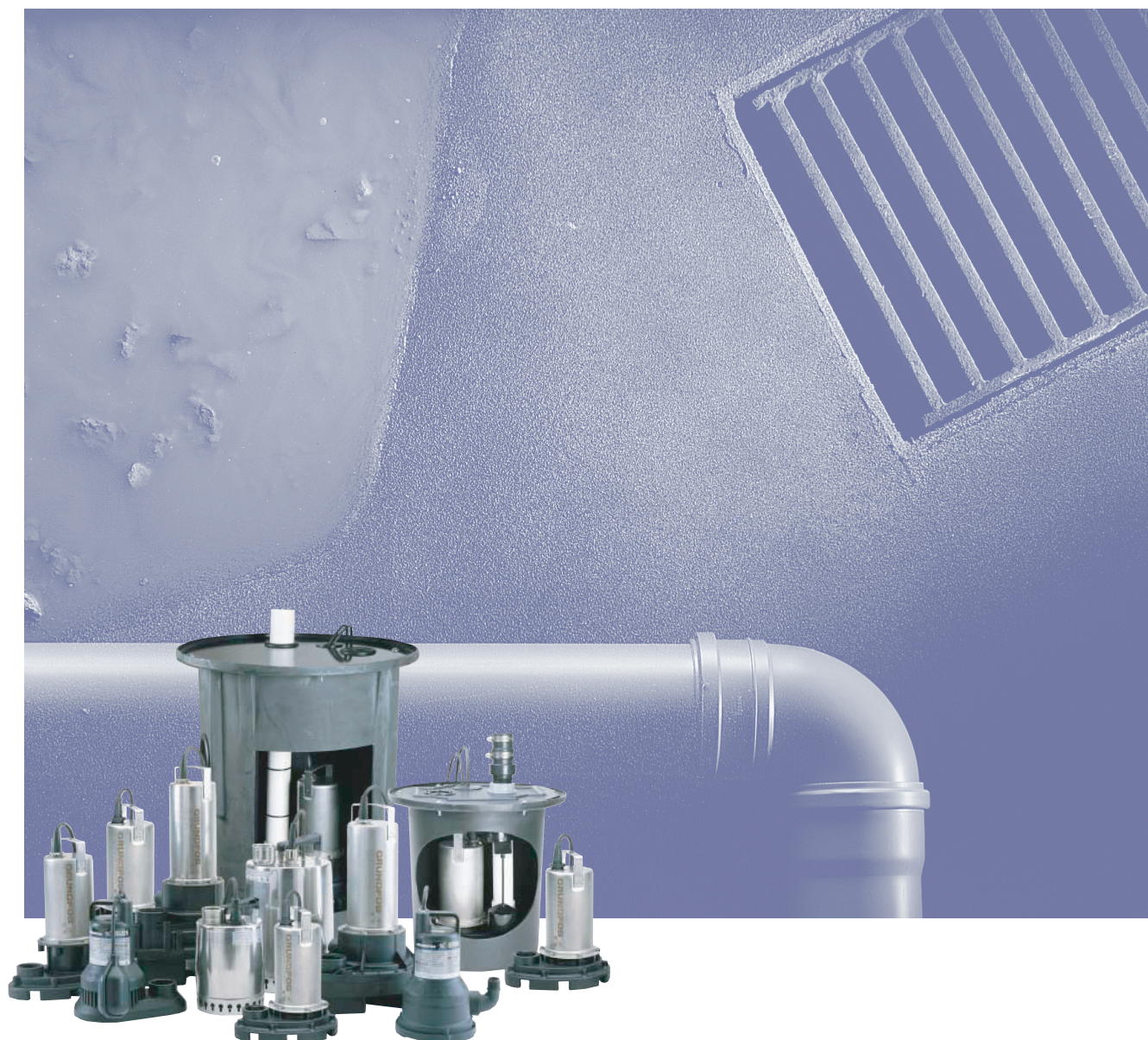


Unilift

KP, AP, SU/SV, SE & EF

Sump, Sewage, Effluent and Utility

Pumps 60 Hz



Contents

Mission

General data	5	Pumps	12
Performance range	5	Pumped Liquid	12
Product range	5	Agency Approvals	12
Pump and System Sizing Instructions	6	Mounting Position	12
Applications	12	Electrical Data	13

Product Technical Data

SU 25 Sump Pump	
Performance Curves & Data	14
Dimensions and Weights	15
Materials of Construction	15
SV 25 Sump Pump	
Performance Curves & Data	16
Dimensions and Weights	17
Materials of Construction	17
KP 150, 250, 350 Utility Pump	
Performance Curves & Data	18
Dimensions and Weights	19
Materials of Construction	19
AP12, 12.40.04*, 12.40.06* Utility Pump	
Performance Curves & Data	20
Dimensions and Weights	21
Materials of Construction	21
AP 35.40.06* Utility Pump	
Performance Curves & Data	22
Dimensions and Weights	23
Materials of Construction	23
SE 40, 50, 75, 100, 150 Sewage Pump	
Performance Curves & Data	24
Dimensions and Weights	25
Materials of Construction	25
EF 25 Effluent Pump	
Performance Curves & Data	26
Dimensions and Weights	27
Materials of Construction	27

Product Technical Data

EF 33E Effluent Pump	
Performance Curves & Data	28
Dimensions and Weights	29
Materials of Construction	29
EF 33, 50, 75, 100, 150 Effluent Pump	
Performance Curves & Data	30
Dimensions and Weights	31
Materials of Construction	31
Sump Pump & Basin Package	
Performance Curves & Data	32
Dimensions and Weights	33
Materials of Construction	33
Sewage Pump & Basin Package	
Performance Curves & Data	34
Dimensions and Weights	35
Materials of Construction	35
Sewage Pump & Basin Package	
Performance Curves & Data	36
Dimensions and Weights	37
Materials of Construction	37
Control Panels	38
Tank Alerts	44
Accessories	47

*Canada Only

Mission

- to successfully develop, produce, and sell high quality pumps and pumping systems worldwide, contributing to a better quality of life and healthier environment



Bjerringbro, Denmark



Fresno, California



Olathe, Kansas



Monterrey, Mexico



Allentown, Pennsylvania

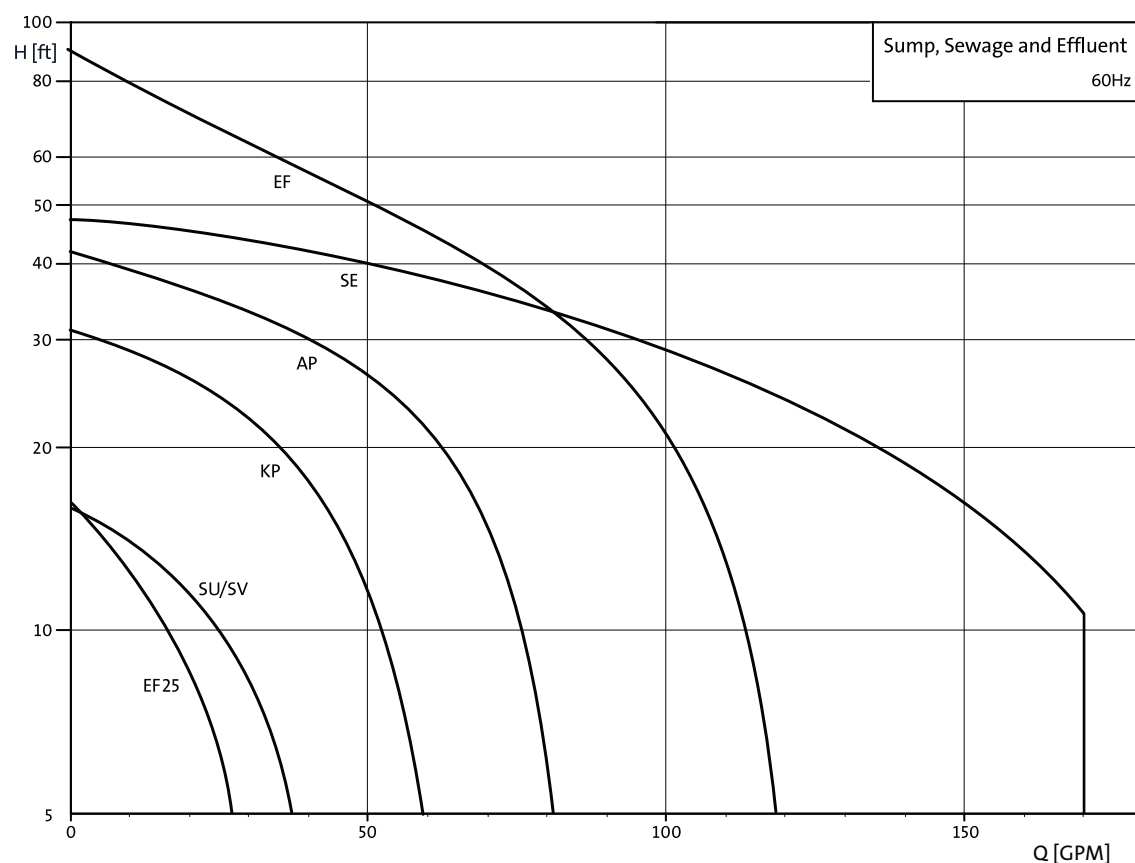


Oakville, Ontario, Canada

- One of the largest pump companies in the world with over 11,000 employees worldwide
- World headquarters in Denmark
- North American headquarters in Kansas City - Manufacturing in Fresno, California
- 60 companies in 40 countries
- More than 10 million pumps produced annually worldwide
- North American companies operating in USA, Canada and Mexico
- Continuous reinvestment in growth and development enables the company to **BE** responsible, **THINK** ahead, and **INNOVATE**

General data

Performance range



* Capacities given are for near-sea level installations.

Product range

Model	Sump Pumps		Sewage Pumps	Effluent Pumps			Utility Pumps		
	SU25	SV25	SE	EF25	EF33E	EF	KP	AP 12	AP 35
Flow Range (U.S. gpm)	1-36	1-36	10-170	1-28	1-64	1-120	0.5-62	0.5-98	0.5-78
Maximum Pump Head H(ft)	16	16	48	29	27	90	31	45	45
Motor Power (hp), Nominal	1/4	1/4	4/10-1.5	1/4	1/3	1/3-1.5	1/4-1/2	3/4	1/2-3/4
Fluid Temperature Range (°F)	32°-120°	32°-120°	32°-104°	32°-120°	32°-104°	32°-104°	32°-122°	32°-122°	32°-122°
Minimum Pumping Level (Manual)	2.5"	2.5"	18"	1/8"	14"	17"	1/2"	1-3/8"	1-3/8"
Minimum Pumping Level (Automatic)	7"	7"	18"	7"	14"	17"	4"	1-3/8"	1-3/8"
Maximum Spherical Solids, Diameter	3/16"	3/16"	2"	1/2"	3/4"	3/4"	3/8"	7/16"	1-3/8"
Discharge Size (Female NPT)	1-1/2"	1-1/2"	2"	1-1/4"***	1-1/2"	2"	1-1/4"	1-1/2"	1-1/2"
Maximum Starts per Hour	20								
Operation Cycle	Please see appropriate pump pages for specific limits								

***1-1/4" NPT Female + 3/4" Adjustable Hose Fitting (EF25 only)

Pump and System Sizing Instructions

The information needed and steps required to properly size a sewage/effluent pump and system are:

Determine

1. System Capacity (GPM required)
2. Total Dynamic Head (TDH)
3. Size of Solids
4. Pump Selection
5. Basin Size
6. Type (Simplex or Duplex)

The following pages explain how this information is obtained and used to properly size the pump and system.

1. Determine System Capacity

US Gallons Per Minute

The best method to determine this figure is through the “Fixture Unit” method. This is done by:

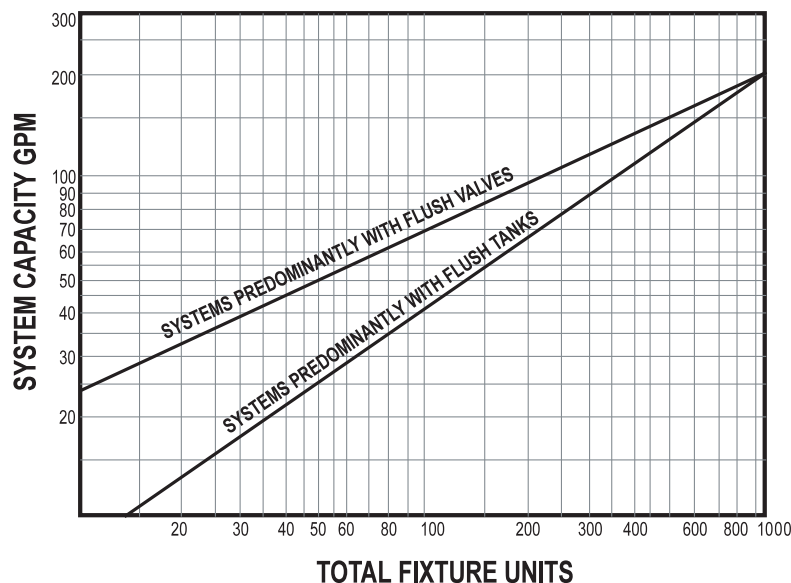
- A. Counting the water fixtures in the building structure and their Unit Values, as shown in the chart found on page 5 and,
- B. Referring to the graph below to determine GPM.

Note: It must also be determined if there is a fluid velocity of at least 2 feet per second through the pipe to carry the solids without clogging. This is ensured if flow is at least:

9 GPM	Through	1.25" pipe
13 GPM	Through	1.5" pipe
21 GPM	Through	2" pipe
30 GPM	Through	2.5" pipe
46 GPM	Through	3" pipe

MINIMUM FLOW REQUIREMENTS

System Capacity Based On Total Value of Fixture Units



Pump and System Sizing Instructions

Fixture Unit Values

Description Unit Values	Qty.	Total	
Bathroom Group Lavatory, bathtub or shower and (direct flush) water closet	8		
Bathroom Group Lavatory, bathtub or shower and (flush tank) water closet	6		
Bathtub with 1.5" trap	2		
Bathtub with 2" trap	3		
Bidet with 1.5" trap	3		
Dental unit or cuspidor	1		
Drinking fountain	1/2		
Dishwasher (non-commercial)	2		
Kitchen sink, domestic	2		
Kitchen sink, domestic with garbage disposal	3		
Lavatory with 1.5" waste plug	1		
Lavatory (barber or beauty shop)	2		
Laundry tray, 2-compartment	2		
Shower stall	2		
Shower (group) per head	3		
Sink (direct flush valve)	8		
Sink (service type with floor drain)	3		
Sink (scullery)	4		
Sink (surgeons)	3		
Urinal (with flush valve)	8		
Urinal (with flush tank)	4		
Water closet (flush valve)	8		
Water closet (flush tank)	4		
Swimming pool (per 1000 gal capacity)	1		
Water softener (domestic)	1		
Washing Machine	2		
Unlisted fixture with 1.25" trap size	3		
Unlisted fixture with 1.5" trap size	4		
Unlisted fixture with 2" trap size	5		
Unlisted fixture with 2.5" trap size	6		
Unlisted fixture with 3" trap size	4		
Unlisted fixture with 4" trap size	2		
Total Fixture Units =			

Pump and System Sizing Instructions

2. Determine Total Dynamic Head

Feet of Head (H₂O. ft)

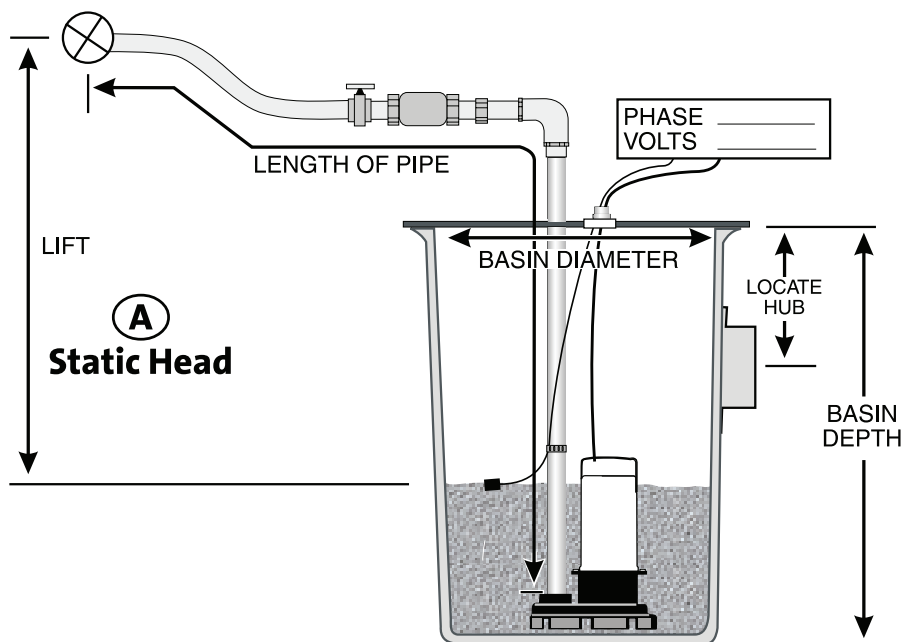
Total Dynamic Head is a combination of:

A. The Static Head

The actual vertical distance of “lift” in feet from the minimum water level in the basin to the highest point in the discharge piping.

B. Friction Loss

The friction losses caused by pumping the solids/fluids through the various piping and fittings. Every foot of pipe and every valve or fitting is rated for various friction losses at given rate of capacity (GPM). Use the diagram below and the friction loss chart on the following page to determine these numbers.



Friction Head Worksheet

Fittings

Diameter of fittings _____

of 90° Elbows _____

of 45° Elbows _____

of Through Flow Tees _____

of Branch Flow Tees _____

of Swing Check Valves _____

of Gate Valves _____

From Chart “A”

x Each _____

x Each _____

x Each _____

x Each _____

x Each _____

x Each _____

Equals this Pipe Length

= _____ feet

= _____ feet

= _____ feet

= _____ feet

= _____ feet

= _____ feet

Feet of Pipe Equivalent _____ feet

+

Feet of Pipe Actual _____ feet

Total Feet of Pipe = _____ feet

Friction Head Losses (from Chart “B”) _____

Pump and System Sizing Instructions

CHART A

Friction Head Losses for fittings (equivalent feet of piping)

Nominal Pipe Dia.	90° Elbow	45° Elbow	Tee (Thru-Flow)	Tee (Branch Flow)	Swing Check Valve	Gate Valve (Open)
1.25"	3.5	1.8	2.3	6.9	11.5	0.9
1.5"	4.0	2.2	2.7	8.1	13.4	1.1
2"	5.2	2.8	3.5	10.3	17.2	1.4
2.5"	6.2	3.3	4.1	12.3	20.6	1.7
3"	7.7	4.1	5.1	15.3	25.5	2.0

CHART B

Friction Head Losses for Pipe (per 100 feet of piping)

GPM	1.25" Dia.		1.5" Dia.		2" Dia.		2.5" Dia.		3" Dia.	
	Plastic	Steel*	Plastic	Steel*	Plastic	Steel*	Plastic	Steel*	Plastic	Steel*
4	0.34	0.35								
6	0.71	0.72	0.33							
8	1.19	1.2	.056	0.57						
10	1.78	1.74	0.83	0.85						
12	2.48	2.45	1.16	1.18	0.34	0.35				
14	3.29	3.24	1.54	1.51	0.45	0.46				
16	4.21	4.15	1.97	1.93	0.58	0.59				
18	5.25	5.17	2.41	2.40	0.72	0.73				
20	6.42	6.31	2.96	2.92	0.88	0.88				
25	10.39	9.61	4.80	4.80	1.38	1.39				
30	13.60	13.00	6.27	6.23	1.81	1.82	0.75	0.77		
35	19.20	18.20	8.82	8.82	2.40	2.40	1.01	0.99		
40			10.70	10.80	3.12	3.10	1.28	1.30		
45			14.00	14.00	3.80	3.80	1.50	1.60	0.55	0.56
50			16.50	16.50	4.70	4.70	1.90	1.90	0.66	0.68
60					6.50	6.60	2.70	2.70	0.94	0.91
70					8.60	8.80	3.70	3.60	1.20	1.20
80					11.10	11.40	4.70	4.60	1.60	1.60
90					13.80	14.30	5.80	5.80	2.00	2.00
100					16.80	17.50	7.10	7.10	2.40	2.40
125							10.90	10.90	3.70	3.60
150							15.90	15.90	5.20	5.10
175									6.90	6.90

* Steel piping based on Schedule 40 Pipe

$$\begin{array}{rcl}
 \text{Static Head} & & \text{feet} \\
 \text{Friction Head} & + & \text{feet} \\
 \hline
 \text{Total Dynamic Head} & = & \text{feet}
 \end{array}$$

Pump and System Sizing Instructions

3. Determine Size of Solids

If the building has a water closet of any kind, it will pass 2" solids and require a SEWAGE pump. If it does not have a water closet, it will only need to pass at least 3/4" or smaller solids, and will require an EFFLUENT pump.

- SE pumps can handle 2" solids
- EF pumps can handle 3/4" solids

4. Selecting the Pump

Using the Capacity (GPM), Total Dynamic Head and solids handling requirements, refer to the pump performance curves to determine the best pump for the application. Select the smallest pump that meets the Capacity and Head requirements and can pass the required solid size. (See performance curves in this guide).

5. Determine the Basin Size

To determine the proper basin size, refer to the required US gpm of the system. Convert this to the volume the pump must be able to pump out of the basin during each cycle ("Pumpable Volume") using this formula:

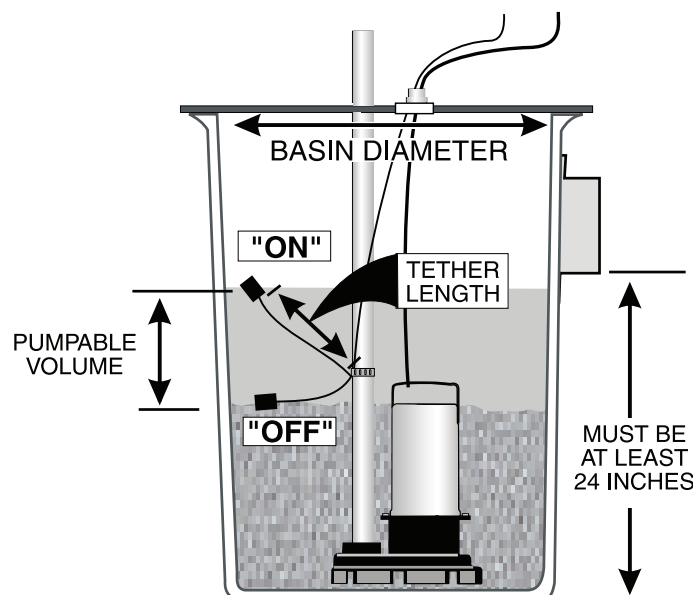
$$\text{GPM} \times \text{Run Time} = \text{Volume}$$

The run time must be at least 2 minutes to ensure against short cycling (which would greatly reduce the service life of the pump). Therefore if the flow is 50 GPM, the pumpable Volume needed in the basin must be 100 gals:

GPM	x	Run Time (mins.)	=	Volume (gals)
50 gpm	x	2 mins.	=	100 gals

Referring to the diagram below and the chart on the following page, select a basin diameter and float switch tether length that will guarantee a sufficient Pumpable Volume. Ensure basin **DEPTH** is sufficient to allow for:

1. The ON/OFF range of the float switch
2. The bottom of the basin must be at least 24" below the basin inlet.
3. See individual pumps for water level required above the pump (submergence).



Pump and System Sizing Instructions

Approximate Pumping Volume for Various Combinations of Basin Diameter and Float Switch Tether Lengths (in gallons).

Tether Length of Float Switch (inches)											
OFF	3.5	6	8	10	12	14	16	18	20	22	24
ON	5.5	10	12	16	18	22	25	28	30	32	36
Basin Dia.	Approximate Pumping Volume (Gallons)										
18in.	6	11	13	17	20						
24in.	11	20	23	29	35	41	47				
30in.	17	31	37	46	55	64	73				
36in.	24	44	53	66	79	93	106	123	132	145	159
48in.	43	78	94	117	141	164	188	219	235	258	282
60in.	67	122	147	184	220	257	294	343	367	404	440
72in.	97	176	211	264	317	370	423	493	529	581	634

These numbers are approximations only. Volume may differ slightly due to basin construction.

6. Determining a Simplex or Duplex System

Local Plumbing codes will often determine whether a waste system must be Duplex (two pumps), or if it can get by with just one pump (Simplex System). Most commercial applications are of the duplex type - not necessarily for the increased capacity offered by two pumps, but more for the stand-by safety factor that many municipalities require (public health concerns). In most residential installations, a simplex system is adequate - but be sure to check the local plumbing codes.

7. Additional Pipe Volume and Velocity Information

Storage of Water in Various Size Pipes

Pipe Size	Volume in Gallons per Foot	Pipe Size	Volume in Gallons per Foot
1¼	.06	6	1.4
1½	.09	8	2.6
2	.16	10	4.07
3	.36	12	5.87
4	.652		

Minimum Flow to Maintain 2ft./sec. *Scouring Velocity in Various Pipes

Pipe Size	Minimum GPM	Pipe Size	Minimum GPM
1¼	9	6	180
1½	13	8	325
2	21	10	500
3	46	12	700
4	80		

* Failure to maintain or exceed this velocity will result in clogged pipes.
Based on schedule 40 nominal pipe.

General data

Applications:

The Grundfos series of Sump, Sewage and Utility pumps are individually suitable for a variety of applications in temporary and permanent, free standing and fixed installations. Applications include:

- Drainage
- Transfer
- Effluent and Sewage pumping – residential, commercial and industrial
- Wastewater

Sump Pumps: SU and SV Series

Single stage, submersible sump pumps of lightweight, corrosion resistant glass reinforced thermoplastic complete with oil cooled, single phase motor and built-in thermal protection, automatic reset. Vertical discharge arrangement, with manual or automatic operation. Swing or vertical float switch options available.

Sewage Pumps: SE Series

Single stage, submersible sewage pumps of lightweight, stainless/composite material complete with oil cooled, single-phase motor and built-in thermal protection and automatic reset. Vertical discharge arrangement with manual or automatic operation (swing float switch operation only).

Effluent Pumps: EF Series

Single stage, submersible effluent pumps of lightweight, corrosion resistant materials (EF25) or composite/stainless materials (all other EF Series pumps) complete with oil cooled, single phase motor and built-in thermal protection, automatic reset. Side (EF25) and vertical (all other EF Series pumps) discharge arrangement with manual or automatic operation (swing float switch operation only).

Utility Pumps: KP and AP Series

Single stage, submersible utility pumps of lightweight, stainless steel construction, complete with water/glycol (KP) or oil cooled (AP) single-phase motor and internal overload protection and automatic reset. Vertical discharge arrangement with manual or automatic operation (swing float switch operation only). Impeller design reduces any harmful effects from solid particles passing through the pump.

Tank Packages: SinkpaQ and Standard Pump/Tank Systems

Complete pump systems, which include; pump, tank, float and fittings.

Pumped Liquids:

Sump and Utility pumps – Suitable for pumping clean, non-aggressive water or slightly dirty (gray) wastewater.

Effluent pumps – Suitable for pumping effluent wastewater containing small sized particles.

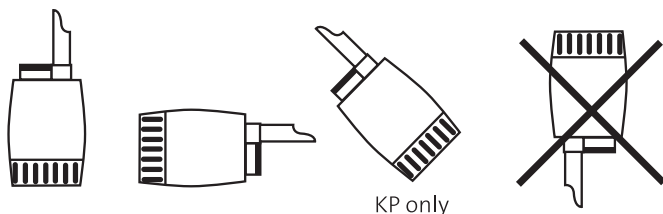
Sewage pumps – Suitable for pumping raw wastewater containing large sized particles no larger than the maximum recommended solid size (see General Data).

All above pumps designed for operation on liquid with pH range of 4-9 and a maximum specific gravity of 1.1.

Mounting Position:

Pumps without float switch or with swing float can be installed in the vertical, horizontal or tilted (discharge up (KP only)) position. The pumps cannot be operated in an upside-down configuration (i.e. discharge facing down)

Pumps with vertical float switches can be installed in the vertical position.



Agency Approvals:

CSA, UL or cUL listed.



General data

Electrical Data:

Model		Electrical Data					
		Voltage 60 Hz	Maximum Power Consumption (Watts)	Hp Nominal	Service Factor	Maximum Current (Amps)	Locked Rotor Current (Amps)
Sump Pumps	SU 25	115	460	1/4	1.0	5.6	6.8
	SV 25	115	460	1/4	1.0	5.6	6.8
Sewage Pumps	SE 40	115	935	4/10	1.4	8.2	18
		230	850	4/10	1.4	3.9	9
	SE 50	115	1155	1/2	1.6	11.2	24
		230	1110	1/2	1.6	5.2	12
	SE 75	230	2155	3/4	1.5	9.7	23
	SE 100	230	2290	1	1.4	10.3	23
	SE 150	230	2890	1-1/2	1.3	13.1	30
Effluent Pumps	EF 25	115	530	1/4	1.0	6.2	6.8
	EF 33E	115	675	1/3	1.15	6.0	12
		230	600	1/3	1.15	2.7	6
	EF 33	115	905	1/3	1.7	8.4	18
		230	830	1/3	1.7	3.9	9
	EF 50	115	1190	1/2	1.6	11.5	24
		230	1115	1/2	1.6	5.4	12
	EF 75	230	1690	3/4	1.5	7.6	23
	EF 100	230	2240	1	1.4	10.1	23
	EF 150	230	2880	1-1/2	1.3	13.1	30
Utility Pumps	KP 150	115	300	1/4	1.6	2.9	8.7
	KP 250	115	480	1/3	1.6	4.9	14.5
	KP 350	115	750	1/2	1.6	7.3	21.4
	AP 12	115	900	1/2	1.6	8.0	24
	AP 12.40.04	115	900	1/2	1.6	8.0	24
	AP 12.40.06	230	1000	3/4	1.6	4.4	13.2
	AP 35.40.06	230	1200	3/4	1.6	3.9	11.7



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
SU25	1/4	1.0	1	115	460	5.6	6.84	3000

Technical Data

Performance Range:

- Flow: 1 - 36 GPM
- Head: 0 - 16 ft.

Solids Handling:

- 3/16" Spherical Solids

Motor Type:

- AC Induction
- Oil Filled
- Class C Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits:

- Minimum: 40°F (4.4°C)
- Maximum: 120°F (48.9°C)

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Semi-Open

Maximum Installation Depth Below Water Level:

- 30 ft.

Approvals:

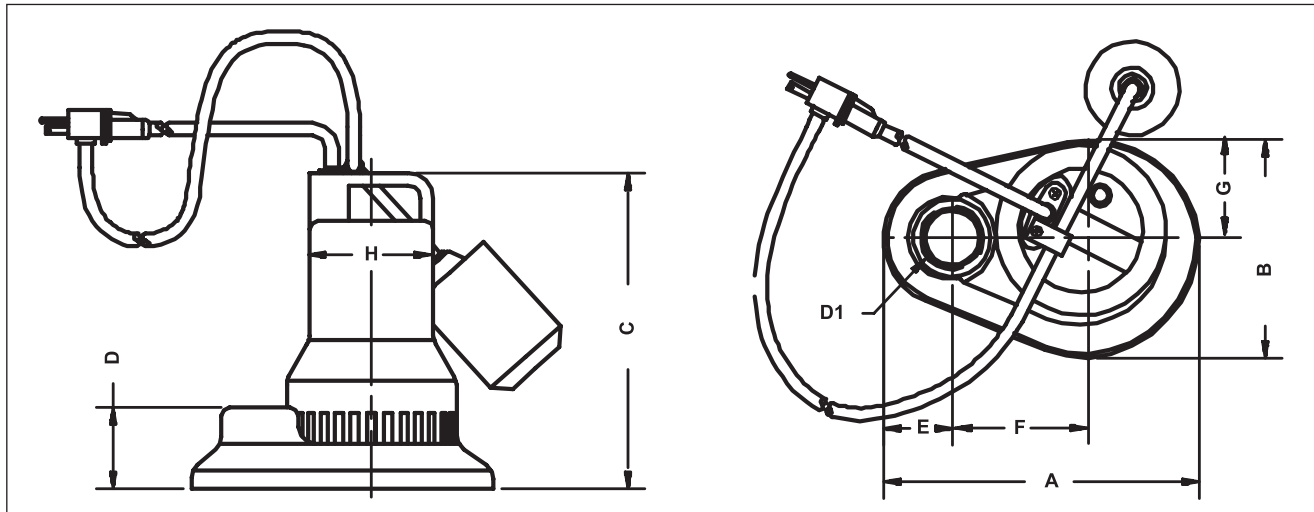
- CSA Approved
- UL Listed

On Level: 14-inches

Off Level: 7-inches

Minimum Basin I.D.: 13-inches

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)								Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G	H		
SU25	1/4	1.0	1	115	1-1/2"	9-1/4	6-3/8	9-1/4	2-3/8	2	4	2-7/8	3-5/8	7.1	0.52

Materials of Construction

Description	Material
Motor Housing	Glass Reinforced Thermoplastic
Volute	Glass Reinforced Thermoplastic
Impeller	Glass Reinforced Thermoplastic
Shaft	416 SS
Lip Seal & O-Rings	Buna N
Power Cord Set	3-Prong, 8 ft.
Interior of Motor	Oil Filled - Polyalphaolefin



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
SV25	1/4	1.0	1	115	460	5.6	6.84	3000

Technical Data

Performance Range:

- Flow: 1 - 36 GPM
- Head: 0 - 16 ft.

Solids Handling:

- 3/16" Spherical Solids

Motor Type:

- AC Induction
- Oil Filled
- Class C Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits:

- Minimum: 40°F (4.4°C)
- Maximum: 120°F (48.9°C)

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Semi-Open

Maximum Installation Depth Below Water Level:

- 30 ft.

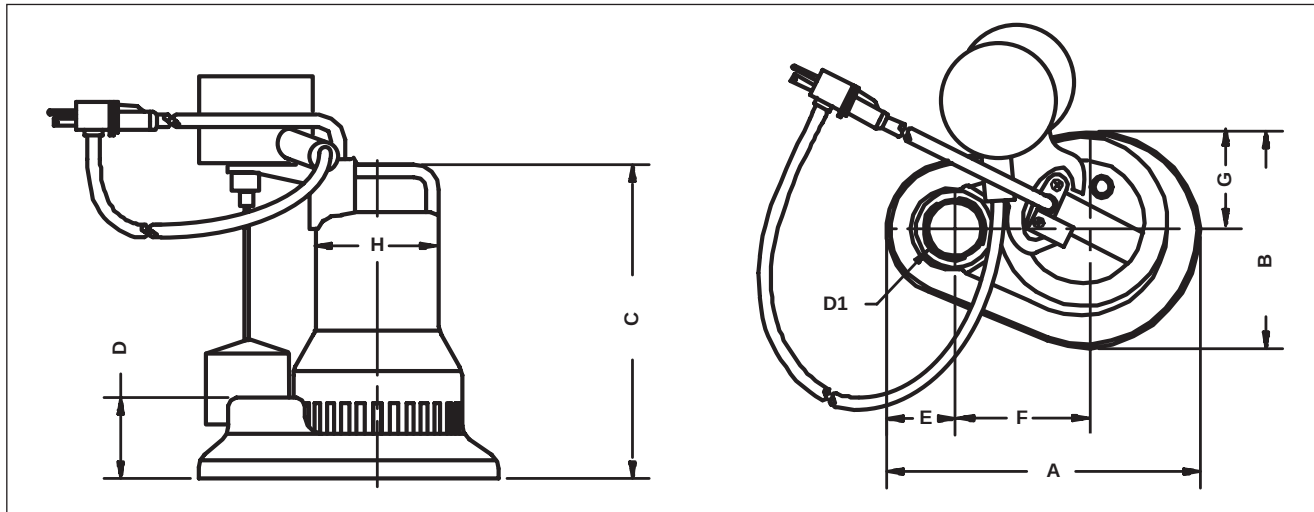
Approvals:

- CSA Approved
- UL Listed

On Level: 14-inches

Off Level: 7-inches

Dimensional Drawing



Dimensions and Weights

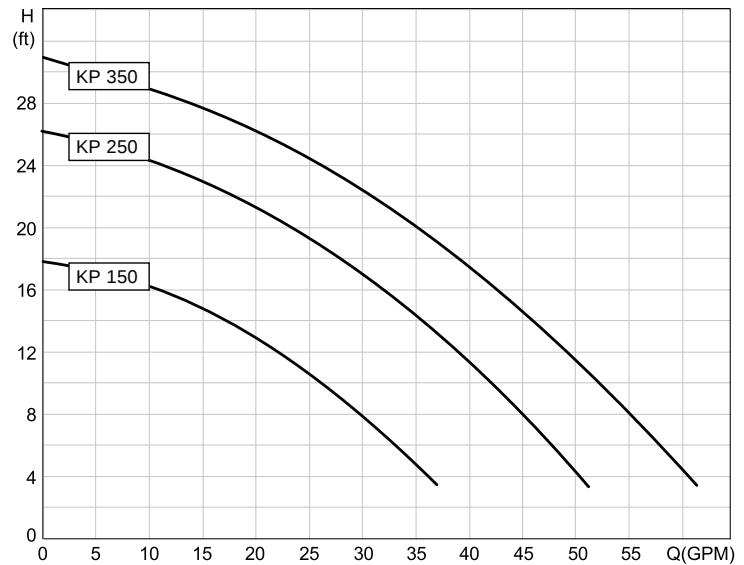
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)								Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G	H		
SV25	1/4	1.0	1	115	1-1/2"	9-1/4	6-3/8	9-1/4	2-3/8	2	4	2-7/8	3-5/8	7.1	0.52

Materials of Construction

Description	Material
Motor Housing	Glass Reinforced Thermoplastic
Volute	Glass Reinforced Thermoplastic
Impeller	Glass Reinforced Thermoplastic
Shaft	416 SS
Lip Seal & O-Rings	Buna N
Power Cord Set	3-Prong, 8ft.
Interior of Motor	Oil Filled - Polyalphaolefin



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
KP150	1/4	1.6	1	115	300	2.9	8.7	3350
KP250	1/3	1.6	1	115	480	4.9	14.5	3350
KP350	1/2	1.6	1	115	800	7.5	21.4	3350

Technical Data

Performance Range:

- Flow: 0.5 - 62 GPM
- Head: 0 - 31 ft.

Solids Handling:

- 3/8" Spherical Solids

Motor Type:

- AC Induction
- Water/Glycol Filled (SML 2)
- Class F Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- 10

Minimum Liquid Level (Above Bottom of Pump):

- Manual Operation:
 - With Suction strainer: 1.0 inches
 - Without suction strainer: 0.5 inches
- Automatic operation:
 - KP 150, KP 250: 3.5 inches
 - KP 350: 4.0 inches

pH Range:

- 4 to 9

Thermal Protection:

- Internal resetting

Fluid Temperature Limits: (Totally Submerged)

- 32° - 122°F (0° - 50°C) Semi-Continuous*
- 32° - 158°F (0° - 70°C) Intermittent

Discharge Size:

- 1-1/4" Female NPT

Impeller Design:

- Semi-Open

Maximum Installation Depth Below Water Level:

- 30 ft.

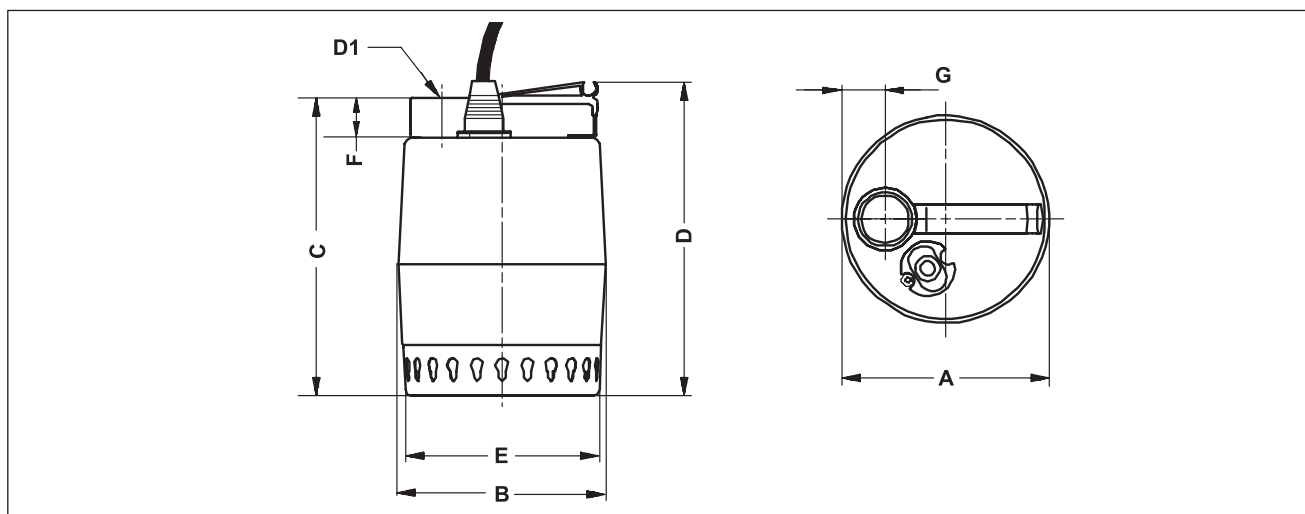
Approvals:

- CSA Approved
- UL Listed

Length of Power Cord:

- 10 or 25 ft.

Dimensional Drawing



Dimensions and Weights

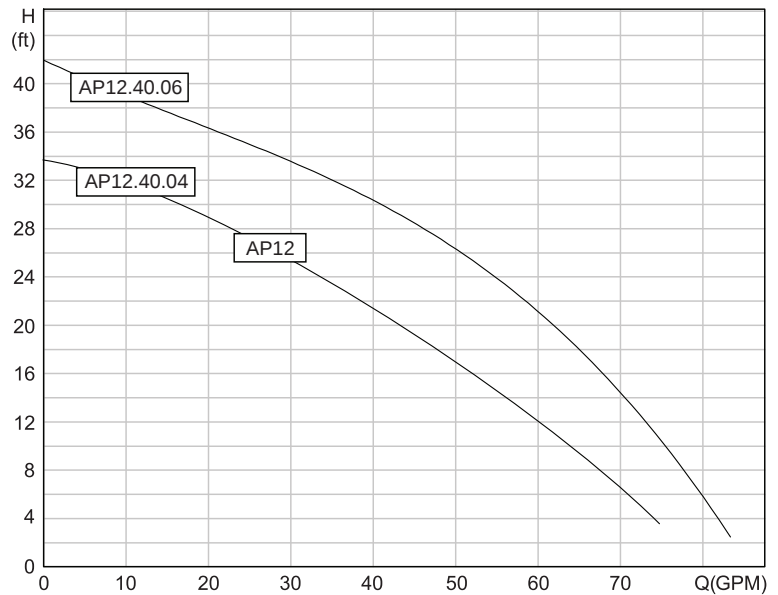
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)							Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G		
KP150	1/4	1.6	1	115	1-1/4"	5-7/8	5-7/8	8-7/16	8-7/8	5-9/16	1-3/16	1-1/4	15	0.5
KP250	1/3	1.6	1	115	1-1/4"	5-7/8	5-7/8	8-7/16	8-7/8	5-9/16	1-3/16	1-1/4	16	0.5
KP350	1/2	1.6	1	115	1-1/4"	5-7/8	5-7/8	8-11/16	9-1/8	5-9/16	1-3/16	1-1/4	18	0.5

Materials of Construction

Description	Material
Pump Housing	304 SS
Strainer	304 SS
Impeller	304 SS
Shaft	431 SS
Fasteners, Wear Plate, Lock Nut, Washer	304 SS
Bearings	Compounded Carbon
Seal Rings	NBR
Power Cord Jacket	Neoprene
Grommet	Neoprene
Motor Fluid	Water/Glycol Filled (SML 2)



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
AP 12	1/2	1.6	1	115	900	8.0	24	3350
AP12.40.04***	1/2	1.6	1	115	900	8.0	24	3350
AP12.40.06***	3/4	1.6	1	230	1000	4.4	13.2	3350

*** Canada Only

Technical Data

Performance Range:

- Flow: 0.5 - 98 GPM
- Head: 0 - 45 ft.

Solids Handling:

- 7/16" Spherical Solids

Motor Type:

- PSC
- Oil Filled
- Class B Insulation

Motor Duty:

- Continuous when fully submerged

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

pH Range:

- 4 to 10

Thermal Protection:

- Internal resetting

Fluid Temperature Limits: (Totally Submerged)

- 32° - 131°F (0° - 55°C) Continuous*
- 32° - 158°F (0° - 70°C) Intermittent

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Semi Open

Maximum Installation Depth Below Water Level:

- 30 ft.

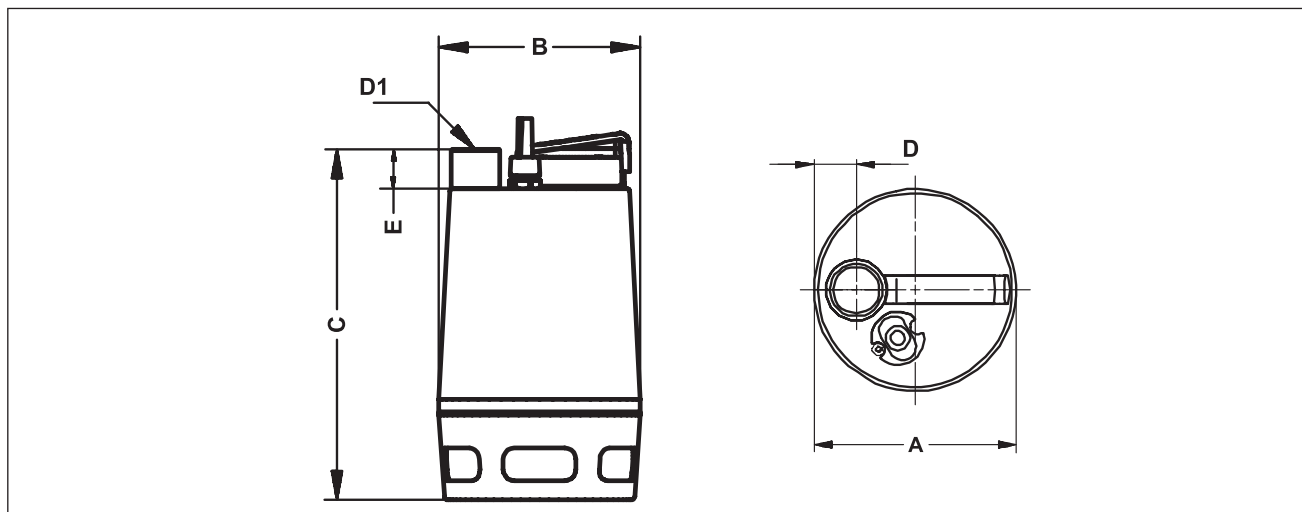
Approvals:

- CSA Approved
- UL Listed

Length of Power Cord:

- 10 or 25 ft.

Dimensional Drawing



Dimensions and Weights

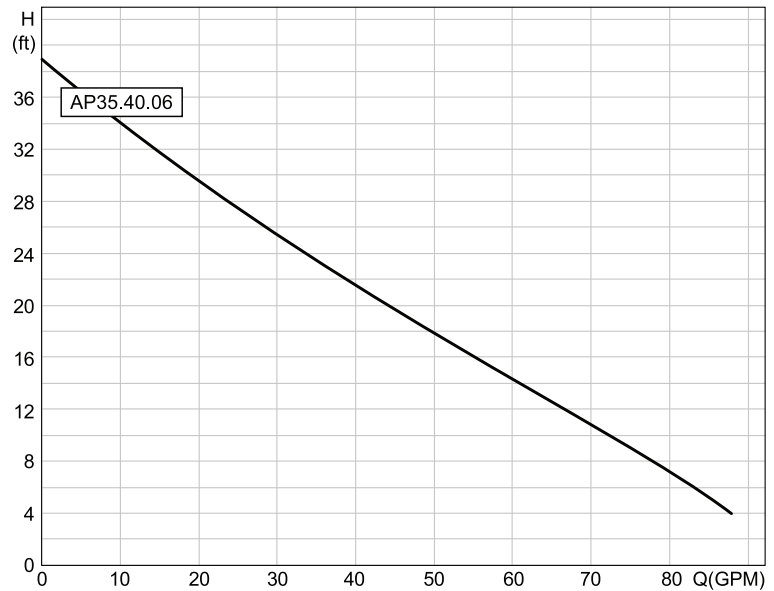
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)					Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E		
AP12	1/2	1.6	1	115	1-1/2"	8-1/2	8-9/16	12-11/16	1-1/4	1-3/16	24	24
AP12.40.04	1/2	1.6	1	115	1-1/2"	8-1/2	8-9/16	12-11/16	1-1/4	1-3/16	24	24
AP12.40.06	3/4	1.6	1	230	1-1/2"	8-1/2	8-9/16	12-11/16	1-1/4	1-3/16	24	1.17

Materials of Construction

Description	Material
Pump Housing	304 SS
Strainer	304 SS
Impeller	304 SS
Shaft, Pump Sleeve, Stator Housing	316 SS
Fasteners, Wear Plate, Lock Nut, Washer	304 SS
Shaft Seal	Silicon Carbide/Silicon Carbide
Bearings	Compounded Carbon
O-Rings	NBR
Power Cord Jacket	Neoprene
Grommet	Neoprene
Interior of Motor	Oil Filled - Polyalphaolefin



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
AP35.40.06	3/4	1.6	1	230	1200	3.9	11.7	3330

Technical Data

Performance Range:

- Flow: 0.5 - 98 GPM
- Head: 0 - 45 ft.

Solids Handling:

- 1-3/8" Spherical Solids

Motor Type:

- AC Induction
- Oil Filled
- Class F Insulation

Motor Duty:

- Continuous when fully submerged

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Internal resetting

Fluid Temperature Limits: (Totally Submerged)

- 32° - 131°F (0° - 55°C) Continuous*
- 32° - 158°F (0° - 70°C) Intermittent

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Vortex

Maximum Installation Depth Below Water Level:

- 30 ft.

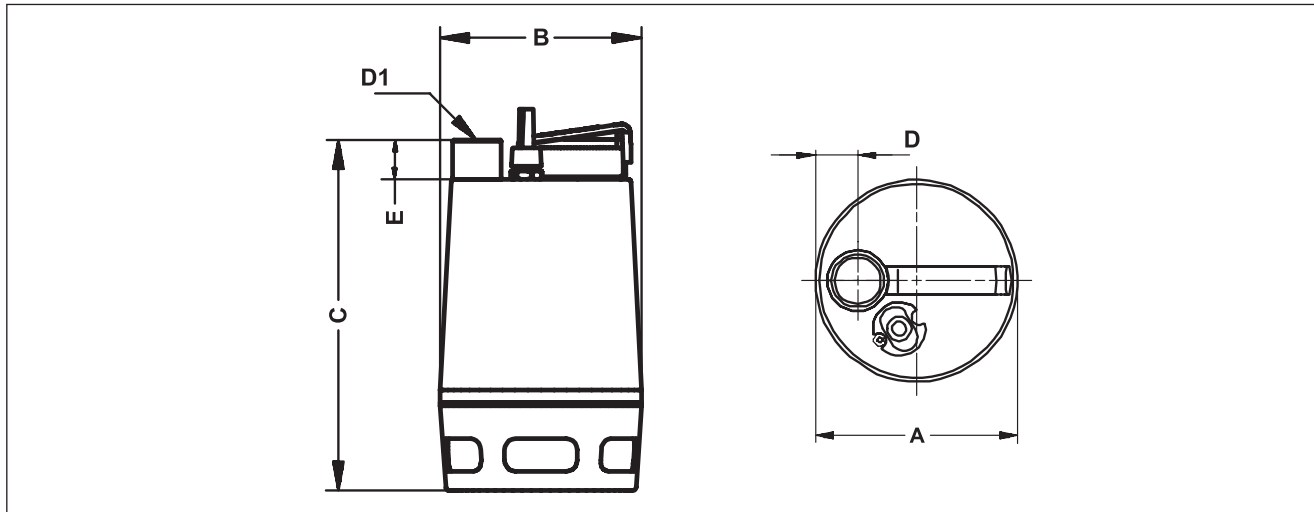
Approvals:

- CSA Approved
- UL Listed

Length of Power Cord:

- 10 or 25 ft.

Dimensional Drawing



Dimensions and Weights

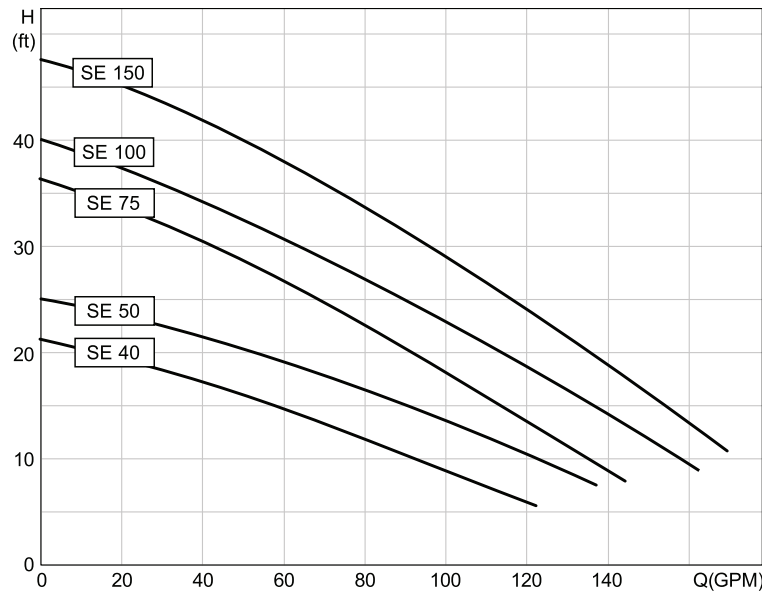
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)					Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E		
AP35.40.06	3/4	1.6	1	230	1-1/2"	12	12	16-3/16	1-1/2	1-3/16	25	1.17

Materials of Construction

Description	Material
Pump Housing	304 SS
Strainer	304 SS
Impeller	304 SS
Shaft, Pump Sleeve, Stator Housing	316 SS
Fasteners, Wear Plate, Lock Nut, Washer	304 SS
Shaft Seal	Silicon Carbide/Silicon Carbide
Bearings	Compounded Carbon
O-Rings	NBR
Power Cord Jacket	Neoprene
Grommet	Neoprene
Interior of Motor	Oil Filled - Polyalphaolefin



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
SE40	4/10	1.4	1	115	935	8.2	18	1625
		1.4	1	230	850	3.9	9	1615
SE50	1/2	1.6	1	115	1155	11.2	24	1635
		1.6	1	230	1110	5.2	12	1630
SE75	3/4	1.5	1	230	2155	9.7	23	3335
SE100	1	1.4	1	230	2290	10.3	23	3315
SE150	1-1/2	1.3	1	230	2890	13.1	30	3350

Technical Data

Performance Range:

- Flow: 2 - 170 GPM
- Head: 0 - 48 ft.

Solids Handling:

- 2" Spherical Solids

Motor Type:

- AC Induction
- Permanent Split Capacitor
- Oil Filled, Durasyn[®] 166
- Class F Insulation
- Thermally Protected

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Motor Bearing System:

- 1 Ball/1 Sleeve Bearing

Fluid Temperature Limits: (Totally Submerged)

- 32° - 104°F (0° - 40°C) Semi-Continuous*
- 32° - 140°F (0° - 60°C) Intermittent

Discharge Size:

- 2" Female NPT

Impeller Design:

- Vortex

Maximum Installation Depth Below Water Level:

- 30 ft.

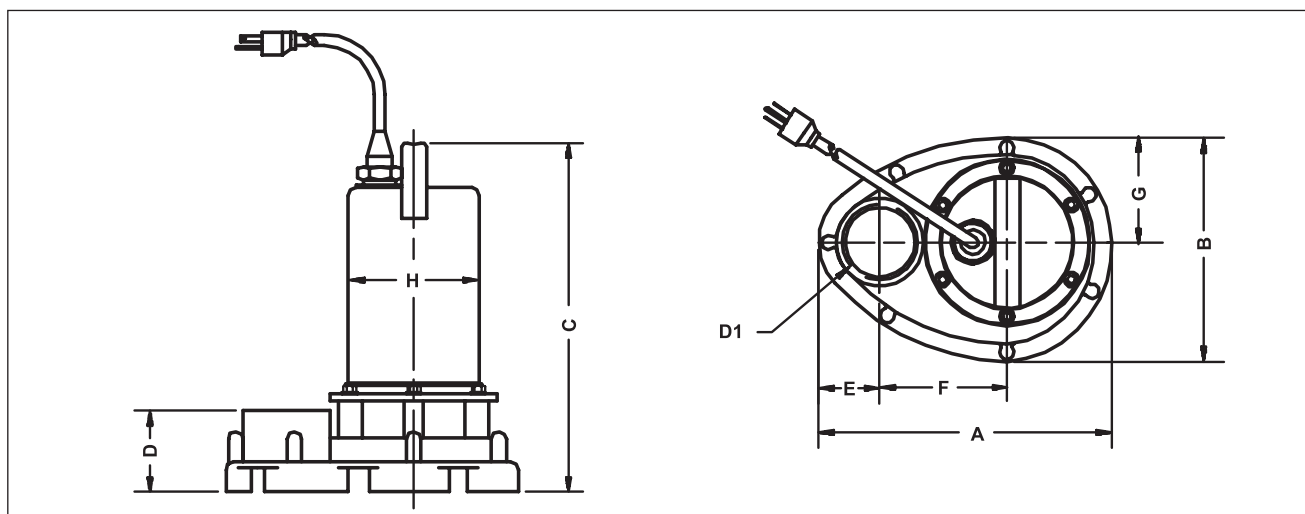
Approvals:

- cUL & UL Listed

Length of Power Cord:

- 10 or 20 ft.

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)								Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G	H		
SE40	4/10	1.4	1	115/230	2"	11-1/2	8-3/4	17-5/8	6-5/8	2	5	4-3/8	4-1/8	27	1.94
SE50	1/2	1.6	1	115/230	2"	11-1/2	8-3/4	19-1/4	6-5/8	2	5	4-3/8	4-1/8	31	1.94
SE75	3/4	1.5	1	230	2"	11-1/2	8-3/4	19-1/4	6-5/8	2	5	4-3/8	4-1/8	31	1.94
SE100	1	1.4	1	230	2"	11-1/2	8-3/4	19-1/4	6-5/8	2	5	4-3/8	4-1/8	31	1.94
SE150	1-1/2	1.3	1	230	2"	11-1/2	8-3/4	19-1/4	6-5/8	2	5	4-3/8	4-1/8	33	1.94

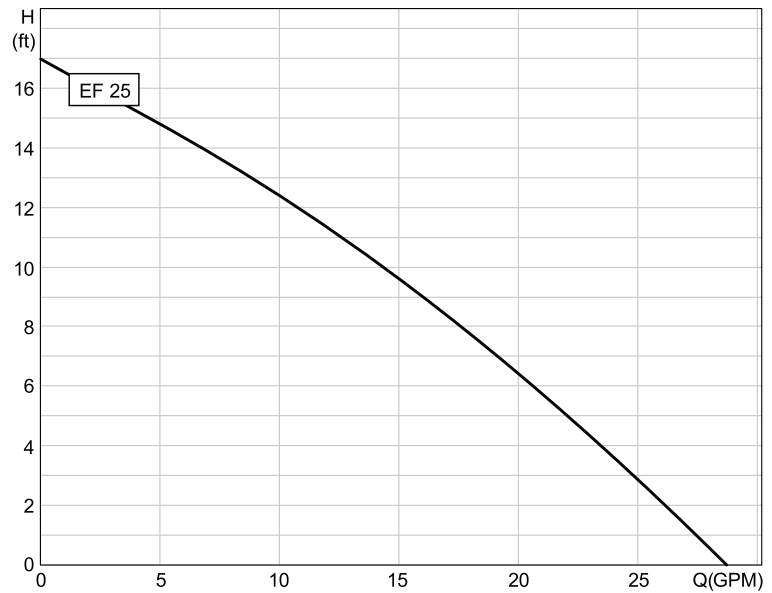
Materials of Construction

Description	Material
Motor Housing	316 SS
Volute Top	Polypropylene
Volute Bottom	Polypropylene
Vortex Impeller, Upper Volute Gland	Ryton BR111
Motor/Pump Shaft	1045 Mild Steel/4301 SS
Mechanical Shaft Seal	Ceramic, Carbon, NBR, 316 SS
Lip Seal, Volute O-Ring, Motor Housing O-Ring, Pin Connector O-Ring, Port Plug O-Ring, Shaft Seal O-Ring	NBR
Port Plug	Amodel 1125 HS®
3-Pin Connector	Rynite 530FR
Screw, Hi-Low Torx, 1/4" Washer	303 SS
Screw Coated & Nut, Ball Bearing, Cable Nut	304 SS
Spacer Ring	ABS Plastic
Sleeve Bearing	Bronze
Power Cord Set	3-Prong - SJOW-A-Neoprene
Motor Fluid	Durasyn® 166 Di-electric Oil

®Registered trademark of Amococ Oil Company



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
EF25	1/4	1.0	1	115	530	6.2	6.84	3000

Technical Data

Performance Range:

- Flow: 1 - 28 GPM
- Head: 0 - 17ft.

Solids Handling:

- 1/2" Spherical Solids

Motor Type:

- AC Induction
- Oil Filled
- Class C Insulation
- Automatic Thermal Reset

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Fluid Temperature Limits: (Totally Submerged)

- 40°F (4.4°C)
- 120°F (48.9°C)

Discharge Size:

- 1-1/4" Female NPT and 3/4" adjustable hose fitting (Included)

Impeller Design:

- Vortex

Maximum Installation Depth Below Water Level:

- 30 ft.

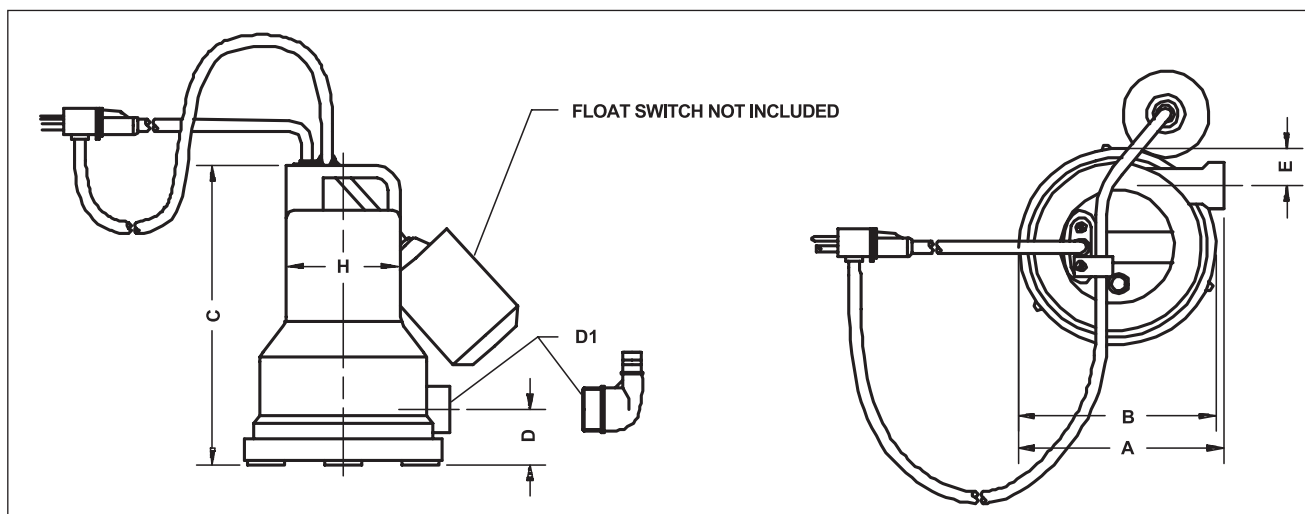
Approvals:

- CSA Approved
- UL Listed

Length of Power Cord:

- 10 or 25 ft.

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)						Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	H		
EF25	1/4	1.0	1	115	1-1/4"	6-1/2	6-1/4	9-1/2	1-3/4	1-3/16	3-5/8	7	0.26

Materials of Construction

Description	Material
Motor Housing	Glass Reinforced Thermoplastic
Volute	Glass Reinforced Thermoplastic
Vortex Impeller	Glass Reinforced Thermoplastic
Shaft	416 SS
Lip Seal & O-Rings	Buna N
Power Cord Set	3-Prong - Neoprene
Interior of Motor	Oil Filled - Polyalphaolefin



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
EF33E	1/3	1.15	1	115 230	675 600	6.0 2.7	12 6	3140 3145

Technical Data

Performance Range:

- Flow: 1 - 64 GPM
- Head: 0 - 27 ft.

Solids Handling:

- 3/4" Spherical Solids

Motor Type:

- AC Induction
- Permanent Split Capacitor
- Oil Filled, Durasyn[®] 166
- Class F Insulation
- Thermally Protected

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits: (Totally Submerged)

- 32° - 104°F (0° - 40°C) Semi-Continuous*
- 32° - 122°F (0° - 50°C) Intermittent

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Centrifugal

Motor bearing System:

- 2 Bronze Sleeve Bearings

Maximum Installation Depth Below Water Level:

- 30 ft.

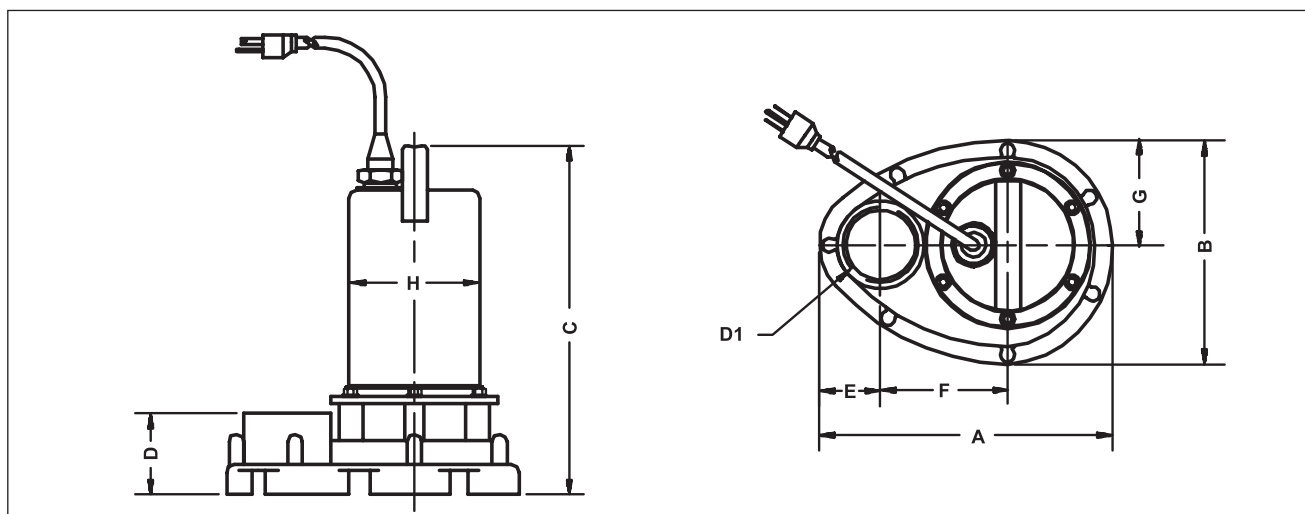
Approvals:

- cUL and UL Listed

Length of Power Cord:

- 10 or 20 ft.

Dimensional Drawing



Dimensions and Weights

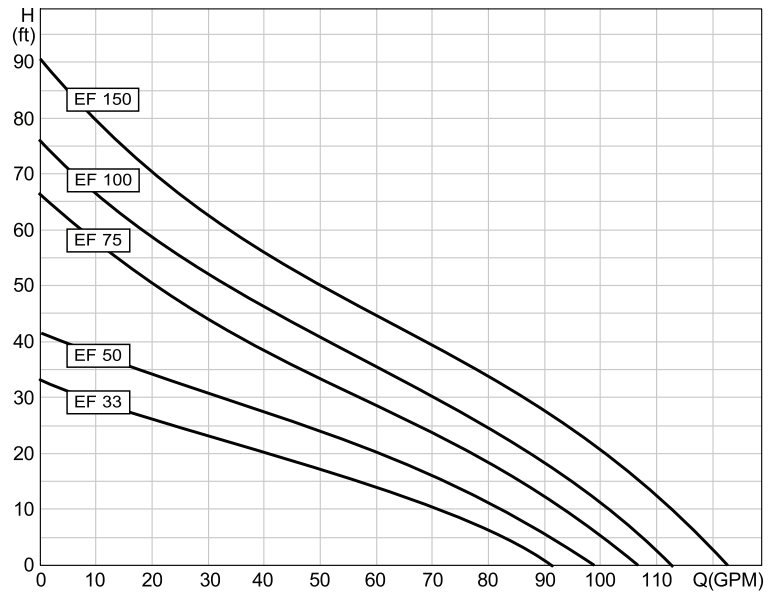
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)								Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G	H		
EF33E	1/3	1.15	1	115/230	1-1/2"	9-5/8	7-1/8	13-1/4	2-5/8	2	4-3/16	3-7/16	4-5/16	21	0.92

Materials of Construction

Description	Material
Motor Housing	316 SS
Volute, Impeller	Polypropylene, Semi Open
Mechanical Shaft Seal	Silicon Carbide, NBR, 316 SS
Motor/Pump Shaft	1045 Mild Steel/4301 SS
Motor Housing O-Ring, Pin Connector O-Ring	NBR
Sleeve Bushings	Bronze, Oil Impregnated
Base Plate	Mild Steel
Screw, Hi-Lo TorX	303 SS
Screw, Phillips	302 SS
Cable Nut	304 SS
Power Cord Set	3-Prong
Motor Fluid	Durasyn ® 166 Di-electric Oil



Performance Curve



Electrical Data

Pump Type	HP	Service Factor	PH	Input Voltage	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
EF33	1/3	1.7	1	115	905	8.4	18	1650
		1.7	1	230	830	3.9	9	1640
EF50	1/2	1.6	1	115	1190	11.5	24	1655
		1.6	1	230	1115	5.4	12	1655
EF75	3/4	1.5	1	230	1690	7.6	23	3390
EF100	1	1.4	1	230	2240	10.1	23	3290
EF150	1-1/2	1.3	1	230	2880	13.1	30	3340

Technical Data

Performance Range:

- Flow: 1 - 120 GPM
- Head: 0 - 90 ft.

Solids Handling:

- 3/4" Spherical Solids

Motor Type:

- AC Induction
- Permanent Split Capacitor
- Oil Filled, Durasyn[®] 166
- Class F Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits: (Totally Submerged)

- 32° - 104°F (0° - 40°C) Semi-Continuous*
- 32° - 140°F (0° - 60°C) Intermittent

Discharge Size:

- 2" Female NPT

Impeller Design:

- Semi-Open

Maximum Installation Depth Below Water Level:

- 30 ft.

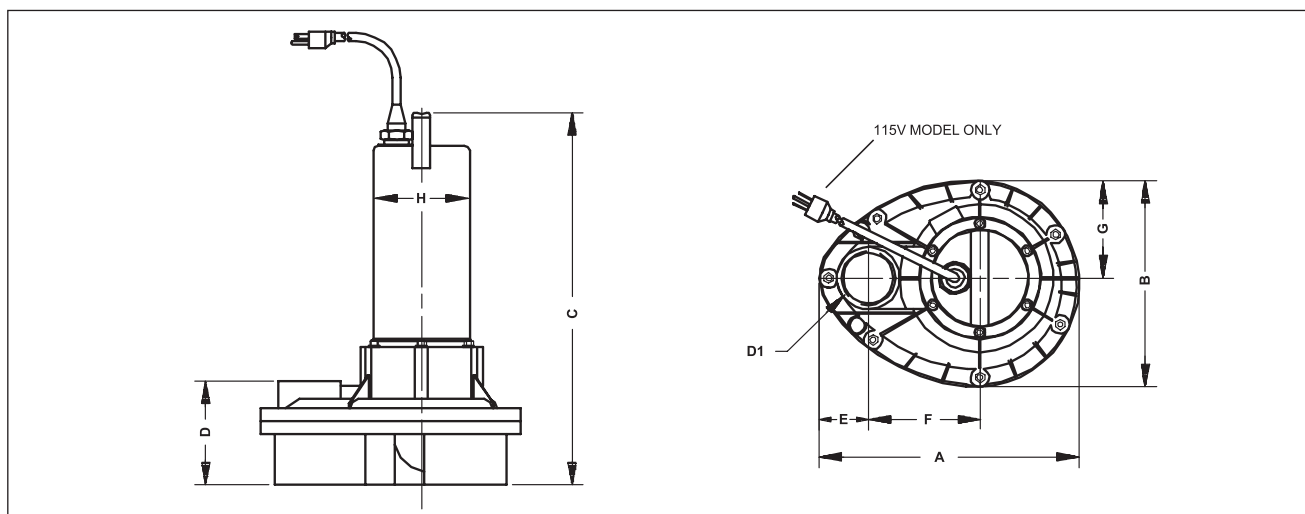
Approvals:

- cUL and UL

Length of Power Cord:

- 10 or 20 ft.

Dimensional Drawing



Dimensions and Weights

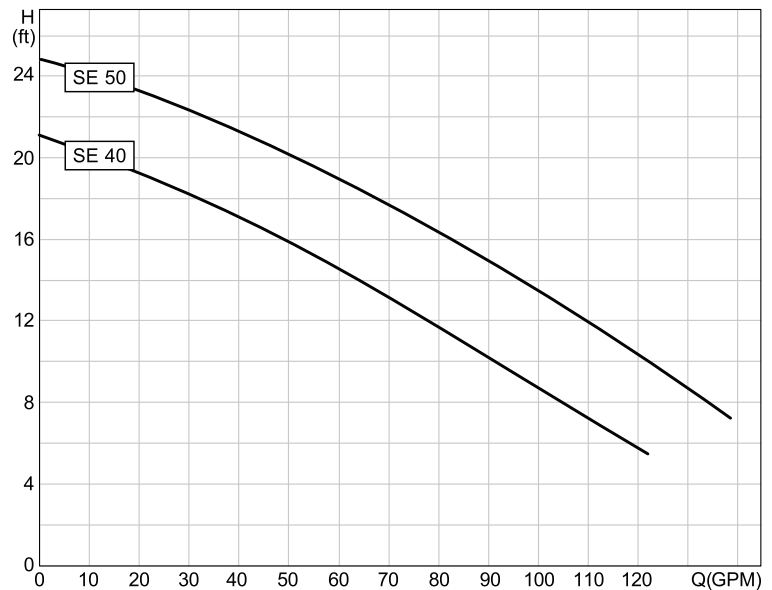
Pump Type	Motor Data				D1 Discharge NPT	Dimensions (Inches)								Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D	E	F	G	H		
EF33	1/3	1.7	1	115/230	2"	11-1/2	8-3/4	15	4-3/8	2-3/16	5	4-3/8	4-1/8	25.5	1.82
EF50	1/2	1.6	1	115/230	2"	11-1/2	8-3/4	16-3/8	4-3/8	2-3/16	5	4-3/8	4-1/8	30	1.82
EF75	3/4	1.5	1	230	2"	11-1/2	8-3/4	16-3/8	4-3/8	2-3/16	5	4-3/8	4-1/8	30	1.82
EF100	1	1.4	1	230	2"	11-1/2	8-3/4	16-3/8	4-3/8	2-3/16	5	4-3/8	4-1/8	33	1.82
EF150	1-1/2	1.3	1	230	2"	11-1/2	8-3/4	16-3/8	4-3/8	2-3/16	5	4-3/8	4-1/8	33	1.82

Materials of Construction

Description	Material
Volute Top	Polypropylene
Volute Bottom	Polypropylene
Motor Housing	316 SS
Impeller	BR111, Semi Open
Shaft	304 SS
Lip Seal & O-rings	NBR
Power Cord Set	3-Prong - Neoprene
Motor Fluid	Durasyn ® 166 Di-electric Oil
Cable Nut	Ryton
Screw, Phillips	304 SS
Screw, Hilo torx	303 SS
Motor/Pump Shaft	1045 Mild Steel/4301 SS



Performance Curve



Electrical Data

Pump Type	HP	PH	Input Voltage	Basin Size	Discharge Vent	Vent Size	Cord Length	Service factor	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
SE40EPAQ10-2	4/10	1	115	18"x30"	2"	2"	10'	1.4	935	8.7	18	1625
SE40EPAQ20-2	4/10	1	115	18"x30"	2"	2"	20'	1.4	935	8.7	18	1625
SE40EPAQ10-3	4/10	1	115	18"x30"	2"	3"	10'	1.4	935	8.7	18	1625
SE40EPAQ20-3	4/10	1	115	18"x30"	2"	3"	20'	1.4	935	8.7	18	1625
SE50EPAQ10-2	1/2	1	115	18"x30"	2"	2"	10'	1.6	1155	11.2	24	1635
SE50EPAQ20-2	1/2	1	115	18"x30"	2"	2"	20'	1.6	1155	11.2	24	1635
SE50EPAQ10-3	1/2	1	115	18"x30"	2"	3"	10'	1.6	1155	11.2	24	1635
SE50EPAQ20-3	1/2	1	115	18"x30"	2"	3"	20'	1.6	1155	11.2	24	1635

Technical Data

Performance Range:

- Flow: 2 - 170 GPM
- Head: 0 - 48 ft.

Solids Handling:

- 2" Spherical Solids

Motor Type:

- AC Induction
- Permanent Split Capacitor
- Oil Filled
- Class F Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Motor Bearing System:

- 1 Ball/1 Sleeve Bearing

Fluid Temperature Limits: (Totally Submerged)

- 32° - 104°F (0° - 40°C) Semi-Continuous*
- 32° - 140°F (0° - 60°C) Intermittent (approx 3-4 minutes)

Discharge Size:

- 2" Female NPT

Impeller Design:

- Vortex

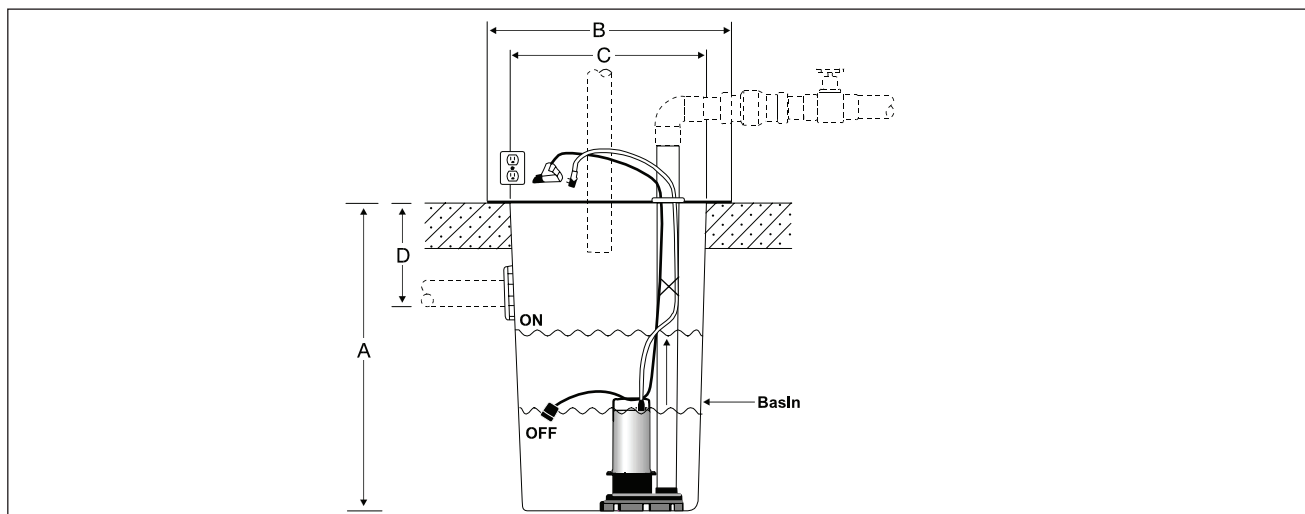
Maximum Installation Depth Below Water Level:

- 30 ft.

Approvals:

- Pump: UL Listed
- Float Switch: UL recognized

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				Discharge NPT	Dimensions (Inches)				Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D		
SE40EPAQ10-2	4/10	1.4	1	115	2"	30	22	18-3/8	10-1/2	47	8.4
SE40EPAQ10-3	4/10	1.4	1	115	2"	30	22	18-3/8	10-1/2	47	8.4
SE50EPAQ10-2	1/2	1.6	1	115	2"	30	22	18-3/8	10-1/2	51	8.4
SE50EPAQ10-3	1/2	1.6	1	115	2"	30	22	18-3/8	10-1/2	51	8.4

Materials of Construction

Description	Material
Motor Housing	316 SS
Volute Top	Amodel 1125 HS®/Polypropylene
Volute Bottom	Polypropylene
Basin	Polypropylene
Cover	S2410 Steel
Bolts & Washers	Cadmium Plated Steel
Fittings & Discharge Pipe	PVC

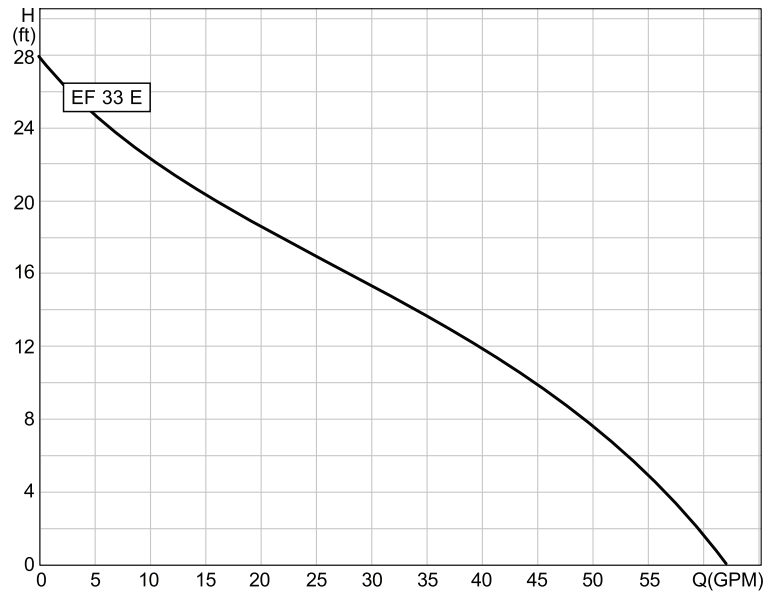
®Registered trademark of Amococ Oil Company

E-paQ Assembly Components

Description	Quantity
Poly Basin & Cover	1
Pump	1
Tether Float Switch	1
Discharge Drop Pipe Assembly (28")	1
Hardware Packet	1
Installation & Operation Manual	1



Performance Curve



Electrical Data

Pump Type	HP	PH	Input Voltage	Basin Size	Discharge Size	Vent Size	Cord Length	Service Factor	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
EF33E	1/3	1	115	15"x16"	1-1/2"	2"	8'	1.15	675	6.0	12	3140

Technical Data

Performance Range:

- Flow: 1 - 36 GPM
- Head: 0 - 16 ft.

Solids Handling:

- 3/16" Spherical Solids

Motor Type:

- AC Induction
- Oil Filled
- Class C Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits: (Totally Submerged)

- 40° F (4.4°C) Minimum
- 120°F (48.9°C) Maximum

Discharge Size:

- 1-1/2" Female NPT

Impeller Design:

- Centrifugal

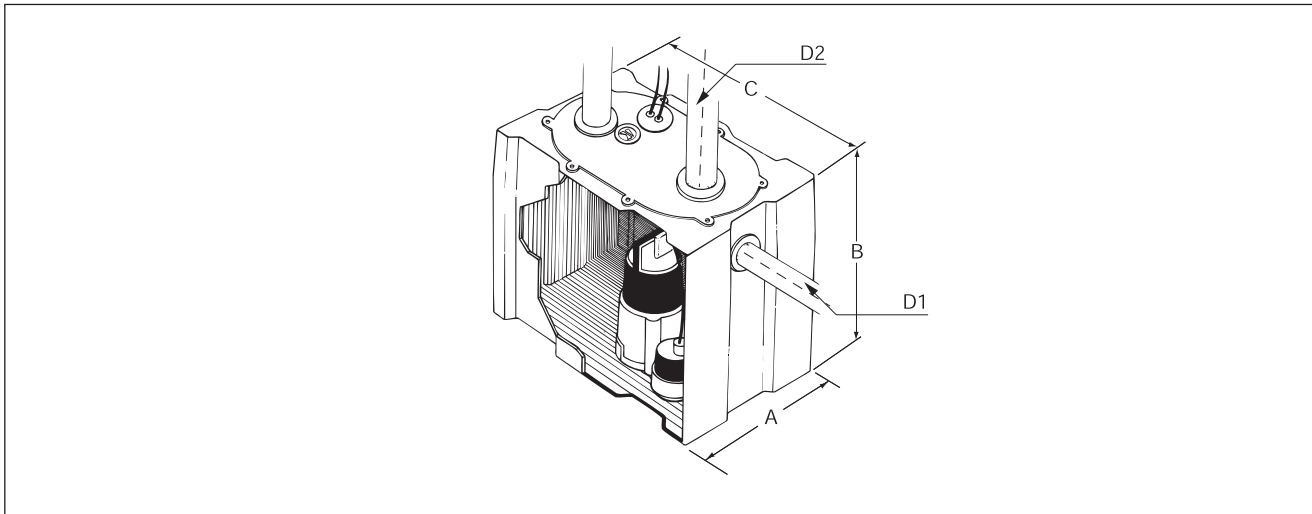
Vent Size:

- 1-1/2" Female NPT

Approvals:

- Pump: UL Listed
- Float Switch: UL recognized

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				D1 Inlet	Dimensions (Inches)				Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
	HP	S.F.	PH	Volts		A	B	C	D2		
EF33E	1/3	1.15	1	115	1-1/2"	17	11	14	1-1/2	15	1.4

Materials of Construction

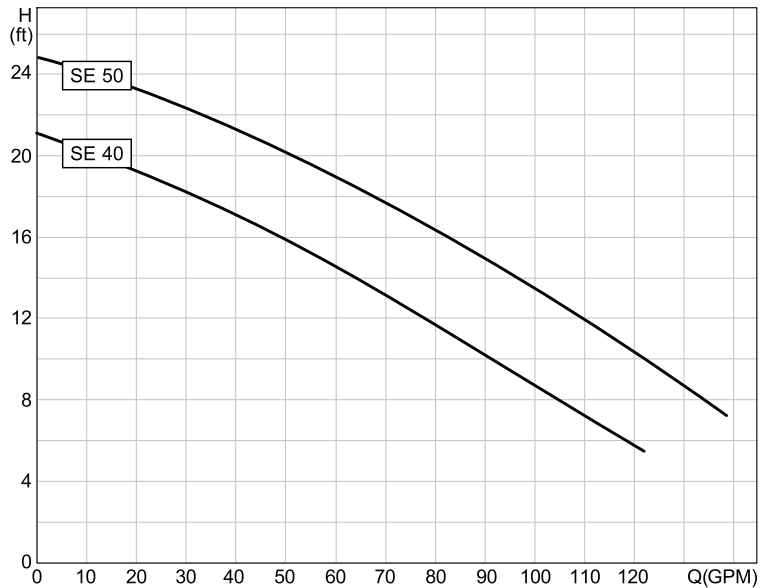
Description	Material
Volute	Glass Filled Engineered Composite
Pump	Stainless Steel
Basin & Cover	Polypropylene
Discharge Pipe	PVC

Sump Package Assembly Components

Description	Quantity
Poly Basin & Cover	1
Pump with Vertical Float Switch	1
Hardware Packet	1
Discharge Pipe	1
Check Valve	1
Installation and Operation Manual	1



Performance Curve



Electrical Data

Pump Type	HP	PH	Input Voltage	Basin Size	Discharge Size	Vent Size	Cord Length	Service Factor	Maximum Power Consumption (Watts)	Maximum Current (Amps)	Locked Rotor Current (Amps)	Nominal Speed (Rpm)
SE40	4/10	1	115	22"x32"	2"	2"	10'	1.4	935	8.7	18	1625
SE50	1/2	1	115	22"x32"	2"	2"	10	1.6	1155	11.2	24	1635

Technical Data

Performance Range:

- Flow: 1 - 130 GPM
- Head: 0 - 25 ft.

Solids Handling:

- 2" Spherical Solids

Motor Type:

- AC Induction
- Permanent Split Capacitor
- Oil Filled
- Class F Insulation

Motor Duty:

- Semi-Continuous if fully submerged
- Max. 8 hours in a 24 hour period

Starts Per Hour:

- Maximum 20 starts per hour
- Evenly Distributed once every 3 minutes

Thermal Protection:

- Automatic Reset

Fluid Temperature Limits: (Totally Submerged)

- 32° - 104°F (0° - 40°C) Semi-Continuous*
- 32° - 140°F (0° - 60°C) Intermittent (approx 3-4 minutes)

Discharge Size:

- 2" Female NPT

Impeller Design:

- Vortex

Vent Size:

- 2" Female NPT

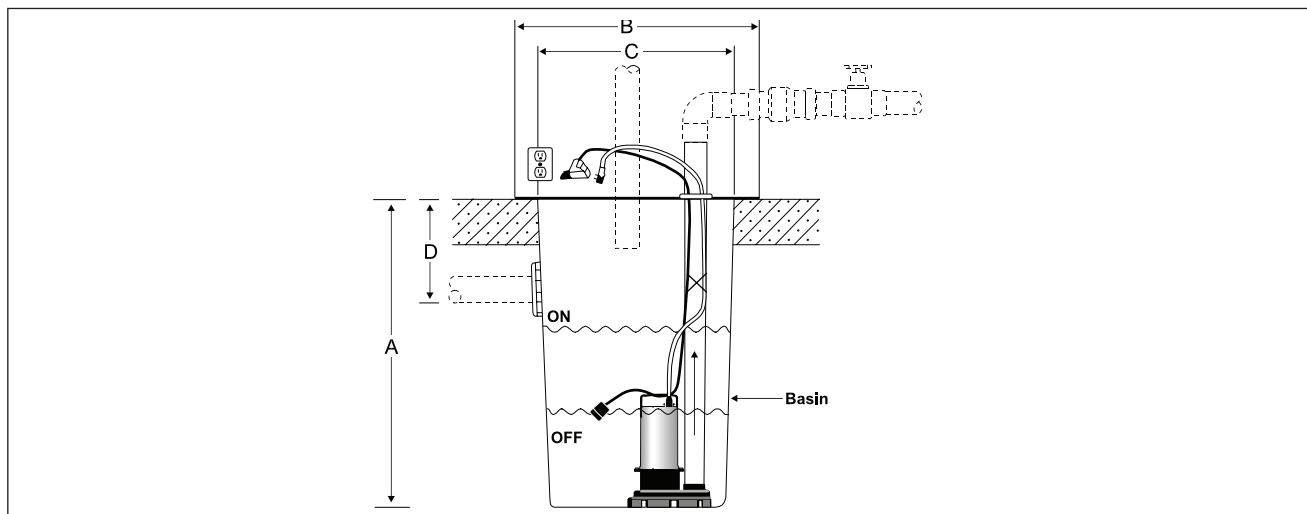
Motor Bearing System:

- 1 Ball / 1 Sleeve Bearing

Approvals:

- Pump: UL Listed
- Float Switch: UL recognized

Dimensional Drawing



Dimensions and Weights

Pump Type	Motor Data				Discharge NPT	Dimensions (Inches)				Ship Wt. (lbs)	Sip Vol. (cu. Ft.)
	HP	S.F.	PH	Volts		A	B	C	D		
SE40	4/10	1.4	1	115	2"	32-1/2	26-1/2	23	12-1/2	25	5.63
SE50	1/2	1.6	1	115	2"	32-1/3	26-1/3	24	12-1/3	25	5.63

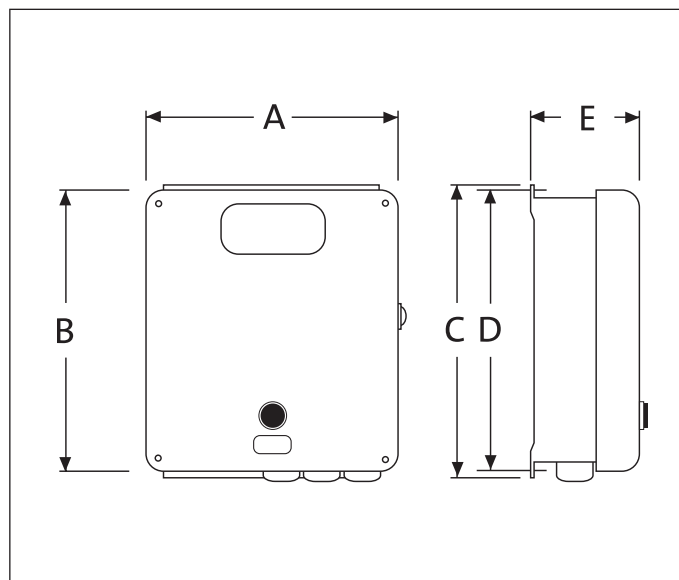
Materials of Construction

Description	Material
Volute Top	Amodel 1125 HS®/Polypropylene
Volute Bottom	Polypropylene
Motor Housing	316 SS
Vortex Impeller	Ryton BR111
Mechanical Shaft Seal	Ceramic, Carbon, NBR, 316 SS
O-Rings	NBR
Basin & Cover	Polypropylene
Discharge Pipe	PVC

Sewage Package Assembly Components

Description	Quantity
Poly Basin & Cover	1
Pump	1
Hardware Packet	1
Discharge Pipe	1
Vertical Float Switch	1
Check Valve	1
Installation and Operation Manual	1

Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)					Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E		
S1	1/3 - 1	1	115	9-5/16	11-5/16	11-1/2	10-3/4	5-1/2	9	0.5
S2	1/3 - 1-1/2	1	230	9-5/16	11-5/16	11-1/2	10-3/4	5-1/2	9	0.5

Technical Data

Ratings:

- S1 - Rated up to 120 VAC, 1 Hp, 16A, Single Phase, 60Hz
- S2 - Rated at 240 VAC, 1-1/2 Hp, 16A, Single Phase, 60Hz

Standard Features:

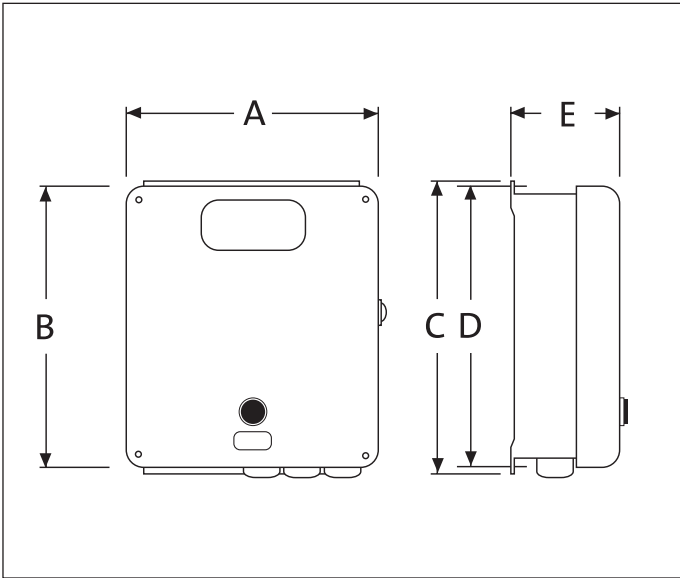
- Nema Type 4X Fiberglass Enclosure with External Mounting
- Hinged Door with Padlockable Stainless Steel Latch
- Motor-Start Contractor
- Current Limiting Circuit breaker
- SPDT HOA Toggle Switch
- High Level Audio Alarm with Push-to-Silence Feature
- 7/8" Diameter Visual Red Alarm Light
- Fuse Disconnect
- Audio Alarm Silence Relay
- Alarm Circuit

Approvals:

- UL Listed 508



Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)					Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E		
D1	1/3 - 1	1	115	13-5/16	15-5/16	15-1/2	14-3/4	8-1/4	16	1.25
D2	1/3 - 1-1/2	1	230	13-5/16	15-5/16	15-1/2	14-3/4	8-1/4	17	1.25

Technical Data

Ratings:

- D1 - Rated up to 120 VAC, 1 Hp, 16A, Single Phase, 60Hz
- D2 - Rated at 240 VAC, 1-1/2 Hp, 16A, Single Phase, 60Hz

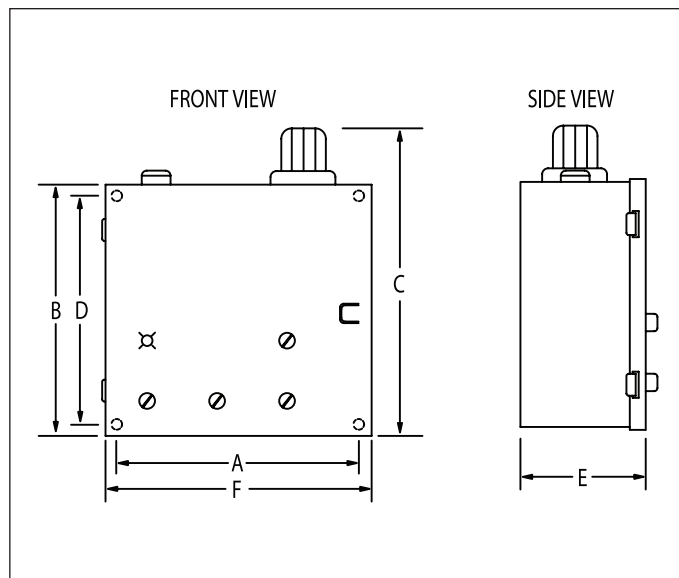
Standard Features:

- Nema Type 4X Fiberglass Enclosure with External Mounting
- Hinged Door wit Padlockable Stainless Steel Latch
- Motor-Start Contractor
- Current Limiting Circuit breaker
- Duplex Alternator
- SPDT HOA Toggle Switch
- High Level Audio Alarm with Push-to-Silence Feature
- 7/8" Diameter Visual Red Alarm Light
- Fuse Disconnect
- Audio Alarm Silence Relay
- Alarm Circuit

Approvals:

- UL Listed 508

Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)						Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E	F		
SI	1/3 - 1-1/2	1	115/230	11	14	17-1/4	11	6	12	1	5.63

Technical Data

Standard Features:

- Nema Type 1 Steel Enclosure
- Hinged Door
- High Level Alarm Horn with Silence
- Top Mounted High-Intensity Flashing Red High Level Alarm Light
- High Level Alarm Dry Contacts
- High Level Alarm Test Button Mounted Through Door
- High Level Alarm Reset Button Mounted Through Door
- Pump Running Lights Mounted Through Door
- Float Level LEDs & Replaceable Printed Circuit Board

Approvals:

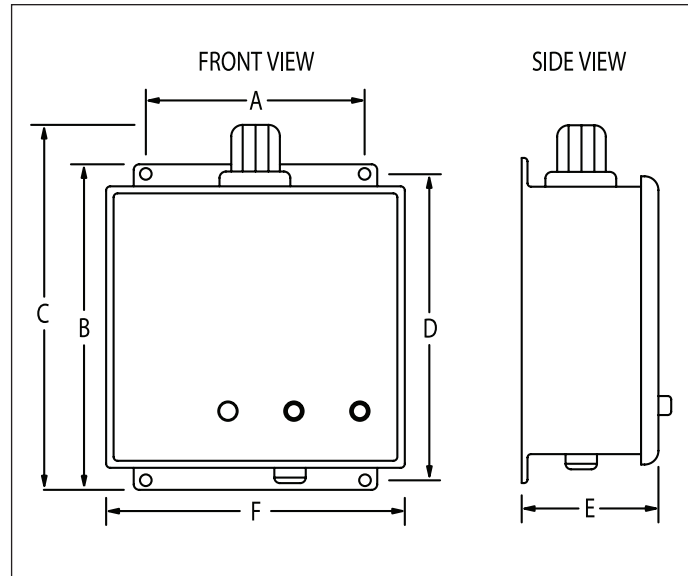
- cUL & UL Listed 508

Optional Features:

- Elapsed Time Meter
- Cycle Counter
- Condensate Heater
- Lightning Arrest/ Surge Protection
- Cord Grips
- Sensor Floats - 10', 20', 30' Lengths



Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)						Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E	F		
SO	1/3 - 1-1/2	1	115/230	10	15-1/2	18-3/4	14-3/4	6-5/8	13-1/4	1	5.63

Technical Data

Standard Features:

- Nema Type 4 Fiberglass Enclosure
- Hinged Door
- High Level Alarm Horn with Silence
- Top Mounted High-Intensity Flashing Red High Level Alarm Light
- High Level Alarm Dry Contacts
- High Level Alarm Test Button Mounted Through Door
- High Level Alarm Reset Button Mounted Through Door
- Pump Running Lights Mounted Through Door
- Float Level LEDs & Replaceable Printed Circuit Board

Approvals:

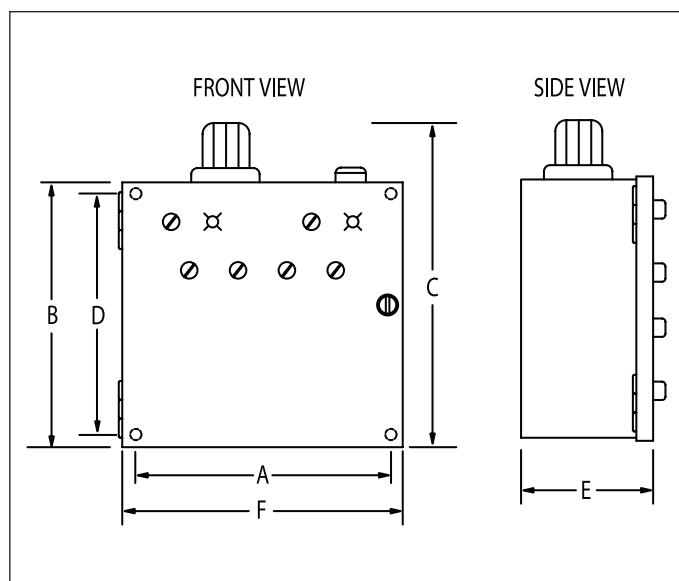
- cUL & UL Listed 508

Optional Features:

- Elapsed Time Meter
- Cycle Counter
- Condensate Heater
- Lightning Arrest/Surge Protection
- Cord Grips
- Sensor Floats - 10', 20', 30' Lengths



Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)						Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E	F		
DI	1/3 - 1-1/2	1	115/230	10	15-1/2	18-3/4	14-3/4	6-5/8	13-1/4	1	5.63

Technical Data

Standard Features:

- Nema Type 1 Steel Enclosure
- Hinged Door
- High Level Alarm Horn with Silence
- Top Mounted High-Intensity Flashing Red High Level Alarm Light
- High Level Alarm Dry Contacts
- High Level Alarm Test Button Mounted Through Door
- High Level Alarm Reset Button Mounted Through Door
- Pump Running Lights Mounted Through Door
- Float Level LEDs & Replaceable Printed Circuit Board

Approvals:

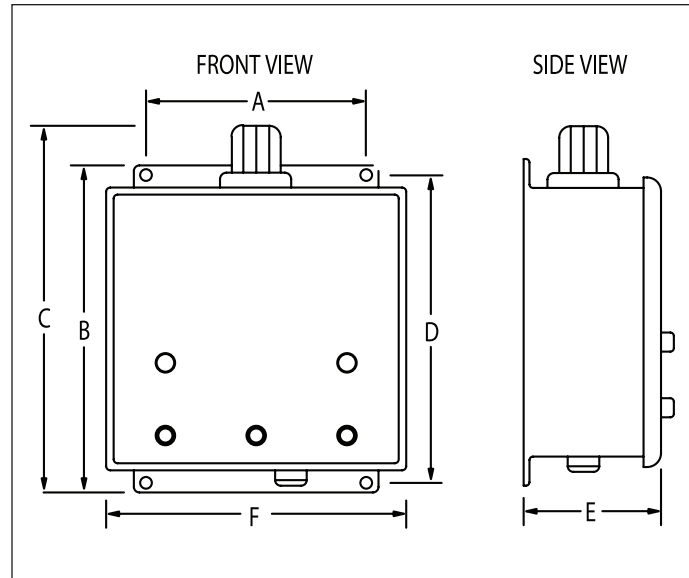
- cUL & UL Listed 508

Optional Features:

- Elapsed Time Meter
- Cycle Counter
- Condensate Heater
- Lightning Arrest/Surge Protection
- Cord Grips
- Sensor Floats - 10', 20', 30' Lengths



Dimensional Drawing



Electrical Data, Dimensions and Weights

Model	HP	PH	Volts	Dimensions (Inches)						Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
				A	B	C	D	E	F		
DO	1/3 - 1-1/2	1	115/230	10	15-1/2	18-3/4	14-3/4	6-5/8	13-1/4	1	5.63

Technical Data

Standard Features:

- Nema Type 4 Fiberglass Enclosure
- Hinged Door
- High Level Alarm Horn with Silence
- Top Mounted High-Intensity Flashing Red High Level Alarm Light
- High Level Alarm Dry Contacts
- High Level Alarm Test Button Mounted Through Door
- High Level Alarm Reset Button Mounted Through Door
- Pump Running Lights Mounted Through Door
- Float Level LEDs & Replaceable Printed Circuit Board

Approvals:

- cUL & UL Listed 508

Optional Features:

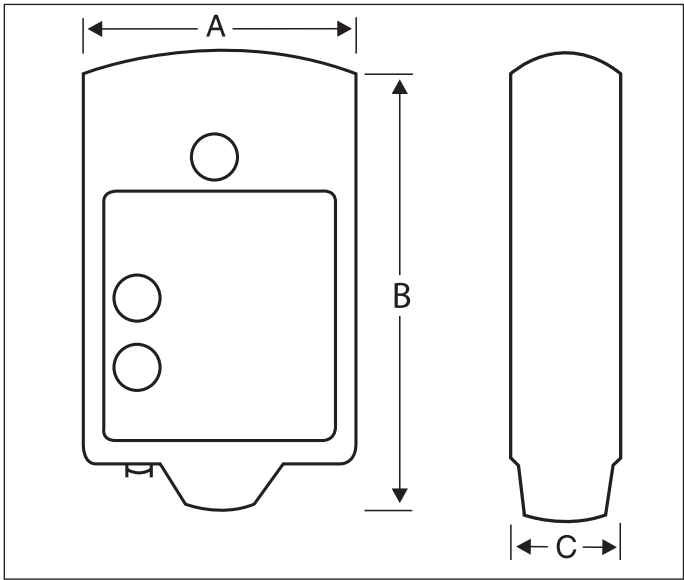
- Elapsed Time Meter
- Cycle Counter
- Condensate Heater
- Lightning Arrest/Surge Protection
- Cord Grips
- Sensor Floats - 10', 20', 30' Lengths

Technical Data - Tank Alerts Liquid Level Alarm

Tank Alert AB (USA & Mexico)



Dimensional Drawing



Electrical Data, Dimensions and Weights

HP	PH	Volts	Dimensions (Inches)			Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
			A	B	C		
1/3 - 1-1/2	1	115/230	6	4	2-1/4	3	5.63

Technical Data

Standard Features:

- Nema Type 1 Plastic Panel
- Red Alarm Light
- Green “Power On” Light
- Alarm Test Switch
- Horn Silence Switch
- SJE’s Signal Master® Float Switch
- 24 Watts max. 120V 60 Hz Primary, 9V 60 Hz Secondary
- Battery Backup Power: 9 VDC
- Pump Running Lights Mounted Through Door
- Float Level LEDs & Replaceable Printed Circuit Board
- Power Cord: 6 foot

Approvals:

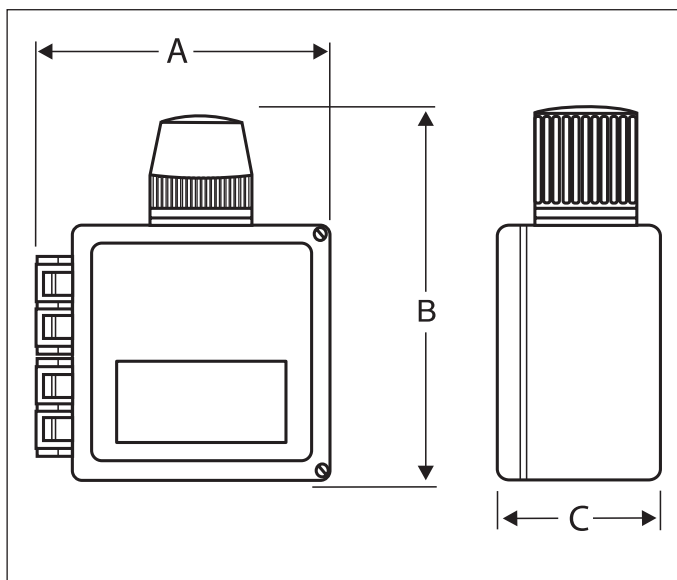
- CSA & UL

Technical Data - Tank Alerts Liquid Level Alarm

Tank Alert 4X (USA & Mexico)



Dimensional Drawing



Electrical Data, Dimensions and Weights

HP	PH	Volts	Dimensions (Inches)			Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
			A	B	C		
1/3 - 1-1/2	1	115/230	5-3/10	6-2/5	5-1/4	6	5.63

Technical Data

Standard Features:

- Nema 4X, indoor/outdoor, weatherproof, UV stabilized thermoplastic
- Large Red Alarm Light
- Non-Corrosive Horn
- Green "Power On" Light
- Alarm Test Switch
- Alarm Hrn: 88 decibels @ 10 ft.
- Horn Silence Switch with Automatic Reset
- SJE's Pump Master® Pump/Control Switch
- 40 Watts max. 120VAC

Optional Features:

- Auxiliary Alarm Contact - 5 Amps 120 VAC

Note:

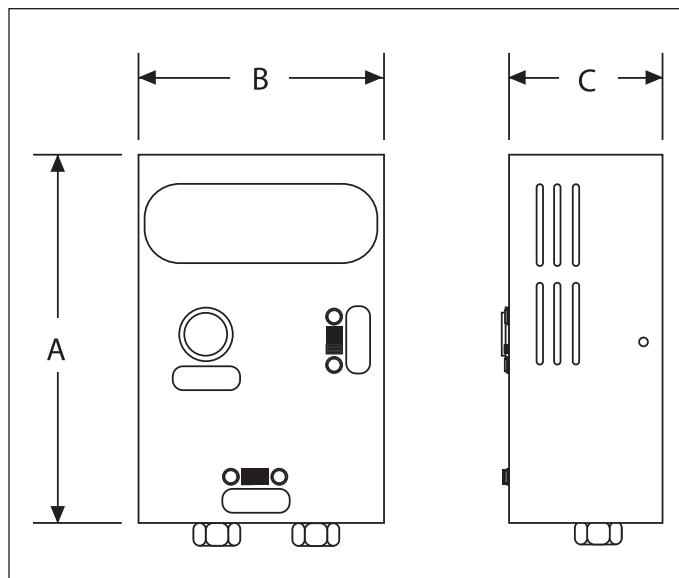
- Power to alarm must be 120 VAC only

Approvals:

- UL & cUL



Dimensional Drawing



Electrical Data, Dimensions and Weights

PH	Volts	Dimensions (Inches)			Ship Wt. (lbs.)	Ship Vol. (cu. ft.)
		A	B	C		
1	120	6	4	2-1/2	6	5.63

Technical Data

Standard Features:

- NEMA 1 Steel (indoor) Enclosure
- Hinged Door
- Loud Alarm Horn with Silence
- Red Warning Light
- Alarm Reset/Silence Switch
- Push to Test Switch
- Primary 120V, 60 Hz, Secondary: 12V, 60Hz
- 10', 20', 30', Float Switch Options

Approvals:

- CSA

Accessories for US and Mexico products

Product Group	Description	Size	Materials of Construction	For Use With
Float Switches & Sensors	Power Cord 115V, 16/3 AWG 3 Prong	10' or 20' Lengths	SJOW-A-Neoprene	1/4hp - 1-1/2hp
	Power Cord 230V, 16/3 AWG	10' or 20' Lengths	SJOW-A-Neoprene	1/4hp - 1-1/2hp
	"Piggyback" Mechanical Float Switch 115V	10' or 20' Lengths		1/4hp - 1-1/2hp
	Float Switch 230V	10' or 20' Lengths		1/4, 1/2, 3/4, 1hp
	Float Switch 230V	10' or 20' Lengths		1-1/2hp
	TF-10 Tether Float Switch	10'		SU & EF 25
	VF-10 Vertical Float Switch	10'		EF 25
	FS-10 Wide Angle Mechanical Float Switch, "Piggyback" Design	10'		KP & AP
	FS-25 Wide Angle Mechanical Float Switch, "Piggyback" Design			KP & AP
	VFS - Vertical Float Switch	10'		1/4hp - 1-1/2hp
	Sensor Float	10' or 20' Lengths		Simplex & Duplex Control Panel
Controls	1/3 - 1-1/2 Hp, 115/230V, NEMA 4X	9-5/16", 11-5/16", 5-1/2"	Fiberglass	Simplex
	1/3 - 1-1/2 Hp, 115/230V, NEMA 4X	13-5/16", 15-5/16", 8-1/4"	Fiberglass	Duplex
	Control Panel Option - Elapsed Time Meter	-		Simplex & Duplex Control Panel
	Control Panel Option - Pump Run Light	-		Simplex & Duplex Control Panel
	Control Panel Option - Cycle Counter	-		Simplex & Duplex Control Panel
	Control Panel Option - Redundant Off/Low Level Alarm	-		Simplex & Duplex Control Panel
	Control Panel Option - Lighting Arrest/Surge Protection	-	Plastic	Simplex & Duplex Control Panel
	Tank Alert I - High Level Tank Alarm, NEMA 1 Enclosure	-	Thermoplastic	115-230V Models
	Tank Alert 4X - High Level Tank Alarm, NEMA 4X Enclosure	-		115-230V Models
Fittings	Compression Fitting Check Valves	1-1/2", 2", 3"	PVC	Ejector Basins
	Solvent Weld Fitting Check Valves	1-1/2", 2"	PVC	Ejector Basins
	Junction Box	-	PVC	
	Cord Grips for Wire Gauges 18-3, 16-3	-	PVC	Junction Box
	Bolt & Gasket Package	-		Ejector Basins
Basins	Ejector Basins	18"x30"	Polyethylene	
	Ejector Basins	24"x36"	Polyethylene	
	Ejector Basins	30"x36"	Fiberglass	
	Ejector Basins	36"x36"	Fiberglass	
	Basin Hub	3", 4", 6"		Ejector Basins
	Basin Fittings	3", 4", 6"		Ejector Basins
	Basin Cover, Simplex with 2"x2" or 2"x3" Discharge Vent	18"	Steel, Steel/Split	Ejector Basins
	Basin Cover, Simplex with 2"x2" or 2"x3" Discharge Vent	24"	Steel	Ejector Basins
	Basin Cover, Simplex or Duplex with 2"x2" or 2"x3" Discharge Vent	30"	Steel	Ejector Basins
	Basin Cover, Simplex or Duplex with 2"x2" or 2"x3" Discharge Vent	36"	Steel	Ejector Basins

Accessories for Canadian products

Product Group	Description	Size	Materials of Construction	For Use With
Float Switches & Sensors	"Piggyback" Mechanical Float Switch 115V, 3 Prong	10' or 20'		1/3hp - 1/2hp KP&AP
	Mechanical Float Switch 230V	10' or 20'		1/3hp - 1/2hp KP&AP
	Mechanical Float Switch 230V	10' or 20'		3/4hp - 1hp AP
	Mechanical Float Switch 230V	10' or 20'		1-1/2hp
	Mechanical Float Switch 115V, 3 Prong	25'		KP & AP
	Mechanical Float Switch 115V, 3 Prong	30'		1/3, 4/10, 1/2 KP
	Mechanical Float Switch 230V	30'		AP
	Power Cords 115V	10', 20' & 30'	SJOW-A-Neoprene	1/3hp - 1/2hp
	Power Cords 230V	10', 20' & 30'	SJOW-A-Neoprene	1/3hp - 1/2hp
Controls	1/3 - 1-1/2 Hp, 115/230V, NEMA 1	11", 14", 17-1/4"	Steel	Simplex
	1/3 - 1-1/2 Hp, 115/230V, NEMA 1 or 4	10", 18-3/4", 6-5/8"	Fiberglass	Simplex & Duplex Control Panel
	Control Panel Option - Elapsed Time Meter	-		Simplex & Duplex Control Panel
	Control Panel Option - Pump Run Light	-		Simplex & Duplex Control Panel
	Control Panel Option - Cycle Counter	-		Simplex & Duplex Control Panel
	Control Panel Option - Redundant Off/Low Level Alarm	-		Simplex & Duplex Control Panel
	Control Panel Option - Lighting Arrest/Surge Protection	-		Simplex & Duplex Control Panel
	Sensor Float for Control Panels	10' or 20'		Simplex & Duplex Control Panel
	Tank Alert I - High Level Tank Alarm, NEMA 1 Enclosure	-	Steel	120V Models
	Tank Alert 4X - High Level Tank Alarm, NEMA 4X Enclosure	-	-	120V Models
Fittings	Compression Fitting Check Valves	1-1/2", 2", 3"	PVC	Ejector Basins
	Solvent Weld Fitting Check Valves	1-1/2", 2"	PVC	Ejector Basins
	Junction Box - Simplex & Duplex	-	PVC	
	Cord Grips for Wire Gauges 18-3, 16-3	-	PVC	Junction Box
	Bolt & Gasket Package	-		Ejector Basins
Basins	Basins - Side Vent w/Plastic Cover & Accessories	18"x30"	Polyethylene	
	Basins - Side Vent w/Plastic Cover & Accessories	22"x32"	Polyethylene	
	Basins - w/Steel Cover & Accessories	24"x36"	Polyethylene	
	Basins - w/Simplex or Duplex Steel Cover & Accessories	30"x36"	Polyethylene	
	Basins - w/Simplex or Duplex Steel Cover & Accessories	30"x36"	Fiberglass	
	Basins - w/Simplex or Duplex Steel Cover & Accessories	36"x36"	Polyethylene	
	Basins - w/Simplex or Duplex Steel Cover & Accessories	36"x36"	Fiberglass	
	Basin Hub	3", 4", 6"	Cast Iron	Ejector Basins
	Basin Fittings	3", 4", 6"		Ejector Basins
	Basin Cover, Simplex with 2"x2" or 2"x3" Discharge Vent	18"	Steel, Steel/Split	Ejector Basins
	Basin Cover, Simplex with 2"x2" or 2"x3" Discharge Vent	24"	Steel	Ejector Basins
	Basin Cover, Simplex or Duplex with 2"x2" or 2"x3" Discharge Vent	30"	Steel	Ejector Basins
	Basin Cover, Simplex or Duplex with 2"x2" or 2"x3" Discharge Vent	36"	Steel	Ejector Basins

Submittal data sheet



Company name: _____
Prepared by: _____
Phone number: () - _____
Fax number: () - _____
Date: _____ Page 1 of: _____
Quote number: _____

Client Information

Project title: _____	Client name: _____
Reference number: _____	Client number: _____
Client contact: _____	Client phone no: () - _____

Location Information

For: _____	Unit: _____
Site: _____	Service: _____
Address: _____	City: _____ State: _____ Zip Code: _____

Technical Data

Flow (GPM) _____
Head (Ft) _____
Motor _____
Max Fluid Temp _____
Min Fluid Temp _____
Max Working Pressure _____
Min Required Inlet Pressure _____
Connection Type and Size _____

Motor Information

HP: _____
Phase: _____
Voltage: _____
Enclosure: _____

Pump Information

Model Information from Type Key and Codes: _____	
Quantity Required: _____	Example: SU 25
Minimum required flow: _____	NPSH required at duty point: _____
Product Guide additional information pages	
Materials page number: _____	Performance curve page number: _____
Technical data page number: _____	Motor data page number: _____

Custom-built pump information (optional): _____

Additional Information

Notes

Notes

L-SE-PG-001	7/05
PRINTED IN USA	

Subject to alterations.

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