



# Variable Speed Pump Spare Parts Installation Instructions



## These Instructions are to be used on Jandy Pro Series spare parts kit:

R0688600 Variable Frequency Motor Drive

### **WARNING**

**FOR YOUR SAFETY:** This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment by the jurisdiction in which the product will be installed where such state or local requirements exist. In the event no such state or local requirement exists, the installer or maintainer must be a professional with sufficient experience in pool equipment installation and maintenance so that all of the instructions in this manual can be followed exactly.

Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death.

This pool motor is **NOT equipped** with a **Safety Vacuum Release System (SVRS)**. SVRS helps prevent drowning due to body entrapment on underwater drains. In some pool configurations, if a person's body covers the drain, the person can be trapped by suction.

Depending on your pool configuration, a SVRS may be required to meet local, state and federal requirements.

# Section 1. Important Safety Instructions

## READ AND FOLLOW ALL INSTRUCTIONS

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

### ⚠ WARNING

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

### ⚠ WARNING

Follow all applicable electrical codes. Prior to Installation or performing any service, turn off all switches and the main breaker in the pool/spa pump electrical circuit. Failure to comply may cause a shock or hazard resulting in severe personal injury or death. While disconnecting and/or connecting any electrical wiring, be careful not to damage or abrade any of the wiring.

## Section 2. Getting Started

### 2.1 Compatibility

This Kit is for use on Jandy Pro Series Variable Speed Pump Models listed in table 1.

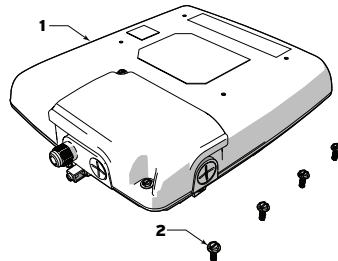
**Table 1. Compatible Pump List**

| VS PlusHP   | VS FloPro™  | ePump™      |
|-------------|-------------|-------------|
| VSPHP270JEP | VS-FHP2.0   | VSSHP220AUT |
| VSPHP270AUT | VSFHP270JEP | VSSHP270AUT |
|             | VSFHP270AUT |             |

### 2.2 Package Contents

Before starting, check that you have the correct parts as indicated below. If any parts are missing or incorrect, please call your local distributor or Zodiac Pool Systems technical support at **1-800-822-7933** for assistance.

| Item | Description                    | Qty. |
|------|--------------------------------|------|
| 1    | Variable Frequency Motor Drive | 1    |
| 2    | Screw                          | 4    |



## 2.3 Required Equipment

Please ensure that the following equipment is available to the installer at the time of installation.



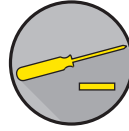
Gloves



Safety Eyewear



Phillips Screw Driver



Flat Head Screwdriver



Needle Nose Pliers

## Section 3. Installation

### 3.1 Remove Motor Drive

1. Turn off all electrical power to the pump at the breakers.
2. Remove the 2 screws securing the junction box cover. See Figure 1 (a).
3. Disconnect the high voltage connections. See Figure 1 (b).
4. Disconnect the ground wire. See Figure 1 (c).
5. Disconnect the low voltage communications wires. See Figure 1 (d).
6. Disconnect any auxiliary load connections if applicable. See Figure 1 (e).
7. Disconnect the bonding wire from the bonding lug. See Figure 1 (f).
8. Remove the four screws securing the pump motor drive to the pump motor body. See Figure 1 (g).
9. Lift the pump motor drive free of the pump motor body being careful not to strain or damage any wiring or plumbing connections. See Figure 1 (h).
10. Discard of the removed motor drive appropriately.

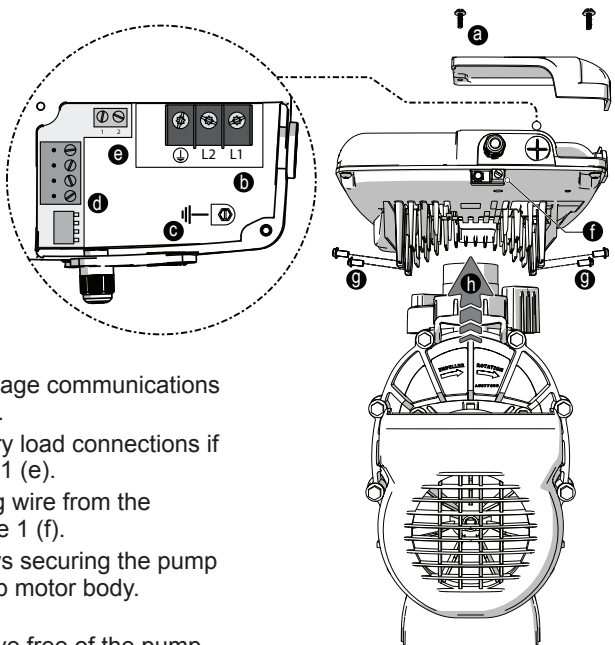


Figure 1. Remove Motor Drive

### 3.2 Install New Pump Motor Drive

1. Place new motor drive onto pump motor body, be sure to properly align the electrical connections on the pump motor body. See Figure 2.
2. Install the 4 screws to secure the pump motor drive to the pump motor body. See Figure 1 (g)
3. Wiring should be performed by a licensed electrician or other qualified technician. It is the responsibility of the electrical installer to ensure that the pump is wired according to the National Electric Code® and any local ordinances.
4. Using a solid copper conductor, No. 8 AWG or larger (In Canada No. 6 AWG or larger); bond the pump motor to all other metal parts of the swimming pool, spa or hot tub structure and to all electrical components and equipment associated with the pool/spa water circulation system.
5. Ground the pump motor securely using the green screw provided. Ground before attempting to connect to an electrical power supply. **Do not ground to a gas supply line.**
6. Insulate all connections carefully to prevent grounding or short-circuits. Sharp edges on terminals require extra protection.
7. Reinstall all conduit and junction box covers. Do not force connections into the junction box.

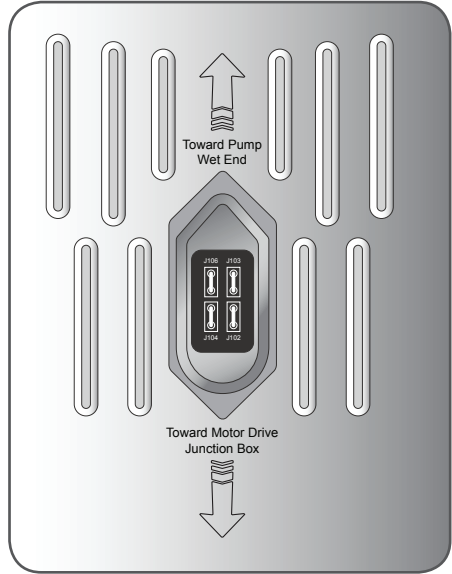


Figure 2. Motor Drive Orientation

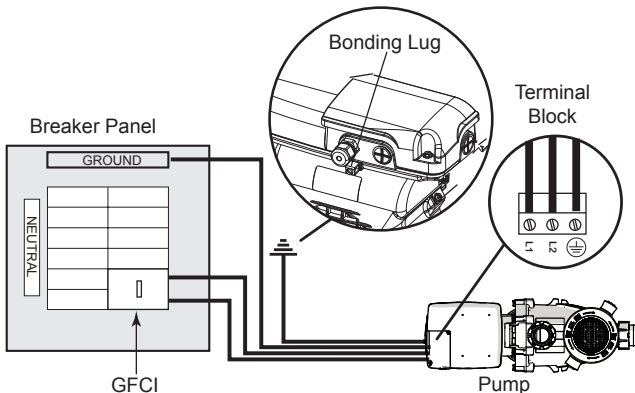


Figure 3. Bonding the Motor

## **WARNING**

In order to prevent the risk of electrical shock, The National Electrical Code® (NEC®, NFPA-70®) requires all pool pump circuits be protected with a Ground Fault Interrupter (GFCI). Therefore, it is also the responsibility of the electrical installer to ensure that the pump circuit is in compliance with this and all other applicable requirements of the National Electrical Code (NEC) and any other applicable installation codes. In Canada the requirements of the Canadian Electrical Code (CEC, CSA C22.1) should be adhered to.

Always disconnect the power source before working on a motor or it's connected load.

Ensure that the control switch, time clock, or control system is installed in an accessible location, so that in the event of an equipment failure or a loose plumbing fitting, the equipment can be turned off. This location must not be in the same area as the pool pump, filter, and other equipment.

## **CAUTION**

Failure to provide data plate voltage (within 10%) during operation will cause the motor to overheat and void the warranty.

The pump must be permanently connected to a dedicated electrical circuit. No other equipment, lights, appliances or outlets may be connected to the pump circuit, with the exception of devices that may be required to operate simultaneously with the pump, such as a chlorinating device or heater.

### 3.3 Controller Options

The pump can be operated by one of the following controllers: JEP-R variable-speed controller, AquaLink RS, AquaLink PDA or AquaLink Z4. The pump communicates with the controllers via a four-wire RS-485 interface.



**NOTE** Since the pump is operated by an external controller, the pump will not be turned on until it is turned on with a controller.

#### 3.3.1 For Installations with AquaLink® controller

The Variable Frequency Drive can be operated by the following AquaLink Controllers:

AquaLink RS (Rev O or later) |

AquaLink PDA (Rev 4.0 or later) |

AquaLink Z4

## **WARNING**

### **ELECTRICAL SHOCK HAZARD**

Turn off all switches and the main breaker in the variable-speed pump electrical circuit before starting the procedure. Failure to comply may cause a shock hazard resulting in severe personal injury or death.

1. Disconnect the high voltage lines or open any breaker to which the pump power is connected.
2. Set Dip switches 1 and 2 to the OFF position.
3. Select the pump address(es) by setting dip switches 3 and 4, as shown in Table 2.
4. Connect the RS-485 cable from the AquaLink through the available compression fitting and route the cable through the motor drive port closest to the connector. See Figure 4.
5. Connect the other end of the cable to an RS-485 connector on the AquaLink RS (or multiplexer interface board), matching wire colors with connector positions. See Figure 4.

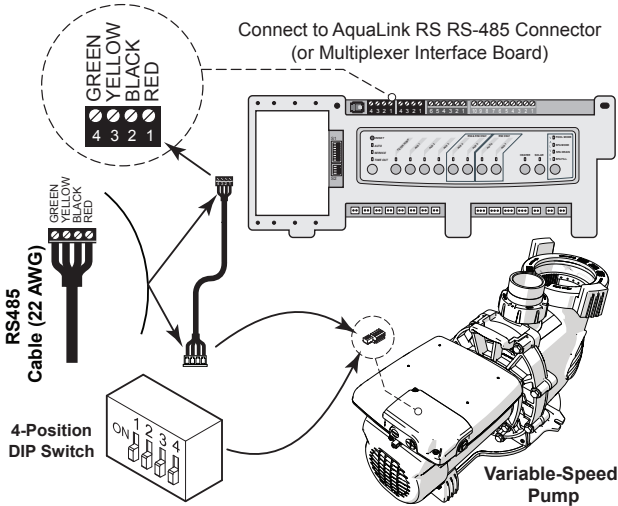


Figure 4. Wiring AquaLink RS, PDA or Z4

6. Restore power to the pump and verify the operation of the controller.
7. Refer to the appropriate manual for set up and operation of the pump:
  - AquaLink RS Manual #6593
  - AquaLink PDA Manual #H0572300
  - AquaLink Z4 Manual #H0386600.

### 3.3.2 For Installations with JEP-R variable-speed controller

## IMPORTANT

The installer must TURN ON switches 1 and 2 at the VS Plus HP pump when connected to the variable-speed controller.

1. Disconnect the high voltage lines or open any breaker to which the pump power is connected.
2. Remove the junction box cover and feed the RS-485 cable into the fitting.
3. Unplug the RS-485 connector.
4. Attach the four (4) RS-485 cable wires to the RS-485 connector. Match the wire colors with the positions on the connector: See Figure 5.
5. Insert the RS-485 connector back into the junction box.

6. Dip switches 1 and 2 must be in the ON position, and switches 3 and 4 must be in the OFF position. See Figure 5.
7. Connect the other end of the cable to the controller. Match the colors of the wires with the appropriate connector positions. See Figure 4.
8. Restore power and verify the operation of the controller.
9. Refer to the Variable-Speed Controller Owner's Manual, #H0412200, to operate the pump.

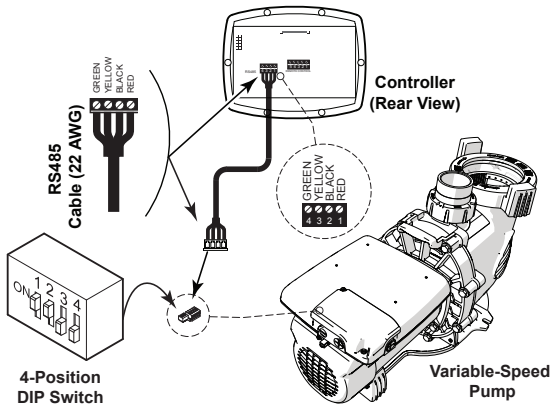


Figure 5. Wiring JEP-R VSP Controller

### 3.3.3 Pump Dip Switch Settings

1. As shown in Figures 4 and 5, the four position dip switch serves two functions: it selects the pump address, and it determines what type of controller will be used with the pump.

Table 2. Dip Switch Settings

| Switch 1 | Switch 2 | Controller                                 |
|----------|----------|--|
| OFF      | OFF      | Factory Default                            |
| OFF      | OFF      | AquaLink® RS, AquaLink PDA, or AquaLink Z4 |
| ON       | ON       | Variable Speed Controller                  |

| Switch 3 | Switch 4 | Pump Address             |
|----------|----------|--------------------------|
| OFF      | OFF      | PUMP 1 (Factory Default) |
| ON       | OFF      | PUMP 2                   |
| OFF      | ON       | PUMP 3                   |
| ON       | ON       | PUMP 4                   |

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