

PROJECT: 18090  
ADDRESS: 9142 Green Valley Road

**PUMP CALCULATION FOR GRINDER STATION  
CONNECTION TO PUBLIC SEWER**

**Grinder Station #3**

Influent flows - Domestic Wastewater Lift Station #2 - 38 gpm  
Domestic Wastewater Gravity Influent - 10 gpm

SIZE PUMP: Capacity = 38 gpm min.

Head losses:

Elev. head:

At pump =  $112.26 - 8' = 104.26'$   
At hi point =  $116.5'$   
Total elev Height =  $116.5' - 104.26'$   
=  $12.24'$

Friction head:

3" pressure line  
Head =  $577 \text{ lf}(0.39' / 100')$   
=  $2.2'$

3" fitting loss

90 ell =  $8.0 \text{ l.f.}$   
45 ells =  $3.8 \text{ l.f.}$   
 $[8.0(5) + 3.8(5)] (0.39 / 100)$   
=  $0.23'$

3" fittings in sump

90 ell =  $8 \text{ l.f.}$   
Ch. vlv. =  $20 \text{ l.f.}$   
Gate vlv. =  $1.7 \text{ l.f.}$   
45 ells =  $3.8 \text{ l.f.}$   
 $[8 + 20 + 1.7 + 2(3.8)] 0.39' / 100'$   
=  $(29.7) (0.39' / 100')$   
=  $0.12'$

Minor losses - bends - use  $5.0'$

Pressure in 3" Force Main due to pond pump =  $35.6'$  @ 80gpm (max)

$$\begin{aligned}\text{Total friction head} &= 2.2' + 0.23' + 0.12' + 5.0' \\ &= 7.55'\end{aligned}$$

$$\text{Total Head} = 12.24' + 7.55' + 35.6' = 55.39', \text{ Use } 56'$$

**FOR 38 GPM AT 56' TOTAL HEAD USE LIBERTY XLGX200 2HP PUMP**

# XLSGX200-SERIES

2-Stage High Head Grinder Pump for Hazardous Locations

# Liberty Pumps®

A Family and Employee Owned Company

## X-Series™

**2 hp**

**1-1/4" Discharge**

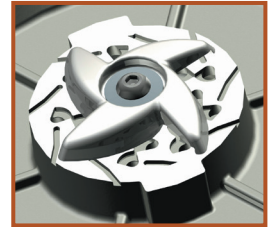
Class 1, Division 1, Groups C and D T4  
Class 1, Zone 1, Groups IIA and IIB T4

For sewage applications where hazardous location ratings are required. Applications include groups of homes, commercial buildings, schools, lakefront development and systems requiring high pressure sewage pumping.

### Features

- Patented V-Slice® Cutter Technology provides unmatched shredding performance of wipes, disposable cleaning pads, rags and other difficult solids
- 440 hardened stainless steel cutter and plate
- Stainless steel impellers
- Dual mechanical seals – silicon carbide with Viton® elastomers
- Seal fail sensor
- 1-1/2" threads provided at power cords for optional conduit connection

For use with ISS and ISD-Series (intrinsically safe) panels.  
Consult factory for proper panel sizing



V-Slice® Cutter Technology



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



innovate. evolve.

# XLSGX200-Series



## Construction

**Pump and Motor Housing:** Heavy cast iron - Class 30

**Impeller:** Two impellers, both stainless steel

**Motor:** Submersible type, oil-filled, hermetically sealed

**Shaft:** 300 Series stainless steel

**Bearings:** Ball bearings upper and lower

**Thermal Protection:** Single-phase models use integrated thermal protection with automatic reset; 3-phase models require overload relays in the pump control panel

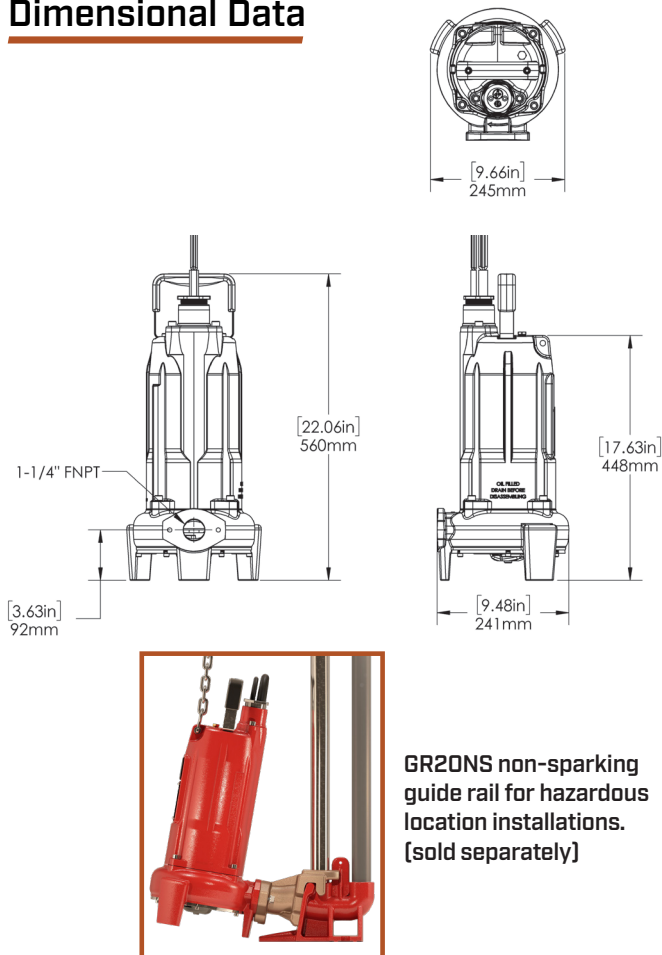
**Capacitor:** Single-phase pumps require start and run capacitors as well as a start relay which is located in the pump control panel

**Shaft Seal:** Dual mechanical seals – silicon carbide with Viton® elastomers

**Seal Fail Sensor:** Integral moisture sensing probe (functionality requires indicator in panel – see ISS or ISD-series panels)

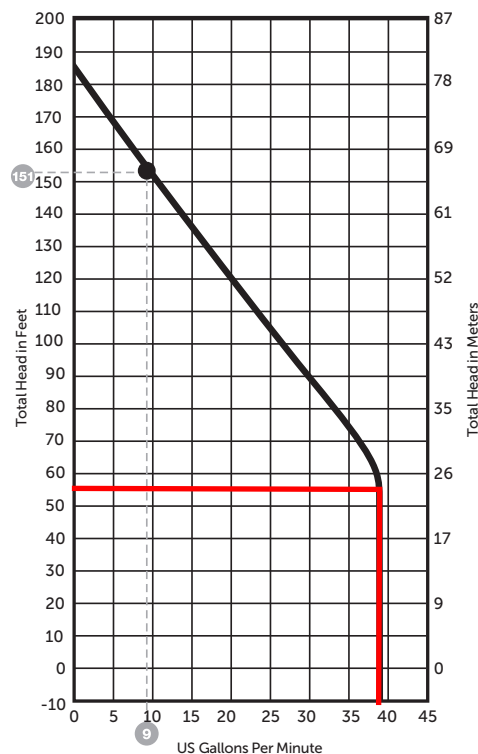
**Maximum Fluid Temperature:**  
104°F (40°C) Continuous duty rated

## Dimensional Data



## Performance Curve

60 Hz 3450 RPM



## Models

MODEL	HP	VOLTS	PH	HZ	AMPS	LOCKED ROTOR AMPS	CAPACITOR KIT	DISCHARGE	WEIGHT IN LBS
XLSGX208M-2	2	200 VAC	1	60	20	66.5	K001640	1-1/4"	127
XLSGX202M-2	2	230 VAC	1	60	20	64.3	K001641	1-1/4"	127
XLSGX203M-2	2	200/230 VAC	3	60	13.5	39.2	N/A	1-1/4"	127
XLSGX204M-2	2	460 VAC	3	60	6.7	19.6	N/A	1-1/4"	127
XLSGX205M-2	2	575 VAC	3	60	5.3	16.3	N/A	1-1/4"	127

25' cords are standard. For 35' or 50' cord, add "-3'" or "-5'" suffix. Example: XLSGX202M-5 for 50' cord.

All X-Series grinders require the use of Liberty Pumps ISS or ISD control panels. Please contact the factory for assistance in panel selection.

Capacitor kit includes: Run Cap, Start Cap, Start Relay