



Circulatory Cooling System (Version: Portable Back Pack)



KewlFlow Cooling Vest
Colors: Blue, Custom
Sizes: S, M, L, XL



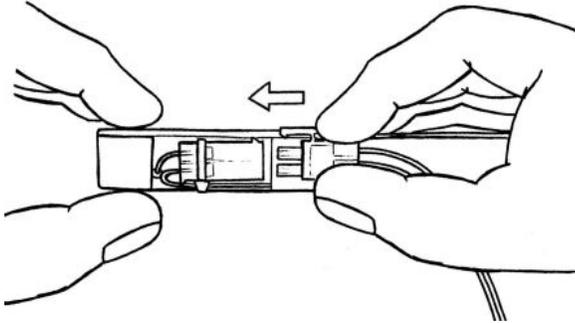
KewlFlow Back Pack
Colors: Black, Custom
Size: 4 Litre

*Thank you for purchasing a KewlFlow™ Circulatory Cooling System.
Please read all operating instructions before using your new system.
If you have any questions, comments or suggestions, please do not
hesitate to contact us at 1-888-823-2665. Stay Kewl !*

Getting Started

CONNECT THE BATTERY

We shipped your Backpack with the Battery disconnected to prevent the pump from being accidentally turned on during shipment. To connect the Battery, pull up on the Flap (with the reflective striping) of the Battery Pouch and pull the Battery Pack out.



Push the white Connector on the end of the red & black Power Wire into the mating Socket on the Battery Pack, as shown in the figure to the left. Push the Connector all the way into the Socket until the tip of the Latch engages, locking it in place.

Replace the Power Pack back into the Battery Pouch of the Backpack and close the Flap securely.

If using the optional Lithium-Ion Battery, please charge it fully before using it for the first time.

FILL THE RESERVOIR

Unzip the longer of the two zippers at the top of the Backpack to access the Reservoir. Slide the blue plastic Slider at the top of the Reservoir to the right to remove it, and then unfold the Flap underneath to open the Reservoir. Reverse these steps to close the Reservoir. *A tip on closing the Reservoir:* When sliding the blue Slider back on, pinch the folded Flap closed just ahead of the Slider as you slide it back on to the left.

The Reservoir can be filled with your choice of:

1. Ice cubes + 16 ounces or more of water for circulation
2. Round ice blocks (molded from plastic cups or tumblers) + 16 ounces or more of water for circulation, or
3. Four 1/2 liter (16.9 ounce) frozen plastic water bottles + 32 ounces or more of water for circulation

Ice cubes will provide the greatest cooling intensity but significantly less cooling duration than either ice blocks or frozen water bottles (which provide the longest duration). We recommend that you experiment to find what works best for you.

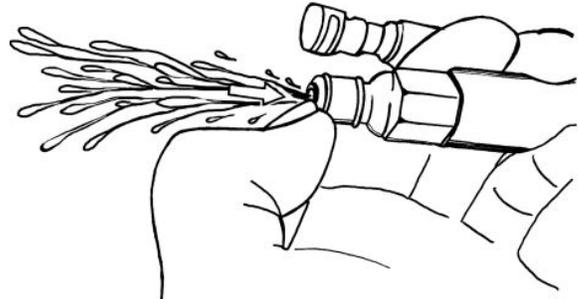
If the weight of the Backpack filled to capacity is uncomfortable, it's OK to fill it only partially - it will still operate properly.

A few tips to take note of:

1. If filling with ice cubes, a handy funnel can be made by cutting the bottom out of a plastic cup and inserting that into the top of the Reservoir to keep it open.
2. If using larger blocks of ice, the remaining spaces between the blocks can be filled with smaller ice cubes or ice chips to maximize the cooling capacity.
3. If using frozen water bottles, please be sure to follow these steps:
 - 3.1 Remove the entire paper label from each bottle, otherwise this could soften, come loose and become lodged in the pump's Inlet Screen. Soaking in hot water may be helpful in removing the labels.
 - 3.2 Remove all traces of remaining sticky glue or adhesive under the label. Some form of solvent (e.g. paint thinner, acetone or alcohol) may be helpful in removing the residue.
 - 3.3 Open each bottle and pour out at least 2 ounces of water before freezing. If this is not done, the bottom will bulge out when frozen and all four bottles may not fit in the Reservoir.
 - 3.4 After placing the frozen water bottles in the Reservoir, add one quart (32 ounces) of water, or enough to cover at least the bottom half of the upper pair of water bottles.

4. Use the coldest water available to minimize the amount ice that is melted in the process of chilling the water the first time you fill the Reservoir. On subsequent refills, don't pour out all of the remaining cold water. If refilling with cubes or blocks, leave a small amount of the chilled water for circulation. If using frozen water bottles, don't pour out any of the water - simply replace the bottles with freshly frozen ones.

5. When filling the Backpack for the first time (or anytime after all of the water has been drained from the Reservoir), press in on the round spring-loaded tip of the Male Connector at the end of the backpack's Outlet Hose with just the tip of your finger or fingernail to let some water begin to stream out, as shown in the figure to the right.



This assures the Pump is fully primed and water will begin circulating as soon as the Power Switch is turned ON.

PUT THE BACKPACK ON

Adjust the Waist Strap, Shoulder Straps and Sternum Strap (between the shoulder straps) for the most comfortable fit. Note that the Sternum Strap Ends also slide up and down along each shoulder strap. The Elastic Loop on each strap may be used to keep the excess length folded and out of the way.

CONNECT TO THE VEST

Connect each Hose on the Backpack to the mating Connector on the end of the Vest Hose. Push them together until a click is heard or felt to ensure proper connection. Press on each Connector's spring-loaded Latch to release.

TURN THE POWER SWITCH ON

The Power Switch for the pump is located on the Left Shoulder Strap. This can be turned on and off as required to regulate the flow of ice-chilled water through the Cooling Vest.

The Power Switch is equipped with a sliding Switch Guard to prevent it from accidentally being switched on. Slide the Power Switch Guard down to allow the Power Switch to be turned ON.

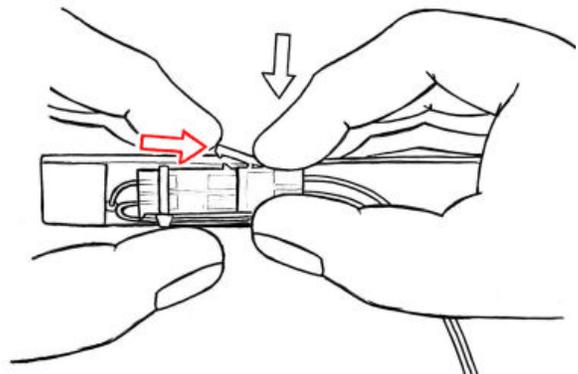
It is recommended that you slide the Power Switch Guard UP when the Backpack is not being used to prevent accidentally running the batteries down.

When the Backpack and Cooling Vest are filled for the first time, or if all of the water was drained out after the previous use, it may take 30 to 60 seconds to clear all the air from the pump and hoses (the pump is self-priming, so this process takes place automatically).

Helpful Tips for Using Your Backpack

REMOVING THE BATTERY PACK:

1. Open the Flap on the Battery Pouch and pull out the Battery Pack.
2. Pinch down on the back portion of the Latch (as shown by the black vertical arrow in the figure to the right) of the white Power Connector located on the end of the red & black Power Wire.
3. Push back on the end of the Latch with the index finger of your other hand (as shown by the red horizontal arrow in the figure to the right) to unplug the Connector from its Socket on the Battery Pack.



REPLACING THE BATTERIES:

If using the optional Lithium-Ion Battery Pack, simply recharge and replace after charging. If using the Power Pack (for AA batteries), follow the steps below:

1. Pull up on the pointed tips of the three Velcro Closures. Note that you do not need to remove them completely from the Power Pack, just pull them up and away enough to open the Power Pack Lid.

Product # 6429B Backpack User Guide

2. Inside the Power Pack you will find two Battery Placeholders - one at each end of the Power Pack. These are for use with eight Alkaline Batteries. If you plan to use ten NiMH (Nickel Metal Hydride) Rechargeable Batteries, remove the two Battery Placeholders and keep them for possible later use.

Note: Alkaline batteries have a voltage of 1.5 Volts per cell, so only eight of them in series are required to supply 12 Volts to operate the pump. Use of the two Battery Placeholders is required in the two remaining open slots in the Power Pack in order to complete the circuit. The Battery Placeholders can go in any of the open slots. NiMH Rechargeable Batteries have a voltage of 1.2 Volts per cell, so ten of them in series are required to supply 12 Volts to operate the pump.

3. Replace the dead batteries with new ones, taking note of their alternating positive/negative orientations (the flat end of each cell goes against the spring).
4. Close the Power Pack Lid and wrap the three Velcro Closures over the Lid to hold it tightly closed.
5. Reconnect the Power Connector by pushing it all the way into the Socket of the Power Pack until the Latch engages, locking it in place. Replace the Power Pack back into the Battery Pouch of the Backpack and close the Flap securely.

When storing or transporting your Backpack, slide the Power Switch Guard UP to prevent the Power Switch from accidentally being turned on.

USING AN EXTERNAL POWER SOURCE:

The Backpack can be powered from an external 12V DC power source using the optional External Power Cord. This is especially handy when the Backpack is used in or on a vehicle, eliminating the need for the Power Pack. To facilitate easy connection/disconnection of the External Power Cord, the red & black Power Wire inside the Battery Pouch can be routed externally as follows:

1. Insert the white plastic Socket on the end of the External Power Cord into the small opening in the bottom seam of Battery Pouch (located about 1 inch to the right of the lower left corner).
2. Feed the External Power Cord into the opening until the Socket protrudes out the top of the Pouch, then plug the white Connector on the end of the red & black Power Wire into the Socket.
3. Pull the External Power Cord back out of the opening until both the Connector and Socket come out. Continue pulling until the entire length (approximately 14 inches) of the red & black Power Wire is exposed, and then unplug the External Power Cord.
4. The Connector on the red & black Power Wire can now be passed under and through the Velcro Wrap on the Backpack's two Hoses so the Connector is retained near the Quick-Connect Fittings on the Hoses, keeping it within easy reach when connecting the External Power Cord while wearing the Backpack.

DRAINING WATER BEFORE REFILLING THE RESERVOIR:

It's not necessary to turn the Backpack upside down to drain any of the water before refilling. An alternate method is to simply press in on the round spring-loaded tip of the Male Connector at the end of the backpack's Outlet Hose with just the tip of your finger or fingernail to let the water stream out, as was shown in Step 5 of FILL THE RESERVOIR. This can be accomplished even more quickly by turning the Power Switch ON at the same time.

Answers to Some Questions You May Have:

How long will the ice last?

The ice can last as long as four hours or more, or can melt in as little as 90 minutes in extreme cases. The actual duration depends on many factors which can be divided into two groups: How much "cold" you start with and how rapidly heat is absorbed.

It takes more heat to melt a pound of ice just removed from a deep freezer than a pound of ice that has been sitting out and is beginning to melt, thus the colder the ice you start with, the better. When you add water to that ice (which is necessary for circulation through the pump and vest), it "warms up" the ice, so adding only a minimal amount of the coldest water possible (ice water) is best.

More body heat is generated by a person rigorously exercising than at rest. More heat will be absorbed when the vest is worn tightly against bare skin as compared to loosely over a shirt. In addition, more heat is absorbed from the surrounding environment when the ambient temperature is high and there is nothing worn over the vest. This is why we recommend wearing at least a lightweight windbreaker-type jacket over the vest to minimize loss of cold to the atmosphere.

Product # 6429B Backpack User Guide

The heat absorbed by the water in the vest is in turn, absorbed by the ice, causing it to slowly melt. You will obtain the best cooling performance if you start with the coldest ice, the coldest and least amount of water and minimize your loss of "cold" to the atmosphere by wearing a thermally insulating garment over the vest.

How do I control the temperature or amount of cooling?

Use the power switch on the backpack's left shoulder strap to turn the pump on & off as needed. As a point of reference, the volume of water in the vest is cycled through the system approximately four times per minute when the pump is on.

How long will the batteries last?

The water circulation pump in the backpack can run for 8 hours or more continuously on a fully charged set of AA batteries. If run intermittently, the total pump operating time can be even longer.

The optional Lithium-Ion Battery Pack will power the pump for 6 to 6-1/2 hours and requires about 6 hours to recharge.

Which performs best: Alkaline (single use) batteries, NiMH rechargeable batteries or the optional Lithium-Ion Battery Pack?

We recommend that you use NiMH rechargeable batteries or the optional Lithium-Ion Battery Pack if you plan to use your Personal Cooling System regularly. The cost of the NiMH rechargeable batteries plus a charger is about the same as 10 to 15 sets of single-use alkaline batteries. The NiMH batteries can be recharged 1000 times or more, so the long-term cost is much lower.

The Lithium-Ion Battery Pack offers the ultimate in convenience as it can be recharged more quickly and easily, eliminating the need for the removal and replacement of individual cells that is required when using AA batteries in the standard Power Pack.

Why not fill all ten slots with alkaline batteries?

There is no advantage gained by doing this. This will result in a higher voltage that causes the pump to run faster but does not improve cooling significantly and will provide approximately the same pump operating time as eight alkaline batteries.

Can I use just eight NiMH rechargeable batteries?

Yes, but this may result in slightly less cooling and will reduce the pump operating time by approximately 20 percent as compared to using ten NiMH rechargeable batteries.

Can I use NiCad rechargeable batteries instead of NiMH rechargeable batteries?

We don't recommend this. NiMH rechargeable batteries will greatly out-perform NiCad batteries and are far better suited for this application.

Customer Support

Your satisfaction is our number one goal. If you have any questions, requests or unresolved issues, please contact us at: sales@techniche-intl.com or call us toll free at 1-8888-823-2665 (760-476-0654) anytime.

Product Warranty

TechNiche International warrants its products against defects in material and workmanship under normal use and service for one (1) year from the date of original retail purchase. If defective, the product will be repaired or replaced at our option, at no charge with dated proof of purchase. This warranty applies only to the original retail consumer and is not transferable.

This product is sold as is. This warranty does not cover defects or damage resulting from: accident, misuse, improper operation, unauthorized modification, normal wear and tear or failure to maintain the product as specified in this User Guide. No warranties, express or implied. TechNiche International disclaims all warranties not set forth herein, including warranties of fitness for a particular purpose. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our products.

Product Service

Please contact us prior to returning any products, so together we can determine the best course of action. We will do our best to resolve all issues as quickly as possible with the minimum amount of inconvenience to you. If your in-warranty product cannot be repaired quickly and completely, we will replace it at no cost to you.

For out-of-warranty products, please contact us to discuss what options are available. If your product is repairable, we will quote the cost for your approval before performing any repairs. If your product cannot be repaired, we may be able to offer you a comparable replacement product at a reduced price.

Please Follow These Important Safeguards:

- Read all instructions carefully before using
- Save these instructions for future reference
- This is not a therapeutic device
- Do not use for anything other than the intended use
- Do not rely on this system as your only source of hydration
- Not for use by small children
- Do not operate if damaged - return to Us for service
- Do not disassemble - there are no user-serviceable parts inside. Disassembly or modification voids the warranty
- Use only alkaline or NiMH AA-size rechargeable batteries in the Power Pack
- Do not operate dry - extended dry operation may damage the pump and will void the warranty
- Never put anything but water (or water with a recommended cleaning agent) and ice (no dry ice) in the system, otherwise the warranty is voided
- Do not fill with alcohol, electrolytes, sports drinks or energy drinks - just pure water
- After filling, ensure the reservoir is securely closed to prevent leakage
- Do not place or store near a source of heat
- Do not place any part of the system into a freezer
- Do not immerse the backpack in water
- Clean & sanitize the entire system periodically to prevent build-up of potentially harmful micro-organisms
- Clean and drain the reservoir and remove the batteries prior to long-term (seasonal) storage
- Do not hang the vest on a hanger without padding for an extended period of time

Backpack Features and Specifications

The KewiFlow™ Backpack serves as a source of chilled water for circulation through the KewiFlow™ Cooling Vest. Together, the Backpack and Vest comprise a fully self-contained Complete Personal Cooling System providing the user with comfort, convenience and unrestricted mobility.

- Extra large 4.4 quart capacity reservoir made from ultra-tough thermoplastic polyurethane
- Quick and easy to fill and clean the reservoir through the large 5.5-inch wide slide opening top
- Can be filled with ice cubes, cylindrical ice blocks or four 1/2 liter frozen water bottles (used as quick-change ice cartridges)
- 5/8-inch thick, 10 layer high performance radiant reflective foil-faced gas-filled thermal insulation surrounds the entire reservoir
- Single charge of ice lasts for 4+ hours (actual duration dependant on user activity level and ambient temperature)
- Small high-efficiency pump circulates ice-chilled water through the cooling vest
- Ten NiMH rechargeable or eight alkaline (single use) AA cells in a quick-change Power Pack provide 8+ hours of continuous pump operation
- Optional Lithium Ion Battery Pack provides 6+ hours of continuous pump operation at one-half the size & weight of the AA Power Pack
- Cooling rate can be adjusted to personal preference using the convenient power switch on left shoulder strap
- Dry-break style quick-disconnect fittings for easy connection to vest with no leakage when disconnected
- Backpack also serves as a source of chilled, filtered drinking water (hydration pack) with the pump on or off
- Thermally insulated drink tube on right shoulder strap keeps first sip cold
- Bite-valve with removable cover and shut-off valve prevents leakage during transport or storage
- 130-micron inline filter on the drink tube prevents any particulates in the reservoir from reaching the bite valve
- Backpack constructed to Mil-Spec standards using rugged 500 Denier Cordura Nylon
- Fully adjustable shoulder, waist and sternum straps with quick-snap buckle closures to comfortably fit all sizes
- Padded back panel and shoulder straps with breathable mesh provide enhanced ventilation
- Zippered external top pocket with key clip and mesh organizer for storing on-the-go essentials
- Mesh pocket on left shoulder strap holds cell phone, MP3 player or snack bar for convenient access while wearing the backpack
- Lower pocket holds battery pack for quick and easy access
- Reflective safety stripes for high visibility in low light conditions double as attachment loops for shock cord to strap extra items to the outside of the backpack, or to attach an auxiliary expansion pack
- Low-profile design keeps pack stable and prevents interference with helmet
- Dimensions: 21" tall x 7" wide x 6" deep (max) at bottom, 3" deep at top
- Weight empty: 2.5 pounds without batteries, 2.8 pounds with Lithium-Ion Battery Pack, 3.1 pounds with AA Battery Pack
- Weight full with AA Battery Pack and reservoir filled to maximum capacity (4.4 quarts): 12.0 pounds
- Color: Black with grey trim
- Warranty: One year on all materials & workmanship