

HydraTherm™

Composite Heating Unit

Operation Manual



Table of Contents

Warranty	2
Foreword	3
Precautionary Instructions	3
R-12 Pictorials.....	4-6
Set Up & Operating Instructions	7
Electronic Digital Control	8-10
Explanation of Symbols / Labels	10-11
Relocating Heating Unit	11
Electrical Interference.....	11
Maintenance	11
Cleaning Instructions.....	12
Troubleshooting.....	12
Technical Specifications.....	13
Ordering Details.....	14

WARRANTY

Richmar warrants that our units are free of defects in material and workmanship.

This warranty shall remain in effect for One (1) year from the date of the original end users purchase.

If these Products fail to function during the One (1) year warranty period due to a defect in material or workmanship, Richmar or the selling dealer will repair or replace the respective Product without charge within a period of Thirty (30) days from the date on which the Product is returned to Richmar.

All repairs to the Product must be performed by Richmar or a Richmar Authorized Service Center.

Any modifications or repairs performed by unauthorized centers or groups will void this warranty.

To participate in warranty coverage, the Product's warranty registration card (included with the Product) must be filled out and returned to Richmar by the original owner within ten (10) business days from the date of purchase.

RICHMAR SHALL RESERVE THE RIGHT TO REQUEST PROOF OF PURCHASE FROM THE END-USER TO VALIDATE THE WARRANTY PERIOD

This Warranty Does Not Cover:

- ~ Replacement parts or labor furnished by anyone other than Richmar, the selling dealer or a certified service technician.
- ~ Defects or damage caused by labor furnished by someone other than Richmar, the selling dealer or a certified service technician.
- ~ Any malfunction in the Product caused by product misuse, including, but not limited to, the failure to provide reasonable and required maintenance or any use that is inconsistent with the Product's Manual.

RICHMAR SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

To Obtain Service from Richmar or the selling dealer under this warranty:

1. A claim must be made within the warranty period to Richmar or the selling dealer.

Written claims made to Richmar should be sent to:

Richmar

4120 South Creek Road

Chattanooga, TN 37406

Telephone +1 423.648.7730 / FAX +1 423.648.7735

or

Email: technicalsupport@richmarweb.com

and

2. The Product must be returned to Richmar or End User's Distributor by the End User.

This warranty gives you specific legal rights and you may also have other rights which vary from location to location. Richmar does not authorize any person or representative to create for it any other obligation or liability in connection with the sale of the Product.

Any representative or agreement not contained in the warranty shall be void and of no effect.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANT ABILITY OR FINESS FOR A PARTICULAR PURPOSE.

Foreword

This manual is written to insure the proper and safe operation of the R-12 Heating Unit. It contains general information regarding replacement parts, operation, safety precautions and maintenance. In order to maximize safety, efficiency and the life of your heating unit, please read this manual thoroughly and follow all instructions prior to operating the unit.

Specifications and instructions put forth in this manual are in effect at the time of publication; however, due to Richmar's policy of continued product improvement, changes may be made to these specifications and instructions at any time without obligation on the part of Richmar.

Precautionary Instructions



CAUTIONS:

- The R-12 Heating Unit is intended for clinic/professional use ONLY.
- Heat Packs are never to be used directly on the skin. A terry cover or other toweling must always be used in conjunction with the heat packs.
- Read, understand and practice the precautionary and operating instructions. Know the limitations associated with the R-12 Heating Unit. Observe the cautionary and operational decals installed on the Product. On the initial start up of the heating unit or when new heat packs are added, check the water level every 2 hours for a period of 8 hours. This will prevent running the heater with low water levels as some new heat packs absorb water.

NOTE: Richmar recommends using the HydraTherm Paks which do not absorb water, provide better performance and lower maintenance.

- The thermostat is preset to 135°F (57°C) at the factory. The operating temperature is 120°F (49°C) to 160°F (71°C). Always allow sufficient time for the water temperature to stabilize.
- ALWAYS keep the water level at or over the top of the heat packs.
- Check water level daily, due to evaporation from the unit.
- Clean the tank periodically as described in the cleaning and maintenance sections.
- ALWAYS replace heat packs as soon as they show signs of wear.
- If the unit is to be left unattended for an extended period of time:
 - Turn the unit off
 - Disconnect the power cord from the power source/electrical outlet
 - Remove the packs.
- DO NOT move The R-12 Heating Unit while hot.
 - ***Refer to "Relocating Heating Unit" on page 12 of this manual.***
- ALWAYS use factory authorized replacement parts.
- ALWAYS use a towel or washable terry cover against a patient's skin when using hot packs to prevent injury to patient and contamination.
- If electrical interference is observed on sensitive equipment in the locale of the heating unit, first turn the unit off to determine the source of interference. If necessary, unplug the heating unit and move it to another area after the water has been allowed to cool and the unit has been drained.
 - ***Refer to "Electrical Interference" on page 12 of this manual.***



WARNING:

- The water temperature in the R-12 Heating Unit is adjustable from 120°F (49°C) to 160°F (71°C).

NOTE: The scalding temperature of water is 120°F (49°C). Never place hands into the Heating Unit. Always use tongs to retrieve hot pack if necessary. It is recommended that the water temperature be checked on a regular basis prior to use.

HYDRATHERM R-12



Front View



Side View with Shelf

NOTE: One Shelf is a Standard Accessory on the Deluxe Model Only



Rear View



2 3



115/120VAC (White Actuator)



220/240VAC (Green Actuator)



4

- 1 Power Entry Module and Power Switch
- 2 HEAT / DRAIN Switch (*Deluxe Model Only*)
- 3 Low Voltage Control Fuse (*500mA @ 250V*)
- 4 Drain Hose and Valve

R12 Composite Rack System

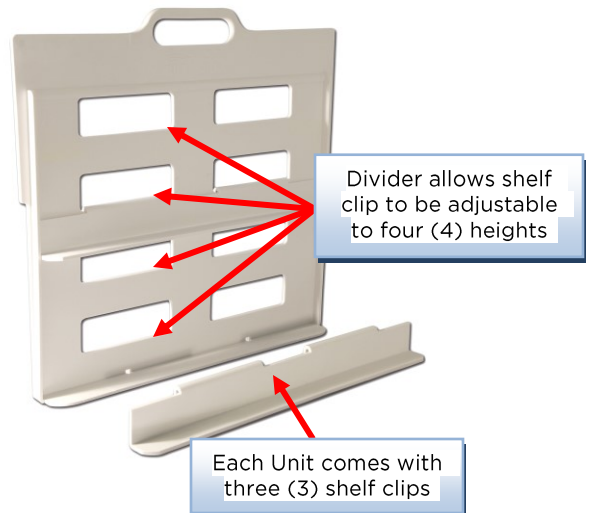
The Hydratherm comes standard with the Divider System as shown in Figure 1 below, but can be substituted for the Traditional Rack System as shown in Figure 2 below.



FIGURE 1 - DIVIDER SYSTEM
Functions like a drawer to enable the raising of Heat Packs



Note: The front rail of the 1st divider is thin compared to the other dividers



Divider allows shelf clip to be adjustable to four (4) heights

Each Unit comes with three (3) shelf clips



FIGURE 2 -TRADITIONAL RACK SYSTEM
Made from same composite material, Rack System sits lower inside the tank and functions like traditional stainless steel racks. Shelf Clips are included.

Set-Up and Operating Instructions

The R-12 Heating Unit is designed to be simple and easy to use.

Installation

- Remove all of the contents inside the R-12 Heating Unit, and then place the racks into the unit.
- Allow a minimum of 16 inches clearance above the lid so that the packs can be removed without external interference and 6 inches or more in the back to be able to access the electrical enclosure power switch.

NOTE: As with all electrical equipment and components, the unit should be kept clear of any hazardous or explosive gasses.

- Insert the Hot Pack(s).
- Fill tank with water until the packs are covered.

NOTE: Adding additional packs after the unit is filled will cause the water to displace and may cause an overflow condition.

- To turn the unit on, simply plug the supplied power cord into the back of the unit and then into a 115/120VAC or 220/240VAC, 50 or 60 Hz outlet (Ground Fault Circuit Interruption (GFCI) is recommended) and place the switch in the "I" position. To turn the unit off, simply move the switch to the "O" position, and unplug from the mains power outlet.

NOTE: DO NOT attempt to use direct current.

- Follow the procedures indicated in the Precautionary Instructions.

NOTE: DO NOT attempt to use the unit if it is not properly grounded.

- The Digital Thermostat, located on the front of the unit, controls and maintains the temperature of the water as well as senses Low Water Condition.
- **For Deluxe Models:** Ensure that the Water Circulate / Water Drain switch is selected to the Circulate position.

Pump System - Deluxe Model Only

Heat Mode

When the R-12 HEAT / DRAIN Switch is in the "HEAT" position, the unit will operate in a normal mode.

Drain Mode

The R-12 Deluxe pump can be used to drain the water from the tank. When the HEAT / DRAIN Switch is set to the "DRAIN" position, the pump will turn on.

NOTE: Make sure that the shut-off valve on the Drain Hose is in the OPEN position.

Once the tank is empty, place the HEAT / DRAIN switch back to the "HEAT" mode position, close the drain hose shut-off valve and store inside the unit.

Refer to page 6 for location of switch and drain hose.

Electronic Digital Control

The R-12 Heating Unit is equipped with a digital temperature controller and will display the current water temperature. This control also has a Low Water Sensing circuit that will warn the user, via an LED light on the lower left front of the control display, that a Low Water Condition exists. This feature will also disable the heating element until a safe water level is sensed.

See page 11 for more information.

Changing the Temperature Set Point

The Temperature Set Point is adjustable between 120°F (49°C) and 160°F (71°C). The Factory Default setting is 135°F (57°C). To change the set point to desired water temperature, follow the instructions below:

- Upon completion of filling the tank with water, power the unit up using the ON/OFF switch located in the lower back side of the unit.
- The control on the front should now be on and displaying the current water temperature sensed. See Figure 1 below for an example.

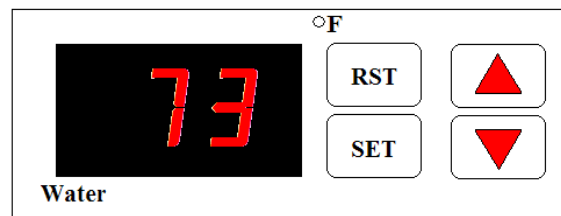


Figure 1

- Press the SET key on the control. HSP will now be displayed as shown in Figure 2 below.

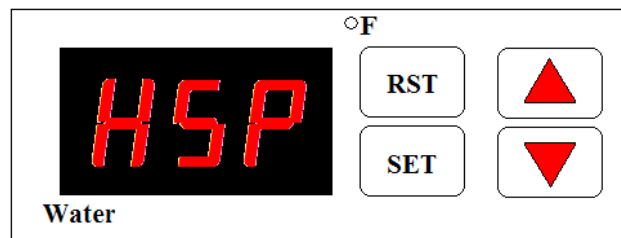


Figure 2
Heat Set Point Menu Displayed

- Again, press the SET key. The current Set Point Temperature will now be displayed. Factory default setting is 135°F (57°C) as shown in Figure 3 below.

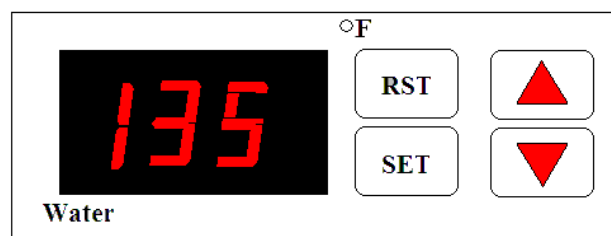


Figure 3
Factory Default Set Point Setting Displayed

- Using either the UP or DOWN keys, adjust the set point to the desired value. The controller will allow set points between 120°F and 160°F. See Figures 4A and 4B below.

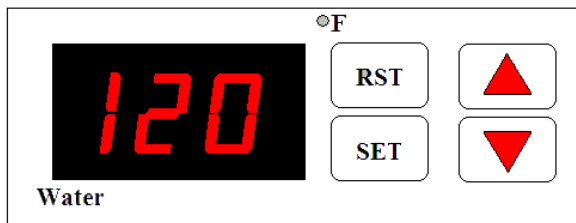


Figure 4A
Minimum Setting

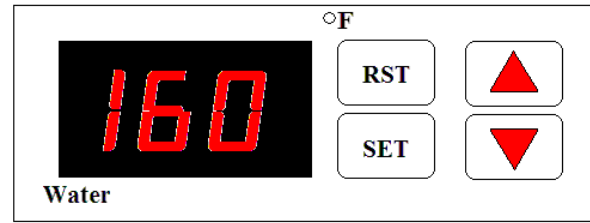


Figure 4B
Maximum Setting

- Once the desired Set Point value is reached, press the SET key. The control will now display HSP again as shown in Figure 5 below.

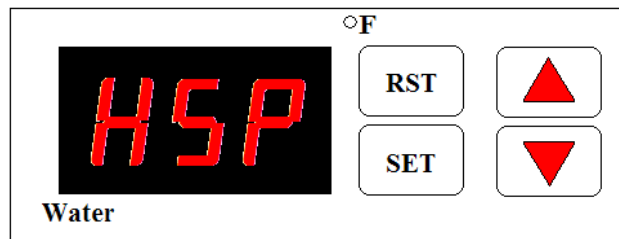


Figure 5

- To exit the the Set Point menu, press the SET and DOWN keys at the same time. The control will save the value of the set point and the current water temperature will be displayed.

Low Water Condition

The control provides a Low Water Sense feature. If the water level drops to a certain level, the controller will sense the Low Water Condition and will disable the heating element from energizing. The Water LED will illuminate and blink to indicate that a Low Water Level exists. See Figure 6 below.

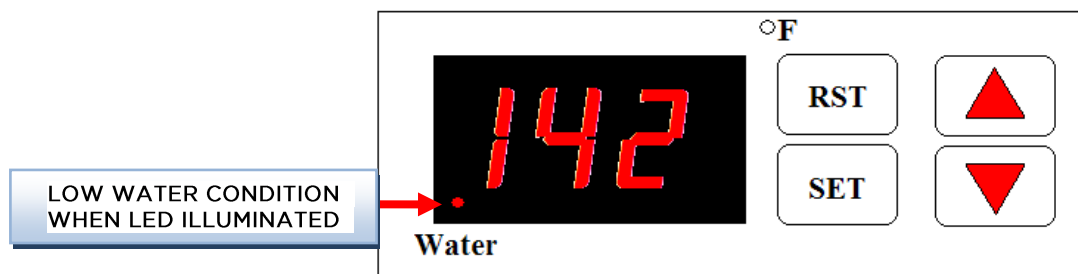


Figure 6

Open or Shorted Temperature Sensor



WARNING!

In the event that the Temperature Sensor or sensor wiring encounters an OPEN or SHORTED STATE, the Control will display “**0 0 0**” (OPEN) as shown in Figure 7 below, or “**- - -**” (SHORTED) as shown in Figure 8 below:

1. Turn the unit OFF
2. Remove the Power Cord
3. Quarantine the unit.

Contact Richmar Service Department for technical support or further instructions.

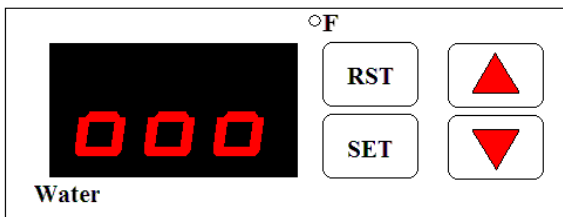


Figure 7

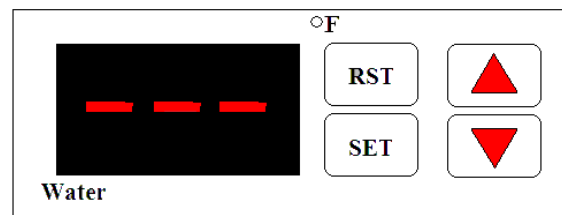


Figure 8

Symbols & Labels

The following labels are located on the electrical enclosure in the rear of the unit.

- **Hazardous Voltage**
High Voltage is present in the electrical enclosure located in the rear of the unit. Service should only be accomplished by trained personnel.

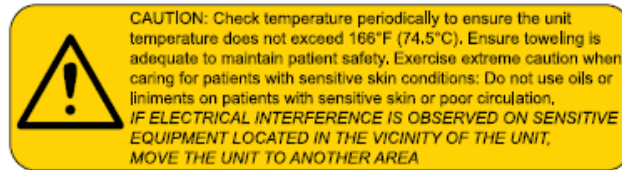


- **Explosion Hazard**
Due to the high temperatures in which the unit operates, do not use this unit in the presence of flammable anesthetics.



- **Water Temperature**

Check water temperature periodically to ensure temperature does not exceed 166°F (74.5°C). For personal safety and patient safety, please observe the cautions as outlined in the label below.



Relocating the R-12 Heating Unit



CAUTION

It is best to unplug the heating unit from the power source (GFCI) and allow the hot water inside to cool to room temperature before draining and moving the unit.

If this is not possible, take extreme caution when moving the product with hot water inside. Tipping the heating unit over could result in a burn or serious injury.

Environmental and Transportation Conditions

Environmental

Maintain the heating unit in an area where temperature is controlled and does not exceed 90°F (32°C).

Transportation

Maintain the heater in an area where the minimum temperature is above -20°F (-29°C) at 40% RH and does not exceed 140°F (60°C) at 60% RH.

Electrical Interference

If electrical interference or EMC is determined to exist between the HydraTherm Unit and sensitive therapeutic or diagnostic equipment, move the R-12 Unit to a new location.

Maintenance

The R-12 Heating Unit is equipped with an immersion type heating element and a Digital Thermostat Controller to maintain the water temperature.

It is critical to maintain the water level at or over the top of the heat packs to avoid damage to the heat packs.

Water is constantly lost during operation due to evaporation; therefore, it is essential to check the water level daily.

Cleaning



CAUTION

Always unplug the unit from its electrical service (GFIC) when cleaning the unit.

- It is recommended to clean the heating unit a minimum of 2 times per year.
NOTE: DO NOT USE BLEACH or any cleaner with HIGH CHLORINE content.
- Water is constantly lost during operation due to evaporation. Fill it daily with clean, cold water as needed.
NOTE: Chlorine in regular tap water may be present in high enough concentrations to damage your unit. If you suspect high levels of chlorine in your R-12 Heating Unit, Richmar recommends the use of distilled water or the addition of a dechlorinator.
Also, certain additives such as herbal teas, essential oils, etc., may damage the components of the heating unit. The R-12 Heating Unit was designed to heat clean water and heat packs only.
- The interior of the unit should be cleaned using a **nonabrasive cleaner**. Check for low or no chlorine content in your cleaner and make sure that the residue is thoroughly rinsed away with water.
- Use a solution of vinegar and water to dissolve deposits, and then thoroughly rinse the water tank with clean water to remove dissolved deposits.

NOTE: Failure to maintain your equipment may result in voiding the warranty.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Water does not get hot or display on Digital Controller not illuminated	1. Circuit Breaker to plug is off 2. Unit ON/OFF Switch in OFF position 3. Low Water condition 4. Digital Controller not functioning 5. Heating Element failure	1. Re-set or turn breaker ON 2. Place the Unit Switch to ON position 3. Check water level and fill as needed 4. Turn OFF unit and turn back ON after 30 seconds 5. Contact Richmar Service Department
Water is Cloudy	1. Filler from packs seeping out 2. Too long of a period between cleaning	1. Drain and clean. 2. Replace heating packs 3. Drain and clean unit
Packs/Water too Hot or Not Hot enough	1. Check Temperature Set Point 2. Digital Controller Malfunction	1. Adjust Temperature Set Point 2. Contact Richmar Service Department

For additional troubleshooting solutions, call the Richmar Service / Technical Support team.




CAUTION!

If the water reaches extreme temperatures, turn the unit OFF, remove the Power Cord and quarantine the unit. Contact Richmar's Service Department for technical support or further instructions.

Technical Specifications

Supply Voltage	110/120VAC or 220/240VAC
Line Frequency	50/60 Hz
Power Consumption	
• 110/120VAC Models	
○ Standard Model (P/N: HT-R12-S)	1000 Watt
○ Deluxe Model (P/N: HT-R12-D)	1000 Watt
• 220/240VAC Models	
○ Standard Model (P/N: HT-R12-S220)	2000 Watt
○ Deluxe Model (P/N: HT-R12-D220)	2000 Watt
Adjustable Temperature Range	120°F (49°C) - 160°F (71°C)
Safety Thermal Cut-Out Temp	175°F +/- 5°F (79°C +/- 3°C)
Digital Temperature Control Accuracy	+/- 2°
Weight (Dry)	
• Standard Model	70 lbs.
• Deluxe Model	75 lbs.
Dimensions	30"W x 20"D x 33"H
Safety Class	B

Type	Symbol	Definition
B		Equipment providing a particular degree of protection against electric shock, particularly regarding allowable leakage currents and reliability of the protective earth connection (if present).

Ordering Details

Hydra Therm R-12 Standard

Part Number	Voltage Requirements	Divider / Rack System	Includes
HT-R12-S	115 / 120 V	Divider System	N/A
HT-R12-SW	115 / 120 V	Divider System	Hydra Heat Packs 3 – Standard 3 – Cervical 3 – Oversized
HT-R12-SR	115 / 120 V	Rack System	N/A
HT-R12-S220	220 / 240 V	Divider System	N/A
HT-R12-SR220	220 / 240 V	Rack System	N/A
HT-R12-SW220	220 / 240 V	Divider System	Hydra Heat Packs 3 – Standard 3 – Cervical 3 – Oversized

Hydra Therm R-12 Deluxe

Part Number	Voltage Requirements	Divider / Rack System	Includes
HT-R12-D	115 / 120 V	Divider System	N/A
HT-R12-DW	115 / 120 V	Divider System	Hydra Heat Packs 3 – Standard 3 – Cervical 3 – Oversized
HT-R12-DR	115 / 120 V	Rack System	N/A
HT-R12-D220	220 / 240 V	Divider System	N/A
HT-R12-DR220	220 / 240 V	Rack System	N/A
HT-R12-DW220	220 / 240 V	Divider System	Hydra Heat Packs 3 – Standard 3 – Cervical 3 – Oversized

Replacement Parts and Optional Equipment

Description	Part Number	Qty. per Unit
Digital Controller (°F)	HT-R12-CTR	1
Digital Controller (°C)	HT-R12-CTRC	1
Power Relay	HT-R12-RLY	1
Shelf Assembly (option)	HT-R12-SHELF	2.
Heat Pack Divider System	HT-R12-DIV	5 pcs.
Heat Pack Rack System (option)	HT-R12-RCK	5 pcs.
* Pump	HT-R12-PMP	1
* 12VDC Power Supply	HT-R12-PWR	1
* Heat/Drain Switch	HT-R12-SWT	1
** 24VAC Secondary Transformer Line Voltage of 115/120VAC	HT-R12-XFM120	1
** 24VAC Secondary Transformer Line Voltage of 220/240VAC	HT-R12-XFM220	1
** 12 Amp Circuit Breaker Switch Line Voltage of 115/120VAC	HT-R12-CBR120	1
** 12 Amp Circuit Breaker Switch Line Voltage of 220/240VAC	HT-R12-CBR220	1
** 115/120 Heating Element 1000 Watt	HT-R12-120HE	1
** 220/240 Heating Element 2000 Watt	HT-R12-220HE	1

* Deluxe Model Only

** Line Voltage Sensitive