**Description:**

The Model 4100 CRYOTherm Contrast Console provides comfortable and convenient of cold, warm, and contrast hydrotherapy. Water in both tanks is precisely maintained at selected temperatures using a hermetic refrigeration system and electronic controls.

Specifications:

Weight / Tanks Empty	1,950 Pounds
Weight / Tanks Full	4,654 Pounds
Tank Dimensions	48" L x 30" W x 28" D
Tank Capacities	162 Gallons
Left Tank Temperature Range	40° F to 70° F
Right Tank Temperature Range	40° F to 110° F
Tank Construction	14 Gauge, Type 304 Stainless Steel
Exterior Construction	DuPont Corian
Voltage	208-240/120 Volt, Single Phase, 60 Hertz
Full Load Amperage	25 Amps
Circuit Breaker	2 Pole, 30 Amp, GFI
Refrigeration Capacity	2-Ton
Pumps	(2) 1 HP, Dual Speed
Hydrotherapy Jets	Two per Tank

Please read thoroughly before use and retain for later reference



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Important Safeguards:

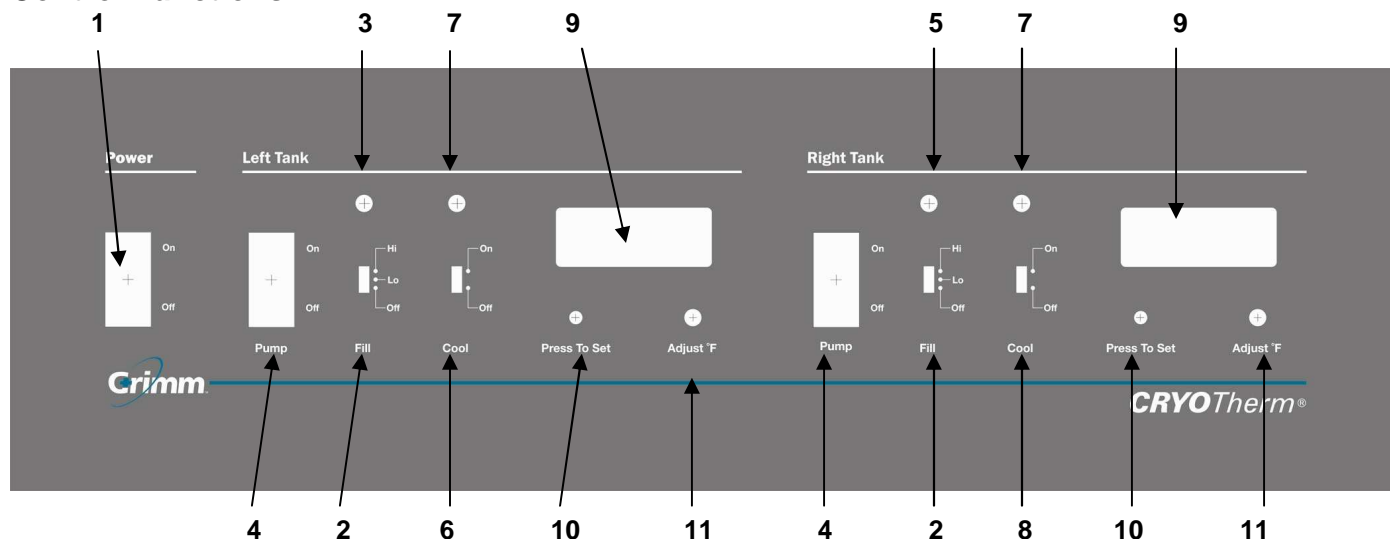
The following safety precautions should always be followed when using CRYOTherm.

1. Use CRYOTherm only as directed in this manual. Improper use can cause injury.
2. Do not plug CRYOTherm into any electrical outlet that is not protected by a ground fault interrupter and matches the voltage and amperage specification.
3. Do not modify the power cord in any way or use with any type extension cord.
4. Both tanks must be filled for CRYOTherm to operate properly. If empty, warm tank walls will over heat and cold tank will form ice.
5. Maintain CRYOTherm as described in this manual. Improper maintenance can cause injury.
6. Use only Grimm-approved parts or service. Improper parts or service can cause injury.
7. Do not utilize warm or hot water treatment where there is hemorrhaging or swelling.
8. Be aware the patient may possibly develop heat-stress syndrome when the CRYOTherm is used at high temperatures for prolonged times.
9. Advise patients to refrain from adjusting controls, and never leave patients alone.
10. Thoroughly clean the tanks with a disinfectant between treatments, particularly after treating open lesions (see "Maintenance" section of this manual).
11. An antibacterial agent added when filling the tanks helps prevent or reduce infection.
12. Keep loose material (bandages, gauze, washcloths, etc.) out of tanks as they can block pump intakes.

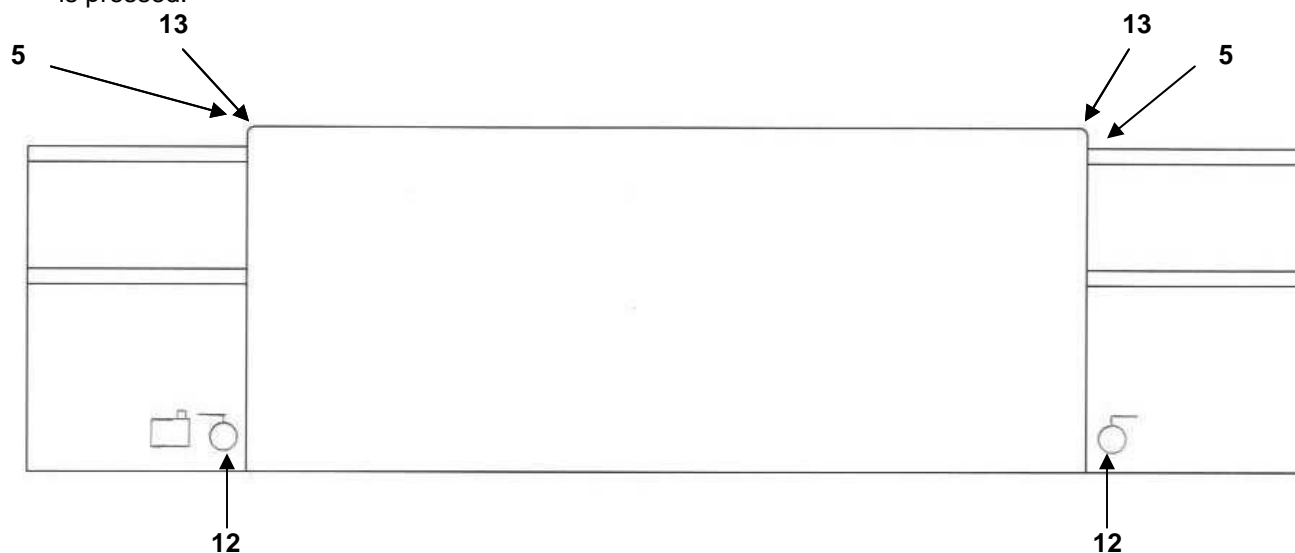
Water Temperature Terminology:

Very Cold	40° F to 55°F	5° C to 13° C
Cold	55° F to 60°F	13° C to 16° C
Warm	90° F to 98°F	32° C to 37° C
Hot	98° F to 104°F	37° C to 40° C
Very Hot	104° F to 110°F	40° C to 43° C

Control Functions:



1. **Power Switch** - Activates all electrical components.
2. **Fill Switches** - Activate automatic water level controls.
3. **Fill LEDs** - Indicate when tank is filling.
4. **Pump Switches** - Activate dual speed circulation pumps.
5. **High Speed Button** - Switches pump speed from low to high for 20 minutes.
6. **Left Cool Switch** - Activates cooling temperature control for left tank.
7. **Cool LEDs** - Indicate temperature controls are asking for cooling.
8. **Right Cool Switch** - “On” to control cooling “Off” to control heating.
9. **Digital Displays** - Display water temperature and temperature control settings.
10. **Press-To-Set Button** - Switches digital display from reading the actual water temperature to reading the temperature control setting.
11. **Adjust Slot** - Adjusts (use small screwdriver supplied) temperature control settings when Press-To-Set button is pressed.



12. **Drain Valves** - Manually drain tanks. Power switch should be switched off.
13. **Air Controls** - Controls air supply to hydrotherapy jets while pumps are running.

Installation:**1. Site Preparation**

The attached Spec Sheet indicates the utilities necessary for installation of the CRYOTherm. Consideration should also be made for the 4,654-pound load this unit will place on the floor and building structure.

2. Level CRYOTherm

Fifteen 5/8-11 stainless steel hex head leveling feet are provided to give uniform support. Thread these into the frame before positioning the unit. Place a level on the top Corian surface and level the CRYOTherm.

3. Drain Connections

A 2-inch copper drain connection is provided. This should be positioned over an open, trapped floor drain with an adequate air gap. Refer to local plumbing codes for specific requirements.

4. Cold Water Supply Connection

A ¾" NPT connection is provided for connection to the cold water supply. An internal RPZ valve protects the supply and requires annual inspection. This supply fills the two 160-gallon tanks and uses an average of .04 gallons per minute to control the warm tank temperature.

When the supply pressure fails, the high-pressure cutout on the refrigeration system will trip making it necessary to press the reset button (see #14 under control functions) after the pressure is restored.

5. Electrical Connection

Power requirements for the Model 4100 CRYOTherm are 208-240/120 volt, single-phase, 60 hertz, 25 amps.

Only plug the CRYOTherm into a voltage-matched NEMA 14-30R, 30 amp, 3-pole, 4-wire grounding outlet that is properly grounded, polarized, and ground-fault-circuit-interrupter (GFCI) protected.

Use professional electrical assistance and follow the National Electrical and local codes as a minimum.

Operation:

1. Operator Considerations

Operators should have a working knowledge of clinical hydrotherapy and cryotherapy procedures. They should also have a complete understanding of the procedures described in this manual, the ability to operate the CRYOTherm, and assist patients.

2. Fill Tanks

Both tanks must be filled for proper operation of CRYOTherm. If prescribed, add an antibacterial agent to the water at this time. Follow the antibacterial agent manufacturer's directions for use.

With Fill, Pump, and Cool switches "Off" on both tanks and drain valves "Closed" press Power Switch to "On". Now press Fill switches to "On" and allow water levels to rise. Automatic level switches located behind the overflow grille will control both water levels just below the overflow pipe height. These level controls have a ten-second delay with the under-level condition to avoid valve chatter.

3. Switch Pumps "On" and Adjust Hydrotherapy Jets

When tanks are full, close Air Control Valves and press Pump switches to "On". Pumps will begin circulating the water. Pumps must be left on at all times for proper operation of the temperature controls. ***Without circulation ice will form on the tank walls.***

Each tank has two adjustable hydrotherapy jets. When the 1-horsepower, dual-speed pumps are switched "On" they circulate water through these jets in the low-speed mode. Press the black "Hi" button over the Pump switch for high-speed hydrotherapy. After 20-minutes the pumps will resume low-speed operation automatically. Open the Air Control valves for more vigorous aerated hydrotherapy.

4. Select Left Tank Temperature

The left tank is a dedicated cold tank adjustable from 40°F to 60°F. Heat removed from this tank is used to heat the right tank. To set the temperature press the black Press-To-Set button and the digital display will switch from reading the water temperature to indicating the set point temperature. Using the small screwdriver supplied, adjust the set point to the desired temperature. When the button is released, the digital display will immediately return to reading the actual water temperature. Press the Cool switch to "On" and the CRYOTherm will seek the set point temperature and control at that point. Cooling rate is approximately four degrees per hour.

5. Select Right Tank Temperature

The right tank can be operated at either a warm or cold temperatures. With the Cool switch switched "Off" the water temperature can be set to any warm temperature up to 110°F. With the Cool switch switched "On" cold temperatures as low as 40°F may be selected.

6. Patient Loading

CRYOTherm is ergonomically designed to accommodate all size patients and support them either standing in the tanks or sitting anywhere on the Corian surfaces.

Maintenance:**1. Clean Regularly**

After patient use, clean the tanks thoroughly with a disinfectant and inspect for contaminants, particularly after treating open lesions.

Note...The entire CRYOTherm should be inspected, cleaned, and disinfected at least once a week.

Caution...When cleaning CRYOTherm wear protective gloves.

2. Disinfection Procedure:

- a) Turn Power switch "Off" and drain tanks before disinfection.
- b) Apply solution of diluted bleach (1/4 cup bleach to one gallon water) or EPA approved intermediate level disinfectant with cloth or sponge. Wet surface thoroughly and allow to remain wet for ten minutes.
- c) Rinse with clean water to reduce residue of disinfectant on the surfaces to a non-toxic level.
- d) Examine tank walls, exterior surfaces, and associated components for damage and visual cleanliness.

3. Culturing

Routine culturing of the tanks should be done. Guidelines for culturing can be obtained through clinical laboratory or hospital infection control department.

4. Replace Filters:

Filters should be changed following a positive culture or when circulation is impaired.

- a) Turn Power switch "Off" and drain tanks before replacing filters.
- b) Loosen locking ring(pull down locking tab and rotate ring counter clockwise)
- c) Remove old filter cartridge and clean inside of housing.
- d) Install new 25 sq. ft. filter cartridge (Grimm part #060740) into filter housing.
- e) Clean o-ring. For ease of future disassembly, apply a very light film of silicone lubricant to o-ring and threads.
- f) Be sure o-ring is in place then and insert housing into filter head. Tighten locking ring (pull down locking tab and rotate ring clockwise)

Service:**1. Trouble Shooting**

Problem	Possible Cause
Nothing happens when Power switch is switched "On".	Power cord unplugged. GFCI breaker tripped.
CRYOTherm won't cool or heat.	Check refrigeration compressor high pressure cut out reset button.
Ice forms on tank walls.	Pump switch turned "Off".
Water circulation impaired.	Check pump suction fittings for debris. Check filter cartridges.

2. One Year Warranty

The CRYOTherm warranty applies to purchaser and any subsequent owner. Grimm Scientific Industries, Inc. (warrantor) warrants this product to be free from defects in material and workmanship under normal use for one year from the date the product is shipped. The warrantor may opt to replace the product, rather than repair it. This warranty does not cover damage resulting from accidents, improper use, or maintenance of this product, and in no case shall warrantor's liability exceed the original purchase price paid for the product. This warranty is expressly in lieu of all other express warranties.

3. Repairs

Should repairs be needed on your CRYOTherm, simply call the factory and ask to speak with a service technician. We will repair it free during the first year and quote a nominal parts and labor fee after the warranty expires.

4. Inspection & Calibration

Every year a qualified service technician should check the CRYOTherm. Temperature control calibration should be verified with a certified mercury thermometer, electrical system tested for grounding and leakage current, and RPZ valve inspected. Grimm can provide this service.

5. Call 1-800-223-5395

All Grimm products are sold and serviced directly by the factory. Call us toll-free Monday through Friday, 8:00 a.m. to 5: p.m. EDT about your thermal therapy needs. We are often available before and after hours so call us anytime.