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Leaders in Pump Technology

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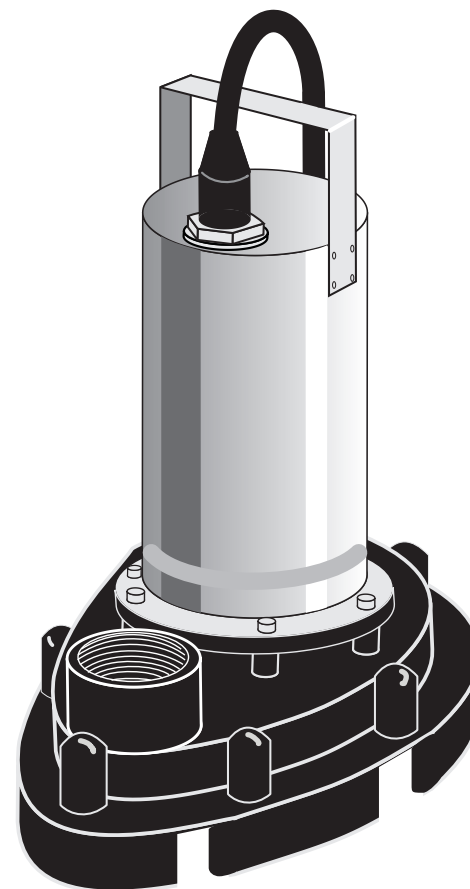


L-SE-TL-006 Rev. 06/98
Printed in USA

Models SU 252 - 332

Series II Sump Pumps

Installation and Operating Instructions



Please leave these instructions with the pump for future reference.

GRUNDFOS 
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Troubleshooting

WARNING

FOR YOUR PROTECTION, ALWAYS DISCONNECT THE PUMP FROM ITS POWER SOURCE BEFORE HANDLING.

Diagnosing Specific Problems

<i>Problem</i>	<i>Possible Cause and Remedy</i>
The pump does not run or start when water is up in tank.	<ol style="list-style-type: none"> 1. Check for blown fuse or tripped circuit breaker. 2. Check for defective level switch. 3. Level or control ball mechanism may be stuck inside basin. Make sure it floats freely. 4. If control panel is used, check to make sure pump is set for automatic start. 5. Check for burned out motor (possible lightning damage). 6. If single-phase and plug-in cords are used, make sure contact blades are clean and making a good connection.
Pump runs but does not deliver expected flow.	<ol style="list-style-type: none"> 1. Check strainer housing and discharge pipe for clog. 2. Check for air lock by stopping and restarting pump several times. 3. Check valve may be installed backwards. 4. Check vertical elevation to make sure pump is not set higher than pump can operate (see pump curve). 5. Incorrect voltage (high or low) may be causing motor inefficiencies. Check to make sure it is $\pm 10\%$ nameplate voltage. 6. Check for defective capacitor.
Pump will not shut off	Defective or stuck float switch. Check first to make sure it isn't mechanically bound to the sides of the basin, etc. Then check for out-of-adjustment.
Pump stops and starts too often.	<ol style="list-style-type: none"> 1. Float switch set too "tight". 2. Check valve is either stuck or one was not installed in a long discharge line that needed one. 3. Sump pit is too small. 4. Overload is open.

Pre-Installation Checklist

3. Electrical Requirements

The electrical supply must be a separate branch circuit with fuses or circuit breakers for short-circuit protection, wire sizes, etc., per national and local electrical codes.

4. Is the Application Correct for This Pump?

Compare the pump's nameplate data or its performance curve with the application in which you plan to install it. Will it perform the way you want it to perform?

Also, make sure the application falls within the following limits:

- **Maximum Operating Limit(s):**

Motor Duty: Continuous, not to exceed 8 hours per 24 hour period.

Liquid Temperature:

104°F (40°C) continuous operation, 132°F (55°C) intermittent operation; fully submerged.

Starts Per Hour: 20, evenly distributed.

- Solids Handling: SU252 5/16" maximum
SU332 1/2" maximum
SU332AV 1/2" maximum

- Ensure that the receiver basin is well ventilated.
- Flammable gases can be present in a wet well or receiver basin due to bacterial action. Exercise extreme caution when working in and around such areas. Ensure that no sparks are generated that could ignite said gases.
- Sump pumps are not designed for use in swimming pools or hazardous liquids.

Installation Procedures

Required Accessories

Accessories required to complete a system other than normal plumbing and electrical items are:

- Receiver basin or wet-well.
- Level control system: Float switch(es) or vertical switch (or other types).
- Magnetic Contactor (optional for single-phase pumps).
- Duplex controller if two pumps are installed.

Installation Procedures

Electrical Preparation

Requirements and Considerations

The electrical connection should be carried out in accordance with local regulations. The pump **must** be grounded. Other electrical requirements include:

- The motor is already wired correctly from the factory.
- Wire size must limit maximum voltage drop to 10% of nameplate voltage at motor terminals, or motor life and pump performance will be lowered.
- Always use correct horsepower-rated switches, contactors and starters.
- Do not carry or hang pump by the electrical cord. Use the handle for this purpose.
- **Motor Protection:**
Single-phase: Motor has a built in thermal protector which opens the circuit when overload condition is encountered. Protector automatically resets when motor cools.

Electrical Procedures

The installation of automatic pumps with vertical float switches or non-automatic pumps using auxiliary tethered float switches is the responsibility of the installing party, and care should be taken that the vertical or tethered float switch will not hang up on the pump apparatus.

1. Level control switching can be accomplished using several commercially available systems. If using multiple float switches, the separation must be such that there is no possibility of entanglement. Suggested minimum is 4" between centers.
2. Adjust the switch(es) vertical position so that turn-off occurs slightly above the center of the motorhousing. Higher is better.
3. **Wiring:**
Single-phase units: Plug the 3-pronged plug into a grounded receptacle. If an extension cord is used it should not exceed 100 feet.
4. **Rotation Check:** Not required on single-phase units.

CAUTION: DO NOT PHYSICALLY FEEL FOR THE IMPELLER ROTATION. SERIOUS INJURY COULD RESULT.

Piping

Requirements and Considerations

Receiver basin or wet-well size should allow sufficient room for unimpeded movement of the **float switches (A, above right)**, if employed. It should be large enough to stay within the recommended maximum of twenty starts per hour. The basin or wet-well must have a solid and homogeneous bottom and free of any debris.

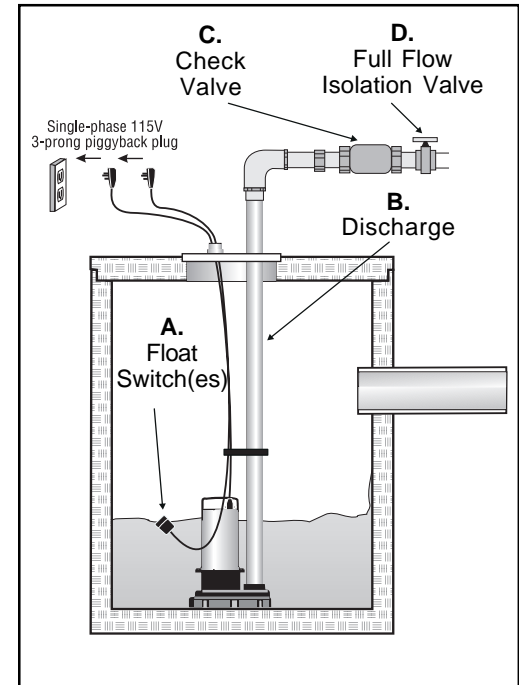
Installation Procedures

Typical Sump Installation

Install a **full flow isolation valve (D, above right)** on the discharge line, after the check valve, to aid in maintenance work. On duplex installations, manifold to a common discharge line after the isolation valves.

Piping

The **discharge pipe (B, above right)** should be sized at least as large as the pump's discharge port. If a larger size is being considered, ensure that the liquid velocity in the pipe does not go below 2 feet/second (30 GPM in 2-1/2" pipe or 50 GPM in 3" pipe) to prevent solids settling.



Install a **check valve (C, above right)** specifically designed for solids handling on the discharge pipe so as to prevent back flow into the receiver. Follow the valve manufacturer's recommendation regarding valve orientation.

Procedures

1. Position the pump to one side of the basin or wet-well so as to allow sufficient room for the float switch(es) to swing unobstructed. Also, ensure that the influence does not cascade directly on the switch(es).
2. If using receiver basin, ensure that the cover is gasketed properly and the discharge and vent lines are sealed against the cover. Failure to do so could mean outside water entering or objectionable odor escaping.

NOTE: INSTALLATION OF COVER SHOULD BE DONE ONLY AFTER SUCCESSFULLY TESTING THE COMPLETE SYSTEM.

Final Installation Adjustments

1. Fill basin or wet-well.
2. Energize the pump(s) manually to verify proper operation.
3. Put the system in automatic mode and refill.
4. Observe turn-on and turn-off points. Adjust position of switches as required.
5. Install basin or septic tank cover after system is adjusted properly.