



OWNER'S MANUAL  
**Variable Speed Booster Pump**

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MANUEL D'UTILISATION  
**Pompe de surpression  
à vitesse variable**

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MANUAL DEL USUARIO  
**Bomba de refuerzo de  
velocidad variable**

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INTELLIBOOST  
MIB0715B, MIB0715S

# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS -

This manual contains important instructions that should be followed during installation, operation, and maintenance of the product. Save this manual for future reference.

**▲** This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury!

**▲ DANGER** indicates a hazard which, if not avoided, will result in death or serious injury.

**▲ WARNING** indicates a hazard which, if not avoided, could result in death or serious injury.

**▲ CAUTION** indicates a hazard which, if not avoided, could result in minor or moderate injury.

**NOTICE** addresses practices not related to personal injury.

Carefully read and follow all safety instructions in this manual and on pump.

Keep safety labels in good condition. Replace missing or damaged safety labels.

## California Proposition 65 Warning

**▲ WARNING** This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

## ELECTRICAL SAFETY

**▲ WARNING** **Hazardous voltage.** Capacitor voltage may be hazardous. To discharge the Variable Frequency Drive (VFD) capacitor, disconnect the pump

from the power supply and wait at least 5 minutes.

**IMPORTANT:** DO NOT assume that the capacitor is discharged. Disconnect the power, wait the 5 minutes, and only then begin work on the pump or VFD. If in doubt, consult a qualified electrician. Also, this pump is designed to operate ONLY on a 230V, 1-Phase, AC power supply. The VFD converts 230V 1-Phase AC to correct power for the pump motor. DO NOT attempt to operate the motor, or connect the motor to any power source, unless the VFD is installed and operating correctly. DO NOT put a plug on the power cable and try to operate the pump as a plug-in unit.

**▲ WARNING** **Electrical shock hazard.** Do not touch terminals. Terminals may be energized in the open position even when screen is blank.

## GENERAL SAFETY

**▲ CAUTION** **Risk of burns.** Do not touch an operating motor. Motors are designed to operate at high temperatures. To avoid burns when servicing pump, shut it down and allow it to cool for 20 minutes before handling it.

Do not allow pump or any system component to freeze. To do so will void the warranty.

Pump clean water only with this pump.

Periodically inspect pump and system components.

Wear safety glasses at all times when working on pumps.

Keep work area clean, uncluttered and properly lighted; store properly all unused tools and equipment.

Keep visitors at a safe distance from the work areas.

Maximum pressure must not exceed 116 PSI.

Read the instructions in this manual before installing or operating this pump. Improper installation or use will void the warranty.

**▲ WARNING Hazardous voltage.** Can shock, burn, or cause death. Ground pump and motor before connecting to power supply. Disconnect power before working on pump, motor or tank.

Meet National Electrical Code (NEC), Canadian Electrical Code (CEC), and local codes (as applicable) for all wiring.

Follow wiring instructions in this manual when connecting motor to power supply.

**▲ WARNING Hazardous pressure.** Install pressure relief valve in discharge pipe. Release all pressure on system before working on any component.

Only qualified personnel should install, operate, and maintain this VFD System. Electrical work must be done by a qualified electrician.

Disconnect all power to the VFD System and wait 5 minutes before working on it. After working on the System, reset and test all safety and protective devices before operating the System.

When working on the VFD System, always wear all necessary safety clothing (including, but not limited to, safety glasses and gloves).

Always observe safety standards at the work place and keep a first aid kit on site.

In some cases, the pump and the pumping medium may be hot and could cause burns.

Make sure that the power cable is not mechanically or chemically damaged. Replace any damaged or kinked cables.

## APPLICATION

The INTELLIBOOST Variable Frequency Drive (VFD) System is a pre-assembled and pre-wired unit made up of a pump, expansion tank, fittings, and a pressure transducer. It is equipped with an electronic Variable Frequency Drive with inverter technology that maintains constant pressure in the system. The INTELLIBOOST pump is a horizontal multi-stage pump for pumping clean water only.

The VFD:

- Is ready to use.
- Starts and stops the pump as needed.
- Reduces water hammer.
- Allows you to set specific pressure parameters for your system.
- Protects the pump from dry running and motor overloads.

The pump can be used to pump water in city water boosting.

The expansion tank is divided into two compartments: one for water and one for air. The water section collects and delivers water on demand and reduces motor starts in the event of small leaks in the system. The air section of the tank provides a cushion to prevent water hammer and helps maintain a constant output pressure. The pump is started and stopped by the VFD, which adjusts the motor speed according to demand. The VFD maintains a constant pressure according to the selected set point. As the water demand decreases, the device reduces the pump speed until it stops.

The expansion tank minimizes the pump start-up and shutdown cycles.

The factory default set point is 60 pounds per square inch (PSI). Tank pressure should be 70% of the set point pressure.

For best operation, adjust the set-point and the tank pressure to the specific needs of your installation (See Table 2).

**NOTE:** The pump is designed for use with clean water.

### Application Limits

Temperature of pumped liquid: from +41°F To +122°F (+5°C to +50°C) in compatibility with the pump materials.

Maximum ambient temperature: +104°F (+40°C).

Max. operating pressure: 116 PSI.

Use of this pump in situations requiring very low boost may result in cycling of the pump or fluctuations in water pressure.

**Table 1.**

Pos.	Description	Specification
1	Type of Pump	Variable Speed Booster
2	For Installation	Indoors Only
3	Power Supply	230V/50-60Hz/1Ph
4	Circuit Breaker	15 Amp
5	Rated Current	5A
6	Maximum Liquid Temperature	122°F (50°C)
7	Maximum Head	116 PSI

### Transport and storage

On delivery, check that the pump has not been damaged during transport; in case of damage, notify the distributor immediately.

Store the pump in a clean, dry area protected from external contaminants and mechanical damage.

### Installation

This water pressure booster pump is a system including pump, expansion tank, and variable speed drive (VFD) that boosts water pressure in a home water system, maintaining a constant pre-set pressure. The system will pump water at a maximum water temperature of 122°F (50°C) at up to 21 gallons per minute.

**NOTICE:** This pump is not to be used to draw water from a cistern or other static water source.

The motor varies in speed to maintain constant pressure, boosting water pressure to the pressure you program using four stainless steel impellers. The VFD with integrated electronic speed control indicates pump status and controls the motor for soft starts and soft stops to minimize water hammer. The VFD has integral dry run protection.

Engineered composite plastic and stainless steel is used throughout for a durable and corrosion-free pump. The integral expansion tank allows booster use without an external pressure tank.

### UNPACKING AND INSPECTION

**NOTICE:** Handle with care. Check items received against packing list to be sure that all equipment has been received. Inspect for shipping damage. If found, file claim with carrier immediately.

Follow local and/or national plumbing, building and electrical codes when installing the pump. Use rigid pipe when installing this pump.

### INSTALLATION

Install the pump in a well-ventilated area. Relative humidity in the environment must not exceed 50% at

122°F (50°C) (condensate free). Be sure that the ambient temperature does not exceed 122°F (50°C).

Install shutoff valves on the suction and discharge pipes to avoid draining the system during maintenance.

**▲ WARNING Risk of explosion and burns.** Operating the pump with the discharge shutoff valve closed can cause the water trapped in the pump to turn to steam, and may cause an explosion. NEVER operate the pump with the discharge shutoff valve closed.

Pipelines and valves must be correctly sized for the installation. Suction and discharge pipe diameters must be at least as large as the diameter of the pump ports.

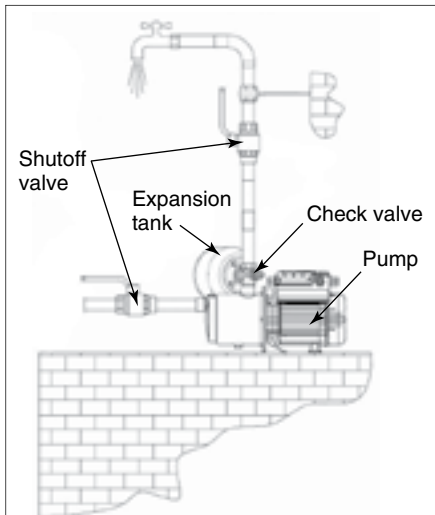


Figure 2

## ELECTRICAL CONNECTION

**▲ WARNING Hazardous voltage.**

Ground motor before connecting to electrical power supply. Failure to

ground motor can cause severe or fatal electrical shock hazard.

Do not ground to a gas supply line

To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

Supply voltage must be within  $\pm 10\%$  of nameplate voltage. Incorrect voltage can cause fire or damage motor and voids warranty. If in doubt consult a licensed electrician.

Use the power cable supplied with the pump. DO NOT remove the cable or substitute another one. Connect the pump to a separate branch circuit with no other appliances on it.

**▲ WARNING Hazardous voltage in capacitors.** Can shock, burn, or kill. Before working on the pump or the Variable Frequency Drive (VFD), discharge the VFD capacitors by disconnecting the pump from the power supply and waiting at least 5 minutes for the capacitors to discharge. If in doubt, consult a qualified electrician.

This pump is designed to operate ONLY on a 230V, 1-Phase, AC power supply. The VFD converts 230V 1-phase AC to correct power for the pump motor. DO NOT attempt to operate the motor, or connect the motor to any power source, unless the VFD is installed and operating correctly. DO NOT put a plug on the power cable and try to operate the pump as a plug-in unit.

The electrical cables must be protected, in particular from high temperatures, vibrations and impact, which could cause mechanical or chemical damage.

The power supply must include a 15 amp circuit breaker.

**⚠️ WARNING Electrical shock hazard.**

Do not touch terminals. Terminals may be energized in the open position even when screen is blank.

### Electrical Connection

1. Install, ground, wire and maintain your pump in compliance with the National Electrical Code (NEC), the Canadian Electrical Code (CEC), and all local codes and ordinances, as applicable. Consult your local building inspector for code information.
2. Provide a correctly fused disconnect switch for protection while working on the motor. For switch requirements, consult your local building inspector for information about codes.
3. Connect the pump's power cable to the circuit breaker service panel. Connect the ground wire first to a grounded lead in the service panel, then connect current carrying wires. Do not connect the ground wire to a plastic pipe or to insulated fittings. Protect current carrying and grounding conductors from cuts, grease, heat, oil, and chemicals.
4. If this procedure or the wiring diagrams are confusing, consult a licensed electrician.

### Adjust Expansion tank

**⚠️ WARNING Risk of explosion and injury.** The expansion tank air pressure must never exceed 116 PSI.

The factory default set point for the Intelliboost is 60psi. The expansion tank may only be shipped from the factory pre-charged to 21psi. For optimal system performance, the pressure in the tank should be set to 70% of the system set-point. Use a tire pressure gauge to

verify the air pressure in the tank. Adjust the air in the tank until pre-charge pressure is 42psi. If a different set point will be used, charge the tank to 70% of the set point or see Table 2. Note that the system should have no pressure in it when checking the expansion tank pre-charge.

**Table 2**

Pressure Point Setting (PSI)	Precharge Pressure (PSI)
30	21
35	25
40	28
45	32
50	35
55	39
60 (Default)	42

## OPERATION

### Pump Priming

The system will fill from the incoming system water pressure in the suction pipe.

### Pump Start-Up

Use the pump according to the performance specifications as stated on the data plate.

Never operate the pump with the suction shutoff valve completely closed. Dry running of the pump can lead to overheating and damage to the pump.

**⚠️ WARNING Explosion hazard.** Never operate the pump with the discharge shutoff valve completely closed. Water trapped in the pump may boil, which

could cause a steam explosion and can scald anyone near. If you find the pump running hot, turn it off and let it cool. Never allow the pump to cavitate, as this can cause internal damage to the pump.

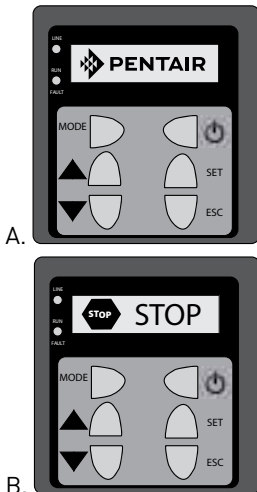
**⚠️ WARNING Explosion hazard.**

Pressure on the discharge side of the pump must never exceed the maximum operating pressure as shown on the pump. See "Application Limits", Table 1.

The discharge pressure of the pump equals the pressure produced by the pump plus the pressure on the suction side of the pump.

Make sure that the suction and discharge shutoff valves are both open.

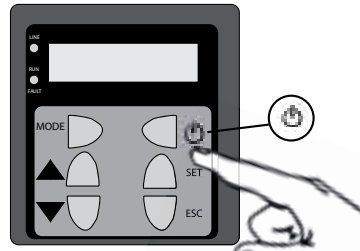
When the Intelliboost is connected to the power supply it initializes. The green LED will be ON and the Pentair logo shows up on the display (Figure 3a). As this initialization ends, the pump stops and the display shows STOP (Figure 3b).



**Figure 3**

If you need to change the set-point, wait for the initialization to complete and then push the up ▲ or down ▼ button [See Figure 7 and 8]. Hold down the button until the desired set-point is displayed.

Start the pump by pressing the ON/OFF ⏻ button [Figure 4].



**Figure 4**

The pump starts and reaches the pressure level set at the factory (default is 60PSI). The RUN/FAULT LED will be ON and showing green. If the system pressure is equal to or higher than the factory pressure setting, the pump will be in stand-by mode (green LED ON), ready to start if the pressure decreases.

The pump should start immediately when the pressure drops below the set-point and pressure should return to the set-point and stay there. Do not run the pump with the discharge shut-off valve closed! If the system goes to PROTECTION mode, refer to the "Quick Troubleshooting Guide".

**MAINTENANCE**

**⚠️ WARNING Hazardous voltage.**

Can shock, burn, or kill. Before doing any work on the pump or the VFD, disconnect all power from the VFD and wait 5 minutes for the VFD capacitors to

discharge. See “Electrical Safety” and “Electrical Connection”.

**⚠ WARNING Risk of flooding.** Close system shut-off valves before removing any plugs, caps, or fittings from the pump. System water pressure will prevent replacing the fittings once they are removed.

In normal conditions, electric pumps do not require any scheduled maintenance. Periodically check the pressure delivered and current draw. Reduced pressure indicates pump wear. Increased current draw indicates abnormal mechanical friction in the pump.

Special maintenance may be required to clean the pump and replace any worn parts.

At least twice a year, inspect the expansion tank and check the pre-charge pressure, the sealing efficiency of the joints, and all areas for visible signs of damage and/or corrosion. To check the pre-charge pressure, close the shut-off valves on both sides of the pump, turn off the pump, and drain all water from the variable speed booster system until the system water pressure has returned to zero. On completion of the check, restore the system to normal conditions.

If the pump is not used for prolonged periods (e.g. for an entire season) drain it completely, rinse it with clean water, and store it in a dry location.

## SIGNALS, ALARMS STATUS AND ERRORS

### Programming

#### 1. Language setting:

To change the language, press the SET button (see Figure 5).

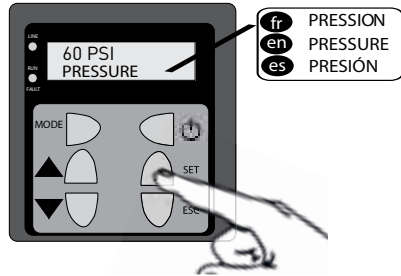


Figure 5

#### 2. Display setting.

Press MODE to change the display configuration and choose between GRAPHIC (a) and TEXT (b) modes (see Figure 6).

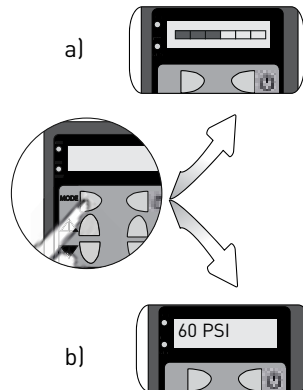


Figure 6

#### 3. Pressure level setting (set-point)

To increase or decrease the set-point, press the up ▲ or down ▼ buttons (See Figures 7 and 8).



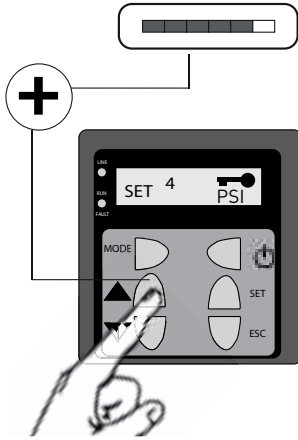


Figure 7

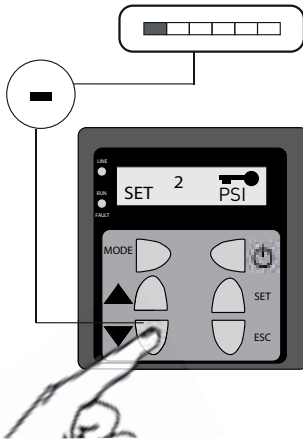


Figure 8

## QUICK TROUBLESHOOTING GUIDE

### Removal

1. Disconnect the power supply and wait at least 5 minutes for the VFD capacitors to discharge. Before starting work, the LED "LINE" must be OFF. Make sure that the

power supply cannot be restored accidentally.

2. Disconnect the VFD from the power supply at the circuit breaker.
3. Close the shutoff valves on the delivery and suction sides of the pump. Notice the position of the fill port, which can also be used as a bleed point. Make sure that draining the pump cannot cause damage or physical injury.
4. Loosen the fill cap to relieve the pressure of the water remaining in the pump (between the two pump shutoff valves).
5. Remove the drain plug from the pump body to completely empty the pump.

### Winterization

If the pump needs to be winterized, drain water from the pump as follows:

1. Disconnect the power supply and wait at least 5 minutes for the VFD capacitors to discharge. Before starting work, the LED "LINE" must be OFF. Make sure that the power cannot be restored accidentally.
2. Close the inlet and outlet shutoff valves and open the bypass valve if the system has one.
3. Disconnect all pipes from the pump.
4. Remove the plug on the bottom of the pump and drain all water from the pump. Replace the plug and store the pump in a cool dry place.

To return the pump to service, ensure the plug is in place before reconnecting the pump to the system.

## Quick Troubleshooting Guide - Pump

Problem	Cause	Fix
Water leaks from tank air valve when checking air pressure	Tank diaphragm is damaged	Replace the tank
Pump does not start	No power	Check/repair loose or defective electrical connections,damaged power cable; check power supply voltage.
	Tripped CB or blown fuse	Reset CB or replace fuse.
	Motor overload has tripped	Check/repair cables and connections, pump clogged; clean it.
	Motor damaged	Replace VFD System.
	Faulty control device	Replace VFD System.
Pump starts, runs a short time, stops	High amp draw	Pump partially clogged; clean out/repair pump.
	Thermal overload tripped	Check/correct circuit breakers/fuses.
	Damaged power cable	Replace cable.
	Motor damaged	Replace VFD System.
	Dry running	Replace VFD System.
Pump starts, no water pumped	No water to inlet	Check/repair water supply, open inlet shutoff valve.
	Outlet shutoff closed	Open outlet shutoff.
Pump performance reduced	Low inlet water pressure	Check/repair water supply, open inlet shutoff valve.
	Set point low	Adjust set point.
Pump performance unstable	Low suction pressure/cavitation	Check/repair/clean out water supply, open inlet shutoff valve. Repair any leaks in suction pipe.
	Differential pressure in pump too low	Gradually close discharge shutoff until delivery pressure stabilizes and noise level drops; DO NOT close completely.

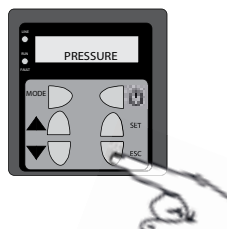
## Quick Troubleshooting Guide - Pump

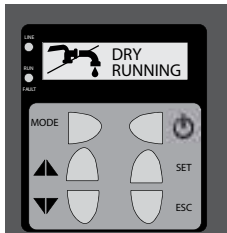
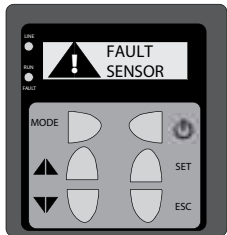
Problem	Cause	Fix
Pump reverses when stopped	Check valve stuck open	Remove and clean/replace check valve.
	Leaky suction pipe	Repair suction pipe.
Pump cycles rapidly	Tank diaphragm is damaged	Replace tank
	Tank air pressure incorrect	Adjust tank air pressure to 70% of set point pressure; see Table 2.

## Quick Troubleshooting Guide - VFD

**NOTICE:** The VFD will reset the dry run fault four times. When the fault occurs, the pump restarts after 1 minute, 5 minutes, 1 hour, and 6 hours. After the fourth try the VFD locks out and displays the error message.

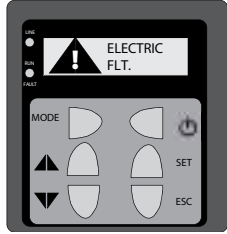
To manually reset the fault, press the ESC (Escape) button. The fault will reset and the display will clear, but if the fault has not cleared, it will immediately reappear on the display panel.



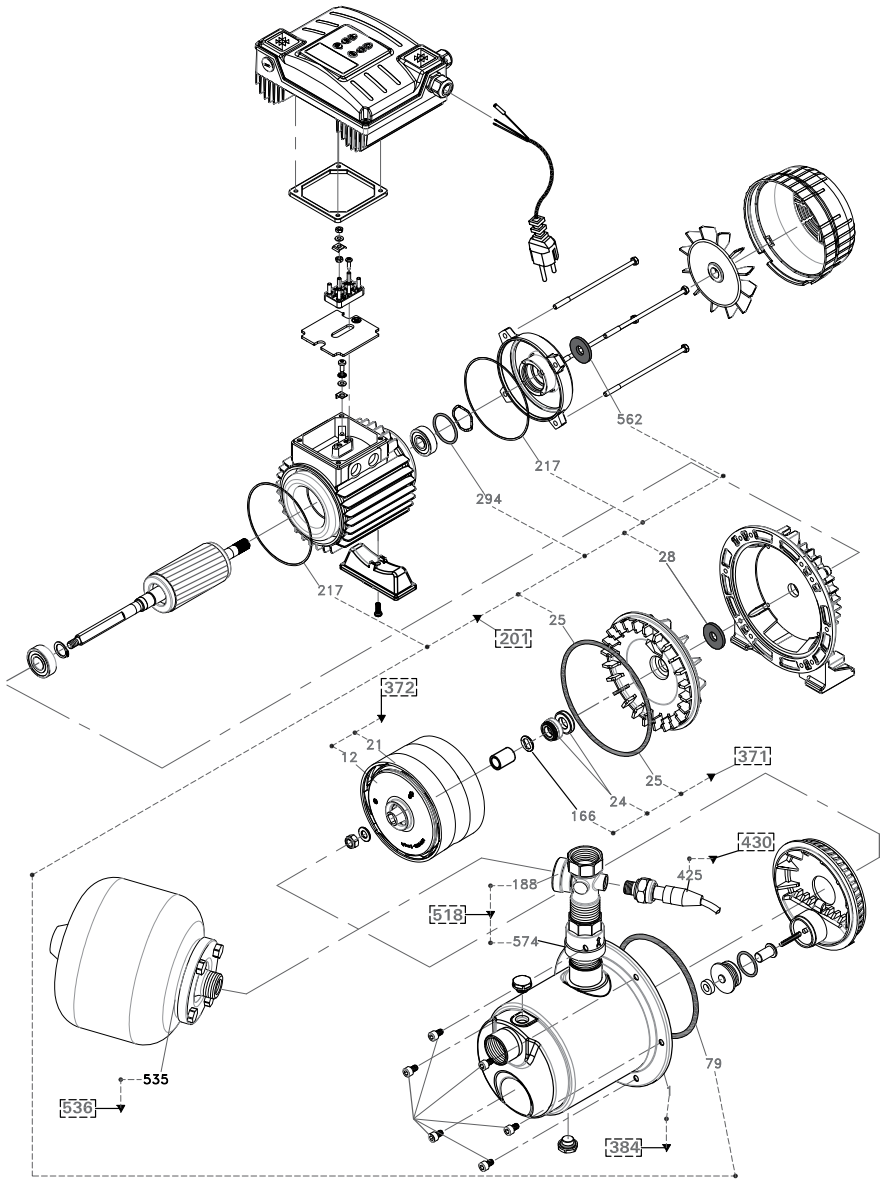
Display	Problem	Fix
DRY RUNNING/ Blinking red RUN/ FAULT LED 	Pump not primed	Check/repair water supply, open inlet shutoff valve.
FAULT SENSOR/ Blinking red RUN/ FAULT LED 	The VFD cannot interact with the pressure sensor	Check the sensor connection to the VFD and call the service center (866-973-6835)

## Quick Troubleshooting Guide - VFD

Display	Problem	Fix
<p>ELECTRIC FLT/ Blinking red RUN/ FAULT LED</p> <p><b>⚠ WARNING</b></p> <p><b>Hazardous voltage.</b> Turn off power to the pump and wait 5 minutes before proceeding.</p>	<p>Voltage out of range</p> <p>High amp draw</p> <p>Damaged motor</p> <p>Problems with the VFD</p>	<p>Check incoming power supply voltage.</p> <p>Pump partially clogged; clean out/repair pump.</p> <p>Replace the VFD System.</p> <p>Replace the VFD System.</p>



# REPAIR PARTS



Reference chart on next page

## REPAIR PARTS

Key No.	Kit. Ref. No.	Kit Description	Component Ref. No.	Component Description	Model Number	Quantity
	201	Gasket Kit	25	O-Ring (Pump Body ~)	ZBR45830	1 pc
			28	Water Slinger		1 pc
			79	Gasket (Pump Body ~)		1 pc
			217	Gasket (IP55 ~)		2 pcs
			294	O-Ring (Bearing ~)		1 pc
			562	Water Slinger		1 pc
	371	Mechanical Seal Kit	24	Seal (Complee Mechanical ~)	ZBR25620	1 pc
			25	O-Ring (Pump Body ~)		1 pc
			166	Washer (Seal Compression ~)		1 pc
	372	Hydraulic Kit	12	Diffuser (Welded ~)	ZBR45880	1 pc
			21	Impeller		1 pc
	384	Pump Body Kit	1	Pump Body	ZBR46050	1 pc
	430	Kit Sensor	425	Sensor	ZBR22350	1 pc.
	518	Pipe Fitting Kit	188	Pipe Fitting (5 Ways)	ZBR56210	1 pc.
	536	Tank Kit	535	Tank	ZBR56200	1 pc.

# WARRANTY

## Limited Warranty

PENTAIR warrants to the original consumer purchaser (“Purchaser” or “You”) of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period shown below.

Product	Warranty Period
Water Systems Products — jet pumps, small centrifugal pumps, submersible pumps and related accessories	<i>whichever occurs first:</i> 12 months from date of original installation, 18 months from date of manufacture
PENTEK INTELLIDRIVE™	12 months from date of original installation, or 18 months from date of manufacture
Pro-Source® Composite Tanks	5 years from date of original installation
Pro-Source® Steel Pressure Tanks	5 years from date of original installation
Pro-Source® Epoxy-Line Tanks	3 years from date of original installation
Sump/Sewage/Effluent Products	12 months from date of original installation, or 18 months from date of manufacture

Our warranty will not apply to any product that, in our sole judgment, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that three phase motors must be protected by three-leg, ambient compensated, extra-quick trip overload relays of the recommended size or the warranty is void.

Your only remedy, and PENTAIR’s only duty, is that PENTAIR repair or replace defective products (at PENTAIR’s choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer as soon as a problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is not transferable.

PENTAIR IS NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING LIMITED WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions 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.

This Limited Warranty is effective June 1, 2011 and replaces all undated warranties and warranties dated before June 1, 2011.

### PENTAIR

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