

## CUSTOM DESIGNED SEWAGE EJECTOR PUMP SYSTEM

For Resident of Pepper Pike, Ohio

Designed by Liberty Pump by request of **SAFE SEPTIC PLUS**

Headquartered in Bergen, NY, Liberty Pumps is a leading U.S. manufacturer of pumping products for ground water and wastewater removal in residential and commercial applications.

<https://www.libertypumps.com/>

<b>Qty</b>	<b>Item/Description</b>
2	LE41M-2 Sewage pumps, 4/10 HP, 115 V, 1 phase, capacities of 142 GPM, heads to 21' TDH, 25' power cord
1	AE24L=3 NEMA 4X duplex alternating control panel including three floats, aux. contacts, and integral audio/ visual high level alarm
1	36" dia. X 84" H fiberglass basin with Fiberglass anti-floatation flange with 2" side discharge. 2" Female Threaded PVC discharge coupling.
1	36" Blank Fiberglass cover
2	Guide rail assembly, including GR22-S guide rail, 1-1/4" galvanized steel rails, s/s lifting chain, etc.
1	(1) 4" Unmounted inlet hub
1	Miscellaneous hardware and plumbing, including PVC ball valves, PVC check valves, float bracket, PVC discharge pipe etc.
1	JB70 junction box, with watertight cable connectors and 2" conduit coupling

# LE40-SERIES

Sewage Pumps

## Liberty Pumps®

A Family and Employee Owned Company

### 4/10 hp 2" Solids Handling

#### Features

- Heavy cast iron construction
- Oil-filled, thermally protected motor
- Permanently lubricated ball bearings
- Corrosion resistant, vortex style impeller made of high temperature engineered polymer
- All stainless-steel fasteners and rotor shaft
- Quick-connect 10' standard power cord allows replacement of cord in seconds without breaking seals to motor (25' length optional. 35' and 50' bare lead cords available.)



Vertical float  
switch models  
available in 115V



# LE40-Series

## Impeller

Vortex style impeller capable of passing a 2" spherical solid

## Paint

Powder coat

## Max Fluid Temperature

104°F (40°C) Continuous duty  
140°F (60°C) Intermittent

## Motor

Submersible type, oil-filled, hermetically sealed, thermally protected

## Power Cord Type

SJTW, Quick-connect 10' standard length  
(25' cord option)  
SJOOW, bare lead 35' and 50' cords available

## Motor Housing

Class 25 cast iron

## Volute

Class 25 cast iron

## Dimensional Data

**Weight:** LE41M: 40 lbs

**Height:** 14"

**Major Width:** 10.75" (manual models)

## All Models

MODELS	HP	VOLTS	PHASE	AMPS	DISCHARGE SIZE	AUTOMATIC	IMPELLER
LE41M	4/10	115	1	12	2" FNPT	No	Vortex
LE41A	4/10	115	1	12	2" FNPT	Wide-Angle Float Switch	Vortex
LE41AV	4/10	115	1	12	2" FNPT	Vertical Float Switch	Vortex

10' cord standard on above models.

For 25' cord options, add a "-2" suffix to model number. Example: LE41A-2

For 35' bare lead cords on manual models, add a "-3" suffix to model number. Example: LE41M-3

For 50' bare lead cords on manual models, add a "-5" suffix to model number. Example: LE41M-5

## Shaft

Stainless

## Hardware

Stainless

## Mechanical Shaft Seal

Carbon ceramic

## Bearings

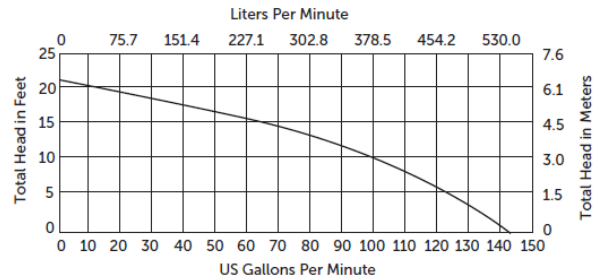
Upper and lower ball bearings

## Float Switch (automatic models)

Wide-angle and vertical float switch models available

## Performance Curve

60 Hz, 1725 RPM



Specifications subject to change without notice.

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# AE-SERIES

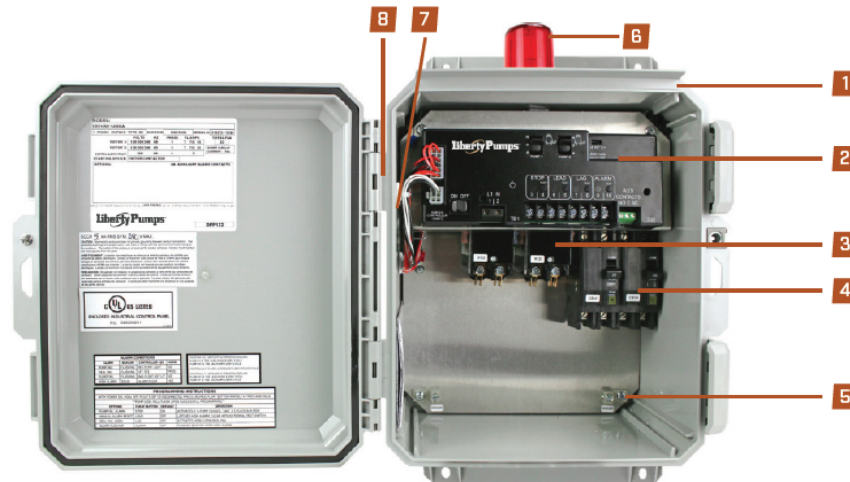
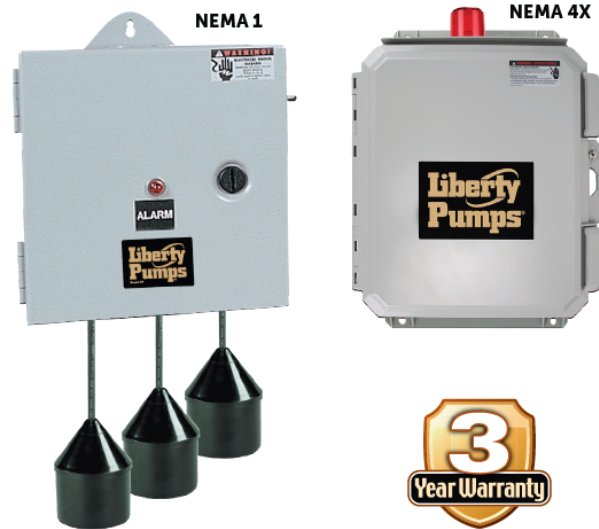
## Duplex Pump Controls

# Liberty Pumps®

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AE-Series duplex panels control two 1-phase or 3-phase pumps in water and sewage installations. This panel includes a new **innovative duplex controller** for pump control, alternation and alarm; including float switch status LEDs, control/alarm power ON/OFF switch with LED indicator, pump run LEDs, HOA switches, pump lead/lag selector switch, auxiliary contacts and more.

The control panel features built-in lag pump delay time, pump failure detection, and float switch out-of-sequence notification. In addition, there are user-selectable field programmable operations: alarm steady-state or flashing; alarm auto reset or manual reset; pump failure notification.



1-phase NEMA 4X shown

## Components

1. Newly designed larger NEMA 4X enclosure for indoor/outdoor use
  - a. Drip shield
  - b. Heavy-duty wide clamping securable latches (2)
  - c. Stainless steel 1/4 turn cover set screw
  - d. Low profile hinged lockable cover
  - e. Integral mounting flanges
2. Duplex Controller
  - a. Pump HOA switches with green/red LED indicators
  - b. Control power ON/OFF switch
  - c. Power ON green LED indicator
  - d. Float switch status red LED indicators
  - e. Float switch push-to-test buttons
  - f. Pump selector switch
  - g. Auxiliary alarm contacts
  - h. Terminal blocks for incoming power and float switches
3. Magnetic motor contactors control pumps by switching electrical lines.
4. Circuit breakers provides pump disconnect and branch circuit protection
5. Ground lugs
6. Red LED alarm beacon
7. Alarm horn
8. Exterior alarm test/normal/silence switch

# D3600-SERIES

Duplex Grinder Package

# Liberty Pumps®

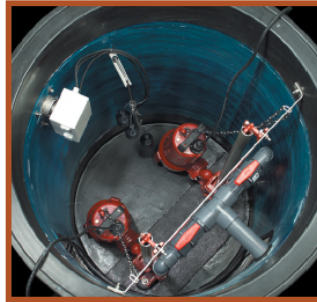
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## Factory Assembled 2 hp Grinder Pumps 36" Diameter System 2" Discharge

### Features

- Integral check valves
- QuickTree® pre-mounted float switch system for pump control and alarm
- 4" Inlet hub with rubber pipe seal
- Factory pre-assembled guide rail system
- Galvanized guide rail piping (stainless optional)
- Factory pre-assembled Schedule 80 PVC discharge piping with ball valves
- Fiberglass basin with anti-flotation collar
- Standard green fiberglass cover, solid (optional black steel, solid)
- All stainless-steel supports and brackets pre-mounted
- NEMA 4X junction box for electrical connections, pre-mounted
- Stainless-steel chain for pump lift-out

\*Other custom basin sizes available consult factory



4" Inlet  
(unmounted)



Available Heights  
48"  
60"  
72"  
84"  
96"  
120"



Available with  
LSG or LSGX-Series

# D3600-Series

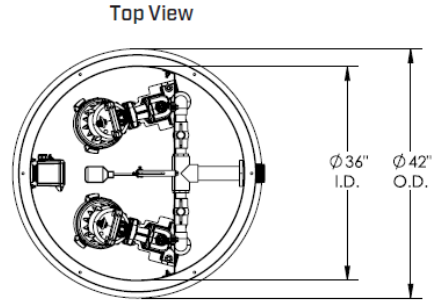
## Features

- 2 hp Grinder pumps
- Choose from single stage LSG or 2-stage LSGX-Series pumps
- Available in a wide range of voltages
- 2" Discharge
- 25' Power cable length

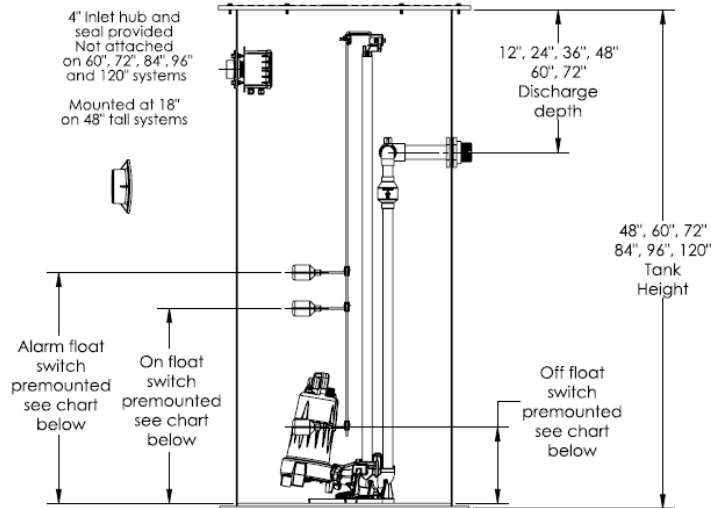


(See LSG or LSGX-Series literature for complete pump specifications.)

## Dimensional Data



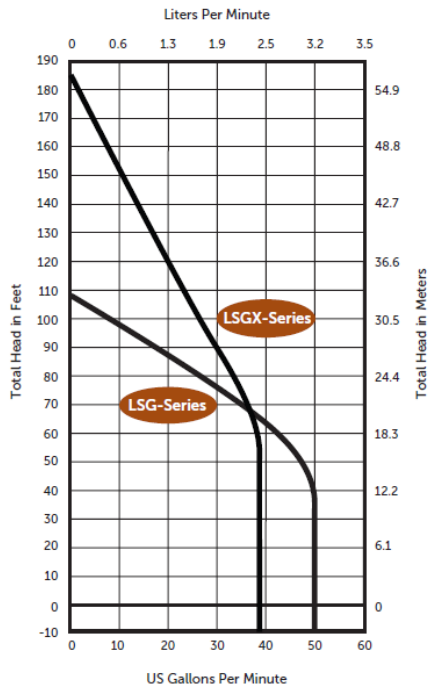
Side View



Galvanized guide rails standard. For stainless-steel rails  
add "S" to model number. Example: (galvanized) D3672LSG202-24-S  
For steel cover option add "-SC" suffix to model number.  
Example: (steel) D3672LSG202-24-SC

## Performance Curves

60 Hz, 3450 RPM



## Factory Set Control Levels

MODEL	OFF LEVEL	ON LEVEL	ALARM LEVEL	VOLUME PER PUMP CYCLE	TOTAL BASIN CAPACITY
D3648	13" (33 cm)	25" (64 cm)	31" (79 cm)	53 gal (201 L)	211 gal (799 L)
D3660	13" (33 cm)	28" (71 cm)	34" (86 cm)	66 gal (250 L)	264 gal (999 L)
D3672	13" (33 cm)	31" (79 cm)	37" (94 cm)	79 gal (299 L)	317 gal (1200 L)
D3684	13" (33 cm)	34" (86 cm)	40" (102 cm)	92 gal (348 L)	370 gal (1400 L)
D3696	13" (33 cm)	37" (94 cm)	43" (109 cm)	106 gal (401 L)	423 gal (1601 L)
D36120	13" (33 cm)	43" (109 cm)	49" (124 cm)	132 gal (500 L)	529 gal (2002 L)

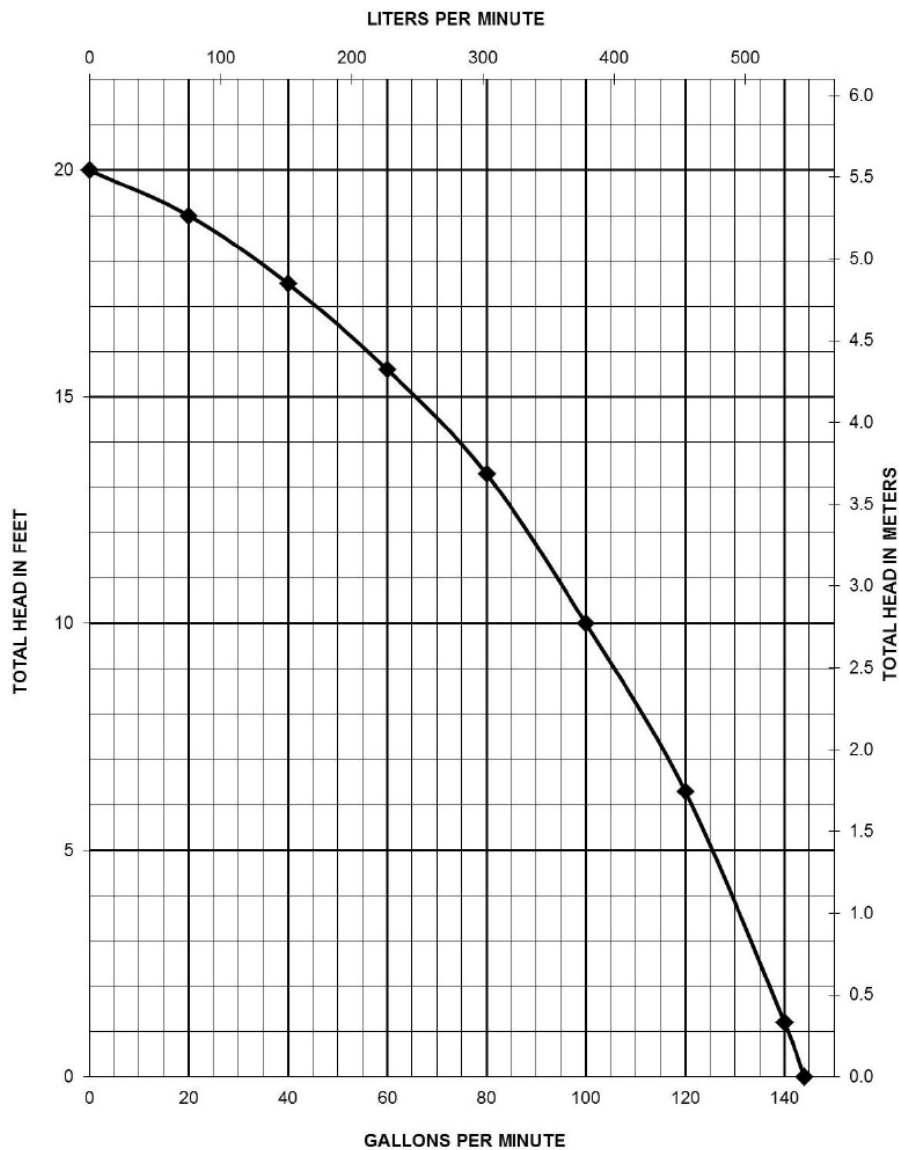
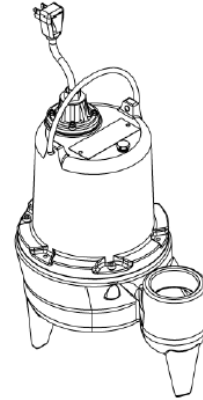


# Liberty Pumps®

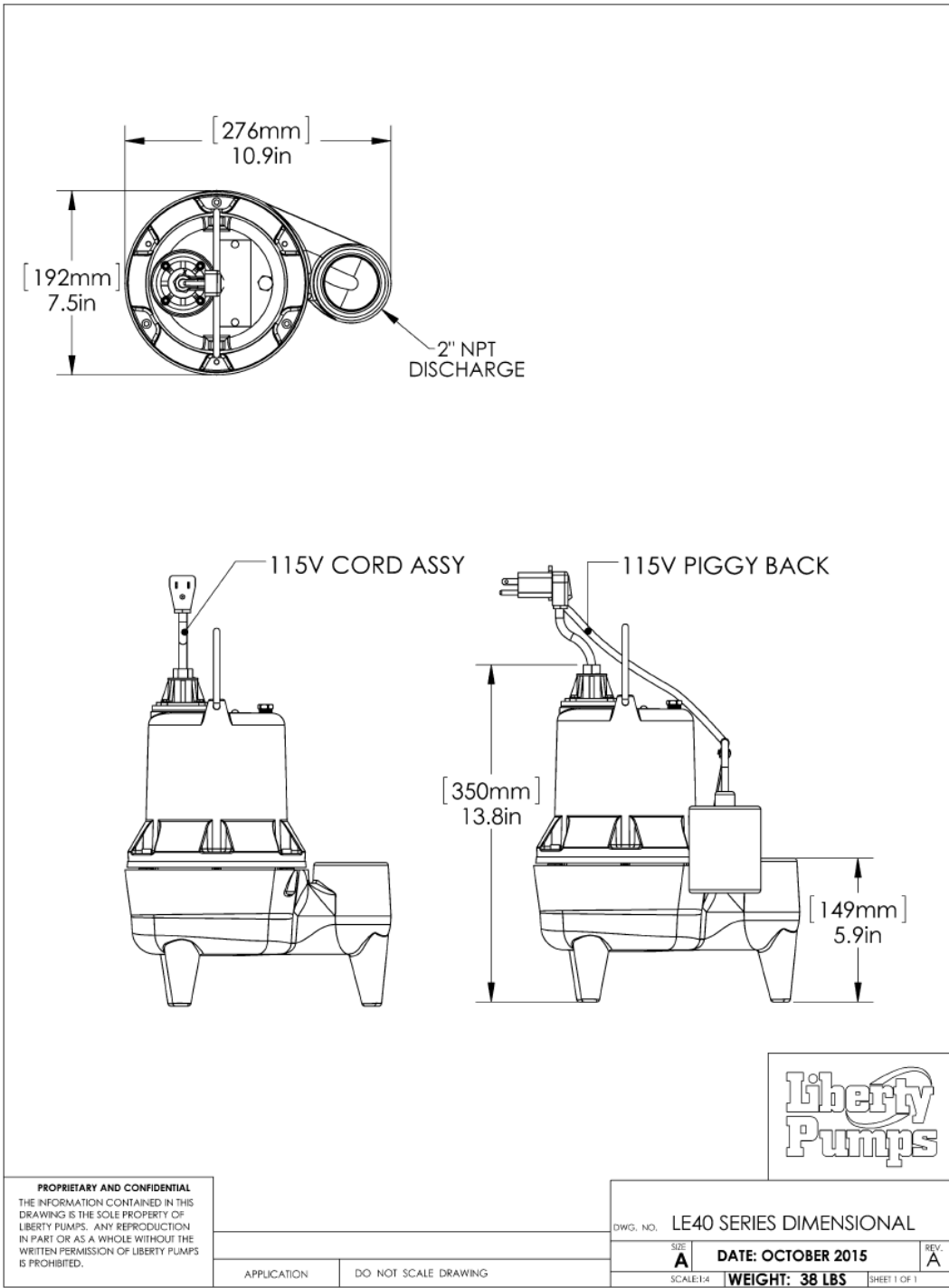
## Pump Specifications

### LE40 Series

### 4/10 HP Submersible Sewage Pump



# LE40-Series Dimensional Data

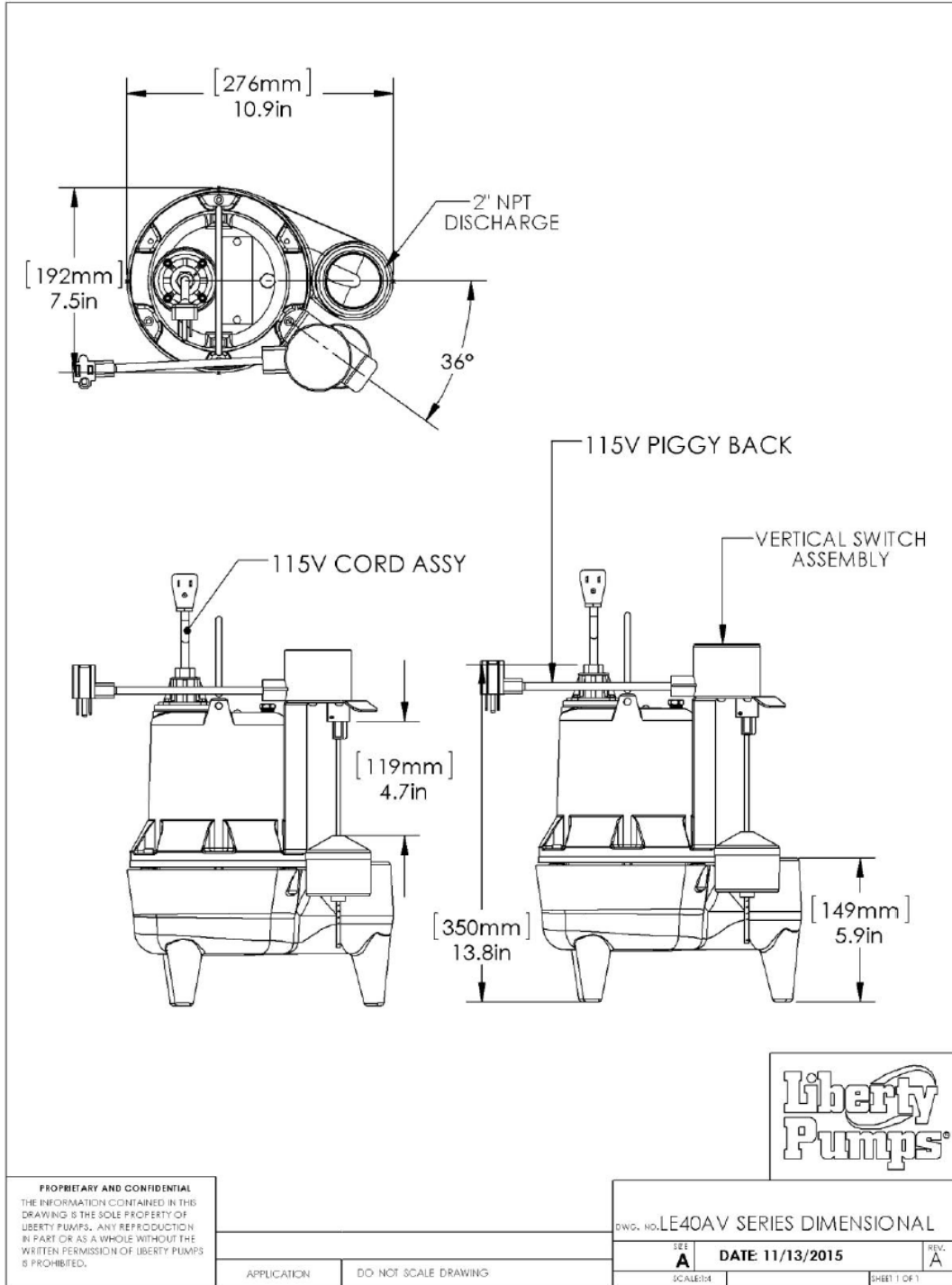


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APPLICATION	DO NOT SCALE DRAWING
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DWG. NO. LE40 SERIES DIMENSIONAL		
SIZE <b>A</b>	DATE: OCTOBER 2015	REV: <b>A</b>
SCALE: 1:4	WEIGHT: 38 LBS	SHEET 1 OF 1





## LE40-Series Electrical Data

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MODEL	HP	VOLTAGE	PHASE	SF	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH FT	DISCHARGE	AUTOMATIC
LE41A	4/10	115	1	1.00	12	22.5	105°C 221°F	B	10	2"	WIDE ANGLE
LE41A -2	4/10	115	1	1.00	12	22.5	105°C 221°F	B	25	2"	WIDE ANGLE
LE41AV	4/10	115	1	1.00	12	22.5	105°C 221°F	B	10	2"	VERTICAL SWITCH
LE41AV -2	4/10	115	1	1.00	12	22.5	105°C 221°F	B	25	2"	VERTICAL SWITCH
LE41M	4/10	115	1	1.00	12	22.5	105°C 221°F	B	10	2"	NO
LE41M-2	4/10	115	1	1.00	12	22.5	105°C 221°F	B	25	2"	NO

## LE40-Series Technical Data

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IMPELLER	VORTEX ENGINEERED POLYMER
SOLIDS HANDLING SIZE	2"
PAINT	POWDER COAT
MAX LIQUID TEMP	60°C 140°F
MAX STATOR TEMP	130°C 266°F
THERMAL OVERLOAD	105°C 221°F
POWER CORD TYPE	SJTW
MOTOR HOUSING	CLASS 25 CAST IRON
VOLUTE	CLASS 25 CAST IRON
SHAFT	STAINLESS
HARDWARE	STAINLESS
ORINGS	BUNA N
MECHANICAL SEAL	UNITIZED CERAMIC CARBON
WEIGHT	40 LBS

## LE40-Series Specifications

Re

### 1.01 GENERAL:

The contractor shall provide labor, material, equipment, and incidentals required to provide \_\_\_\_\_(QTY) centrifugal pumps as specified herein. The pump models covered in this specification are Series LE40 single phase pumps. The pump furnished for this application shall be model \_\_\_\_\_as manufactured by Liberty pumps.

### 2.01 OPERATING CONDITIONS:

Each submersible pump shall be rated at 4/10 hp \_\_\_\_\_volts, single phase, 60 Hz., 1725 RPM. The unit shall produce \_\_\_\_\_G.P.M. at \_\_\_\_\_ feet of total dynamic head.

The submersible pump shall be capable of handling residential sewage with 2" solid handling capability. The submersible pump shall have a shut-off head of 20 feet and a maximum flow of 125 GPM @ 5 feet of total dynamic head.

The pump shall be controlled with:

- \_\_\_\_\_A piggy back style on/off float switch.
- \_\_\_\_\_A pre-assembled HD vertical switch
- \_\_\_\_\_A NEMA 4X outdoor simplex control panel with three float switches and a high water alarm.
- \_\_\_\_\_A NEMA 1 indoor simplex control panel with three float switches and a high water alarm.
  
- \_\_\_\_\_A NEMA 4X outdoor duplex control panel with three float switches and a high water alarm.
- \_\_\_\_\_A NEMA 1 indoor duplex control panel with three float switches and a high water alarm.
- \_\_\_\_\_A NEMA 4X outdoor duplex control panel with four float switches and a high water alarm.
- \_\_\_\_\_A NEMA 1 indoor duplex control panel with four float switches and a high water alarm.

### 3.01 CONSTRUCTION:



Each centrifugal sewage pump shall be equal to the c<sup>us</sup> certified Series LE40 SERIES pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N o-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a unitized ceramic/carbon seal with stainless steel housings and spring. The pump shall be furnished with stainless steel handle.

### 4.01 ELECTRICAL POWER CORD

The submersible pump shall be supplied with 10 or 25 feet of multiconductor power cord. It shall be cord type SJTW, capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a water tight compression fitting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord, by means of a damaged or wicking cord.

#### **5.01 MOTORS**

Single phase motors shall be oil filled, permanent split capacitor, class B insulated NEMA B design, rated for continuous duty. At maximum load the winding temperature shall not exceed 130 degrees C un-submerged. Since air filled motors are not capable of dissipating heat they shall not be considered equal. The pump motor shall have an integral thermal overload switch in the windings for protecting the motor. The capacitor circuit shall be mounted internally in the pump.

#### **6.01 BEARINGS AND SHAFT**

An upper and lower ball bearing shall be required. Both bearings shall be permanently lubricated by the oil, which fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of .50".

#### **7.01 SEALS**

The pump shall have a unitized carbon / ceramic seal with stainless steel housings and spring equal to Crane Type 6A. The motor plate / housing interface shall be sealed with a Buna-N o-ring.

#### **8.01 IMPELLER**

The vortex impeller shall be constructed of engineered polymer, with pump out vanes on the back shroud to keep debris away from the seal area and shall be threaded onto the motor shaft utilizing an integrally molded brass insert.

#### **9.01 CONTROLS**

All single phase units can be supplied with CSA and UL approved automatic wide angle tilt float switches or pre-installed heavy duty vertical switch. The switches shall be equipped with piggy back style plug that allows the pump to be operated manually without the removal of the pump in the event that a switch becomes inoperable. Manual Pumps are operable by means of a pump control panel.

#### **10.01 PAINT**

The exterior of the casting shall be protected with Powder Coat paint.

#### **11.01 SUPPORT**

The pump shall have cast iron support legs, enabling it to be a free standing unit. The legs will be high enough to allow 2" solids to enter the volute.

#### **12.01 SERVICEABILITY**

Components required for the repair of the pump shall be shipped within a period of 24 hours.

### 13.01 FACTORY ASSEMBLED TANK SYSTEMS WITH GUIDE RAIL AND QUICK DISCONNECT DISCHARGE

\_\_\_\_\_ Guide factory mounted rail system with pump suspended by means of bolt on quick disconnect which is sealed by means of nitrile grommets or o-rings. The Discharge piping shall be schedule 80 PVC and furnished with a check valve and PVC shut-off ball valve. The Tank shall be wound fiberglass or roto-molded plastic. An inlet hub shall be provided with the fiberglass systems.

- \_\_\_\_\_ Stainless steel Guide Rail
- \_\_\_\_\_ Zinc plated steel Guide Rail
- \_\_\_\_\_ "diameter of basin size
- \_\_\_\_\_ "height of basin size
- \_\_\_\_\_ "distance from top of tank to discharge pipe outlet
- \_\_\_\_\_ Fiberglass cover
- \_\_\_\_\_ Structural foam polymer cover
- \_\_\_\_\_ Steel cover
- \_\_\_\_\_ Simplex System with Outdoor panel and alarm
- \_\_\_\_\_ Duplex System with Outdoor panel and alarm
- \_\_\_\_\_ Simplex System with Indoor panel and alarm
- \_\_\_\_\_ Duplex System with Indoor panel and alarm
- \_\_\_\_\_ Separate Outdoor Alarm
- \_\_\_\_\_ Remote Outdoor Alarm

### 14.01 TESTING

The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for electrical integrity, moisture content and insulation defects. The motor and volute housing shall be pressurized, and an air leak decay test is performed to ensure integrity of the motor housing. The pump shall be run, voltage current monitored, and the tester checks for noise or other malfunction.

### 15.01 QUALITY CONTROL

The pump shall be manufactured in an ISO 9001 certified Facility.

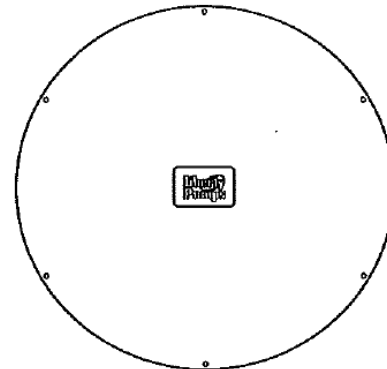
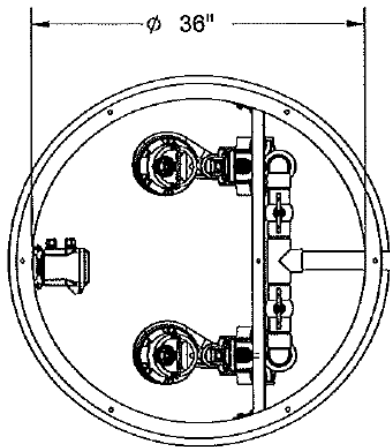
### 16.01 WARRANTY

Standard limited warranty shall be 3 years.

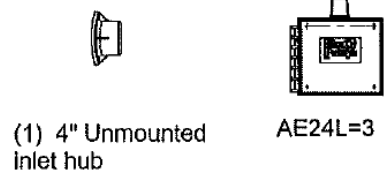
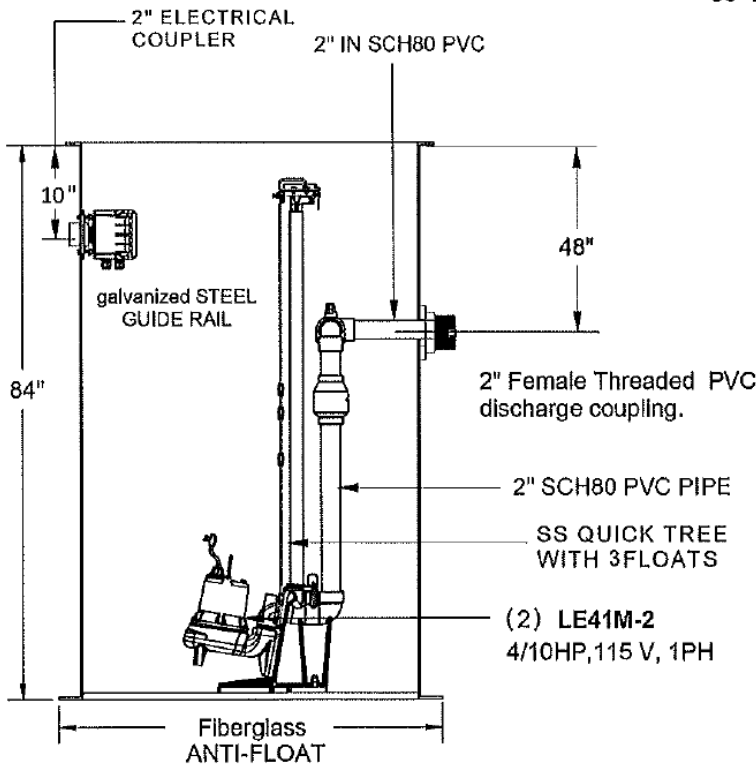
**\*\*NOTE: LIFTER CHAINS AND FLOATS  
NOT SHOWN. PUMPS SHIPPED SEPARATELY  
TO PREVENT SYSTEM DAMAGE**

# EPS104553

36X84 DUPLEX LE41M-2  
SEWAGE SYSTEM



36" Blank Fiberglass cover



19-july-2023 11:48 AM

**Fiberglass Tank dimension tolerance(s): +/- 1"**

Custom items are non-cancelable once order is placed. 100% restocking fee applies

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