

Your Peace of Mind is Our Top Priority®

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



**PUMP COMPANY**

*Zoeller Family of Water Solutions™*

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FM1613  
0511  
Supersedes  
0410

THE  
**aquanot®**  
Series by **ZOELLER**

**MODELS 580 & 585**

## BATTERY BACKUP PEDESTAL SUMP PUMP


### PREINSTALLATION CHECKLIST

1. **Inspect your pump.** Occasionally, products are damaged during shipment. If the unit or any of the parts are damaged, contact your dealer before using.
2. **Read all the installation instructions** regarding installing and start up. Retain for future reference.



**WARNING**

SEE BELOW FOR LIST OF WARNINGS

1. **Testing for Ground.** As a safety measure each electrical outlet should be checked for ground using an Underwriters Laboratory listed 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.
2. **For your protection always disconnect the power supply** from its power source before handling the components of your DC backup pump or the primary pump.
3. Installation and checking of electrical circuits and hardware should be performed by a qualified, licensed electrician.
4. All electrical and safety codes must be followed in addition to the National Electrical Code and all applicable local codes.
5.  It is the owner's responsibility to check the battery and battery connection **at least once a month**. Batteries contain acid and caution must be taken when handling.
6. Risk of electric shock - These pumps have not been investigated for use in swimming pool areas.
7. According to the state of California (Prop 65), this product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

**CAUTION**

SEE BELOW FOR LIST OF CAUTIONS

1. **Make sure there is a properly grounded 115V receptacle available.** Do not use primary pump circuit. The location must be within 6' of the control box and battery. The power supply for your DC control system plugs directly into the 115V outlet. **DO NOT USE AN EXTENSION CORD.**
2. **Make sure the 115V electrical supply circuit is equipped with fuses or circuit breakers of proper capacity.**
3. DC emergency pumps are designed for handling clear water. Do not use in septic tanks to pump effluent or sewage pits to pump sewage.
4. Repair and service of your DC backup system should be performed by an authorized service station.
5. The installation of DC automatic backup pumps requires the use of a variable level float switch for operation. It is the responsibility of the installing party, to ensure that the tethered float switch will not hang up on the pump apparatus or pit peculiarities and is secured so the pump will turn "on" and "off". It is recommended that the pit be 18" in diameter or larger to accommodate both a primary and a DC backup pump.

REFER TO WARRANTY ON PAGE 2.

## 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 act of God; 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 Service 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.

**Note:** The purchase of an Aquanot® Battery from Zoeller Pump Company will extend the Limited Warranty to three years from date of installation.

**Note:** Three year limited warranty valid only when a complete system is purchased and used as a backup to a primary dewatering system. A complete system includes a Model 580 or 585 Aquanot® Pump, Monitor/Charger, and an Aquanot Battery.

## Carbon Monoxide Detectors

Whether you have an Aquanot® Battery Backup Sump Pump System, or a competitive brand, all batteries give off gaseous by-products when charging. Some of these by-products can produce a rotten egg odor. Also, some of these by-products can cause a CO detector to falsely activate. In order to help prevent false activation, Zoeller recommends moving the battery as far apart from the CO detector as possible or, if necessary, vent the battery to the exterior. Zoeller provides the previous statements only as guidelines to help prevent false activation of the CO detector. In no way are they meant to supersede the instructions that accompany the detector nor do they supersede advice from the CO detector manufacturer.

If the audible alarm associated with your CO detector is activated, we recommend the following actions:

- 1) Take immediate action for personal safety as recommended in the CO detector literature.
- 2) Contact the appropriate agency to determine if the CO is being produced by your furnace, water heater, or any other device which uses natural gas.
- 3) If you are certain that no CO is being produced, then a charging battery may be producing gaseous by-products which are causing the CO detector to activate. Contact the manufacturer of the CO detector, and ask for recommendations as to what can be done to prevent the alarm activation.

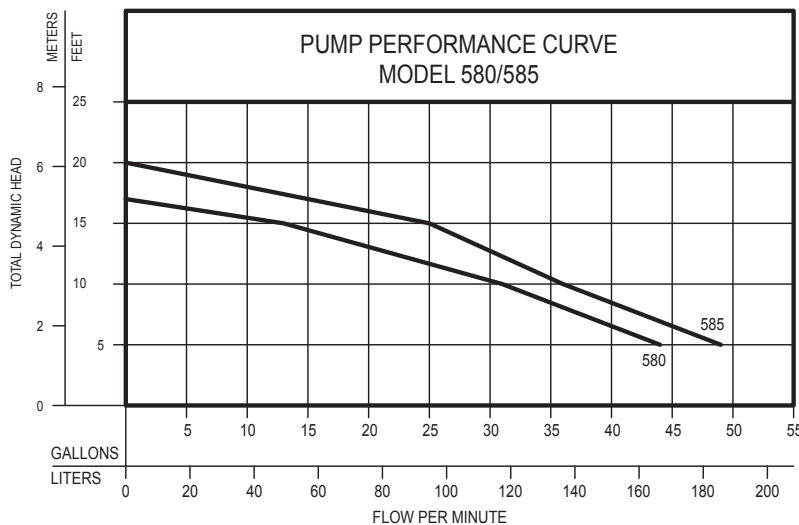
## Ten Helpful Hints For Easy Installation

1. Remove all debris from pit before installation.
2. Use a deep cycle battery only. Refer to battery descriptions on page 6.
3. Be sure the pump is on a firm, level surface.
4. Install a serviceable check valve in the discharge line.
5. Test the unit immediately after installation. Refer to STEP 6.
6. The battery & charger should be placed on a shelf.
7. Check float On/Off levels per STEP 2 of instructions.
8. Apply grease to the Positive and Negative terminals of the battery to prevent corrosion.
9. Check the battery water level once a month and add distilled water as necessary.
10. Obtain model number, date code and installation instructions before calling factory.

## Do's And Don't's For Installing A Unit

1. DO read all installation material with the pump and charger.
2. DO inspect unit for any visible damage caused by shipping. Contact dealer if unit appears to be damaged.
3. DO clean all debris from the pit.
4. DO always disconnect pump from power source before handling. DO always connect to a separately protected and properly grounded ground fault protected circuit. DO NOT ever cut, splice or damage power cord. DO NOT carry or lift pump by its power cord. DO NOT use an extension cord with the Aquanot®. DO NOT lengthen battery/pump leads.
5. DO install union check valve (see step 3) in the discharge line. DO NOT use a discharge pipe smaller than the recommended pump discharge sizes.
6. DO test pump immediately after installation to be sure that the system is working properly.
7. DO review all applicable local and national codes and verify that the installation conforms to each of them.

## Performance Characteristics



**TOTAL DYNAMIC HEAD/FLOW  
PER MINUTE  
EFFLUENT AND DEWATERING**

| MODEL          |        | 585          |        |
|----------------|--------|--------------|--------|
| Feet           | Meters | Gal.         | Liters |
| 5              | 1.5    | 49           | 186    |
| 10             | 3.0    | 36           | 136    |
| 15             | 4.6    | 25           | 95     |
| Shut-off Head: |        | 20 ft.(6.1m) |        |

| MODEL          |        | 580          |        |
|----------------|--------|--------------|--------|
| Feet           | Meters | Gal.         | Liters |
| 5              | 1.5    | 44           | 167    |
| 10             | 3.0    | 31           | 117    |
| 15             | 4.6    | 13           | 49     |
| Shut-off Head: |        | 17 ft.(5.2m) |        |

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**Note:** Aquanot® II (Model 585) data was developed with the charger supplying DC power to the pump.

## STEP 1

## Placement of the Pump in the Pit

**Note:** If your pit has a cover, then it will have to be modified to accept the Aquanot®.

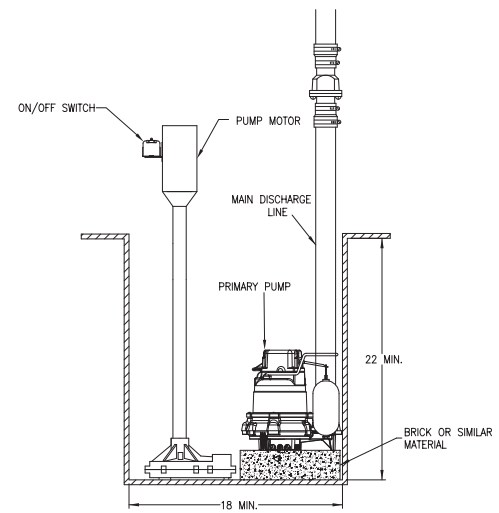
- 1.1) Inspect the pit for debris and clean as necessary
- 1.2) Place the pump in the pit making certain that it is on a stable level surface. Refer to Figure 1.1.

**IMPORTANT:** If this pump is to be used as a backup to your primary pump, then make certain that there is no interference between the two pumps.

The motor is not watertight. It should **NEVER** be below floor level.

If necessary, bricks or similar materials, can be placed under the Aquanot®.

**▲ NOTICE** This product is meant to be used as a battery backup pump to your primary pump only. Consult factory for advice before installing this unit as a primary pump.



SK1775

Figure 1.1

## STEP 2

## Float Stop Adjustment

- 2.1) With the pump in the pit, measure the desired float stop on/off positions as shown in Fig. 2.1. These two dimensions will determine the on/off levels of the pump. The spacing between the upper and lower stops will determine the amount of water removed from the pit.

**Note:** It may be necessary to raise the float rod guide to adjust the stops to the dimensions determined in Step 2.1.

**▲ CAUTION** The float rod guide should **NEVER** be between the upper and lower stop.

- 2.2) Remove the pump from the pit and adjust the float stops as necessary. Tighten all screws.

**Note:** If a brick, or similar material has been used to raise the pump in the pit, it will be necessary to account for the thickness of the brick.

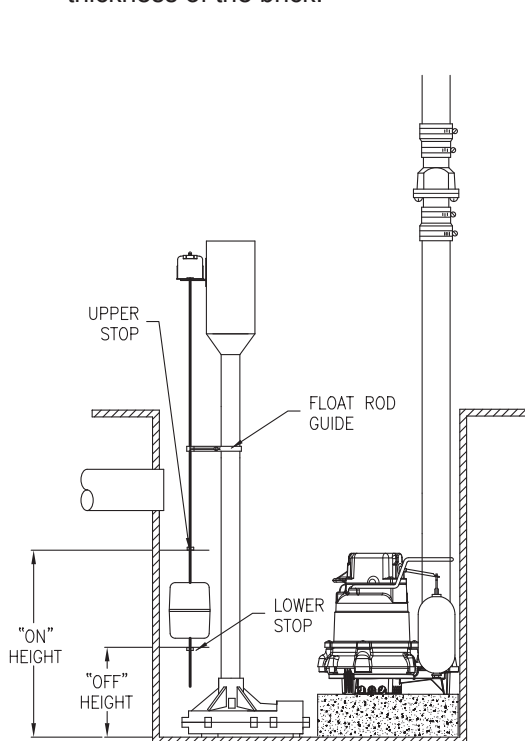


Figure 2.1

SK1776

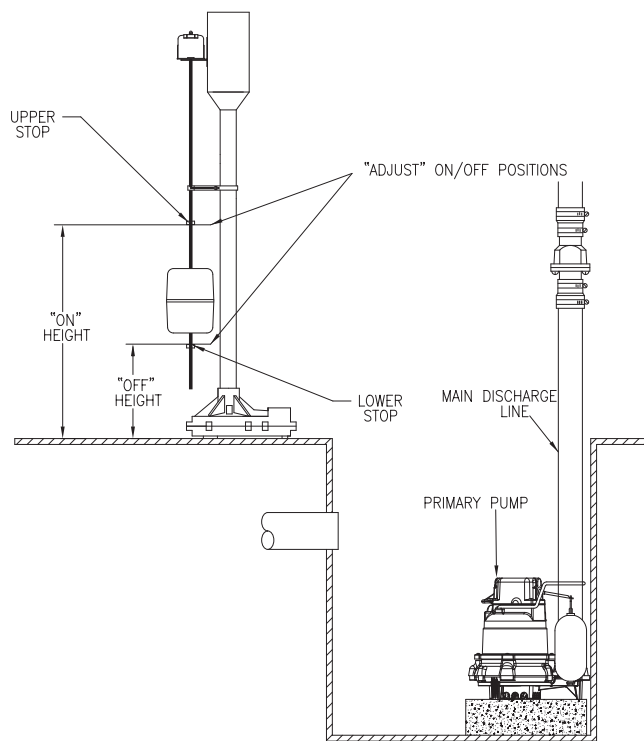


Figure 2.2

SK1777

### STEP 3

### Installation of the Discharge Piping

3.1) Assemble the discharge pipe into the pump as shown in Figure 3.1.

**IMPORTANT:** In order for this installation to work properly, a check valve must be installed onto the discharge line.

P/N 30-0100 } Recommend the following Zoeller check valves:  
P/N 30-0101 } Some local codes require union check with ball valve.  
P/N 30-0102 }  
P/N 30-0103 }

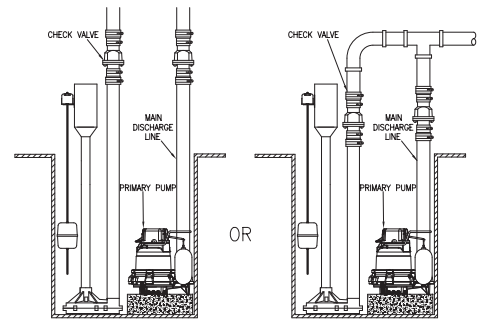


Figure 3.1

SK1778

### STEP 4

### Electrical Connections for Model 585

**Note:** This Step is for the Aquanot® II (Model 585). Proceed to STEP 5 for installation of Aquanot® I (Model 580).

4.1) Complete electrical connections as shown in Figure 4.1.

4.2) Proceed to STEP 6.

**CAUTION** Do not place battery or charger directly on ground. If the battery or charger must be placed directly on the ground, then place a piece of wood between the units and the ground. Do not put the charger on top of the battery.

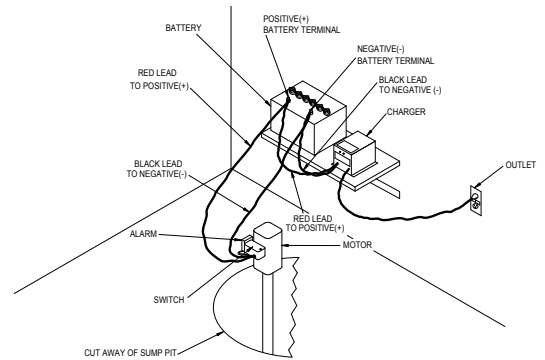


Figure 4.1

SK1783

### STEP 5

### Electrical Connections for Model 580

5.1) Complete the electrical connections as shown in Figure 5.1.

**CAUTION** Do not place battery or monitor directly on ground. If the battery or monitor must be placed directly on the ground, then place a piece of wood between the units and the ground. Do not put the battery monitor on top of the battery.

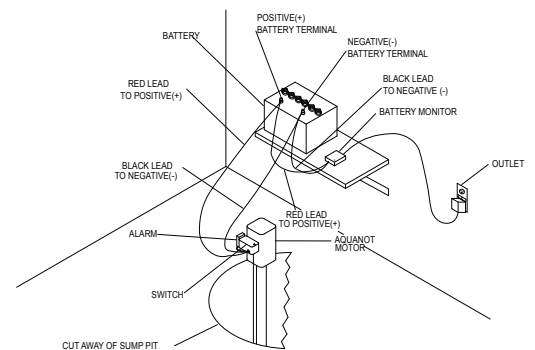


Figure 5.1

SK1784

### STEP 6

### Testing of Pump Operation

- 6.1) Unplug the primary pump so that it does not start.
- 6.2) Fill pit with water until the Aquanot® starts.
- 6.3) Verify that the pump starts and stops at the desired on/off points.
- 6.4) Verify that there are no leaks in the discharge line.
- 6.5) If adjustment is necessary, raise or lower the appropriate stop(s) according to STEP 2.

**IMPORTANT:** Spacing between upper and lower stops determine amount of water removed from pit.

- 6.6) If the pump is not operating properly after following the above steps, refer to the Troubleshooting guide on page 8.
- 6.7) When finished testing plug primary pump back into AC receptacle.

## Operation of the Aquanot® Charger (Model 585 Only)

The charger automatically monitors and charges your battery. In the event of a power outage the pump will be powered by the battery. Once line power is restored, the charger will recharge the battery. If there is a failure of the primary pump, the charger will supply power to the pump through the battery if line power is present; otherwise, the battery will take over until the problem has been corrected.

The lights on the front panel of the charger indicate the state of system:

The red light: Indicates that AC line power is present.

The green light: Indicates that the battery is charged to 12V DC\*.

During periods of extended power outage the charge on the battery may drop below 12V DC which would cause the green light to go out. This is normal. The green light will be illuminated once the charger restores the voltage level to 12V DC.

The yellow light: Indicates that the battery is charged above 8V DC.

If the yellow light is not illuminated, it indicates that the charge on the battery is below 8V DC. If the line power is out, the pump may have depleted the battery due to normal operation. If there has been no power outage and the primary pump is working properly, it may indicate that the battery is defective or that the controller is defective. Refer to the Troubleshooting guide on page 8 for further instructions.

If the Green and Yellow lights flash intermittently, refer to Section G in the Trouble Shooting Guide on page 8.

\*Voltage is only one indicator of the state of the battery, and does not reflect the true condition of the battery. Use a hydrometer to more accurately determine the condition of the battery.

## Operation of the Audible Alarm (All Models)

All Aquanot® pump systems are equipped with an alarm which sounds when the pump is activated. The alarm will automatically silence when the pumping cycle is completed.

Activation of the audible alarm indicates that the primary pump has failed or line power to the primary pump is not present. Whenever the alarm is activated the primary pump and outlet should be inspected.

The On/Off switch, located on the side of the alarm enclosure, allows the audible alarm to be turned off, however, this practice is not recommended. Verify that the alarm switch is in the "on" position, by manually turning the pump "on".

## The Aquanot® Battery

There are millions of batteries manufactured each year, so it is impossible to guarantee consistent quality. A defective battery will never become fully charged and may damage the circuits of the charger. It is for this reason that Zoeller offers its own line of batteries. We offer two types of batteries; Water/Acid Deep-Cycle, and AGM - both power the pump continuously for over 3½ hours. These times are based on continuous pumping at 10' of static head. Actual times will vary depending on static head, volume of water entering the pit, and the condition of the battery.

### Follow these recommendations:

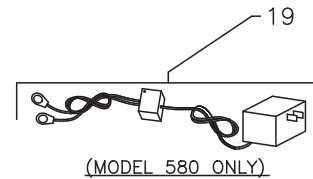
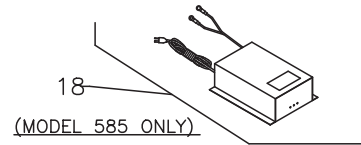
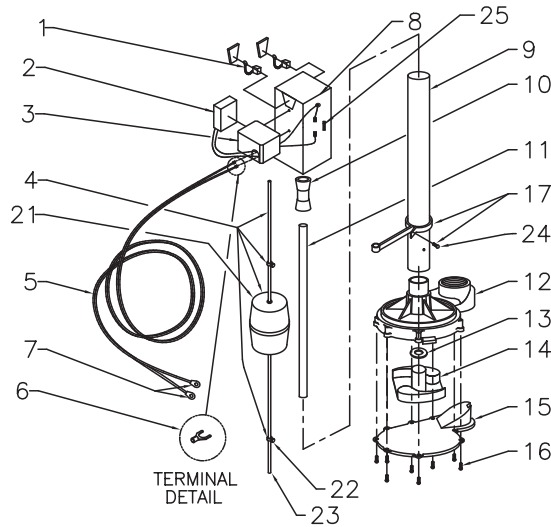
- Use a B.C.I. size 27 deep-cycle battery, 175 minute reserve capacity, or larger.
- Do NOT use a "maintenance-free" battery unless it is Gel-filled or AGM battery.
- Replace your battery every 3 years.
- Do not let corrosion build up on the battery terminals.
- Do not place your battery on a concrete floor where it will discharge faster.
- To check specific gravity, follow the instructions on a hydrometer (not applicable for Gel or AGM batteries).

### PROTECT YOUR WARRANTY:

- Water level in batteries must be checked once a month (not applicable for Gel or AGM batteries).



# 20-MODEL 580/585 COMPLETE PUMP



SK1786

## Illustrated Parts Breakdown

| REF. NO. | MODELS:                    |     | 580-A    | 580-B    | 580-C    | 580-D    | 580-E            | 585-A    | 585-B    | 585-C    | 585-D    | 585-E    | 585-F            | 585-G            |
|----------|----------------------------|-----|----------|----------|----------|----------|------------------|----------|----------|----------|----------|----------|------------------|------------------|
|          | DESCRIPTION                | QTY |          |          |          |          |                  |          |          |          |          |          |                  |                  |
| 1        | Motor Brushes              | 2   | 011882   | 011882   | 011882   | 013878   | *Consult Factory | 011882   | 011882   | 011882   | 011882   | 013878   | *Consult Factory | *Consult Factory |
| 2        | Pump Alarm                 | 1   | 012485   | 012485   | 012485   | 012485   | 012485           | 012485   | 012485   | 012485   | 012485   | 012485   | 012485           | 012485           |
| 3        | Pump Switch                | 1   | 011990   | 011990   | 017205   | 017205   | 017205           | 011990   | 011990   | 011990   | 017205   | 017205   | 017205           | 017205           |
| 4        | Float Kit & Cable          | 1   | 012109   | 012109   | 012709   | 012709   | 012709           | 012109   | 012109   | 012109   | 012709   | 012709   | 012709           | 012709           |
| 5        | Lead Wires                 | 1   | 012401   | 012401   | 012401   | 012401   | 012401           | 012401   | 012401   | 012401   | 012401   | 012401   | 012401           | 012401           |
| 6        | Terminal Spade             | 1   | 004442   | 004442   | 004442   | 004442   | 004442           | 004442   | 004442   | 004442   | 004442   | 004442   | 004442           | 004442           |
| 7        | Terminal Ring              | 1   | 011939   | 011939   | 011939   | 011939   | 011939           | 011939   | 011939   | 011939   | 011939   | 011939   | 011939           | 011939           |
| 8        | Pump Motor                 | 1   | 013873   | 013873   | 013873   | 013873   | 013873           | 013873   | 013873   | 013873   | 013873   | 013873   | 013873           | 013873           |
| 9        | Column                     | 1   | 011942   | 011942   | 011942   | 011942   | 011942           | 011942   | 011942   | 011942   | 011942   | 011942   | 011942           | 011942           |
| 10       | Adapter, Drive             | 1   | 011940   | 011940   | 011940   | 011940   | 011940           | 011940   | 011940   | 011940   | 011940   | 011940   | 011940           | 011940           |
| 11       | Shaft                      | 1   | 011944   | 011944   | 011944   | 011944   | 011944           | 011944   | 011944   | 011944   | 011944   | 011944   | 011944           | 011944           |
| 12       | Head w/Brass Bearing       | 1   | 011947   | 012137   | 012137   | 012137   | 012137           | 011947   | 011947   | 012137   | 012137   | 012137   | 012137           | 012137           |
| 13       | Washer, Thrust             | 1   | 002140   | 002140   | 002140   | 002140   | 002140           | 002140   | 002140   | 002140   | 002140   | 002140   | 002140           | 002140           |
| 14       | Impeller                   | 1   | 011945   | 011945   | 011945   | 011945   | 011945           | 011945   | 011945   | 011945   | 011945   | 011945   | 011945           | 011945           |
| 15       | Base Plate                 | 1   | 011948   | 012138   | 012138   | 012138   | 012138           | 011948   | 011948   | 012138   | 012138   | 012138   | 012138           | 012138           |
| 16       | Screws                     | 8   | 011949   | 012118   | 012118   | 012118   | 012118           | 011949   | 012118   | 012118   | 012118   | 012118   | 012118           | 012118           |
| 17       | Guide, Float Rod           | 1   | N/A      | N/A      | 003903   | 003903   | 003903           | N/A      | N/A      | N/A      | 003903   | 003903   | 003903           | 003903           |
| 18       | Battery Charger (585 Only) | 1   | N/A      | N/A      | N/A      | N/A      | N/A              | 012309   | 012298   | 012298   | 012298   | 012298   | 012298           | 019841           |
| 19       | Battery Monitor (580 Only) | 1   | 012484   | 012484   | 012484   | 012484   | 012484           | N/A      | N/A      | N/A      | N/A      | N/A      | N/A              | N/A              |
| 20       | Pump 580/585               | 1   | 585-0006 | 585-0006 | 585-0006 | 585-0006 | 585-0006         | 585-0006 | 585-0006 | 585-0006 | 585-0006 | 585-0006 | 585-0006         | 585-0006         |
| 21       | Float                      | 1   | N/A      | N/A      | 012707   | 012707   | 012707           | N/A      | N/A      | N/A      | 012707   | 012707   | 012707           | 012707           |
| 22       | Stop, Float                | 2   | N/A      | N/A      | 054085   | 054085   | 054085           | N/A      | N/A      | N/A      | 054085   | 054085   | 054085           | 054085           |
| 23       | Rod, Float                 | 1   | N/A      | N/A      | 012706   | 012706   | 012706           | N/A      | N/A      | N/A      | 012706   | 012706   | 012706           | 012706           |
| 24       | Screws                     | 1   | N/A      | N/A      | 003925   | 003925   | 003925           | N/A      | N/A      | N/A      | 003925   | 003925   | 003925           | 003925           |
| 25       | Fuse, 30 Amp               | 1   | 011927   | 012353   | 012353   | 012353   | *Consult Factory | 011927   | 012353   | 012353   | 012353   | 012353   | *Consult Factory | *Consult Factory |

\*Advise motor Leeson or CIM.



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

If the following checklist does not solve the problem, consult Zoeller's Technical Service Department 1-(800) 928-7867 - **Do not** attempt to service or otherwise disassemble pump.

# Troubleshooting Guide

| CONDITION |   | POSSIBLE CAUSE                                  | REMEDY  |
|-----------|---|---|---|
| A         | PUMP WILL NOT START OR RUN.                               | Low voltage, blown fuse open circuit.           | Have a qualified electrician check fuse and circuit.  |
|           |   | Impeller bound.                                 | Replace fuse.   |
|           |   | Blown pump fuse.                                |   |
|           |   | Defective Switch                                | Contact factory.  |
|           |   | Motor or wiring shorted.                        |   |
| B         | PUMP STARTS TOO SOON.                                     | Float "ON" point is adjusted too low.           | Refer to STEP 2.  |
| C         | PUMP WILL NOT SHUT OFF.                                   | Float is obstructed.                            | Inspect float operation and correct problem.  |
|           |   | Float "Off" point adjusted too low.             | Adjust "Off" point. Refer to STEP 2.  |
|           |   | Faulty float switch.                            | Contact factory.  |
| D         | PUMP OPERATES BUT DELIVERS LITTLE OR NO WATER.            | Debris around intake.                           | Clean area around intake.   |
|           |   | Blockage in discharge pipe.                     | Remove pipe and flush out debris.   |
|           |   | Low voltage.                                    | Check condition of battery. Replace as necessary or recharge.   |
|           |   | Blown fuse, open circuit.                       | Have a qualified electrician check circuit.   |
|           |   | Incorrect float adjustment                      | Refer to STEP 2 for proper installation.  |
|           |   | Pump is air locked.                             | Drill 1/4" hole in discharge pipe below waterline.  |
|           |   | Vertical lift too high.                         | Change discharge piping or contact tech. service.   |
|           |   | Base plate is "loose" or corroded.              | Remove pump from pit and tighten as necessary.  |
|           |   | Pump runs in reverse.                           | Make certain that the red(+) lead and black(-) leads go to the appropriate battery terminals.                             |
|           |   | Damaged Impeller.                               | Contact factory.  |
| E         | RED LIGHT ON CHARGER (MODEL 585) IS OUT.                  | Power outage.                                   | Normal condition Red light will be illuminated once line power is restored.   |
|           |   | AC line fuse blown.                             | Have a qualified electrician replace with new fuse on the circuit board.  |
|           |   | Defective controller or light burned out.       | Contact factory.  |
|           |   | No AC power, battery less than 5V.              | Battery has depleted below 5V due to prolonged operation without AC power. Call for service or replace battery.           |
| F         | RED LIGHT FLASHING (MODEL 585).                           | The charger fan may be defective.               | Have a qualified electrician inspect the charger.   |
| G         | GREEN & YELLOW LIGHTS FLASH INTERMITTENTLY (MODEL 585).   | Positive & Negative battery leads are reversed. | Make certain that the positive (red) & negative (black) leads go to the proper battery terminals.                         |
|           |   | Battery maintenance required.                   | Check water level of battery, refill as necessary (Do not overfill).  |
|           |   |   | Defective battery. Replace as necessary.  |
|           |   | Battery has a "Dead Short".                     | Replace battery. Battery has aged beyond its ability to chemically store electricity.                                     |
|           |   | Loose battery connections.                      | Tighten red and black battery leads.  |
| H         | YELLOW LIGHT IS OUT (MODEL 585).                          | Corroded battery terminals.                     | Clean terminal as necessary. Apply grease to terminals to prevent future corrosion problems.                              |
|           |   | Battery voltage has dropped below 8V.           | Battery depleted below 8V due to normal operation. Will be illuminated once AC power is restored and battery is charged.  |
|           |   | Battery may be defective.                       | Replace battery.  |
| I         | GREEN LIGHT IS OUT  | Light may be defective.                         | Contact factory.  |
|           |   | Battery voltage has dropped below 12V.          | Battery depleted below 12V due to normal operation. Will be illuminated once AC power is restored and battery is charged. |
| J         | RED, GREEN & YELLOW LIGHTS FLASH IN SEQUENCE (MODEL 585). | Lights flash for approximately for 4 seconds.   | Normal condition. The lights indicate that the system is properly installed.  |
| K         | CONSTANTLY ADDING DISTILLED WATER TO BATTERY.             | Defective battery.                              | Have battery inspected. The charger will overcharge a battery with a defective cell.                                      |
|           |   | Defective controller.                           | Contact factory.  |
| L         | ROTTEN EGG SMELL IN BASEMENT.                             | Charger is overcharging battery.                | Have battery inspected. The charger will overcharge a battery with a defective cell.                                      |