

## EN INTRODUCTION

This instruction sheet provides you with the information required to safely own and operate your product. Retain these instructions for future reference.

The product you have purchased is of the highest quality workmanship and material, and has been engineered to give you long and reliable service. This product has been carefully tested, inspected, and packaged to ensure safe delivery and operation. Please examine your item(s) carefully to ensure that no damage occurred during shipment. If damage has occurred, please contact the place of purchase. They will assist you in replacement or repair, if required.

**READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE, OR SERVICE YOUR PRODUCT. KNOW THE PRODUCT'S APPLICATION, LIMITATIONS, AND POTENTIAL HAZARDS. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!**

### DESCRIPTION

This is a submersible effluent pump for use in basins or lift stations, and is suitable for pumping effluent, wastewater, and other non-explosive, non-corrosive liquids with up to 3/4" spherical solids and temperatures up to 200°F.

### SAFETY GUIDELINES



**CAUTION: INTENDED FOR COMMERCIAL AND INDUSTRIAL USE ONLY. READ SAFETY GUIDELINES AND INSTRUCTIONS CAREFULLY.**

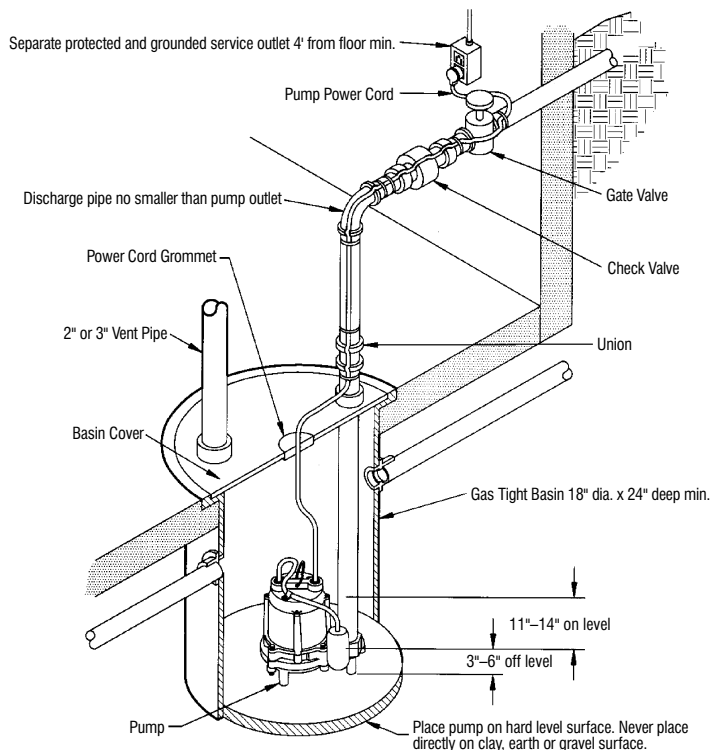
1. Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in explosive atmospheres or hazardous locations as classified by NEC, ANSI/NFPA. Pump should only be used with liquids compatible with pump component materials.
2. Do not handle pump with wet hands or when standing on a wet or damp surface, or in water.
3. Do not pull the pump out of the water by the power cord when the pump is operating or connected to power source.
4. This pump is supplied with a grounding conductor and/or grounding type attachment plug. To reduce the risk of electric shock, be certain that it is connected to a properly grounded grounding type receptacle.
5. The National Electric Code requires a ground fault circuit interrupter (GFCI) be installed in the branch circuit supplying fountain equipment, pools, etc.
6. In any installations 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.
7. 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.
8. This pump's motor housing is filled with a dielectric oil for motor heat transfer and life-time 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.

9. 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.
3. If the cord is equipped with stripped lead wires, such as on 230V models, be sure that the lead wires are connected to a power source correctly. The green/yellow wire is the ground, the other two are live.
4. 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).
5. To conform to the National Electrical Code, all pumps must be wired with 14 AWG or larger wire. For runs to 250 feet, 14 AWG wire is sufficient. For longer runs, consult a qualified electrician or the factory.
6. 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.
7. The flexible PVC jacketed cord assembly mounted to the pump must not be modified in any way, with the exception of shortening the cord 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.



**Figure 1**

## OPERATION



1. Pump should be installed in a suitable basin which is at least 18" in diameter and 24" deep, in accordance with local plumbing codes.
2. When a pump is in a basin, etc. do not touch motor, pipes or water until unit is unplugged. If your installation has water or moisture present, do not touch wet area until all power has been turned off.
3. Pump features a 1-1/2" female NPT discharge.
4. Pump must be placed on a hard level surface. Never place pump directly on clay, earth or gravel surfaces.
5. A check valve must be used in the discharge line to prevent back flow of liquid into the basin. The check valve should be a free flow valve that will easily pass solids.

**CAUTION:** For best performance of check valves, when handling solids install in a horizontal position or at an angle of no more than 45 degrees. Do not install check valve in a vertical position as solids may settle in valve and prevent opening on start-up.

When check valve is used, drill a 3/16" hole in discharge pipe approximately 1" to 2" above the pump discharge and below the check valve to prevent air locking of the pump.

6. Do not attempt to 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.
7. Do not let the unit operate dry. 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.
8. 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.

## TESTING PUMP OPERATION

**NOTE:** BE CERTAIN PUMP IS SECURE IN BASIN AND FLOAT MOVES UNOBSTRUCTED WITHOUT TOUCHING THE BASIN WALLS OR PLUMBING.

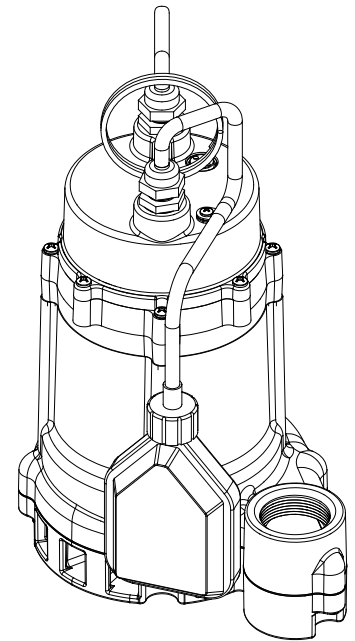
1. These pumps are equipped with a float operated switch. When these pumps are installed in a basin with a sealed cover, switch operation cannot be observed. The sump cover usually will have a spare hole that is plugged with a rubber plug. This plug can be removed and switch operation can be observed.
2. Plug power cord into a grounded receptacle with voltage consistent with pump voltage as indicated on pump nameplate.
3. Run water into basin until pump starts.
4. Be sure gate valve in discharge line is open.
5. Allow pump to operate through several on-off cycles.
6. If pump does not operate properly, consult the Troubleshooting table. If trouble cannot be located with these steps shown, consult your pump dealer or take pump to a Little Giant authorized service center.

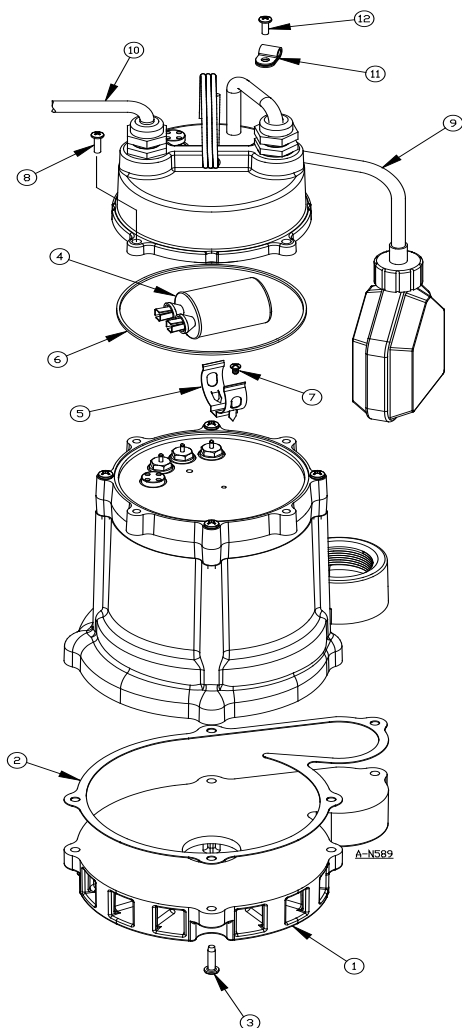
## MAINTENANCE



**WARNING:** DISCONNECT THE PUMP FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT!

1. 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.
2. Periodic cleaning of the pump parts will prolong the LIFE and EFFICIENCY of the pump.
3. Remove screws that hold base to volute and clean impeller and volute passage. Do not use strong solvents on impeller.
4. Be sure impeller turns freely after cleaning.
5. **CAUTION:** DO NOT REMOVE IMPELLER. THIS 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. ANY REPAIR ON MOTOR MUST BE DONE BY AN AUTHORIZED LITTLE GIANT SERVICE CENTER.
6. Be certain power cord is in good condition and contains no nicks or cuts.





REPLACEMENT PARTS LIST			
ITEM NO.	PART NO.	DESCRIPTION	CATALOG NO./ STOCK NO.
			511916 35LV01
1	109440202	Screen Base	•
2	109460	Gasket, Screen Base	•
3	909023	Screw/Washer, 10-24 x 7/8"	5
4	950481	Capacitor, 10MFD, 370V	•
5	950482	Capacitor Bracket	•
6	928008	Seal Ring, 4.718 ID x .078 Wall	•
7	901203	Screw, Machine, #6-32 x 1/4"	•
8	909022	Screw/Washer, 10-24 x 5/8"	4
9	950227	Switch Assy, Non Mercury, Automatic	•
10	951660	Wire Harness Assy, Automatic	•
10	951661	Wire Harness Assy, Manual	
11	927427	Loop Clamp, Black	•
12	901424	Screw, Machine, #8-32 x 1/2"	•
13**	951798	Lead Wire Assembly, White	•
14**	951799	Lead Wire Assembly, Red	•
15**	950502	Capacitor Insulating Boot	•
16**	950400	Closed End Connector	•

\*\* Items not shown

## 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.
	Accumulation of trash on float.	Clean float.
	Float obstruction.	Check float path and provide clearance.
	Defective switch.	Have pump serviced by authorized service center.
	Defective motor.	Have pump serviced by authorized service center.
Pump will not shut off.	Float or float rod obstruction.	Check float and float rod path and provide clearance.
	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.
	Defective switch.	Disconnect switch, check w/ohmmeter, Open-infinite resistance, closed-zero.
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.	(See corrective action above.)
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 basin.	Install a check valve in discharge line.
	Check valve leaking.	Inspect check valve for correct operation.
	Basin too small for inflow.	Install larger basin.

## LIMITED WARRANTY

THIS WARRANTY SETS FORTH THE COMPANY'S SOLE OBLIGATION AND PURCHASER'S EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCT.

Franklin Electric Company, Inc. and its subsidiaries (hereafter "the Company") warrants that the products accompanied by this warranty are free from defects in materials or workmanship of the Company that exist at the time of sale by the Company and which occur or exist within the applicable warranty period. Any distributor, sub-distributor, recipient, end-user and/or consumer agrees that by accepting the receipt of the products, the distributor, sub-distributor, recipient, end user and/or consumer expressly agrees to be bound by the terms of the warranty set forth herein.

### I. Applicable Warranty Period

The products accompanied by this warranty shall be covered by this Limited Warranty for a period of 24 months from the date of original purchase by the consumer. In the absence of suitable proof of purchase date, the warranty period of this product will begin to run on the product's date of manufacture.

### II. Instructions Applicable to this Limited Warranty

1. Consumers wishing to submit a warranty claim must return the products accompanied by this warranty to the point of purchase for warranty consideration.
2. Upon discovery of a defect, any personal injury, property damage or any other type of resulting damage, if applicable, shall be reasonably mitigated to the extent possible.
3. At its discretion, the Company may inspect products either at its facilities or in the field, and after determination of a warranty claim, will, at its option, repair or replace defective parts. Repaired or replaced parts will be returned freight prepaid by the Company.
4. This warranty policy does not cover any labor or shipping charges. The Company shall not be liable for any costs or charges attributable to any product testing, maintenance, installation, repair or removal, or for any tools, supplies, or equipment needed to install, repair, or remove any product.

### III. Limitations Applicable to this Limited Warranty

**THIS WARRANTY DOES NOT APPLY TO ANY OF THE FOLLOWING:**

1. Brushes, impeller or cam on models with brush-type motors and/or flex-vane impellers.
2. Any product that is not installed, applied, maintained and used in accordance with the Company's published instructions, applicable codes, applicable ordinances and/or with generally accepted industry standards.
3. Any product that has been subject to misuse, misapplication, neglect, alteration, accident, abuse, tampering, acts of God (including lightning), acts of terrorism, acts of war, fire, improper storage or installation, improper use, improper maintenance or repair, damage or casualty, or to an excess of the recommended maximums as set forth in the product instructions.
4. Any product that is operated with any accessory, equipment, component, or part not specifically approved by the Company.
5. Use of replacement parts not sold by the Company, the unauthorized addition of non-Company products to other Company products, and the unauthorized alteration of Company products.
6. Products damaged by normal wear and tear, normal maintenance services and the parts used in connection with such service, or any other conditions beyond the control of the Company.
7. Any product that has been used for purposes other than those for which it was designed and manufactured.
8. Any use of the product where installation instructions and/or instructions for use were not followed.
9. Products connected to voltage other than indicated on nameplate.
10. Products where the pump was exposed to any of the following: sand, gravel,

cement, grease, plaster, mud, tar, hydrocarbons, hydrocarbon derivatives (oil, gasoline, solvents, etc.) or other abrasive or corrosive substances.

11. Products in which the pump has been used for pumping of liquids above 140°F.
12. Products in which the pump was allowed to operate dry (fluid supply cut off).
13. Products in which the sealed motor housing has been opened or the product has been otherwise dismantled by customer.
14. Products in which the cord has been cut to a length of less than three feet.

The Company reserves the right at any time, and from time to time, to make changes in the design and/or improvements upon its product without thereby imposing any obligation upon itself to make corresponding changes or improvements in or upon its products already manufactured and/or previously sold. The Company further reserves the right to substitute parts or components of substantially equal quality in any warranty service required by operation of this Limited Warranty.

This written Limited Warranty is the entire warranty authorized and offered by the Company. There are no warranties or representations beyond those expressed in this document.

THIS WARRANTY AND REMEDY IS IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY SPECIFICALLY DISCLAIMED AND EXPRESSLY EXCLUDED. CORRECTION OF NON-CONFORMITIES, IN THE MANNER AND FOR THE PERIOD OF TIME AS SET FORTH ABOVE, SHALL CONSTITUTE FULFILLMENT OF ALL LIABILITY OF THE COMPANY TO THE PURCHASER WHETHER BASED ON CONTRACT, NEGLIGENCE, OR OTHERWISE.

**THE COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES SUCH AS, BUT NOT LIMITED TO:**

**DAMAGE TO OR LOSS OF OTHER PROPERTY OR EQUIPMENT, LOSS OF USE OF EQUIPMENT, FACILITIES OR SERVICE, LOSS OF PROFIT OR SALES, COST OF PURCHASES OR REPLACEMENT GOODS, CLAIMS OF CUSTOMERS OF THE PURCHASER, FAILURE TO WARN AND/OR INSTRUCT, LOSS OF OTHER PRODUCTS, OR COSTS OF ENVIRONMENTAL REMEDIATION, OR DIMINUTION IN PROPERTY VALUE. THE REMEDIES OF THE PURCHASER SET FORTH HEREIN ARE EXCLUSIVE, AND THE LIABILITY OF THE COMPANY SHALL NOT, EXCEPT AS EXPRESSLY PROVIDED HEREIN, EXCEED THE PRICE OF THE PRODUCTS UPON WHICH SUCH LIABILITY IS BASED. DAMAGES AS SET FORTH IN THIS PARAGRAPH SHALL BE REASONABLY MITIGATED TO THE EXTENT POSSIBLE. THIS PARAGRAPH SHALL ALSO APPLY TO ALL DAMAGES RESULTING FROM CONDITIONS SET FORTH IN SECTION III ABOVE AND (1) DEFECTS IN PRODUCT PROTOTYPES OR REPLACEMENT PART PROTOTYPES THAT HAVE NOT BEEN PUT INTO PRODUCTION, CIRCULATED AND SOLD BY THE COMPANY, AND/OR (2) DEFECTS THAT WERE NOT FOUND AT THE TIME OF SALE DUE TO SCIENTIFIC AND TECHNOLOGICAL REASONS.**

This Limited Warranty gives you specific legal rights. You may have other rights, which vary according to the applicable laws and regulations. Where any term of this warranty is prohibited by such laws, it shall be null and void, but the remainder of this warranty shall remain in full force and effect.

**DISCLAIMER:** Any oral statements about the product made by the seller, the Company, 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 the Company's only obligation, and buyer's only remedy, shall be the replacement and/or repair by the Company of the product as described above. Before using, the user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith.

---

**For replacement parts, contact:**  
**Grainger Parts**  
**1657 Shermer Road**  
**North Brook, IL 60062-5362**  
**Phone: 800.323.0620 • Fax: 847.498.3402**

---