



COMP cooler

Personal Thermal Regulation Technology
To Keep Your Body Cool and Comfortable in Harsh Conditions!

On line Shopping



www.compcooler.shop

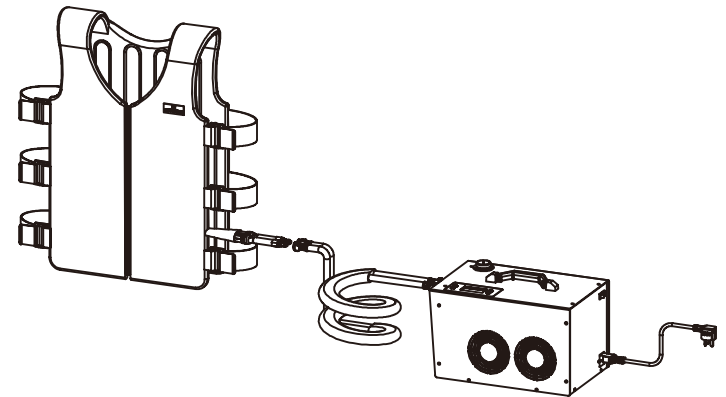
simonsun@compcooler.com

Designed in USA
Made in China

Indoor Refrigeration Chiller System

Model: COMP-IRCS-110400

Operation Manual



COMP cooler

PERSONAL THERMAL TECHNOLOGY

Contents

COMPCOOLER

Personal Thermal Technology

Personal Liquid Circulation Cooling System

- Liquid Cooling Garment
- ICE Water Cooling Unit
- Mini Chiller Cooling Unit

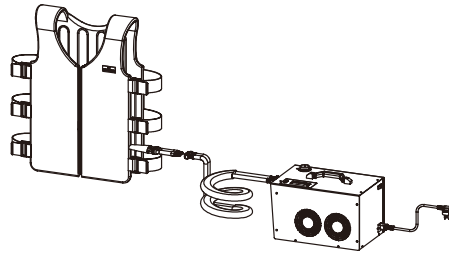
Reduce body core temperature and decrease the incidence of thermal stress while increasing comfort, safety, focus and endurance.

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System Description

The Compcooler Indoor Refrigeration Chiller System (IRCS) is designed for indoor personal cooling applications.

IRCS uses a compressor refrigeration system (a.k.a. chiller) to cool liquid in a reservoir. A pump circulates the cold liquid to a tubing-lined garment and/or cooling pad. The User's body heat is absorbed by the liquid and returned back to the chiller unit to be cooled again. This process continues in a closed loop as long as the system is powered 'On'.



IRCS is powered by a 110V or 220V wall plug and delivers 400W of cooling capacity. Temperature control is -9°C to 30°C (16°F to 86°F) with an accuracy of +/-1°C (2°F).

The system is programmable and will automatically operate at the User's preferred temperature set point. The set point can be adjusted using the control panel on the chiller housing. The User may pre-cool the unit to achieve the coldest liquid needed.

Components List

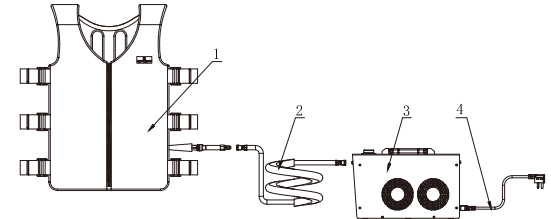
Item	Part number	Description	Quantity
1	COMP-IRCU-110400	Refrigeration Unit, 110V/220V AC	1
		Power Cord US/EU/JP/AU	1
2	COMP-ET2M-2F2F	Extension Tubing, 2m (6ft.)	1
3	COMP-MLCV	Mesh Liquid Cooling Vest	1
4		Operation Manual	1

Chiller Part Numbers

1	COMP-IRCU-110400-US	110V Chiller with US type power connection
2	COMP-IRCU-110400-JP	110V Chiller with Japan power connection
3	COMP-IRCU-220400-EU	220V Chiller with Europe power connection
4	COMP-IRCU-220400-AU	220V Chiller with Australia power connection

Component Description

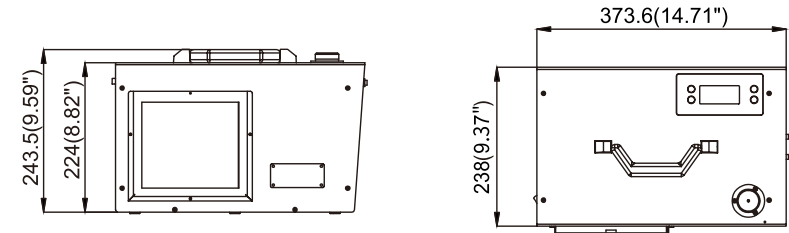
1. Mesh liquid Cooling Vest
Part no. COMP-MLCV
2. Extension Tubing
Part no. COMP-ET2M-2F2F
3. Chiller Unit
Part no. COMP-IRCU-110400
4. Power Cord
Part no. COMP-PC-ACUS



Optional Components

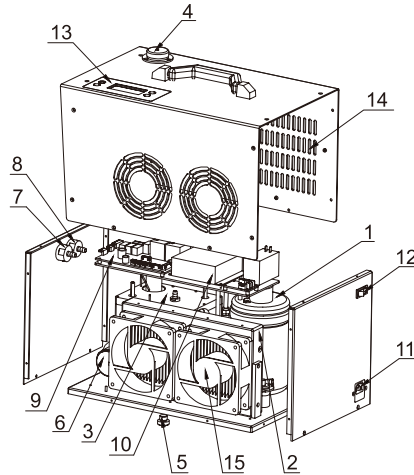
Item	Part Number	Description
1	COMP-LCG-FB	Full body cooling garment
2	COMP-PC-ACEU/JP/AU	Power cord 110-220V AC Europe/Japan/Australia
3	COMP-HCP-S6038	Single size liquid Heating & Cooling Pad 60"x38" (1524x990mm)
4	COMP-HCP-F5475	Full size liquid Heating & Cooling Pad 54"x75" (1905x1372mm)
5	COMP-HCP-K7680	King size liquid Heating & Cooling Pad 76"x80" (2032x1930mm)

Dimensions, Chiller Unit



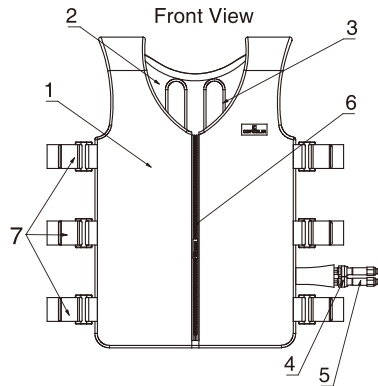
Chiller Unit Callouts

1. Refrigeration Compressor
2. Condenser
3. Reservoir
4. Filling cap
5. Draining cap
6. Water pump
7. Water inlet
8. Water outlet
9. Control board
10. Power supply
11. Power connector
12. Power switch
13. Front panel
14. Hot air outlet
15. Fresh air inlet



Liquid Cooling Vest Callouts

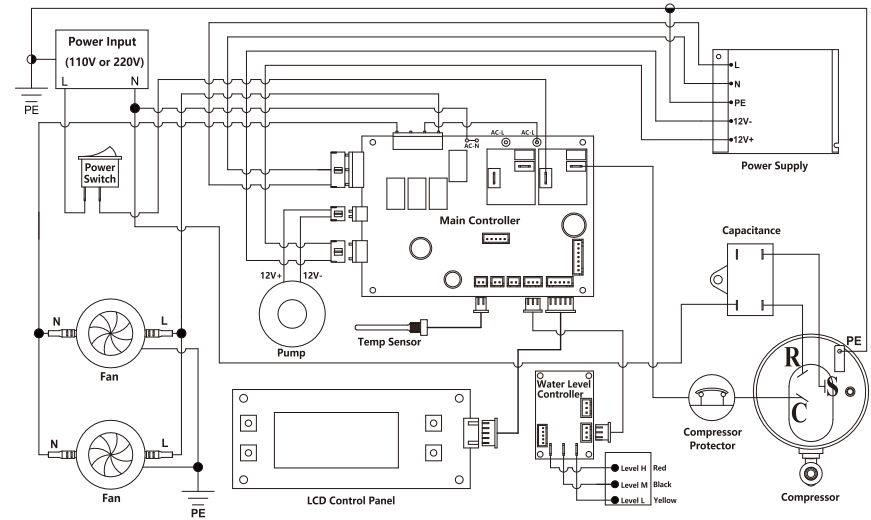
1. Outer Fabric; Soft stretch mesh
2. Liner; Soft stretch mesh
3. Cooling Channel; Silicone micro-tubing
4. Aluminum manifold
5. Male quick-connect fittings
6. Front Zipper
7. Adjustable tabs



Liquid Cooling Vest Sizes

Feature	XS/S	M/L	XL/2XL	3XL/4XL
Chest	84cm/33.1"	100cm/39.4"	108cm/42.5"	123cm/49.6"
Length	64cm/25.2"	68cm/26.8"	70cm/27.6"	73cm/28.8"

Chiller Control Diagram

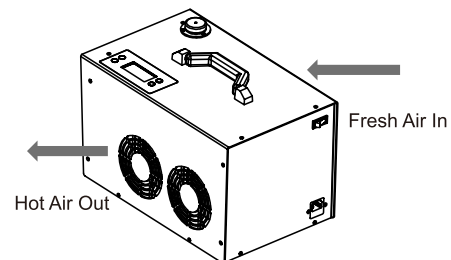


Chiller Unit Technical Datasheet COMP-IRCU-110400

Cooling Capacity (Ambient Temp. 40°C)		W	400
Cooling Capacity (Ambient Temp. 104°F)		Btu	1364
Max Cooling Capacity		W	600
Power Supply		V AC	110 or 220
Operation Current		A	1-2
Max Current		A	3
Max Power Consumption		W	250
Refrigerant	Type		R134a
Compressor Operation			ON/OFF
Temp Control		°C (°F)	-9 to 30 (16 to 86)
Coolant	Anti-freeze liquid		Yes
Rotary Compressor	Qty	PC	1
	Voltage	V AC	110 or 220
	Discharge	CC	3.0
Fan	Qty	PC	2
	Voltage	V AC	110 or 220
	Air Flow	CFM	45
Pump	Voltage	V DC	24
	Water flow	L/Min	5
	Lift	M	5
Power Connector	Type		3PIN
Operation Ambient	Max	°C (°F)	45 (113)
Storage Temp		°C (°F)	-20 to 70 (-4 to 158)
Noise	Max	dBA	48
Color			Silver
Dimension	L x W x H	MM	374x238x243
		Inch	14.71x9.37x9.59
Weight		KGS (LBS)	11 (24.2)

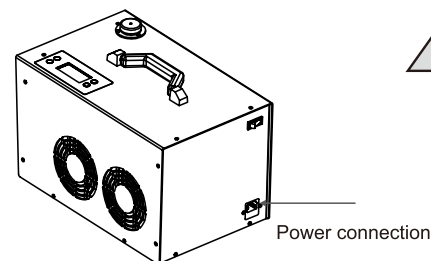
System Preparation

- Installation:** Install the base on a flat surface and in a well-ventilated area. The fresh air inlet and dual fan outlets serve to cool the chiller unit, thus allowing it to operate at maximum performance (reference diagram below). Therefore, allow ample clearance around these features.



Do not block hot air outlet.

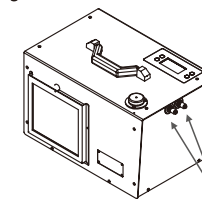
- Power Connection:** One power cord is provided with the refrigeration unit. It must be connected to a wall outlet plug with a rating of 110V or 220V. Reference diagram below for location of power connection point.



Ensure power source matches the power rating of your IRCU chiller model. AN IRCU chiller rated for 220V AC power won't be damaged if plugged into a 110V AC outlet. However, an IRCU chiller rated for 110V AC will not work, or may be damaged, if plugged into a 220V AC outlet.

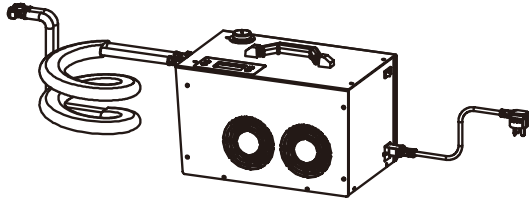
- Connect Extension Tubing; IRCU comes standard with one set of extension tubes which tethers the refrigeration unit to the cooling vest.

The extension tubes have quick-release fittings on both ends. Simply press the button on the fitting to release it. Conversely, when connecting the fitting, an audible 'click' ensures a good connection. Reference diagram to the right and below for the fitting and power connection on the chiller housing.



Fitting connection point


While these fittings are designed to mate with Compcooler's line of personal cooling devices and garments, they may be replaced by the User for compatibility with different garments or pads.



4. **Priming the System;** If using the IRCU for the first time, a two-step priming process is required. Before priming, it is imperative to understand the types of liquid to be used with the chiller.

The chiller can be set to cool liquid above, or below, the freezing point of water. Accordingly, the type of liquid to be used depends on the programmable temperature setting of the chiller. Please follow these guidelines for liquid preparation:

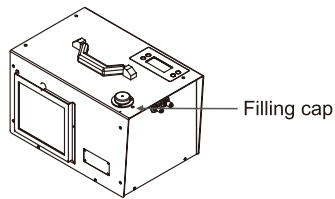
- Plain, clean water must be used for temperature settings above 1°C (33°).
- Anti-freeze liquid (such as 20% glycol with 80% clean water) must be used for temperature settings below 1°C (33°).
- Deionized water may be used for isolation applications.

 DO NOT use salt water, caustic, corrosive, or flammable fluids as these will damage the IRCU and void the warranty.

Priming Steps:

Step 1:

- Remove the filler cap from the top of the chiller (reference diagram at right).
- Using a funnel, fill the reservoir with liquid until full.
- Connect the cooling garment or cooling pad to the chiller using the extension tubes.
- Connect the chiller to a power source using the supplied cable.
- Press the 'Pump' button on the control panel to start circulation and allow it to run for 1 minute. This allows the liquid to circulate in a closed loop between the chiller reservoir and cooling garment and/or cooling pad.
- Turn off the pump.



Step 2:

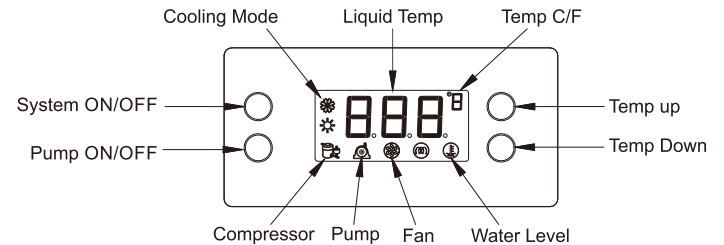
- Using a funnel, fill the reservoir until full. This is required since some of the liquid has been used to fill the extension tubes, cooling garment and/or cooling pad during Step 1 of the priming process.
- Replace the reservoir cap.

5. **Pre-Testing and Pre-Cooling;** With the unit attached to AC power, turn the power switch on. Using the control panel, ensure 'Pump' is off. Press "System" on to start refrigeration and use the "Temp Up/Down" buttons to set the desired cooling temperature. The temperature should come down in a few minutes and remain at that temperature in standby mode.

Note: This refrigeration unit has a temperature control feature that stops cooling when the liquid reaches a temperature 3°C (6°F) below the User setting and begins cooling when the liquid reaches a temperature 1°C (2°F) above the User setting.

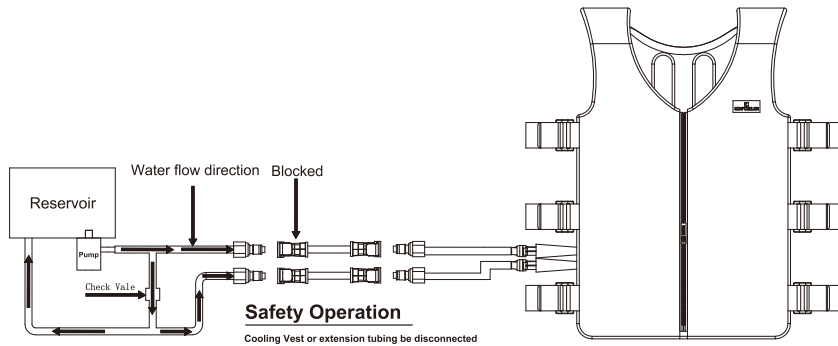
System Operation

- Garment or Pad Connection;** Connect the extension tubing to the chiller unit and liquid cooling garment and/or cooling pad. An audible 'click' ensures a good connection.
- Apply the Cooling Garment and/or Cooling Pad;** Once donned, create a snug fit. For optimal cooling performance, wear the vest against bare skin. For a cooling pad, place in desired location and secure in place if necessary.
- Start Refrigeration;** Turn the power switch on. Using the control panel, ensure "Pump" is off. Press "System" on to start refrigeration.
- Temperature Setting;** Use the 'Temp' up and down buttons on the remote controller to set the desired temperature for the circulation liquid. The liquid temperature will go down to the set point in minutes.



Note: Setting is completed when number stops blinking. The steady number shows the current liquid temperature. Indicator shows the ON/OFF status of refrigerator, pump and water level.

- Start Pump:** Press the 'Pump' button on the control panel to start or stop circulation. Ensure the extension tubing is connected in a closed loop between the refrigeration unit and garment and/or pad before circulation begins. Make sure no kinks exist in the extension tubes. Otherwise, flow and cooling performance will be impeded. If flow is impeded or disconnected at the garment and/or pad, the liquid will be diverted and flow through a check valve whereby circulation will remain in a closed loop between the chiller and extension tubes only (reference diagram below).



Maintenance

- Cleaning:** Several parts of the IRCU may require cleaning as follows:

- Refrigeration Unit:** The protective metal housing of the chiller box may be cleaned with a damp cloth and alcohol-based cleaning solution.
- Garment:** Machine washing with cold water on a gentle or delicate cycle is acceptable using a laundry bag. Hang drying is the only acceptable drying method. Do not use bleach, an iron or place the vest in a machine dryer.
- Reservoir:** Remove the plug from the underside of the chiller and drain the liquid. If the liquid contains anti-freeze, contain and discard this liquid according to your local regulations. Replace the drain cap and remove the filler cap on the topside of the IRCU. Refill the reservoir with a solution of clean water, disinfectant and/or scale remover. Allow that to dwell for 10 minutes and drain again. Leave the drain cap off and allow the reservoir to dry completely. Replace the drain cap before next use.
- Condenser:** To keep the chiller at optimum cooling capacity, the condenser should be kept free of dust and dirt. To check if cleaning is necessary, open the side panel and remove the fans. If cleaning is required, use 50-100psi compressed air to clean the contamination.



Note – always use protective eyewear when cleaning with compressed air.

Maintenance, Continued

- Charging Refrigerant:** (not recommend for uncertified operator)

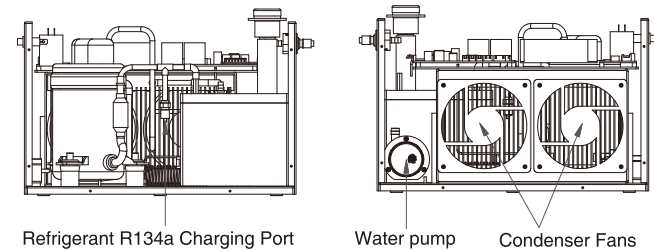
If the cooling capacity has been decreased due to lack of refrigerant, the IRCU will need to be recharged by a licensed refrigeration specialist using 150g of R134a refrigerant.

Storage

- Disconnect the power cord.
- Disconnect the extension tubing.
- Empty and clean the reservoir by following the instructions under Maintenance section 1.c.
- Pack the unit for storage.
- Restart: after long term storage the chiller reservoir should be flushed using a solution of clean water and 5% detergent. Follow Priming instruction number 5 under the section for System Preparation and allow this solution to circulate for 10 minutes with a cooling garment or cooling pad connected. Then empty the detergent solution and refill with the proper operating liquid according to the same priming instructions.

Components Renewal

Open the side panels to replace the fans and pump if damaged, or to use the refrigerant charging port when refrigerant is low. The remote controller and heater can also be replaced if damaged.



Cautions



- Ensure power source is 110V / 220V before connecting IRCU using AC cord.
- Repetitively cycling the IRCU within a short period of time using the 'System On/Off' button will adversely affect the refrigeration system and power consumption.
- Do not block the air inlet and outlet. It may lessen cooling performance or worse yet, cause the compressor to overheat.
- Ensure cooling garments or cooling pads are connected to the IRCU before starting the pump. Otherwise, leakage will occur or the flow will go into the Safety Operation mode (reference section for System Operation, #5).
- Use anti-freeze liquid if temperature setting lower than 0°C.

Cautions, Continued

6. Do not operate the IRCU close to a heat source or in ambient temperatures greater than 45°C (113°F).
7. Do not operate the IRCU in wet or submerged conditions.
8. Stop operation and disconnect the power if high vibration or abnormal noise is observed.
9. Always use protective eyewear when cleaning the IRCU with compressed air.

Troubleshooting

Problem Description	Possible Cause	Solution
No cooling	Overheat protection; compressor in protection mode	Restart the system at a lower ambient temperature and check for cooling performance.
	No liquid circulation	Check if pump is turned on and cooling garment is connected, and no kinks or blockage exist.
	Power connection	Check connection of refrigeration unit to power source. Replace power cord if loose or damaged.
Low cooling capacity	Low heat exchange rate for evaporator	Check liquid level inside reservoir. Replenish if low.
	Low refrigerant level	Check if air from condenser air outlet is hot. Air should be hot for normal operation. Recharge refrigerant R134a if need.
	Low water level	Check the water level indicator on front panel. Add clean water until full.
No liquid flow	Pump is Off	Turn pump on.
	Problem with quick fitting connection between unit and garment	Check that quick fitting connection on extension tubes are connected properly and not blocked or broken.
	Pump blocked	Disassemble the pump from chiller unit and clean if blocked.
Faulty temperature sensor	No feedback; reference 'P1' fault code on remote controller.	Check if sensor connection on the control board is loose or replace the sensor.

Safety

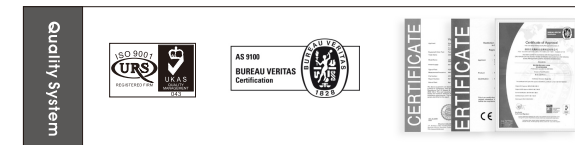


Warning: It is important to become thoroughly familiar with the operating characteristics of the Compcooler Refrigeration Chiller Unit. It is the owner's responsibility to assure proper User training of the cooling system including component knowledge, system preparation, system operation and maintenance. Disregarding this warning can result in injury to the operator and severe mechanical damage to the unit.

Warranty

Compcooler warrants this product to be free from defects in workmanship and materials, under normal residential use and conditions, for a period of one (1) year from the date of shipment. Shipping and handling fees are to be paid for by the customer. The manufacturer agrees, at its option during the warranty period, to repair any defect in material or workmanship or to furnish a repaired or refurbished product of equal value in exchange without charge (except for fees for shipping, handling, packing, return postage, and insurance which will be incurred by the customer). Such repair or replacement is subject to verification of the defect or malfunction and proof of purchase as confirmed by showing the model number on original dated sales receipt.

Certifications



Customer service:
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