

Frequently Asked Questions:

Q1: *Can we install the tank ourselves?*

Yes and No. The tank comes in one piece. The scale support structure is easily assembled and the pump/filter/heater unit just requires connection of the flexible inlet and outlet hoses. HOWEVER, the electrical connections MUST be performed by a licensed electrical contractor that is familiar with the laws and electrical codes concerning swimming pool installations.

**THIS IS A MATTER OF LIFE OR DEATH,
DO NOT DO THIS YOURSELF.**

Q2: *How is the pump/filter/heater connected?*

There are 2 holes in the side. Hole 1 near the bottom returns the water to the pump, hole 2 at mid-level pumps in the filtered, heated water. You install the supplied hose fittings, then the 2 hoses and tighten the hose clamps.

Q3: *Where is the pump/filter/heater unit placed?*

The pump/heater is usually placed within a few inches of the tank. We supply two sections of flex-hose approx 3 feet each for connecting pump inlet and outlet to tank. Longer length are possible on special request.

Q4: *What is the ideal water temperature?*

The normal water temperature is 27 to 32 degree C, it definitely should not exceed body temperature. The HYDROWT software requires water temperature input and makes appropriate corrections. The heater unit has an adjustable temperature control. There is also a timer you can set for automatic ON - OFF cycling.

Q5: *How does water movement affect measurement accuracy?*

Since the water enters at the tanks's mid-level there is no visible surface movement. The only water surface disturbance is caused by the subject's movement while submerging. Of course, you have always the option to shut off the pump while testing.

As the test subject submerges, surface disturbance is created. Measurements with analog (manual) scales require a certain amount of "eye-balling" to average the bouncing needle of the scale.

The advantage of the electronic load cell system is that you can keep your eye on the test subject until he/she has blown out the last "bubble". The load cell has built-in filtering to integrate (reduce) fluctuations caused by water movement, resulting in higher repeatability.

Q6: *What is the pump flow rate?*

Pump flow rate is approx 42 gallons per minute.

Q7: *How do I fill the tank?*

Run a water hose to the nearest water spigot.

Q8: *How do I empty the tank?*

First siphon with water hose. Then disconnect the hose returning the water from the pump to the tank. Connect a water hose from the pump to the nearest drain. Use the pump to pump out the tank.

Q9: *How do I keep the water clean?*

Go to your nearest swimming pool supply house and buy all the chemicals and test kits for keeping pools clean. Drain and replace water every 3 to 6 months, depending on usage.

Q10: *How do subjects get in and out of the tank?*

Go to your local swimming pool supply house and buy a ladder. For more comfort, build a small ramp or deck.

Q11: *I have a low ceiling, will your tank fit?*

Our standard support beam for the scale or load cell is 7 feet high. On request, we can change this, or you can mount the scale or load cell directly to your ceiling without our supports.

If you do it yourself consider electrical safety, see question 1

If you are planning a new building, or you can otherwise afford it, recess the tank into the floor by about two feet.

Q12: *What are the maximum outside dimension to move the tank through a doorway?*

The plastic tank is 45" wide, 60" long, 53" high

Q13: *How full do I fill the tank?*

About 40 to 44 inches of water is plenty. Less if your are testing very heavy people.

Q14: *Why do we need a weight belt?*

To help people submerge. Obese people actually float, the more obese a subject is, the less he will weigh under water. Fat floats, look at your chicken soup.

Q15: *How do I get Residual Volume?*

Two ways. First is to actually measure it. VacuMed model 17400 Residual Volume Measurement System will do it for you. We understand you do need to measure it if you plan to publish any data. The second method is to estimate it from Vital Capacity (VC). A simple spirometer for measuring VC is available from VacuMed for about \$400. HYDROWT software allows you to enter VC and will automatically make the estimation.

Q16: *What kind of computer do I need to run the HYDROWT software?*

Any PC, it's a DOS program. No hard disk required.

Q17: *What maintenance does the tank require?*

Water hygiene is described in question 9. No external maintenance is required. We suggest rubbing the wood finish of the plastic tank with linseed or other furniture oil every six months.

Q18: *What is the shipping weight & dimension?*

Total weight of plastic tank with pump, heater, filter unit is about 450 pounds, however for airfreight cost determination it is rated at 800 pounds. Final packed dimensions 62" x 60" x 47".

Q19: *What are the power requirements?*

110 Volt Pump/Filter Heater unit has 1500 watt heater: 20 Amp, 3-wire, 60 Hz, dedicated circuit (No other lights or appliances allowed on the circuit).

220 Volt Pump/Filter/Heater unit has 5500 watt heater: 50 Amp, 4-wire, 50 or 60 Hz.