

 **GOULDS PUMPS**

Goulds 3171 / CV 3171

Vertical Sump and Process Pumps



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ITT

ENGINEERED FOR LIFE

Goulds 3171

Goulds Model 3171

Vertical Sump and Process Pumps Designed for the Total Range of Industry Services

- Capacities to 3,180 GPM (722 m³/h)
- Heads to 344 feet (105 m)
- Temperatures to 450° F (232° C)
- Pit Depths to 20 feet (6 m)

Design Features

- Self-Priming
- Rugged Double Row Thrust Bearing
- Heavy Duty One-Piece Shaft
- External Impeller Adjustment
- Available in a Wide Range of Alloys
- Open Impeller Design
- Vapor Proof Option: Choice of packing, or mechanical seal for containing sump vapors

Services

- Industrial Process
- Industrial Sump Wastes
- Molten Sulfur
- Tank Unloading
- Corrosive and Non-Corrosive Liquids



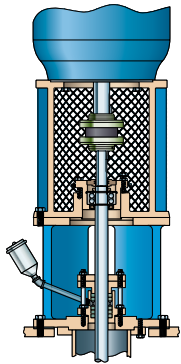
The "Veteran" vertical sump and process pump. Thousands of installations – industrial process, sump drainage, corrosive liquids, pollution control, molten salts – attest to the 3171's remarkable performance. Simple mounting.

Model 3171 Vertical Sump and Process Pumps

Heavy Duty Design Features for a Wide Range of Services.

LABYRINTH BEARING SEAL

Prevents premature bearing failure due to lubricant contamination



OPTIONAL UPPER STUFFING BOX

Provides rigid support for pump and bearings

LINESHAFT STEADY BEARING

Self-lubricating carbon / graphite bearing furnished as standard – best for handling water, corrosives, solvents and high temperature liquids

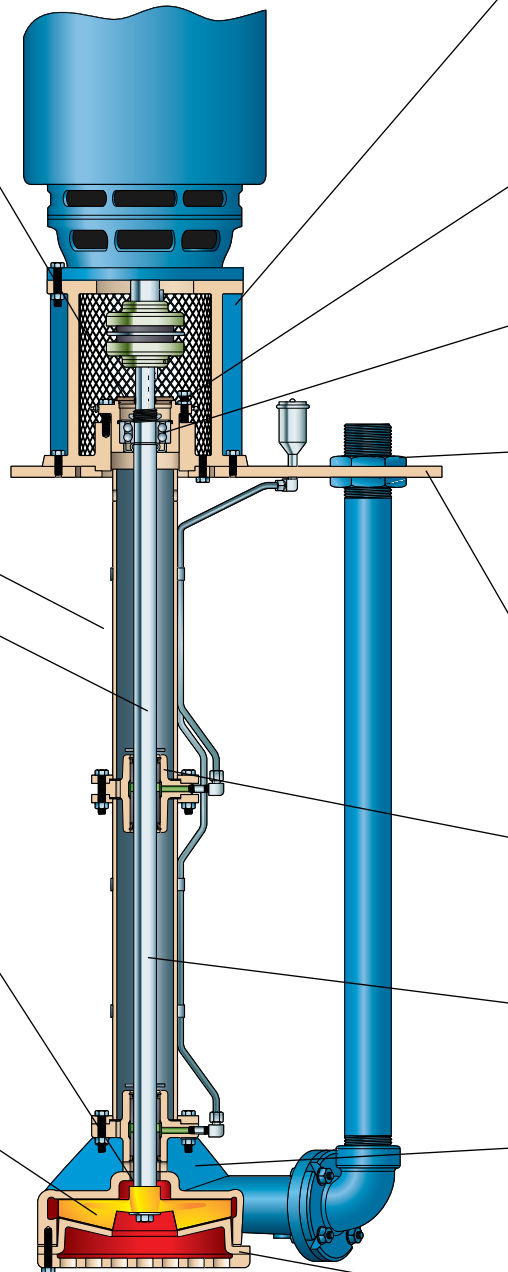
RESTRICTOR BUSHING

Close running bushing to prevent pressure loss from casing



FULLY OPEN IMPELLER WITH BACK PUMP-OUT VANES

Acknowledged best design for process services – solids handling, stringy material, corrosives, abrasives



C-FACE MOTOR MOUNTING

Accommodates readily available C-face motors. Also available for P-base and IEC motors.

CONTINUOUS HIGH PERFORMANCE

Original high efficiency maintained by simple external adjustment resulting in long-term energy savings

DOUBLE ROW THRUST BEARING

Grease lubricated – carries pump thrust load, sealed for outdoor installation

DISCHARGE LOCKED TO PUMP SUPPORT PLATE FOR STRENGTH

ANY MOUNTING REQUIREMENTS

Met by support plate and optional pit cover. Float switches, alternators and other control devices can be easily mounted

STEADY BEARING HOUSING

Precision machined register fit of column, bearing housing and casing assures positive bearing and shaft alignment. Completely interchangeable with all lineshaft bearing options

HEAVY DUTY ONE-PIECE SHAFT

With closely spaced steady bearings assures long life and low maintenance

HEAVY DUTY CASING

Provides rigid support for shaft – closer to impeller load – resulting in longer steady bearing life

REMOVABLE SUCTION COVER

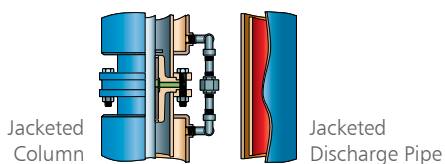
Replaceable wear part for low operational costs.

Optional Features for Application Flexibility

Goulds offers a variety of options to meet users' specific plant and application requirements. Your Goulds representative will be glad to recommend the features best suited to your particular service conditions to assure safe, efficient and reliable operation.

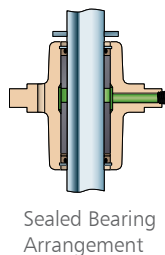
Molten Sulfur Pumps

- Jacketed column and discharge pipes (tested to 150 PSIG [1034 kPa])
- Available in all principal alloys
- One-piece, self-lubricating, graphite impregnated steady bearing
- Vapor-proof construction to seal sump vapors
- Balanced, low NPSH, semi-open impeller for optimum performance
- Multiple intermediate bearings permit overall settings to 20 feet (6 m)



Abrasive Liquids

Goulds sealed bearing arrangement is recommended for applications where abrasive solids are in the pumpage and no clean flush is available. A carbon bearing and lip seal is used for sealing the bearing housing. Spring loaded grease cup is provided.



Optional Bearings

Goulds offers the best choice of steady bearings to meet service requirements: optional fluted rubber with rigid shell, bronze, and (standard) carbon.



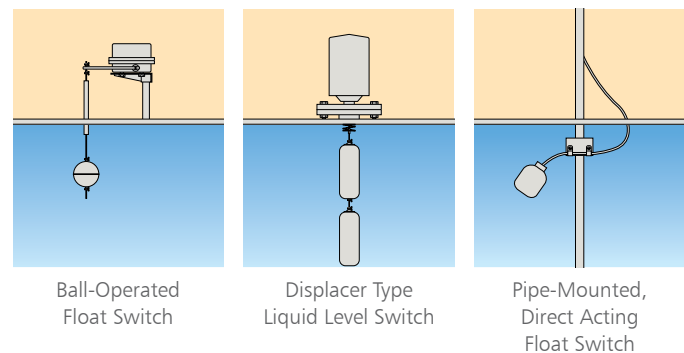
Mounting Systems

Goulds can provide optional mounting systems to meet specific user requirements including pit covers fabricated with float control mounting points, man holes for access, vapor-proof designs, and lube line holes.



Float Controls

The widest range of float controls is offered to suit the individual requirements of every installation. Ask your Goulds representative for a complete list of options



Other Options

- Complete line of controls and starters
- Enclosed lineshaft
- Other types of float controls
- ANSI tank mounting
- Flanged discharge connections

Goulds 3171

Parts List and Materials of Construction

Item Number	Part Name	Cast Iron	Bronze Fitted	Carbon Steel	316SS	Alloy 20	Hastelloy B & C
100	Casing	Cast Iron		Steel	316SS	Alloy 20	Hastelloy
101	Impeller	Ductile Iron	Bronze	Steel	316SS	Alloy 20	Hastelloy
105	Upper Stuffing Box Lantern Ring	Teflon					
106	Upper Stuffing Box Packing	Acrylic Graphite					
107	Upper Stuffing Box Gland	316SS					
112	Ball Bearing	Double Row Angular Contact					
122	Pump Shaft	Steel			316SS	Alloy 20	Hastelloy
123	Deflector	EPDM					
134	Bearing Shell	Cast Iron					
136	Bearing Locknut	Steel					
178	Impeller Key	316SS				Alloy 20	Hastelloy
155	Restrictor Bushing	Carbon-Filled Teflon®					
182	Suction Cover	Cast Iron		Steel	316SS	Alloy 20	Hastelloy
187	Strainer	Cast Iron		316SS		Alloy 20	Hastelloy
189	Pump Support Plate	Steel					
190	Lubrication or Flush Pipe	Steel		316SS		Alloy 20	Hastelloy
192	Head Column		Steel		316SS	Alloy 20	Hastelloy
195	Discharge Pipe		Steel		316SS	Alloy 20	Hastelloy
197	Steady Bearings	Carbon					
198	Impeller Screw	316SS				Alloy 20	Hastelloy
199	Impeller Washer	316SS				Alloy 20	Hastelloy
213	Steady Bearing Housing	Cast Iron			316SS	Alloy 20	Hastelloy
221	Upper Stuffing Box (When Used)	Cast Iron					
240	Motor Support	Cast Iron					
242	Pipe Collar (Discharge Pipe)		Steel		316SS	Alloy 20	Hastelloy
306	Column Extension		Steel		316SS	Alloy 20	Hastelloy
315	Discharge Elbow	Cast Iron		Steel	316SS	Alloy 20	Hastelloy
332A	Labyrinth Seal	Carbon-Filled Teflon® with Viton O-ring					
351	Gasket—Suction Cover to Casing	Nitrile Acrylic					
369	Retaining Ring—Steady Bearing	Stainless				Alloy 20	Hastelloy

Goulds 3171

Construction Details All dimensions in inches and (mm).

		ST			S						S/MT		MT	
		1X1 -5	1X1.5-6	1.5X3-6	1X1.5-8	1.5X2-8	2.5X3-8	4X4-8	1.5X2-11	2.5X3-11	1.5X2-11	4X4-8	1.5X2-8	2.5X3-8
Pump	Weight (2 Foot Depth) Less Motor Lb (kg)*	275 (125)	280 (127)	295 (134)	305 (139)	315 (143)	325 (138)	390 (177)	385 (175)	425 (193)	385 (175)	390 (177)	325 (148)	335 (152)
	Weight--Add to Each 6" of Length Lb (kg)*	13 (6)	14 (6)	15 (7)	14 (6)	14 (6)	15 (7)	17 (8)	14 (6)	15 (7)	14 (6)	17 (8)	14 (6)	15 (7)
	Maximum Diameter of Solids	0.188 (5)	0.250 (6)	0.500 (13)	0.281 (7)	0.281 (7)	0.938 (24)	0.938 (24)	0.344 (9)	0.594 (15)	0.344 (9)	0.938 (24)	0.281 (7)	0.938 (24)
Shaft	Diameter at Impeller	0.6875 (17)			Tapered 1.1118 (28) Large End						Tapered 1.1118 (28) Large End		Tapered 1.585 (40) Large End	
	Diameter at Coupling End	0.875 (22)									1.375 (35)			
	Diameter at Steady Bearing	1.125 (29)										1.625 (41)		
Bearings	Ball Bearing	5305 or Equal												
	Steady Bearing (Sleeve Type)	1.125 I.D.x1.625 O.D. (29x41)									1.125 I.D.x1.625 O.D. (29X41)		1.625 I.D.X2.125 O.D. (41X54)	
General	Maximum Total Working Pressure--Casing	150 PSI (1035 kPa)												
	Max. Liquid Temp.-- Without Upper Stuffing Box	210°F (99°C)												
	Max. Liquid Temp.-- Upper Stuffing Box	450°F (232°C)												

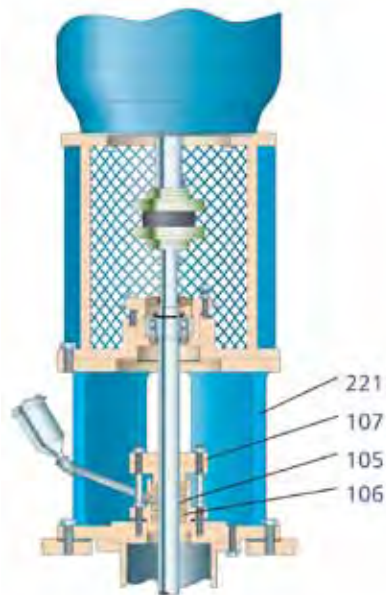
		M									L		
		3X4-11	4X6-11H	1.5X3-13	2.5X3-13	3X4-13	4X6-13	LF1X1.5-8	LF1X2-10	LF1.5X3-13M	LF1.5X3-13L	6X8-13	6X8-13
Pump	Weight (2 Foot Depth) Less Motor Lb (kg)*	540 (245)	590 (268)	535 (243)	550 (250)	570 (259)	600 (273)	305 (139)	385 (175)	550 (250)	550 (250)	830 (377)	910 (414)
	Weight--Add to Each 6" of Length Lb (kg)*	20 (9)	20 (9)	19 (9)	19 (9)	20 (9)	20 (9)	14 (6)	15 (7)	19 (9)	19 (9)	35 (16)	40 (18)
	Maximum Diameter of Solids	0.594 (15)	1.125 (13)	0.250 (6)	0.594 (15)	0.594 (15)	0.594 (15)	0.250 (6)	0.250 (6)	0.250 (6)	0.250 (6)	0.594 (15)	1.188 (30)
Shaft	Diameter at Impeller	Tapered 1.585 (40) Large End						Tapered 0.75 (19) 1 (25.4) 1.25 (31.75)			Tapered 2.222 (56) Large End		
	Diameter at Coupling End	1.375 (35)									1.875 (48)		
	Diameter at Steady Bearing	1.625 (41)									2.25 (57)		
Bearings	Ball Bearing	5308 or Equal									5311 or Equal		
	Steady Bearing (Sleeve Type)	1.625 I.D.x2.125 O.D. (41x54)									2.25 I.D.x3.3 O.D. (57x75)		
General	Maximum Total Working Pressure--Casing	150 PSI (1035 kPa)						250 PSI (1724 kPa)			450 PSI (3102 kPa)	450 PSI (3102 kPa)	150 PSI (1035 kPa)
	Max. Liquid Temp.-- Without Upper Stuffing Box	210°F (99°C)											
	Max. Liquid Temp.-- Upper Stuffing Box	450°F (232°C)											

* L Group Pump Weights are based on a 3ft (.9m) Setting

Goulds 3171

Designed to Meet (or Exceed) Today's Tough Environmental Requirements

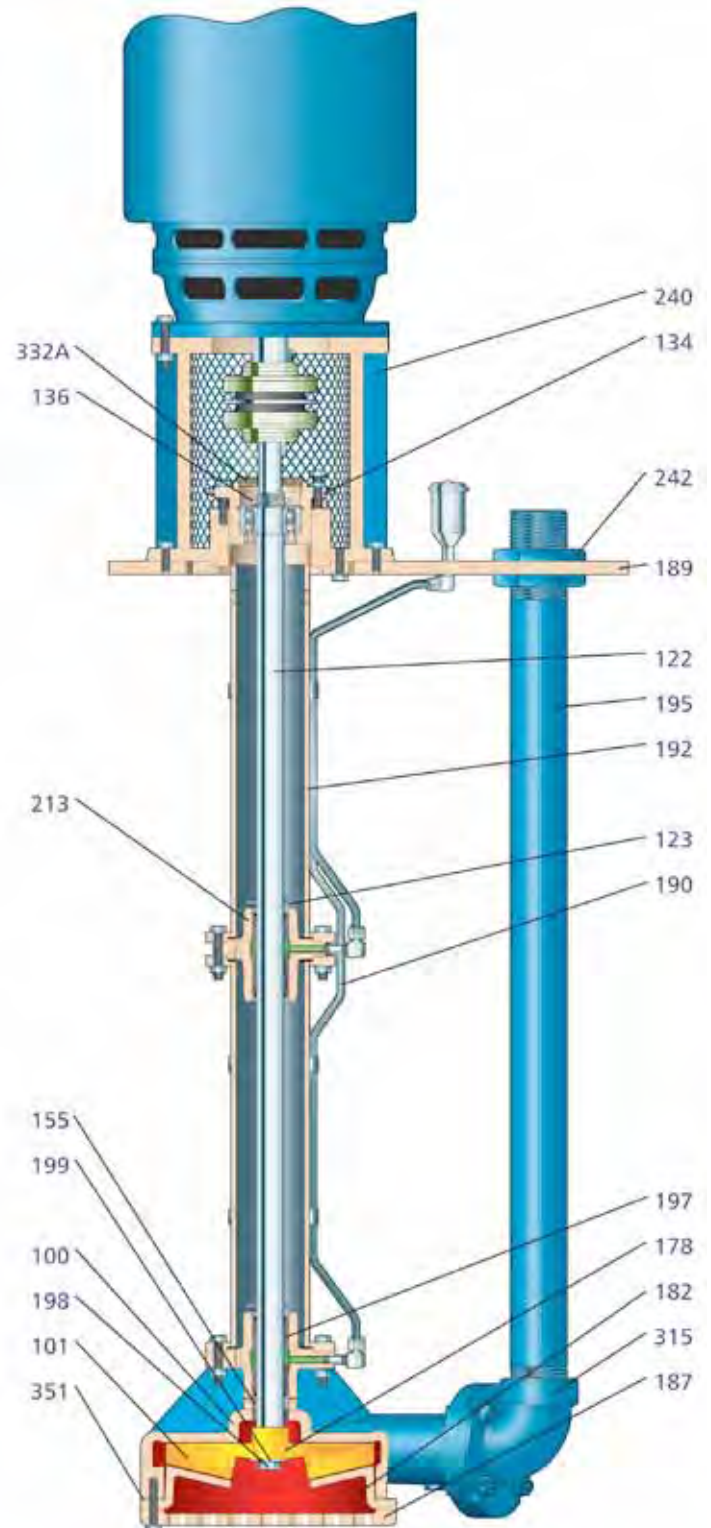
Installed in 1988 on hydrocarbon waste sump service, this 3171 was easily retrofitted with vapor-proof construction including a ferrofluidic seal to meet tougher EPA emission requirements. Readings were less than 30 ppm – exceeding EPA requirements.



Optional Upper Stuffing Box

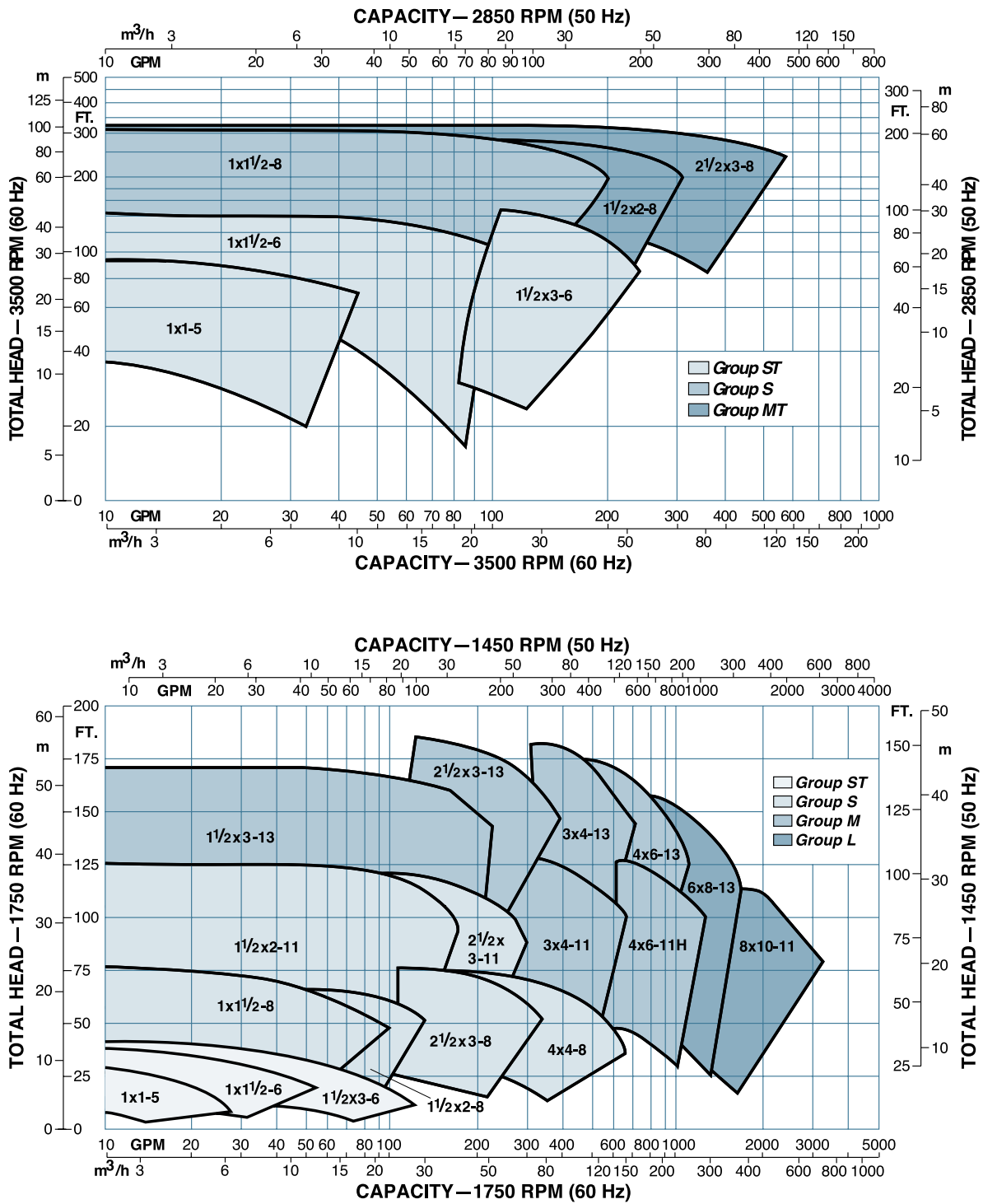


Sectional View



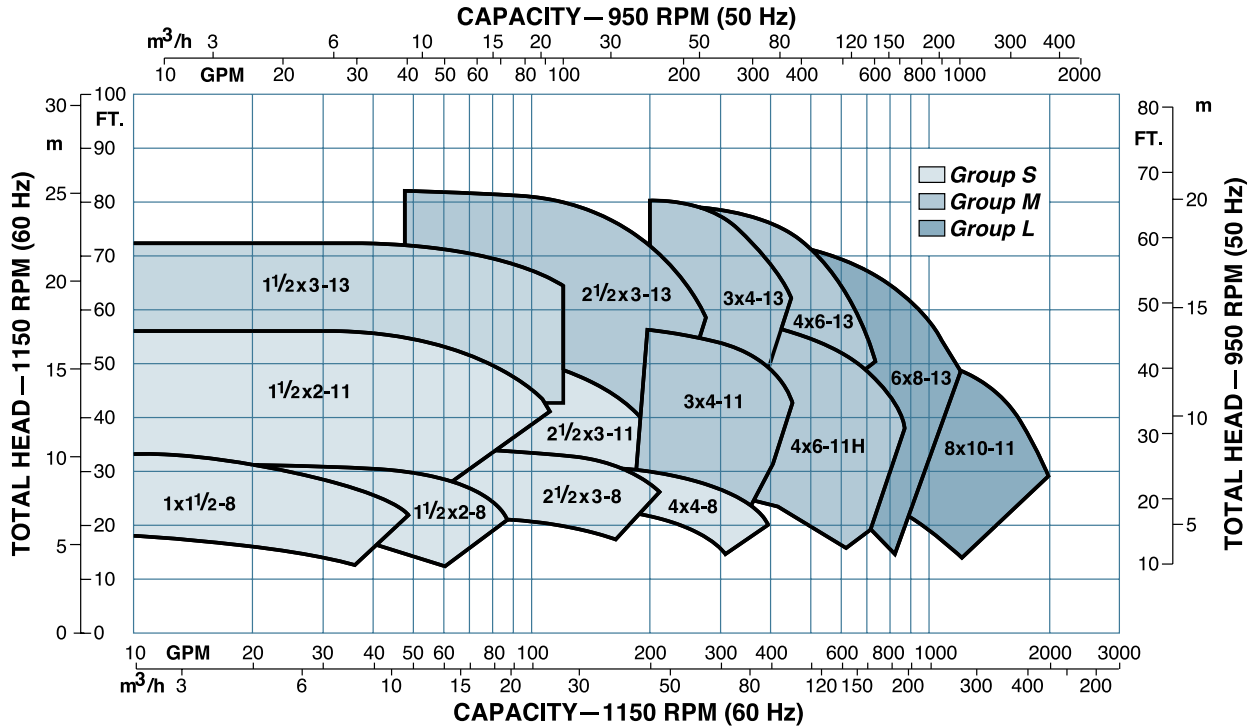
Goulds 3171

Hydraulic Coverage



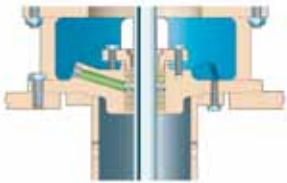
Goulds 3171

Hydraulic Coverage



Maximum Sealing Flexibility: Vapor-Proof Construction

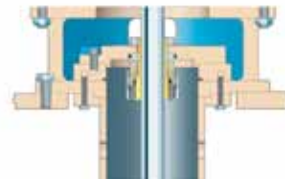
Optional upper stuffing box allows use of wide range of sealing arrangements to meet specific user requirements for sealing toxic, hazardous, noxious or corrosive fumes. With this option, the discharge pipe and all fittings are sealed at the support plate. Your Goulds representative will gladly recommend the best sealing solution for your service, some of which are illustrated here.



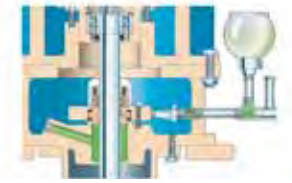
PACKED BOX
Standard vapor-proof sealing option. Includes packing, lantern ring and grease lubricator (not illustrated).



DOUBLE CARTRIDGE SEAL
Available in wet or dry versions to control emissions.



DRY RUNNING SEAL
Dry running, non-contacting cartridge gas seal. Pressurized air barrier between seal faces prevents vapor leakage.



SINGLE OUTSIDE SEAL
Mechanical seal with oil lubricator and sight glass. Outside mount has no metal parts in contact with vapors.

Goulds 3171

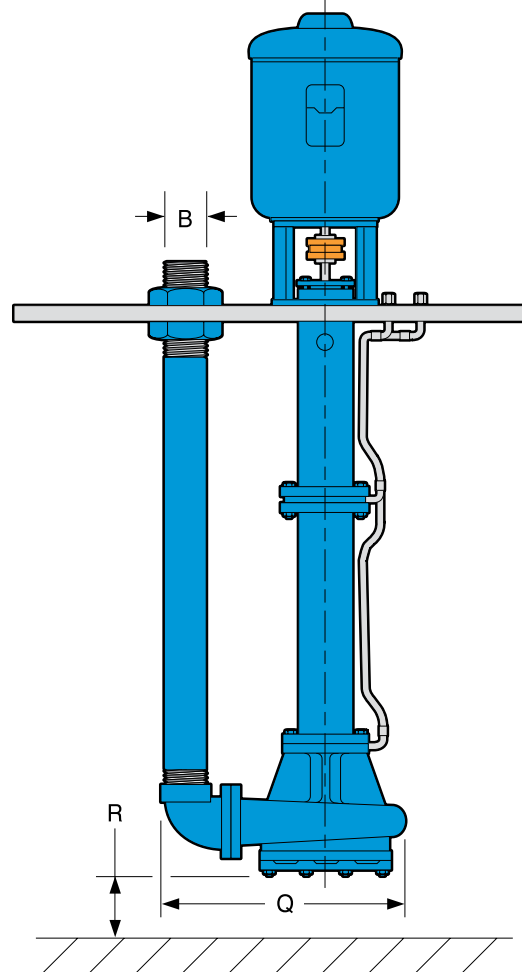
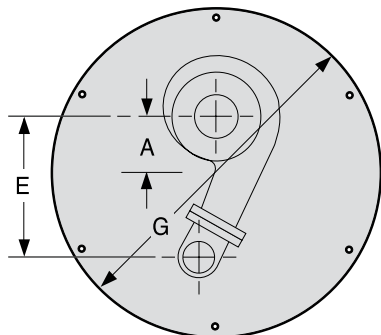
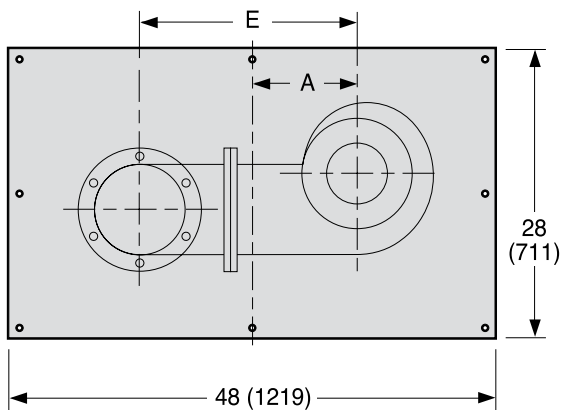
Dimensions

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

	ST			S						S/MT		MT	
	1x1-5	1X1.5-6	1.5X3-6	1X1.5-8	1.5X2-8	2.5X3-8	4X4-8	1.5X2-11	2.5X3-11	1.5X2-11	4X4-8	1.5X2-8	2.5X3-8
A	3.6 (92)	3.6 (92)	3.6 (92)	3.6 (92)	3.6 (92)	3.6 (92)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4.5 (114)
B	1.5 (38)	2 (51)	3 (76)	2 (51)	2 (51)	3 (76)	4 (102)	2 (51)	3 (76)	3 (76)	4 (102)	3 (76)	4 (102)
E	8.1 (205)	8.4 (213)	9.2 (232)	10.1 (256)	9.6 (244)	10.3 (262)	12.1 (306)	11.4 (289)	12.1 (306)	12.37 (314)	12.1 (362)	11.4 (289)	13.6 (346)
G	22 (559)	22 (559)	22 (559)	22 (559)	22 (559)	22 (559)	26.5 (673)	26.5 (673)	26.5 (673)	31 (787)	26.5 (673)	26.5 (673)	31 (787)
R	6 (152)	5.8 (147)	5.3 (135)	4.3 (109)	4.4 (112)	3.8 (97)	3.3 (84)	4.6 (117)	4.2 (107)	4.56 (116)	3.3 (84)	4.4 (112)	3.8 (97)
Q*	14.3 (362)	15.3 (387)	16.8 (425)	17 (432)	17 (432)	18.5 (467)	22.5 (572)	20.5 (521)	22.5 (572)	22 (599)	22.5 (572)	20 (508)	22.8 (578)

	M								L					
	3X4-11	4X6-11H	1.5X3-13	2.5X3-13	3X4-13	4X6-13	LF 1X1.5-8	LF 1X2-10	LF1.5X3-13M	LF1.5X3-13L	6X8-13	6X8-13	8X10-11	8X10-11
A	4.5 (114)	4.5 (114)	4.5 (114)	4.5 (114)	4.5 (114)	4.5 (114)	2.88 (73)	4 (102)	2.75 (70)	2.75 (70)	10.4 (264)	10.4 (264)	10.4 (264)	10.4 (264)
B	4 (102)	4 (102)	3 (76)	3 (76)	4 (102)	4 (102)	2 (51)	2 (51)	2 (51)	2 (51)	6 (152)	8 (203)	8 (203)	10 (254)
E	12.8 (325)	14.3 (362)	13.6 (346)	13.2 (335)	13.8 (351)	14.8 (375)	9.54 (242)	11.5 (292)	14 (356)	14 (356)	21.5 (546)	21.5 (546)	24.3 (616)	24.3 (616)
G	31 (787)	31 (787)	31 (787)	31 (787)	31 (787)	31 (787)	22 (559)	31 (787)	31 (787)	31 (787)	--	--	--	--
R	4 (102)	3.7 (94)	4.8 (122)	4.7 (119)	4.3 (109)	3.7 (94)	6.19 (157)	5.44 (138)	5.44 (138)	5.44 (138)	6.9 (175)	6.9 (175)	5.3 (135)	5.3 (135)
Q*	24 (610)	26.5 (673)	25 (635)	25 (635)	25.5 (648)	27.5 (699)	17 (432)	19.8 (503)	23.8 (605)	23.8 (605)	38.5 (978)	39.5 (1003)	42.5 (1080)	43.5 (1105)

*Add 3 in. (76) for float mounted option.



Goulds CV 3171

Goulds Model 3171

Vertical Sump and Process Pumps Designed for the Total Range of Industry Services

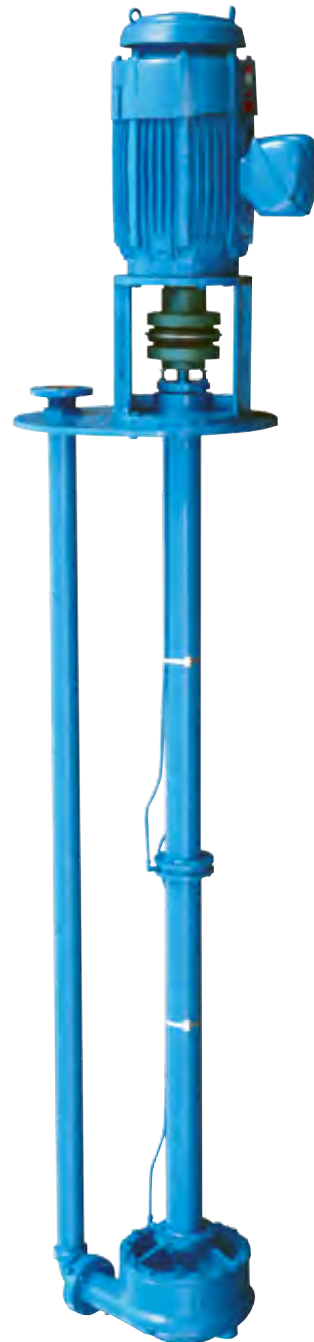
- Capacities to 1,300 GPM (295 m³/h)
- Heads to 230 feet (126 m)
- Temperatures to 450° F (232° C)
- Pit Depths to 20 feet (6 m)

Design Features

- Self-Priming
- Rugged Double Row Thrust Bearing
- Heavy Duty One-Piece Shaft
- External Impeller Adjustment
- Available in a Wide Range of Alloys
- Recessed Impeller Design
- Sealless Design
- Optional Vapor Proof Construction

Services

- Fibrous Wastewater
- Industrial Process
- Industrial Sump Wastes
- Tank Unloading
- Corrosive and Non-Corrosive Liquids
- Food Processing
- Chemical Slurries



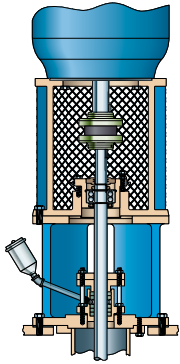
The CV 3171 is a recessed impeller, circular volute type sump pump. Ideal for large solids and shear sensitive fluids. It will pass any solid that will pass through the discharge pipe. Circular volute minimizes radial loads, making this the ideal pump for low flow process applications.

Model CV 3171 Vertical Sump and Process Pumps

Heavy Duty Design Features for a Wide Range of Services.

LABYRINTH BEARING SEAL

Prevents premature bearing failure due to lubricant contamination



C-FACE MOTOR MOUNTING

Accommodates readily available C-face motors. Also available for P-base and IEC motors.

CONTINUOUS HIGH PERFORMANCE

Original high efficiency maintained by simple external adjustment resulting in long-term energy savings

DOUBLE ROW THRUST BEARING

Grease lubricated – carries pump thrust load, sealed for outdoor installation

DISCHARGE LOCKED TO PUMP SUPPORT PLATE FOR STRENGTH

ANY MOUNTING REQUIREMENTS

Met by support plate and optional pit cover. Float switches, alternators and other control devices can be easily mounted

STEADY BEARING HOUSING

Precision machined register fit of column, bearing housing and casing assures positive bearing and shaft alignment. Completely interchangeable with all lineshaft bearing options

HEAVY DUTY ONE-PIECE SHAFT

With closely spaced steady bearings assures long life and low maintenance

NON-CLOG CIRCULAR CASING

Large open passageways prevent clogging when handling bulky, fibrous, or stringy liquids. Circular Volute reduces radial loads during low flow operation, extending steady bearing life.

OPTIONAL UPPER STUFFING BOX

HEAVY COLUMN PIPE

Provides rigid support for pump and bearings

LINESHAFT STEADY BEARING

Grease lubricating sealed bearings furnished as standard – best for handling fluids with solids

RESTRICTOR BUSHING

Close running bushing to prevent pressure loss from casing

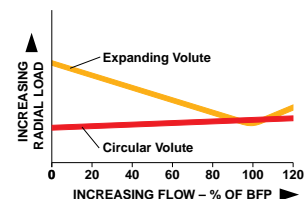
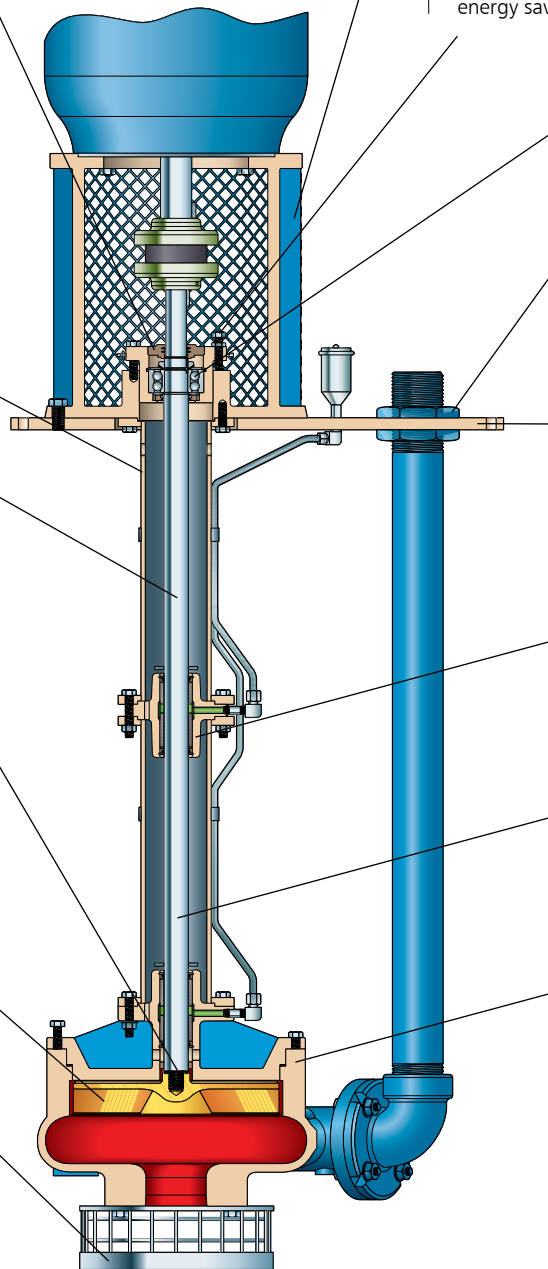


RECESSED IMPELLER

Since impeller is recessed in the casing, velocities are low and solids contact with the casing are reduced. Wear rate, solids degradation, and shearing of liquids are minimized

OPTIONAL STRAINER

Recommended for services where solids larger than the discharge of the pump can potentially enter the casing.



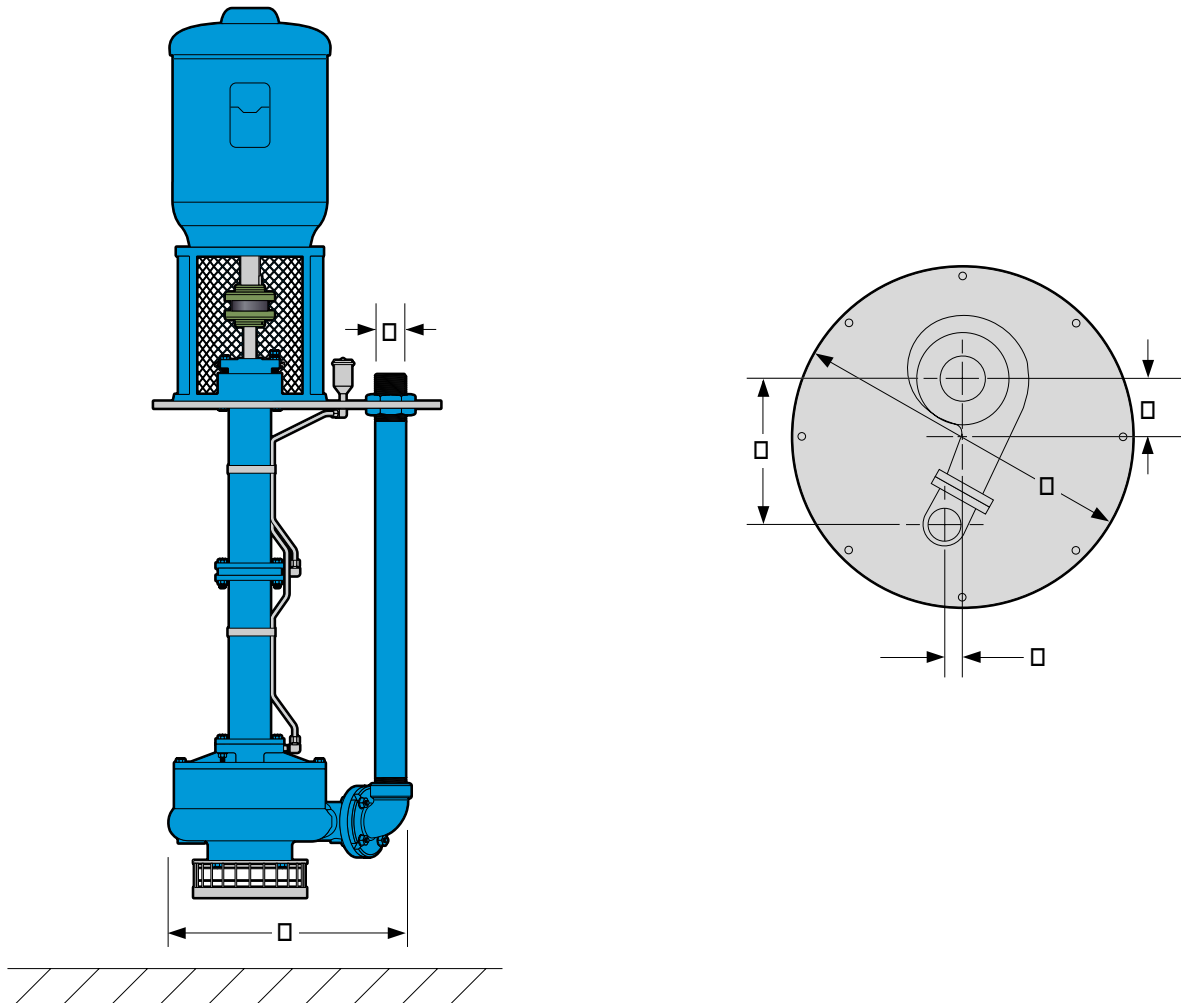
Goulds CV 3171

Dimensions

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

	2 × 2-8	2 × 2-10	3 × 3-10	2 × 3-13	3 × 4-13
A	4.00 (102)	4.50 (114)	4.50 (114)	4.50 (114)	4.50 (114)
B	2.00 (51)	2.00 (51)	3.00 (51)	2.00 (51)	3.00 (76)
D	1.32 (34)	1.45 (37)	1.69 (43)	1.27 (32)	1.14 (29)
G	26.50 (673)	31.00 (787)	31.00 (787)	31.00 (787)	31.00 (787)
E	10.79 (274)	13.01 (330)	13.17 (335)	15.44 (392)	15.22 (387)
Q*	18.11 (460)	21.47 (545)	22.97 (583)	25.24 (641)	26.32 (669)

* Add 3 in. (76) for float mounted option.



Goulds CV 3171

Parts List and Materials of Construction

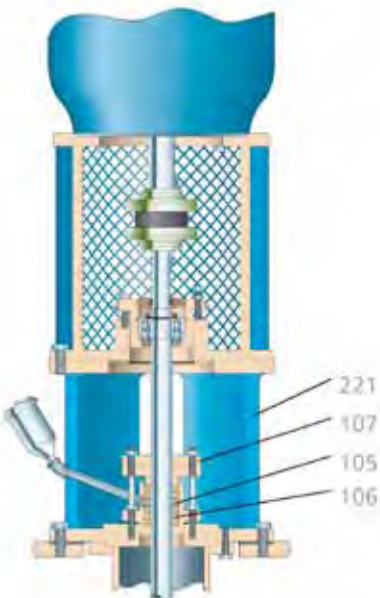
Item Number	Part Name	Cast Iron	CD4	GA-20
100	Casing	D.I.	CD4	GA-20
101	Impeller	CD4	CD4	GA-20
105	Lantern Ring	Teflon		
106	Packing	Acrylic Yarn		
107	Gland	316SS or as Specified		
108A	Adapter, Casing	D.I.	D4	GA-20
112	Bearing, Ball	Steel		
122	Shaft	Steel	316SS	C-20
123	Deflector	EPDM		
134	Shell, Bearing	C.I.		
136	Locknut, Bearing	Steel		
155	Bushing (casing)	Carbon Teflon		
187	Strainer (OPTIONAL)	Steel	316SS	C-20
189	Plate, Support	Steel or as Specified		
190	Tubing, Lube Line	Steel	316SS	C-20
192	Column, Head	Steel	316SS	C-20
195	Pipe, Discharge	Steel	316SS	C-20
197	Steady Bearing	Carbon/Bronze/Rubber/Viton		
213	Steady Bearing Housing	C.I.	316SS	GA-20
221	Upper Stuffing Box	Cast Iron or as Specified		
240	Support, Motor	C.I.		
242	Nut, Pipe	Steel	316SS	C-20
306	Extension, Column	Steel	316SS	C-20
315	Elbow, Discharge	D.I.	CD4	GA-20
332A	Seal, Labyrinth	Teflon/Viton		
333	Seal, Housing	Steel/Nitrile		
333H	Seal, Lip	Nitrile	Viton	Viton
351	Gasket, Casing	Nitrile/Acrylic		
351A	Gasket, Elbow	Nitrile Acrylic		
361A	Ring, Retaining Ball Bearing	Steel		
369	Ring, Retaining Steady Bearing	316SS		C-20
369A	Ring, Retaining Shaft	Steel		
382	Washer Lock Nut	Steel		
412A	O-Ring, Impeller	Teflon		

Construction Details All dimensions in inches and (mm).

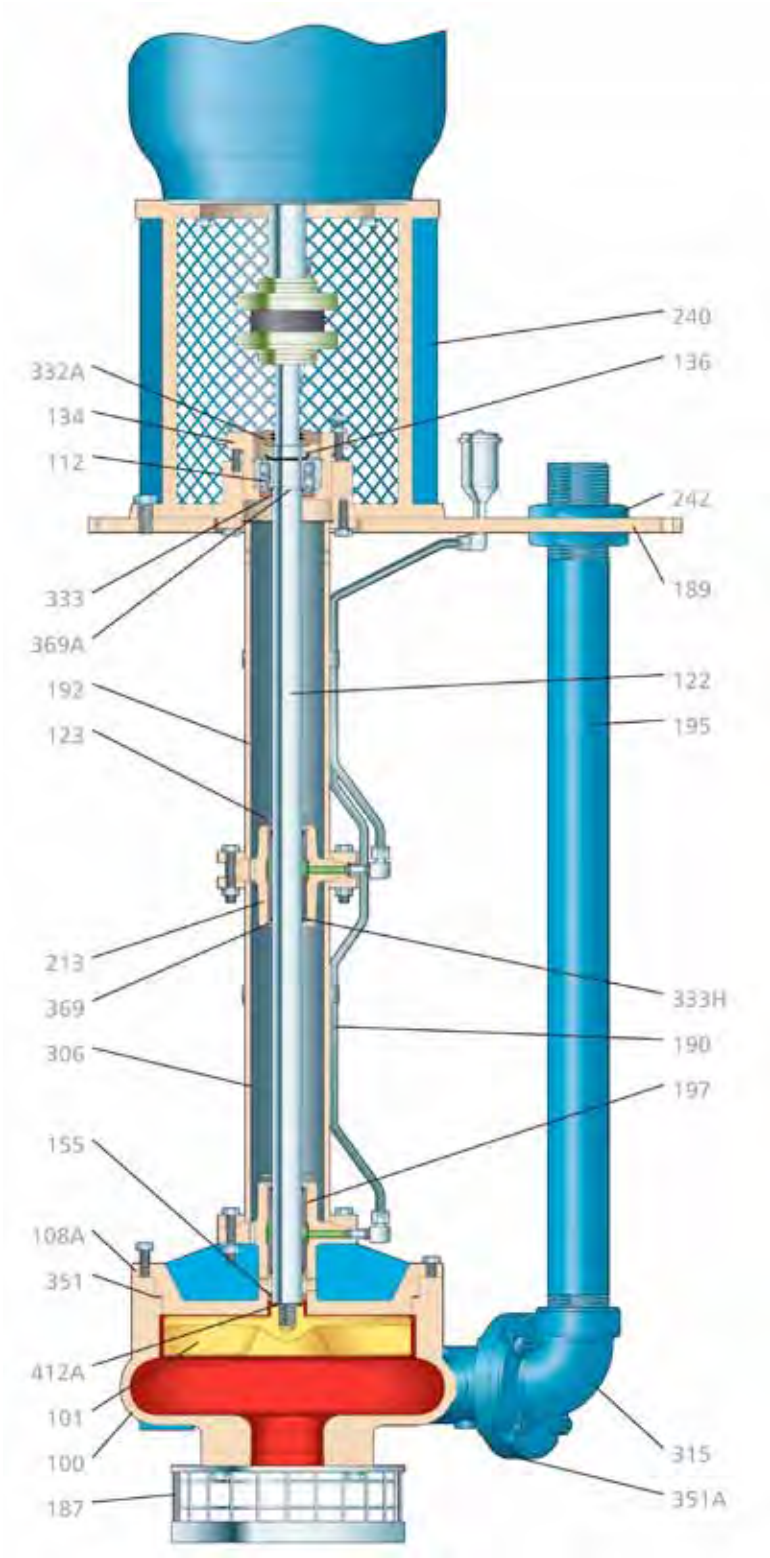
		2 × 2-8	2 × 2-10	3 × 3-10	2 × 3-13	3 × 4-13
Pump	Weight (3 Foot Depth) Less Motor Lb (kg) *	484 (220)	531 (241)	559 (254)	565 (257)	616 (280)
	Weight—Add fo Each 6" of Length Lb (kg)	20 (9)	20 (9)	20 (9)	20 (9)	20 (9)
	Maximum Diameter of Solids	1.75 (45)	1.75 (45)	2.75 (70)	1.75 (45)	2.75 (70)
Shaft	Diameter at Impeller	0.6309 (16)	0.9008 (23)	0.9008 (23)	0.9008 (23)	0.9008 (23)
	Diameter at Coupling End	1.375 (35)				
	Diameter at Steady Bearing of Solids	1.625 (41)				
Bearings	Ball Bearing	5308 or Equal				
	Steady Bearing (Sleeve Type)	1.625 I.D. × 2.125 O.D. (41 I.D. × 54 O.D.) 4.00 LG. (102 LG.)				
General	Maximum Total Working Pressure—Casing	285 PSIG (1965 kPa)				
	Max. Liquid Temp.— Without Upper Stuffing	180° F (82° C)				
	Box					
	Max. Liquid Temp.— With Upper Stuffing					
	Box 450° F (232° C)					

Goulds CV 3171

Sectional View

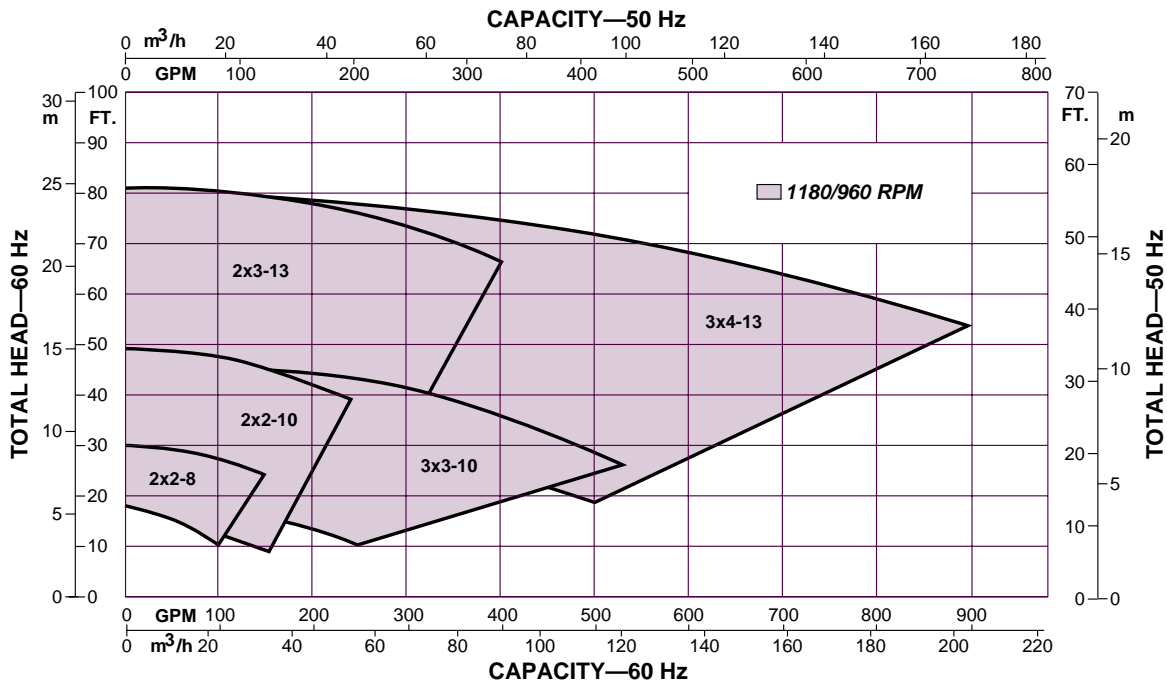
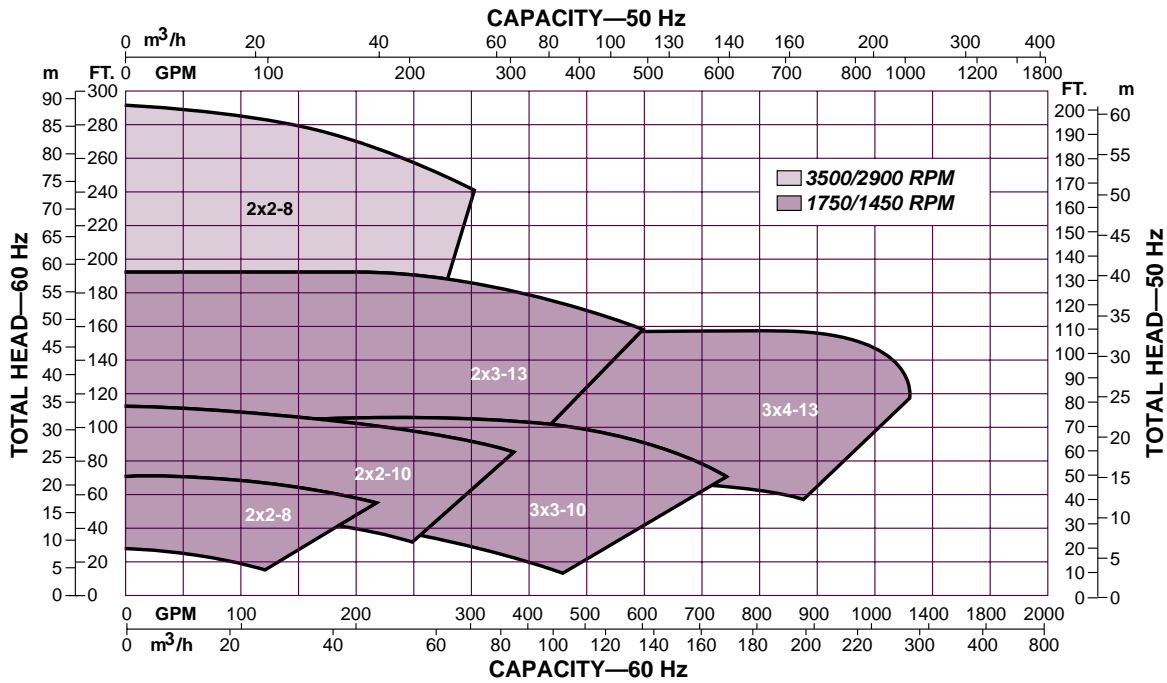


Optional Upper Stuffing Box



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Hydraulic Coverage



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