

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

INSTALLATION INSTRUCTIONS

SUBMERSIBLE SUMP PUMPS DEWATERING AND SEWAGE

DATE INSTALLED:
MODEL NUMBER:

NOTICE: VENT HOLE FOR CHECK VALVE SEE #3 IN CAUTION SECTION AND #4 PAGE 3

	MODELS	Dewatering	Effluent	Sewage
433047	3SDPH-L	X		
412082	3SPH-L	X		
420816	3SEH-L	X	X	
	5SPH-L	X		
	5SDPH-L	X		
433152	4EP	X	X	X
	BN4EP	X	X	X
451558	40EC	X	X	X
	S1137	X	X	
451549	S1098	X	X	
	S1057	X	X	
	200ECF ECP SERIES	X	X	X

*Effluent systems should specify that pumps should not handle solids exceeding three fourths inch (3/4") in order to prevent large solids from entering leaching fields, mound systems and etc. Where codes permit, sewage pumps can be used for effluent systems. Nonautomatic pump(s) with external level control recommended for septic tank effluent applications.

PRE INSTALLATION CHECKLIST - ALL INSTALLATIONS

1. Inspect your pump. Occasionally, products are damaged during shipment. If the unit is damaged, contact your dealer before using. Do Not remove the test plugs in the cover nor the motor housing.
2. Carefully read the literature provided to familiarize yourself with specific details regarding installation and use. These materials should be retained for future reference.

 <div style="border: 1px solid black; padding: 5px; display: inline-block;">WARNING</div> <p>SEE BELOW FOR LIST OF WARNINGS</p>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CAUTION</div> <p>SEE BELOW FOR LIST OF CAUTIONS</p>
---	---

1. To reduce the risk of electrical shock, a properly grounded receptacle or control box must be installed in accordance with the governing codes. Never remove ground pin from plug.
2. Make certain that the ground fault interrupter protected receptacle or control box is within the reach of the pump's power supply cord. DO NOT USE AN EXTENSION CORD. Extension cords that are too long or too light do not deliver sufficient voltage to the pump motor, and they could present a safety hazard if the insulation were to become damaged or the connection end were to fall into a damp or wet area.
3. Make sure the pump's electrical supply circuit is equipped with fuses or circuit breakers of proper capacity. A separate branch circuit is recommended, sized according to the National Electric Code for the current shown on the pump name plate.
4. **Testing for ground.** As a safety measure, each electrical outlet should be checked for ground using a circuit analyzer which will indicate if the power, neutral and ground wires are correctly connected to your outlet. If they are not, call a qualified licensed electrician.
5. FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING. If pump is wired direct, de-energize the circuit at the control box. Wear insulated protective shoes and do not stand in water. Pumps equipped with a 3-prong ground plug are designed to help protect against electrical shock. DO NOT, UNDER ANY CIRCUMSTANCES, REMOVE THE GROUND PIN.
6. Installation and servicing of the pump, electrical circuits and hardware should only be performed by a qualified licensed electrician.
7. **Risk of electrical shock.** Do not remove power supply cord and strain relief or connect conduit directly to the pump. If the supply cable is damaged, it must be replaced by the Manufacturer or an authorized Zoeller Service Station to avoid a hazard.
8. Pump contains oil which becomes pressurized and hot when operating. Allow 2½ hours after disconnecting before attempting service.
9. Pump is not intended for potable water due to possible contamination by oil contained in the pump.
10. **Risk of electric shock.** These pumps have not been investigated for use in swimming pools and marine areas.
11. Prop65 Warning for California residents: Cancer and Reproductive Harm- www.P65warnings.ca.gov.

1. Check to be sure your power source is capable of handling the voltage requirements of the motor, as indicated on the pump name plate.
 2. The installation of variable level float switches is the responsibility of the installing party, and care should be taken that the tethered float switch will not hang up on the pump apparatus or pit peculiarities and is secured so that the pump will shut off. It is recommended to use rigid pipe and fittings and the pit be 18" or larger in diameter.
 3. **Vent hole.** It is necessary that all submersible sump, effluent, and sewage pumps capable of handling various sizes of solid waste be of the bottom intake design to reduce clogging and seal failures. If a check valve is incorporated in the installation, a 3/16" vent hole must be drilled in the discharge pipe below the check valve and pit cover to purge the unit of trapped air. Vent hole should be checked periodically for clogging. The vent hole on a High Head application may cause too much turbulence. If you choose not to drill a vent hole, be sure the pump case and impeller is covered with liquid before connecting the pipe to the check valve. **NOTE: THE HOLE MUST BE BELOW THE BASIN COVER AND CLEANED PERIODICALLY.** Water stream will be visible when pump is operating.
 4. Pump should be checked frequently for debris and/or build up which may interfere with the float "on" or "off" position. Repair and service should be performed by an Authorized Zoeller Service Station only.
 5. Maximum operating temperature for standard model pumps must not exceed 130 °F (54 °C).
 6. Do not operate a pump in an application where the Total Dynamic Head is less than the minimum Total Dynamic Head listed on the Pump Performance Curves.
 7. For health reasons, do not unplug, turn off, or disable pump and use pump tank system as a way to fill up a sink or laundry tray, etc.
 8. Pumps must be installed in accordance with the National Electrical Code and all applicable local codes and ordinances. Pumps are not to be installed in locations classified as hazardous in accordance with National Electric Code, ANSI, NFPA 70.
- NOTE:** Pumps with the "UL" mark and pumps with the "US" mark are tested to UL standard UL778. CSA certified pumps are certified to CSA standard C22.2 No. 108.



▲ WARNING FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING. Single phase pumps are supplied with a 3-prong grounded plug to help protect you against the possibility of electrical shock. DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN. The 3-prong plug must be inserted into a mating 3-prong grounded receptacle. If the installation does not have such a receptacle, it must be changed to the proper type, wired and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances. Three phase pumps require motor starting devices with motor overload protection. Pumps must be installed in accordance with the National Electrical Code and all applicable local codes and ordinances. Pumps are not to be installed in locations classified as hazardous in accordance with National Electrical Code, ANSI/NFPA 70.



▲ WARNING "Risk of electrical shock" Do not remove power supply cord and strain relief or connect conduit directly to the pump.



▲ WARNING Installation and servicing of electrical circuits and hardware should be performed by a qualified licensed electrician.



▲ WARNING Pump installation and servicing should be performed by a qualified person.



Pump should be checked frequently for debris and/or build up which may interfere with the float "on" or "off" position. Repair and service should be performed by an Authorized Service Station only.



Dewatering and effluent sump pumps are not designed for use in pits handling raw sewage.



Maximum operating temperature for cast iron pumps must not exceed 130 °F (54 °C). Thermoplastic pumps must not exceed 110 °F (43 °C).



CSA certified pumps must be operated submerged with "off - on" level controls.



Submersible pumps must be operated in an upright position. Do not attempt to start pump when tilted or laying on its side.



Do not operate a pump in an application where the Total Dynamic Head is less than the minimum Total Dynamic Head listed on the Head/Capacity Curves.

LIMITED WARRANTY

Manufacturer warrants, to the purchaser and subsequent owner during the warranty period, every new product to be free from defects in material and workmanship under normal use and service, when properly used and maintained, for a period of one year from date of purchase by the end user, or 18 months from date of original manufacture of the product, whichever comes first. Parts that fail within the warranty period, one year from date of purchase by the end user, or 18 months from the date of original manufacture of the product, whichever comes first, that inspections determine to be defective in material or workmanship, will be repaired, replaced or remanufactured at Manufacturer's option, provided however, that by so doing we will not be obligated to replace an entire assembly, the entire mechanism or the complete unit. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to and there shall be no warranty for any material or product that has been disassembled without prior approval of Manufacturer, subjected to misuse, misapplication, neglect, alteration, accident or uncontrollable act of nature; that has not been installed, operated or maintained in accordance with Manufacturer's installation instructions; that has been exposed to outside substances including but not limited to the following: sand, gravel, cement, mud, tar, hydrocarbons, hydrocarbon derivatives (oil,

gasoline, solvents, etc.), or other abrasive or corrosive substances, wash towels or feminine sanitary products, etc. in all pumping applications. The warranty set out in the paragraph above is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products.

Contact Manufacturer at, 3649 Cane Run Road, Louisville, Kentucky 40211, Attention: Customer Support Department to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

MANUFACTURER EXPRESSLY DISCLAIMS LIABILITY FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR BREACH OF EXPRESSED OR IMPLIED WARRANTY; AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY.

Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

In instances where property damages are incurred as a result of an alleged product failure, the property owner must retain possession of the product for investigation purposes.

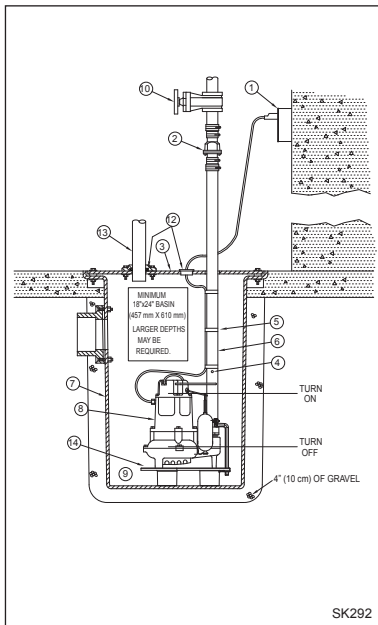
EASY DO'S & DON'T'S FOR INSTALLING A SUMP PUMP

1. **DO** read all installation material with the unit.
2. **DO** inspect unit for any visible damage caused by shipping. Contact dealer if unit appears to be damaged.
3. **DO** remove all debris from the basin. Be sure that the pump will have a hard, level surface beneath it. **DO NOT** install on sand, gravel or dirt.
4. **DO** be sure that the area is large enough to allow proper clearance for the level control switch(es) to operate properly.
5. **DO Always Disconnect Pump From Power Source Before Handling.** **DO** always connect to a separately protected and properly grounded circuit. **DO NOT** ever cut, splice, or damage power cord (Only splice in a watertight junction box). **DO NOT** carry or lift pump by its power cord. **DO NOT** use an extension cord.
6. **DO** install a check valve and a union in the discharge line.

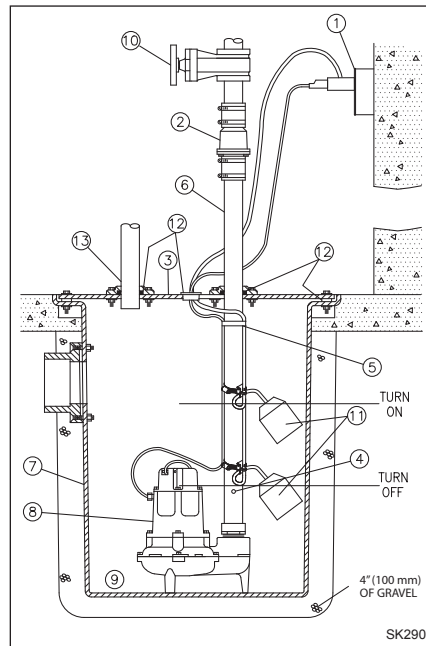
7. **DO NOT** use a discharge pipe smaller than the pump discharge.
7. **DO NOT** utilize this unit for pumping gasoline or other hazardous liquids.
8. **DO** test pump immediately after installation to be sure the system is working properly.
9. **DO** review all applicable governing codes and verify that the installation conforms to each of them.
10. **DO** consult manufacturer for clarifications or questions.
11. **DO** consider a two-pump system with an alarm where an installation may become overloaded or primary pump failure would result in property damages.
12. **DO** consider a D.C. Backup System where a sump or dewatering pump is necessary for the prevention of property damages from flooding due to A.C. power disruptions, mechanical or electrical problems or system overloading.
13. **DO** inspect and test system for proper operations at least every 3 months.

RECOMMENDED INSTALLATION FOR ALL APPLICATIONS

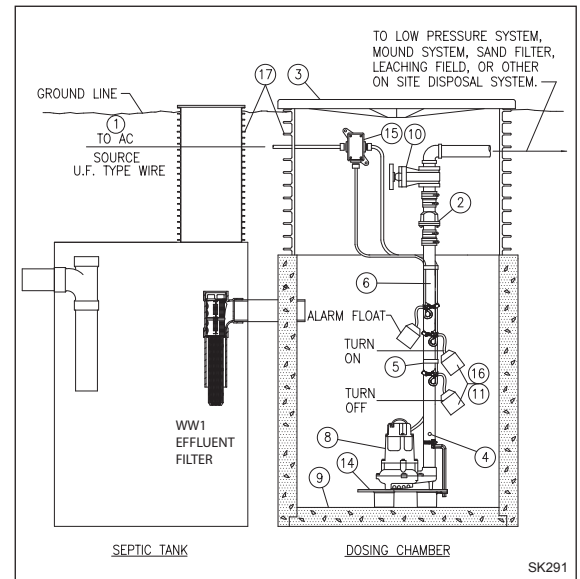
1. Electrical wiring and protection must be in accordance with National Electrical Code and any other applicable state and local electrical requirements.
 2. Install proper check valve, preferably just above the basin to allow easy removal of the pump for cleaning or repair. See (4) below.
 3. All installations require a basin cover to prevent debris from falling into the basin and to prevent accidental injury.
 4. When a check valve is installed, drill a 3/16" dia. hole in the discharge pipe even with the top of the pump. **NOTE: THE HOLE MUST ALSO BE BELOW THE BASIN COVER AND CLEANED PERIODICALLY.** Water stream will be visible from this hole during pump run periods.
 5. Securely tape or clamp power cord to discharge pipe, clear of the float mechanism(s).
 6. Use full-size discharge pipe.
 7. Basin must be in accordance with applicable codes and specifications.
 8. Pump must be level and float mechanism(s) clear of sides of basin before starting pump.
 9. Basin must be clean and free of debris after installation.
 10. Gate Valve or Ball Valve to be supplied by installer and installed according to any and all codes.
 11. Locate float switches as shown in sketches. The best place for the "off" point is above the motor housing and positioned 180° from the inlet. Never put "off" point below discharge on pump (Sewage & Effluent only). **NOTE: FOR AUTOMATIC PUMPS, USE DEWATERING INSTALLATION SKETCH.**
 12. Gas tight seals required to contain gases and odors.
 13. Vent gases and odors to the atmosphere through vent pipe (Sewage & Dewatering only).
 14. Install Pump Stand under pump to provide a settling basin. (Effluent & Dewatering only.)
- For Effluent Only:**
15. Wire pump to power through a watertight junction box or watertight splice. **NOTE: Watertight enclosure is a must in damp areas.**
 16. Refer to SSPMA Effluent Sizing Manual for determining "on" - "off" switches.
 17. Septic tank risers must be used for easy pump and filter access.



TYPICAL DEWATERING INSTALLATION



TYPICAL SEWAGE INSTALLATION



TYPICAL EFFLUENT INSTALLATION

All installations must comply with all applicable electrical and plumbing codes, including, but not limited to, National Electrical Code, local, regional, and/or state plumbing codes, etc. Not intended for use in hazardous locations.

SINGLE PHASE WIRING INSTRUCTIONS



▲ WARNING FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING. Single phase pumps are supplied with a 3-prong grounded plug to help protect you against the possibility of electrical shock. **DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN.** The 3-prong plug **must** be inserted into a mating 3-prong grounded receptacle. If the installation does not have such a receptacle, it must be changed to the proper type, wired and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances.

▲ WARNING "Risk of electrical shock" Do not remove power supply cord and strain relief or connect conduit directly to the pump.

▲ WARNING Installation and checking of electrical circuits and hardware should be performed by a qualified licensed electrician.

▲ WARNING Units supplied without a plug (single and three phase) and single phase nonautomatic units with a 20 amp plug must have a motor control and liquid level control provided at time of installation. The control device should have suitable voltage, ampere, frequency, grounding and horsepower rating for the pump to which it is connected.

SERVICE CHECKLIST



▲ WARNING **ELECTRICAL PRECAUTIONS** - Before servicing a pump, always shut off the main power breaker and then unplug the pump - making sure you are wearing insulated protective sole shoes and not standing in water. Under flooded conditions, contact your local electric company or a qualified licensed electrician for disconnecting electrical service prior to pump removal.

▲ WARNING Submersible pumps contain oils which becomes pressurized and hot under operating conditions - **allow 2-1/2 hours after disconnecting before attempting service.**

CONDITION	COMMON CAUSES
A. Pump will not start or run.	Check fuse, low voltage, overload open, open or incorrect wiring, open switch, impeller or seal bound mechanically, defective capacitor or relay when used, motor or wiring shorted. Float assembly held down. Switch defective, damaged, or out of adjustment.
B. Motor overheats and trips overload or blows fuse.	Incorrect voltage, negative head (discharge open lower than normal) impeller or seal bound mechanically, defective capacitor or relay, motor shorted.
C. Pump starts and stops too often.	Float tight on rod, check valve stuck or none installed in long distance line, overload open, level switch(s) defective, sump pit too small.
D. Pump will not shut off.	Debris under float assembly, float or float rod bound by pit sides or other, switch defective, damaged or out of adjustment.
E. Pump operates but delivers little or no water.	Check strainer housing, discharge pipe, or if check valve is used vent hole must be clear. Discharge head exceeds pump capacity. Low or incorrect voltage. Incorrect motor rotation. Capacitor defective. Incoming water containing air or causing air to enter pumping chamber.
F. Drop in head and/or capacity after a period of use.	Increased pipe friction, clogged line or check valve. Abrasive material and adverse chemicals could possibly deteriorate impeller and pump housing. Check line. Remove base and inspect.

If the above checklist does not uncover the problem, consult the factory - Do not attempt to service or otherwise disassemble pump. Service must be performed by an Authorized Service Station.