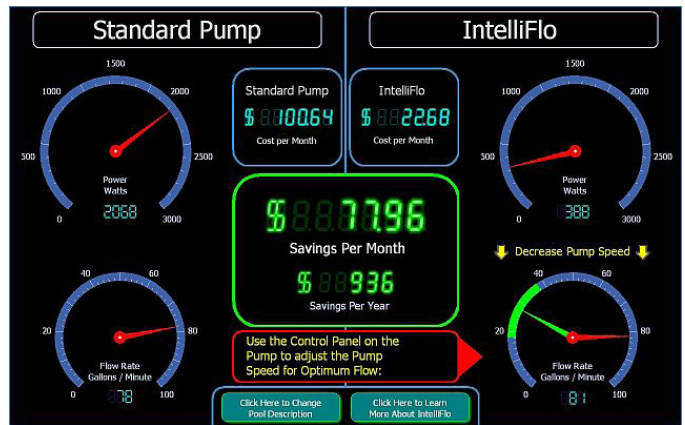
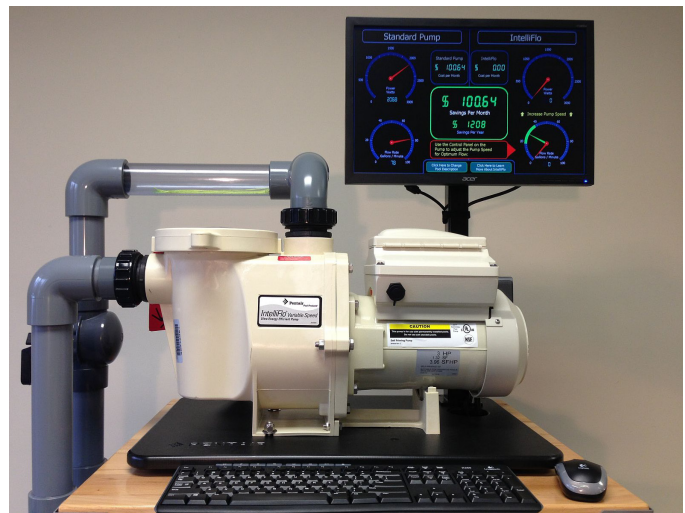




INTELLIFLO® VARIABLE SPEED PUMP LIVE DEMO UNIT OPERATION AND SET UP INSTRUCTIONS



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: mbrumsey@thermal-solutions.com

Software downloads available at:

<http://www.thermal-solutions.com/customerdata/pentair/PumpDaqSetupUS>

Go to page 11 for instructions on how to install the latest software version.

Technical Support for IntelliFlo® Pump Operation

If you have questions about IntelliFlo® pump operation, please use the following contact information:

Customer Service (8 A.M. to 5 P.M. — Eastern/Pacific Times)

Phone: (800) 831-7133

Fax: (800) 284-4151

Technical Support:

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/PumpDaqSetupUS/>. 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, **the pump's maximum speed has been set to 2800 RPM prior to shipment.** It is recommended that the maximum speed not be changed. Do not change preset maximum pump RPM without contacting an authorized Pentair representative.

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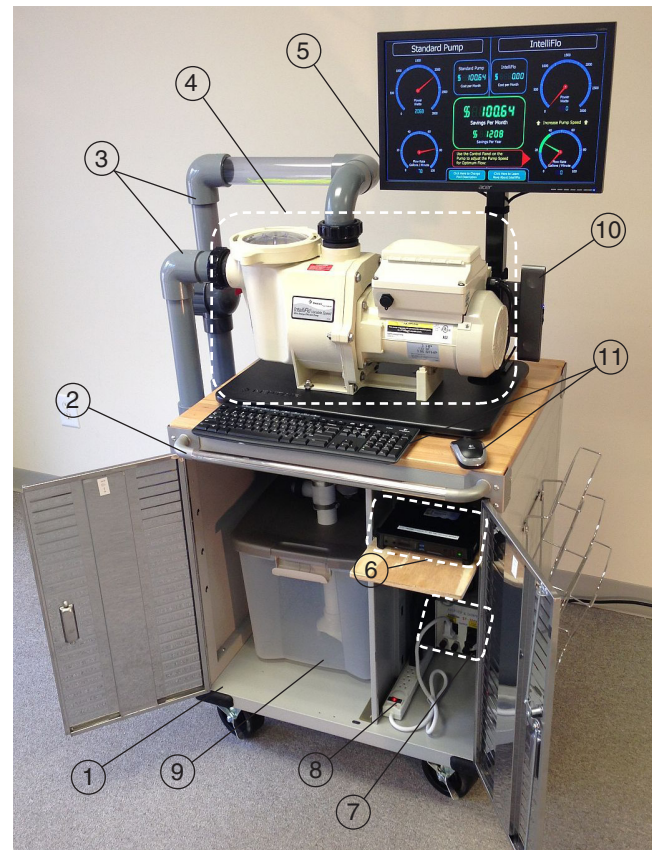
SHIPPING CONTENTS

Required tools: Tools that will be required to complete the demo unit assembly (not included with kit) are:

- 5/16" nut driver
- Medium-tip (#2) Phillips head screw driver.

- 1 Base Cabinet
 - DAQ-202 Black Box Unit
 - A/C Ventilation Fan
- 2 Cabinet Front Handle
- 3 Piping Set
 - Discharge Piping w/ Integrated Valve (2)
 - Suction Piping w/ Integrated Flow Sensor & Cable (2)
 - Flexible Coupling Adapters (2)
 - Diffusers (2)
- 4 Pump Module Assembly w/ Pump
 - IntelliFlo® Variable Speed Pump mounted on board
 - Threaded union adapters on pump
 - LCD Monitor Stand
- 5 19" LCD Monitor and Cables
- 6 PC Computer and Cables
- 7 120V/240V "Step Up" Transformer
- 8 A/C Power Strip
- 9 10 Gallon Water Tub w/ Lid
- 10 External PC Speaker
- 11 Wireless Keyboard & Mouse

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



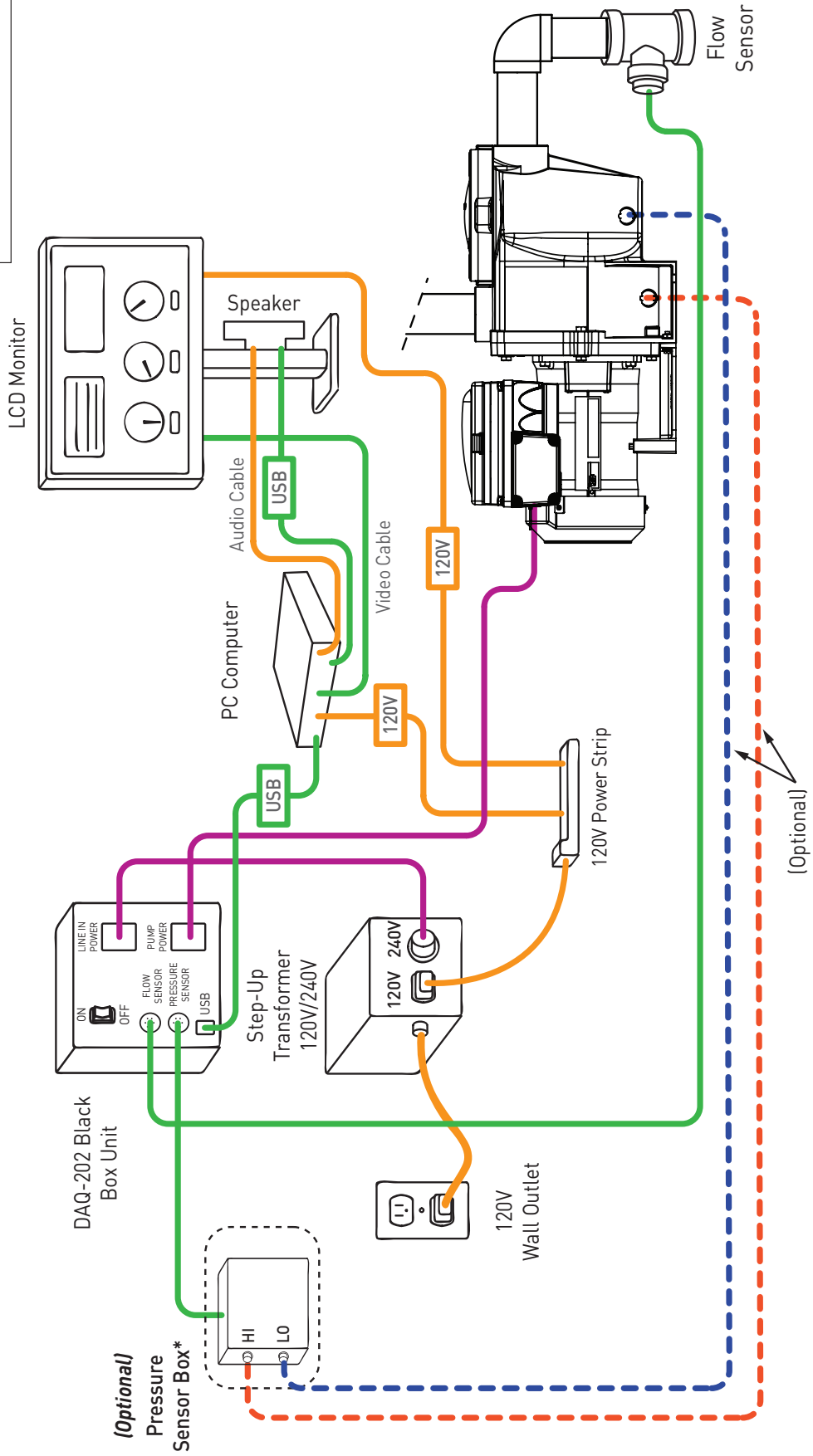
QUICK REFERENCE GUIDE: CONNECTION DIAGRAM

CONNECTION DIAGRAM

LEGEND

- 120V POWER
- 240V POWER
- LOW VOLTAGE SIGNAL
- HIGH PRESSURE TDH (PUMPS DISCHARGE)
- LOW PRESSURE TDH (PUMP SUCTION)

- POWER UP SEQUENCE:**
1. Main 120V Supply - ON
 2. Transformer - ON
 3. "Black Box" - On
 4. Monitor - ON*
 5. PC Computer - ON
- *Critical Step:**
Monitor must be on before turning on PC computer.



*Pressure sensor box is not included but can be ordered separately for an additional charge.

CABINET SET UP



Base Cabinet and Pump Assembly Setup

1. Unpack the cabinet and place close to the chosen demo location.

Note: Be sure to leave room for the front door to open and close for normal service access.

The following items come installed in the cabinet:

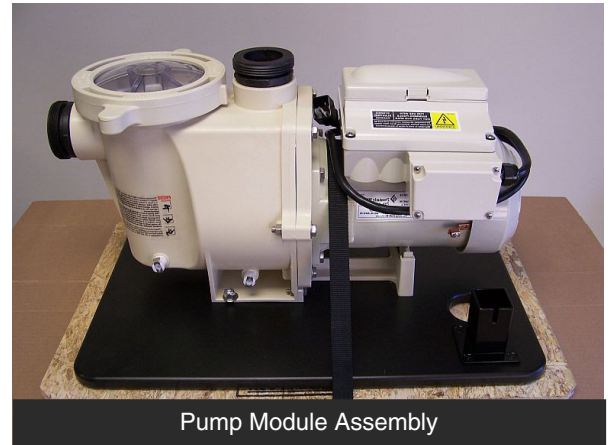
- Cabinet cooling fan
- DAQ-202 “BLACK BOX” Unit
- PC Computer mounted on shelf with transformer

2. Remove the pump module assembly from the plywood and shipping strap.
3. Place on top of the cabinet. The black mounting board has 5 rubber feet to grip to the surface.

The pump module assembly includes:

- IntelliFlo® Variable Speed pump
- Threaded union adapters (attached to pump)
- Pump mounted on mounting board
- LCD monitor stand
- Pump power cord

4. Attach the front handle to the cabinet with a Phillips head screw driver (screws provided). See image to the right.



Connecting the Pump to the Power Supply

1. Route the pump power cord down through the opening in the pump mounting board, into the cabinet computer shelf area and down through the opening at the back of the shelf.
2. Plug the 3-Prong connector into the socket labeled “Pump Power” on the DAQ-202 “Black Box” Unit.





INSTALLING THE PIPING

Installing Gray PVC Piping (Outside Cabinet)

Suction Section

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



TIP:

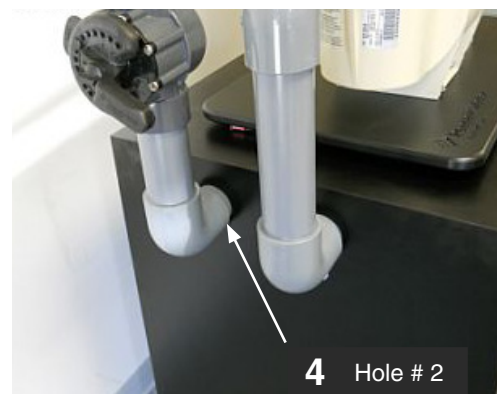
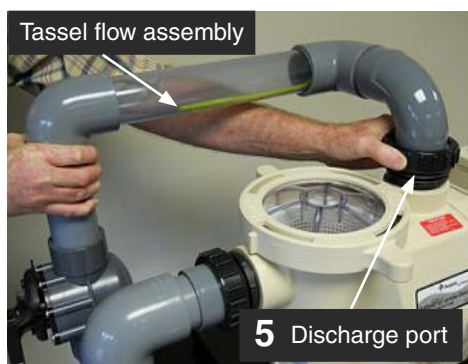
Be sure flanges of union and gasket are flush *before* tightening the union nut.

NOTE:

Be sure gaskets do not fall off while assembling discharge and suction pipes; the pump will leak.

Discharge Section (with Flow Valve)

1. Install large **clear gasket** into the pipe flange end. Align flange (see picture, right).
2. If not already installed, install the **tassel flow assembly** into the clear pipe end of the assembly. Place the tasselled end into opening until metal ring is flush inside the gasket.
3. Shake the pipe slightly to allow the tassels to be visible inside the clear section of piping.
4. Place the bottom end of the pipe into Hole #2.
5. **Connect to discharge port** threaded union adapter of the pump. Tighten the union nut securely. Be sure pipe is centred in Hole #2.





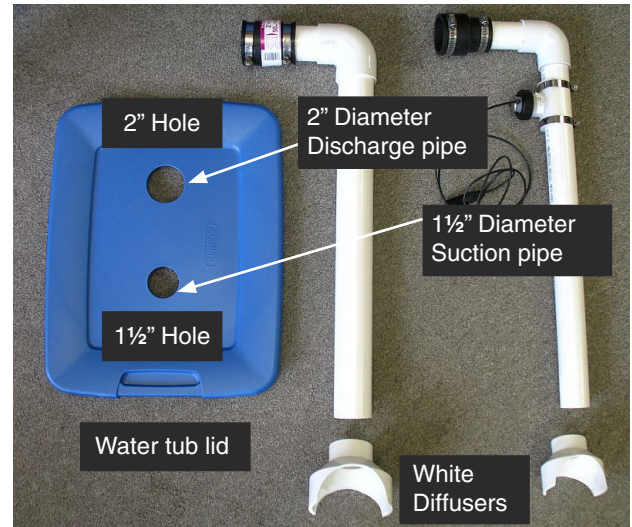
Installing White PVC Piping (Inside Cabinet)

Discharge Section (2" Diameter Pipe)

1. Place the straight end of 2" diameter pipe through the 2" hole in lid of the water tub.
2. Install the large white diffuser onto the bottom end of the pipe.

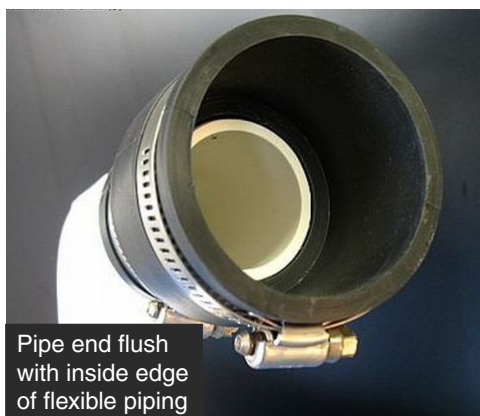
Suction Section (1½" Diameter Pipe)

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 1 1/2" diameter suction pipe section positions toward the front doors.



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 cabinet divider wall, and plug into the DAQ-202 "Black Box".





INSTALLING THE ELECTRONIC EQUIPMENT

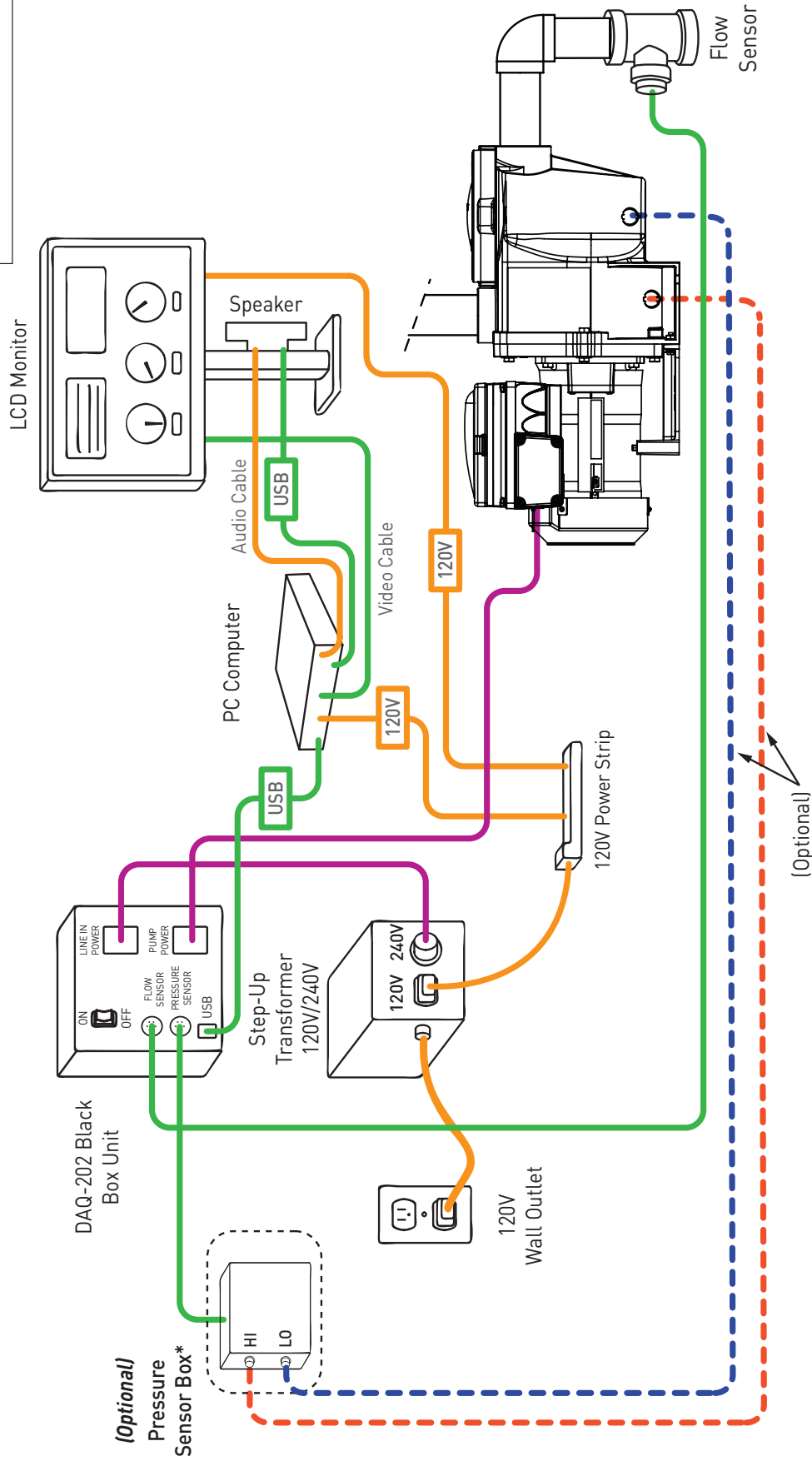
POWER UP SEQUENCE:

1. Main 120V Supply - ON
2. Transformer - ON
3. "Black Box" - On
4. Monitor - ON*
5. PC Computer - ON

***Critical Step:**
Monitor must be on before turning on PC computer.

CONNECTION DIAGRAM

LEGEND



**Pressure sensor box is not included but can be ordered separately for an additional charge.*

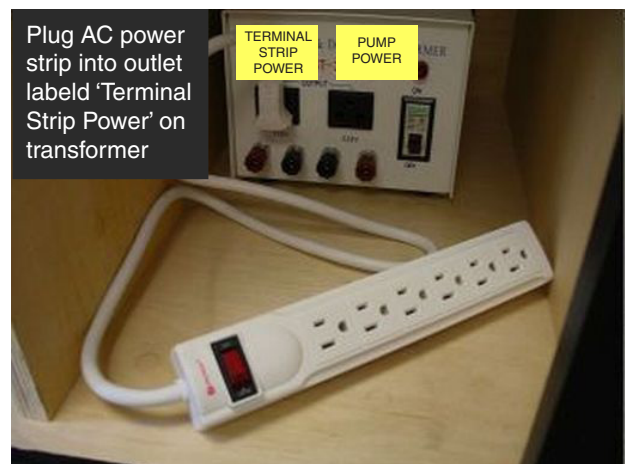
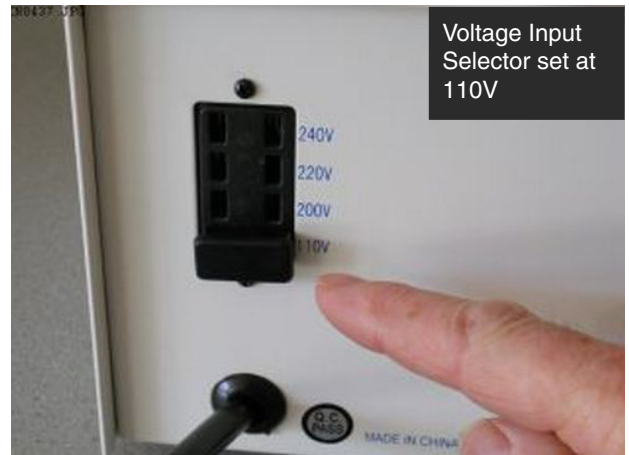


120V/240V A/C Step-Up Transformer

The cabinet is a completely self-contained unit, with the exception of the power cord connected externally to an AC power source.

Set the input voltage for the transformer to the proper voltage for your country or region.

1. Verify that the **transformer power switch is set to the OFF position**.
2. Set the Voltage Input Selector “TAP PLUG” to the proper voltage used in your country, or region. Transformers are shipped set to the 110V position. (see image, top right).
3. Put the AC power cable found on the back of the transformer through the hole located in the back of the cabinet. Attach the cable to a wall AC outlet having a minimum rating of 20 Amps.
4. Plug the AC terminal strip into the transformer outlet labeled ‘Terminal Strip Power’. (Note: AC power cord for unit vent fan and computer are already connected to AC terminal strip).
5. Plug the heavy black 12-gauge power cord into the transformer outlet labeled ‘Pump Power’. Plug the other end of the black 12 gauge cable into the DAQ-202 “Black Box” socket labeled ‘Line In Power’ (see image below).





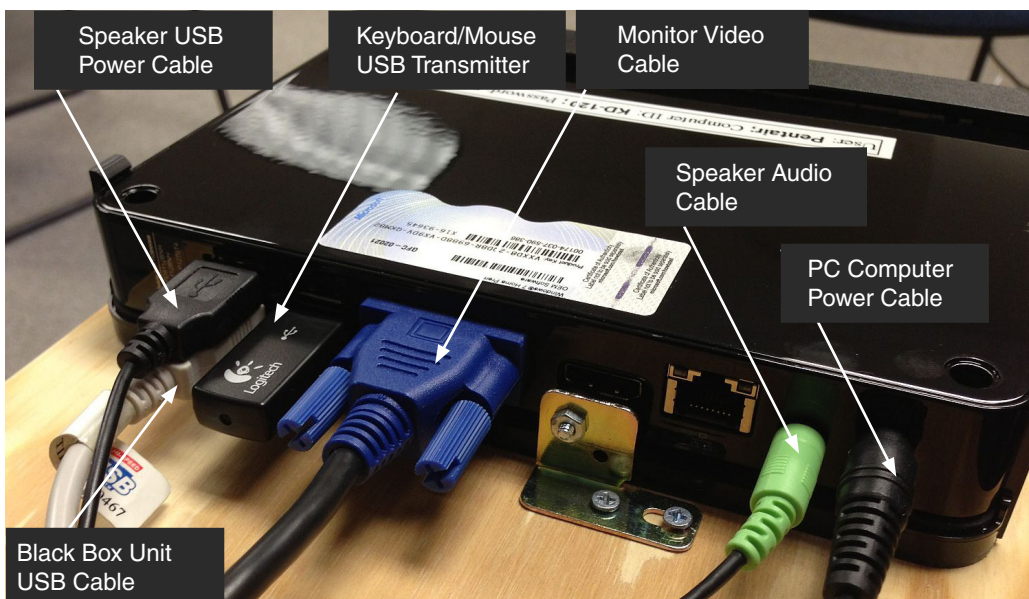
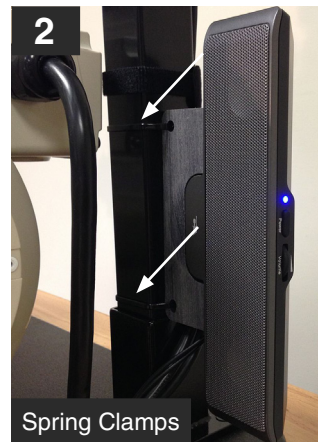
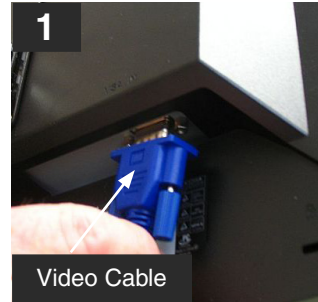
Connecting Cables to Computer and DAQ-202 Black Box Unit

- **Monitor:** Video/AC power cable
- **Speaker:** Audio cable/USB power cable
- **Keyboard/Mouse:** Wireless USB transmitter
- **DAQ-202 Unit:** USB cable (already connected)
- **PC Computer:** AC power cable

NOTE: Do not turn on the computer at this time. Only connect the cables. Always follow the Start Up Sequence found on page 10

Connection Instructions

1. Connect the monitor power cord and video cable to the monitor as shown.
2. Use speaker bar spring clamps to mount the speaker bar to the bracket located on the monitor stand shaft. (Note: the speaker volume cannot be set up until the unit is started with the computer running).
3. Route the monitor power cord, video cable, and (2) speaker cables through the hole in the pump board.
4. Plug the (2) speaker cables and video cable into the PC computer (located on shelf in cabinet).
5. Route monitor power cord through the opening behind computer shelf and plug into the AC power strip.
6. Install batteries in both keyboard and mouse. Refer to included instructions if needed. Plug the keyboard/mouse USB transmitter into PC computer.
7. Plug the PC computer power cord into AC power strip.





Pressure Tube Set (Included with Optional Pressure Sensor Unit)

1. Install the red and blue color coded tube ends into the corresponding marked connections (orange flanged adapters) on the pressure sensor box.
2. Route the pressure tube quick disconnect ends through the opening in the cabinet divider wall and up through the pump board.
3. Push the quick release metal tabs on the connectors at the pump to install the tube ends.

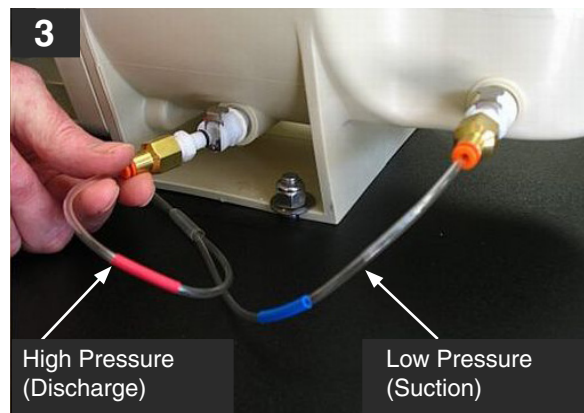
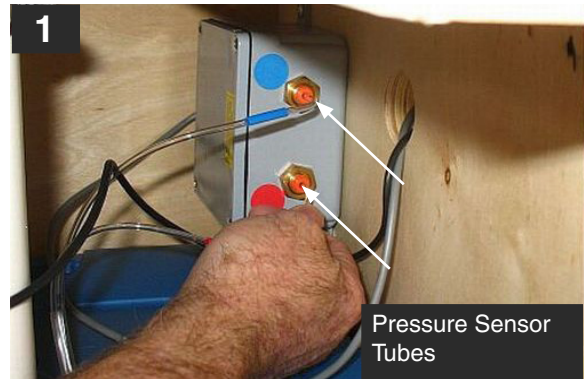
RED end goes to the **HIGH** pressure connector (discharge).

BLUE goes to the **LOW** pressure connector (suction).

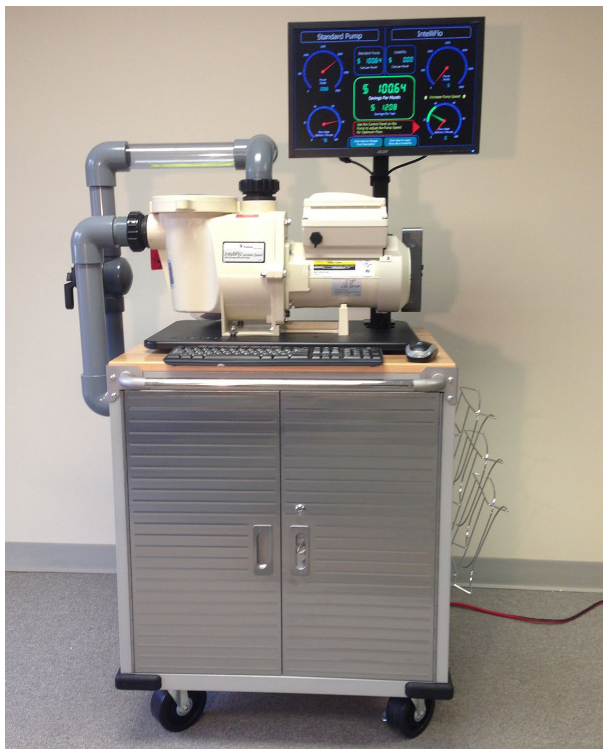
IMPORTANT!

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

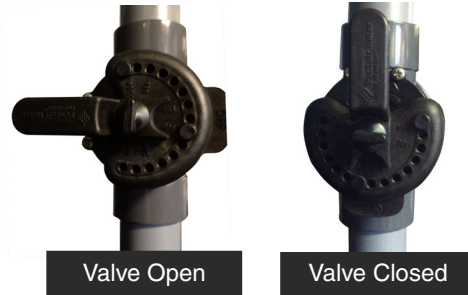
Water Fill and Priming

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.

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.



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, **the pump's maximum speed has been set to 2800 RPM prior to shipment.** It is recommended that the maximum speed not be changed. Do not change preset maximum pump RPM without contacting an authorized Pentair representative.

Start Up Sequence

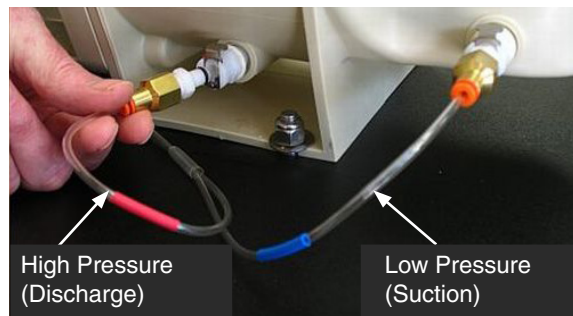
1. Switch ON the transformer (red light means power is on). Be sure switch on power strip is ON.
2. Switch the DAQ-202 "Black Box" Unit ON. The keypad will light up on the pump.
3. Be sure to read important instructions above. Turn the pump ON. (Press Stop/Start button on pump keypad). Keep finger on the Stop/Start button and 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, 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 14 for more information). (**Note:** only applies to earlier demo units that used a laptop).



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 through tube until dry (about 15 seconds).



Software Updates

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.

To avoid possible software conflicts, first uninstall the existing version.

1. Click the 'Start' button (lower left corner of Windows tool bar) and click 'Control Panel'.
2. Select 'Programs and Features'.
3. Select "Pentair Pump Data Acquisition System" and click 'Uninstall' to uninstall the previous version.
4. If applicable, uninstall the programs "FFDshow" and "K-Lite Pack" if they show on the program list.

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 Computer Program

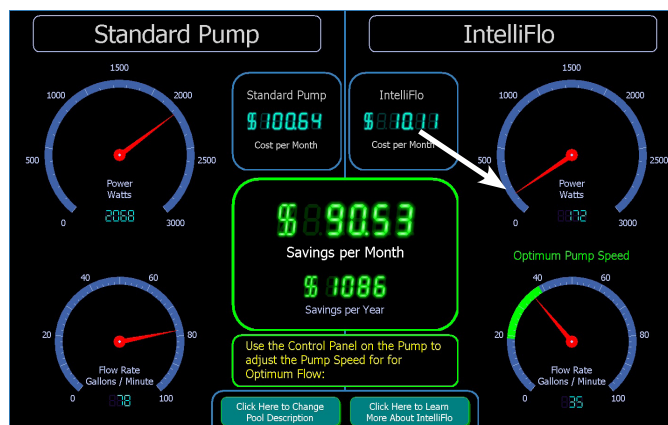
Click on the Pentair icon on monitor desktop to open the "Pentair Pump Data Acquisition System" program. Under normal operating circumstances, this should start the Pentair Pump Data Acquisition System (DAQ program).

If an error message appears, it's likely a communication issue between the DAQ 202 Box and the PC. Check the USB cable to be sure it's connected.

Comparative Cost Calculator

1. The **Comparative Cost Calculator** screen (shown in image, right) will appear once the program is open.
2. Adjust the speed of the IntelliFlo pump from the keypad, until the flow rate needle is within the green "Optimum Pump Speed" zone, on the Flow Rate meter.

This indicates the ideal flow rate for a 12 hour turn on the selected pool size.



Comparative Cost Calculator screen shows the potential energy savings when using an IntelliFlo® Variable Speed Pump vs. a Standard single speed pump.

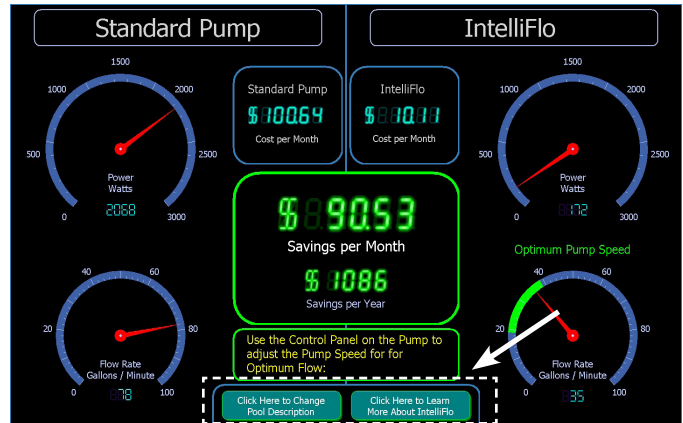


Comparative Cost Calculator, Continued

3. On the bottom of the Comparative Cost Calculator screen there are 2 blocks at the bottom of the screen:

‘Click Here to Change Pool Description’ brings up the Cost Comparison Calculator, where the pool data can be entered in a 2 step process (see next section for details).

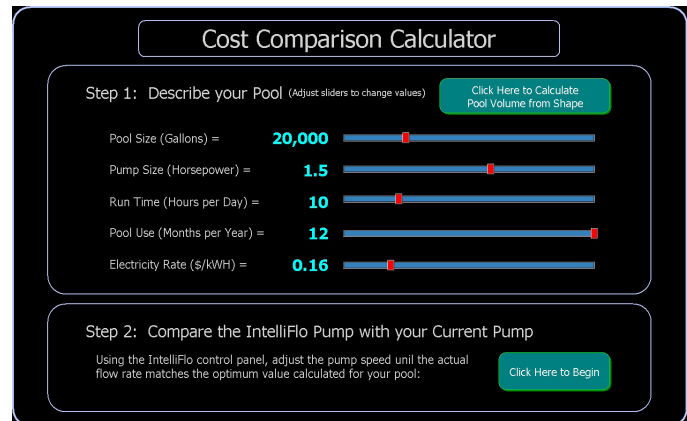
‘Click Here to Learn More About IntelliFlo’ Plays an informational video about IntelliFlo Pump technology.



Cost Comparison Calculator

This screen allows pool parameters used by the calculator to be customized. All size, hours of operation and pump parameters can be set to simulate the actual operation of an existing pool.

1. Move the sliders in Step I to set these specific parameters.
2. If the pool size (volume) is unknown, click on ‘Click Here to Calculate Pool Volume from Size’.

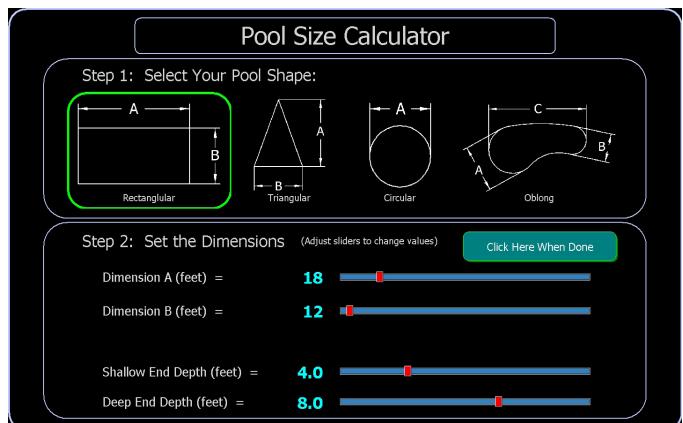


Cost Comparison Calculator: Set pool size, hours of operation and pump parameters to simulate operation of an existing pool.

Pool Size Calculator

This screen will aid in calculating the volume using a pools general shape and dimensional information.

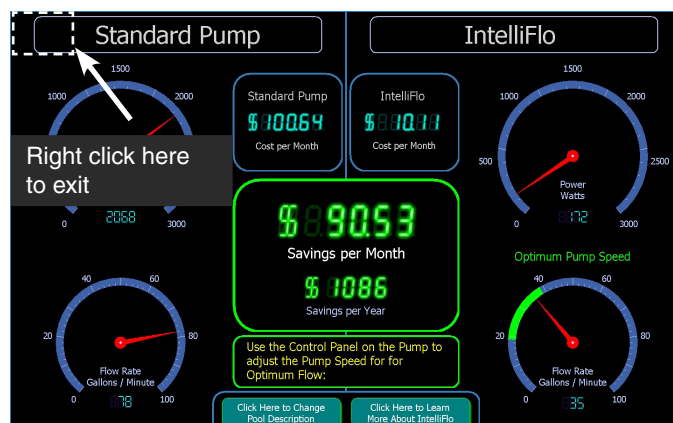
1. Select options in Step 1 and Step 2 on the monitor and select, ‘Click Here When Done’ to return to the Cost Comparison Calculator.
2. Select ‘Click Here to Begin’ to view the energy savings. This will take you to the Comparative Cost Calculator screen.



Pool Size Calculator. Set pool size, hours of operation and pump parameters to simulate operation of an existing pool.



3. To exit the Comparative Cost Calculator screen, right click on the upper left corner of the screen, in the space just to the left of the “Standard Pump” heading.
4. The ‘Meter Screen’ will appear, showing the actual reading from the IntelliFlo® pump running on the demo unit. These are the same readings shown on the IntelliFlo pump portion (right side) of the Comparative Cost Calculator screen.
5. To exit the program completely, move the cursor to the bottom center of the Meter Screen. A row of tabs will appear. Right click within the tabs area.
6. Next a “Program Options” and also an “Exit” tab appears. Left click on the Exit tab, to close out of the Pentair program



Meter Screen: Shows actual reading from IntelliFlo pump from the demo unit. These are the same readings from the Comparative Cost Calculator screen.



Informational IntelliFlo Pump Video: Select ‘Click Here to Learn More About IntelliFlo’ on the Comparative Cost Calculator screen to play a video about IntelliFlo pump technology.



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 “**IMPORTANT**” warning on pages i and 10 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. **Note:** If you have 1366 x 768 resolution, chose the 1366 x 768 resolution setting.
- 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 11-13 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