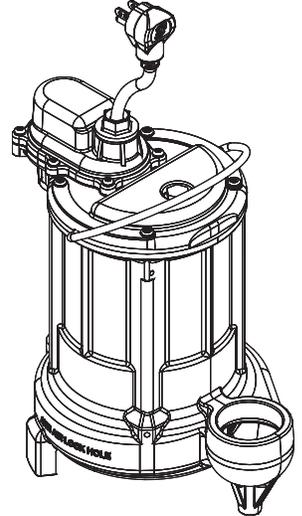
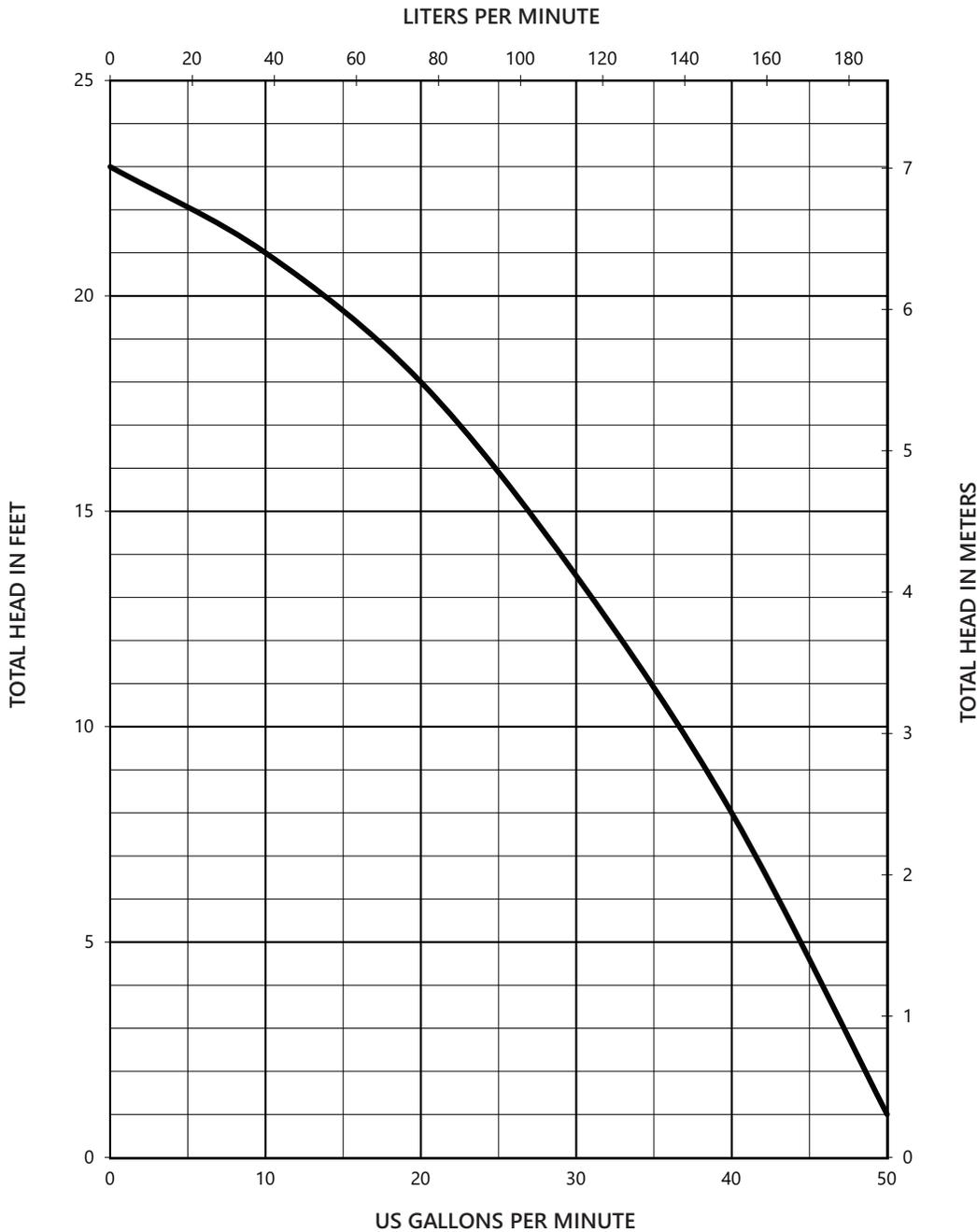


## Pump Specification

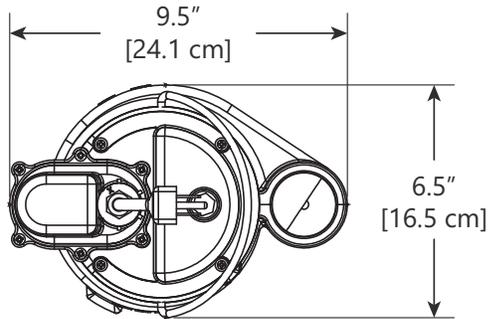
### 250-Series

### 1/3 hp Sump/Effluent Pumps

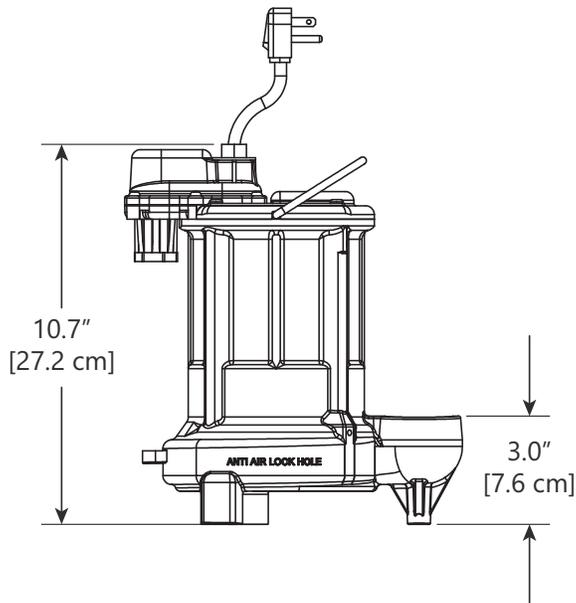


## 250-Series Dimensional Data

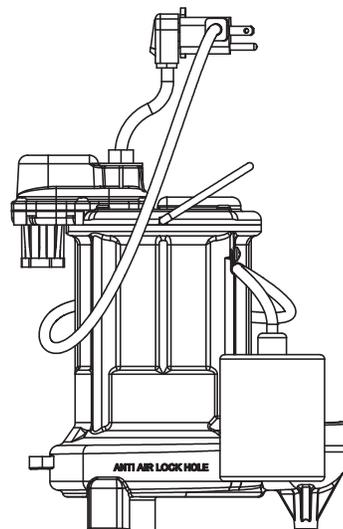
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MANUAL VERSION



PIGGYBACK  
AUTOMATIC VERSION



## 250-Series Electrical Data

MODEL	HP	VOLTAGE	PHASE	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH	DISCHARGE	AUTOMATIC
250	1/3	115	1	5.2	8	105°C / 221°F	B	10'	1-1/2"	NO
250HV	1/3	230	1	2.6	4	105°C / 221°F	B	10'	1-1/2"	NO
250-2	1/3	115	1	5.2	8	105°C / 221°F	B	25'	1-1/2"	NO
250HV-2	1/3	230	1	2.6	4	105°C / 221°F	B	25'	1-1/2"	NO
250-3	1/3	115	1	5.2	8	105°C / 221°F	B	35'	1-1/2"	NO
250HV-3	1/3	230	1	2.6	4	105°C / 221°F	B	35'	1-1/2"	NO
250-5	1/3	115	1	5.2	8	105°C / 221°F	B	50'	1-1/2"	NO
250HV-5	1/3	230	1	2.6	4	105°C / 221°F	B	50'	1-1/2"	NO
251	1/3	115	1	5.2	8	105°C / 221°F	B	10'	1-1/2"	YES, INTEGRAL FLOAT
251HV	1/3	230	1	2.6	4	105°C / 221°F	B	10'	1-1/2"	YES, INTEGRAL FLOAT
251-2	1/3	115	1	5.2	8	105°C / 221°F	B	25'	1-1/2"	YES, INTEGRAL FLOAT
251HV-2	1/3	230	1	2.6	4	105°C / 221°F	B	25'	1-1/2"	YES, INTEGRAL FLOAT
251-3	1/3	115	1	5.2	8	105°C / 221°F	B	35'	1-1/2"	YES, INTEGRAL FLOAT
251HV-3	1/3	230	1	2.6	4	105°C / 221°F	B	35'	1-1/2"	YES, INTEGRAL FLOAT

MODEL	HP	VOLTAGE	PHASE	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH	DISCHARGE	AUTOMATIC
251-5	1/3	115	1	5.2	8	105°C / 221°F	B	50'	1-1/2"	YES, INTEGRAL FLOAT
251HV-5	1/3	230	1	2.6	4	105°C / 221°F	B	50'	1-1/2"	YES, INTEGRAL FLOAT
253	1/3	115	1	5.2	8	105°C / 221°F	B	10'	1-1/2"	YES, PIGGYBACK FLOAT
253HV	1/3	230	1	2.6	4	105°C / 221°F	B	10'	1-1/2"	YES, PIGGYBACK FLOAT
253-2	1/3	115	1	5.2	8	105°C / 221°F	B	25'	1-1/2"	YES, PIGGYBACK FLOAT
253HV-2	1/3	230	1	2.6	4	105°C / 221°F	B	25'	1-1/2"	YES, PIGGYBACK FLOAT
253-3	1/3	115	1	5.2	8	105°C / 221°F	B	35'	1-1/2"	YES, PIGGYBACK FLOAT
253HV-3	1/3	230	1	2.6	4	105°C / 221°F	B	35'	1-1/2"	YES, PIGGYBACK FLOAT
257	1/3	115	1	5.2	8	105°C / 221°F	B	10'	1-1/2"	YES, VERTICAL MAGNETIC FLOAT
257HV	1/3	230	1	2.6	4	105°C / 221°F	B	10'	1-1/2"	YES, VERTICAL MAGNETIC FLOAT
257-2	1/3	115	1	5.2	8	105°C / 221°F	B	25'	1-1/2"	YES, VERTICAL MAGNETIC FLOAT
257HV-2	1/3	230	1	2.6	4	105°C / 221°F	B	25'	1-1/2"	YES, VERTICAL MAGNETIC FLOAT

## 250-Series Technical Data

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IMPELLER	VORTEX ENGINEERED POLYMER
SOLIDS HANDLING SIZE	1/2"
PAINT	POWDER COATING
MAX LIQUID TEMP	
CONTINUOUS DUTY	40°C / 104°F
INTERMITTENT	60°C / 140°F
MAX STATOR TEMP	CLASS B 130°C / 266°F
THERMAL OVERLOAD	105°C / 221°F
POWER CORD TYPE	
10 FT AND 25 FT	SJTW
35 FT AND 50 FT	SJTOOW
MOTOR HOUSING / VOLUTE	CLASS 25 CAST IRON
SHAFT	STAINLESS
HARDWARE	STAINLESS
O-RINGS	BUNA-N
SEAL	ENGINEERED DOUBLE LIP SEAL WITH STAINLESS STEEL SPRINGS
WEIGHT	10.4 KG / 23 LBS
CERTIFICATIONS	SSPMA, cCSAus

## 250-Series Specifications

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### 1.01 GENERAL

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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 250-Series single-phase pumps. The pump furnished for this application shall be model \_\_\_\_\_ as manufactured by Liberty Pumps.

### 2.01 OPERATING CONDITIONS

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Each submersible pump shall be rated at 1/3 hp, \_\_\_\_\_ volts, 1-phase, 60 Hz, 3450 RPM. The unit shall produce \_\_\_\_\_ GPM at \_\_\_\_\_ feet of total dynamic head.

The submersible pump shall be capable of handling effluent with 1/2" solids handling capability. The submersible pump shall have a shut-off head of 23 feet and a maximum flow of 44 GPM @ 5 feet of total dynamic head.

The pump shall be controlled with:

- \_\_\_\_\_ A piggyback style on/off float switch
- \_\_\_\_\_ An integrally wired on/off float switch
- \_\_\_\_\_ A vertical magnetic float (VMF) type on/off switch
- \_\_\_\_\_ A NEMA 4X outdoor simplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor simplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 4X outdoor simplex control panel with four float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor simplex control panel with four float switches including a high water alarm
- \_\_\_\_\_ A NEMA 4X outdoor duplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor duplex control panel with three float switches including a high water alarm
- \_\_\_\_\_ A NEMA 4X outdoor duplex control panel with four float switches including a high water alarm
- \_\_\_\_\_ A NEMA 1 indoor duplex control panel with four float switches including a high water alarm

### 3.01 CONSTRUCTION

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Each centrifugal effluent pump shall be equal to the  Certified 250-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 an engineered double lip seal with stainless steel springs. The pump shall be furnished with stainless steel handle.

#### **4.01 ELECTRICAL POWER CORD**

The submersible pump shall be supplied with multiconductor power cord as per **Electrical Data** table. It shall be cord type SJTW, or SJTOOW 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 cord shall not enter the motor housing directly but will conduct electricity to the motor by means of a watertight 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**

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°C unsubmerged. 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**

Upper and lower ball bearings shall be required. The bearings shall be a single ball/race type bearing. Both bearings shall be permanently lubricated by the oil that fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of 0.311".

#### **7.01 SEALS**

The pump shall have an engineered double lip seal with stainless steel springs. The motor plate/housing interface shall be sealed with a Buna-N O-ring.

#### **8.01 IMPELLER**

The impeller shall be engineered polymer with pump out vanes on the back shroud to keep debris away from the seal area. It shall be threaded to the motor shaft.

#### **9.01 CONTROLS**

All units can be supplied with a CSA and UL approved VMF type switch, an integrally wired wide-angle tilt float switch, or piggyback type wide-angle tilt float switch. The piggyback style switch is equipped with a plug that allows the pump to be operated manually without the removal of the pump in the event that the 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 freestanding unit.

#### **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**

- Factory mounted guide rail system with pump suspended by means of bolt-on quick disconnect that is sealed by means of nitrile grommets or O-rings. Discharge piping shall be Schedule 80 PVC and furnished with a 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 in inches
- Height of basin in inches
- Distance from top of tank to discharge pipe outlet in inches
- Fiberglass cover
- Structural foam polymer cover
- Steel cover
- Simplex system with outdoor panel and alarm
- Duplex system with outdoor 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 performed to ensure integrity of the motor housing. The pump shall be run at rated voltage to verify current, performance curve and monitor operation.

### **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.