

VHS & VJC

Vertical Cantilever Recessed Impeller Pump
& Vertical Cantilever Bottom Suction Pump



VHS

Vertical Cantilever Recessed Impeller Pumps Designed to Handle Large or Fibrous Solids

- Capacities to 7,000 GPM (1,590m³/h)
- Heads up to 140 feet (42.6 m)
- Temperatures to 200°F (93°C)
- Pit Depths to 11 feet (3.4 m)*
- Solids to 10 in. (254 mm)

Services

- Mill Scale
- Waste Paper Stock
- Sludge
- Coal Slurry
- Black Liquor
- Clay Slurry
- Plant Waste
- Coal Pile Runoff
- Food Pulp
- Sewage Treatment
- Washdown Water
- Ash Slurry

Design Features

Cantilever Design

- No submerged bearings
- No packing or mechanical seals

External Impeller Adjustment

- Maintains pump efficiency and performance

Heavy Duty bearings and frame

Heavy Duty Shaft

- Operates minimum of 20% below first critical speed for reliability

Materials of Construction

- Available in a wide range of corrosive/abrasive resistant alloys



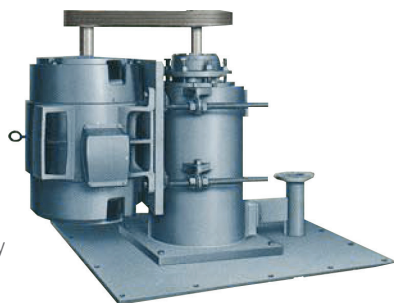
Application Flexibility

Direct or Belt Drive

Goulds offers drive arrangements to meet specific user requirements.



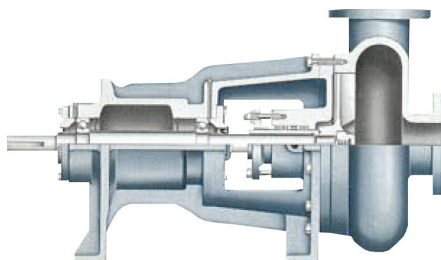
Direct drive offers simplicity, ease of installation and minimum maintenance.



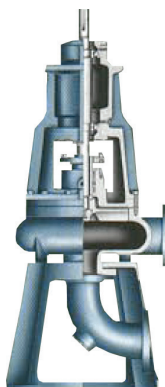
Belt drive allows use of standard speed motors with full diameter impellers. Adapts pump to meet any head or capacity. Extends wear life through low operating speeds.

Other Recessed Impeller Pumps

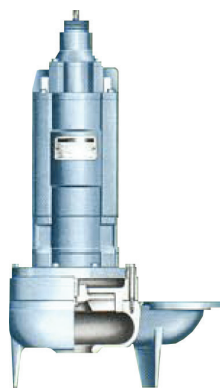
Besides the Model VHS vertical cantilever pump, Goulds makes other recessed impeller pumps for handling large solids.



Model HS Horizontal Solids Handling Pump



Model HSD Vertical Dry Pit Solids Handling Pump

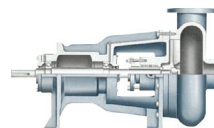


Model HSU Submersible Solids Handling Pump

Horizontal Pumps

Goulds makes a complete line of horizontal abrasive slurry pumps in sizes from 1" to 14" discharge with capacities to 16,000 GPM (3636 m³/h) and heads to 395 feet (120 m).

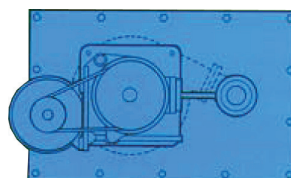
Pumps are available in side suction or end suction configurations.



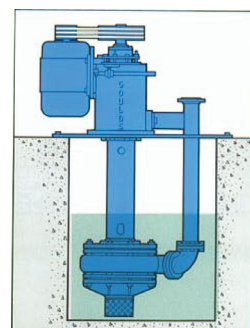
Model 5500 Severe Duty End Suction Slurry Pump

Optional Floor Plate

Two standard floor plate configurations, circular and rectangular, are available. Custom designed floor plates can be provided.



Top View
Rectangular Configuration



Model VHS Vertical Cantilever Recessed Impeller Pump

Design Features for Handling Large or Fibrous Solids

Direct or Belt Drive

Direct drive offers simplicity, ease of installation and low maintenance costs. V-belt drive allows use of readily available standard speed motors along with full diameter impellers to meet desired operating conditions with greater pump efficiency. Belt drive also provides flexibility to meet changes in head/capacity requirements.

Bearing Frame

Sealed to prevent contamination

High Strength Column Pipe

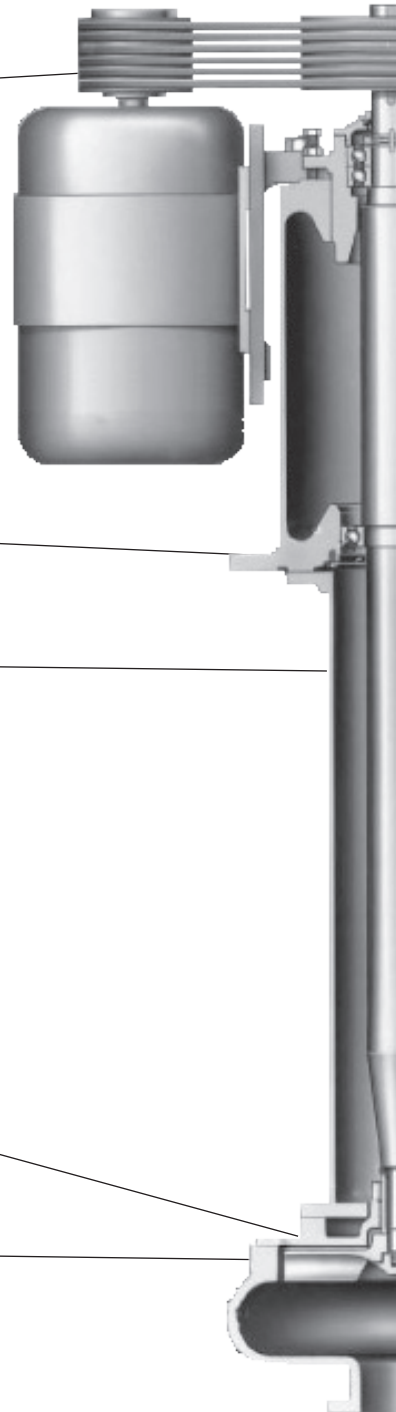
Rigidly maintains alignment between bearing frame and casing. Protects pump shaft.

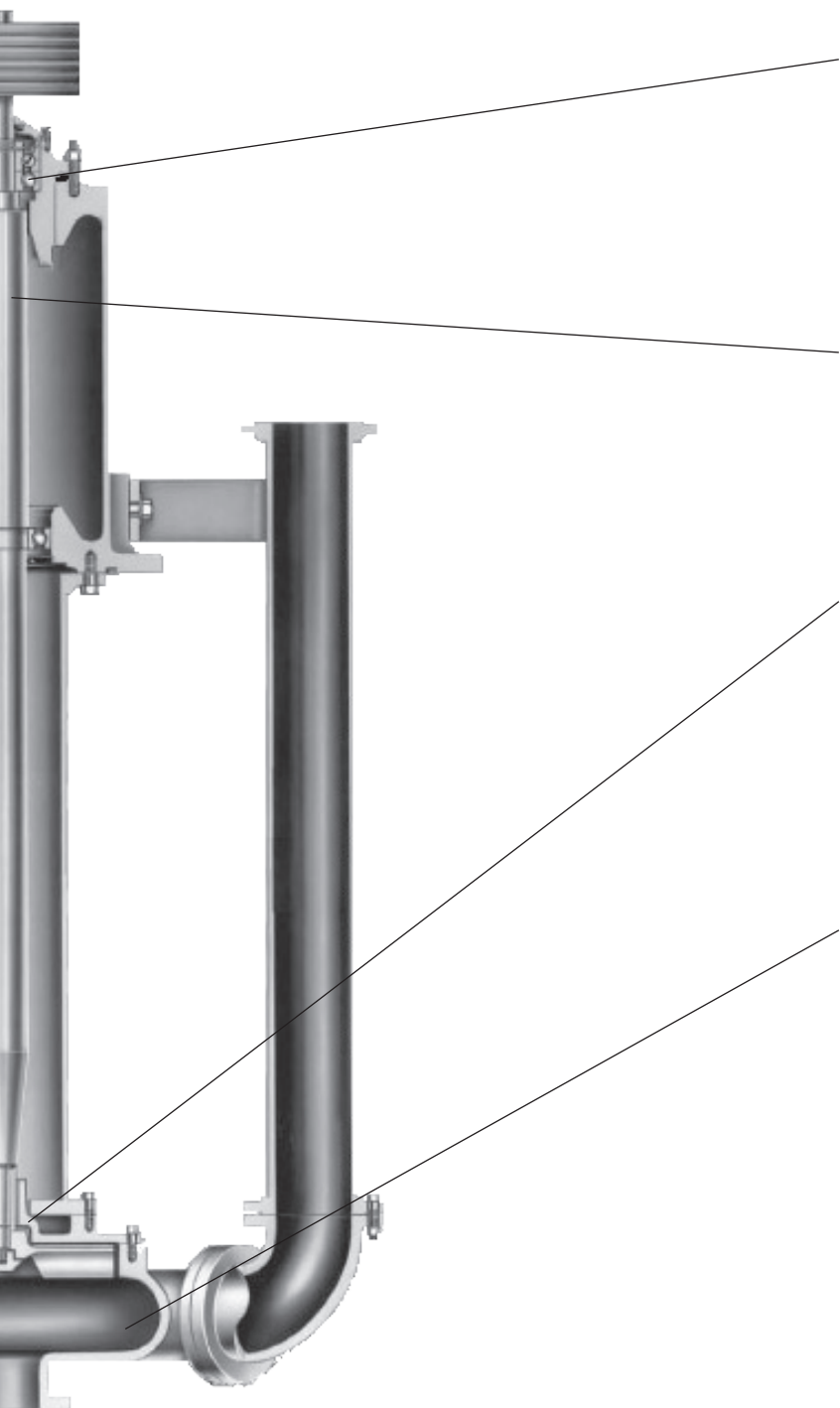
Renewable Shaft Sleeve

Full length hook-type sleeve protects shaft

Fully Recessed Impeller

Allows passage of solids equal in size to pump suction. Keyed on shaft.





Heavy-Duty Bearings

Grease-lubricated ball bearings located over floor plate, completely sealed from contamination

Cantilever Shaft – No Bottom Bearings

Tapered design operates safely below first critical speed. Ideal for remote locations - no oil or water lines required to lubricate submerged bearings.

Hub Disc

Minimizes blow-back of pumpage around shaft sleeve without actual sealing contact

Rugged On-Piece Casing

Circular design enhances vortex pumping action; dimensioned to allow large solids to pass without clogging

Model VHS Parts List and Materials of Construction

Item No.	Part Name	Material	
		Standard	Optional*
		HC600	316
100	Casing	HC600	316
101	Impeller	HC600	316
109	Bearing End Cover	Cast Iron	
112	Thrust Bearing	Steel	
122	Shaft	4140 Steel	316
123	Deflector	Rubber	
126	Shaft Sleeve	416	316
134	Thrust Bearing Housing	Cast Iron	
168	Radial Bearing	Steel	
184	Stuffing Box Cover	Cast Iron	HC600 316
192	Pipe Column	Steel	316
195	Discharge Pipe	Steel	316
228A	Bearing Housing	Cast Iron	
304	Impeller Nut	316	316 316
315	Discharge Elbow	Cast Iron	316
333	Labyrinth Seal	Carbon Filled Teflon®	

*For other materials, consult factory.

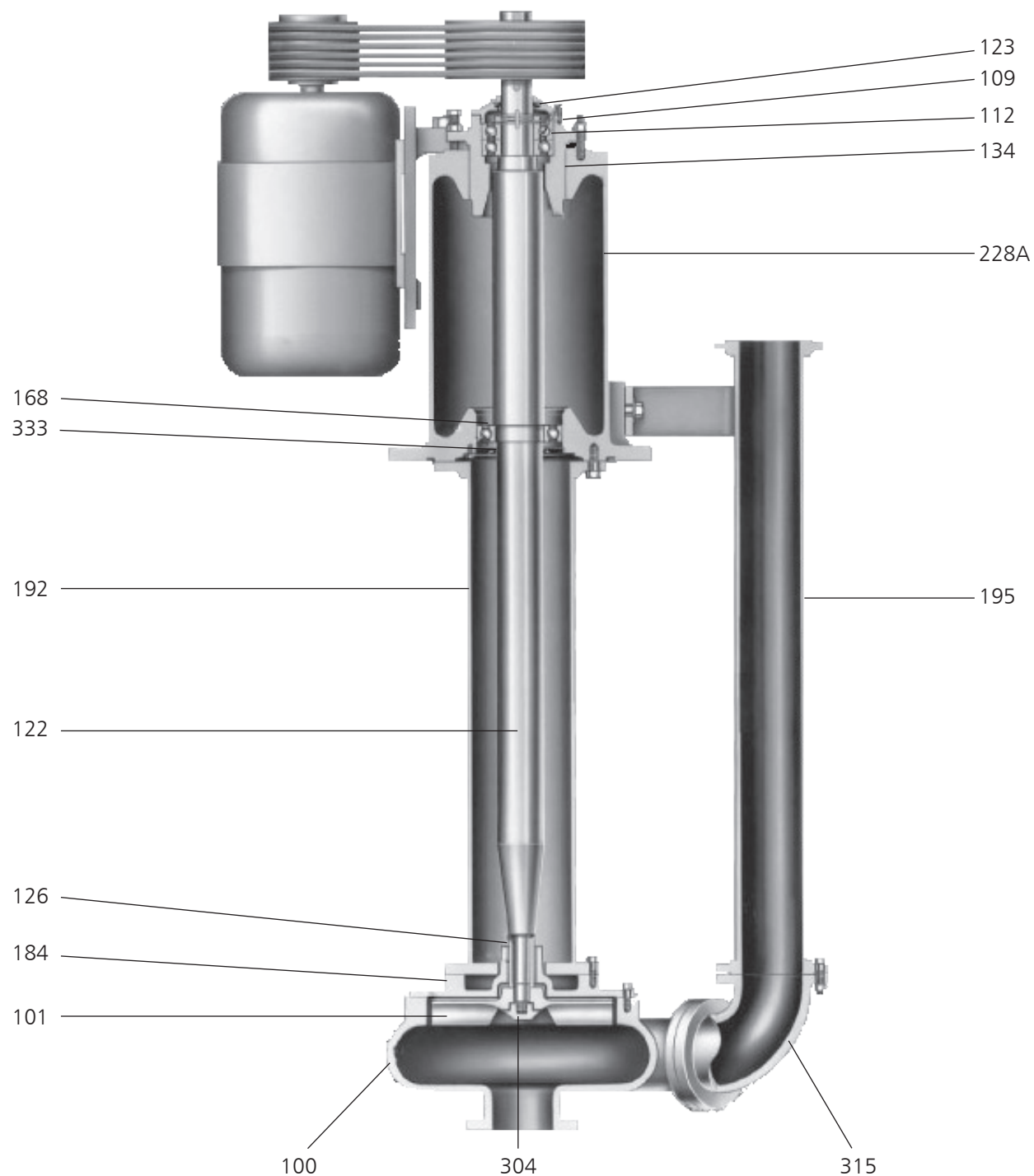
Materials of Construction

Material	Specification
Cast Iron	ASTM A48
HC600	ASTM A532 – Class A hardened
316SS	AISI 316 or ASTM a 743 CF8M
1144 Steel	AISI 1144 free-machining steel

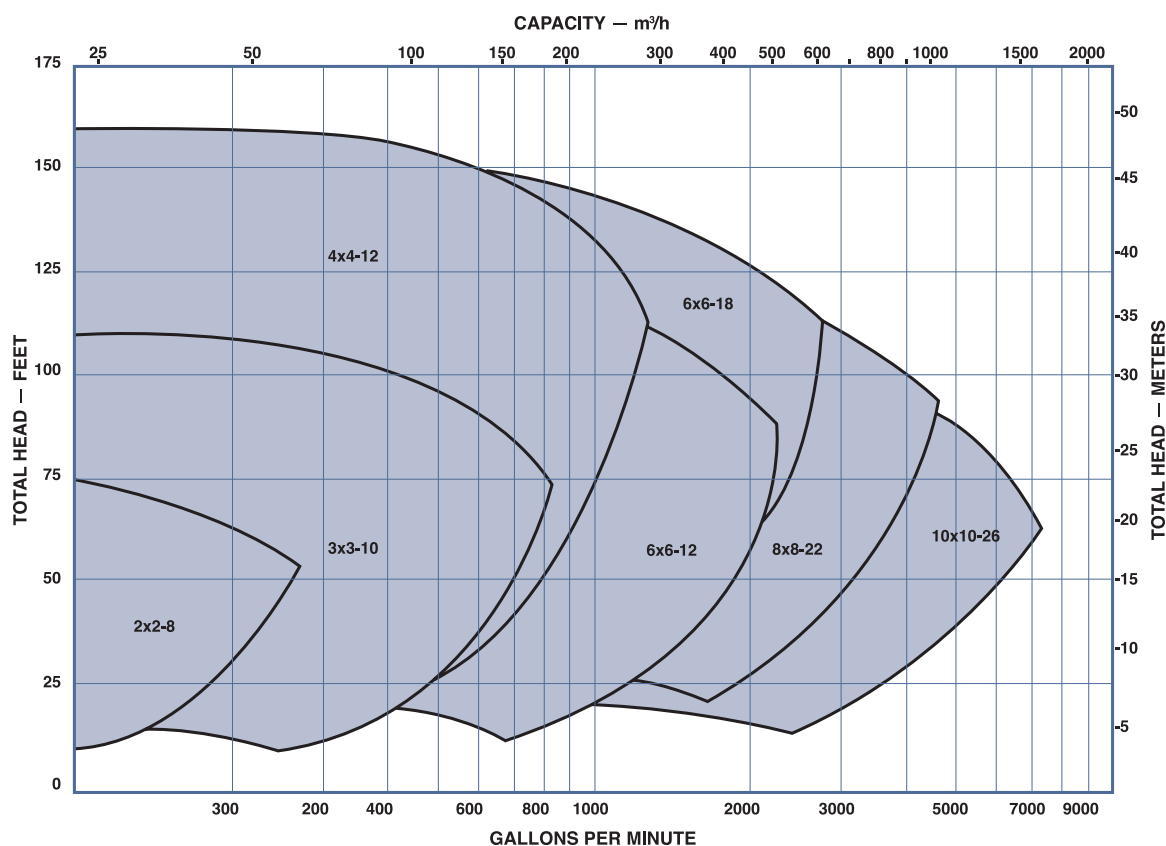
Construction Details

		Pump Size						
		2x2-8	3x3-10	4x4-12	6x6-12	6x6-18	8x8-22	10x10-26
Impeller and Casing	NetWeight - Lbs. (kg)	600 (272)	900 (408)	1100 (499)	1225 (556)	1600 (816)	2400 (1089)	4800 (2177)
	Min. Casing Thickness-in. (mm)	.38 (9.7)	.56 (14.2)	.5 (12.7)	.62 (15.7)	.75 (19)	.75 (19)	.88 (22.4)
	Max. Solid Size - in. (mm)	2 (50.8)	3 (76.2)	4 (101.6)	6 (152.4)	6 (152.4)	8 (203.2)	10 (254)
	Working Pressure - PSIG (kPA)	100 (689.5)					70 (482.6)	

Model VHS Sectional View



Model VHS Hydraulic Coverage



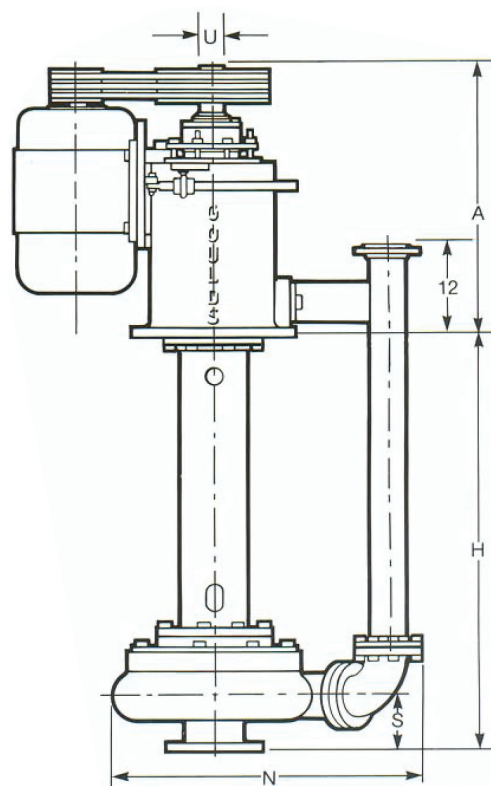
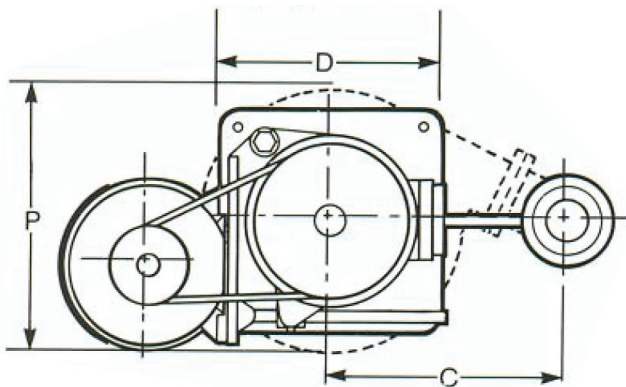
Bearing Frame Data

Bearing Frame	C1	C2	C3	C4	C5A	C5	C6A	C6
Shaft Diameter at Coupling (Size 6x6-12 and Larger)	1.375	2.375	2.875	2.875 (3.375)	2.875	2.875 (3.375)	2.875 (3.375)	2.875 (3.375)
Shaft Dia. Between Bearings	2.625	4.0	5.0	5.75	7.0	7.0	8.125	8.125
Shaft Diameter under Outboard Bearing	2.165	3.150	3.346	4.331	3.346	3.812	4.331	4.50
Shaft Diameter under inboard Bearing	2.362	3.543	4.724	5.512	6.692	6.692	7.784	7.784
Bearing Span	13.75	24.63	29.25	33.0	29.6	31.75	33.0	34.38
Outboard Bearing	7311 Duplex	7216 Duplex	7317 Duplex	7322 Duplex	7317 Duplex	90381 90744	7322 Duplex	HM926740 HM926710D
Inboard Bearing	6212	6218	6224	6228	61834	23034	61840	2394D
Shaft Diameter below bearing frame (before taper)	2.31	3.5	4.69	5.5	6.63	6.63	7.75	7.75
Maximum Motor Frame Size V-BELT	215T	365T	405T	445T	405T	445T	445T	447T
Maximum Motor Frame Size DIRECT DRIVEN	280HP	400HP	400HP	449HP	400HP	449HP	449HP	449HP
Minimum Horsepower	5HP							

NOTES:

- 1) Outboard bearings are duplex angular contact bearings on frame sizes C1, C2, C3, C4, C5A, & C6A; and are double row tapered roller bearings on the C5 and C6 frames.
- 2) Inboard bearings are single row deep groove ball bearings on frame sizes C1, C2, C3, C4, C5, & C6A; and are spherical roller bearings on the C5 and C6 frames.
- 3) All dimensions are in inches.

Model VHS Dimensions



Pump Dimensions

Pump Size	C	H	N	P	S
2x2-8	15 (381)	48" (1219) standard. 42" (1067) thru 132" (3353) available in 6" (152) increments.	26 (660)	13 (330)	3 (76)
3x3-10	18.3 (465)		31 (787)	17 (432)	4.5 (114)
4x4-12	19.2 (485)		33 (838)	20 (508)	5.5 (140)
6x6-12	22.1 (561)		41 (1041)	24 (610)	7.5 (191)
6x6-18	25.9 (658)		45 (1143)	29 (734)	7.5 (191)
8x8-22	31.9 (810)		58 (1473)	35 (889)	9 (229)
10x10-26	37.8 (960)		68 (1727)	42 (1069)	10.5 (267)

Bearing Frame Dimensions

Frame	C1	C2	C3 & C5A	C4 & C6A	C5	C6
A	23 (584)	38.9 (988)	45.5 (1153)	50.8 (1290)	50.8 (1290)	53.4 (1356)
D	17 (432)	22 (559)	26 (660)	29 (737)	29 (737)	30 (762)
U	1.38 (35)	2.38 (60.4)	2.88 (73.1)	2.88 (73.1)	3.38 (85.8)	3.38 (85.8)

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

Flange Dimensions

Pump Size	I.D	O.D	B.C	Holes
2x2-8	2	6	4.75	Four – 5/8"
3x3-10	3	7.5	6	Four – 5/8"
4x4-12	4	9	7.5	Eight – 5/8"
6x6-12	6	11	9.5	Eight – 3/4"
6x6-18	6	11	9.5	Eight – 3/4"
8x8-22	8	13.5	11.75	Eight – 3/4"
10x10-26	10	16	14.25	Twelve – 7/8"

Goulds VJC

Vertical Cantilever Pumps Designed to Handle Corrosive/Extremely Abrasive Slurries

- Capacities to 7,000 GPM (1,590 m³/h)
- Heads to 240 feet (73 m)
- Temperatures to 200° F (93°C)
- Pit Depths to 11 feet (3.4 m)
- Solids to 2 1/4 in. (57 mm)

Design Features

Cantilever Design

- No submerged bearings
- No packing or mechanical seals

External Impeller Adjustment

- Maintains pump efficiency and performance

Heavy Duty bearings and frame

Heavy Duty Shaft

- Operates minimum of 20% below first critical speed for reliability

Materials of Construction

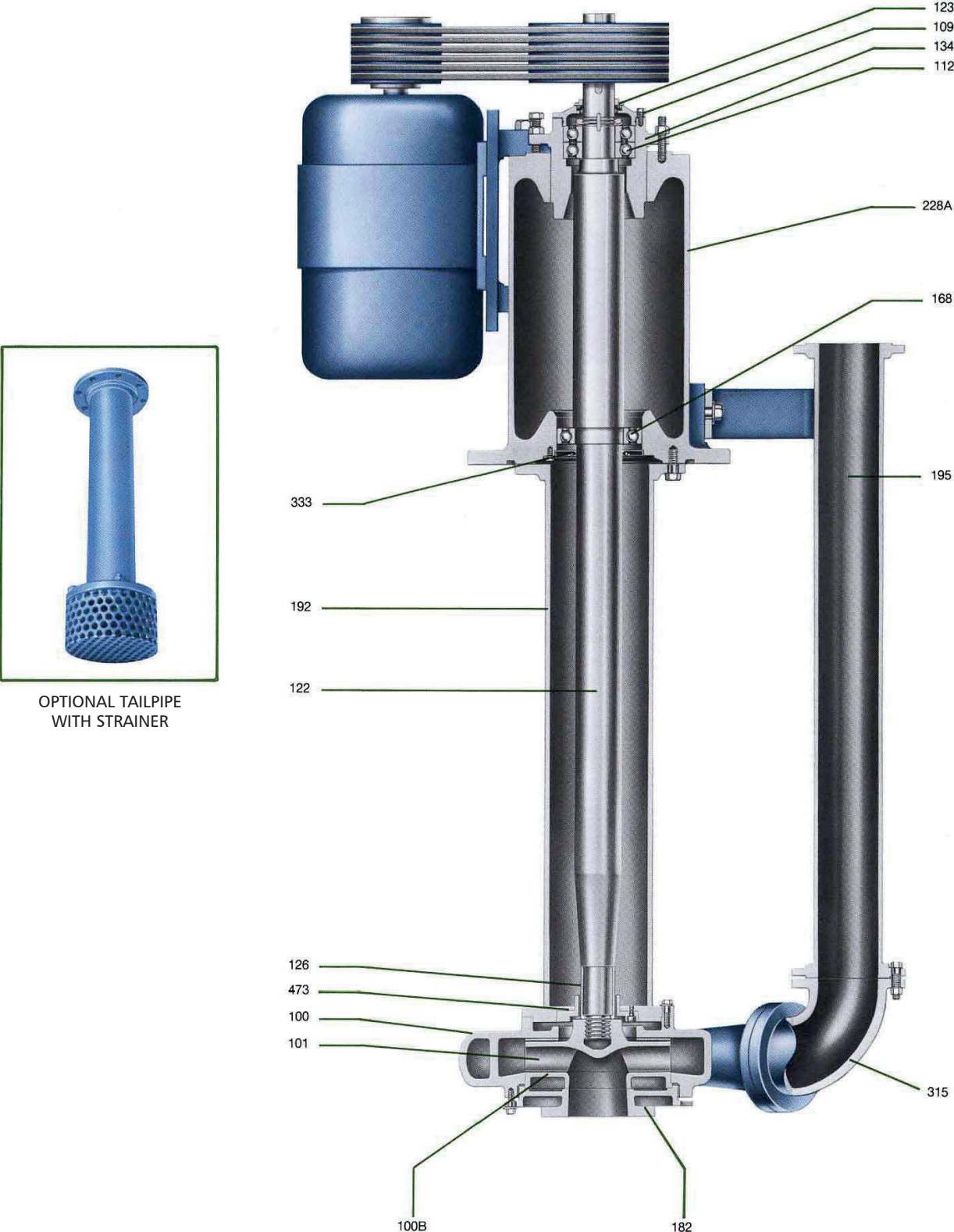
- Available in a wide range of corrosive/abrasive resistant alloys

Services

- Steel Mills
- Phosphoric Acid Plants
- Power Plants
- Coal Prep Plants
- Foundries
- Phosphate Mines
- Alumina Refineries
- Iron Ore Slurry
- Cement Mills
- Mine Slurry



Model VJC Sectional View



Model VJC Vertical Cantilever Bottom Suction Pumps

Heavy-Duty Design Features for Wide Range of Severe Corrosive/Abrasive Slurry Services

CANTILEVER SHAFT – NO BOTTOM BEARINGS

Tapered design to operate safely below first critical speed. Ideal for remote locations – no oil or water lines required to lubricate sub-merged bearings.

HIGH STRENGTH COLUMN PIPE

Rigidly maintains alignment between bearing frame and casing. Protects pump shaft, reduces wear.

RENEWABLE SHAFT SLEEVE

Full length hook-type sleeve protects shaft from traces of abrasive slurry.

THROTTLE BUSHING

Minimizes leakage, helps contain pressure in casing.

SEMI-OPEN IMPELLER

Designed to provide optimum combination of solids handling capability, wear resistance, and pump efficiency.

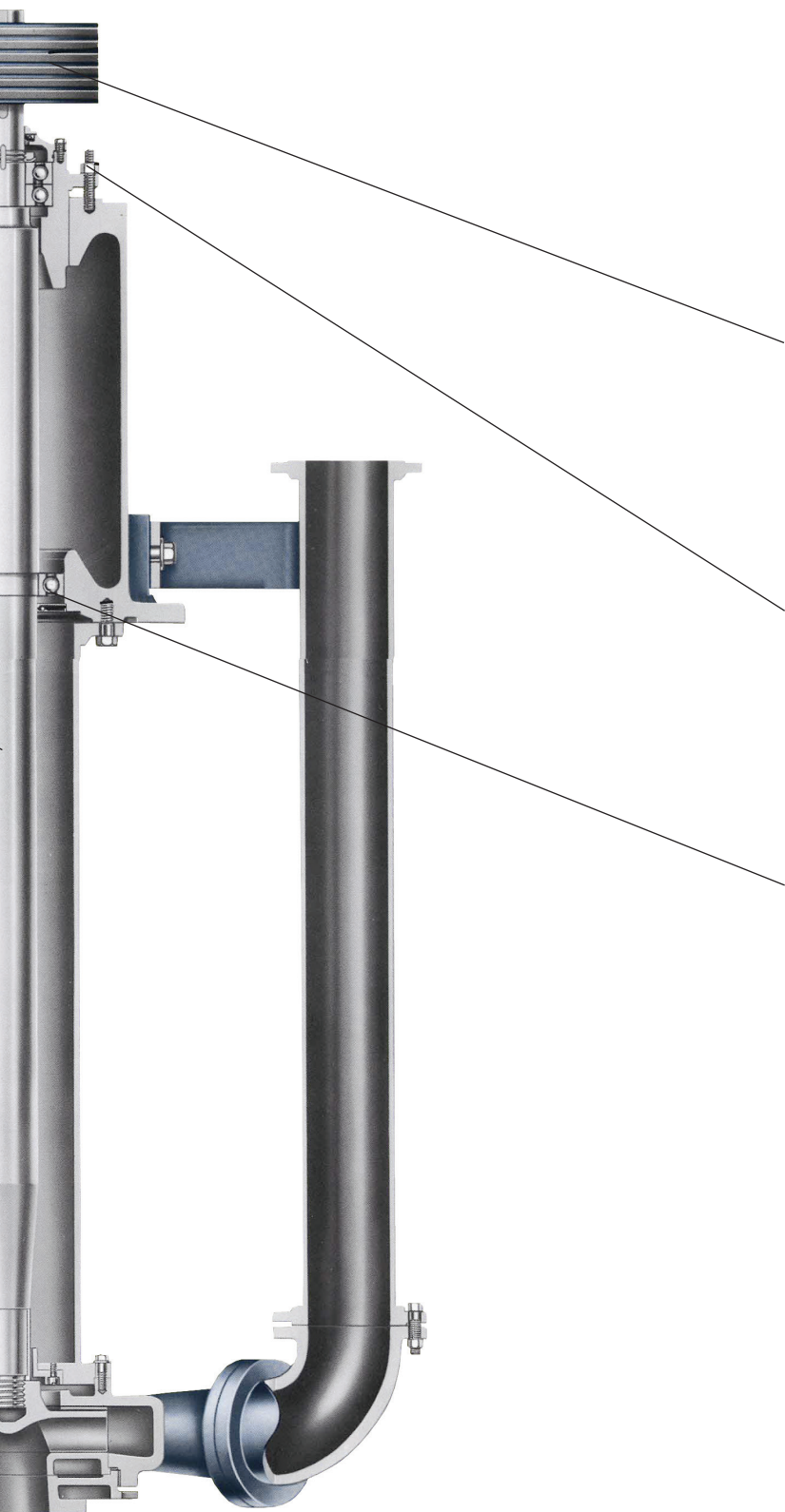
DUAL VOLUTE CASING

Virtually eliminates radial shaft loading – extends bearing life. Extra thick wall sections provide longer life under severe abrasive conditions.

SUCTION COVER LINER

Renewable liner protects casing from abrasive wear.





**OPTIONAL TAILPIPE
WITH STRAINER**

DIRECT OR BELT DRIVE

Direct drive offers simplicity, ease of installation and low maintenance costs. V-belt drive allows use of readily available standard speed motors along with full diameter impellers to meet desired operating conditions with greater pump efficiency. Belt drive also provides flexibility to meet changes in head/capacity requirements.

EXTERNAL IMPELLER ADJUSTMENT

Permits restoring running clearance after abrasive wear without dis-assembling pump. Maintains pump efficiency and performance over life of impeller.

HEAVY-DUTY BEARINGS

Grease-lubricated ball bearings located over floor plate, completely sealed from contamination. Roller bearings provided on larger frame sizes.

Model VJC Parts List and Materials of Construction

Item No.	Part Name	Material	
		Standard	Optional*
		HC600	316SS
100	Casing	HC600	316
100B	Suction Liner	HC600	316
101	Impeller	HC600	316
109	Bearing End Cover	Cast Iron	
112	Thrust Bearing	Steel	
122	Shaft	4140 Steel	316
123	Deflector	Rubber	
126	Shaft Sleeve	416	
134	Thrust Bearing Housing	Cast Iron	
168	Radial Bearing	Steel	
182	Suction Cover	Cast Iron	316
192	Pipe Column	Steel	316
195	Discharge Pipe	Steel	316
228A	Bearing Frame	Cast Iron	
315	Discharge elbow	Steel	Steel 316
333	Labyrinth Seal	Carbon Filled Teflon	
473	Throttle Busing	Cast Iron	HC600 316

* For other materials, contact factory.

Materials of Construction

Cast iron	ASTM A48 – Classes 25 and 35
HC600	High Chrome Iron – Similar to ASTM A532 C 1.3 Type A
316SS	Stainless Steel – AISI 316 or ASTM A743, Grado CF8M

Construction Details

		Pump Size					
		2x3-14	3x4-14	4x6-14	6x6-14	8x10-18	10x12-22
Impeller and Casing	Net Weight — Lbs. (kg)	2000 (907)	2080 (943)	2100(953)	2600(1179)	3500 (1588)	6200(2812)
	Min. Casing Thickness — in. (mm)	.56(14)	.62(16)			.75(19)	
	Max. Solids Size — in. (mm)	7/8 (22)	1-1/8(29)	1-3/8(35)	1-1/2(38)	2(51)	2-1/4(57)
	Workina Pressure — PRIG (kPa)	127 PRIG (875)					

Shaft and Bearing Data

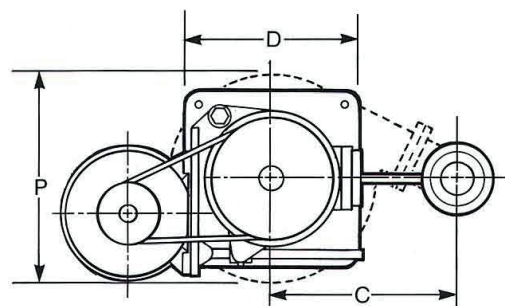
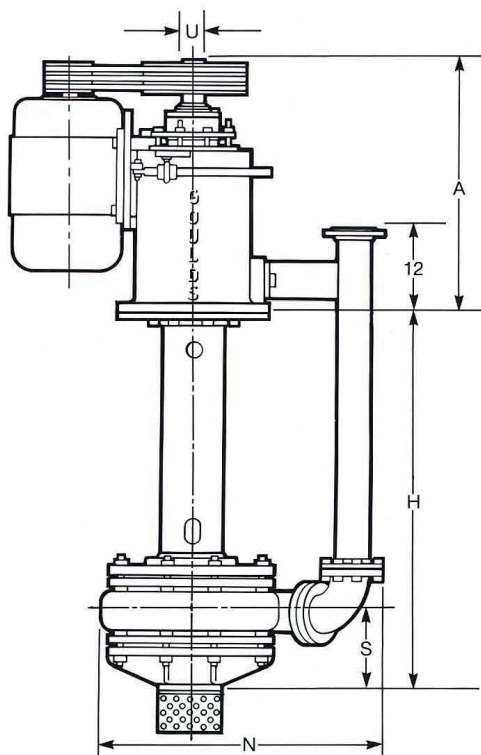
		Bearing Frame						
		C2	C3	C4	C5A	C5	C6A	C6
Shaft	Diameter at Coupling (Size 6x6-12 and Larger)	2.875	2.875	2.875 (3.375)	2.875	2.875 (3.375)	2.875 (3.375)	2.875 (3.375)
	Dia. Between Bearings	4.0	5.0	5.75	7.0	7.0	8.125	8.125
	Dia. at Outboard Bearing	3.150	3.346	4.331	3.346	3.812	4.331	4.50
	Dia. at Inboard Bearing	3.543	4.724	5.512	6.692	6.692	7.784	7.784
	Bearing Span	24.63	29.25	33.0	29.6	31.75	33.0	34.38
Bearings	Outboard ¹	7216 Duplex	7317 Duplex	7322 Duplex	7317 Duplex	90381 90744	7322 Duplex	HM926740 HM926710D
	Inboard ²	6218	6224	6228	61834	23034	61804	2394D

1) Outboard bearings are duplex angular contact bearings on frame sizes C2, C3, C4, C5A, & C6A; and are double row tapered roller bearings on the C5 and C6 frames.

2) Inboard bearings are single row deep groove ball bearings on frame sizes C2, C3, C4, C5A, & C6A; and are spherical roller bearings on the C5 and C6 frames.

3) All dimensions are in inches.

Model VJC Dimensions



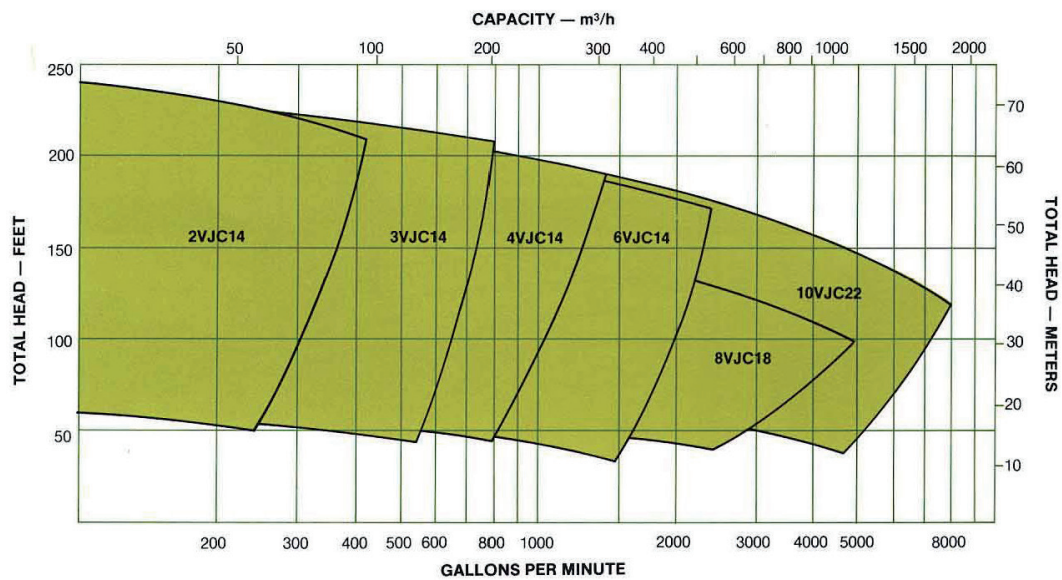
Dimensions					
Pump Size	C	H	N	P	S
2x3-11	16(406)	48 (1219)	29 (737)	17(432)	4(102)
2x3-14	17.5(444)	Standard.	31 (787)	19 (483)	4 (102)
3x4-11	17.8(452)	42 (1067)	31 (787)	19 (483)	4.8 (122)
3x4-14	19(483)	thru 132	35 (889)	23 (584)	4.8(122)
4x6-14	19.4 (493)	(3353) avail, in	35 (889)	23 (584)	5.3 (135)
6x6-14	22.6 (574)	3" (76)	41 (1041)	26 (660)	5.6 (142)
8x10-18	28.7 (730)	increments.	53 (1346)	37 (940)	9.6 (244)
10x12-22	35.4 (899)		65(1651)	41 (1041)	9.6 (244)

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

Dimensions – Bearing Frames			
Frame	A	D	U
C-2	38.9 (988)	22 (559)	2.38 (60.4)
C-3	45.5(1156)	26 (660)	2.88 (73.1)
C-4	50.8(1290)	29 (737)	2.88 (73.1)
C-5	50.8(1290)	29 (737)	3.38 (85.8)
C-6	53.4(1356)	30 (762)	3.38 (85.8)

Flange Dimensions			
I.D.	O.D.	B.C.	Holes
2	6	4.75	4 – 5/16
3	7.5	6.0	4 – 5/16
4	9	7.5	8 – 5/16
5	10	8.5	8 – 3/4
6	11	9.5	8 – 3/4
8	13.5	11.75	8 – 3/4
10	16	14.25	12 – 1/2
12	19	17	12 – 1
14	21	18.25	12 – 1

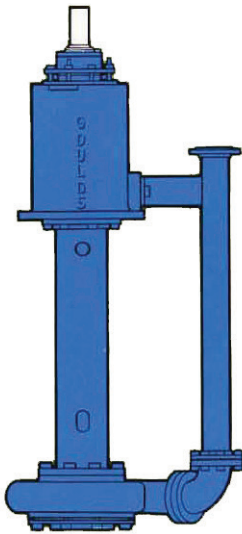
Model VJC Hydraulic Coverage



One Cantilever Design - Two Pump Models

Model VJC

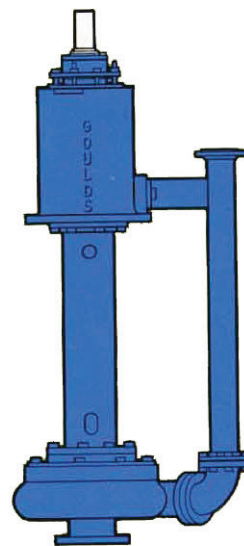
Vertical Cantilever Bottom Suction Pump



The Model VJC is ideal for corrosives and extremely abrasive slurries.

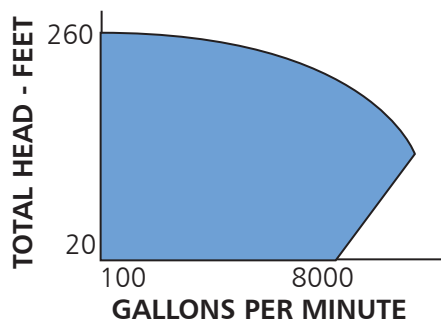
Model VHS

Vertical Cantilever Recessed Impeller Pump

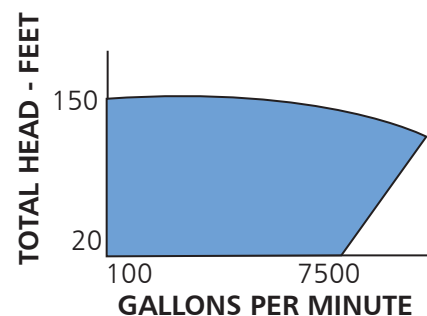


Designed to handle large or fibrous solids. Recessed, non-clog impeller – maximum solid size is equal to pump suction. Solids to 10 in. (254 mm).

Hydraulic Coverage

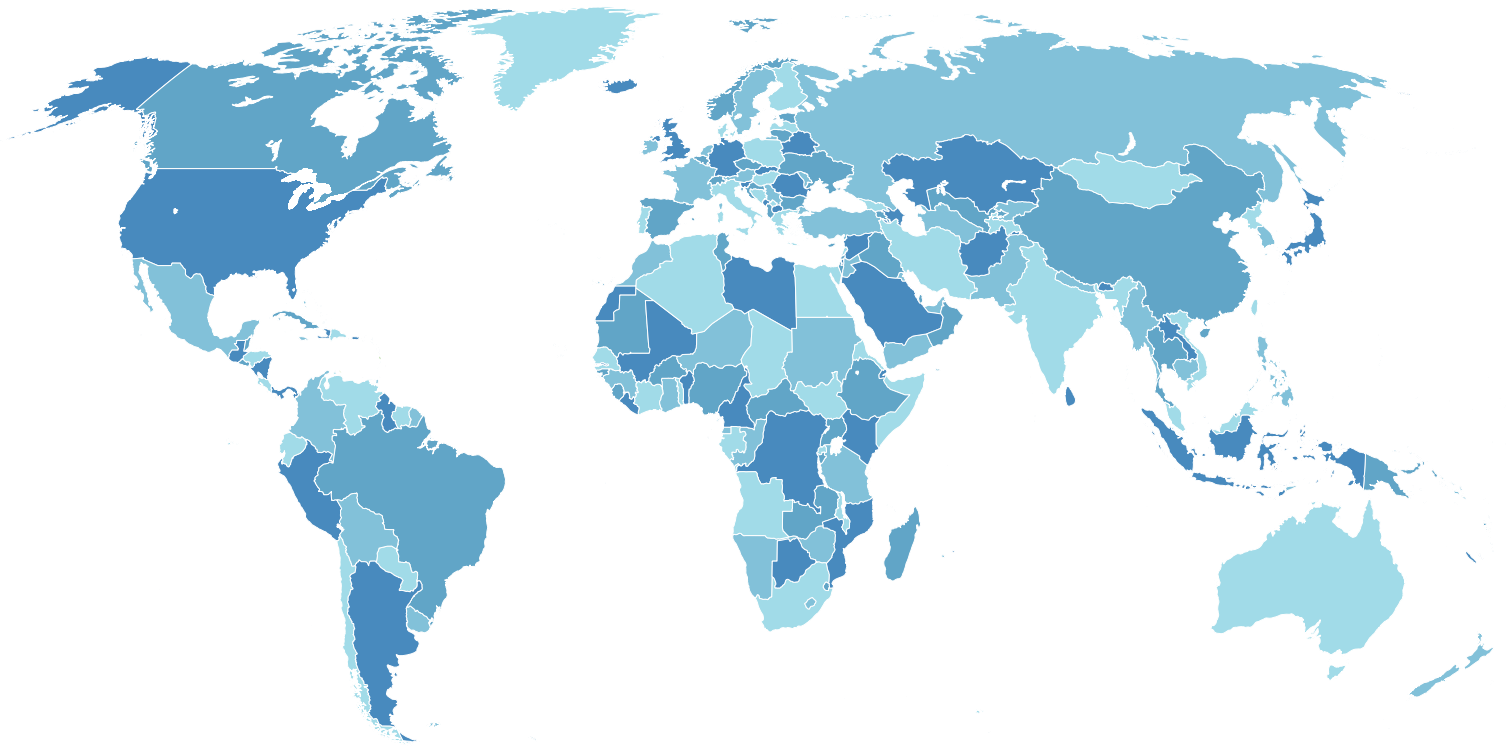


Hydraulic Coverage



Notes

Notes



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



— An ITT Brand

240 Fall Street
Seneca Falls, NY 13148
Phone: 315.568.2811
Fax: 315.568.2418
www.gouldspumps.com

© 2025 ITT Goulds Pumps Inc.

B.VHS/VJC.en-US.2025-10