



CIVIL ENGINEERING ASSOCIATES, INC.

10 Mansfield View Lane
South Burlington, VT 05403

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E-Mail: mail@cea-vt.com

June 17, 2015

Ms. Jeannine McCrumb, Town Planner & Zoning Administrator
Town of Charlotte Offices
PO Box 119
Charlotte, Vermont 05445

**Re: Marlys Beck Property
1161 Lime Kiln Road, Charlotte
State Wastewater & Potable Water Supply Permit Application**

Dear Ms. McCrumb:

Ms. Marlys Beck is seeking approval to permit the construction of a mound type wastewater disposal system at the undeveloped property located at 1161 Lime Kiln Road to support a proposed 4-bedroom house.

The isolation distance for the proposed conventional system does extend northerly across the east property line to the property owned by Stephen and Margaret Foster. An abutter notification has been sent to them prior to the submittal of this application package in conformance with the notification requirements of Act 145.

This completes our summary of the proposed wastewater system and potable water supply components for the property at 1161 Lime Kiln Road. If you should have any questions, please feel free to contact me at 864-2323 x310.

Respectfully,

David S. Marshall, P.E.
Project Engineer

\dsm

Enclosures

Application and Application Fee (\$500)
Two sets of full size plans, one set of 11x17
Basis of Design, Pump cut sheets
Act 145 Abutter Notice Certification
CD of PDF's of application

cc: M. Beck; D. Waller (w/ enclosures (1 set 11x17)
CEA File 15150.00 (w/ enclosures 1 set 11x17 plans)

Beck Wastewater Disposal System Charlotte, Vermont

Pump Station Basis of Design 11-May-15

Design Flow	490 GPD
Infiltration	0 GPD
20% Municipal Credit	0
Total Design Flow	490 GPD
Average Daily Flow	0.51 GPM
Peaking Factor	5.00
Peak Flow	2.55 GPM
Required Storage	490 gallons
Storage Provided	500 gallons
Force Main Dia.	2.00 Inches
Min. Cleansing Velocity	2.00 FPS
Min. Pumping Rate	19.57 GPM
Chosen Pumping rate	28.00 GPM
Length of FM to Mound	270.00 feet
Friction Losses to Mound	4.36 feet
High Point of FM in Mound	353.00 feet
Low Elevation in PS	<u>325.00</u> feet
Elevation Change	28.00 feet
Minor headlosses	3.00 feet
Residual	3.00 feet
TDH	38.36 feet
Pump Cycle Storage	100 Gallons
Run Cycle	5.33 Minutes
Wet Well Detention Time	195.92 Minutes
System Curve	GPM TDH
	15 35.40
	20 36.30
	25 37.50
	30 39.00
	35 40.60
Pump Selection	Hydromatic SPD50H, 1 Ph, 230 v, 60 Hz, 0.5 HP



SPD100H Shown

HYDROMATIC[®] SPD50H/100H SUBMERSIBLE EFFLUENT PUMP

Septic Tank Effluent • High-Capacity Sump • High-Head Dewatering

SPD50H/100H Submersible Effluent Pump



SPD100H

The Hydromatic SPD50H/100H submersible pumps are specifically designed to meet the demands of septic tank effluent applications that require a “high-head”, dual-seal pump. The SPD50H has a powerful 1/2 horsepower motor, while the SPD100H comes with a 1 horsepower motor. Both pumps are standard 2 inch NPT discharge pumps, with 3 inch versions optional, and available in automatic and manual configurations. The SPD50H can handle capacities up to 110 gallons per minute and heads to 50 feet, while the SPD100H handles capacities up to 140 gallons per minute and heads to 63 feet.

These pumps feature a high-quality cast iron pump volute, motor housing and seal housing construction that help to ensure a long service life. The pump’s non-clogging, two-vane, cast iron impeller, which is threaded to a stainless steel shaft, is capable of handling up to 3/4 inch spherical solids – providing long life in demanding applications. A seal-failure sensor probe (for connection to a seal failure alarm) is standard on three-phase units and available as an option on single-phase models. Two carbon- and ceramic-faced mechanical shaft seals are mounted in tandem to provide double protection against water entry for a long, leakproof life.

The SPD50H/100H’s oil-filled motor provides superior cooling characteristics, allowing the motor to run cool and quiet for years. This oil-filled design also provides permanent lubrication of the shaft bearings, minimizing maintenance and extending the service life of the pump. In addition, to protect against overheating, the motor windings contain an automatic reset thermal overload protection located in the accessory control panel.

Automatic models (1/2 HP) feature the exclusive Hydromatic diaphragm pressure switch, which provides proven reliability in installations where a float might hang up. It also incorporates a unique piggyback plug arrangement, which allows for simple conversion to manual operation by simply removing the switch plug and inserting the motor plug directly into the electrical outlet.

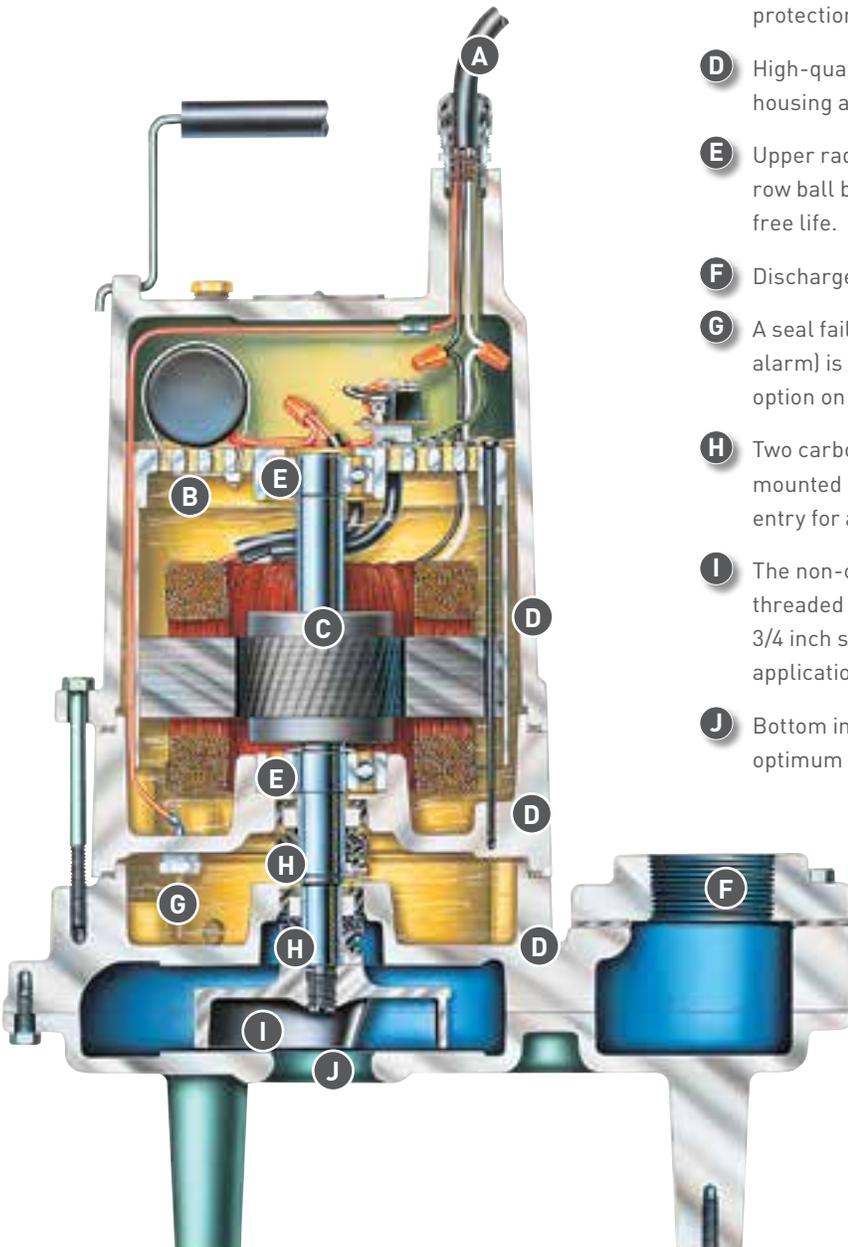


SPD50H

SPD50H/100H

The SPD50H/100H are completely submersible, "high-head", dual-seal pumps for use in septic tank effluent applications.

Automatic models (1/2 HP) feature the exclusive Hydromatic diaphragm pressure switch with piggyback plug-in arrangement. Proven reliability for automatic operation in installations where a float might hang up. Switch is easily serviced and may be disconnected for manual operation.



- A** Water-resistant power cord has a compression-fit connection and an epoxy potting for double protection against water entry. Lengths of 10 and 20 feet are available with molded plugs, depending on model variations..
- B** Oil-filled motor provides superior cooling and permanent lubrication of bearings, minimizing maintenance and extending service life.
- C** 1/2 or 1 HP capacitor-start motors provide maximum starting torque. Motor windings contain automatic thermal overload protection (1Ø).
- D** High-quality cast iron construction of pump volute, motor housing and seal housing provides long life.
- E** Upper radial- and lower thrust bearings are heavy-duty, single-row ball bearings that are permanently lubricated for service-free life.
- F** Discharge is standard 2 inch NPT (3 inch is optional).
- G** A seal failure sensor probe (for connection to a seal failure alarm) is standard on three-phase units and available as an option on single-phase models.
- H** Two carbon- and ceramic-faced mechanical shaft seals are mounted in tandem to provide double protection against water entry for a long, leakproof life.
- I** The non-clogging, two-vane, cast iron impeller, which is threaded to a stainless steel shaft, efficiently handles up to 3/4 inch spherical solids – providing long life in demanding applications.
- J** Bottom inlet has no screen to become clogged, providing optimum pump performance and minimal maintenance.

SP50

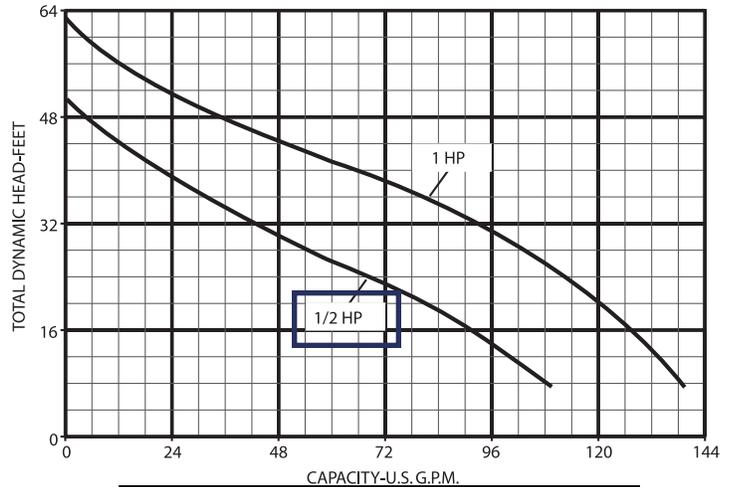
PUMP CHARACTERISTICS

Pump/Motor Unit	Submersible				
Manual Models (50)	MH1	MH2	MH6	MH4	MH5
Automatic Models	AH1	AH2	-	-	-
Horsepower	1/2				
Full Load Amps	14.0	7.0	4.0	1.8	1.5
Motor Type	Capacitor Start		Three-Phase		
R.P.M.	3450				
Phase Ø	3				
Voltage	115	230	200	460	575
Manual Models (100)	MH2	MH6	MH3	MH4	M5
Automatic Models	AH2	-	-	-	-
Horsepower	1				
Full Load Amps	9.9	5.5	5.2	2.5	1.5
Motor Type	Cap. Three-Phase				
R.P.M.	3450				
Phase Ø	1	3			
Voltage	230	200	230	460	575
Hertz	60				
Operation	Intermittent				
Temperature	140°F Max Fluid Temp.				
NEMA Design	B				
Insulation	Class B				
Discharge Size	2" NPT (3" opt.)				
Solids Handling	3/4"				
Unit Weight	73 lbs.				
Power Cord: SPD50H 14/3, SJTW-A, 1Ø, 115V=10' std. (20' opt.)-14/4, STW-A, 1Ø, 115V=10' (20' opt.)-16/3, STW-A, 1Ø, 230V=20' std.-16/4, STW-A, 1Ø, 230V=20' std. SPD100H 16/3, STW-A, 1Ø, 230V=20' std.-16/4, STW-A, 1Ø, 230V=20' std.-18/5, STW-A, 3Ø, 200V, 230V, 460V or 575V=20' std.					

MATERIALS OF CONSTRUCTION

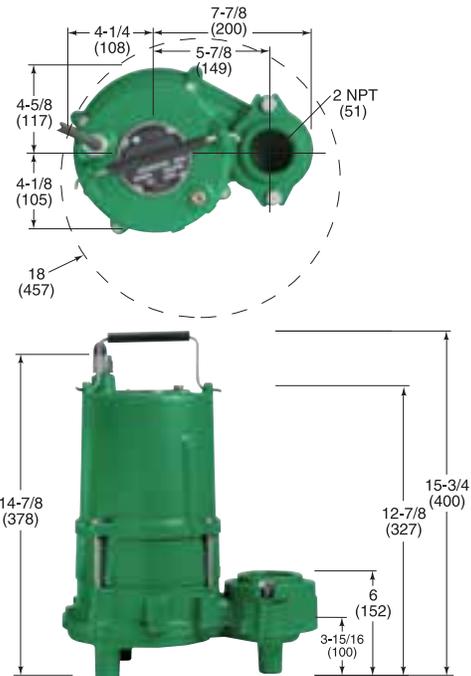
Handle	Steel
Lubricating Oil	Dielectric Oil
Motor Housing	Cast Iron
Seal Housing	Cast Iron
Pump Casing	Cast Iron
Shaft	Stainless Steel
Mechanical Shaft Seal	Seal Faces: Carbon/Ceramic Seal Body: Brass Spring: Stainless Steel Bellows: Buna-N
Impeller	Cast Iron
Upper Bearing	Single Row Ball Bearing
Lower Bearing	Single Row Ball Bearing
Base	Cast Iron
Fastener	Stainless Steel

PERFORMANCE DATA



See Next Page for Operating Curve

DIMENSIONAL DATA



All dimensions in inches. Metric for international use. Component dimensions may vary $\pm 1/8$ inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable.



USA
293 WRIGHT STREET, DELAVAN, WI 53115 WWW.HYDROMATIC.COM
PH: 888-957-8677 ORDERS FAX: 800-426-9446

CANADA
269 TRILLIUM DRIVE, KITCHENER, ONTARIO, CANADA N2G 4W5
PH: 519-896-2163 ORDERS FAX: 519-896-6337

Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

HYDROMATIC®

SPD50H/100H

SUBMERSIBLE HIGH HEAD, DOUBLE SEAL EFFLUENT

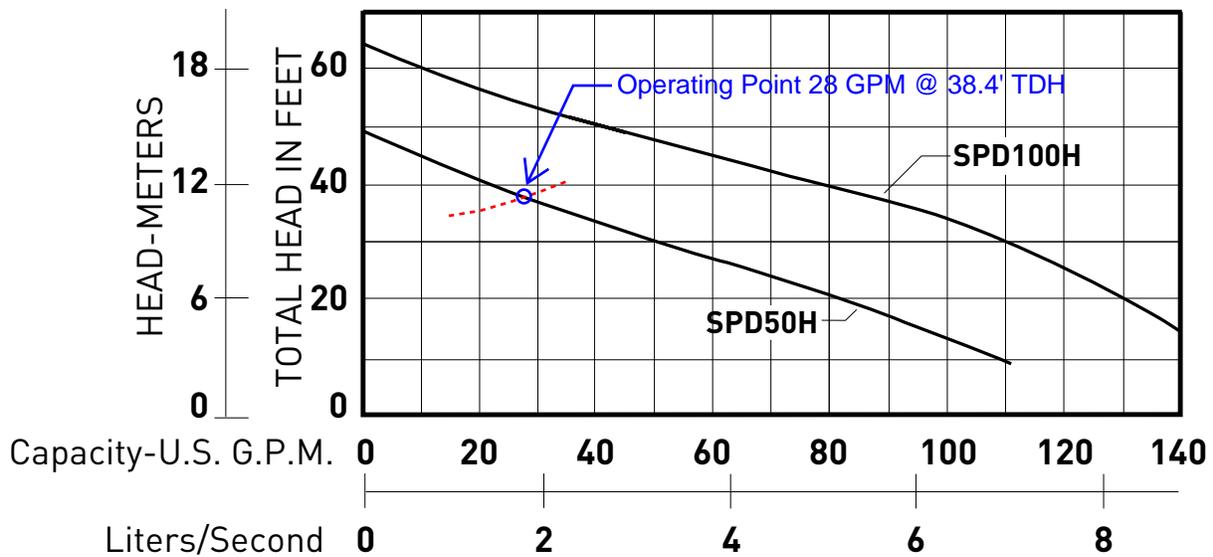
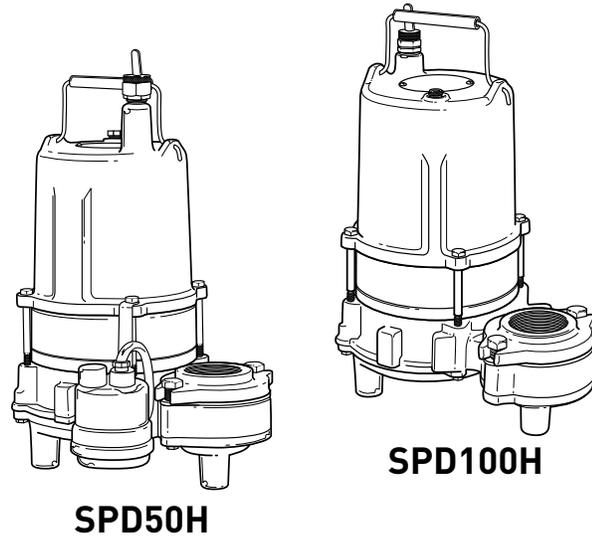
PERFORMANCE DATA

Wholesale Products Page: 6130-1

Dated: September 2011

Supersedes: April 2002

RPM: **3450** Discharge: **2"** Solids: **¾"**



The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

ANR Form 4: Certification Statement for Notification of Overshadowed Property Owner(s) pursuant to the Wastewater System and Potable Water Supply Program

A person submitting an application to the Secretary for a Wastewater System and Potable Water Supply Permit where the proposed project has isolation distances (overshadowing) that extend onto property owned by persons other than the permit applicant shall submit the following certification with the application.

Note: When the property subject to the permit application is owned by more than one person, only one of the landowners must sign this certification statement even though all landowners must sign the permit application itself.

I hereby certify that the individual(s) that own property that is overshadowed by my proposed project have been sent by certified mail a copy of the required notification form and the site plan(s) that accurately depicts all isolation distances. I also certify that I attached to this certification form a copy of all certified mail receipts for notifications that were sent to the affected property owners.

Signature  _____

Name (Printed) **Marlys Beck**

Property Address or Property Tax ID **#00012-1161**

Date of this certification **May 13, 2015**

Please list all of the property owners who were sent a notification by certified mail.

Affected Property Owner(s) – (Please provide a second sheet using this format when there are more than three affected property owners)

Name: Stephen & Margaret Foster
PO Box 548
Shelburne, VT 05482
Prop. Address: 1259 Lime Kiln Road
Parcel ID# 00012-1259

(To Comply with Act 145 and Act 117 – 8-24-12, Last Revised 9-11-12)

English

Customer Service

USPS Mobile

Register / Sign In



USPS Tracking™



Customer Service >
Have questions? We're here to help.



Get Easy Tracking Updates >
Sign up for My USPS.com.

Tracking Number: 70132630000053262464

On Time
Expected Delivery Day: Friday, May 15, 2015

Product & Tracking Information

Postal Product: First-Class Mail®
Features: Certified Mail™

Available Actions

[Text Updates](#)

[Email Updates](#)

DATE & TIME	STATUS OF ITEM	LOCATION
May 15, 2015 , 3:16 pm	Delivered	SHELBURNE, VT 05482

Your item was delivered at 3:16 pm on May 15, 2015 in SHELBURNE, VT 05482.

May 15, 2015 , 8:13 am	Available for Pickup	SHELBURNE, VT 05482
May 15, 2015 , 8:08 am	Arrived at Unit	SHELBURNE, VT 05482
May 14, 2015 , 2:39 pm	Departed USPS Origin Facility	ESSEX JUNCTION, VT 05452
May 13, 2015 , 8:13 pm	Arrived at USPS Origin Facility	ESSEX JUNCTION, VT 05452
May 13, 2015 , 5:59 pm	Departed Post Office	SOUTH BURLINGTON, VT 05403
May 13, 2015 , 4:56 pm	Acceptance	SOUTH BURLINGTON, VT 05403

Track Another Package

Tracking (or receipt) number

[Track It](#)

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	\$	\$1.40	
Certified Fee		\$3.30	
Return Receipt Fee (Endorsement Required)		\$0.00	
Restricted Delivery Fee (Endorsement Required)		\$0.00	
Total Postage & Fees	\$	\$4.70	

Sent To: Stephen; Margaret Foster
 Street, Apt. No.; or PO Box No.: PO Box 548
 City, State, ZIP+4: SHELBURNE, VT 05482

PS Form 3800, August 2006 See Reverse for Instructions

7013 2630 0000 0092 0000 9225 2464