JIM MURRAY, INC.
Your Partners in Pumping Since 1958

N116 W18455 Morse Drive • Germantown, WI 53022 • 1-262-253-1353

PVL-EC-AVF
Manual

EN ENGLISH

This owner's manual will provide you with information required to safely own and operate Jim Murray, Inc. EC Series pumps. The pump you have purchased is a submersible effluent pump for use in basins, effluent, wastewater, and other non-explosive, non-corrosive, non-abrasive liquids with up to 1/2" spherical solids.

The Jim Murray, Inc. EC Series unit you have purchased is of the highest quality workmanship and material. It has been engineered to give you long and reliable service.

The Jim Murray, Inc. EC Series pumps are carefully packaged, inspected, and tested to ensure safe operation and delivery. When you receive your pump, examine it carefully to determine that there are no broken or damaged parts that may have occurred during shipment. If damage has occurred, make notation and notify the firm that you purchased the pump from. They will assist you in replacement or repair, if required.

READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THE JIM MURRAY, INC. EC SERIES PUMP. KNOW THE PUMP APPLICATION, LIMITATIONS, AND POTENTIAL HAZARDS. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE! RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

SAFETY GUIDELINES

1. Disconnect the pump from the power source before servicing or removing any component.
2. Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. DO NOT use in explosive atmospheres or hazardous locations as classified by NEC, ANSI/NFPAT. Pump should be used with liquids compatible with pump component materials.
3. Do not handle the pump with wet hands or when standing on a wet or damp surface or in water.
4. Do not pull the pump out of the water by the power cord when the pump is operating or connected to power source.
5. This pump is supplied with a grounding conductor and/or grounding-type attachment plug. To reduce the risk of electrical shock, be certain that it is connected to a properly grounded grounding-type receptacle.
6. The National Electric Code requires a ground fault circuit interrupter (GFCI) be installed in the branch circuit supplying fountain equipment, pools, etc.
7. In any installation where property damage and/or personal injury might result from an inoperative or leaking pump due to power outages, discharge line blockage, or any other reason, a backup system(s) and/or alarm should be used.
8. Support pump and piping when assembling and when installed. Failure to do so may cause piping to break, pump to fail, motor bearing failures, etc.
9. This pump's motor housing is filled with a dielectric oil for motor heat transfer and lifetime lubrication of the bearings. This oil is non-toxic to aquatic life. However, suffocation can occur if oil is left on the water surface. If oil escapes the motor housing it can be removed from the surface quickly by placing newspapers on the water surface to soak up the oil.
10. The pump motor is equipped with an automatic resetting thermal protector and may restart unexpectedly. Protector tripping is an indication of motor overloading as a result of excessively high or low voltage, inadequate wiring, incorrect motor connections, or a defective motor or pump.

ELECTRICAL CONNECTIONS

1. Check the pump label for proper voltage required. Do not connect to voltage other than that shown.
2. If pump is supplied with a 3-prong electrical plug, the third prong is to ground the pump to prevent possible electrical shock hazard. DO NOT REMOVE the third prong from the plug. A separate branch circuit is recommended. Do not use an extension cord. Do not cut plug from the cord. If the plug is cut or the cord is shortened, then this action will void the warranty.
3. Check local electrical and building codes before installation. The installation must be in accordance with their regulations as well as the most recent National Electrical Code (NEC).
4. To conform to the National Electrical Code, all pumps must be wired with 14 AWG or larger wire. For runs to 250', 14 AWG wire is sufficient. For longer runs, consult a qualified electrician or the factory.
5. Pump should be connected or wired to its own circuit with no other outlets or equipment in the circuit line. Fuses and circuit breaker should be of ample capacity in the electrical circuit.
6. Do not modify the pump power cord except to shorten it to fit into a control panel. Any splice between the pump and the control panel must be made within a junction box and mounted outside of the basin and comply with the National Electrical Code.

CONSULT OWNER'S MANUAL ILLUSTRATIONS FOR PROPER ASSEMBLY AND DISASSEMBLY OF YOUR JIM MURRAY, INC. EC SERIES PUMP.

OPERATION

1. Install pump in a suitable basin that is at least 18" in diameter and 22" deep. Check and follow local plumbing codes.
2. Pump features a 1-1/2" female NPT discharge.
3. Clean debris and inspect basin and sump for obstructions. Pump must be placed on a hard level surface. Never place pump directly on clay, earth or gravel surfaces. Clean any sediment, mud or sand from basin.
4. A free-flow check valve that will easily pass solids should be used in the discharge line to prevent backflow of liquid into the basin.

   CAUTION: For the best performance of check valves, when handling solids install in a horizontal position or at an angle of no more than 45°.
5. Do not restrict the intake side of these pumps. Restricting the intake may cause damage to the seal and may starve the pump. If you require reduced flow rates, then place a valve on the discharge side of the pump or if flexible vinyl tubing is used, a clamp can be used on the tubing to restrict the flow.

6. Do not let the unit run dry (without liquid). It is designed to be cooled by pumping fluid. You may damage the seal and the motor may fail if the pump is allowed to run dry.
7. If the unit is going to be idle for a period of time, follow the cleaning instructions outlined in the next section. Do not let the unit freeze in the wintertime. This may cause cracking or distortion that may destroy the unit.

SERVICE INSTRUCTIONS

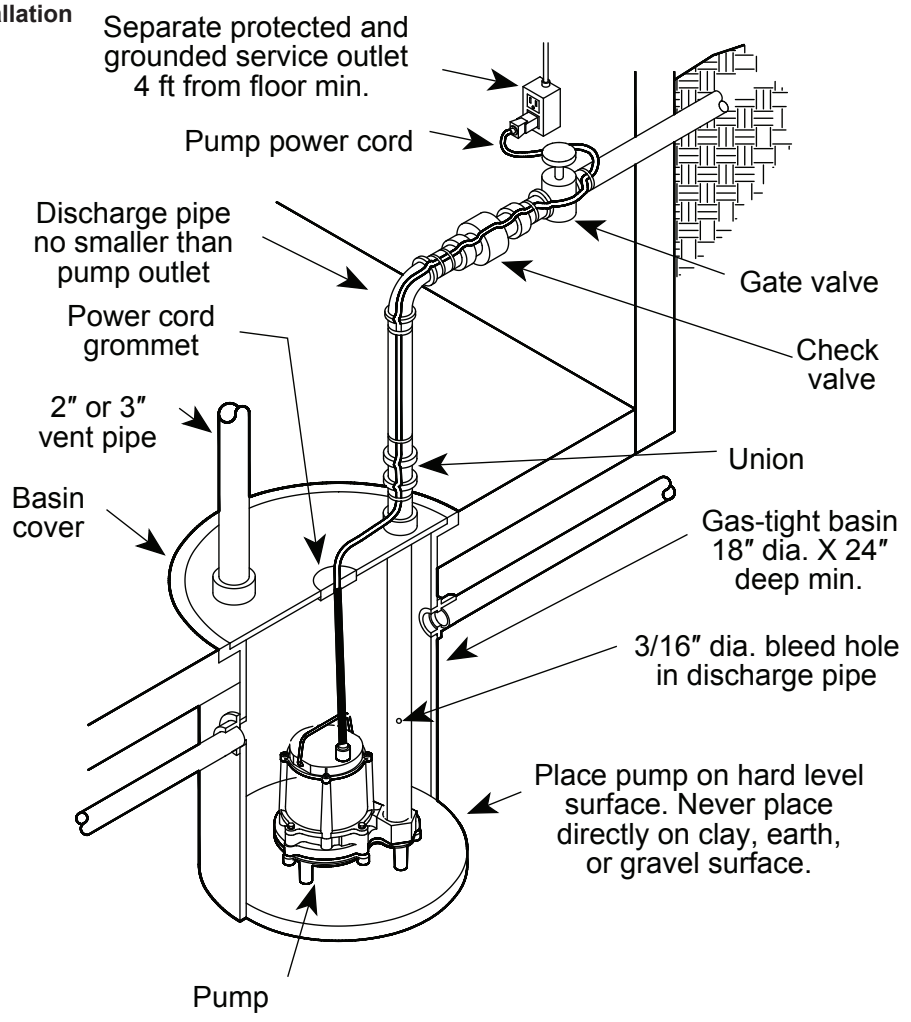
MAKE CERTAIN THE UNIT IS DISCONNECTED FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT!

1. If pump does not operate properly, consult the troubleshooting chart. If trouble cannot be located with these steps shown, consult your pump dealer or installer (plumber).
2. This unit is permanently lubricated. Oiling is not required. Do not, in any case, open the sealed portion of the unit or remove housing screws.
3. Periodic cleaning of the pump parts will prolong the LIFE and EFFICIENCY of the pump. Refer to the assembly and disassembly of the pumping head.
4. Remove screws that hold base to volute and clean impeller and volute passage. Do not use strong solvents on impeller.
5. Be sure impeller turns freely after cleaning.
6. **WARNING:** DO NOT REMOVE IMPELLER. REMOVAL OF IMPELLER REQUIRES SPECIAL TOOLS AND IS TO BE DONE ONLY BY AN AUTHORIZED SERVICE CENTER. DO NOT REMOVE MOTOR HOUSING COVER. WARRANTY IS VOID IF MOTOR HOUSING COVER, IMPELLER OR SEALS HAVE BEEN REMOVED.
7. Be certain power cord is in good condition and contains no nicks or cuts.

TROUBLESHOOTING

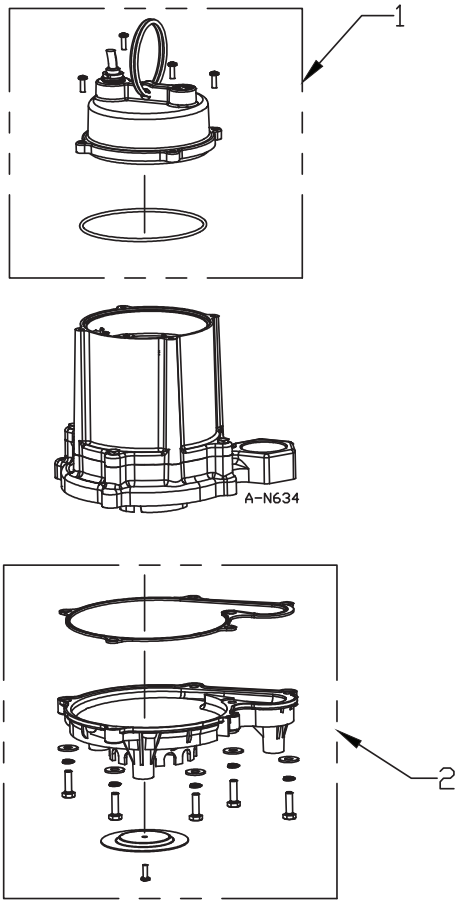
PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
Pump does not turn on.	Pump not plugged in.	Plug in pump.
	Circuit breaker shut-off or fuse removed.	Turn on circuit breaker or replace fuse.
	Defective motor.	Have pump serviced by authorized service center.
Pump will not shut off.	Pump is air locked.	Shut power off for approximately 1 minute, then restart. Repeat several times to clear air from pump.
	Liquid inflow matches pump capacity.	Larger pump required.
Pump runs but does not discharge liquid.	Check valve installed backwards.	Check flow indicating arrow on check valve body to ensure it is installed properly.
	Check valve stuck or plugged.	Remove check valve and inspect for proper operation.
	Lift too high for pump.	Check rating table.
	Inlet to impeller plugged.	Pull pump and clean.
	Pump is air locked.	Shut power off for approximately 1 minute, then restart. Repeat several times to clear air from pump.
Pump does not deliver rated capacity.	Lift too high for pump.	Check rated pump performance.
	Low voltage, speed too slow.	Check for proper supply voltage to make certain it corresponds to nameplate voltage.
	Impeller or discharge pipe is clogged.	Pull pump and clean. Check pipe for scale or corrosion.
	Impeller wear due to abrasives.	Replace worn impeller.
Pump cycles continually.	No check valve in long discharge pipe allowing liquid to drain back into sump.	Install a check valve in discharge line.
	Check valve leaking.	Inspect check valve for correct operation.
	Basin too small for inflow.	Install larger basin.

Figure 1 - Typical Installation



REPLACEMENT PARTS		
ITEM #	**DESCRIPTION**	**BALLOON NUMBER**
110970103	Cover Assembly, 115 V, Manual, 20' Cord	1
110970401	Volute Base, Plastic, with Gasket	2

Figure 2



THREE (3) YEAR LIMITED WARRANTY
SUMP, EFFLUENT, AND RESIDENTIAL SEWAGE

INTRODUCTION

Jim Murray, Inc. EC Series pumps are recommended for use in sumps, basins or lift stations and suitable for pumping basement drainage water, effluent, wastewater and other non-explosive, non-corrosive, non-abrasive liquids not above 140 °F with 1/2" solids handling ability. (NOT TO BE USED FOR SEWAGE WATER EXCEPT TO PUMP SEPTIC TANK EFFLUENT.)

Jim Murray, Inc. EC Series pumps are guaranteed to be in perfect condition when they leave our factory. During the time periods and subject to the conditions hereinafter set forth, Jim Murray, Inc. will repair or replace to the original user or consumer any portion of your new Jim Murray, Inc. product which proves defective due to materials or workmanship of Jim Murray, Inc. Contact your nearest Jim Murray, Inc. dealer for warranty service. At all times Jim Murray, Inc. shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts, or components. Damage due to lightning or conditions beyond the control of Jim Murray, Inc. is NOT COVERED BY THIS WARRANTY.

WARRANTY PERIOD

PUMPS: 36 months from date of purchase.

LABOR, ETC. COSTS: Jim Murray, Inc. shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or affixing any Jim Murray, Inc. product, part or component thereof.

THIS WARRANTY WILL NOT APPLY:

1) to defects or malfunctions resulting from failure to properly install, operate, or maintain the unit in accordance with printed instructions provided.
2) to failures resulting from abuse, accident or negligence.
3) to normal maintenance services and the parts used in connection with such service
4) to units which are not installed in accordance with applicable local codes, ordinances and good trade practices.
5) unit is used for purposes other than for what it was designed and manufactured.
6) If pump exposed to but not limited to the following: sand, gravel, cement, grease, plaster, mud, tar, hydrocarbons, or hydrocarbon derivatives (oil, gasoline, solvents, etc.) or other abrasive or corrosive substances.
7) if pump has been used for continuous pumping of suitable liquids above 140 °F.
8) if power cord has been cut or spliced
9) if pump has been dismantled by customer. (Dealer only can dismantle pump for field service.)

RETURN OR REPLACED COMPONENTS: Any item to be replaced under the Warranty must be returned to Jim Murray, Inc. or such other place as Jim Murray, Inc. may designate, freight prepaid.

PRODUCT IMPROVEMENTS: Jim Murray, Inc. reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such change or improvement.

DISCLAIMER: Any oral statements about the product made by the seller, the manufacturer, the representatives or any other parties, do not constitute warranties, shall not be relied upon by the user, and are not part of the contract for sale. Seller's and manufacturer's only obligation, and buyer's only remedy, shall be the replacement and/or repair by the manufacturer of the product as described above. Neither seller nor the manufacturer shall be liable for any injury, loss or damage, direct, incidental or consequential (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss), arising out of the use or the inability to use the product, and the user agrees that no other remedy shall be available to it. Before using, the user shall determine the suitability of the product for his intended use, and user assumes all risk of liability whatsoever in connection therewith. The warranty and remedy described in this limited warranty is an EXCLUSIVE warranty and remedy and is IN LIEU OF any other warranty or remedy, expressed or implied, which other warranties and remedies are hereby expressly EXCLUDED, including but not limited to any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow the exclusive 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 the absence of other suitable proof of the installation date, the effective date of this warranty will be based upon the date of manufacture plus one year. Direct all notices, etc., to: Jim Murray, Inc., N116 W18455 Morse Dr., Germantown, WI 53022.

DETERMINATION OF UNIT DATE OF MANUFACTURE: (9-87) month and year stamped on pump and/or serial number on pump nameplate coded to indicate year of manufacture.

For Parts, Repair or
Technical Assistance, please contact 262.253.1353

www.jimmurrayinc.com
sales@jimmurrayinc.com

SJE VerticalMaster® Pump Switch Installation Instructions

This mechanically activated pump switch is designed for direct control of pumps in non-potable water and sewage applications. It works well in applications with limited space such as: small sump chambers, effluent applications, and laundry trays, as well as in large tanks.

The SJE VerticalMaster® pump switch is not sensitive to turbulence.

It is available for pump down applications only.

SJE VERTICALMASTER® PUMP SWITCH

- Mechanically activated.
- Heavy-duty contacts.
- Adjustable pumping range of .75 to 6.5 inches (2 to 17 cm).
- Five-year limited warranty.
- Maximum operating temperature 125ºF.

U.S. Patent No. 5,155,311
Canadian Patent No. 2,060,748

PREVENTATIVE MAINTENANCE

- Periodically inspect the product. Check that the cable has not become worn or that the housing has not been damaged so as to impair the protection of the product. Replace the product immediately if any damage is found or suspected.
- Periodically check to see that the float and rod are free to move and operate the switch.
- Use only SJE-Rhombus® replacement parts.

SJE-RHOMBUS® FIVE-YEAR LIMITED WARRANTY

SJE-RHOMBUS® warrants to the original consumer that this product shall be free of manufacturing defects for five years after the date of consumer purchase. During that time period and subject to the conditions set forth below, **SJE-RHOMBUS®** will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of **SJE-RHOMBUS®**.

THIS EXPRESS WARRANTY DOES NOT APPLY TO THE MOTOR START KIT COMPONENT. SJE-RHOMBUS® MAKES NO WARRANTIES OF ANY TYPE WITH RESPECT TO THE MOTOR START KIT.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of **SJE-RHOMBUS®**; **(B)** to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; **(C)** to failures resulting from abuse, misuse, accident, or negligence; **(D)** to units which are not installed in accordance with applicable local codes, ordinances, or accepted trade practices, and **(E)** to units repaired and/or modified without prior authorization from **SJE-RHOMBUS®**.

Some states do not allow limitations on how long an implied warranty lasts, 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.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to **SJE-RHOMBUS®**, or such place as designated by **SJE-RHOMBUS®**.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOMBUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.

NOTICE!
Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment to ensure that employees will not be exposed to health hazards in handling said material. All applicable laws and regulations shall apply.

⚠ WARNING — **ELECTRICAL SHOCK HAZARD**
Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠ WARNING — **EXPLOSION OR FIRE HAZARD**
Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

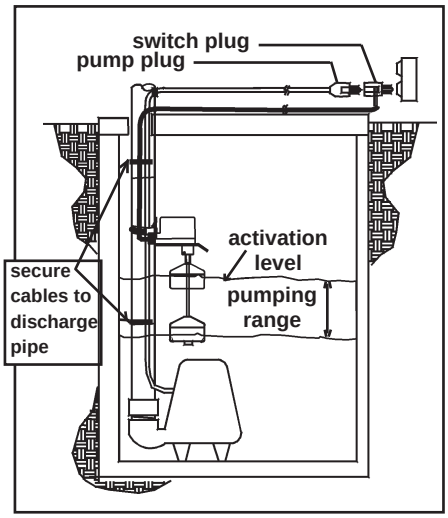
For detailed specifications on this product, or for the complete line of SJE-Rhombus® panel, alarm, and switch products, visit our web-site at www.sjerhombus.com.

MOUNTING THE SWITCH

Warning: Do not install switch in direct line of incoming liquid.

1. Determine desired activation level and pumping range as shown in Figure A. Pumping range can be adjusted by moving the float stop up or down the rod.
2. Insert hose clamp through slots in mounting bracket as shown in Figure B.
3. Position hose clamp around discharge pipe with bracket gripping tabs against pipe. Cable should remain outside of hose clamp.
4. Tighten the hose clamp securely.
5. Secure pump cable and switch cable to discharge pipe as shown in Figure A.

Figure A



PIGGY-BACK PLUG INSTALL

- Electrical outlet must not be located in pump chamber.
- Electrical outlet voltage, piggy-back plug voltage, and pump voltage must match.

1. Follow steps 1 through 5 of "Mounting The Switch."
2. Insert the switch's piggy-back plug into outlet.
3. Plug pump into piggy-back plug as shown in Figure A.
4. Check installation. Allow system to cycle to ensure proper operation.

Figure B

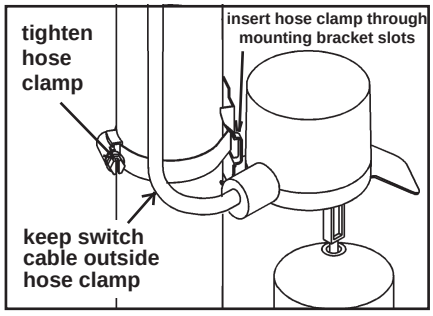
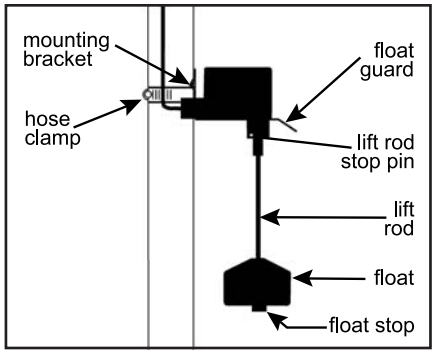
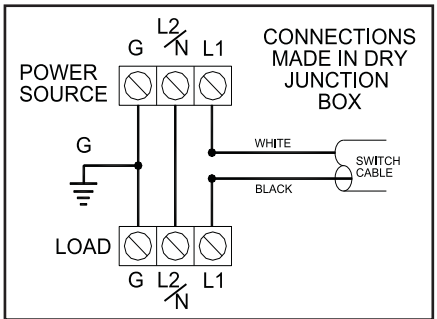


Figure C



DIRECT WIRE INSTALL

1. Follow steps 1 through 5 of "Mounting The Switch."
2. Wire switch as shown below.
3. Check installation. Allow system to cycle to insure proper operation.



⚠ WARNING

In 230 VAC installations, one side of the line going to the load is always **HOT**. This condition exists if the switch is on or off. Install double pole disconnect on all 230 VAC circuits.

Ensure cable connections are performed in a **dry** junction box or other watertight seal that seals both conductors and cable jacket. Failure to do so could result in electrical shock hazard and/or water traveling down cable and entering the switch. Failure to guard against this may affect switch performance.

SJE-Rhombus®

22650 County Highway 6 ■ P.O. Box 1708 ■ Detroit Lakes, Minnesota 56502 USA
1-888-DIAL-SJE (1-888-342-5753) ■ Phone: 218-847-1317 ■ Fax: 218-847-4617 ■ E-mail: customer.service@sjerhombus.com

Instl. Instr. PN 1011981J

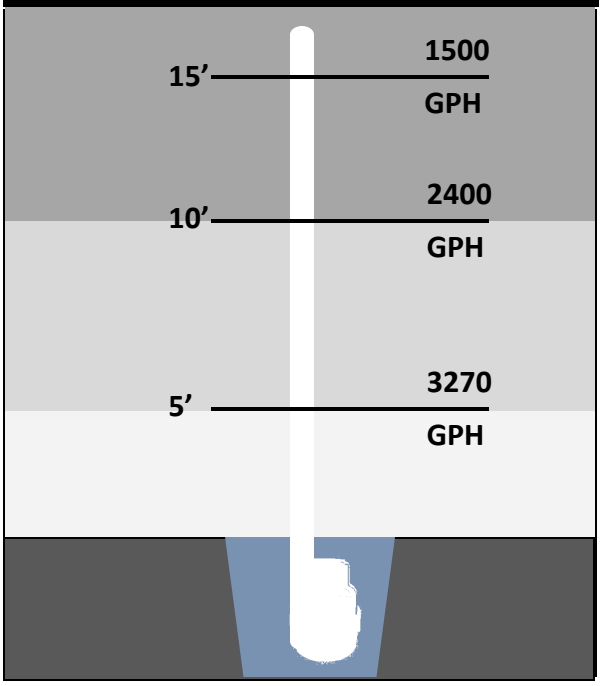
ALPHA
BATTERY BACKUP SYSTEM

HEAVY DUTY
12 VOLT DC
BATTERY BACKUP SYSTEM

INSTALLATION AND OPERATING INSTRUCTIONS

MODEL# PZM-ALPHA-1

PUMPING CAPACITY



Thank you for choosing the SumpTek Alpha Battery Backup System. In a few easy steps your system will be operational and ready for use. **Read and save these instructions**. This manual contains important information about your system. Failure to follow safety instructions and warnings could result in injury or death. Read all the instructions before installing or using the system. Always disconnect batteries and AC power source before storing, handling, or making adjustments.

CAUTION

⚠ **DANGER :** Water and electricity can be dangerous if certain precautions are not adhered to. This pump is designed to operate safely in a water environment; however, improper use and/or installation can result in personal harm from electrical shock. Please pay attention to the following warnings.

⚠ **WARNING:** Never touch any electrical device, including this pump, when it is touching water, in water, or even in a moist environment. Always unplug (disconnect the electricity) when working on or installing the unit.

⚠ **WARNING** Always unplug the main pump when installing or servicing the backup pump or float switch to avoid electric shock.

⚠ **WARNING** Do not use in pits handling raw sewage, salt water or other hazardous materials.

⚠ **WARNING** Do not use an extension cord. The electrical outlet should be within the length of the pumps power cord, and at least 4 feet above the floor.

NOTE: Do not use in raw sewage, sanitary, chemical or saltwater applications.

For Technical Assistance Call:
1-800-407-2076 between 8am to 5pm CST

BATTERY PRECAUTIONS

Use extreme caution when installing, servicing and disposing of batteries. All performance testing on this battery backup system was done with a 120AH maintenance free battery (Group 27), using any battery with a lower rating will decrease both runtime and pumping performance.

⚠ **CAUTION:** Do not dispose of batteries in a fire. The batteries may explode. CAUTION: Do not open or mutilate the batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

⚠ **CAUTION:** A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries.

1. Remove watches, rings, or other metal objects.

2. Use tools with insulated handles.

3. Do not lay tools or metal objects on top of batteries.

4. Wear safety goggles and a face shield.

⚠ **CAUTION:** If electrolyte contacts the skin, wash it off immediately. If electrolyte contacts the eyes, flush thoroughly and immediately with water. Seek medical attention. Spilled electrolyte should be washed down with a suitable acid neutralizing agent.

⚠ **CAUTION:** Lead acid batteries can present a risk of fire:

1. **Do not smoke when near batteries**
2. **Do not cause flame or spark in battery area.**
3. **Discharge static electricity from body before touching batteries by first touching a grounded metal surface.**
4. **See battery manufacturers' installation manual for additional installation maintenance, and safety instructions.**

INSTALLATION

Follow these step by step instructions to install the Alpha Battery Backup System. If you have any question or need assistance please call 1-800-407-2076.

TOOLS NEEDED:

- Pipe wrench
- Flat head screw driver
- Hand saw
- Tape measure

MATERIALS NEEDED:

- 1.5" Check valve
- Appropriate PVC fittings
- PVC primer and glue

PUMP INSTALLATION:

⚠ **CAUTION:** Make sure the pump is disconnected from any power source prior to installation.

1. Find a suitable position for the pump that is away from other equipment that can obstruct its operation such as the primary pump, switch or drain tile inlet
2. When sharing the same discharge pipe you must use a separate dedicated check valves with each pump to prevent the water from cycling back into the pit as shown in (Figure A) below
3. Using PVC piping and check valve connect the pump to the existing or a dedicated discharge pipe as shown in (Figure B).

FIGURE A:
SINGLE DISCHARGE

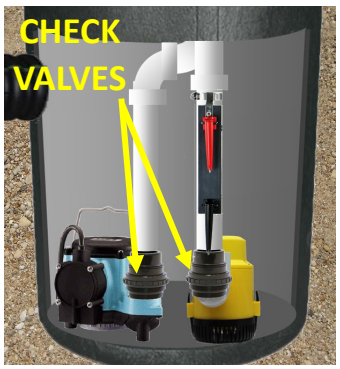


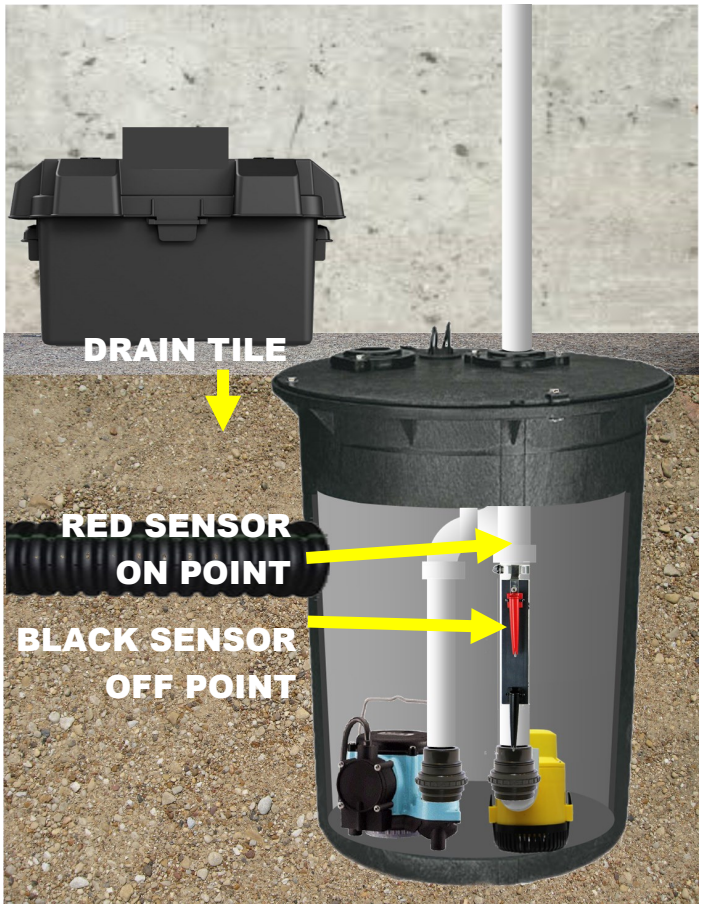
FIGURE B:
DEDICATED DISCHARGE

SENSOR INSTALLATION

IMPORTANT: The sensors will turn the pump ON when the water touches the bottom metal tip of the **RED** sensor and OFF once the water reaches the bottom metal tip on the **BLACK** sensor. Keep this in mind when you are positioning the sensors onto the discharge pipe.

For ease of installation and maintenance the ON and OFF sensors for the Model: PZM-Alpha-1 have been pre-mounted to the bracket with a stainless steel house clamp.

NOTE: the bottom of the red sensor should be positioned below the drain tile and above the normal ON point of the primary pump. Mount the sensors away from the incoming water to avoid false triggering of the system as shown in figure below



NOTE: Basins with high mineral content or water softener discharger may require additional bracket kit for sensors (Part# STBRKT3)

CONTROLLER INSTALLATION

1. Pull the battery cables through the large circle opening on the face of the battery box
2. Align the predrilled holes on the controller to the holes on the battery box.
3. Push the bolts through the controller holes into the battery box holes and tighten wing nuts.
4. Make sure the controller is securely fastened to the battery box

CONNECTING THE BATTERY:

1. Follow all safety instructions and precautions in both this manual and per the battery manufacture.
2. Place the battery into the battery box with the posts facing the front of the box.
3. Connect the black negative (-) ring terminal to the negative (-) post on the battery.
4. Connect the red positive (+) ring terminal to the positive (+) post on the battery.
5. Fasten securely using an insulated wrench
6. The system should now come on

CONNECTING THE COMPONENTS:

PUMP: Connect the pump cable to the modular connection on the face of the controller marked pump.

SENSORS: Connect the RED sensor into the Top Sensor (ON) receptacle and the BLACK sensor into the Bottom Sensor (OFF) receptacle on the left side of controller.

CHARGER: Connect the charger unit into the AC Power receptacle on the left side of the controller and then into the wall.

OPERATION

WHEN THE SYSTEM OPERATES:
In any event that your primary sump pump can not operate due to failure or loss of power the Alpha Battery Backup System will operate using battery power to prevent flood damage.

HOW THE SYSTEM OPERATES:
Once the water reaches the metal tip of the top **RED** sensor the pump will turn ON and pump down until it reaches the metal tip of the bottom **BLACK** sensor and shut OFF. This is known as the pump cycle. If the bottom sensor fails, the top sensor will operate the pump in 12 second cycles.

COMMON ALARMS

PUMP IS RUNNING
When the pump operates you will hear an audible alarm. Check the system to make sure it is operational and in good working order. If the power is on, check your primary pump, outlet and breaker for failure. To silence the alarm simply press the silence button one time until you see the screen flash (do not hold the button down). This will silence the alarm for a period of 24hrs.

AC POWER FAILURE:
In the event of a power failure the unit will wait 15 minutes after it detects loss of power to sound an alarm. This will avoid nuisance alarms when the power turns off only for a few seconds or minutes. If the system detects water during the 15 minute period an alarm will sound to indicate the pump is running.

Once power is restored the unit will begin to charge the battery and then go back to stand-by mode.

IMPORTANT NOTE:
For every different alert the alarm will sound, even if you pressed the silence button. The system only alerts when it recognizes potential threats that may lead to flooding.

EMERGENCY ALARMS

LOW BATTERY:
When the system has been running for an extended period of time the battery will drain down. Once it reaches 11.2V an alarm will sound and "Low Battery" will appear on the LCD screen. The pump will still operate but take caution and be prepared with an alternate source of power such as another fully charged battery or a generator to plug your primary pump into.

CRITICAL BATTERY VOLTAGE:
If your system sounds an alarm for critical battery voltage, the battery is critically low and the system is about to stop pumping.

HIGHWATER ALARM:
If the pump is running continuously and the storm water is not dropping below the red sensor after 30 seconds, the system will sound an alarm and the LCD screen will display High Water. **This may result in flooding.**

BLOWN FUSE:
Although it is not common, a blown fuse will prevent the system from operating. Replace the fuse with another 20A fuse as soon as possible. Check the pump and battery connections.

TESTING

SELF TESTING:
Once a week the system will run a diagnostic test of the entire system. During the self test the pump will run for a period of 10 seconds to ensure proper operation. If there is an issue detected during the self test an alarm will sound and a message will be displayed on the LCD screen to indicate the type of failure.

MANUAL TESTING:
To manually test your system simply hold down the Alarm Silence/Test Button for 10 seconds. The LCD screen will flash and indicate system testing. Once the diagnostic test is complete the LCD will display System OK or indicate failure if present.

SILENCING & TESTING

Silencing the alarm	To silence the alarm, press and release the alarm silence/test button once (do not hold). This will deactivate the alarm for a period of 24hrs.
Manually testing the system	Hold the Alarm Silence/Test button down for 10 seconds, the system will start a diagnostic test and run the pump for 10 seconds
Manually testing the auxiliary contact	Hold the Alarm Silence/Test button down for 15 seconds, the unit will send a alarm signal to the auxiliary contact. ***Note:*** *This will activate any alarm/dialer that you have connected to the system*.

DISPLAY MESSAGES

INFORMATIONAL MESSAGES

System OK	Displayed when no alarms are active and the system is not running	System is working properly
Pump Running	Displays when the pump is on and the system has been activated	System is working properly
AC Power Failure	Displayed when the system loses AC power	If power in the house is on, check that the unit is plugged in or the GFI/breaker has not been tripped

ALARM MESSAGES

Reverse Polarity	Battery RED/BLACK leads are reversed	Connect leads to correct terminals
AC Power Failure	Displayed when the system loses AC power	If power in the house is on, check that the unit is plugged in or the GFI/breaker has not been tripped
Highwater	System has failed or is not keeping up with the incoming water	Check display for additional message like low battery or pump not running
Blown Fuse	Pump fuse on controller has blown	Replace with another 20Amp fuse
Power OK Sys ON	AC Power is on but system is running	Check your primary pump for failure
Pump Failure	System is ok but pump isn't running	Check pump connections or inspect pump
Battery Low	Battery voltage has dropped below 11.2V	Normal during extended loss of power
Battery Critical	Battery voltage has dropped below 10.2V	Replace battery if power remains out
Auto Test Fail	System did not pass auto test	Check display for additional messages and/or call for service
Sensor Failure	Sensor is not getting a signal from the controller	Check the metal tip on the bottom of the sensors for obstructions

WARRANTY

MODEL# PZM-ALPHA-1

Kasco the parent company of the Sumptek brand warrants that the pumps its manufactures are free from all factory defects in material and workmanship for a period of 3 years from the date of purchase. The date of purchase shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump if the date of return is more than 3 years from the "CODE" (date of manufacture) number noted on the pump name plate.

The manufacturer's obligation under this Warranty shall be limited to the repair or replacement of any parts found by the manufacturer to be defective, provided the part or assembly is returned freight prepaid to the manufacturer or authorized service center, and provided that none of the following warranty-voiding characteristics are evident:

The manufacturer shall not be liable under this Warranty if the product has not been properly installed; if it has been disassembled, modified, abused or tampered with; if the electrical cord has been cut or spliced; if the pump discharge has been reduced in size; if the pump has been used in water temperatures above the advertised rating; if the pump has been used in water containing sand, lime, cement, gravel or other abrasives; if the product has been used to pump chemicals or hydrocarbons; if a non-submersible motor has been subjected to excessive moisture; or if the label bearing the serial and code number has been removed.

Kasco shall not be liable for any loss, damage or expenses resulting from installation or use of its products, or for consequential damages, including costs of removal, reinstallation or transportation.

There is no other express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to three years from the date of purchase. This Warranty contains the exclusive remedy of the purchaser, and, where permitted, liability for consequential or incidental damages under any and all warranties are excluded.

For Technical Assistance Call:
1-800-407-2076 between 8am to 5pm CST