (787)	20.00 (508)	16.00 (406)	11.75 (298)	5.00 (127)	1250 (587)
LX XLX	8 x 10-21	11.75 (298)	33.69 (856)	23.00 (584)	21.50 (546)	13.00 (330)	7.00 (178)	1543 (700)
	8 x 10-21A	10.44 (265)	33.69 (856)	23.00 (584)	17.75 (451)	14.50 (368)	7.00 (178)	1543 (700)
	10 x 12-21	13.50 (343)	33.84 (860)	23.00 (584)	21.75 (552)	15.16 (385)	7.00 (178)	1655 (755)

Off-the-shelf Availability on all Model 3700 Pumps

The QWIKSHIP program features industry leading, short lead time delivery of Goulds Model 3700 API process pumps. The Goulds Model 3700 API-610 8th edition process pump is offered in 29 sizes with deliveries of less than 12 weeks!



Upgrade Your Pre-8th Edition API Process Pump



Need an economical alternative to high maintenance costs? Goulds PRO Service Centers are experienced with reconditioning all types of pumps and rotating equipment, restoring equipment to original specification.

Users continually utilize PRO Service Centers for economical repair versus replacement, decreased downtime, reduced inventory of replacement parts and the advantage of updated engineering technology.

Benefits:

Years of experience allow PRO Service Centers to easily handle any rotating equipment including pumps, drivers, gear boxes, centrifuges, blowers, fans and compressors.

Profit from these exclusive quality services:

- Quality rebuilds/repairs insure maximum reliability from your rotating equipment.
- One-year warranty on all rebuilds/repairs.
- Upgrade old designs to latest technology to maximize reliability.

Your local PRO Service Center offers solutions to lowering **Total Cost of Ownership** of your pumping systems. This can be achieved by upgrading your older style API process pumps to today's high performance standard of API 8th edition.

The question of whether to Replace or Upgrade your existing equipment is a challenge faced by most end users today. When casing, piping, and foundation are in good shape, upgrading your existing pump to comply with 8th edition performance usually is economically attractive compared to new pump installation. By exploring all options a better decision can be made.



Upgrades may involve hydraulic modifications and/or power end conversions. PRO Service Centers are experienced with all pump manufacturers.

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