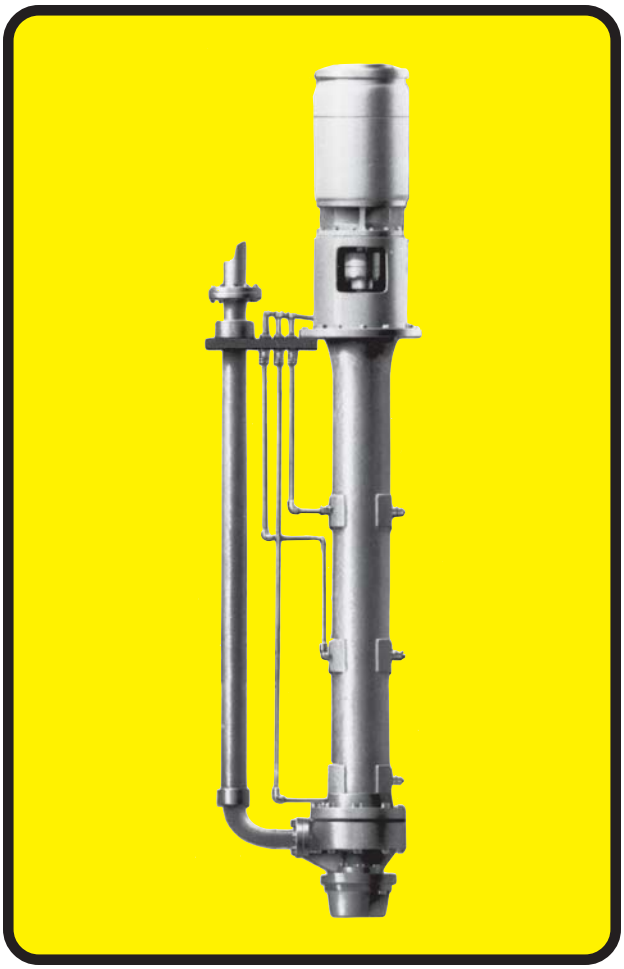
BULLETIN
P-306E
JAN. 1994

SERFILCO®

SERIES 'VGRP' VERTICAL PUMPS



FOR PUMPING, TRANSFERRING, RECIRCULATING OF:

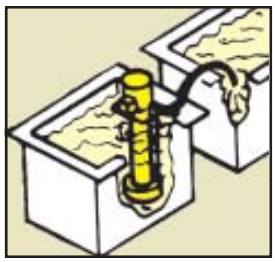
WASTES / ACIDS / CHEMICALS

- **Chemical resistant**
  Fiberglass reinforced vinyl ester w/316SS shaft
  See Chemical Resistance Chart
- **Centrifugal - Quiet, Vibration-free**
- **High efficiency**
  Less horsepower required
- **For pit depths to 10 feet (3 M)**
  With suction extension an additional 8 ft. (2.5 M). can be obtained.
- **Maximum temperature 200°F(93°C)**
  For higher temperature consult Customer Service.
- **To 1500 U.S. GPM or 350 FT. TDH @ 60 Hz (350 cubic meters/hr or 105M TDH @ 60 Hz)**
- **Chemical duty motor**
  Sealed, oversized bearings, cast iron end bells.
  Liquid/vapor seal and slinger.
  Corrosion resistant two-part epoxy finish, stainless steel nameplate.

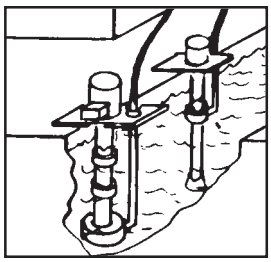
Read: "*Tips for the successful operation of sump pumps".*
See bulletin or index

SPECIFICATIONS

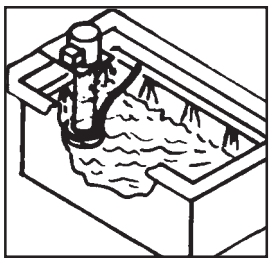
The VGRP is a fiberglass reinforced vinyl ester vertical immersion sump pump for wet pit applications in chemical waste handling, effluent handling and liquid transfer operations wherever the broad corrosion resistance of the proprietary GRP material is required. The standard pump shaft is 316 stainless steel. Alloy 20, K-monel, Hastelloy B or C or titanium shaft sleeves are available depending on the corrosive characteristics of the liquid. Viton “O”-ring and lip seal are standard. Pump supplied with a glass reinforced polypropylene suction strainer, polypropylene lube lines. Teflon bearings are standard and provision for external water is provided for each bearing. The VGRP pump is furnished with vertical P-base motors which meet NEMA Standard MGI-18.620. The high thrust capacity of this motor eliminates the need for an external thrust bearing. If desired, however, an optional thrust bearing design incorporating a flexible coupling is available. Maximum operating temperature: 200°F (93°C). Maximum pressure rating is 100 PSI (6.8 bar) up to 100°F (38°C), except for 3”x1½”x8” and 4”x3”x8” which is rated at 175 PSI (11.9 bar) up to 100°F (38°C). Consult factory for higher temperature rating. PIT DEPTH: Minimum 3'-0” (.9 M). Maximum 10'-0" (3 M).



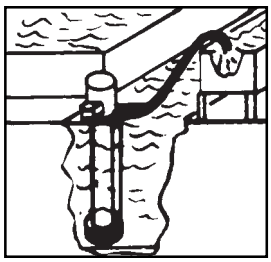
CHEMICAL TRANSFER



DEEP STANDBY PUMP
when priming not possible in deep areas



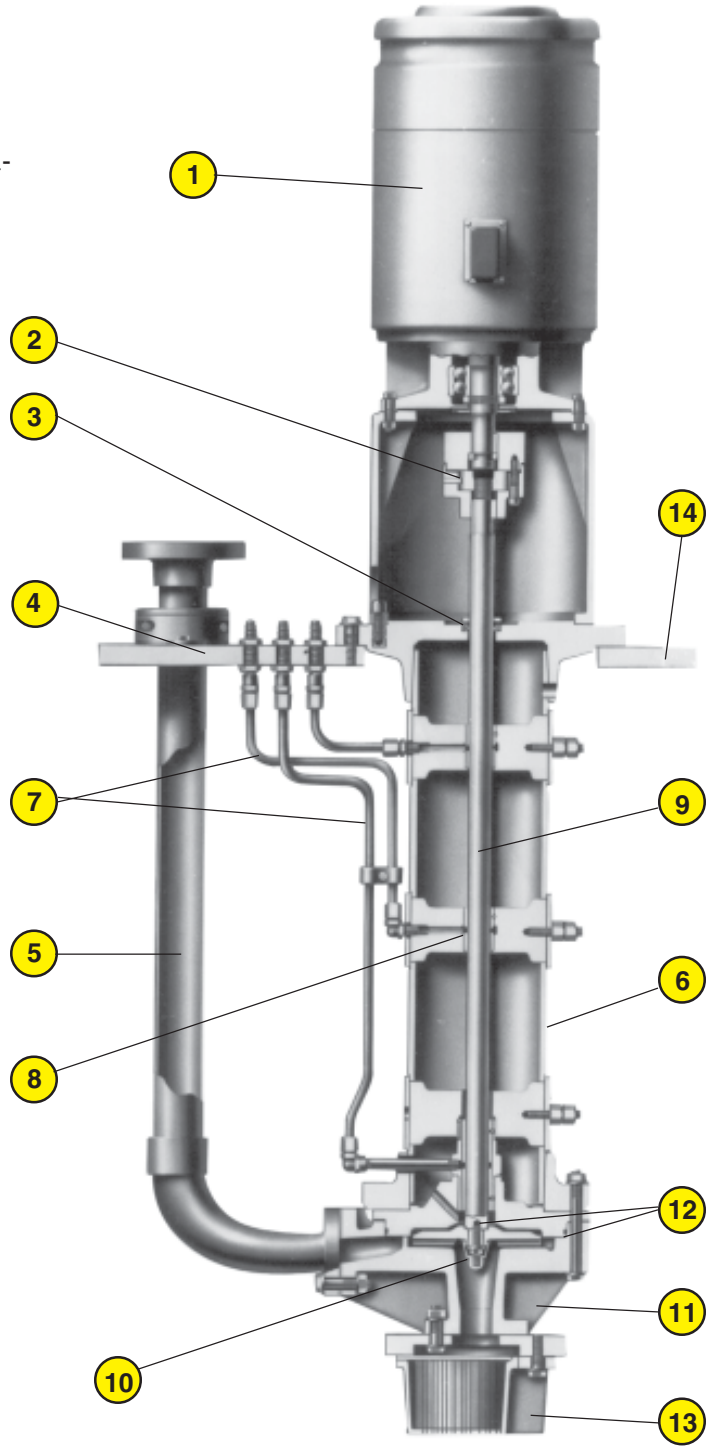
SPRAY PUMPING



SUMP DRAINING

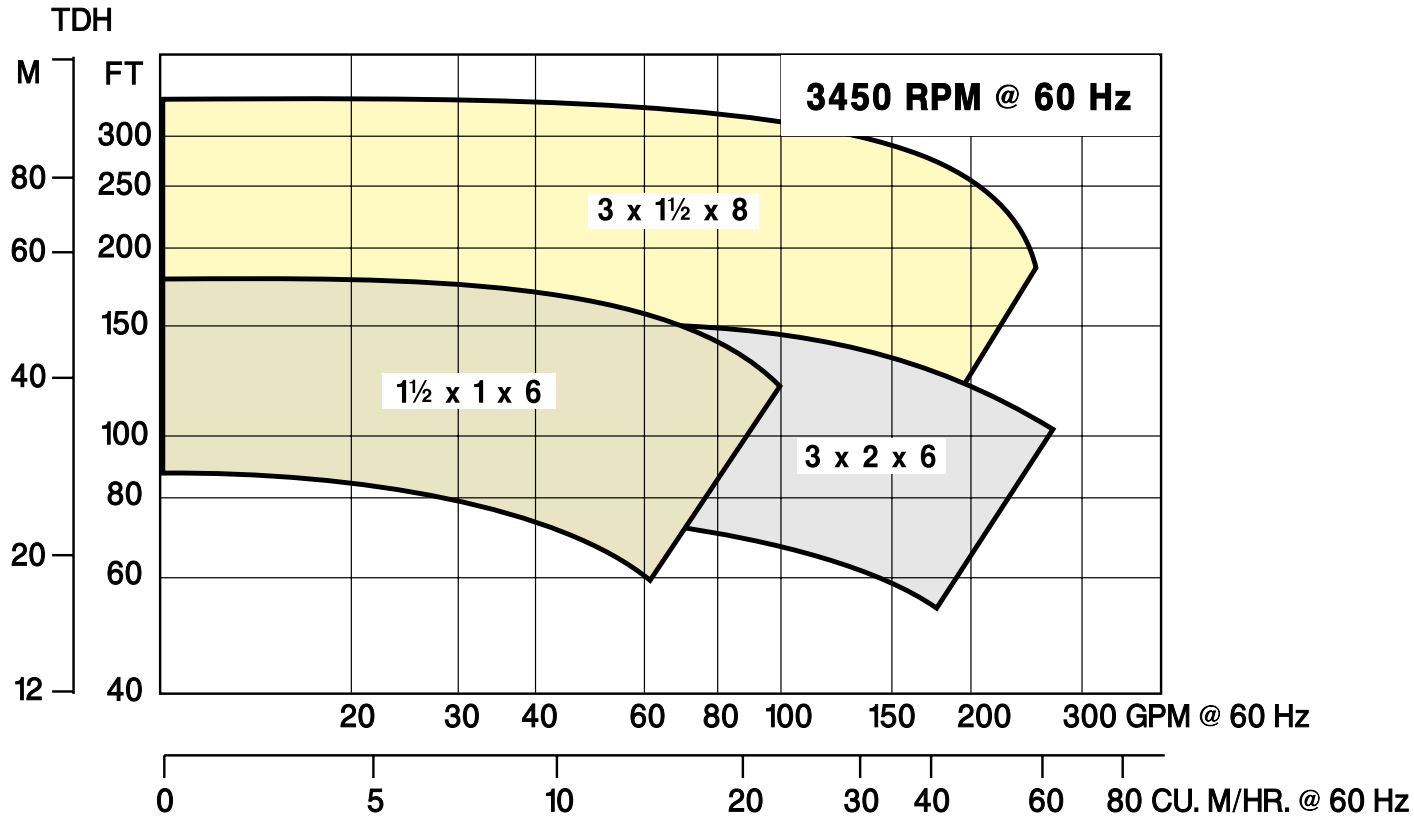
PUMP FEATURES

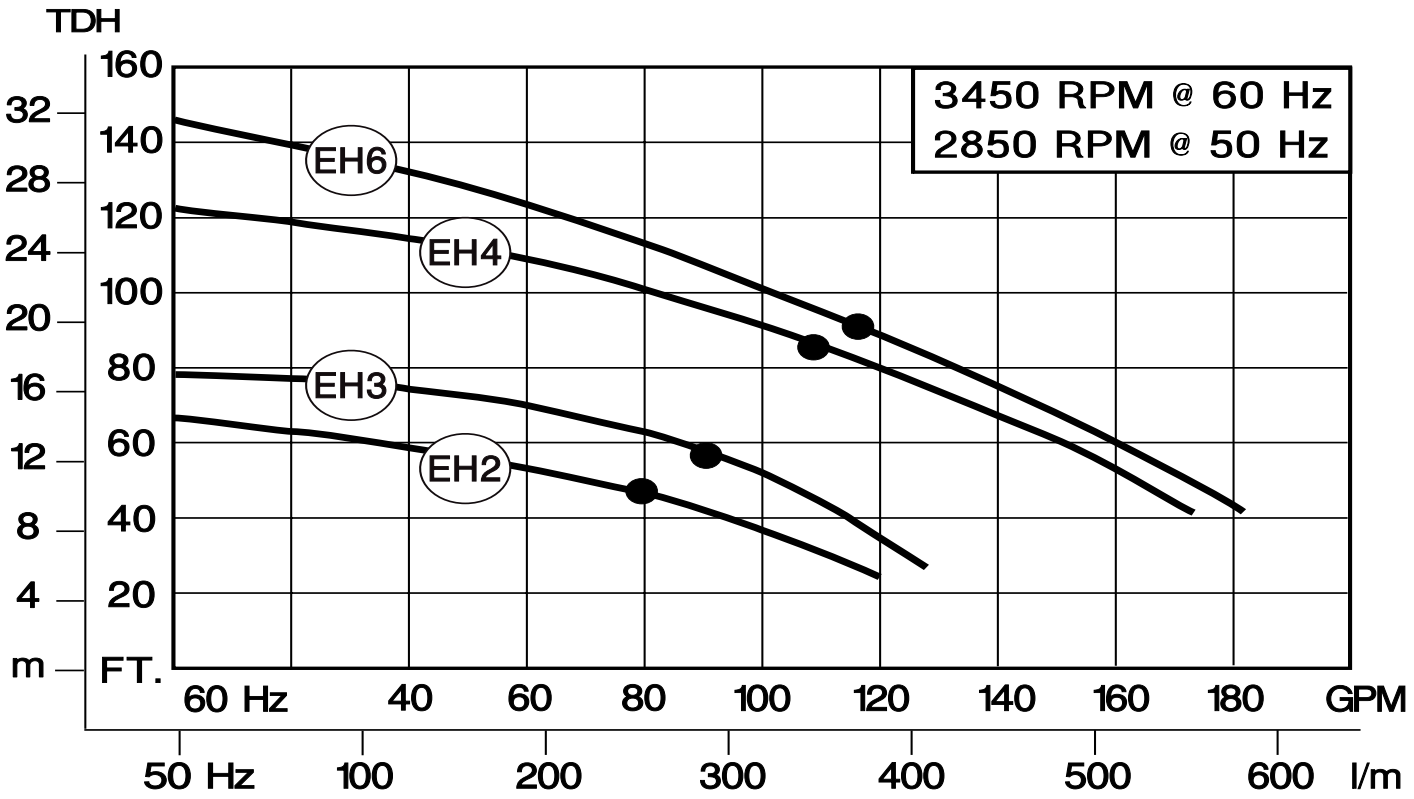
1. NEMA inline motor with high thrust capacity eliminates need for external pump thrust bearing.
2. Impeller adjusting mechanism restores clearances, allowing optimized operation and efficiency with no need to pull or dismantle the pump. The simple, external mechanism is conveniently located above the mounting plate for easy accessibility. The mechanism is fully enclosed to protect against corrosion or fouling of adjustment.
3. Standard-equipment closure-type lip seal provides a positive seal at the shaft — protects against noxious or corrosive vapors, helps comply with EPA and OSHA regulations.
4. Discharge pipe and lube line are locked to support plate for good support and vibration-free operation.
5. Discharge pipe is filament-wound fiberglass with a flanged connection above the mounting plate as standard.
6. Single-piece, filament-wound fiberglass column is generously sized in diameter and wall thickness for strength and rigidity.
7. Bearings can be lubricated by external flush, or self-lubricated by the pumped fluid. For external flush, an individual lube line to each bearing ensures generous flush for long service life.
8. Optimized shaft/bearing system operates well below the first critical speed, resulting in less shaft whip and longer bearing life. All intermediate bearings and the heavy-duty dual bottom bearings are made of PTFE or carbon.
9. Shaft metallurgy is selected to suit the applicaton: 316 stainless, Alloy 20, Titanium, or Hastelloy.
10. Tapered "polygon" impeller drive provides exceptional torque carrying capacity with unequalled shear strength for durability.
11. Unitized fiberglass pump casing with integrally molded suction and discharge nozzles offers structural strength and reliability, and excellent loading factors. Smooth hydraulic passages boost efficiency and lower operating costs.
12. Radial fit and square fit "O"-rings about the cover and impeller respectively ensure a good seal. Patented, "pullout" bearing retainer streamlines maintenance procedure. Bearing retainers and locknuts are fiberglass-reinforced polymer.
13. Full basket strainer, generously sized, protects the pump from clogged suction and fluid starvation.
14. Vinyl Ester Mounting Plate.



The VGRP is a vertical immersion sump pump designed to meet the needs of the process industries with single material standardization, strength, long life and the first truly low-maintenance fiberglass design.

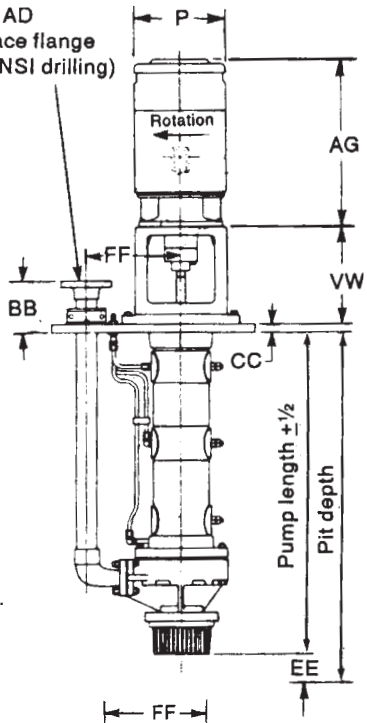
FLOW CURVES


TDH
M
FT
3450 RPM @ 60 Hz
3 x 1½ x 8
1½ x 1 x 6
3 x 2 x 6
80
60
40
20
12
300
250
200
150
100
80
60
40
20 30 40 60 80 100 150 200 300 GPM @ 60 Hz
0 5 10 20 30 40 60 80 CU. M/HR. @ 60 Hz


TDH
3450 RPM @ 60 Hz
2850 RPM @ 50 Hz
EH6
EH4
EH3
EH2
32
28
24
20
16
12
8
4
m
160
140
120
100
80
60
40
20
FT.
60 Hz 40 60 80 100 120 140 160 180 GPM
50 Hz 100 200 300 400 500 600 l/m

DIMENSIONS

GROUP	PUMP SIZE	DISCH. FLANGE AD		PUMP DIMENSIONS BB	CC	EE	FF	MOTOR FRAME 143 thru 256 LP VW	284 thru 326 LP VW	MTG. PLATE STD. W1	L1	W2	L2
#1	1½ x 1 x 6	2	in.	7-1/4	3/4	4-7/16	11-1/8	11-5/16	13-1/16	16	24	24	26
	3 x 2 x 6	2	mm	184	19	111	283	287	332	406	610	610	660
#2	3 x 1½ x 8	2	in.	7-1/4	1	4-5/8	13-1/8	12-15/16	14-11/16	24	30	24	30
			mm	184	25	117	333	329	373	610	762	610	762
	4 x 3 x 8	3	in.	9	1	4-5/8	16-5/8	12-15/16	14-11/16	24	33	24	33
			mm	229	25	117	422	329	373	610	838	610	838
	3 x 1½ x 10	2	in.	7-1/4	1	4-5/8	13-1/8	12-15/16	14-11/16	24	30	24	30
			mm	184	25	117	333	329	373	610	762	610	762
	4 x 3 x 10	3	in.	9	1	4-5/8	16-5/8	12-15/16	14-11/16	24	33	24	33
			mm	229	25	117	422	329	373	610	838	610	838
	6 x 4 x 10	4	in.	9	1	4-1/4	20-1/8	12-15/16	14-11/16	24	39	24	39
			mm	229	25	108	511	329	373	610	991	610	991



NOTE: Pumps are sized to fit depths as listed. Pumps are furnished in incremental lengths to match pit depths in 1-foot increments only. Pump length equals pit depth minus **EE**. Add 1/2" to **BB** dimension when product lubricated bearings are furnished. Dimensions **P** and **AG** vary with motor.

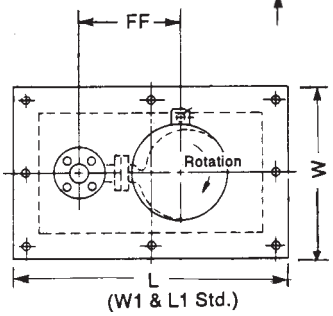
TO ORDER

Select pump size, pit depth, bearing material, operating temperature, shaft sleeve material and motor. Build Model Number and Price Code Number as shown in example below.

EXAMPLE: TYPICAL MODEL NUMBER PRICE CODE NO. 39-_ _ _ _ _ _

VGRP3X2X6 -5P -TF 90°F -SS -D.3.0 = 39-2051SE

PUMP SIZE — VGRP3X2X6
PIT DEPTH — -5P
BEARING — -TF
TEMPERATURE — 90°F
SLEEVE — -SS
MOTOR — -D.3.0



VERTICAL & TOP VIEW

SIZE MODEL	SIZE PRICE CODE NO.	PIT DEPTH ADD TO MODEL (Ft.)	PIT DEPTH ADD TO PRICE CODE NO.	BEARING MATERIAL	BEARING ADD TO MODEL	BEARING ADD TO PRICE CODE NO.	SHAFT MATERIAL	SHAFT ADD TO MODEL	SHAFT ADD TO PRICE CODE NO.
VGRP1½ x 1 x 6	1	3P	03	PTFE	TF	1	316SS (Std.)	SS	S
VGRP3 x 2 x 6	2	4P	04	Carbon	C	2	Alloy 20	A	A
VGRP3 x 1½ x 8	3	5P	05				Hastelloy B	B	B
VGRP4 x 3 x 8	4	6P	06				Hastelloy C	C	C
VGRP3 x 1½ x 10	5	7P	07				K-Monel	K	K
VGRP4 x 3 x 10	6	8P	08				Titanium	T	T
VGRP6 x 4 x 10	7	9P	09						
		10P	10						

OPTIONAL

MOTOR HORSEPOWER (230-460/3/60, TEFC) RPM	ADD TO MODEL	ADD TO PRICE CODE NO.	1½	2	3	5	7½	10	15	20	25	30	40	50
3450	D (H.P.)		A	C	E	G	J	L	N	Q	S	U	W	Y
1725	H (H.P.)		B	D	F	H	K	M	P	R	T	V	X	Z

DESCRIPTION		PRICE CODE NO.
TFE "O"-rings & gaskets		39-0000
TFE lubricating tube w/PVDF fittings		39-0001
Larger mounting plate for use with product flush or float switch assembly (W2 x L2 dimensions).	Group #1	39-0002
	Group #2	Included

Consult Factory for:

Suction extensions for pit depths over 10 feet.
Thrust bearing design incorporating flexible coupling.
Explosion-proof motors.

For Level Controls and Motor Starters See Bulletin

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