



*Installation
&
Operation
Manual*

**Turbo - Cool
Turbo - Dual Temp
2012 Models**



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Warnings:

Please read before operating.

Power Supply Voltage

iCools can only be connected to the voltage marked on the machine. They are manufactured as either 110v or 220v machines, but they are **not multi voltage**. The applicable voltage is marked next to the main power switch. Using a different voltage may cause severe damage.

All models can be used on both 50 Htz and 60 Htz AC supplies.



An Approved Earth Connection is Essential for Safe Operation. To ensure safe operation the AC power connection you use must have an earth connection that complies with your local electrical safety regulations.

Built in Safety Systems

Your iCool has many essential safety features to protect against such things as

- *A loss of water flow,
- *Overheating of the system,
- *Electrical shock risk.

If any such potentially dangerous situation should occur, in most cases your iCool will sound an alarm, shut itself down and a red warning screen will appear to assist you to identify and correct the problem.

In the case of overheating, the main fans may continue to run for some time even after a shut down, until the temperature is safely back to normal.

For the safety of users, any leakage of even a small amount of electrical current will instantly cause the Residual Current Device to remove all electrical power from the entire system. The maximum leakage allowed is 30 milliamps which is considered to be a generally harmless level.

Please Test the Earth Leakage Safety Device Regularly. The main power switch is also part of the electrical safety circuit that can prevent the possibility of electric shock. It is essential to test this safety system each time you use the iCool to make certain it is operating correctly. This takes only a few seconds.

To Test the Earth Leakage Safety Device: Turn on the main switch and then press the test button on the switch body. If the safety system is working normally, pressing the test button will cause the main power switch to shut off instantly. After a successful test, reset the main switch to ON to begin normal operation. If pressing the test button fails to instantly shut off the power switch **DO NOT USE THE SYSTEM until you contact iCool or a qualified electrician for advice.**

Never Restart Without Identifying And Correcting any Fault. In the unlikely event that your system shuts itself down for any reason, you must identify and correct the problem that has caused the safety system to operate before allowing anyone to use the iCool

Electrical Power Connection. Connect the power cable provided with your iCool to a standard power outlet capable of providing at least 20 amps in countries with a 220 V supply and 40 amps in countries with a 110 V supply. Actually the iCool requires much less power than this for normal operation, however all heat pump compressor motors need considerably more power for up to a minute or so each time they start up and this must be allowed for. The TurboCool can be connected either by attaching a suitable approved plug or by direct wiring into an approved electrical wall box. An isolation switch is recommended if connecting to a wall box.



Limits to the Electric Shock Protection System The iCool residual earth leakage protection system can only protect against devices actually connected to the iCool. It can not protect against faults in other unrelated electric devices in the area. All electric devices in any pool area must only be connected to a power supply that has a residual earth leakage device either at the main switch board or on the device itself.

Never risk using unprotected electrical devices near water.

Advice About Water And Pools.

If you are using your TurboCool with an iCool brand spa pool, the pool is provided with a high quality spa water pump especially designed for the purpose. The pumps we provide are resistant to chlorine and salt water at normal concentrations, but the use of chemicals should be kept within the range normally recommended for swimming pools to prolong the life of the pump and the titanium heat exchanger tanks inside the unit.

If You Are Providing Your Own Spa Pool we recommended that you use a **pump of no more than 450 watts** to circulate pool water to and from the iCool. High pressure spa jet pumps of more than 500 watts should not be connected to the iCool because the very high pressure from such pumps could damage the water seals.

If high pressure water jets are required they must be connected to a separate water circuit and a separate pump that is specifically for the massage jets. Do not connect High pressure pool pumps or spa jet pumps to the TurboCool circulation system as it would damage the titanium heat exchangers and also the flow rate would be much too fast for efficient cooling. The TurboCool must have its own independent pump and plumbing. High pressure jets are not normally used in ice baths because they heat the water by injecting and circulating room air.

Avoid Harsh Chemicals. **Never use bromide** as it is highly corrosive to all materials and can cause irritation to athletes eyes and skin. Bromide is unnecessary in cold pools because bacterial growth is much slower at low temperatures. A small amount of chlorine is all that is needed to keep the water safe. Use standard pool test strips to determine the amount needed. If the water is emptied after each session then no chemicals are needed.

The Pump Should Never Be Run Without Proper Water Flow. The main components of most pool pumps are lubricated by the water flow, therefore major damage can occur if the pump is run without water. To protect the pump, your iCool has an automatic water flow monitoring system that will shut the system down and stop the pump if no water flows for more than 2 minutes.

Priming The System With Water.

The pump must be primed with water before it can provide proper circulation. If your spa pool is level with or above the pump then there is generally no need to prime the system as the water will flow by gravity to the pump. If water does not flow after more than 2 minutes the iCool will shut down to protect the pump against over heating.

If your pump has a lint basket please ensure that it clean and that it is full of water before starting the pump. If the water does not begin to flow after about 30 seconds, stop the pump and open the lint basket, fill it with water again, close the lid and start the pump again. This will normally provide enough suction to get the system primed and circulating correctly.

iCool Spas With Built In Filtration Systems (optional extra). Some iCool spas and pools have built in cartridge filtration systems. Before starting the water circulating pump, check that the filter is clean and that the filter housing is full of water. Open the air valve on the filter housing to allow trapped air to be released and close it as soon as a steady flow of water is observed.

Keep Filters And Lint Baskets Clean. The lint basket on pool pumps (if provided) traps any larger objects that may get sucked back from the pool and it should be emptied whenever necessary. Your pools' filter cartridge should be removed and cleaned whenever the pressure shown on the gauge on the top of the filter indicates that the filter is becoming clogged. If there is no gauge on your model, unscrew the lid of the filter housing and look to see if the filter is clean or clogged with dirt. If the filter is not cleaned then eventually the TurboCool will shut down due to low water flow.

Check For Air Leaks.

Water should begin circulating within 2 minutes after the system pump is started. If it does not, the system will stop the pump. **If water does not circulate after 2 or 3 attempted starts, then there may be an air leak** in either the pipes from the spa or the pipe fittings or a blockage in a pipe or filter. This must be corrected.



Understanding Water flow Problems

The water flow warning screen will display if the water flow does not begin or if it fails for any reason. Running the iCool with no water flow can cause serious damage because the heat exchanger tanks will quickly freeze. Frozen water expands considerably and this can cause damage to the tanks. **Lack of water flow can seriously damage the pump** as there would be no lubrication or cooling from the water.



If you are absolutely certain that the system is stopping because of a false or overly sensitive water flow alarm, there is a provision to override the automatic shut down, but please **be warned that once you disarm the flow safety**

monitor, nothing will stop the system even if water is not flowing, Therefore this override function is only to be used for short periods where it is essential to keep your system operating until the reason for the false alarm can be determined and corrected.



Water Flow Can Also Stop If The Heat Exchanger Tanks are Frozen Solid.

If you set the temperature below about 7°C or 45°F it is occasionally possible in certain climatic conditions for the heat exchange tank to freeze solid. This will block most or all of the flow of water. In order to cool the pool water to these extremely low temperatures the system must cool to at least 5°C below the set temperature and this takes it very close to the temperature that water freezes solid. There is an anti freeze safety circuit, however it is sometimes possible for the tanks to freeze in an area not covered by the protection sensors.

If the tanks freeze up, the system will stop to protect the tanks and the screen will sound an alarm and give advice. Allow 30 minutes for the ice to melt and then set the temperature a little higher and restart. Normally settings above 8°C or 45°F will not freeze the tanks in any conditions.

Safe Temperature Settings.

Following international safety recommendations your iCool will not accept water temperature settings below 5°C or 40°F as this would put athletes using the system at risk of hypothermia.

The tanks can only freeze if your setting is below 7 to 8°C and this can only happen in certain conditions. If your set temperature is above this then it is much more likely that the system has stopped because of a lack of water flow caused by either a pipe or filter obstruction, or an air leak in the hoses or pipes from the spa pool, or trapped air in the system.

If there is a possibility that the heat exchanger tank is frozen, then you must allow the system to warm up for about 30 minutes to thaw the ice. Leave the power switched on so that the fans can operate if necessary to thaw out the titanium tanks.

After thawing, set a new temperature no lower than 8 or 9°C before restarting to prevent the tanks freezing again.

Automatic Operation of the Air Fans.

Your TurboCool is very powerful and is capable of removing up to 10,000 watts of heat from a pool per hour. To remove heat from the 2 powerful heat pumps in the TurboCool it has 2 very high powered linear flow cooling fans that cool the condensers compressors and other components. At full power these fans can move 2200 cubic feet of air per minute. During normal operation the fans will automatically change speed as required to maintain safe temperatures and high water cooling efficiency. The fans will be at full speed when temperatures are high or the water is warm. To save electricity the fans will only operate at the exact flow required. Low speed always begins whenever power is applied to the iCool while in the cooling mode. There are no run time limitations on the fans and they use very little power at low speed. In the heating mode, medium speed is set and locked.



Product Description:

Designed Especially For Athlete Recovery Therapy and With Higher Power Efficiency Than Any Comparable Product:

iCools have become the most popular and widely used ice bath cooling and heating systems in the world for the economic and efficient provision of accurate automatic temperature control for modern ice bath recovery therapy for athletes.

Designed and manufactured especially for large ice bath recovery and contrast therapy spas and pools, the TurboCool model provides up to 10,000 watts of cooling (or heating) at the highest power efficiency available. It is a high technology twin heat pump in a very compact single package, with 2 compressors and 2 heat exchangers in separate circuits controlled by a digital power management system to minimise electricity use. The entire system is fully automatic and is controlled and monitored via a modern colour touch screen user interface driving an advanced digital controller.

Lowest Running Cost:

Using the latest heat pump technology the TurboCool can produce up to 10,000 watts of water chilling power yet it uses only a maximum of 3000 watts in normal operation to do so. Furthermore, because the TurboCool is actually two 5000 watt heat pumps in a single cabinet it can operate from a normal 15 amp power outlet (220v models), by digitally controlling the compressor starting sequences to avoid high startup loads. The built in Intelligent Digital Power Management System, DPMS, (exclusive to iCool) means that your TurboCool can operate from a normal 15 amp power outlet if necessary. (30 Amps @ 110V in North America and Japan). This saves a lot of money on initial installation costs, because most other chillers of this power need a special connection to 3 phase power, whereas the TurboCool only requires single phase power.

This is new technology developed by iCool and has many advantages.

The Intelligent Control System Saves a Lot of Electricity.

Firstly, start up current is much lower because the built in digital control makes sure that the 2 systems never start at exactly the same time, so it never exceeds the rating of a normal single phase power socket.

The second advantage is that the TurboCool can accurately provide the exact amount of cooling power actually required to avoid waste. Both of the twin heat pumps run at full power for fast cooling, but at other times such as over night and when the spa pool is not in heavy use, it automatically reduces power or even turns one of the heat pumps off and that saves a lot of electricity. Only iCool has this power saving feature.

In Heating Mode Running Cost can be up to 65% Lower Than Typical Spa Heaters.

In heating mode (ICTurbo DualTemp model) the Turbo uses as much as 65% less electricity compared to a normal electric element spa water heater, because it uses modern reverse cycle heat pump technology. It does not use wasteful electric elements. So with power saving features in both cooling and heating modes the owner can save a lot of money each year on electricity costs.

Standard Package Includes:

A Full Colour Touch Screen to control and monitor all functions.

(On request the touch screen can also display your club logo or graphics.)

Dual Titanium Heat Exchanger Tanks.

Simple industry standard connections for water In and water out.

Twin digitally controlled heat pump cooling systems in a single cabinet.

Environmentally friendly Eco Refrigeration Gas HR22 "Green Gas".

Vibration isolation mountings.

Built in earth leak detection safety system.

Area Lighting controlled from the touch screen.

*As optional extra, a very convenient Wall Mounted Remote Control Touch Screen Panel is available.



Installation:

General Requirements:

Generally Turbos can be installed in much smaller spaces and much more easily than any comparable equipment of similar cooling (or heating) capacity. Floor mounting is the simplest solution and this is included in the standard price, however specially designed wall mounting or even ceiling mounting kits are available if required.

Ventilation Requirements:

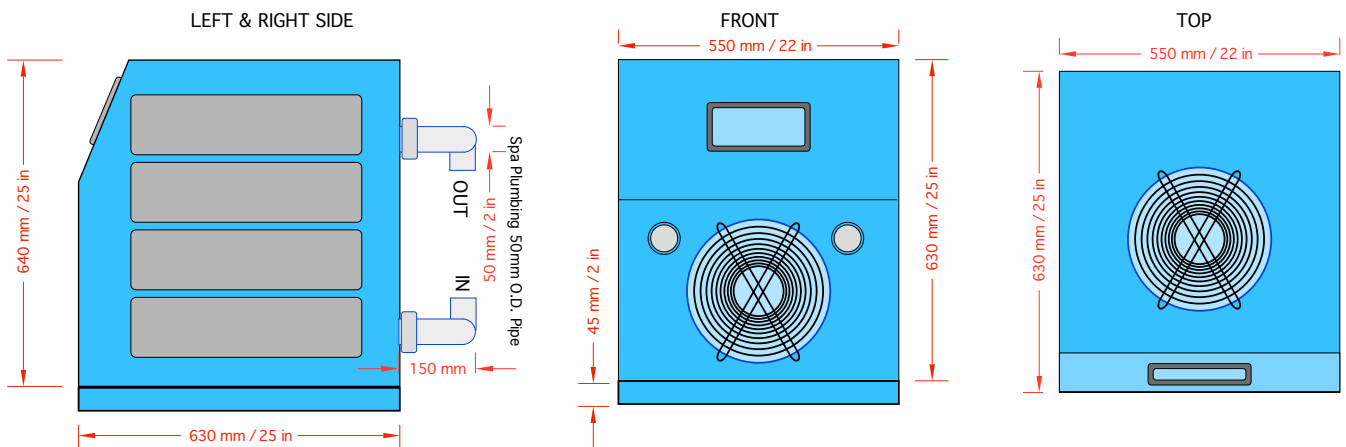
Cold air is taken in from the front and the top of the unit, so these surfaces must be at least 200-300 mm from a wall or obstruction. Hot air is expelled from the 2 long sides and these sides must be at least 200-300 mm from a wall or obstruction. If installing more than one Turbo aligned to each other as shown in the illustration at bottom left, they should be at least 500 mm apart. This spacing can be reduced if they are installed front to back as shown in the illustration at bottom right.

Plumbing Requirements:

Just 2 standard 40mm PVC pool water pipes are required for each TurboCool/Spa installation for carrying water to and from the spa. The TurboCool can be up to a maximum of 25 meters from the Spa Pool and it can be up to 5 meters above or below the Spa Pool, but naturally the closer it is in both distance and level the higher the efficiency will be.

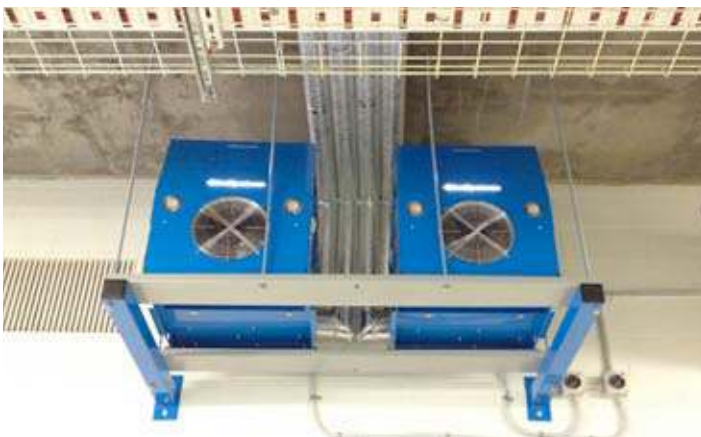
The two PVC water pipes must be insulated with standard 90-100mm diameter (4") insulation lagging to prevent energy loss.

Dimensions in Metric and Imperial:



TurboCools Can be Conveniently Mounted on Floors , Walls or Ceilings:

iCool can provide special mounting brackets for most situations.





Installation:

Remote Control Touch Screen Option:

TurboCools are supplied either with a Touch Screen integrated into the front panel of the machine, or ready wired for either single or double screen remote control panel.



Rear of Cabinet

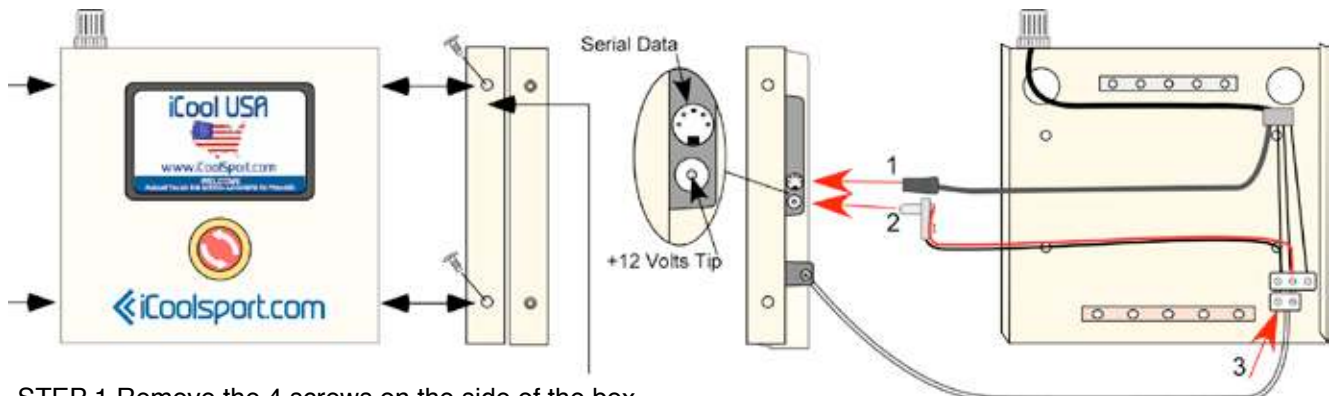
If you ordered a Remote Touch Screen Panel, your Turbo will have a special multi pin cable socket on the top right hand side at the back. Once the cable provided with the remote panel is plugged into this socket, all functions are then controlled from the remote screen and all temperature and systems data is displayed on the remote screen.

The Remote panel is supplied with whatever length of data cable you require. If iCool is installing your TurboCools the data cable may be directly wired instead of via a plug.



A Twin Remote Touch Screen Installation

Mounting Your Remote Control Touch Screen on a Wall: Most iCool users find that it is very convenient to have the remote touch screen mounted within the spa pool area for ease of operation so that the information on the screen such as temperatures, operation functions and the session timer can be easily seen. If you chose this option the remote cabinet can be mounted as shown below.



STEP 1 Remove the 4 screws on the side of the box

STEP 2 Carefully move the front panel away from the back panel until you can see the 3 cables that you must unplug in order to mount the back panel to a wall.

STEP 3 Unplug the 3 cables as shown so that the front can be separated from the rear panel.

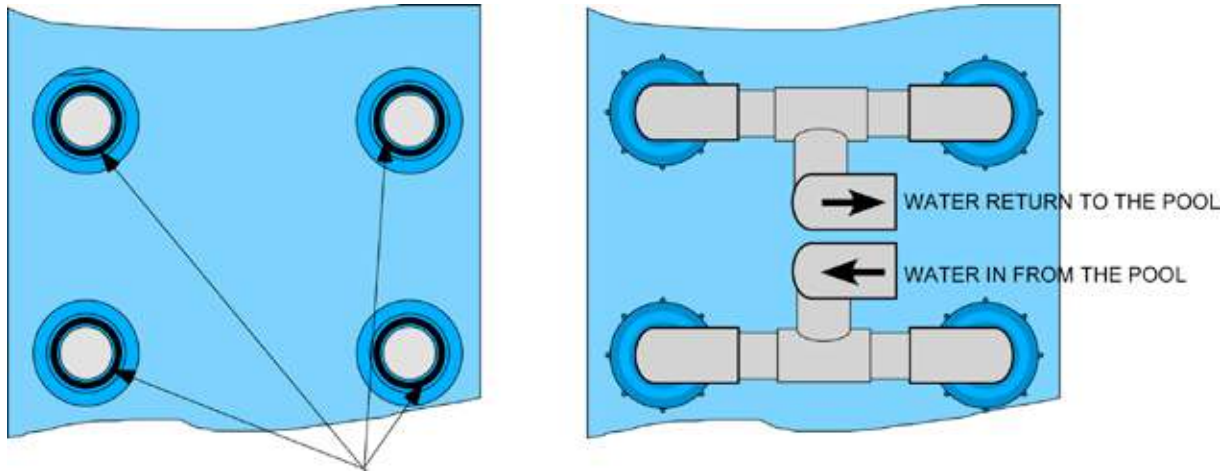
STEP 4 The rear panel has several holes that can be used for screwing to a wall. Select a good position where the screen can be easily reached by operators and can be seen from the recovery spa.

STEP 5 Replace the 3 plugs as shown.

Push the screen power plug number 2 firmly into the screen so that it does not come loose.

Take care when replacing plug number 1, the data cable for the screen, it has several small pins that must line up correctly.

STEP 6 Replace the front panel, check that the cable from the screen box is plugged in to the TurboCool and test that all operations are normal.



Please make sure that these rubber "O" rings are in place or the connection will leak.

Designed to use standard 40mm swimming pool PVC piping. The iCool system is designed to connect with the industry standard 40mm swimming pool and spa water pipes and fittings. Any regular pool supply company can provide these.

Attach the water manifolds as shown. The water manifolds have been removed for safe shipping. Attach them by screwing them on as tight as you can by hand. Do not use a wrench or you may damage the fittings. Manifolds can be reversed if water pipe connections are required in the opposite direction, but the water always flows in to the bottom manifold from the pool and out from the top manifold back to the pool. Standard "40mm PVC Pressure" pipes should be used. Do not use smaller pipes or the flow will be too restricted. **All pipework must be well insulated.** iCool can provide details of suppliers of ideal, easy to install, 90 mm diameter foam insulation.

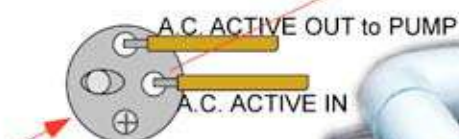
Electrical Connections: Because iCool equipment is shipped to many countries, your TurboCool is normally not supplied with an AC power plug. You must connect the heavy duty power cable provided in a manner that is legal and safe in your country. A 220 volt unit requires a minimum 15-20 amp single phase connection and a 110 volt unit requires a minimum 30-40 amp connection. The safest and best way to connect your TurboCool is to a wall box with an isolation switch, however, because the iCool also has an isolation safety switch and an earth leakage safety device built in, you can also simply attach a power plug and plug that into a standard wall socket.

Connecting the Pump: Depending on your order, on the rear of your TurboCool there will either be a standard AC power socket or a splash proof connection box to connect the water circulating pump. If it has a power socket you can simply plug the pump in. Otherwise follow the connections as set out below. You must connect the pump here or the TurboCool can not provide safety monitoring or control it's function.

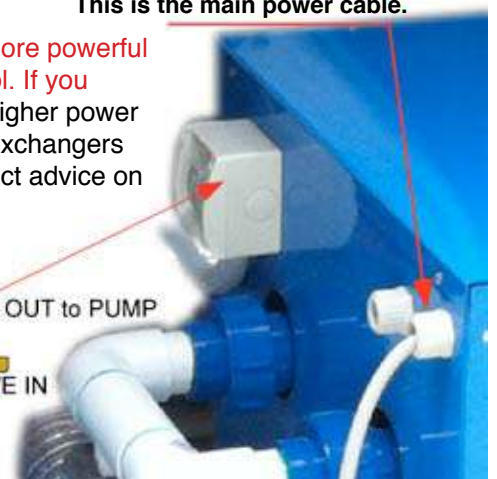
This is the main power cable.

Pump Size: If you are supplying your own pool pump **it must not be more powerful than 450-500 watts. Never run a high power spa jet pump in to your iCool. If you need massage jets you must use a separate plumbing circuit for them.** Higher power pumps, such as standard swimming pool pumps, can damage the heat exchangers and plumbing seals in your TurboCool. Please contact iCool for the correct advice on your particular pump installation if you are unsure.

The **BROWN** wire is the **ACTIVE**
 The **BLUE** wire is the **NEUTRAL**
 The **GREEN** wire is the **EARTH**



The water pump must be connected to the waterproof switch box on the rear panel of the TurboCool. Inside the switch box are three wires and suitable screw connector fittings



Mains Wiring Code: iCool uses the international colour code for AC electrical wiring. The **BROWN** wire is the ACTIVE, the **BLUE** wire is the NEUTRAL and the **GREEN** wire is the EARTH.

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Operating your Turbo:

The Following Pages Contain Very Detailed Instructions.....but once you are fully familiar with all functions you can then simply refer to the convenient single page quick start manual provided.

All of the functions of your TurboCool are controlled by the colour touch screen. Once you have entered your required settings, operation is fully automatic.

Your TurboCool will cool (or heat if you have a dual temp model) to your set temperature and maintain that temperature as long as the system is turned on. There are a number of essential safety functions that are constantly monitored and the system will take automatic action if a safety issue occurs.

STEP 1: Turn on the main power on the side of the cabinet.

If you have a remote control touch screen panel you can turn the main power on and off by using the red emergency stop button on the panel. Push in for OFF and twist in the direction of the arrows to restore power. Otherwise use the Main Power Switch on the side of the TurboCool.

Your iCool has a full colour high-resolution touchscreen that eliminates all switches and provides complete control over your iCool system in a user-friendly and intuitive manner. It also provides a substantial amount of additional information to assist you.



When you turn on the power for the first time the system will load the latest software from its memory card and run a diagnostic self test routine. This will take about 20 seconds and the screen will be black for about 10 seconds.

The status bar will flash white while the software loads and the system is checked.

The STATUS LIGHTS bar above the touch screen will change colour or flash to give a clear indication of each function.

While the software is loading the system conducts an automatic function and safety check, during this time the status light bar will flash white.

Once the software is loaded and tested a **WELCOME** screen will appear. If you requested a personal logo screen with your order, a screen that looks similar to the examples shown below will appear instead, displaying the artwork you requested, Otherwise the standard iCool welcome screen will appear. (bottom left)

Touching the **WELCOME** screen (or your personal logo screen) anywhere will stop the light bar flashing and show a steady white light to indicate that the systems check was successful and that your iCool is now ready to use.

What the Colours Mean: The Status Bar lights glow **BLUE** when only the pump is running, **GREEN** when the cooling system is running correctly and **RED** when the heating system is running correctly.



Touch the WELCOME screen anywhere and the Main Operating Screen will appear.



STEP 2: Select the Required Temperature.



Main Operating Screen



Temperature Selection Screen

The **Main Operating Screen** (above left) appears when you touch the **WELCOME** screen. It provides many options which are covered in detail later in this manual,

To quickly start the system you can simply accept the automatically inserted water temperature setting of **15°C**.

The two most commonly used temperatures for ice bath sessions are pre set for your convenience. **15°C** is inserted automatically on start up and you can just accept this and continue. If you choose “**Change Settings**” then the **Temperature Selection Screen** appears (top right) and **10°C** is automatically set.

If you require a different temperature then after touching the “**Change Settings**” button, the screen will change to



the **Temperature Selection Screen** with **10°C** will be inserted automatically. Then you have the option of changing to any temperature you require by simply touching the up and down arrow buttons.

As you make changes the new pool water temperature setting will appear on the bottom left-hand of the screen in the blue window marked “**Selected Temperature**”.

The right-hand side of this screen shows the outside air temperature.



Once the pool water temperature you want your iCool to cool to is selected, touch the “**Start**” button (next to the up down arrows). This takes you back to the **Main Operating Screen**.

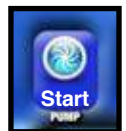
If you did not need to use the Temperature Selection Screen and accepted 15°C, then you will still be seeing the Main Operating Screen.

NOTE: The temperatures can also be displayed in Fahrenheit. This is explained on page 14 of this Manual.

STEP 3: Start the Water Pump.

Touch the “**Start Pump**” button. The pump will begin operating and water should begin circulating within a minute or so.

Please note! When you touch the main buttons they change from “**Start**” buttons to “**Stop**” buttons and can then be used to **Stop** that function if required.



Water MUST be flowing correctly before you touch the “Start System” button.

The water flow is pre set to an optimum flow of between 100-200 litres or around 25-50 gallons per minute. This allows time for the heat exchangers to operate at maximum cooling efficiency and maintains the proper pressure. Pool water is completely changed approximately every 10 to 15 minutes in a 6 person spa.

Do not touch the “Start System” button until you are sure that water is flowing smoothly. If water does not flow smoothly within two to three minutes, please check the plumbing, or if using an optional filtration system check that there is water in the filter housing and no air trapped. If your pump has a debris filter basket, check the basket.

If water does not flow smoothly after 2-3 minutes the system will sound **an alarm and shut the pump off**. A red warning screen will appear with information about how to correct the water flow problem.



STEP 4: You are Now Ready to Start the Automatic Cooling System.



Now that you have pre set your desired temperature and started the circulating pump, the touch screen should look like the picture above. (of course your temperatures may be different). Notice that the pump button will have changed from “**Start**” to “**Stop**” You can use the same buttons to start and stop the pump and system at any time.

Now, touch the “Start System” button and the cooling cycle will begin. The water will be cooled to your preset temperature and the system will then cycle to maintain it at that temperature automatically for as long as the main power is turned on. **The Digital Power Management System** will reduce electricity cost where possible.

If you do not hear the heatpump’s compressor motors start. Do not touch the “Start System” button again, it will start automatically after a 3 minutes safety period elapses to avoid overloading the compressors. This only occurs if you try to restart the system again within 3 minutes of a previous attempt or if you inadvertently touch the button more than once. Normally you will hear the first heat pump start immediately and the second one 2 minutes later if more cooling power is needed. This is automatically controlled by sensors.

Lights on the right hand side of the TurboCool indicate if either heat pump 1, or 2, or both are running. If the temperature difference between the air and pool water is low then the TurboCool may only start one compressor to save electricity. The system inserts a 2 minute delay between each one starting to avoid power overloads.

HEATING MODE

If your Turbo is the Dual Temp Model then, it is capable of either heating or cooling the water automatically to any preset temperature used in athlete recovery sessions. To use the HEATING mode you must switch the **HEAT/COLD** changeover switch on the right hand panel of the TurboCool to **HEAT**.

Do not operate the HEAT/COLD switch while the iCool is running. Turn off the main power first, then change the switch position and turn the main power back on. In HEAT mode the fans will immediately lock on to medium speed which is the most efficient setting for heating. A green light on the bottom right hand of the Turbo cabinet will light to indicate that heating mode (reverse cycle) is selected. In COLD mode the fans will vary as required.

To Operate in the Heating Mode.

Once you have selected **HEAT** at the **HEAT/COLD** switch on the side of the iCool, the operation is essentially the same as for cooling, except that you will need to select a warmer temperature as required. Turn on the power and wait for the **WELCOME** screen as usual. After you touch the **WELCOME** screen the **Main Operating Screen** will appear as usual, however, the auto pre set of 15°C will need to be changed to a suitable warm temperature for typical athlete contrast therapy, normally between **36 and 40°C**. Simply touch the “**Change Settings**” button and the change settings screen will appear. Use the **UP DOWN** arrows to set the hot temperature you require, then touch **START** to go back to the **Main Operating Screen**. Then, everything is the same as in the cooling mode. **START the PUMP**, check that the water is flowing smoothly and then **START the SYSTEM**. The **STATUS BAR** above the screen will turn **RED** to indicate that the Turbo is heating.

Temperature Safety Limitations

For the safety of users, you cannot set temperatures below 5°C or above 45°C (40°F - 112°F) because of the dangers of hypothermia in the case of an unattended athlete using an ice bath, or above 45°C/112°F in the heating mode because of the risk of scalding. These temperature limits have been set after wide consultation with the sporting industry around the world. There are no demonstrated benefits in using water temperature lower than 5°C or above 45°C and therefore the risk of doing so is not justified.



IN AN EMERGENCY you can stop all functions immediately by touching the “ALL STOP” button on the touch screen, or by hitting the EMERGENCY STOP BUTON if you have a remote control panel. You can also remove all power at the main safety switch on the side of the TurboCool cabinet. Please make sure all of your users understand this!



More Details about The Main Operating Screen.



The “**Pool Temperature**” window shows the actual water temperature returning from the pool. This may vary slightly to the temperature measured in the pool because, for safety reasons, the electronic sensors are in the cooling unit, not in the pool. The sensors accurately read the actual temperature of the water that is returning to the pool. The actual pool water temperature may be slightly different depending on your setup, however the temperature of water returning from the TurboCool is always accurately maintained within 1 degree of your setting. If the pool temperature is a bit different you can simply add an offset amount to compensate when selecting your required temperature.



The “**Heat Pump Temperature**” window shows the temperature inside the cabinet. **If this exceeds 70°C or 158°F the system will shut down**, an alarm will sound and a warning screen will appear. This could happen in extremely hot conditions or if the unit is covered by an object such as a towel or anything that prevents proper airflow, or if it is operated in a room with poor ventilation.



The “**Outside Temperature**” window shows the current air temperature around the TurboCool. It is not desirable to operate this system in temperatures above 42°C or 108° F. If the reading exceeds this you need to move the system to a cooler area or improve the air flow.

The “**Preset Temperature**” windows always shows your selected temperature. This is the temperature the water will be automatically cooled (or heated) to and maintained at.



“Change Setting”

You can change your preset temperature at any time by touching the “**Change Setting**” button, this will take you to the **Change Settings Screen**. From here you proceed as described on page 11.



“Lights”

Some iCool models have convenient area lighting which is very helpful if the area around your installation is not well lit. Touching the “**Lights**” button takes you to a simple screen that has both **ON** and **OFF** light buttons. When you touch the **ON** button the area lights illuminate and a **red dot** beside the icon indicates the selected setting. Simply touch **OFF** to turn the lights off. If the lights are activated they do not turn off when system initiates a safety shutdown. This allows an extra measure of safety by continuing to light the area even if a fault has been detected.



“**Help**” Your iCool has an extensive built-in electronic help system with detailed and illustrated helpful information on many important subjects to do with the operation of your iCool

Touching the help button will take you to the main help menu which has eight menu buttons covering all of the important topics you are ever likely to need assistance with.

When you touch the menu button covering a topic, the screen will change to a series of pages covering that subject. Use the buttons to move between the pages

Use the HOME button to come back to the Main Operating Screen.

Occasionally the help program can cause a computer crash. If this happens simply restart the iCool and normal operation will be restored.



“Back 1”

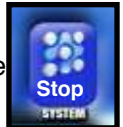
You can flip forward or backwards from page to page using the BACK button on the right-hand side of the help screens or you can return to be main help menu page at any time by touching the HOME button.



“All Stop”

There are several ways to stop the system and close it down.

1. You can stop the cooling system only by touching the **“Stop System”** button, in this case the pump will continue to run,



2. You can stop to pump at any time by touching the **“Stop pump”** button. Stopping the pump while the System is running also automatically stops the Cooling (or Heating) System because it can not run safely without water.



3. Alternatively you can stop everything by touching the **”All Stop”**. button

If you use the **”All Stop”** button the fans may continue to run for a short time to cool the cabinet.

Display the pool temperature at full screen size.

If you touch the number in the pool temperature window on the Main Operation Screen for a few seconds the screen will change to a full-screen display of the pool temperature. (shown here at right)

This is useful if you wish to monitor the system from a distance.

The pre-set temperature and the outside temperature continue to be displayed in smaller windows for your reference. To return to the main operating screen touch the **BACK 1** button.



Systems Preferences

Touching the **“Home”** button will take you to a screen that will give you access to the **SYSTEMS SETTINGS** that allow you to customise certain settings to your preference. Optimum settings are automatically selected so there is normally no need to use this feature.



Available System Preferences

Main Cooling Fan Speed

This allows you to set the main cooling fans to either **Normal** or **Quiet** mode. Generally you should always leave it in the **Normal** mode which is fully automatic and allows the system to control the fan speed to give the very best efficiency.

Temperature Display scale.

This can be set to either Centigrade or Fahrenheit and changes all of the displays throughout the entire system. The iCool normally reads in Centigrade as this is the world standard. It can convert the display to °F if required, however due to rounding off calculations between C° and F° there may be minor differences in the F° display, however the system always holds the water temperature to within 1°C.

Sound Level.

The **Sound level** adjusts the sounds made when touching the screen and by the alarms. Normally it should be left on high to assist with settings and to make sure alarms are heard. There are three settings High, Medium and Low. A red dot indicates which setting is selected in each of the available settings.





Touch Screen Session Timer and Clock Functions.



Your iCool offers a number of very useful timing functions including a real-time clock, a countdown timer to time your recovery and training sessions and a timer to shut down the system automatically after use. To set up and use these functions touch the **“Timer”** button on the HOME screen.



Clock Control Screen



Session Timer Screen

Set Main Clock



To set the clock touch the **“Set Main Clock”** button on the timing functions screen and the time setting display on the bottom right of the screen will begin flashing. You must set each number while it is flashing by using the up down and left right keys. Once you stop using these keys for more than a few seconds the display will stop flashing and the time showing is automatically set into the system and the clock begins operating. *The iCool clock operates in the universal 24-hour time style.*

Set Count down

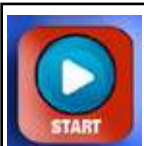


This allows you to accurately control the immersion times of athletes and to repeat those times as often as needed. This is an essential part of successful cryo recovery therapy and is just as important as maintaining accurate and consistent temperatures, which of course your iCool does perfectly.

The session timer is set by touching the **“Set Count down”** button. The numbers on the setting screen in the bottom right-hand corner are minutes and seconds. They will begin to flash and you can use the left, right and up, down arrows to change the minutes and seconds. Once you have set the time you want your athletes to remain in the bath, touching the **“Display Countdown Full Screen”** button will take you to the main session timer screen screen illustrated below. This screen allows you to see the countdown from a distance and also to control it in various convenient ways. The current pool and outside temperature will also be displayed.



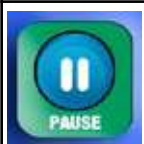
The count down can be set for once only, or it can repeat automatically as many times as you like. This is particularly convenient if you have a number of athletes using the same pool at the same time. The system beeps for each of the last five seconds at the end of each countdown to warn the athletes to get ready to get either in or out of the pool and pauses for several seconds to allow the changeover before the countdown begins again.



This button starts the countdown



Resets time to the preset value in the single shot mode, ready to start again by pressing the **“START”** button



You can pause the countdown at any time and start again from the same position with this button, or touch reset to start from the top.



When this button is pressed the countdown will repeat until the repeat function is cancelled by pressing once again. A red dot indicates that it is active



Automatic System Shutdown Timer



You can preset your iCool to shut down at any time up to five hours in the future. This is very convenient for coaches and specialists who may want to leave the training area early but want to make sure that the system is not left running needlessly. To set this time, touch the **"Set Shut Down"** button and the clock digits on the bottom right of the screen will begin to flash as with setting the clock. Use the same up down and left right arrows to set the number of hours and minutes you wish to elapse before the system automatically shuts down. The system automatically begins the countdown and will stop when the time you set reaches zero. The time remaining before shutdown is displayed on the main clock display screen. As the same arrows are used to set all three time functions, to avoid confusion, a red dot appears next to the button of the function being set.

To avoid an unintended shut down next time you use your iCool this timer automatically resets to 0:00 at shutdown. It does not keep the previous setting, so there will only be a shutdown if you reset this timer.



You can also display the main clock, showing the time of day in full screen mode by touching the "Display Clock in Full Screen" button.



Locking Your iCool System to Prevent Tampering



Your iCool has an electronic lock system. You should keep this a secret known only to authorised operators.

iCool Systems have attractive user interfaces, this makes them easy to use, but the downside is that untrained people often like to play with the colourful touchscreens. This can upset all your settings and even cause an unintended shutdown.



To lock the screen so that no further inputs can be made, touch and hold the iCool icon on the main run screen for more than 10 seconds (you can only lock from this main screen).

A picture of a lock will appear.

When ever this lock is visible it is not possible to make any inputs or to change screens.

To unlock the system and returned to normal, repeat the procedure. Touch and hold the iCool icon for more than 10 seconds. The lock will disappear and all functions will return to normal

Intelligent power management saves electricity automatically

All TurboCools are fitted with a fully automatic intelligent power management system that manages the dual heat pumps to minimise electricity use. It senses pool and room temperature and other parameters and provides only the cooling or heating power that is actually needed at any point and closes down one of the two built in heat pumps completely when it is not required. This cuts power use by up to half. Compared to other comparable systems it offers large savings during long hold over periods such as over night or weekends, while still maintaining your set temperature.

You may notice that the fans change speed and the heat pump compressors start and stop at various times. This is a normal function of the power management system as it optimises the operation for best performance and economy.



Trouble shooting:

If the status bar light on top of the iCool turns Red when you touch the “Start System” button.

This means that the switch on the side of the TurboCool is turned to the HEAT mode. (Dual Temp models only) If you intended to cool your pool then shut down the main power to the TurboCool and turn the switch to the COLD position and restart.

If your screen freezes or fails to respond.

As with all computers and computer controlled devices it is possible that occasionally the system could freeze due to data or software conflicts. Your iCool has 2 computers that monitor and communicate with each other. Occasionally a data error can cause them to stop communicating. Just like your home computer you can restore normal function by restarting the iCool by turning the main power off and then back on again. This reloads the software and runs a diagnostic routine. If this does not restore normal operation, contact iCool for advice.

In most cases if the screen freezes while the iCool is running normally, the main computer will still carry on running the system and monitoring the safety features but you will not be able to change anything and the displayed temperatures will not update. You can either allow it to keep running if that is more convenient, or you can restore the system to normal operation by switching off the main power and re starting.

If the iCool shuts down repeatedly and displays a “No Water” Red Warning Screen

To protect the pump and the Titanium heat exchanger tanks, the system will not allow operation unless the water flows correctly. If water does not flow smoothly or if there is air trapped in the system for more than 2 minutes the safety system will direct a shut down. Please refer to Page 5 for a full explanation and advice on how to correct this.

If the iCool shuts down and displays a “System Too Hot” Red Warning Screen

Your TurboCool is very powerful and can remove as much as 10,000 watts of heat per hour from your pool. Naturally this heat has to be removed into the air surrounding the system. The powerful internal fans can normally handle this with ease, however if the air flow around the iCool is restricted so that the heat can not escape, or the outside air temperature is more than 45°C, eventually the system will reach the limit of it's safe operating range. If the temperature inside the cabinet reaches 70°C the safety system will shut it down, sound an alarm and display the warning screen. Make sure that the fan inlets and the hot air outlets on the TurboCool are not covered or restricted and that the area has a good flow of fresh air. On very hot days when the air temperature is more than 45°C it may not be possible to run the system at full power due to the excessive heat.

Most problems can be resolved quickly by phone or email.

iCool has an excellent reputation around the world for product reliability and prompt customer service. So that you are not prevented from using your system for an important event even if there is a rare failure of a component, we have also build-in ways to work around partial failures. This is a unique advantage of our dual design. TurboCools are actually complete 2 heat pumps in one cabinet so they have built in backups. Our staff can assist you by phone or e-mail.

Our Customer Support is available 7 Days a week.

Just email us at info@icoolsport.com and we will respond with assistance usually the same day. As our factory and service staff are based in Australia, please allow for a short delay due to time zone differences. We can also provide local support in many major regions of the world. Just contact us and we will do our very best to assist you quickly. You can also contact us via our website.



Specifications

Turbo - Cool

Turbo - Dual Temp

Please note.

iCool Systems are sold all around the world and these specifications may be different for units delivered in your country due to local conditions or regulations. We are constantly improving our products and therefore certain specifications may change due to ongoing research and development. We welcome your feedback and suggestions. Thank you for choosing iCool the world's most popular ice bath therapy and recovery systems.

| TurboCool Range | Cool | Dual Temp |
|--|---|---|
| Maximum Cooling Power | 9800 Watts | 9800 Watts |
| Maximum Heating Power | - | 10,000 Watts |
| Operating Power - 220Volts Operating Power - 110Volts | 12 Amps 20Amps | 12 Amps 20Amps |
| Max. Starting Power 220Volts Max. Starting Power 110Volts | 18 Amps 36Amps | 18 Amps 36Amps |
| Heat Pump Type | Twin Rotary X2 | Twin Rotary X2 |
| Earth Leakage Safety Device | 30 Milliamps instant trigger | 30 Milliamps instant trigger |
| Titanium Heat Exchangers | 2 x 25 Liters | 2 x 25 Liters |
| Power Management System | Digital 4 parameter | Digital 4 parameter |
| Standard Mounting Available Mounting Options | Anti Vibration Feet Wall Frame Ceiling Frame Roller Wheels | Anti Vibration Feet Wall Frame Ceiling Frame Roller Wheels |
| Area Lighting Built In | 10 Watts | 10 Watts |
| Standard User Control and Information System | Colour Touch Screen High Resolution LCD | Colour Touch Screen High Resolution LCD |
| Electrically Isolated Pump Drive | Yes | Yes |
| Maximum Pump Capacity | Up to 300 L.P.M. | Up to 300 L.P.M. |
| Mains Power Connection 220 V or 110V Single Phase* | Open 3 Core cable or 3 pin plug on request | Open 3 Core cable or 3 pin plug on request |
| Weight Kg / Pounds | 90KG 175 Lbs | 94KG 202 Lbs |
| Dimensions H. - W. - D. In Mm. | 650x520x1350 | 650x520x1350 |
| Dimensions H. - W. - D. Inches | 25x20x53 | 25x20x53 |

*TurboCools are NOT multi voltage. The correct voltage for each iCool is marked on the main power switch plate.

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