



*Quality People. Building Solutions.*

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**Date:** 2/21/2024

**Return Request:** 3/28/2024

**Project:** Little Rock West High School

**Supplier:** Sanders Supply

**Manufacturer:** Liberty Pumps

**Submittal:** Duplex Grinder Sewage Pumping Station

**Submittal Number:** 22 13 43-01

**Drawing # and Installation:** Plumbing Drawings

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11225 Huron Lane, Suite 104  
Little Rock, AR 72211  
501-223-9302

**ENGINEER**

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**GENERAL CONTRACTOR**

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**MECHANICAL SUBCONTRACTOR**

Comfort Systems USA (Arkansas), Inc.  
9924 Landers Rd.  
N. Little Rock, AR 72117  
501-834-3320

Notes:

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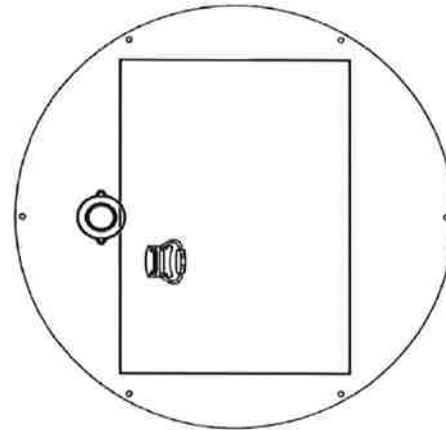
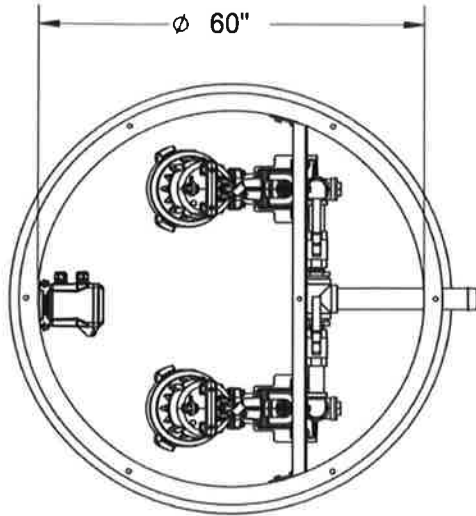
[chowell@comfortar.com](mailto:chowell@comfortar.com)

9924 Landers Rd.  
No. Little Rock, AR 72117

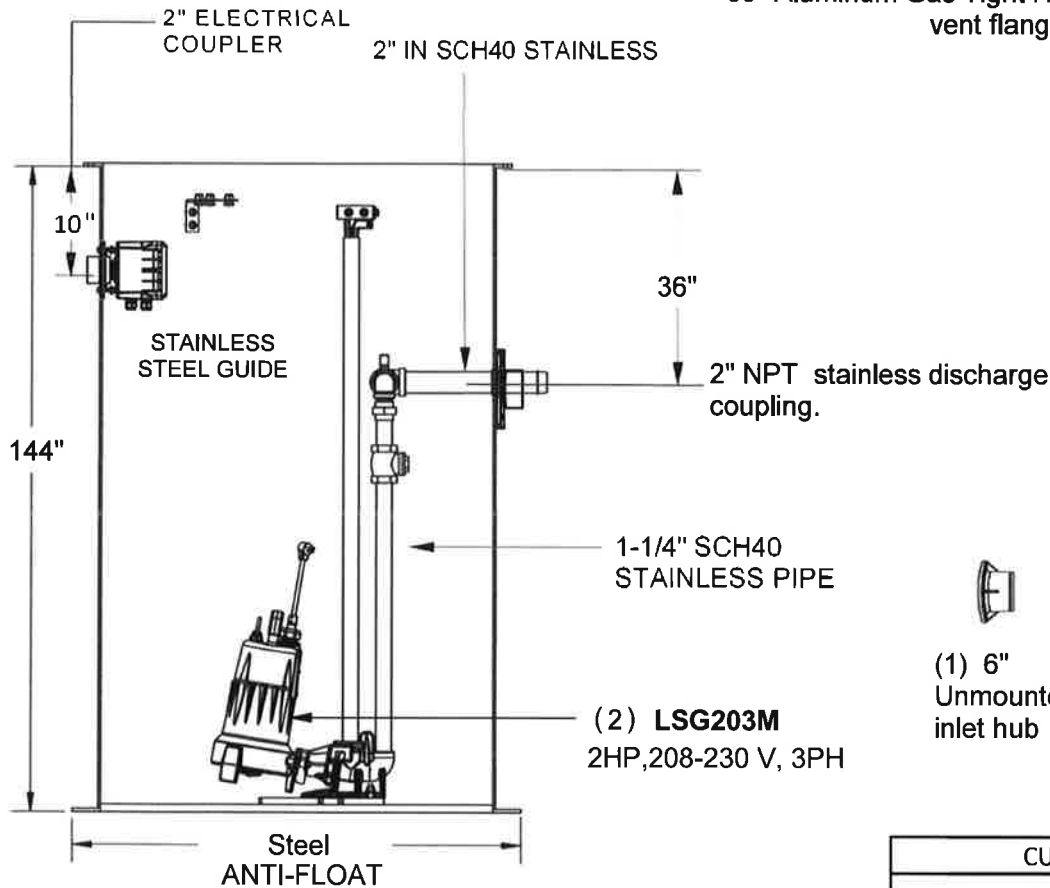
**\*\*NOTE: LIFTER CHAINS AND FLOATS  
NOT SHOWN. PUMPS SHIPPED SEPARATELY  
TO PREVENT SYSTEM DAMAGE**

# EPS106236

60X144 DUPLEX LSG203M  
GRINDER SYSTEM



60" Aluminum Gas Tight Hatch cover (1) 2" vent flange



(1) 6" Unmounted inlet hub



AE34=4-511

31-October-2023 12:44 PM

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

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

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REVISION: A

## CUSTOMER APPROVAL

DATE:

NAME(PRINT):

NAME(SIGN):

FINAL CONFIGURATIONS MAY VARY SLIGHTLY FROM THE ILLUSTRATIONS ON THIS PRINT

# LSG200-SERIES

Omnivore® Grinders

## Liberty Pumps®

A Family and Employee Owned Company



**2 hp**

**1-1/4" Discharge**

### Features

- Patented V-Slice® Cutter Technology
- One-piece uni-body casting
- Stainless-steel impeller
- Quick-connect power cord
- Internal or external capacitor models available
- 300 Series SS rotor shaft



Patent: See  
[www.LibertyPumps.com/patents](http://www.LibertyPumps.com/patents)



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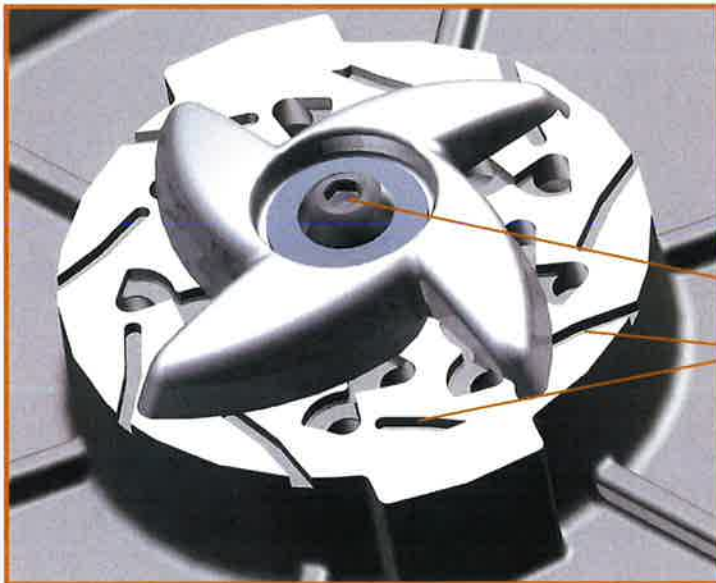
# LSG200-Series

Liberty Pumps LSG200-Series Grinder Pumps meet the demanding needs of commercial and residential sewage applications where difficult solids handling ability is crucial. The LSG200-Series features a superior cutting system made of hardened 440 stainless steel – Rockwell C 58, for shearing solids into small particles prior to being passed to the discharge by the impeller under high pressure. Applications include individual or groups of homes, motels, schools, shopping centers, lakefront developments and systems requiring high pressure sewage pumping.



## Features

- 2 hp, heavy-duty motor – oil-filled, thermally protected
  - Upper and lower ball bearings
  - One-piece uni-body cast iron housing
  - 300 Series SS rotor shaft
  - 316 Stainless-steel impeller
  - Dual seals – Upper seal is unitized graphite impregnated silicon carbide. Lower seal is Viton™ double-lip. (Lower seal ensures that all debris is kept away from upper seal)
  - Motor windings insulated to Class B (130°C)
  - Advanced V-Slice® Cutter Technology made of hardened 440 stainless steel – Rockwell C 58
  - Horizontal 1-1/4" FNPT discharge
  - Back vanes on impeller and spiraled bottom plate for superior solids clearing
  - Stainless-steel fasteners
  - Clog-free volute design
  - Designed for maximum heat dissipation and cool motor operating temperatures
  - Solid state starting circuit - no mechanical relay coil
  - Quick-connect 25' power cord (standard)
  - Piggyback plug with wide-angle float switch (on automatic model) eliminates need for expensive panel
- Viton is a trademark of The Chemours Company FC, LLC.



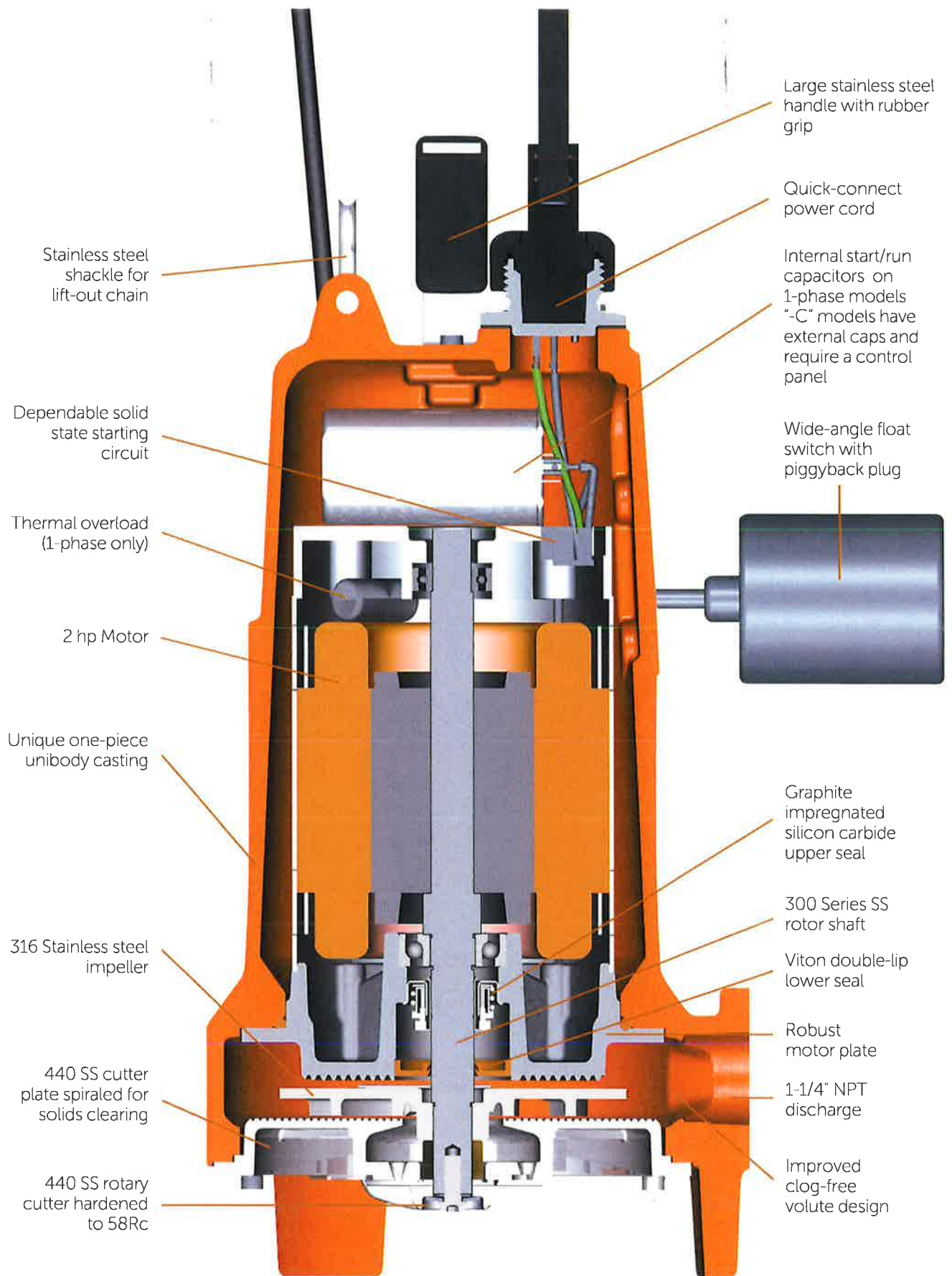
## V-Slice® Cutter Technology

Superior cutting system provides improved shredding performance over radial cutters. V-pattern provides up to 108 alternated cuts per revolution. Entire cutting system made of 440 stainless steel hardened to 58Rc.

Recessed cutter bolt eliminates wadding

Exclusion cleanout slots and back relief clears debris from under cutter

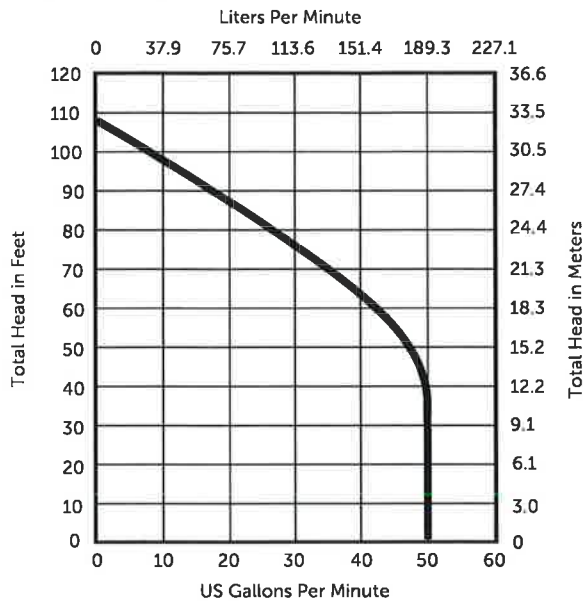
Patent: See  
[www.LibertyPumps.com/patents](http://www.LibertyPumps.com/patents)



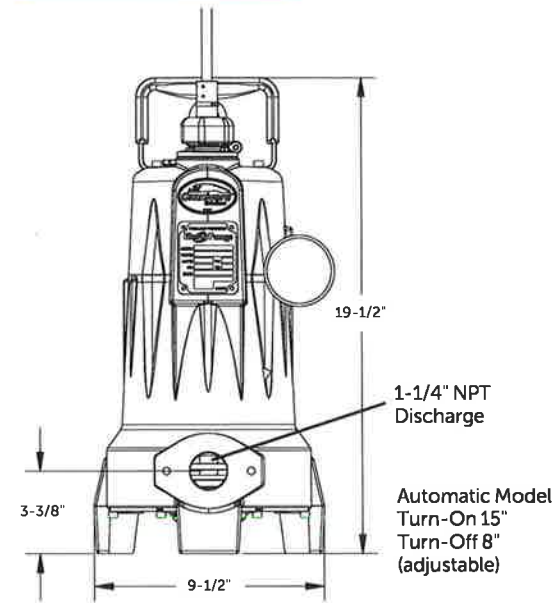
# LSG200-Series

## Performance Curve

60 Hz, 3450 RPM



## Dimensional Data



## Models

MODEL	HP	VOLTS	PH	HZ	AMPS	LOCKED ROTOR AMPS	DISCHARGE	FLOAT SWITCH	WEIGHT IN LBS
LSG202A	2	208/230	1	60	15	53	1-1/4"	Yes	86
LSG202A-5-Y	2	208/230	1	60	15	53	1-1/4"	Yes	86
LSG202M	2	208/230	1	60	15	53	1-1/4"	No	84
LSG202M-C	2	208/230	1	60	15	53	1-1/4"	No	91
➔ LSG203M	2	208/230	3	60	10.6	62	1-1/4"	No	84
LSG204M	2	440-480	3	60	5.3	31	1-1/4"	No	84
LSG205M	2	575	3	60	4.9	24	1-1/4"	No	84

1-phase models are thermally protected. 3-phase models require a properly sized control panel. Maximum intermittent fluid temperature 140° F.  
 \*Models with "Y" suffix feature 50' integrated Y-cord with float switch and bare leads.

LSG202M and LSG202A feature internal capacitors and do not require a separate control panel for operation. LSG202M-C features external capacitors, requiring a panel with appropriately sized start and run capacitors.

## Options for LSG202M-C: External Cap Grinder

MODEL	DESCRIPTION
K001316	Start/Run Capacitor Kit for retrofit in existing panels
SXHC24=3-3	Simplex NEMA 4X Panel with start/run capacitors
AE24HC=3-3	Duplex NEMA 4X Panel with start/run capacitors

For complete panel specifications, see SX or AE-series literature.  
 25' cord standard on all models. LSG202M-C features 35' cord standard. Y-cord models have a 50' cord.

## GR20 Guide Rail Base

(GR20 option sold separately)



- Cast iron construction
- Single 1-1/4" guide rail pipe design
- Auto alignment feature
- GR20 works only with LSG-Series pumps
- Upper rail support bracket

Specifications subject to change without notice.

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 Phone 800-543-2550 - Fax 585-494-1839 - LibertyPumps.com



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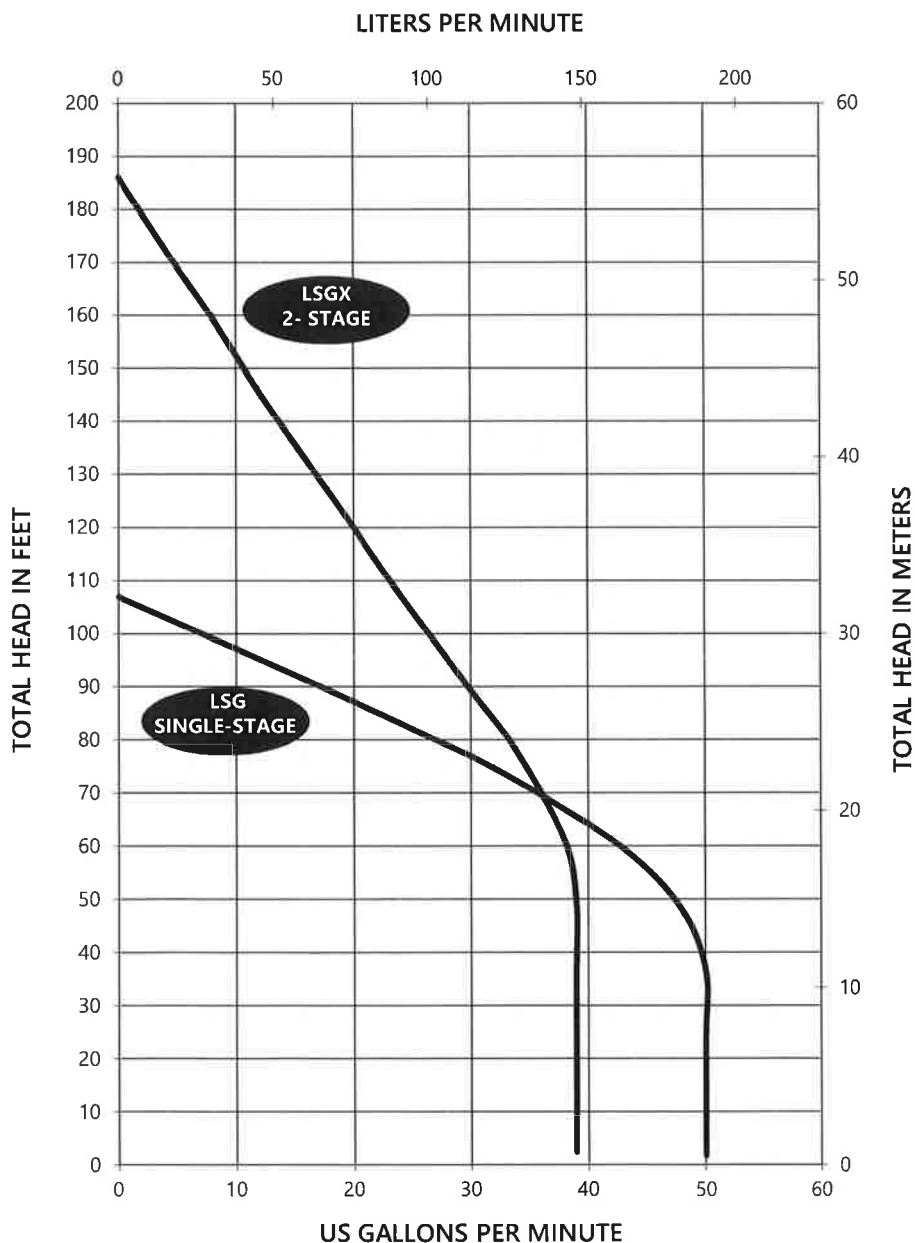
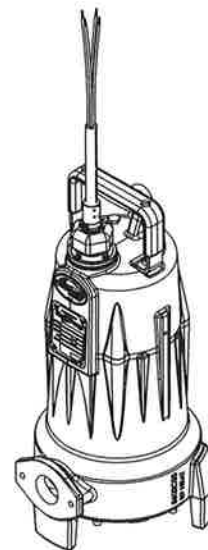


## Pump Specification

**LSG200-Series (Single-Stage)**

**LSGX200-Series (2-Stage)**

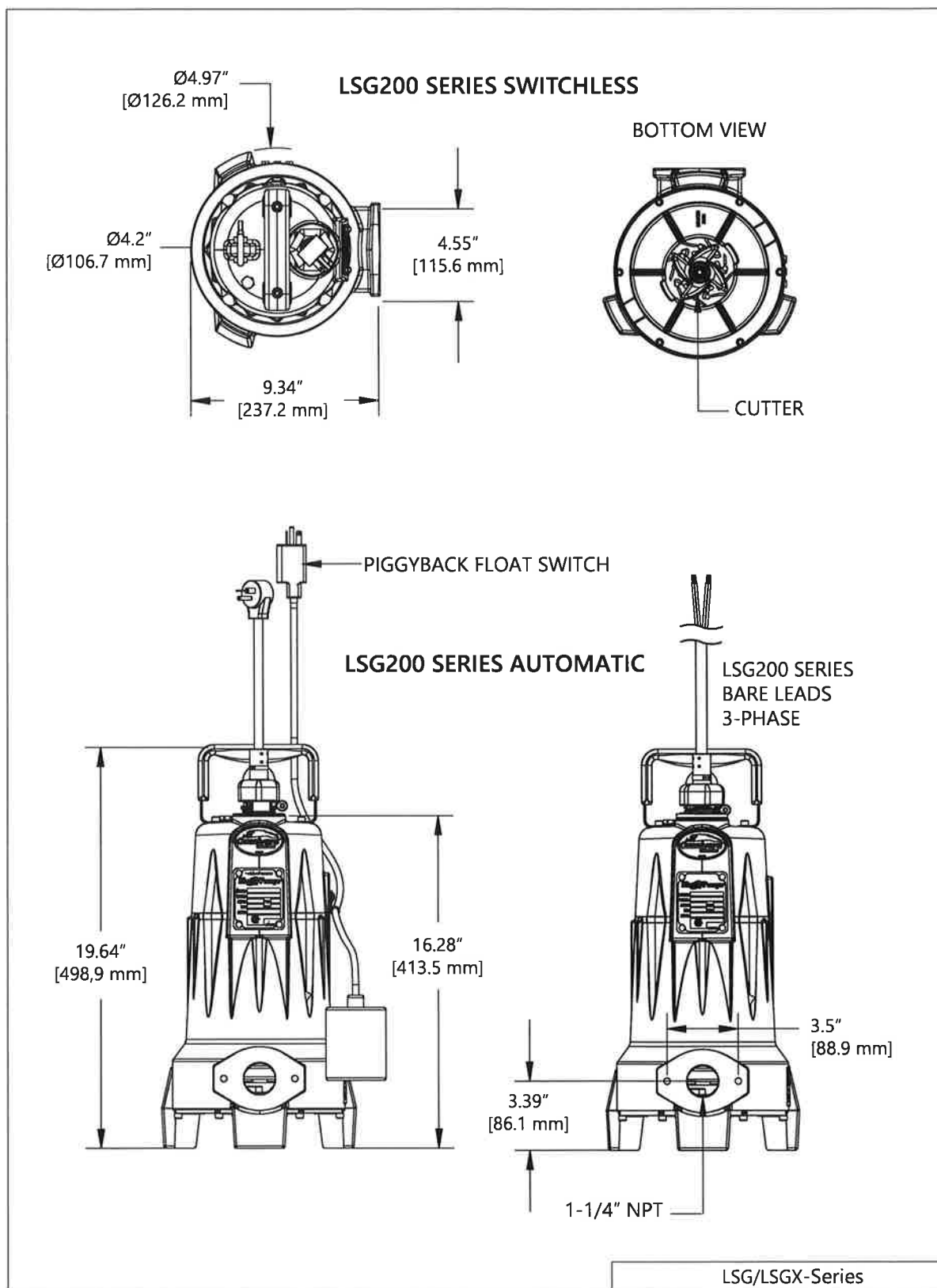
**Omnivore® 2 HP Submersible Grinder Pumps**



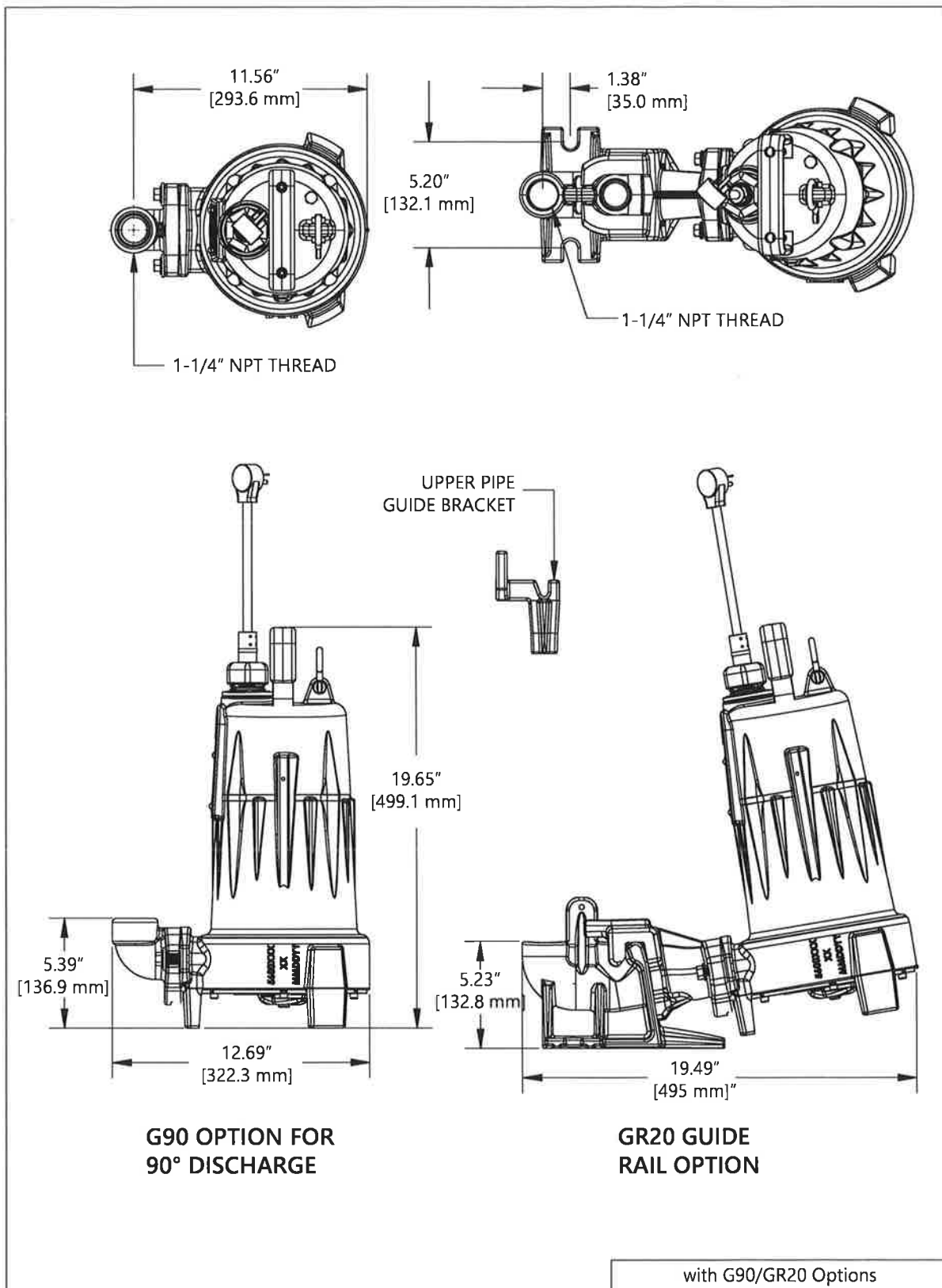
### ATTENTION

*For pressure sewer applications, verify a Redundant Check Valve Assembly (curb stop and check valve) is installed between the pump discharge and the street main, as close to the public right-of-way as possible, on **all** installations to protect from system pressures.*

## LSG/LSGX-Series Dimensional Data



## LSG/LSGX-Series Dimensional Data



## LSG/LSGX-Series Electrical Data

	MODEL	HP	VOLTAGE	PHASE	SF	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH OPTIONS [FT]	DISCHARGE	AUTOMATIC
1-STAGE	LSG202A	2	208/230	1	1.0	15	53	105°C 221°F	B	25	1-1/4" NPT + FLANGE	YES
	LSG202M	2	208/230	1	1.0	15	53	105°C 221°F	B	25	1-1/4" NPT + FLANGE	NO
	LSG202M-3	2	208/230	1	1.0	15	53	105°C 221°F	B	35	1-1/4" NPT + FLANGE	NO
	LSG202M-5	2	208/230	1	1.0	15	53	105°C 221°F	B	50	1-1/4" NPT + FLANGE	NO
	LSG202M-3C <sup>1</sup>	2	208/230	1	1.0	15	53	135°C 275°F	B	35	1-1/4" NPT + FLANGE	NO
	LSG202M-5C <sup>1</sup>	2	208/230	1	1.0	15	53	135°C 275°F	B	50	1-1/4" NPT + FLANGE	NO
	LSG203M	2	208/230	3	1.0	10.6	61	N/A	B	25	1-1/4" NPT + FLANGE	NO
	LSG203M-3	2	208/230	3	1.0	10.6	61	N/A	B	35	1-1/4" NPT + FLANGE	NO
	LSG203M-5	2	208/230	3	1.0	10.6	61	N/A	B	50	1-1/4" NPT + FLANGE	NO
	LSG204M	2	440-480	3	1.0	5.3	31	N/A	B	25	1-1/4" NPT + FLANGE	NO
	LSG204M-3	2	440-480	3	1.0	5.3	31	N/A	B	35	1-1/4" NPT + FLANGE	NO
	LSG204M-5	2	440-480	3	1.0	5.3	31	N/A	B	50	1-1/4" NPT + FLANGE	NO
	LSG205M	2	575	3	1.0	4.9	24	N/A	B	25	1-1/4" NPT + FLANGE	NO
	LSG205M-3	2	575	3	1.0	4.9	24	N/A	B	35	1-1/4" NPT + FLANGE	NO
	LSG205M-5	2	575	3	1.0	4.9	24	N/A	B	50	1-1/4" NPT + FLANGE	NO

## LSG/LSGX-Series Control Panel Information

	PUMP MODEL	SX-SERIES NEMA 1	SX-SERIES NEMA 4X	AE-SERIES NEMA 1	AE-SERIES NEMA 4X	IPS-SERIES	IPD-SERIES
		SIMPLEX		DUPLEX		SIMPLEX	DUPLEX
1-STAGE	LSG202M	SXH21=3	SXH24=3	AE21H=3 or AE21H=4	AE24H=3 or AE24H=4	IPS-24H	IPD-24H
	LSG202M-C	N/A	SXHC24=3-3	N/A	AE24HC=3-3	IPS-24HC	IPD-24HC
	LSG203M	N/A	SX34=3-511	N/A	AE34=3-511 or AE34=4-511	IPS-34-511	IPD-34-511
	LSG204M	N/A	SX34=3-171	N/A	AE34=3-171 or AE34=4-171	IPS-34-171	IPD-34-171
	LSG205M	N/A	SX54=3-161	N/A	AE54=3-161 or AE54=4-161	IPS-54-161	IPD-54-161
2-STAGE	LSGX202M	SXH21=3	SXH24=3	AE21H=3 or AE21H=4	AE24H=3 or AE24H=4	IPS-24H	IPD-24H
	LSGX202M-C	N/A	SXHC24=3-3	N/A	AE24HC=3-3	IPS-24HC	IPD-24HC
	LSGX203M	N/A	SX34=3-511	N/A	AE34=3-511 or AE34=4-511	IPS-34-511	IPD-34-511
	LSGX204M	N/A	SX34=3-171	N/A	AE34=3-171 or AE34=4-171	IPS-34-171	IPD-34-171
	LSGX205M	N/A	SX54=3-161	N/A	AE54=3-161 or AE54=4-161	IPS-54-161	IPD-54-161

## LSG/LSGX-Series Technical Data

IMPELLER	300 SERIES STAINLESS STEEL
PAINT	POWDER COAT
MAX LIQUID TEMP	40°C / 104°F CONTINUOUS DUTY
	60°C / 140°F INTERMITTENT
MAX STATOR TEMP (1-PHASE)	LSG202A, LSG202M – 105°C / 221°F
	LSG202M-C, LSGX MODELS – 135°C / 275°F
THERMAL OVERLOAD (1-PHASE)	LSG202A, LSG202M – 105°C / 221°F
	LSG202M-C, LSGX MODELS – 135°C / 275°F
POWER CORD TYPE	SJOOW (1-PHASE)
	SEOOW (3-PHASE)
	SOOW (EXTERNAL CAPACITOR MODELS)
MOTOR HOUSING	CLASS 25 CAST IRON
VOLUTE	CLASS 25 CAST IRON
SHAFT	300 SERIES STAINLESS STEEL
HARDWARE	STAINLESS
O-RINGS	BUNA-N
MECHANICAL SEAL	UNITIZED GRAPHITE IMPREGNATED SILICON CARBIDE
MIN BEARING LIFE	50,000 HRS
WEIGHT	LSG MODELS – 85 LBS / 38.5 KG
	LSGX MODELS – 95 LBS / 43 KG
CERTIFICATIONS	SSPMA, cCSAus (60 HZ MODELS ONLY)

## **LSG/LSGX-Series Specifications**

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### **1.01 GENERAL**

The contractor shall provide labor, material, equipment, and incidentals required to provide \_\_\_\_\_ (QTY) centrifugal grinder pumps as specified herein. The pump models covered in this specification are LSG200/LSGX200-Series single/three-phase grinder 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 2 hp, \_\_\_\_\_ volts, \_\_\_\_\_ phase, 60 Hz, 3450 RPM. The unit shall produce \_\_\_\_\_ GPM at \_\_\_\_\_ feet of total dynamic head.


The submersible pump shall be capable of handling residential and commercial sewage and grinding it to a fine slurry enabling it to be pumped over long distances in pipelines as small as 1.25" in diameter. The LSG-Series single-stage submersible pump shall have a shut-off head of 110 feet and a maximum flow of 50 GPM @ 10 feet of total dynamic head. The LSGX-Series 2-stage submersible pump shall have a shut-off head of 185 feet and a maximum flow of 38 GPM @ 10 feet of total dynamic head.

Single-phase pumps shall have capacitors and start relay mounted [ ] in the pump, or [ ] in the panel.

The pump shall be controlled with:

- \_\_\_\_\_ A piggyback style on/off float switch (single-phase only)
- \_\_\_\_\_ 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 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**

Each centrifugal grinder pump shall be equal to the  Certified LSG/LSGX-Series grinder 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 dual seal arrangement. The first seal is a double lip seal molded in fluoroelastomer or Buna-N. The second/main seal shall be a unitized graphite impregnated silicon carbide hard face seal with stainless steel housings and spring.

The upper and lower bearing shall be capable of handling all radial thrust loads. The lower bearing shall have the additional ability to handle the downward axial thrust produced by the impeller and cutters by design of angular contact roller races. The pump housing shall be of the concentric design thereby equalizing the pressure forces inside the housing which will extend the service life of the seals and bearings. Additionally there shall be no cutwater in the housing volute in order to discourage the entrapment of flowing debris. The pump shall be furnished with a stainless steel handle having a nitrile grip.

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

The submersible pump shall be supplied with 25, 35 or 50 feet of multi-conductor power cord, as per *Electrical Data* table. It shall be cord type SJOOW (1-phase) or SEOOW (3-phase), or SOOW (external capacitor models), 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 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 via a damaged or wicking cord.

#### **5.01 MOTORS**

All motors shall be oil-filled and Class B insulated NEMA B design rated for continuous duty. Since air-filled motors are not capable of dissipating heat as effectively, they shall not be considered equal. At maximum load, the winding temperature shall not exceed 105°C for model LSG and 135°C for LSGX models (unsubmerged). Single-phase motors shall be capacitor start/capacitor run and have an integral thermal overload switch in the windings for protecting the motor. Three-phase motors shall be used with an appropriate controller with integral overload protection. On all single-phase models (excluding LSG202M-C and LSGX202M-C), the capacitor circuit shall be mounted internally and motor shall have an integral solid state starting circuit switch for switching the start winding off.

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

An upper radial and a lower angular contact ball bearing shall be required. The upper bearing shall be a single ball/race type bearing. The lower bearing shall be an angular contact heavy-duty ball/race type bearing, designed to handle axial grinder pump thrust loads. Both bearings shall be permanently lubricated by the oil that fills the motor housing. The bearing system shall be designed to enable proper cutter alignment from shut off head to maximum load at 10 feet of total dynamic head. The motor shaft shall be made of 300 series stainless steel and have a minimum diameter of 0.670".

#### **7.01 SEALS**

The pump shall have a dual seal arrangement consisting of a lower and upper seal to protect the motor from the pumping liquid. The lower seal shall be a fluoroelastomer molded double lip seal designed to exclude foreign material away from the main upper seal. The upper seal shall be a unitized graphite impregnated silicon carbide hard face seal with stainless steel housings and spring equal to Crane Type T-6a. The motor plate/housing interface shall be sealed with a Buna-N O-ring.

#### **8.01 IMPELLER**

The impeller shall be an investment cast stainless steel impeller with pump out vanes on the back shroud to keep debris away from the seal area. It shall be keyed and bolted to the motor shaft.

#### **9.01 CUTTER MECHANISM**

The cutter and plate shall consist of 440 stainless steel with a Rockwell C hardness of 55–60. The stationary cutter plate shall have specially designed orifices through it, which enable the slurry to flow through the pump housing at an equalized pressure and velocity. The stationary cutter shall consist of V shapes to maximize cutting action and arc shape exclusion slots to outwardly eject debris from under the rotary cutter. The rotary cutter shall have (4) blades and be designed with a recessed area behind the cutting edge to prevent the accumulation and binding of any material between rotary cutter and the stationary cutter. The cutting system must incorporate close tolerances for optimum performance. Ring or radial cutters, or those that grind on the outside circumference, shall not be considered equal.

## **10.01 PRESSURE SEWER APPLICATIONS**

A redundant check valve assembly consisting of a curb stop and check valve must be installed between the pump discharge and the street main, as close to the public right-of-way as possible, on all pressure (force main) sewer installations to protect from system pressures. The curb stop valve is necessary to isolate the site from the pressure sewer while the check valve provides redundant protection against potentially detrimental backflow. All valves and fittings should be rated for at least 200 PSI service. See Liberty Pumps line of CSV-Series Curb Stop/Swing Check Valve Assemblies and CK-Series Connection Kit.

## **11.01 CONTROLS**

Select single-phase units (excluding external capacitor models) can be supplied with CSA and UL approved automatic wide-angle tilt float switches. The switches shall be equipped with a piggyback 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.

## **12.01 PAINT**

The exterior of the casting shall be protected with powder coat paint.

## **13.01 SUPPORT**

The pump shall have cast iron support legs enabling it to be a freestanding unit. The legs will be high enough to allow solids and long stringy debris to enter the cutter assembly.

## **14.01 SERVICEABILITY**

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

## **15.01 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. 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 system.
- ☐ Stainless steel guide rail
- ☐ Zinc plated steel guide rail
- ☐ Diameter of basin size in inches
- ☐ Height of basin size 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

#### **16.01 TESTING**

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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 monitored for run voltage and current, and checked for noise or other malfunction.

#### **17.01 QUALITY CONTROL**

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

#### **18.01 WARRANTY**

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Standard limited warranty shall be 3 years.

# AE-SERIES

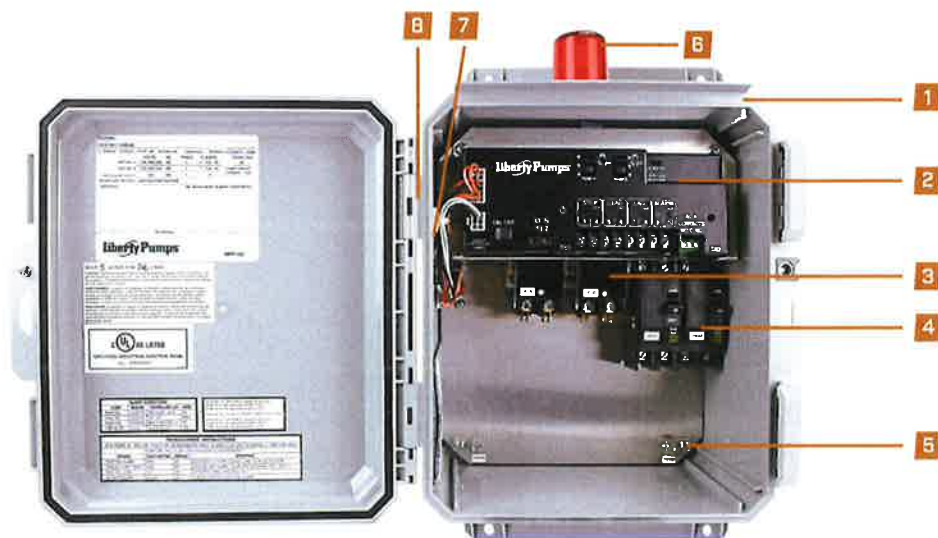
## Duplex Pump Controls

**Liberty Pumps®**

A Family and Employee Owned Company

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



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# AE-Series Duplex Pump Controls

## Standard Features

**Enclosure\*:** 12" x 10" x 6"; NEMA 4X – ultraviolet stabilized thermoplastic for outdoor use; NEMA 1 – metal for indoor use. Certain options may increase enclosure size.

**Magnetic Motor Contactor:** Controls pump by switching hot electrical lines.

**HDA Switches:** Offer manual operation of pumps (on circuit board).

**Green Pump Run Indicators:** On circuit board

**Control ON/OFF Switch:** On circuit board

**Float Switch Terminal Block:** On circuit board

**Control/Alarm Auto Reset Fuses**

\* 3-phase panels measure 14" x 12" x 6". Multi-tap transformer (208/240/480 VAC primary) provides 120V control voltage. Motor protective switch provides adjustable overload, branch circuit protection and pump disconnect.

**Control/Alarm Power ON Indicator:** On circuit board.

**Float Switch Status Indicators:** Stop, lead, lag/alarm, alarm mounted on circuit board. Float switch push-to-test buttons.

**Circuit Breakers:** Provide pump disconnect and branch circuit protection.

**Connection Terminal Block**

**Auxiliary Contacts**

**Ground Lug**

**Alarm Package:** NEMA 4X = red beacon and horn (83 to 85 dB), exterior test/normal/silence switch.

**NEMA 1:** Door mounted red indicator and buzzer mounted internally (83 to 85 dB), exterior test/normal/silence switch.

MODEL	VOLTS	PHASE	FULL LOAD AMPS (Must match pumps)	ENCLOSURE TYPE	FLOAT SWITCHES
<b>1-Phase</b>					
AE21L=3	120/208/240	1	0 - 14.9A	NEMA 1	3
AE21H=3	120/208/240	1	15 - 20A	NEMA 1	3
AE21L=4	120/208/240	1	0 - 14.9A	NEMA 1	4
AE21H=4	120/208/240	1	15 - 20A	NEMA 1	4
AE24L=3	120/208/240	1	0 - 14.9A	NEMA 4X	3
AE24H=3	120/208/240	1	15 - 20A	NEMA 4X	3
***AE24HC=3-3	120/208/240	1	15 - 20A	NEMA 4X	3
AE24L=4	120/208/240	1	0 - 14.9A	NEMA 4X	4
AE24H=4	120/208/240	1	15 - 20A	NEMA 4X	4
<b>3-Phase**</b>					
AE34=3-131	208/240/480	3	1.6 - 2.5A	NEMA 4X	3
AE34=3-141	208/240/480	3	2.5 - 4.0A	NEMA 4X	3
AE34=3-171	208/240/480	3	4.0 - 6.3A	NEMA 4X	3
AE34=3-191	208/240/480	3	6 - 10A	NEMA 4X	3
AE34=3-511	208/240/480	3	9 - 14A	NEMA 4X	3
AE34=4-131	208/240/480	3	1.6 - 2.5A	NEMA 4X	4
AE34=4-141	208/240/480	3	2.5 - 4.0A	NEMA 4X	4
AE34=4-171	208/240/480	3	4.0 - 6.3A	NEMA 4X	4
AE34=4-191	208/240/480	3	6 - 10A	NEMA 4X	4
AE34=4-511	208/240/480	3	9 - 14A	NEMA 4X	4
AE54=3-121	575	3	1.6 - 2.5A	NEMA 4X	3
AE54=4-121	575	3	1.6 - 2.5A	NEMA 4X	4
AE54=3-151	575	3	2.5 - 4.0A	NEMA 4X	3
AE54=3-161	575	3	4.0 - 6.3A	NEMA 4X	3
AE54=4-151	575	3	2.5 - 4.0A	NEMA 4X	4
AE54=4-161	575	3	4.0 - 6.3A	NEMA 4X	4

35' and 50' cord lengths available. Add "-3" or "-5" suffix to model number. Example: AE21L=3-3 for 35' cord.

**NOTE:** AE-Series panels come with variable amp ranges and must be ordered with the correct matching full load amp to that of the pump(s) being used. Use the chart above to select the proper amp range or consult the factory for technical assistance.

\*\* 3-phase panels come equipped with thermal overload protection that must be properly sized to the pump's full load run amps. Please consult factory for proper panel selection. All 3-phase "standard" panels come with NEMA 4X enclosure.

\*\*\* AE24HC=3-3 includes start/run capacitors and start relay for use with LSG202M-C and LSGX202M-C models.

## Float Switch Specifications

All standard duplex panels come equipped with (3) or (4) mercury-free pilot-duty float switches (depending on model). 20' cord standard. Optional lengths available. External weights or pipe clamp mounts required.

**Cable:** Flexible 18 gauge, 2 conductor

**Electrical:** 5A, 120/230 VAC, 50/60 Hz

**Float Switch:** High impact PVC

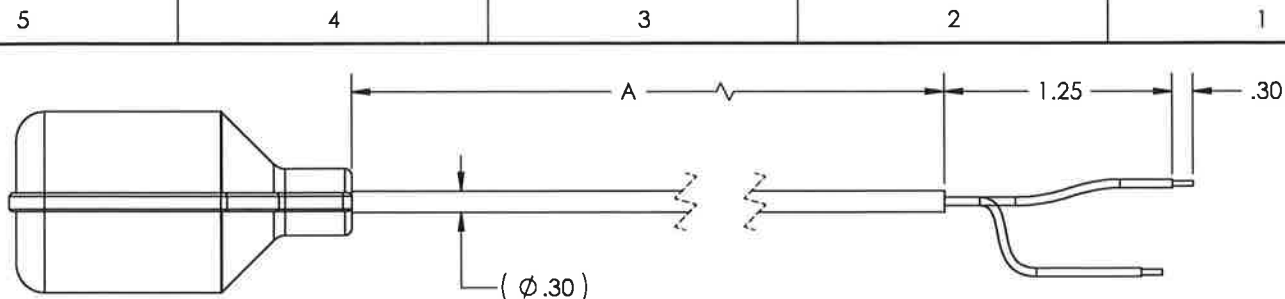
**Maximum fluid temperature:** 140°F

Liberty Pumps can customize a panel to your specific pump needs. Please contact us for available options and ordering information. 800-543-2550

Specifications subject to change without notice.

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Liberty Pumps - 7000 Apple Tree Avenue - Bergen, New York 14416  
Phone 800-543-2550 - Fax 585-494-1839 - [www.LibertyPumps.com](http://www.LibertyPumps.com)



SJE MILLIAMPMMASTER - NORMALLY OPEN  
MECHANICALLY ACTIVATED  
CONTROL DIFFERENTIAL OF 1.5" ABOVE  
AND BELOW HORIZONTAL  
NOT SENSITIVE TO ROTATION  
UL LISTED 83N2; CSA CERTIFIED LR54245  
SEE LABEL ON SWITCH

PART NUMBER	PART REVISION	LENGTH "A" (INCHES)	DESCRIPTION
6007000	C	240	SWITCH, MILLIAMP MASTER, 20' BLUE CAP
60070C0	C	420	SWITCH, MILLIAMP MASTER, 35' BLUE CAP
60070E0	C	600	SWITCH, MILLIAMP MASTER, 50' BLUE CAP

CABLE: 18 GAUGE, 2 CONDUCTOR SJOW, WATER RESISTANT  
FLOAT: 2.75" X 4.83" LONG, POLYPROPYLENE HOUSING  
MAX ELECTRICAL: 1 AMP, 125VAC 50/60 HZ  
MIN ELECTRICAL: 0.160 MILLIAMPS, 125VAC 50/60 HZ

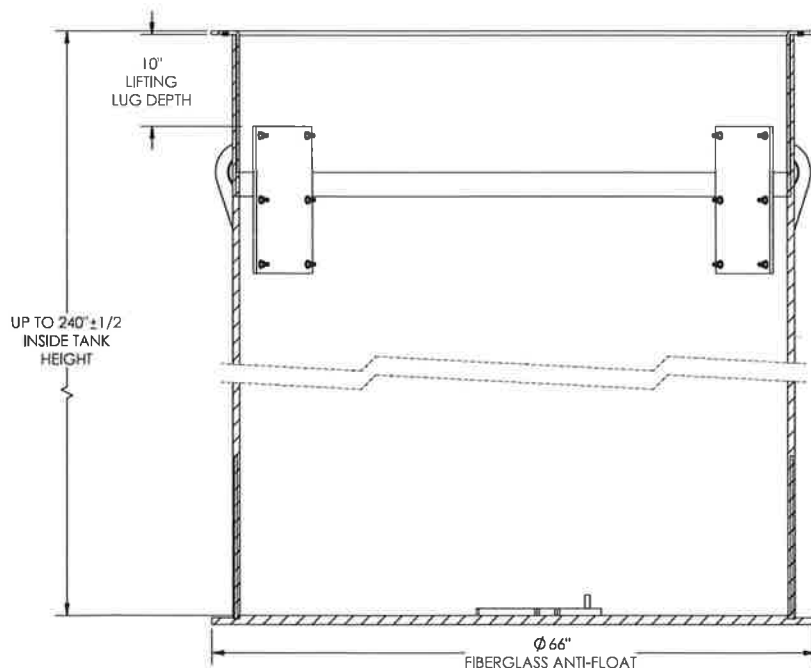
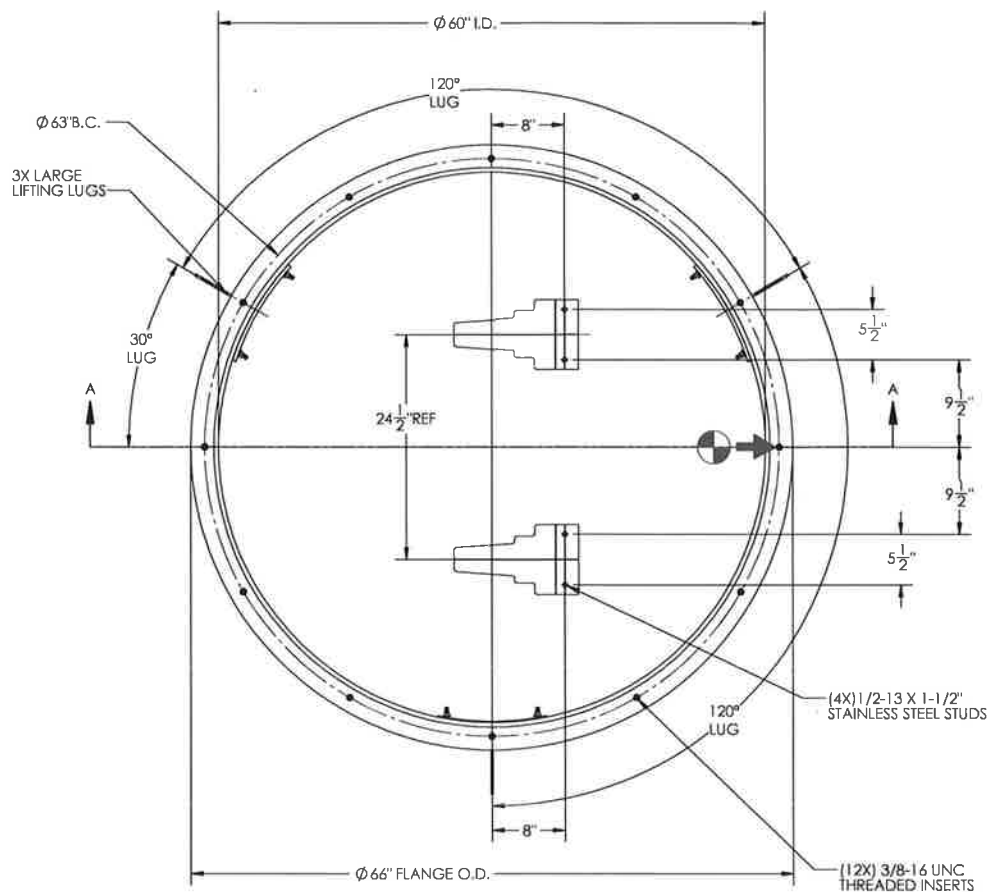
**BLUE CAP**



7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

drn by	Damon Flick	tol: xx+/- .02"
date		xxx+/- .005"
date	4/12/2010	angles +/- 2°
		unless otherwise noted
title	CONTROL SWITCH, MILLIAMP MASTER	
part no.	SEE TABLE	
drawing no.	6007000 - 100079	sheet number 1 of 1
		sheet size A

102986 STRIPPED LENGTH TO 1.55"	D	59505	10/20/22	BPM
ADDED SHEET 102986	C	59165	10/21/21	WEP
ADDED 0C0 AND 0E0	B	56233	1/25/19	JCC
NEW PART	A	NA	4/12/10	DMF
description of change	rev	project	date	initials



SECTION A-A  
SCALE 1 : 10

**\*NOTES:**

- TOPP INDUSTRIES PART NUMBER
  - BASE PART #FB(D)X(H)
  - D=DIAMETER
  - H=HEIGHT
  - EX. FB60X120
- FIBERGLASS ANTI-FLOAT
- LARGE LIFTING LUGS REQUIRED ON TANKS
- TANKS OVER 96" TALL MUST BE SHIPPED LAYING DOWN AND REQUIRE SKIDS
- SEE 7499000 DRAWING FOR SKIDS
- SEE 7498000 DRAWING FOR CASTERS
- FIBERGLASS WOUND TANK
- FOR ALL OTHER MODEL DATA REFER TO CAD MODEL
- REFER TO FIBERGLASS BASIN SPECIFICATION FOLDER IN PART DATA FOLDER FOR BASIN SPECIFICATION
- LIBERTY PART NUMBER
  - XT60DGX(ANY LENGTH)
- SUFFIX
  - SUFFIX -G = GEL COATED
  - SUFFIX -DW = DOUBLE WALL
  - SUFFIX -VE = VINYLESTER MATERIAL

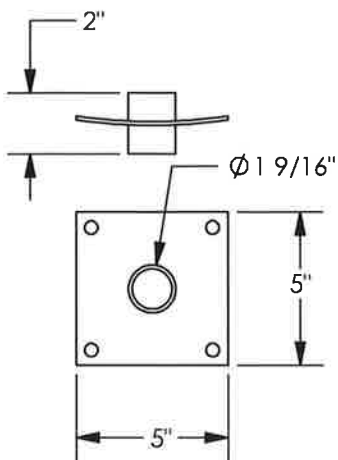
**Liberty Pumps**  
7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

dm by	D.FOELLER	tol: .01" / .02"	tol: .005"
date	09/02/22	angles +/- 2°	fractions +/- .25"
scale	SEE NOTE		
title	60" DG FIBERGLASS TANK		
part no.	SEE NOTE		
drawing no.	60DG	sheet number	sheet size
		of	C

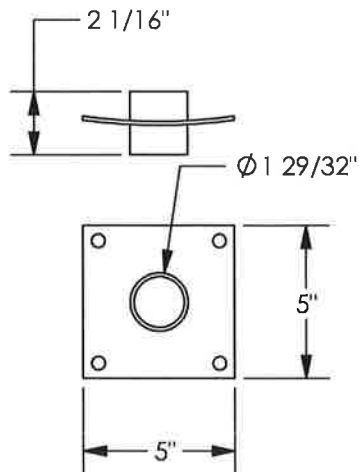
NEW PART	A	09/02/22	DEF
description of change	rev	project	date
			initials

# STAINLESS STEEL PIPE SEALING COUPLINGS

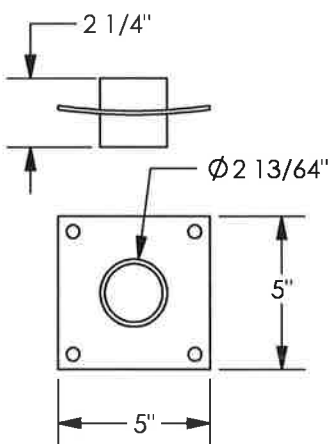
3/8-16 x 1 1/4" STAINLESS STEEL BOLTS, WASHERS, NUTS AND  
3/4"x1/4" CLOSED CELL FOAM ADHESIVE GASKET MATERIAL  
PROVIDED WITH EACH COUPLING KIT



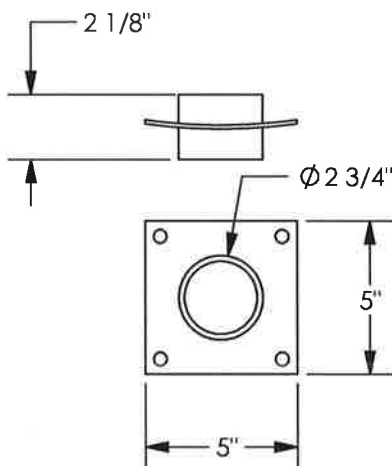
64090B0  
1" FPT PIPE COUPLING  
TOPP PART NO.  
C100S



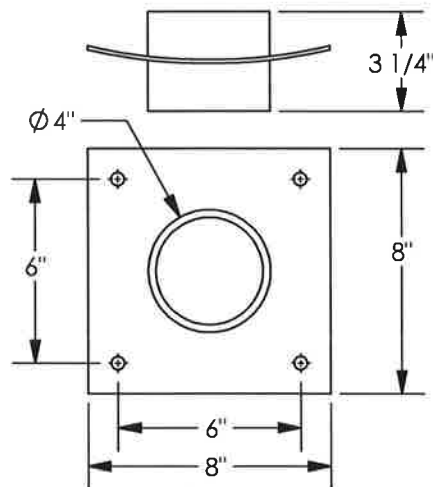
64090C0  
1-1/4" FPT PIPE COUPLING  
TOPP PART NO.  
C125S



64090D0  
1 1/2" FPT PIPE COUPLING  
TOPP PART NO.  
C150S



64090E0  
2" FPT PIPE COUPLING  
TOPP PART NO.  
C200S



64090F0  
3" FPT PIPE COUPLING  
TOPP PART NO.  
C300S

NOTE: FOR PREVIOUS REVISION INFORMATION PLEASE SEE OBSOLETE FOLDER

ADDED CUSTOM  
HOLE SIZE TO TABLE  
FIXED 64090B0 HOLE  
CALLOUT, UPDATED  
SHEET PROPERTIES  
ADDED  
CLEARANCE HOLE  
TABLE, REMOVED  
64090A0

E  
D  
C

07/20/22  
03/24/22  
09/01/21

JCC  
MAL  
JCC

**Liberty  
Pumps®**

7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

drn by E.SOBRESKY

tol: xx+/- .02"

xxx+/- .005"

date 08/02/16

angles +/- 2°

unless otherwise noted

title SS BOLT-ON PIPE COUPLINGS

part no.  
SEE DRAWING

drawing no.  
6409000

sheet number sheet size

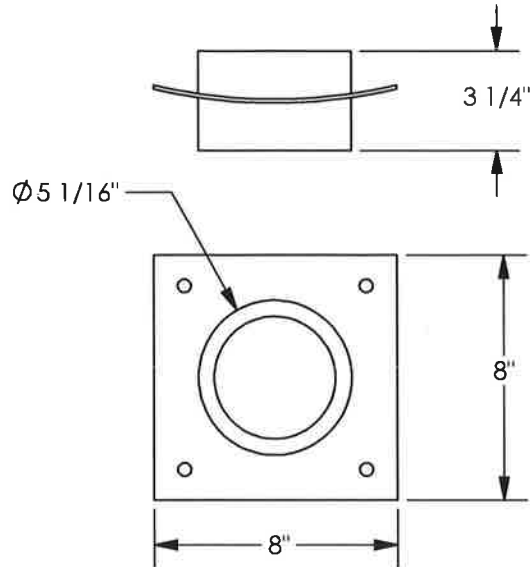
1 of 2

A

8 7 6 5 4 3 2 1

# STAINLESS STEEL PIPE SEALING COUPLINGS

3/8-16 x 1 1/4" STAINLESS STEEL BOLTS, WASHERS, NUTS AND  
3/4"x1/4" CLOSED CELL FOAM ADHESIVE GASKET MATERIAL  
PROVIDED WITH EACH COUPLING KIT




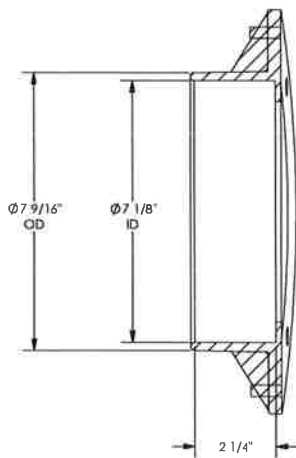
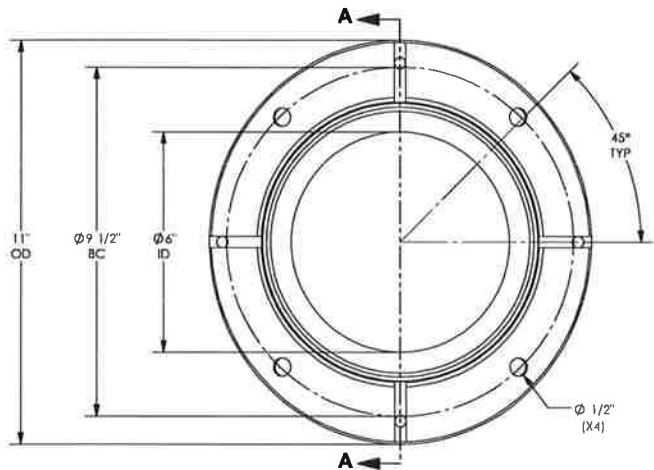
64090G0  
4" FPT PIPE COUPLING  
TOPP PART C400S

HOLE SIZE CHART	
NOMINAL COUPLING SIZE	CLEARANCE HOLE SIZE
1"	1-5/8"
1-1/4"	2"
1-1/2"	2-1/4"
2"	2-7/8"
3"	4"
4"	5"

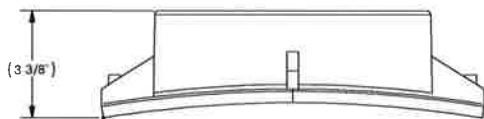
NOTE: FOR PREVIOUS REVISION INFORMATION PLEASE SEE OBSOLETE FOLDER

\* FOR 1-1/4" MANIFOLD CLEARANCES, USE 2 3/8" HOLE SAW

ADDED CUSTOM HOLE SIZE TO TABLE FIXED 64090B0 HOLE CALLOUT, UPDATED SHEET PROPERTIES ADDED CLEARANCE HOLE TABLE, REMOVED 64090A0	E		07/20/22	JCC	 7000 APPLE TREE AVENUE BERGEN, N.Y. 14416 (585) 494-1817	drn by	E.SOBRESKY	tol: xx+/- .02"
								xxx+/- .005"
	D		03/24/22	MAL		date	08/02/16	angles +/- 2°
								unless otherwise noted
						title	SS BOLT ON PIPE COUPLING	
						part no.	SEE DRAWING	
						drawing no.	6409000	sheet number
								2 of 2
								A
description	rev	project	date	initials				



SECTION A-A  
SCALE 1:2.5



- NOTES:
- MANUFACTURER: TOPP
  - MANUFACTURER PART NUMBER: H602FG
  - HARDWARE PACKET INCLUDED WITH HUB CONTAINS
  - (4X) 8184E00, 3/8-16 X 1-1/2" SS BOLT
  - (1X) 4889E00, TAP TAPE 3/8" PIECE
  - 6" FIBERGLASS INLET HUB, FITS TANK DIAMETERS 60" THROUGH 72"
  - DESIGNED TO ACCEPT A 6" FERNCO STYLE PIPE GROMMET

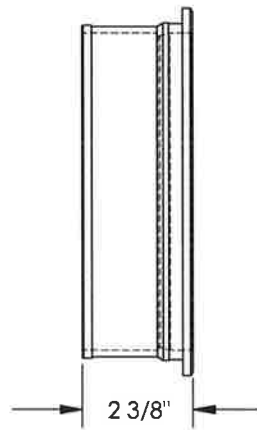
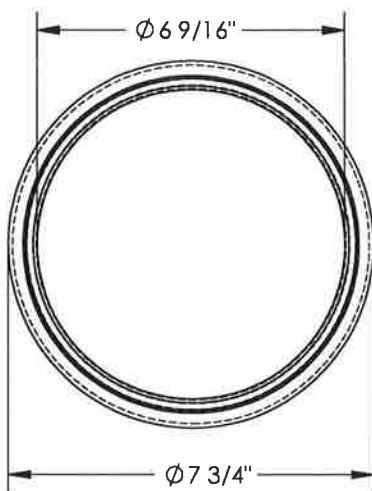
ADDED MANUFACTURER PART NUMBER  
ADDED NOTE ABOUT INCL'D HARDWARE PACKET  
NEW PART

description of change	rev	project	date	initials
	C	NA	10/03/22	MAL
	B	NA	7/28/22	MAL
	A	NA	01/19/10	DMP

**Liberty Pumps**

7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

designed by	D.FLICK	tolerances	xx +/- .02"
date	01/19/10	angles	+/- .2°
scale		unless otherwise noted	
title			
HUB FIBERGLASS 6X60-72			
part no.			
4833000			
drawing no.			sheet number of size
4833000			1 of 1 B



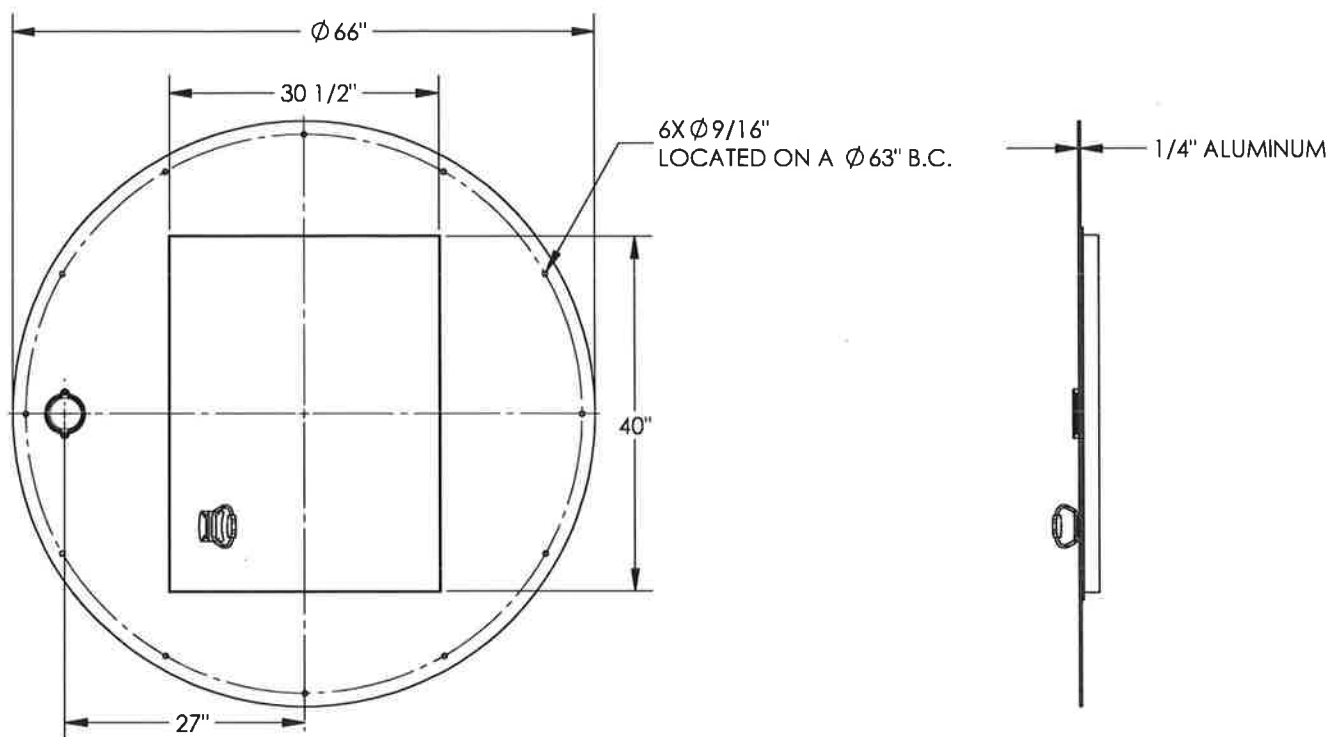
7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

dm by ED SOBRESKY  
date 2/14/2018  
color  
material  
title 6" SEALING DONUT  
part no. 6119000  
drawing no. 6119000

tol: xx+/- .02"  
xxx+/- .005"  
angles +/- 2°  
unless otherwise noted

sheet number sheet size  
1 of 1 A

description of change	rev	project	date	initials
NEW PART	A	NA	2/14/2018	



ALUMINUM HATCH COVERS 36"  
AND OVER REQUIRE TAR TAPE.



7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

dm by ED SOBRESKY

date 4/19/2013

title  
COVER, ALUMINUM HATCH, 3" THREADED VENT GAS TIGHT  
part no.

XC60H2359

drawing no. XC60H2359

tol: xx+/- .02'

xxx+/- .005"

angles +/- 2°

unless otherwise noted

sheet number sheet size  
1 of 1 A

ADDED HOLE AND BOLT CIRCLE  
DIMENSION. ADDED TAR TAPE NOTE.

A

NA

9/3/2014

RSC

NEW PART

A

NA

4/19/2013

description of change

rev

project

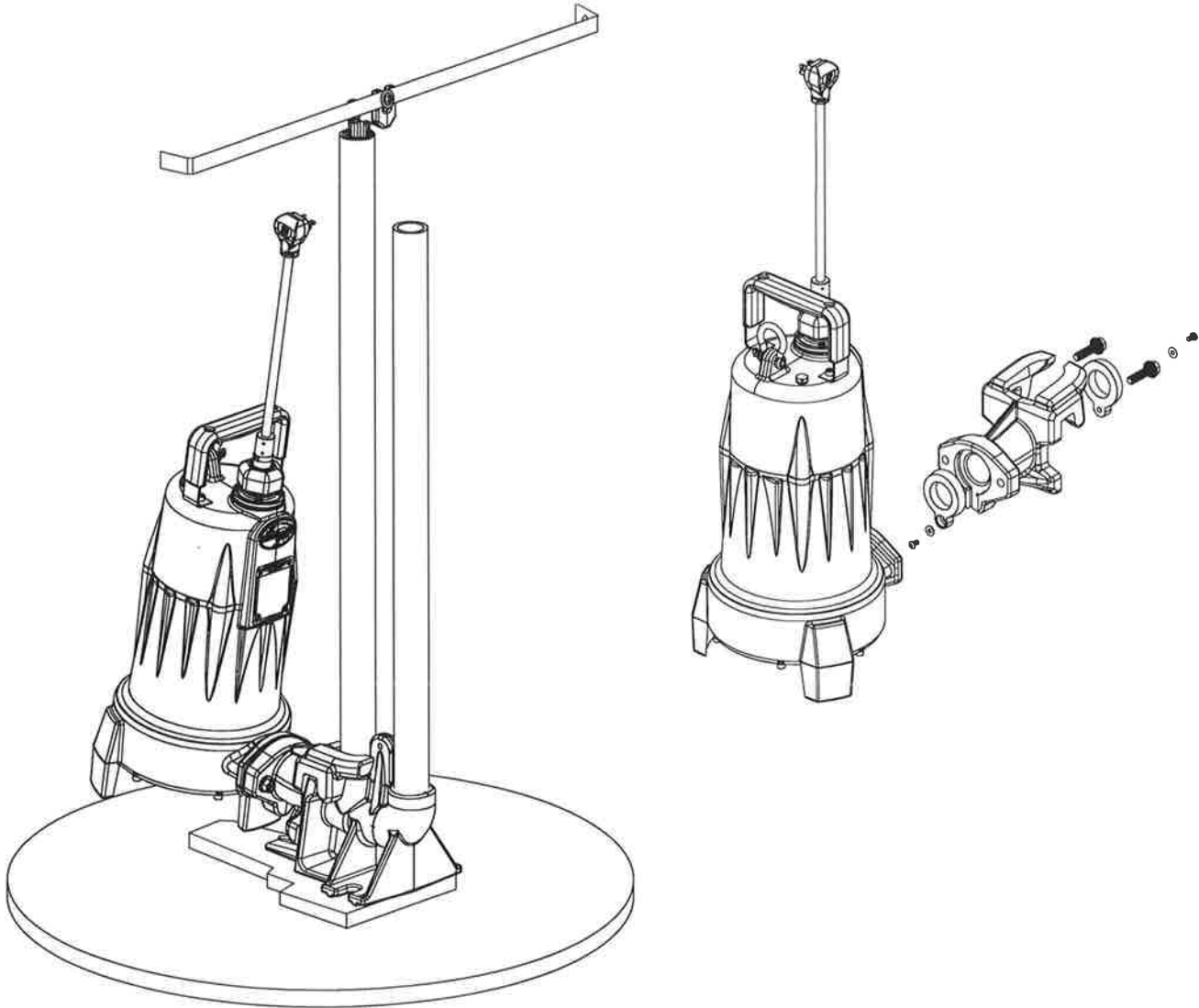
date

initials

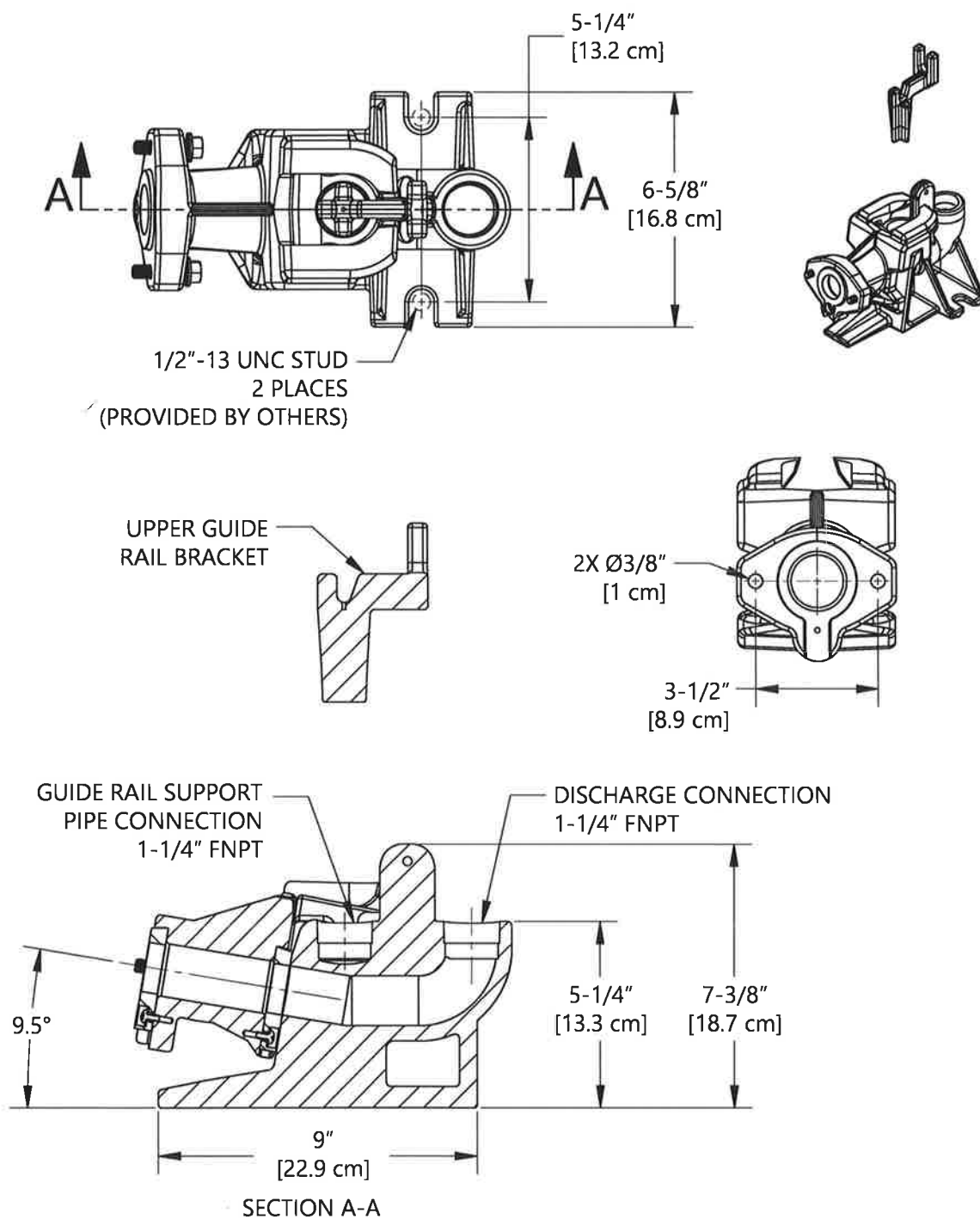
## GR20-Series

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### 1-1/4" Discharge Guide Rail System



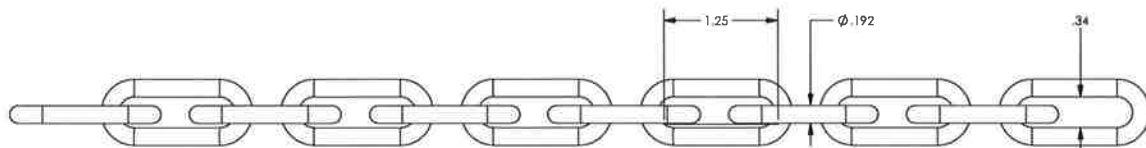
## GR20-Series Dimensional Data



MODEL	WEIGHT
GR20	28 LB.
GR20NS	30 LB.

## **GR20-Series Technical Data**

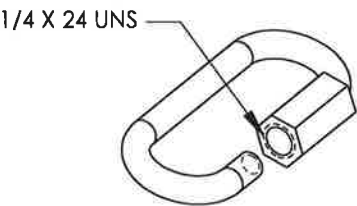
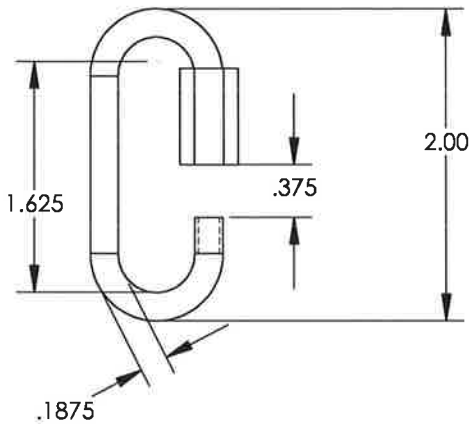
MODEL	GR20-SERIES FOR STANDARD APPLICATIONS	GR20NS-SERIES FOR HAZARDOUS LOCATIONS
GUIDE RAIL BASE	CLASS 25 GRAY CAST IRON	CLASS 25 GRAY CAST IRON
DISCONNECT	CLASS 25 GRAY CAST IRON	BRONZE
GUIDE RAIL	ACCEPTS STANDARD 1-1/4" NPT PIPE (pipe not included)	ACCEPTS STANDARD 1-1/4" NPT PIPE (pipe not included)
DISCHARGE PIPE	ACCEPTS STANDARD 1-1/4" NPT PIPE (pipe not included)	ACCEPTS STANDARD 1-1/4" NPT PIPE (pipe not included)
PAINT	POWDER COAT	POWDER COAT (except disconnect)
HARDWARE	STAINLESS STEEL	STAINLESS STEEL
SEALING GROMMET	BUNA-N	BUNA-N
PUMP INTERFACE	FITS ALL LIBERTY PUMPS 2 AND 2.5 HP GRINDER PUMPS	FITS ALL LIBERTY PUMPS 2 AND 2.5 HP GRINDER PUMPS
MAXIMUM PUMP WEIGHT	113 KG / 250 LBS	113 KG / 250 LBS



NOTES:  
 2/0 304 S/S WELDED CHAIN  
 ACTUAL MATERIAL DIAMETER: 0.192"  
 NOMINAL INSIDE LINK SIZE:  
 WIDTH - 0.34"  
 LENGTH - 1.25"  
 520 LB SAFE WORKING LOAD

UPDATED PART DESCRIPTION TO MATCH 2/0 CHAIN LARGER CHAIN REVISED LINK SPECIFICATIONS NEW PART	D		08/08/22	JCC
	C		6/17/14	JCC
	B	40370	5/26/09	SUE
	A	24657	4/09/01	MSH
description of change	rev	project	date	initials
<div> <div> </div> <div>           7000 APPLE TREE AVENUE            BERGEN, N.Y. 14416            (585) 494-1817         </div> </div>				
drn by MSH		tbl size: 02'		
date 04/09/01		size +/- .005"		
scale 1:1		angles +/- 2"		
title		unbracketed notes apply		
part no.		2/0 304 S/S CHAIN		
drawing no.		4754R00		
drawing no.		4754000		
sheet number		1 of 1		
sheet size		B		

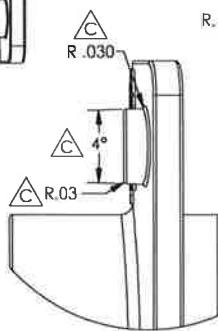
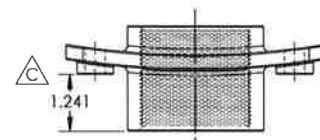
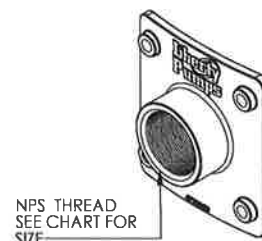
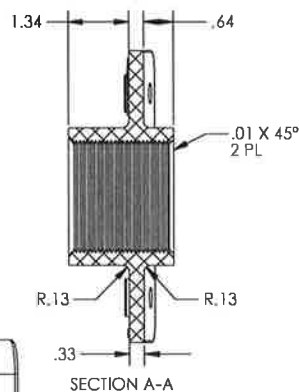
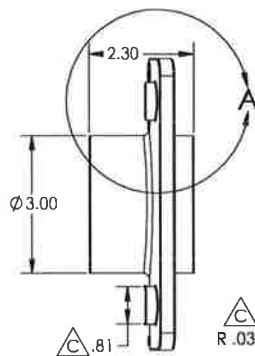
SPECIFICATIONS:  
 3/16" S/S QUICK LINK  
 STOCK DIAMETER: 3/16"



7000 APPLE TREE AVENUE  
 BERGEN, N.Y. 14416  
 (585) 494-1817

drn by	MSH	tol: xx+/- .02"
date	4/09/01	xxx+/- .005"
color		angles +/- 2°
material		unless otherwise noted
title	3/16" S/S QUICK LINK	
part no.	4755000	
drawing no.	4755000	sheet number sheet size
		1 of 1 A

NEW PART	A	24657	4/09/01	MSH
description of change	rev	project	date	initials



DETAIL A  
SCALE 1 : 1

PART NUMBER	RADIUS	THREAD SIZE, NPS
47760A0	18"	1.25"
47760B0	18"	1.5"
47760C0	18"	2"
47760D0	12"	1.25"
47760E0	12"	1.5"
47760F0	12"	2"

dnr by **Damon Flick** lcl: xx+/- 02

 $\times 100 \pm 0.005$ 

dale 1/9/08

angles  $\pm 1^\circ$

scale

unless otherwise noted

BULKHEAD ADAPTER NPS

SEE TABLE

drawing no. 4776000

sheet number sheet size

1 of 1 B

THREAD FORM IS COSMETIC ONLY; DO NOT USE  
MODEL TO CREATE THREADS.

ADDED 12" RADIUS	D	56952	12/13/18	EJS
ADD BOSSES TO MOUNTING HOLES	C	56342	1/15/18	EJS
LIBERTY TOOL	B	54318	7/9/15	DMF
NEW PART	A	N/A	1/08	DMF
Description of change	rev	project	date	initial

7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

5

4

3

2

1

D

D

C

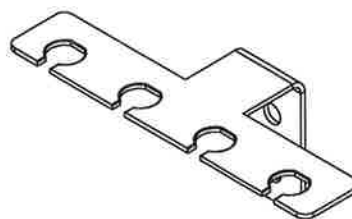
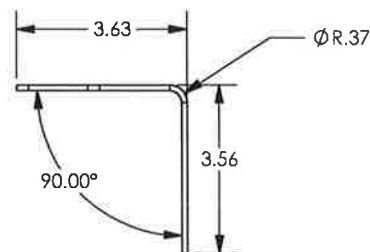
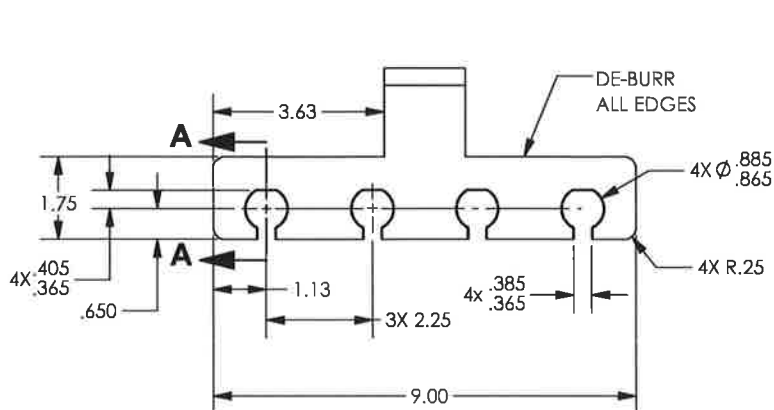
C

B

B

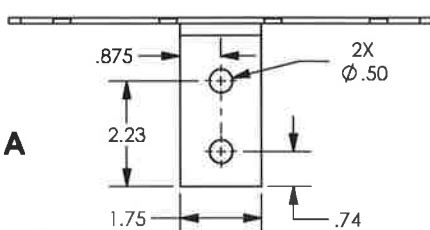
A

A



R.02  
ALL AROUND  
SLOT CUT  
TOP SIDE  
ONLY

SECTION **A-A**  
4X  
SCALE 1 : 2



NOTES:  
MATERIAL: 304 STAINLESS STEEL 11 GAUGE

CHANGED BRACKET TO NEW  
LOW PROFILE DESIGN SEE MODEL  
VERSIONS FOR OLD STYLE

CHANGED CUTOUT SLOT TO .375"  
WAS .45", ADDED FLAT TO RADIUS  
WAS 4788E00, WIDTH 1.75 WAS  
1.50, Ø .875 WAS Ø .625

NEW PART

description of change	rev	project	date	initials
	D	59998	09/11/23	RSC
	C	54618	10/15/15	JCC
	B	54185	05/22/15	DWF
	A	20670	06/26/00	RWS

**Liberty  
Pumps®**

7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

drn by	DAMON FLICK	tol:	xx+/- .02"
date	5/22/2015	xxx+/-	.005"
		angles	+/- 2°
			unless otherwise noted
title	FLOAT BRACKET 3/4 FLOAT		
part no.	4788000		
drawing no.	4788000	sheet number	1 of 1
		sheet size	A

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4

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5

4

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2

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BALL VALVE, 2 PC ECONOMY  
FULL PORT, 1-1/4" FPT X FPT  
STAINLESS STEEL

1000 PSI CWP Non-Shock

150 PSI WSP

Full Port

Blow-out Proof Stem

Adjustable Packing

Investment Cast Body

Threaded NPT Ends

Stainless Steel Handle

Locking Lever

RTFE Seats

Vented Ball

Manufactured Silicone Free

Design: ASME B16.34, MSS SP-110

End Connections: ASME B1.20.1

Seat/Shell Test: MSS SP-110

PART #

SIZE

APPROVED  
MANUFACTURER

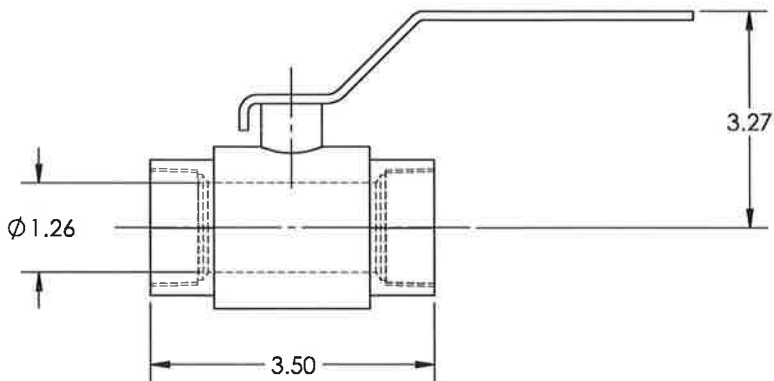
VENDOR PART #

4843000

1-1/4"

FERGUSON

FNW260AH



drn by R.SMITH

tol: xx+/- .02"

date 06/16/2023

xxx+/- .005"

angles +/- 2°

unless otherwise noted

title BALL VALVE, 1.25" FPT SS

part no. 4843000

drawing no. 4843000

sheet number sheet size  
1 of 1 A

CHANGING MANUFACTURER PART #

B

06/16/23

RAS

ADDED SPEC/VENDOR INFO

51984

05/29/14

EJS

NEW PART

A

05/24/10

JRS

description of change

rev

project

date

initials

**Liberty  
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7000 APPLE TREE AVENUE

BERGEN, N.Y. 14416

(585) 494-1817

5

4

3

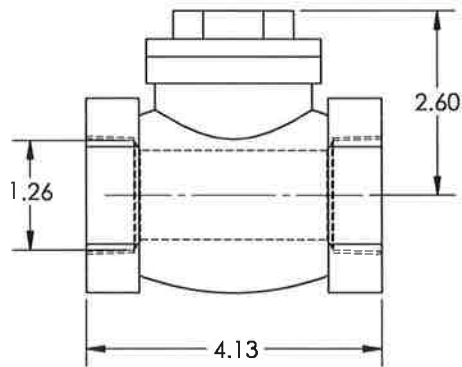
2

1

CHECK VALVE, SWING TYPE  
1-1/4" NPT, STAINLESS STEEL

200 WOG  
Temperature: -4°F to 356°F  
Investment Cast Components  
Stainless Steel Body and Trim  
Solid One-Piece Disc  
Threaded NPT Ends  
Pressure Test: API 598  
Material: ASTM/ASME B16.34  
Connections: ANSI B1.20.1 (NPT)

PART #	SIZE	APPROVED VENDOR	VENDOR PART #
4847000	1-1/2"	FERGUSON	FNW16B200H



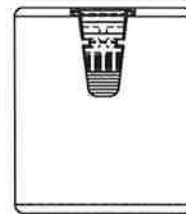
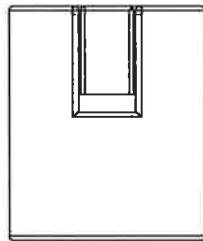
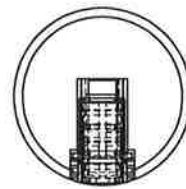
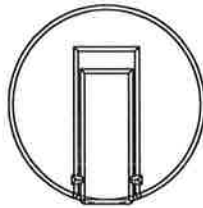
7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

drn by	John Socha	UNLESS OTHERWISE SPECIFIED dimensional tolerances .xx = $\pm .02$ .xxx = $\pm .005$ angles = $\pm 2^\circ$  unit of measure is INCHES dwg view proj THIRD ANGLE
eng	Damon Flick	
date	5/25/2010	
scale	-	
dwg title		
CHECK VALVE, 1-1/4" NPT, SS		
part number		
4847000		
dwg number		sheet numbersheet size
4847000		1 of 1 A

ADDED SPEC/VENDOR INFO	NA	51984	5-29-14	EJS
NEW PART	A	-	5/25/10	JRS
description of change	rev	project	date	initials

THIS COVER PAGE IS FOR LIBERTY PUMPS INTERNAL USE ONLY. UPON UPDATE, SAVE TWO VERSION OF THE PDF:

1. SJE DRAWING: 6048000 - 100079
2. ALDERON DRAWING: 6048000 - 102986



6048000 - 100079  
SJE

6048000 - 102986  
ALDERON



7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

dm by J.CONE

date 10/10/2023

color

angles +/- 2°

material

unless otherwise noted

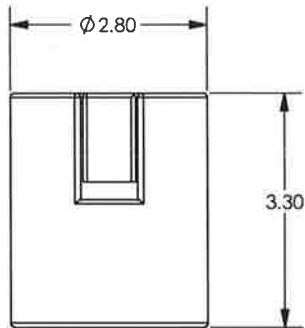
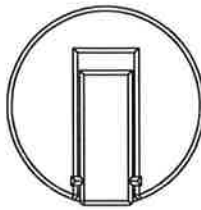
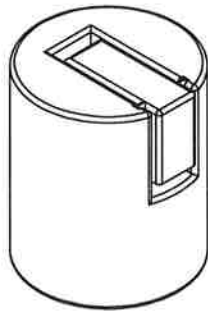
title CABLE WEIGHT

part no. 6048000

drawing no. 6048000

sheet number sheet size  
1 of 1 A

ADD SHEET 102986	C	60032	11/9/22	BPM
WEIGHT FROM 1.93 TO 1.32 lbs.	B	NA	04/03/15	JCC
NEW PART	A	29218	06/01/01	SUE
description of change	rev	project	date	initials



- NOTES:
1. WEIGHT: 1.32 POUNDS
  2. SJE PN: 1002230
  3. ENCLOSURE MATERIAL: PVC
  4. CABLE CLIP MATERIAL: ACETAL PLASTIC
  5. USABLE WITH 18AWG TO 14 AWG CABLE SIZES
  6. MAX ENVIRONMENT TEMP: 140°F



7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

drn by	BPM	tol:	xx+/- .02"
date	11/9/22		xxx+/- .005"
			angles +/- 2°
			unless otherwise noted
title	CABLE WEIGHT		
part no.	6048000		
drawing no.	6048000-100079	sheet number	1 of 1
		sheet size	A

ADD SHEET 102986	C	60032	11/9/22	BPM
WEIGHT FROM 1.93 TO 1.32 lbs	B	NA	4/3/15	JCC
NEW PART	A	29218	6/1/01	SUE
description of change	rev	project	date	initials

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4

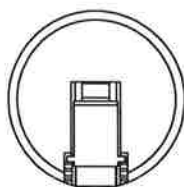
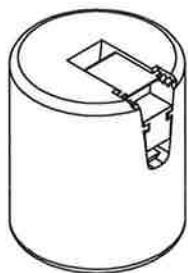
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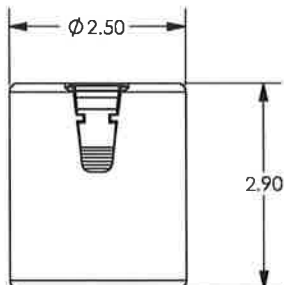
D

D



C

C



B

B

## NOTES:

1. WEIGHT: 1.5 POUNDS
2. ALDERON PN: 2000275
3. ENCLOSURE MATERIAL: POLYPROPYLENE
4. CABLE CLIP MATERIAL: ACETAL PLASTIC
5. USABLE WITH 18AWG TO 14 AWG CABLE SIZES
6. MAX ENVIRONMENT TEMP: 200°F

A

A



7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

dm by BPM

tol: xx+/- .02"

date 11/9/22

xxx+/- .005"

angles +/- 2°

unless otherwise noted

title CABLE WEIGHT

part no. 6048000

drawing no. 6048000 - 102986

sheet number	sheet size
1 of 1	A

ADD SHEET 102986	C	60032	11/9/22	BPM
CHANGE FROM 1.93 TO 1.32 lbs	B	NA	4/3/15	JCC
NEW PART	A	29218	6/1/01	SUE
description of change	rev	project	date	initials

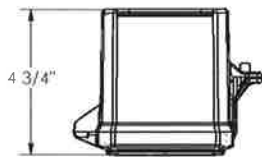
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4

3

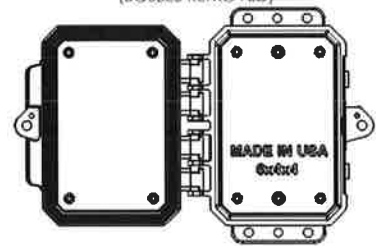
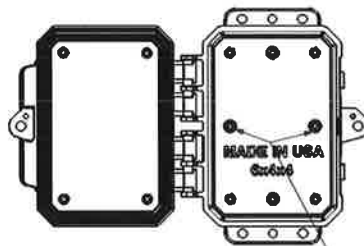
2

1

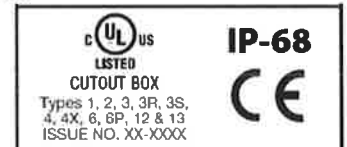
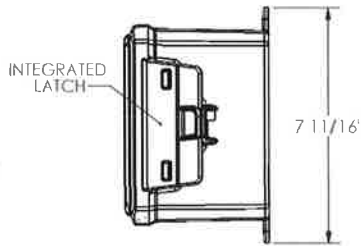
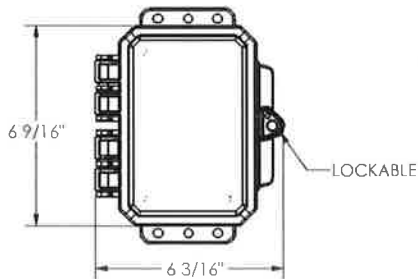


INTEGRA PART #P6044  
(NOT PURCHASED BY LIBERTY)

INTEGRA PART# P6044-M2148  
LIBERTY PART # 6867000  
(BOSSSES REMOVED)



THESE TWO BOSSES  
ARE REMOVED AT  
INTEGRA. BOX BECOMES  
A P6044-M2148.



C UL US listed  
NEMA 4X and 6P rated

APPROVED VENDOR	VENDOR PART #	CERTIFICATIONS	MATERIAL	COLOR
PROMARK ELECTRONICS	P6044-M2148	NEMA 4X & 6P	POLYCARBONATE	LIGHT GREY

dm by E.SOBRESKY  
date 2/13/19  
scale  
title ELECTRICAL ENCLOSURE  
JUNCTION BOX  
part no. 6867000

7000 APPLE TREE AVENUE  
BERGEN, N.Y. 14416  
(585) 494-1817

NEW PART A NA 2/13/19 EJS  
description of change rev project date initials

drawing no. 6867000 sheet number sheet size  
1 of 1 B