IntelliFlo® Pump Demo Kiosk

Operation and Set-Up Instructions

Pre-Installed Live Pump Demo

Pentair Water
Pool and Spa®

Demo Kiosk Technical Support

For questions about the demo kiosk set up or for additional copies of this manual, please use the following contact information:

Thermal Solutions, Inc.

1074 Classic Drive
Apex, NC 27539

Phone: (919) 362-4575 (8 A.M. to 5 P.M. ET)

Email: thermalsol@mindspring.com

Software downloads available at:
http://www.thermal-solutions.com/customerdata/pentair/PumpDaqSetupUS/.

Go to page 15 for instructions on how to install the latest software version.

Technical Support for IntelliFlo® Operation

If you have questions about Pentair Water Pool and Spa ("Pentair") IntelliFlo® pump operation, please use the following contact information:

Sanford, North Carolina (8 A.M. to 5 P.M. ET)

Phone: (919) 566-8000

Fax: (919) 566-8920

Moorpark, California (8 A.M. to 5 P.M. PT)

Phone: (805) 553-5000 (Ext. 5591)

Fax: (805) 553-5515

Web site:
visit www.pentairpool.com or www.staritepool.com

IMPORTANT WARNING AND SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Attention Installer: This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment. Additional copies of this manual are available at: **http://www.thermal-solutions.com/customerdata/pentair/Kiosk%20Instructions**/

Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

⚠ **WARNING** Always disconnect power to the pump at the circuit breaker and disconnect the communication cable before servicing the pump. Failure to do so could result in death or serious injury to service people, users or others due to electric shock. Read all servicing instructions before working on the pump.

⚠ **WARNING** To reduce the risk of injury, service should only be performed by a qualified service professional. To reduce the risk of injury, do not permit children to use this product.

⚠ **WARNING** DO NOT open the strainer pot if pump fails to prime or if pump has been operating without water in the strainer pot. Pumps operated in these circumstances may experience a buildup of vapor pressure and may contain scalding hot water. Opening the pump may cause serious personal injury. In order to avoid the possibility of personal injury, make sure the suction and discharge valves are open and strainer pot temperature is cool to touch, then open with extreme caution

IMPORTANT! READ BEFORE TURNING ON THE PUMP

The pump can draw up to 3000 watts of power during priming and start up (typical 120V 20 Amp circuit is limited to 1800 watts maximum). Check to be sure the pump watt and power usage does not exceed the rated capacity of the electrical outlet.

For continued, safe operation, **set the pump's maximum speed prior to operation. The pump should not run on a high speed for an extended length of time.** Refer to the IntelliFlo® installation and user's guide for instructions on how to set the pump's maximum speed.

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Quick Reference Guide: Connection Diagram

Power Up Sequence:
1. Main 120V Supply - ON
2. Transformer - ON
3. "Black Box" - On
4. Monitor - ON*
5. Laptop - ON

*Critical Step:
Monitor must be on before turning on laptop.

Connection Diagram

LEGEND:

120V power
240V power
Low Voltage Signal
Hi Pressure TDH (pump discharge)
Lo Pressure TDH (pump suction)

19" LCD Monitor

Laptop

Flow Sensor

Suction

240V

120V

120V

USB

120V Power Strip

Step-Up Transformer 120V/240V

OUT

IN

ON OFF

FLOW

PRESSURE

USB

120V

240V

120V Supply

Pressure Sensor Box

LO

HI
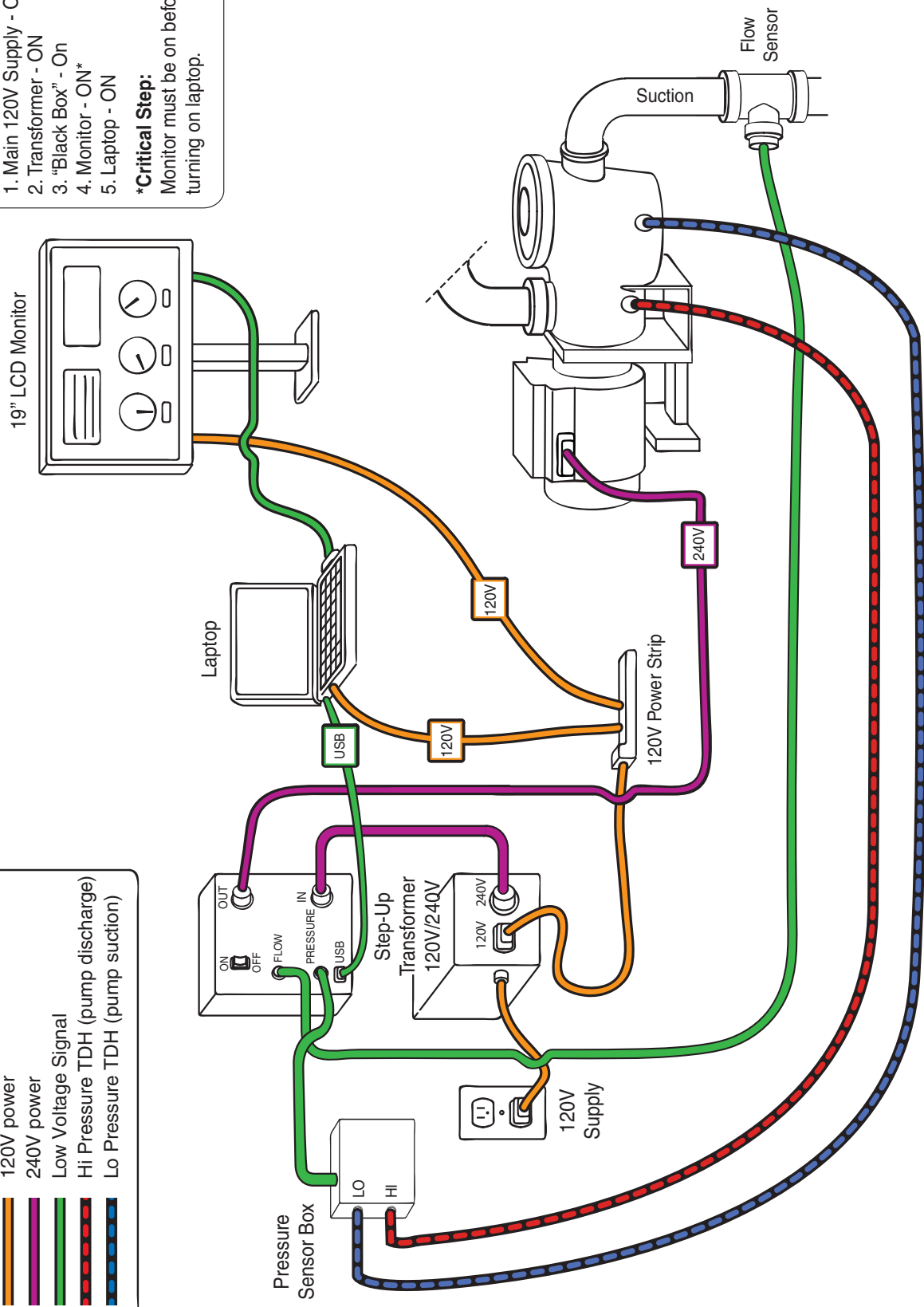
Cabinet Set Up

Tools that will be required to complete the KIOSK Demo Unit assembly (not included with kit shown below, left to right):

• Pipe-Strap Wrench w/ composite
  belt strap
• 7/16" Wrench (or Adjustable Wrench)
• 7/16" Socket w/Ratchet (or Nut Driver)
• 5/16" Nut Driver
• Medium-tip (#2) Phillips Head Screwdriver
• Small blade Screwdriver

Shipping Contents

Before starting assembly, please inspect and verify all individual items and hardware listed are included:

1. **Base Cabinet:** Includes the following pre-installed items:
   • DAQ-202 "BLACK BOX" Unit
   • A/C Ventilation Fan
   • Pressure Sensor Unit includes Pressure Sensor Tube Set
2. **Piping Set:**
   • Discharge Pipe assembly w/Integrated Flow Valve (1)
   • Suction Pipe Assembly w/Integrated Flow Sensor & Cable (2)
   • Flexible Coupling Adapters (2)
   • Threaded Union Adapters w/ O-Rings
   • Diffusers (2)

3. **Pump - Pentair IntelliFlo® Variable Speed Pump**
4. **Pump Mounting Board**
5. **19" LCD Monitor & Cables** (VESA Mounting Hardware located in Monitor Stand Hardware Kit)
6. **Monitor Mounting Stand Components** (VESA Mounting hardware located in located in the Monitor Stand Hardware Kit)
7. **Netbook Pc & Cables** (PC pre-loaded w/Pentair Pump DAQ Demonstration Software)
8. **120V/240V "Step-Up" Transformer**
9. **Pump Hardware**
10. **10-Gallon Water Tub W/Lid**
11. **A/C Power Strip**

Base Cabinet

Unpack the Kiosk Cabinet and place close to the designated final location. Be sure to leave room for the front door can open and close for normal service access.
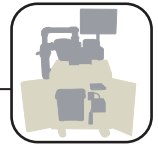
The following items are already installed in the cabinet:

• A/ C Fan w/Bracket Assembly
• DAQ-202 "BLACK BOX" Unit
• Pressure Sensor Unit - (this is an optional component)
• A/C Fan "Finger" Guard

Install the pump mounting board (5) rubber feet onto the bottom of the pump under-board using the (5) supplied # 8-32 X .50Lg. screws.

Cabinet Set Up

LCD Monitor Display Stand

1. Locate the Monitor Stand Base and install the base onto the under-board using the (4) supplied #1/4-20 flat head Screws. (**Note:** Be sure to install the Base with the SLOT in the orientation shown in the picture below).

2. Use the supplied # 1/4-20 Screws from the top side, (4) washers on the bottom side, and the (4) supplied # 1/4-20 Nuts on the bottom side.

3. Tighten each group of hardware with Phillips head screwdriver and 7/16" ratchet.

Quick-Disconnect Fitting Installation

1. Remove the (2) plastic plug fittings from the pump, and remove the o-ring from each plug.

2. Install the o-rings onto the (2) new quick-disconnect fittings and install both into the pump.

3. Tighten to compress the o-ring but do not over-tighten - this can damage the plastic threads.
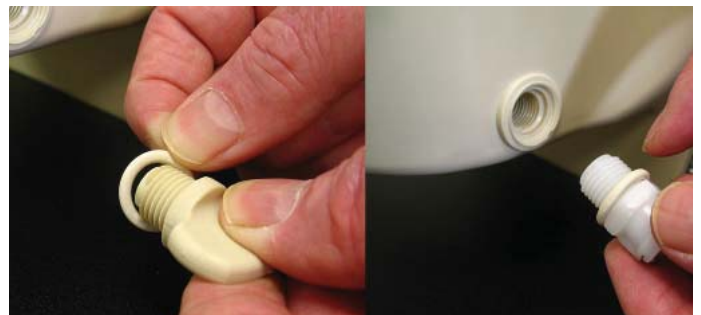
> **TIP:** Install both fittings so the metal-tab release is located toward the top for easy access. Do not over-tighten.

Mounting the Pump

1. Place the pump on the top of the pump board (**Note**: place pump in proper orientation before inserting the hardware).

2. Locate (2) 3/8" bolts, the (4) 3/8" washers, and (2) 3/8" nylock nuts (in monitor stand shipping carton hardware bag).

3. Install with the bolt head on the bottom side of the pump board (countersunk area) with washer, and the nylock nuts on the top side with washer.

4. Place finished assembly on top of the kiosk cabinet, center the pump from left to right, and align the suction opening with the front hole on the left end of the cabinet.

Proper pump placement and orientation
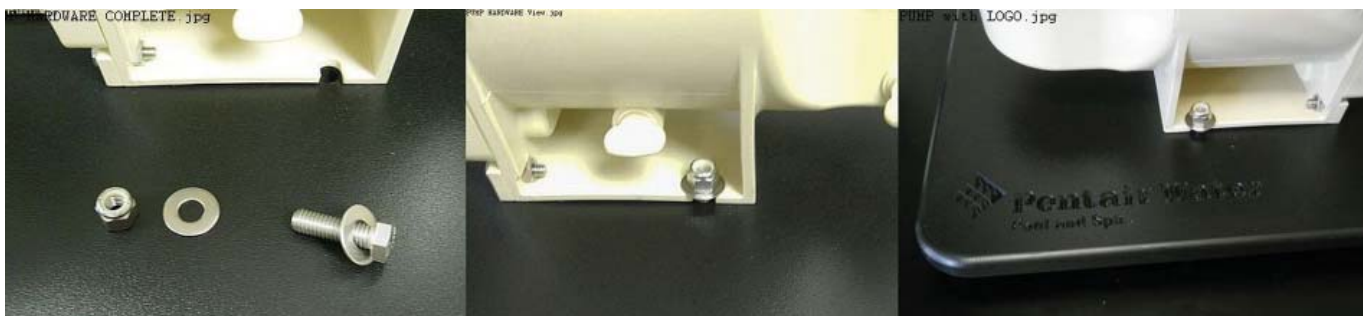
Connecting Pump Power Supply

1. Locate the 12 Gauge Pump Power Cord (w/ black/white/green end).

2. With strain relief bushing on cable, route the wires through the pump wiring housing opening and install the strain relief bushing into the pump using an adjustable wrench to tighten. (Be sure to allow enough wire length to connect the wires).

3. Tighten the strain relief cap securely; now attach the wires as shown (**Note:** The green wire must go to the green grounding screw. Check to be sure all three wires are secure before proceeding to the next step).

4. Install the gasket into the electrical cap cover (shown below).

5. Replace cover using the (4) supplied screws.

6. Route the pump power cord down through the opening in the pump board, into the Cabinet Computer Shelf area and down through the opening at the back of the shelf.

7. Plug the 3-Prong connector into the connector labeled "PUMP IN" on the DAQ-202 "Black Box" Unit.

Install power cord strain relief into pump electrical

Pump wiring cap cover shown with gasket installed

Route power cable through opening in pump board
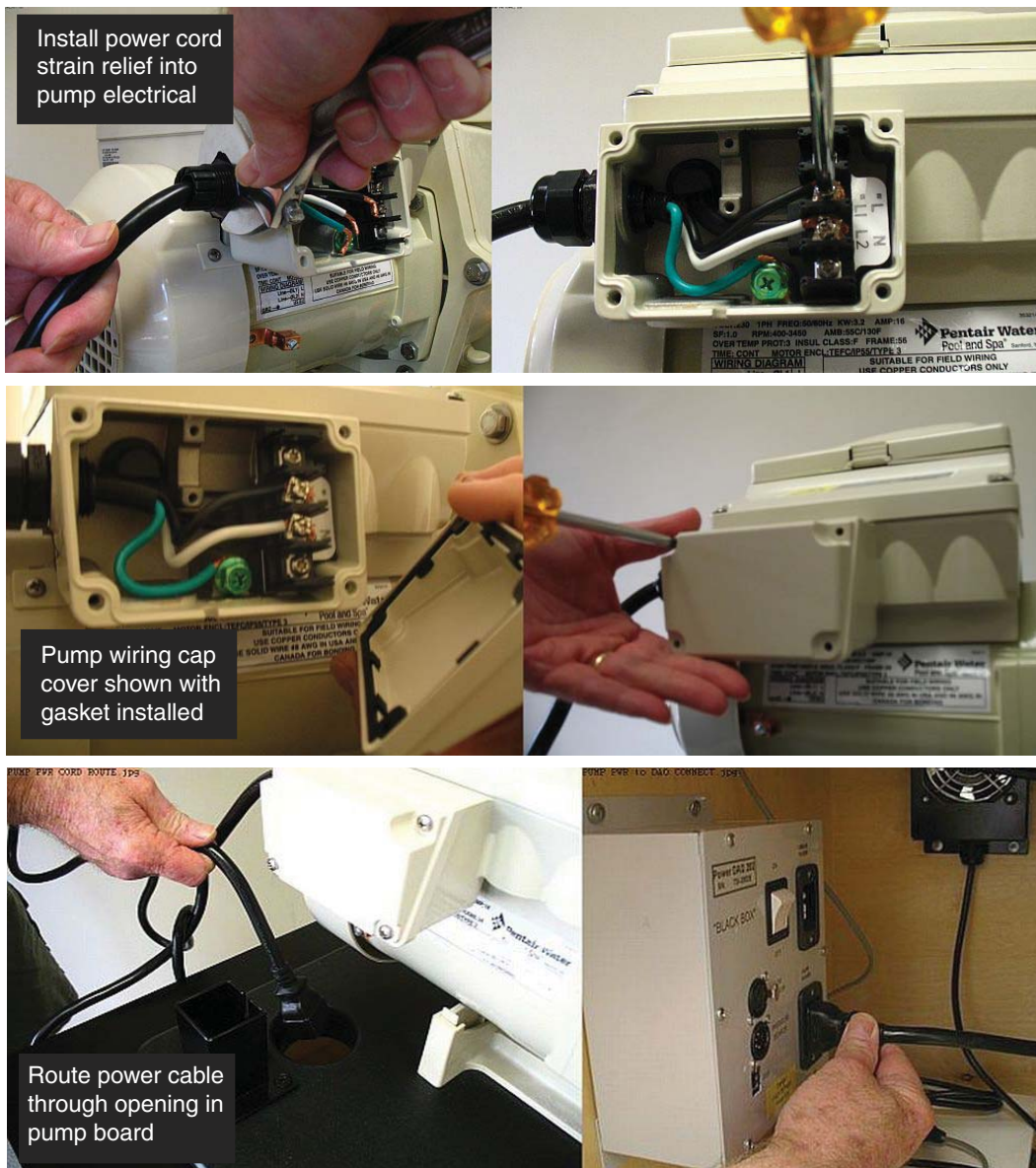
Installing the Piping

Threaded Union Adapters

1. Locate the two threaded union pipe adapters (shown below, adapters are installed on pipe sections for shipment; remove for installation into pump).

   – **Note:** Prior to installation, lubricate both O-rings with a silicone gel or petroleum jelly compatible with neoprene rubber.

2. Visually inspect and remove any burrs or other irregular surface ridges where the O-ring will seal against the pump.

3. Install one union adapter into the front threaded discharge port of the pump.

4. Install second adapter into the top threaded suction port of the pump.

5. Tighten with a pipe strap wrench until the O-Ring seal is compressed - do not over tighten.

Before installation, lubricate both O-Rings

Suction Port

Discharge Port

Installing Gray PVC Piping (Outside Cabinet)

Suction Section

1. Before installing, find the **gray gasket** and install into the pipe flange.
2. Place the lower end of the Pipe into Hole #1.
3. Connect to the front threaded union adapter of the pump.

Light gray gasket

Hole #1

> **TIP:**
> Be sure flanges of union and gasket are flush *before* tightening the union nut.

Discharge Section w/ Flow Valve

1. Locate the large **clear gasket** and install into the available recess on the pipe flange end; flange must align.
2. Locate and install (may already be installed) the Tassel Flow Assembly into the clear pipe end of the assembly.
3. Start by placing the tasselled end into the opening and continue by pushing into the pipe until the metal ring is flush inside the gasket.
4. Shake the pipe slightly to allow the tassels to be visible inside the clear section of piping.
5. Place the bottom end of the pipe into Hole #2.
6. Connect to the top threaded union adapter on the pump. Tighten the union nut securely, be sure pipe is centred in Hole #2.

    – **Note:** Be sure gaskets do not fall off during assembly of discharge and suctions pipes - the pump will leak.
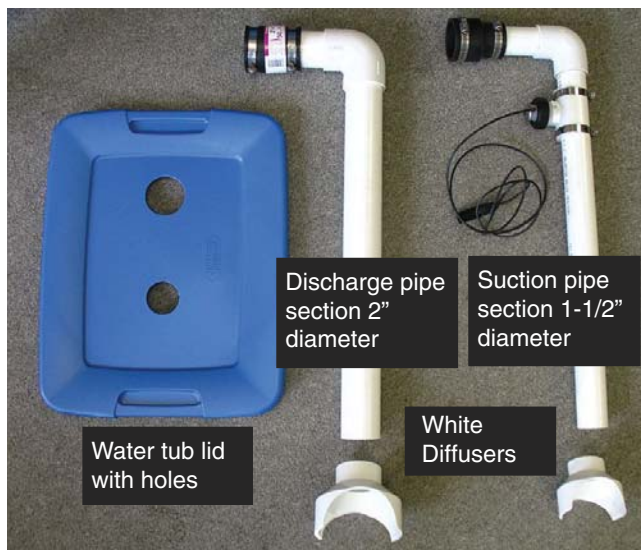

Hole #2

Installing White PVC Piping (Inside Cabinet)

Discharge Foot Section

1. Install the lower end through the corresponding 2" Diameter opening in the top water tub by feeding the leg down through the top lid openings.

2. Install the large white diffuser onto the bottom end of the pipe.

Suction Foot Section

1. Install the lower pipe end through the corresponding 1-1/2" diameter opening in the top of the water bucket by feeding the leg down through the lid openings.

2. Install the small white diffuser onto the bottom end of the pipe. Do not glue the diffusers. The diffusers will need to be removed if cleaning or replacing the water tub.

3. Slide the water tub, lid, and pipes into the open area on the left side of the kiosk cabinet with the suction pipe section facing toward the front.

Discharge pipe section 2" diameter

Suction pipe section 1-1/2" diameter

Water tub lid with holes

White Diffusers

Install with suction pipe (1-1/2") section toward front of cabinet as shown

Flexible Coupling Connections

1. Install both ends of the coupling connections onto corresponding white PVC and gray PVC piping.

2. Align each pipe to be sure pipe ends are flush. Tighten with a 5/16" nut driver. (Do not over-tighten; clamps may strip and possibly cause leaking).

3. Route the flow sensor connector through the divider wall, and plug into the DAQ-202 "Black Box".

Pipe end flush with inside edge of flexible piping

Align pipe clamps for easy access to cabinet front

Installing the Electronics Equipment

Power Up Sequence:
1. Main 120V Supply - ON
2. Transformer - ON
3. "Black Box" - On
4. Monitor - ON*
5. Laptop - ON

*Critical Step:
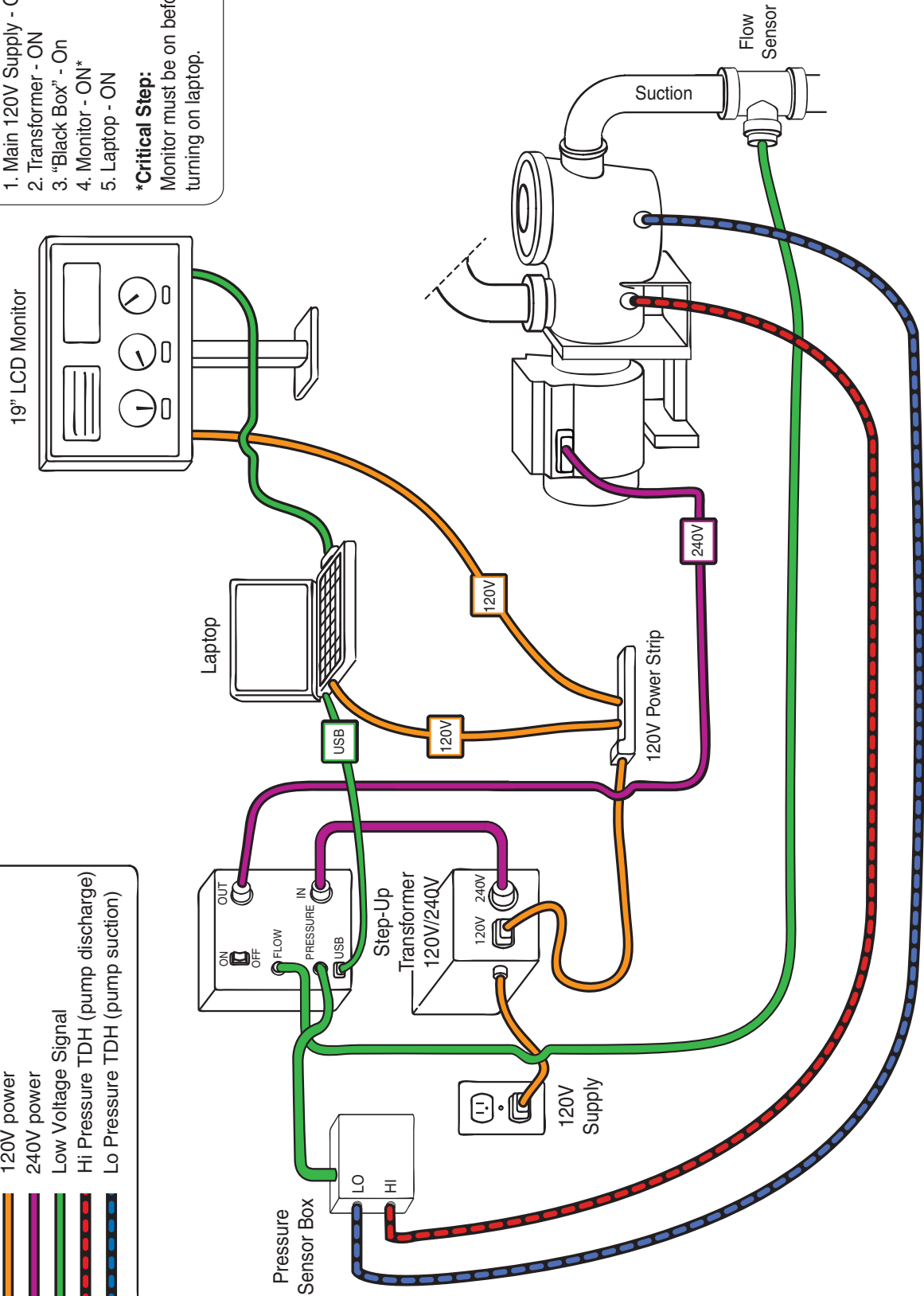Monitor must be on before turning on laptop.

Connection Diagram

LEGEND:
- 120V power
- 240V power
- Low Voltage Signal
- Hi Pressure TDH (pump discharge)
- Lo Pressure TDH (pump suction)

120V/240V A/C Step-Up & Down Transformer

The kiosk transformer should be the only equipment connected to the outside of the kiosk.
It should connect to/from a 20 amp circuit.

1. Be sure the voltage "tap-plug" selector to the 110V on the back of the transformer voltage is in the 110V position.
2. The external power cord may be routed through the 2" diameter opening located in the back wall of the cabinet.
3. The transformer "Power On" switch should be facing the front of the cabinet. Plug A/C power strip into the left-hand side output of the Step-Up Transformer (110V).
4. Plug the 12 gauge power cord into the 220V output. Plug the other end into the DAQ-202 "black box"; at the "line in" connector location (be sure the on/off switch on the DAQ-202 is in the OFF position).

A/C outlet plugs into the 100V side of the transformer

Voltage Input Selector must be in 110V

Transformer

"Black Box"
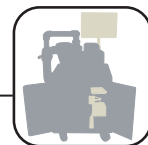
LCD Monitor

1. Contents include the monitor, A/C power cord, and 15-Pin SUB-D monitor cable.

2. Use a small blade screwdriver to unsnap the two plastic covers and remove the "fixed" stand support from the back of the monitor and discard.

3. Remove the (4) screws, remove the "fixed stand assembly" supplied with the monitor, then re-install the two snap-in covers

4. Take the VESA mounting adapter plate assembly and use the (4) supplied M4 x .9 mm screws and install the plate onto the rear of the monitor with the swivel bracket down.

5. Locate the monitor shaft and Insert into the square hole on the pump board.

6. Locate the (2) black Thumb Screw knobs. Install the monitor onto top of the shaft.

7. Insert screw knob and hand tighten. Install the remaining Thumb Screw into the lower threaded hole through the slot in the Base, and hand tighten.

8. Connect the monitor power cord and video cable, as shown in the picture below.

9. Use the (2) supplied Velcro straps to route the wires along the monitor stand and down into the top of the cabinet.

10. Route the power cord and video cable down through the hole in the pump board, and plug into laptop computer.

11. Route the monitor A/C power cord power through the opening in the back of the computer shelf, and plug into the A/C power strip at the bottom of the cabinet.


Use Velcro to secure wires to monitor shaft

Route cables through hole

Connect to Laptop Computer and DAQ-202 "Black Box" Unit

(The Pentair Pump Demonstration Software and companion Cost Comparison Calculator is an installed application available via the Windows Desktop Icon)

1. Install the A/C power cord w/ adapter into the computer. Connect the monitor video cable. Then plug the USB into the laptop.

2. Route the A/C Power adapter cord through the opening at the back of the top shelf and plug into the A/C Outlet.

3. Plug the USB into the laptop and the black box unit.

4. Place the computer into the cabinet on the upper right shelf. Do not turn on the computer. Follow the start up sequence on page 16.

Plug USB to laptop

USB to Black Box
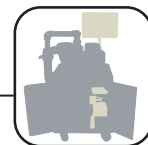
Setting up the Wireless Mouse

1. Be sure to plug in USB adapter for wireless mouse. The adapter may be located inside the mouse for shipping.
2. The ON/OFF switch is located on the bottom of the mouse.

Pressure Tube Set (Included with optional Pressure Sensor Unit)

1. Install the tube ends into the corresponding marked connections (orange flanged adapters) on the pressure sensor box, as shown below.
2. Route the pressure tube quick disconnect ends through the opening in the cabinet divider wall and up through the pump board.
3. Connect to the pump by pushing the quick release metal tabs on the connectors at the pump when installing the tube ends.
4. **RED** end goes to the HIGH pressure connector (discharge).
   BLUE goes to the LOW pressure connector (suction).

High Pressure (Discharge)

Low Pressure (Suction)
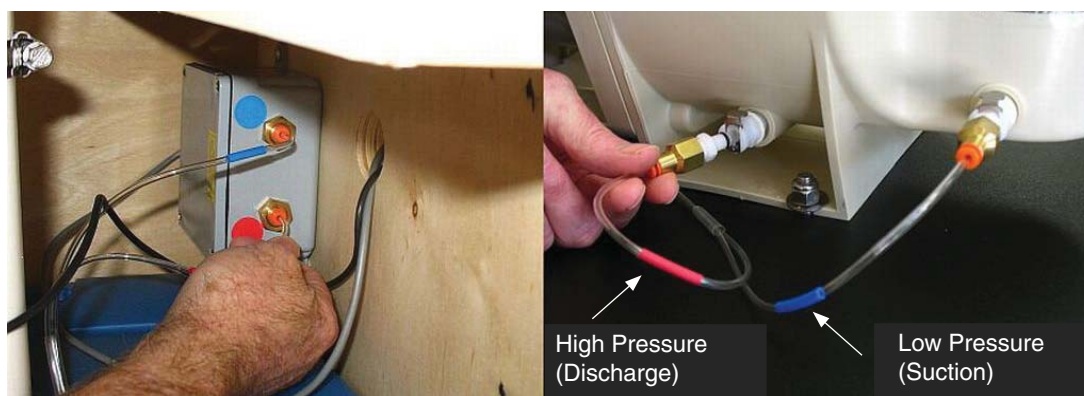
IMPORTANT!

Note: When connecting sensor tubing to Pressure Sensor Box Unit, insert tubing into orange flanged adapter, then push firmly another ¼" until tube "bottoms out" in the socket to prevent leakage.

Note: To disconnect – slide orange shoulder flange back while pulling on tube.

Finished Demo Unit

Start Up and Operation

Water Fill and Priming

> **⚠ CAUTION** DO NOT ADD ADDITIONAL WATER AFTER THE INITIAL START-UP.
> Water in pipes could drain downward and cause an overflow into the water tub and cabinet.

1. Be sure the Flow Valve on discharge piping is OPEN (lever 90° to pipe).

2. Add water to the system by removing the top lid of the pump and filling the pump stainer basket with water.

3. Add water until the water level in the tub is 2" to 3" from the top lip. Securely fasten the lid after the tub is full.

4. Check the water level periodically - water can evaporate over time. Be sure the water level in the tub is at least half full.

Valve Open   Valve Closed
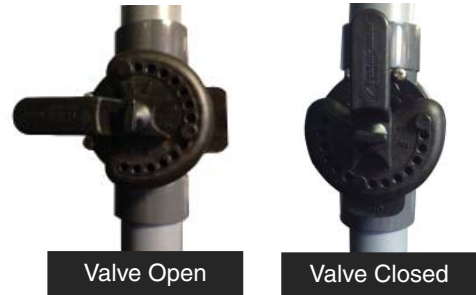
Start Up Sequence

> ### IMPORTANT! READ BEFORE TURNING ON THE PUMP
>
> Pump can draw up to 3000 watts of power during priming and start up (typical 120V 20 Amp circuit is limited to 1800 watts maximum). Check to be sure the pump watt and power usage does not exceed the rated capacity of the electrical outlet.
>
> For continued, safe operation, **set the pump's maximum speed prior to operation. The pump should not run on a high speed for an extended length of time.**
>
> Refer to the IntelliFlo® installation and user's manual for instructions on how to set the pump's maximum speed.

1. Switch ON the transformer (red light means power is on). Be sure switch on power strip is ON.

2. Switch the DAQ-202 "Black Box" Unit ON. The keypad will light up on the pump.

3. Be sure to read important instructions above. Turn the pump ON. (Press Stop/Start button on pump keypad). Look for any sign of leaking water. If this occurs, press the Stop/Start button to turn the pump off.

4. Look inside the kiosk and inspect flexible connections for leaks. If leaks are found, press the Stop/Start button on the pump keypad, tighten loose connections, and resume start up.

5. Turn the monitor ON (**Note:** Turn on monitor before turning on the computer).

6. Turn the wireless mouse ON.

7. Turn on computer. The computer should automatically boot up into pump start up screen. If LCD monitor screen does not display in full screen, verify screen settings are set to 1440 x 900. (See troubleshooting on page 18 for more information).
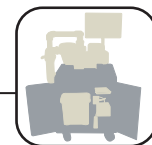
Purging the Pressure Sensing Hoses

(If pressure sensor box is installed)

1. Disconnect the high pressure (RED) tube to vent air out of line (use lower pump speed while bleeding the line).

2. Disconnect the low pressure (BLUE) tube, allowing air to flow though tube until dry (about 15 seconds).

Computer Program Operation

The computer shipped with this Kiosk Demo Unit has pre-installed software. To be sure you have the most updated software version, a flash drive with a software update may be included. The software version is listed in the bottom right corner of the program start up window. Follow the instructions below to install the software update, if applicable.

First uninstall the current version (to be sure you have latest software update):

1. Click the 'Start' menu (lower right corner of tool bar) and click 'Control Panel'.

2. Select 'Programs and Features'.

3. Select "Pentair Pump Data Acquisition System" and click 'Uninstall' to unistall the previous version.

To install and run the updated the program software:

1. Insert the flash drive into the laptop USB port.

2. Open the flash drive file from 'My Computer'.

3. Open file "DAQ Set Up (Version number)"

4. Follow the on-screen instructions to successfully install and run the program.

5. Open the "Pentair Pump Data Acquisition System" file to begin.

Using the Program

1. Open the "Pentair Pump Data Acquisition System" by clicking the Pentair icon on the desktop.

2. The "3 Meter Screen" (shown below) appears. To show screen options, move the mouse to the bottom of the screen. Click on the tabs to navigate the various screen options.

Move mouse here
to show tabs
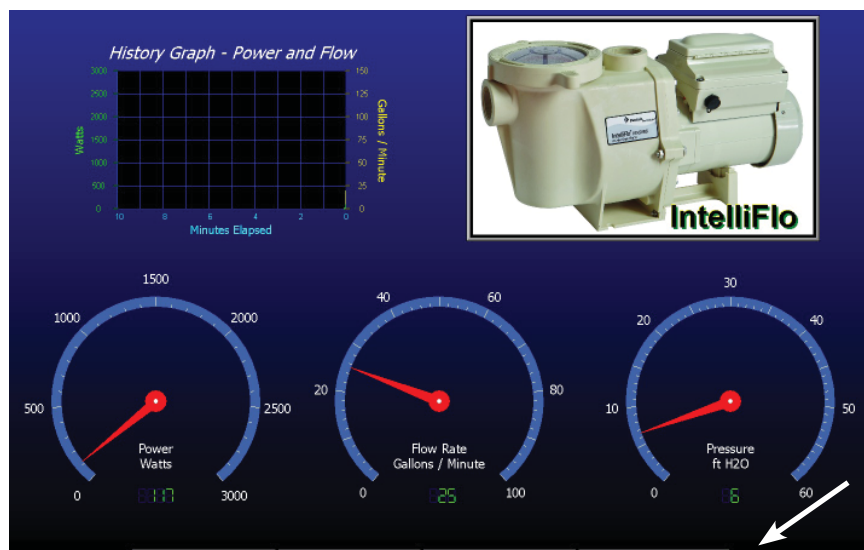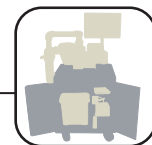
Using the Program, Continued

3. Click on the Cost Comparison Calculator tab to view operating cost scenarios. The screen will show the energy savings for a Standard vs. IntelliFlo Variable Speed pump using the default values.
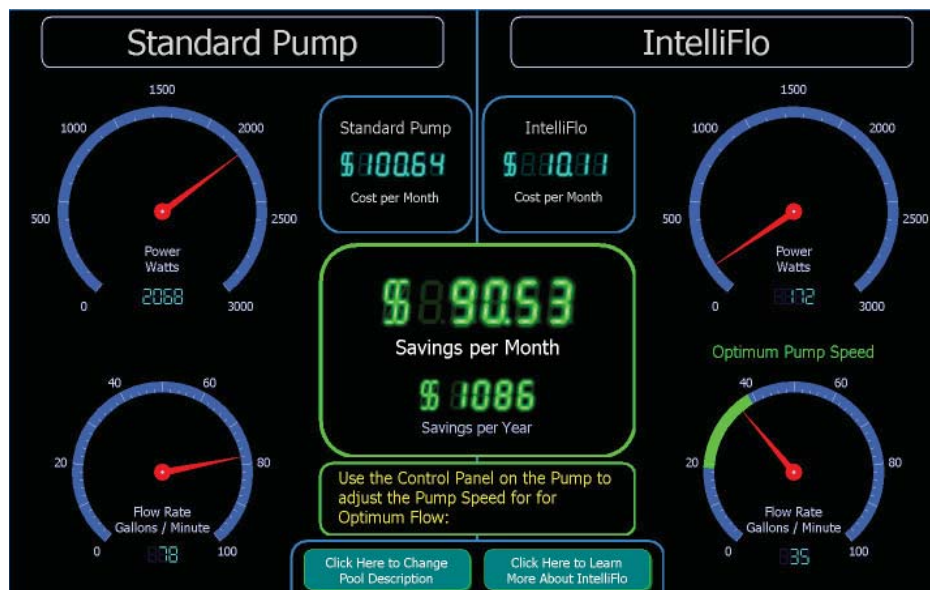
4. To input your savings scenario, click "Click Here to Change Pool Description" and follow the on-screen instructions to customize your data. If pool size is unknown, follow the instructions to go to the "Pool Size Calculator" screen. Click "Click Here to Begin" to go to the Cost Comparison Calculator screen.

5. The screen will show the energy savings for a Standard vs. IntelliFlo Variable Speed pump. Adjust the IntelliFlo pump speed until the flow rate needle is in the green "Optimum Pump Speed" zone - indicating an ideal flow rate for a 12 hour turn on the selected pool size.

Right click here to exit
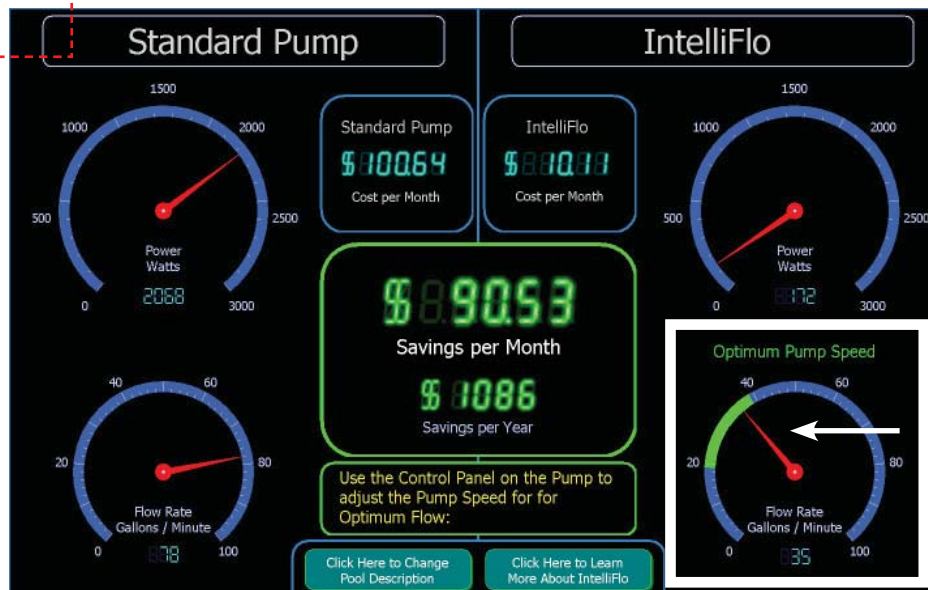
6. To exit this screen and return to the 3 Meters Screen, right click on the upper left corner of the screen.

7. From the "3 Meter Screen", there is also an informational video on the IntelliFlo. Click the "Play Video" tab to launch the video. To exit the video and return to the Cost Comparison Calculator, click the tab "Click Here to See Your Savings" at the bottom of the screen. To exit the program, right click on the bottom of the 3 Meter Screen and select EXIT.

Troubleshooting

Pump Operation

• Diffusers on feet, inside water bucket, must rest flat in tub to prevent stress on unions and possible leakage.

• When pump is running at very high speeds, water may splash excessively, especially during priming (to purge air within the piping and pump). Be sure to maintain water level in the tub to avoid splashing water in cabinet area.

• Be sure not to exceed the rated capacity of the electrical outlet. Refer to warning on page 15 for more information.

• If the pump lid is opened, and the water level in the tub is sufficiently high, there is a possibility that the water in the piping (4+ gallons) will drain into the tub and cause an overflow inside the cabinet.

• Be sure that a sufficient amount of water is removed from the water tub prior to opening the top lid (basket section) on the pump.

• Be sure to read and follow the start up sequence instructions carefully.

Computer Operation

• To keep presentation on monitor only (laptop a blank screen), press FN button and F8 key at same time.

• To keep presentation centered and focused, go to Control Panel; then click "Display". Click last tab settings and under screen resolution, set to 1440 x 900 resolution.

• To switch between Calculator and pool size selection screen, press "Alt" and "Shift" at the same time.

• Demo kiosk shipments may include a flash drive with the latest software update. Please follow the instructions on pages 16-19 to install and run the latest software version.

 Periodically check the following web site to verify the most recent software version:
 http://www.thermal-solutions.com/customerdata/pentair/PumpDaqSetupUS/.

Draining the Pump

1. IMPORTANT: before draining the pump, be sure that all the power to the demo kiosk is off

2. Loosen the pump "basket" section cover, this will allow the water in the upper piping to drain down into the water bucket section.

3. Place a bucket or other medium size container on the floor as close to front of the demo kiosk.

4. Place the open end of the drain hose assembly into the bucket.

5. Insert the other end ('white barb' fitting) into one of the quick disconnects on the front of the pump. Water will start flowing out of the pump and into the bucket.

6. When the water stops flowing, remove the drain hose by pressing on the metal clip on the quick disconnect.

7. Repeat this process on the other quick disconnect fitting.

8. When the water stops flowing, remove the drain hose assembly, draining is complete.
 Note: There will be a small amount of water remaining in the bottom of the pump.

Drain tube assembly