



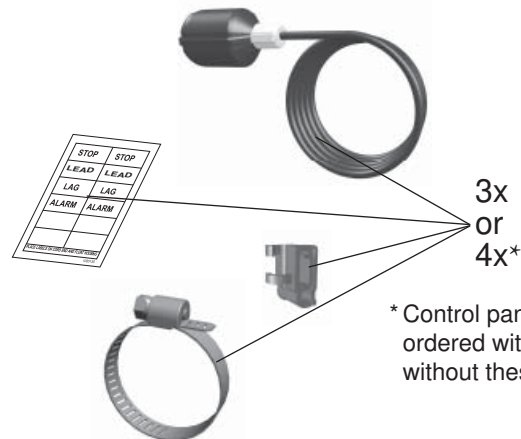
# Single Phase Duplex

## Installation Instructions and Operation/Troubleshooting Manual

\*Patent Pending



### Parts included



3x  
or  
4x\*  
\* Control panel may be ordered with or without these items.

**⚠ WARNING!**  
**ELECTRICAL SHOCK HAZARD**  
 Disconnect all power sources before servicing. Failure to do so could result in serious injury or death.

This control panel must be installed and serviced by a licensed electrician in accordance with the National Electric Code NFPA-70, state and local electrical codes. UL Type 4X enclosures are for indoor or outdoor use.

**Warranty void if panel is modified.**

**? For information regarding operation, available options, or servicing questions, please call an SJE-Rhombus customer service technician:**

1-800-Rhombus (1-800-746-6287)  
 Monday-Friday, 7:00 AM to 6:00 PM Central Time

SJE-Rhombus offers a five-year limited warranty. For complete terms and conditions, please visit [www.sjrhombus.com](http://www.sjrhombus.com).

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.

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 Detroit Lakes, MN 56502 USA

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 Website: [www.sjrhombus.com](http://www.sjrhombus.com)

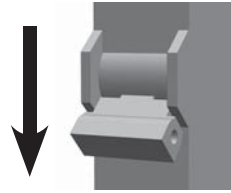
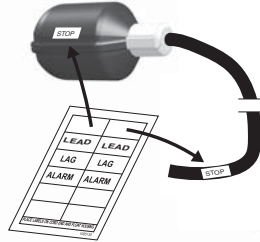
## Installing the float switches

The NEX Series® Single Phase Duplex control panel operates with three or four float switches. They activate pump STOP, LEAD, LAG pump START, LAG pump START and high-level ALARM functions.

### 1 **⚠ WARNING!**

Ensure all power is turned OFF before installing floats in tank. Failure to do so could result in serious or fatal shock.

2 Label each float and cord end with the provided pairs of STOP, LEAD, LAG, and ALARM stickers.

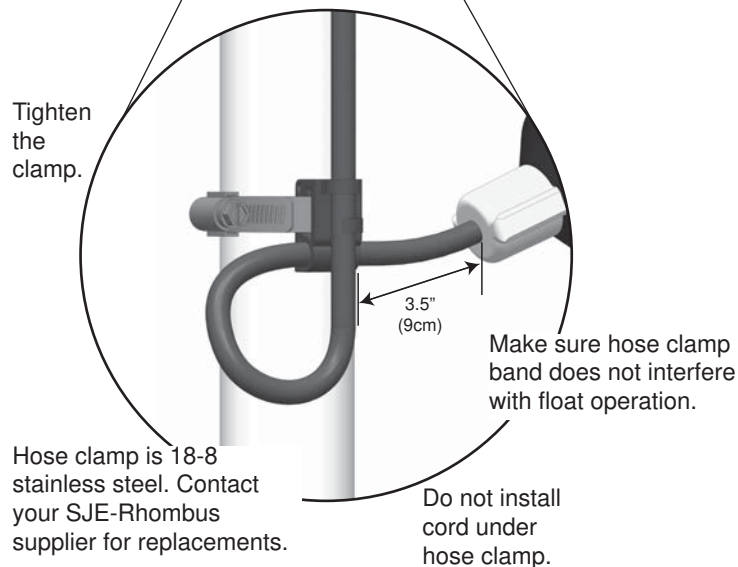
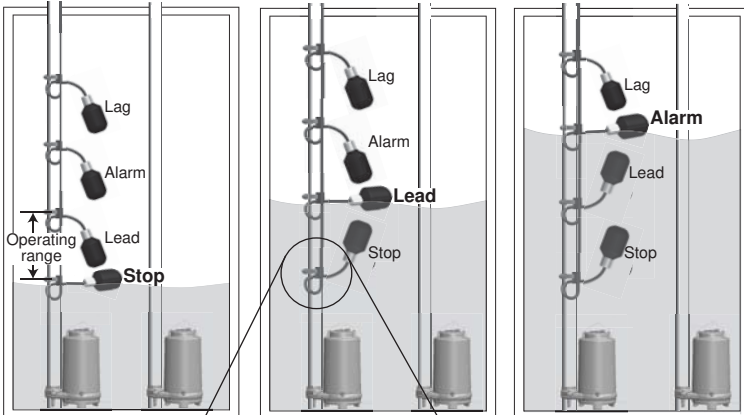


### 3 **⚠ CAUTION!**

If the floats are not properly mounted and connected in the correct order, the pumps will not function properly.

Floats require free range of motion.

They must not touch each other or any equipment in the pump chamber.



## Mounting the control panel

### NOTE

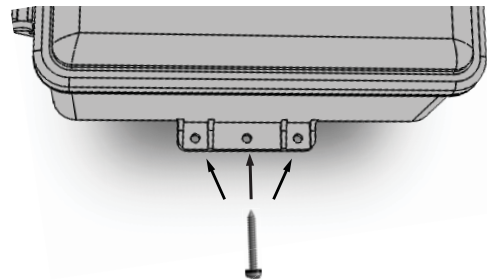
If the distance to the control panel exceeds the length of the float switch cords or the pump power cord, splicing in a liquid-tight junction box will be required. For outdoor or wet installation, we recommend an SJE-Rhombus, UL Type 4X junction box.

1 Drill and install top fastener using appropriate anchor if necessary.



2

Drill and install a bottom fastener using appropriate anchor if necessary.



## Wiring the control panel

**1** Determine conduit entrance locations on control panel as shown. Check local codes and schematic on the inside cover of the panel for the number of power circuits required.

### ⚠ CAUTION!

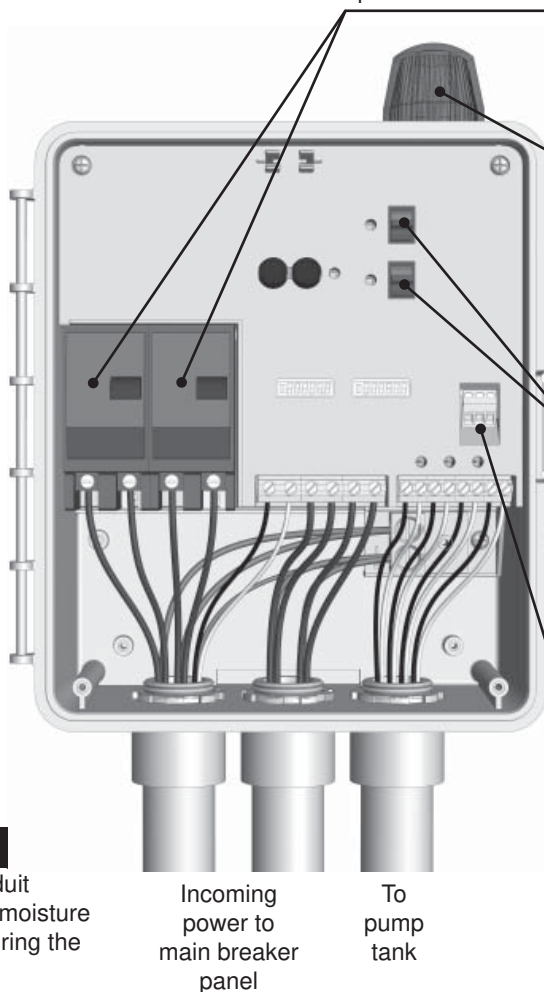
Be sure the pump power voltage and phase are the same as the pump motor being installed.

Use of separate pump and control/alarm power sources is recommended.

**2** Connect the following wires to the proper terminal positions:

- incoming power for each pump circuit
- incoming power for control/alarm circuit
- pump 1
- pump 2
- float switches

See schematic label on inside cover of the control panel for details.



### ⚠ CAUTION!

You must use conduit sealant to prevent moisture or gases from entering the panel.

Type 4X conduit must be used to maintain a Type 4X rating of the control panel.

**3** Verify correct operation of control panel after installation is complete.

## Operations

SJE-Rhombus NEX Series® Single Phase Duplex control panel operates with a three or four float system. When all floats are in the open or OFF position, the panel is inactive. As the liquid level rises and closes the STOP float, the panel remains inactive until the LEAD float closes. At this point the LEAD pump will turn ON (if the Hand-Off-Auto switch is in the AUTO mode and the power is ON). The pump will remain ON until both the STOP and LEAD floats return to their OFF positions. If the liquid level rises beyond both the STOP and LEAD floats to reach the LAG float, the lag pump will turn ON (if the Hand-Off-Auto switch is in the AUTO mode and the power is ON). Both pumps will remain ON until the STOP, LEAD, and LAG floats return to their OFF positions. If the liquid level rises to reach the ALARM float, the alarm will be activated.

### Circuit Breakers

Each pump circuit has a thermal-magnetic circuit breaker that provides pump disconnect and branch circuit protection.

### Alarm System (Indicator Light and Horn)

When an alarm condition occurs, the red light and horn will be activated.

If the TEST/SILENCE button is pressed and released, the horn will be silenced. When the alarm condition is cleared, the alarm system is reset.

### Hand-Off-Auto (HOA) Switches

The HOA, 3-way switches control pump functions.



In HAND mode, the pump will turn ON.



OFF turns the pump OFF.



In AUTO mode, commands from the float switches turn each pump ON and OFF.

### Dry Auxiliary Contacts

**Normally Closed** - Contacts are CLOSED under normal conditions and OPEN when alarm condition is present.

**Normally Open** - Contacts are OPEN under normal conditions and CLOSED when alarm condition is present.

Both types automatically reset once alarm condition is cleared.



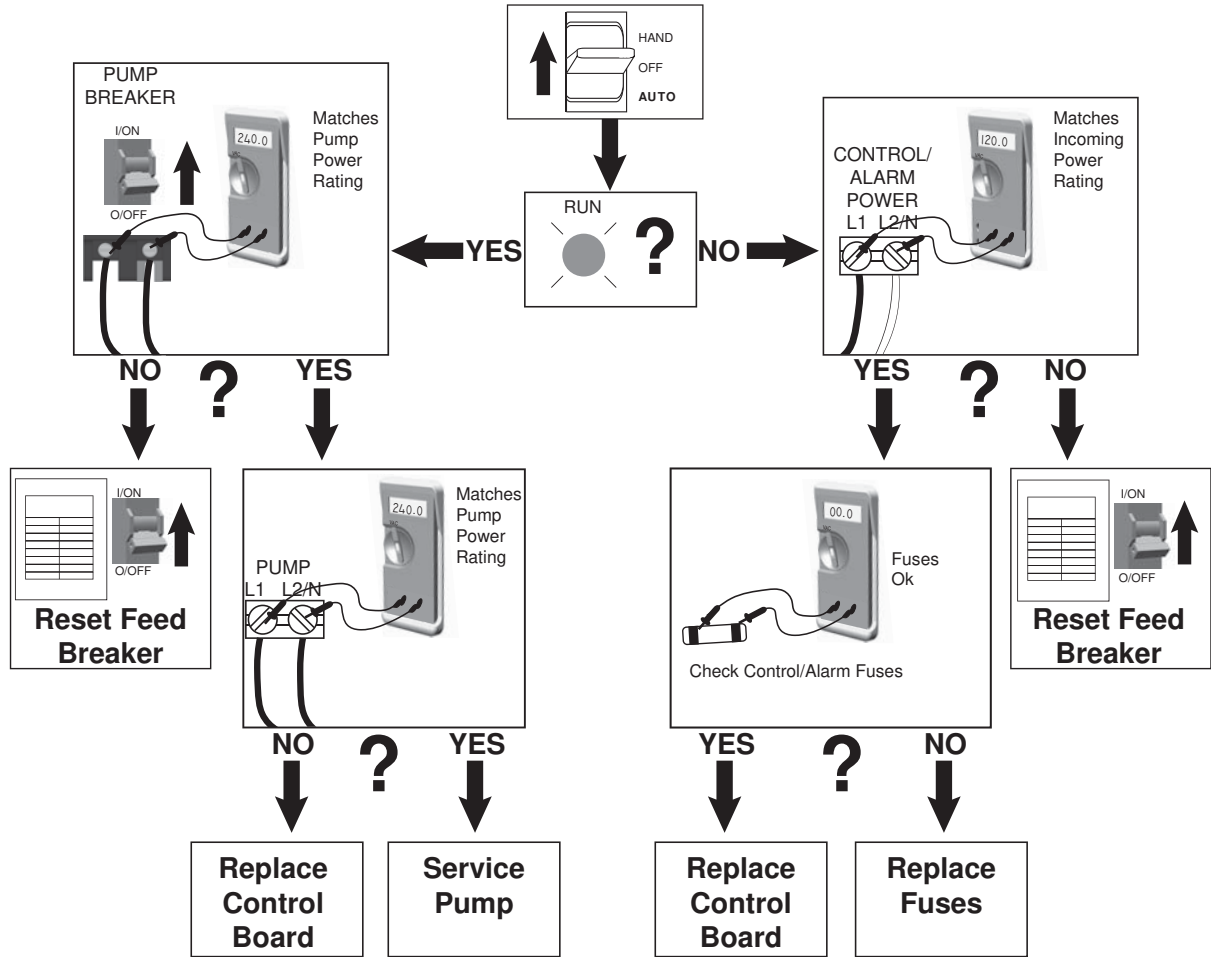
### Technical support, service questions:

1-800-Rhombus  
(1-800-746-6287)

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7:00 AM to 6:00 PM Central Time

# Troubleshooting

## Pump Does Not Work



## Pump Does Not Work in "AUTO"

