Liberty Pumps®
A Family and Employee Owned Company

DRAINAGE SOLUTIONS, INC
(317)346-4110
www.drainagesolutionsinc.com

Omnivore® Grinders

Omnivore X2 2-Stage Grinders™ By Liberty Pumps

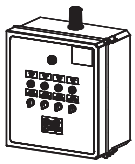
Installation **Manual**

7759000E

Quadplex Grinder Systems

Q4884/Q4896/Q48120-Series

- 48″ Diameter Fiberglass Basin
- Available in 84″, 96″ and 120″ Heights

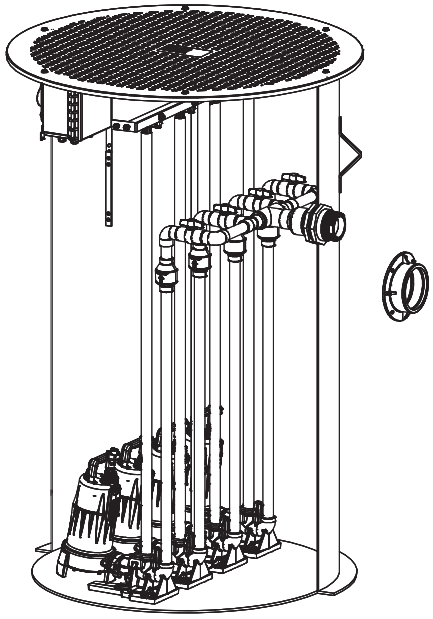


Features

- LSG Single Stage Grinder Pump (*2 hp, 208/230V*)

-or-

- LSGX 2-Stage Grinder Pump (*2 hp, 208–230V*)
- Pre-Mounted Float System
- GR20 Guide Rail Systems
- NEMA 4X Quadplex Alternating Control Panel
- NEMA 4X Junction Box



⚠ **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.

IMPORTANT: All Liberty Pumps products are supplied with their own separate Installation/Operation/Maintenance manuals. Ensure receipt of these manuals, and that they are read and understood prior to installation. For questions, call Liberty Pumps customer service at 1-800-543-2550.

NOTICE **Installer: Manual must remain with owner or system operator/maintainer.**

Record information from pump nameplate:

System: _____

Model(s): _____

Serial(s): _____

Control Panel: _____

Mfg Date: _____

Install Date: _____

7000 Apple Tree Avenue
Bergen, NY 14416
ph: 1-800-543-2550
fax: 1-585-494-1839
www.LibertyPumps.com

Keep this manual handy for future reference.

For replacement manual, visit LibertyPumps.com, or contact Liberty Pumps at 1-800-543-2550.

Retain dated sales receipt for warranty.

Contents

Safety Guidelines

	This safety alert symbol is used in the manual and on the pump to alert of potential risk for serious injury or death.
	This safety alert symbol identifies **risk of electric shock**. It is accompanied with an instruction intended to minimize potential risk of electric shock.
	This safety alert symbol identifies **risk of fire**. It is accompanied with an instruction intended to minimize potential risk of fire.
	This safety alert symbol identifies **risk of serious injury or death**. It is accompanied with an instruction intended to minimize potential risk of injury or death.
⚠DANGER	Warns of hazards which, if not avoided, **will** result in serious injury or death.
⚠WARNING	Warns of hazards which, if not avoided, **could** result in serious injury or death.
⚠CAUTION	Warns of hazards which, if not avoided, **could** result in minor or moderate injury.
NOTICE	Signals an important instruction related to the pump. Failure to follow these instructions could result in pump failure or property damage.

⚠WARNING	Read every supplied manual before using pump system. Follow all the safety instructions in manual(s) and on the pump. Failure to do so could result in serious injury or death.

Safety Precautions

⚠WARNING  **RISK OF ELECTRIC SHOCK**

- Accidental contact with electrically live parts, items, fluid, or water can cause serious injury or death.
- Always disconnect pump(s) from power source(s) before handling or making any adjustments to either the pump(s), the pump system, or the control panel.
- All installation and maintenance of pumps, controls, protection devices, and general wiring shall be done by qualified personnel.
- All electrical and safety practices shall be in accordance with the National Electrical Code®, the Occupational Safety and Health Administration, or applicable local codes and ordinances.
- Do not remove cord and strain relief, and do not connect conduit to pump.
- Pump shall be properly grounded using its supplied grounding conductor. Do not bypass grounding wires or remove ground prong from attachment plugs. Failure to properly ground the pump system can cause all metal portions of the pump and its surroundings to become energized.
- Do not handle or unplug the pump with wet hands, when standing on damp surface, or in water unless wearing Personal Protective Equipment.
- Always wear dielectric rubber boots and other applicable Personal Protective Equipment (PPE) when water is on the floor and an energized pump system must be serviced, as submerged electrical connections can energize the water. Do not enter the water if the water level is higher than the PPE protection or if the PPE is not watertight.
- Do not lift or carry a pump or a float assembly by its power cord. This will damage the power cord, and could expose the electrically live wires inside the power cord.
- The electrical power supply shall be located within the length limitations of the pump power cord, and for below grade installations it shall be at least 4 ft (1.22 m) above floor level.
- Do not use this product in applications where human contact with the pumped fluid is common (such as swimming pools, fountains, marine areas, etc.).
- Protect the power and control cords from the environment. Unprotected power and control (switch) cords can allow water to wick through ends into pump or switch housings, causing surroundings to become energized.
- Single-phase 208/230V pumps shall only be operated without the float switch by using the circuit breaker or panel disconnect.
- Some products may have internal capacitors that could cause shock. Avoid contact with plug ends after removing from energy source.

⚠WARNING  **RISK OF FIRE**

- Do not use an extension cord to power the product. Extension cords can overload both the product and extension cord supply wires. Overloaded wires will get very hot and can catch on fire.
- This product requires a separate, properly fused and grounded branch circuit, sized for the voltage and amperage requirements of the pump, as noted on the nameplate. Overloaded branch circuit wires will get very hot and can catch on fire. When used, electrical outlets shall be simplex of the appropriate rating.
- Sewage and effluent systems produce and may contain flammable and explosive gases. Prevent introduction of foreign objects into basin as sparks could ignite these gases. Exercise caution using tools and do not use electronic devices or have live, exposed electrical circuits in or around basins, open covers and vents.
- These pumps are not to be installed in locations classified as hazardous in accordance with the National Electric Code®, ANSI/NFPA 70.

- Do not use this product with or near flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. If rotating elements inside pump strike any foreign object, sparks may occur. Sparks could ignite flammable liquids.

⚠WARNING ⚠ **RISK OF SERIOUS INJURY OR DEATH**

- Energizing the control panel or breaker for the first time is potentially dangerous. Licensed electrical personnel should be present when the panel or breaker is energized for the first time. If faults caused by damage or poor installation practices have not been detected, serious damage, injury or death can result when power is applied.
- Do not modify the pump/pump system in any way. Modifications may affect seals, change the electrical loading of the pump, or damage the pump and its components.
- All pump/pump system installations shall be in compliance with all applicable Federal, State, and Local codes and ordinances.
- Do not allow children to play with the pump system.
- Do not allow any person who is unqualified to have contact with this pump system. Any person who is unaware of the dangers of this pump system, or has not read this manual, can easily be injured by the pump system.
- In 208/230V installations, one side of the line going to the pump is always "hot", whether the float switch is on or off. To avoid hazards, install a double pole disconnect near the pump installation.
- Vent basin in accordance with local code. Proper venting of sewer and effluent gases alleviates poisonous gas buildup and reduces the risk of explosion and fire from these flammable gases.
- Wear adequate Personal Protective Equipment when working on pumps or piping that have been exposed to wastewater. Sump and sewage pumps often handle materials that can transmit illness or disease upon contact with skin and other tissues.
- Do not enter a pump basin after it has been used. Sewage and effluent can emit several gases that are poisonous.
- Do not remove any tags or labels from the pump or its cord.
- Keep clear of suction and discharge openings. To prevent injury, never insert fingers into pump while it is connected to a power source.
- Do not use this product with flammable, explosive, or corrosive fluids. Do not use in a flammable and/or explosive atmosphere as serious injury or death could result.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. www.p65warnings.ca.gov.
- A grinder pump contains metal parts that rotate at high speeds. Be careful around pump base while power is connected. Make sure that the pump is either in the tank or clear from people and wires when in operation.

NOTICE

- **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.
- Do not use pump system with mud, sand, cement, hydrocarbons, grease, or chemicals. Pump and system components can be damaged from these items causing product malfunction or failure. Additionally, flooding can occur if these items jam the impeller or piping.
- Do not exert heavy pressure or run heavy equipment on the backfill material as this could cause the tank to collapse.
- Do not dispose of materials such as paint thinner or other chemicals down drains. Doing so could chemically attack and damage pump system components and cause product malfunction or failure.
- Do not use pumps with fluid over 140°F (60°C). Operating the pump in fluid above this temperature can overheat the pump, resulting in pump failure. Maximum continuous duty fluid temperature is 104°F (40°C).
- Submersible Pump—do not run dry.
- The Uniform Plumbing Code® states that sewage systems shall have an audio and visual alarm that signals a malfunction of the system, to reduce the potential for property damage.

Introduction

Pumps, alarm, and control panel are supplied with their own separate manuals. Ensure receipt of these manuals and that they are read and understood prior to installing and using this system. Familiarity with the pump and control panel is critical.

This manual provides a brief overview of the system, and deals mainly with inspection and installation of the basin. It does not cover the specifics of the pump operation or the control panel operation. For questions, call Liberty Pumps customer service at 1-800-543-2550.

Identification

Information about the system can be found on a stamped metal tag that is located on the basin cover. This identifies the model number as well as the horsepower, voltage, and amp draw for the pumps. Pump tags are located on the pumps. Duplicate pump tags are packaged with the system. These can be mounted at the control panel for accessibility and immediate pump information.

Inspection

Inspect the system upon arrival to ensure that there is no shipping damage. Pay careful attention to the condition of the fiberglass basin, control floats, pump guide rail brackets, and control panel. Notify the carrier immediately if there is any damage.

Model Specifications

For a complete listing of pump models and their specifications, refer to www.LibertyPumps.com/About/Engineering-Specs. The pump nameplate provides a record of specific pump information.

Basin Installation

This is a brief reference to the recommended methods and procedures for installing Liberty Pumps basins to ensure that damage or premature failure of the basin does not occur.

This section is ***not*** intended to serve as a basic instructional guide. The installation of Liberty Pumps sump and sewage basins is a specialized skill and is assumed that the individuals who install our products and refer to this section will have basic understanding of such procedures as excavating, backfilling, pipefitting, and electrical work. No amount of written instruction by a

manufacturer or regulatory agency will convert an inexperienced, under-supervised laborer into a skilled, experienced mechanic. The ability to recognize and correctly respond to abnormal conditions during a basin installation requires field experience as well as mechanical aptitude. Figure 1 is provided for reference.

In addition to proper system engineering and competent manufacturing, the use of basin installers who have both practical experience and integrity to assist that the basin be installed properly, constitutes the greatest protection from catastrophic basin failure and liability exposure.

Basin Handling

General Handling

Although the exterior surfaces of the fiberglass basins are designed to withstand normal handling, they can be damaged during transportation and installation. Basins must not be dropped, dragged, or handled with sharp objects, and with the exception of the minimal movement involved in a visual inspection, must not be rolled.

Unloading, Lifting, and Lowering

⚠WARNING **RISK OF SERIOUS INJURY OR DEATH**

- Under no circumstances are the use of chains or cables around the basin shell permitted.

The proper way to move a basin is by lifting it, using chains or cables with the optional lifting lugs (not more than a 30° angle), or by using a non-marring sling around the basin. Before any attempt is made to move a basin, verify that all equipment and accessories have sufficient capacity and reach to lift and lower the basin without dragging and/or dropping. Maneuver the basin with guide ropes attached to the sides.

Pre-Installation Inspection

Confirm adherence to the project's specifications before installation. Physically and visually inspected basin, pumps, valves, equipment, and piping materials before installation. Notify the carrier immediately if there is any damage. If the basin or any of its internal components are damaged, suspend installation until a determination of the extent of damage can be made by Liberty Pumps or its agent. Any repairs must be first authorized in writing by Liberty Pumps and then be done in accordance with Liberty Pumps instructions.

Storage

Store the basin in a secure, controlled area where the potential for accidental damage or vandalism will be minimized. The storage area must be free from sharp objects, rocks, and any other foreign solutions or materials that could cause damage to the basin. Chock the basin until it is needed for installation and, if windy conditions are possible, secure the basin with non-marring restraints of a size and number adequate for securing the basin.

Excavation

⚠WARNING **RISK OF SERIOUS INJURY OR DEATH**

- Locate all overhead and underground utilities before excavating.

Excavation Considerations

The excavation must provide adequate space for the basin, piping, and other buried equipment, and for the replacement and compaction of backfill materials particularly around the basin walls. The size, shape, and wall slope of the excavation should be determined by soil conditions, depth of excavation, shoring requirements, and if workers are required to enter the excavation, safety considerations and federal, state, county, and municipal regulations.

Excavation Location

Excavation for an underground basin must be made with due care to avoid undermining foundations of existing structures and contact with underground utilities. In the absence of building codes or regulations, maintain a minimum distance of 5 feet plus a slope of 45° from the bottom of the compacted sub-base to the bottom of the adjacent structures, foundations, footings, and property lines. Additional distances may be required to ensure that any loading carried or created by the foundations and supports cannot be transferred to the basin.

Maximum Basin Burial Depth

If burial depth is greater than the basin height, contact Liberty Pumps to determine if additional wall reinforcement is required and secure written authorization.

Excavated Materials Handling

Carefully store excavated materials, which cannot be removed from the job site, as far from the edge of the basin excavation as possible. Unless approved for use as backfill, securely store excavation materials separate from the approved backfill materials.

Work Area Safety

Safe installation procedures are the sole responsibility of the basin installer. Work safety requirements are defined in US Department of Labor 29 CFR 1926, Subpart P: Excavations.

Backfill

Careful selection, placement, and compaction of approved backfill material is critical to a successful basin installation. Among the common problems associated with basin leaks and premature failures are:

- Use of incorrect backfill material
- Inadequate or improper placement or compaction
- Rocks, clods, or debris left in the excavation or basin
- Voids under or around the perimeter of the basin
- Failure to prevent the migration of backfill materials

Basin Placement

⚠WARNING **RISK OF SERIOUS INJURY OR DEATH**

- Placement of a basin on a concrete pad or compacted sub-base smaller than the total basin bottom area or on intermediate supports (saddles) will cause uneven distribution of loads. This may contribute to structural failure, and is never permitted.