

HydraTherm Deluxe

OPERATION MANUAL

HT-TU-DLX



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INTENDED USE:

The HydraTherm Deluxe is intended for use in treatment facilities and rehabilitation clinics to heat hot packs for the purpose of moist heat therapeutic treatment.

This device complies with part 18 of the FCC Rules.

Congratulations on the purchase of your Compass Health Brands HydraTherm Deluxe. Compass Health Brands warrants that your HydraTherm Deluxe is free of defects in material and workmanship. This warranty shall remain in effect for two (2) years* from the date of the original end user purchase. If this unit fails to function during the warranty period due to a defect in materials or workmanship, Compass Health Brands or the selling dealer will repair or replace the respective unit without charge.

All product repairs must be performed by Compass Health Brands.

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

To qualify for warranty coverage, your product must be registered with Compass Health Brands within ten (10) days of purchase in one of the following ways:

- Using the online form at richmarweb.com/warranty-registration
- Mailing in the completed warranty card included with the device

COMPASS HEALTH BRANDS SHALL RESERVE THE RIGHT TO REQUEST PROOF OF PURCHASE FROM THE END-USER TO VALIDATE THE WARRANTY PERIOD.

This warranty does not cover:

1. Replacement parts or labor furnished by anyone other than Compass Health Brands, the selling dealer, or a certified service technician.
2. Defects or damage caused by labor furnished by someone other than Compass Health Brands, the selling dealer, or a certified service technician.
3. Any malfunction in the unit 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.

COMPASS HEALTH BRANDS SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some locations 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 Compass Health Brands or the selling dealer under this warranty:

1. A claim must be made within the warranty period to Compass Health Brands or the selling dealer.
2. Written claims made to Compass Health Brands should be sent to:
Technical Service
c/o Compass Health Brands
6753 Engle Road
Middleburg Heights, OH 44130 USA
 Phone: 1.888.549.4945
 Email: technicalsupport@richmarweb.com

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

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 FINES FOR A PARTICULAR PURPOSE.

** The two-year warranty applies for HydraTherm Deluxe supplied with HydraHeat packs. For units purchased without HydraHeat packs, a one year limited warranty applies. If any unit malfunction is deemed to be a result of bentonite clay pack leakage, the warranty is null and void.*

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This manual is written to ensure the proper and safe operation of the HydraTherm Deluxe. It contains general information regarding replacement parts, operation, safety precautions and maintenance. In order to maximize safety, efficiency and the life of your HydraTherm Deluxe, 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 Compass Health Brands policy of continued product improvement, changes may be made to these specifications and instructions at any time without obligation on the part of Compass Health Brands.

SYMBOLS GLOSSARY

CAUTIONS

Text under a "CAUTION" heading explains possible safety infractions that could have the potential to cause minor to moderate injury or damage to equipment.

WARNINGS

Text under a "WARNING" heading explains possible safety infractions that could potentially cause serious injury and equipment damage.

DANGER

Text under a "DANGER" heading explains possible safety infractions that are imminently hazardous situations that could result in death or serious injury.

DANGEROUS VOLTAGE

Text under a "DANGEROUS VOLTAGE" heading indicator serves to inform the user of possible hazards resulting in an electrical charge.

NOTE: Throughout this manual, "NOTE" may be found. These notes are helpful information to add in the particular area or function being described.



ATTENTION: Refer to the Instruction Manual/ Booklet



Indicates a requirement not to dispose as municipal waste.

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



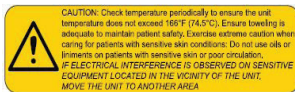
Hazardous Voltage

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 140°F (60°C). For personal safety and patient safety, please observe the cautions as outlined in the label below.



Hot Surface

Hot surface. Do not touch.



802477

Classification

Classified by SGS North America Inc.
Consumer Testing Services (USA Only)

CAUTION

- The HydraTherm Deluxe is intended for clinical/professional use **ONLY**.
- Read, understand and practice the precautionary and operating instructions. Know the limitations associated with the HydraTherm Deluxe. Observe the cautionary and operational decals installed on the unit.
- On the initial startup of the HydraTherm Deluxe 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: Compass Health Brands recommends using HydraHeat Packs, which do not absorb water, used at safer temperatures than canvas packs, can be sanitized between uses, and help to reduce maintenance tasks.

- Each patient can tolerate different temperature levels and patients skin should be monitored to ensure skin is not too hot. **DO NOT** leave patient unattended.
- Temperature readings from external thermometers may differ from the displayed temperature based on location of temperature reading, and type of thermometer used. Dependent on these factors, the temperature reading may vary by +/- 5°F/1°C.
- **ALWAYS** allow sufficient time for water temperature to stabilize prior to temperature readings.
- **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 every six months, or as needed.
- **ALWAYS** replace heat packs as soon as they show signs of wear.
- Packs were developed to be replaced annually per manufacturer recommendations.
- If the unit is to be left unattended for longer than one week:

- a. Turn the unit off.
- b. Disconnect the power cord from the power source/electrical outlet.
- c. Remove the packs and store them on a dry, flat surface.
- d. Drain tank

- **ALWAYS** use factory authorized replacement parts.
- **ALWAYS** use a towel, pillowcase, or washable terry cover against a patient's skin when using hot packs to prevent injury to patient and contamination.

NOTE: For further information on avoiding electrical interference, refer to page 18.

- If electrical interference is observed on sensitive equipment in the locale of the HydraTherm Deluxe, first turn the unit off to determine the source of interference. If necessary, unplug the HydraTherm Deluxe and move it to another area. It is recommended to allow water to cool and/or drain the unit prior to moving.
- **DO NOT** store the unit in a confined space.
- When heated, the surface of the glass lid may become hot. Use the handle to lift the lid. **DO NOT** touch the glass top.
- The HydraTherm Shelf load limit is 7.5 lb (3.4 kg).
- **DO NOT** sit on the HydraTherm Deluxe or the HydraTherm Shelf.
- **DO NOT** add chlorine additive to water.

WARNING

- To avoid risk of electric shock, this equipment must only be connected to a supply main with protective earth/ground.
- **DO NOT** position the equipment in an area that would prevent operation of the power switch and/or the disconnection of the power cord.
- Check the temperature periodically to ensure the unit temperature does not exceed 140°F (60°C).
- **DO NOT** move the HydraTherm Deluxe when filled with heated water. Contact with hot water could result in scalding and/or burns to users or others.

PRECAUTIONARY INSTRUCTIONS



- **ALWAYS** unplug the unit from its electrical service when cleaning the unit.
- A person **MUST** be present when using the drainage feature to ensure the pump is switched off when the tank is empty. Operating the pump with no water will damage the pump.
- Exercise extreme caution when caring for patients with desensitized skin or in areas of poor circulation.
- Consult healthcare professionals before using heat packs on individuals who cannot communicate.

If the water reaches or exceeds 170°F (77°C) the unit will automatically shut off. Remove the Power Cord and quarantine the unit. Contact Compass Health Brands Technical Service for further instructions.

WARNING

- The water temperature in the HydraTherm Deluxe is adjustable from 120°F (49°C) to 140°F (60°C).

NOTE: According to the CPSC scalding temperature of water (exposed to more than six seconds) is 140°F (60°C) and up.* While removing packs from the HydraTherm, **NEVER** place hands into the heating unit

- It is recommended to check water temperature daily before use.
- Individuals with circulatory problems should consult with a physician before receiving moist heat therapy.

DETAILED DEVICE DESCRIPTION



Front View

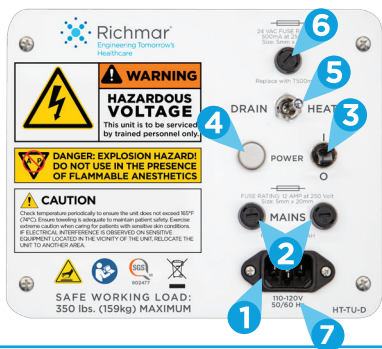


Rear View



Side View with Shelf

*<https://www.cpsc.gov/s3fs-public/5098.pdf>



Enclosure Panel (110 - 120VAC)

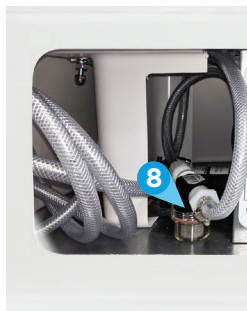
1. Power Entry Module
2. Mains Fuses 12 Amp @ 250 VAC 5mm x20mm
3. Power Switch
4. Power Indicator Lamp
5. Heat/Drain Select Switch

The HydraTherm Deluxe comes standard with the Divider System as shown below in **Figure 1**. The Divider System functions as a vertical drawer by raising the heat packs for easy removal.

Shelf clips are included, and can be connected to any of the four (4) positions on each Divider. See *page 6* for recommended shelf clip positions.



Figure 1. Divider System



Rear Cavity

6. Low Voltage Control Fuse (500mA @ 250V)
7. Voltage Requirement (120 VAC)
8. Drain Valve and Removable Filter

NOTE: The front rail of the first divider is thin compared to the other dividers and should be positioned as such in the tank, as seen in **Figure 2**.



Figure 2. Divider Rail Comparison

RECOMMENDED PACK SETUP

When purchasing the HydraTherm Deluxe, customers have the option of including 12 HydraHeat Packs with their purchase. This includes three of each size: universal, cervical, large and oversize.

Recommended setup uses 2 of the 3 included clip-on shelves, one at the bottom position on the back of the rear-most divider. The second is placed at the top position of the front divider (Fig. 1). The third can be stored for later use, or used if a different configuration is desired.

The recommendation for setup of clip-on shelves and pack placement is illustrated below (Fig. 2).

When retrieving a HydraHeat Pack, it is important to only lift the divider 2" to 3" (5-8 cm), just enough to lift the edge of the pack out of the water. When returning packs to the tank, flatten first to ensure smooth operation of the dividers.

NOTE: Lifting dividers further than 3" may allow packs in the adjacent dividers to slip out of the divider and into the bottom of the tank.



Figure 1.

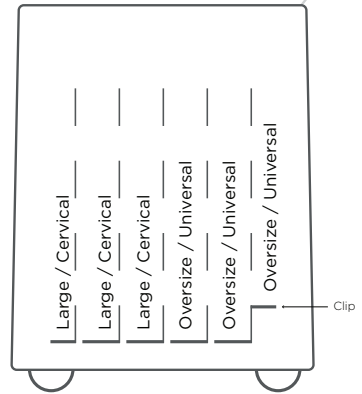


Figure 2. Side View of Tank

The HydraTherm Deluxe is designed to be simple and easy to use.

Remove all of the contents inside the HydraTherm Deluxe and then place the dividers into the unit.

- Allow a minimum of 16" (41 cm) clearance above the lid so that the packs can be removed without external interference and 6" (15 cm) or more in the back to be able to access the electrical enclosure power switch.

WARNING

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

- Insert the heat pack(s).
- Verify drain hose valve is in the closed position.

NOTE: Fill the device, first with **3 cups of tap water**, followed by up to **12 gallons of distilled water**, stopping when the water level has reached 2" from the top of the tank.

NOTE: Exact amount of distilled water varies depending on quantity of packs being used.

NOTE: Distilled water helps to maintain a clean device, but doesn't conduct electricity. For this reason tap water is needed for the Low Water Sensor to operate properly.

CAUTION

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 the appropriate 110-120VAC, 50/60 Hz outlet and set the Power Switch to the "I" position. To turn the unit off, simply move the switch to the "O" position and unplug from the mains power outlet.

NOTE: Ensure the HEAT/DRAIN Switch is set to HEAT before setting the Power Switch to "I".

WARNING

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

CAUTION

A Ground Fault Interruption circuit or receptacle (GFI outlet) is recommended for additional protection.

- 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.
- Ensure that the HEAT/DRAIN switch is selected to the HEAT position.

PUMP SYSTEM:

Heat Mode

When the HydraTherm Deluxe HEAT/DRAIN Switch is in the "HEAT" position, the unit will operate in a normal mode.

• Drain Mode

The HydraTherm 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: If the filter is full of debris, unscrew to remove, clean and replace before draining. Make sure the shut-off valve at the filter is in the open position when draining, and turned to the CLOSED position again before filling.

- Once the tank is empty, place the HEAT/DRAIN Switch back to the "HEAT" mode position. Refer to page 5 for the location of switch and drain hose.

The HydraTherm Deluxe is equipped with a digital thermostat and Temperature Display, along with a Low Water Sensor. When the Low Water Sensor senses low water, the Low Water Indicator will be lit and the Heating Element will be disengaged, until a safe water level is sensed.

NOTE: Refer to page 7 for more information regarding appropriate amounts and type of water necessary.

LOW WATER INDICATOR

- Check Temperature Display. If enough tap water was added, the Low Water Indicator should NOT be illuminated at this time. If Low Water Indicator is illuminated, add more tap water until the indicator light turns off.



Figure 1. Low Water Indicator illuminated

TEMPERATURE SETTING

- It can take several hours for the water to reach the Set Temperature. The default Set Temperature is 135°F (57°C), to change the Set Temperature refer to instructions.

NOTE: If using HydraHeat Packs, **DO NOT** exceed 140°F (60°C) for best therapeutic effect, patient comfort, and HydraHeat Pack longevity.

To enter Temperature Set Mode:

- Press SET button.
- Press UP or DOWN arrows until desired temperature is reached. (**Note:** The temperature cannot be set higher than 140°F / 60°C).
- Press SET button again to lock in temperature.
- The unit will begin heating the water.



Figure 3.



Figure 2. Low Water Indicator not illuminated

OPEN OR SHORTED TEMPERATURE SENSOR

In the event the Temperature Sensor or sensor wiring encounters an OPEN or SHORTED state, the Control will display "EEE" as shown in **Figure 4**.

In the event of an OPEN or SHORTED condition perform the following steps before contacting Compass Health Brands' Service Department for technical support and further instructions:

1. Turn the unit OFF (O).
2. Remove the Power Cord.
3. Quarantine the Unit.
4. Contact Compass Health Brand Technical Service.



Figure 4. Open Temperature Sensor

MAINTENANCE

WARNING

The HydraTherm Deluxe is equipped with an immersion type heating element and a Digital Thermostat Controller to maintain the water temperature.

It is recommended to maintain the water level at or over the top of the heat packs.

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



Contact your local distributor for information regarding disposal of the unit and accessories.

WARNING

ALWAYS unplug the unit from the electrical outlet when cleaning the unit.

It is recommended to clean the your HydraTherm Deluxe once a month. It is recommended to wipe off the heating sensor weekly.

CAUTION

DO NOT USE BLEACH or any cleaner with HIGH CHLORINE content.

NOTE: Chlorine in regular tap water may be present in high enough concentrations (4ppm or more) to damage your unit. If you suspect high levels of chlorine in your HydraTherm Deluxe, Compass Health Brands recommends the use of distilled water or the addition of a dechlorinator. Use of non distilled water, or any unclear tap water may require more cleanings and could cause damage to your unit.

NOTE: DO NOT USE additives such as herbal teas, essential oils, etc., may damage the components of the HydraTherm Deluxe. It is the manufacturers recommendation to use the HydraTherm Deluxe with clean water and using the manufacturer supplied HydraHeat packs.

The interior of the unit should be cleaned using a non-chlorinated and non-abrasive cleaner. Check to make sure your cleaner has a low amount or no chlorine content and make sure that any residue is thoroughly rinsed away with water.

To aid in the removal of deposits on the heating element, pour a solution of vinegar and water in a 1:1 ratio into the heating element well, using no more than required to submerge the heating element. Thoroughly rinse the water tank with clean water to remove dissolved deposits.

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

CLEANING STEPS

STEP 1

Turn device off to let the water and packs cool to room temperature.



Device switch OFF

STEP 2

Remove packs from device and use sponge to clean with cleaning solution.

STEP 3

Remove Divider System to access bottom well of the HydraTherm Deluxe tank.

STEP 4

Remove any debris (e.g. fabric lint) from the bottom of the tank, including the well around the heating element, before beginning to drain the device.

CAUTION

DO NOT attempt to clean the debris from a tank with hot water. Please allow to cool to room temperature.

STEP 5

1. Position hose over wastewater receptacle.
2. Open valve by turning handle parallel with hose.
3. Change the device mode from HEAT to DRAIN.
4. Toggle the power switch to ON. Water will begin emptying from the hose.
5. Once tank is empty, check the filter for debris by unscrewing to remove, clean out the debris and replace before closing the valve.



Valve OPEN



Device mode: DRAIN



Power switch: ON

STEP 6

1. When tank is empty, close valve by turning handle perpendicular to the drain hose.
2. Soak sponge in cleaning solution and wipe all surfaces of the HydraTherm Deluxe tank and dividers.
3. Rinse sponge and soak in water, and then rinse tank.
4. Remove any water and cleaning solution using appropriate draining method above.



Valve CLOSED

STEP 7

Refer to Quick Start Guide or Operation Manual for instructions on how to properly fill your device.

OPERATION: HEATING MODE

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Device fails to power ON. The Power Indication Lamp does not illuminate.	Mains Fuse(s) open	Check MAINS fuse(s) with OHM Meter for continuity. Replace if open.
	Facility outlet not powered	Check facility outlet for proper operation
	Faulty Power Cord	Replace Power Cord
	Faulty Power Switch	Replace Power Switch
Digital Thermostat Controller display does not illuminate. Device Power Indication Lamp illuminates.	HEAT / DRAIN Switch in DRAIN MODE	Move switch to the HEAT position
	24VAC Low Voltage Fuse open	Check Low Voltage Fuse with OHM Meter for continuity. Replace if needed.
	Defective Digital Thermostat Control	Replace Digital Thermostat Control
Device Power Indication Lamp does not illuminate but the Digital Thermostat Controller display is illuminated.	Faulty Power Indication Lamp	Replace Power Indication Lamp
Device does not heat. Both the Power Indication Lamp and Digital Thermostat Controller display illuminates.	If LOW WATER status is illuminated on the Digital Thermostat Controller Display: <ol style="list-style-type: none"> 1. Was HydraTherm Deluxe filled with Distilled water? 2. Possible dirty and/or contamination on temperature sensor housing. 	<ol style="list-style-type: none"> 1. If YES, add tap water until sensor detects water. Several cups may be needed. If NO or LOW WATER indication is still illuminated, proceed to Solution #2. 2. Clean the temperature sensor element located in bottom of tub on left hand side.
	Faulty Digital Thermostat	Replace Digital Thermostat Control
	Faulty Heating Element	Replace Heating Element
	Faulty Heating Element Power Contactor/Relay	Replace Heating Element Power Contactor/Relay

OPERATION: HEATING MODE (CONTINUED)

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Device begins heating but never reaches desired temperature and/or set point. Both the Power Indication Lamp and Digital Thermostat Controller display are illuminated.*	Verify SETPOINT setting/value	Set to desired temperature (see manual)
	Digital Thermostat Controller	Replace Digital Thermostat Control
	Power Contactor intermittent	Replace Heating Element Power Contactor/Relay
Device heating above or below set point temperature. Both the Power Indication Lamp and Digital Thermostat Controller display are illuminated.*	HIGH LIMIT Switch intermittent	Replace HIGH LIMIT Switch Assembly
	HEATING ELEMENT intermittent	Replace Heating Element
	Digital Thermostat Controller faulty	Replace Digital Thermostat Control
Controller displays: "EEE". Both the Power Indication Lamp and Digital Thermostat Controller display are illuminated.	Faulty Power Contactor	Replace Heating Element Power Contactor/Relay
	Faulty High Limit Switch/Assembly	Replace High Limit Switch/Assembly
Controller displays: "EEE". Both the Power Indication Lamp and Digital Thermostat Controller display are illuminated.	Thermistor wire(s) disconnected at Controller terminal (purple wires)	Re-connect thermistor wire(s) in terminal position 1 and/or 2
	Faulty High Limit Switch Assembly	Replace HIGH LIMIT Switch Assembly
	Faulty Digital Controller	Replace Digital Thermostat Control
If none of the possible repair solutions listed above solve the issue: TURN OFF UNIT UNPLUG DEVICE LET WATER COOL DOWN REMOVE PACKS DRAIN UNIT ISOLATE UNIT CONTACT COMPASS HEALTH BRANDS SERVICE DEPARTMENT		

***NOTE:** Temperature readings from external thermometers may differ from the Controller's displayed temperature based on location of temperature reading, and type of thermometer used.

OPERATION: DRAIN MODE - DELUXE MODELS ONLY

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Pump does not come ON - Device Power Indication Lamp illuminated, and HEAT / DRAIN Switch in "DRAIN" position.	PUMP electrical connection to 3-position receptacle located on the left hand side loose or disconnected. <i>Note: Receptacle is located on rear of enclosure.</i>	Re-seat electrical connection
	Pump 3.15 Amp protection fuse open <i>Note: The fuse is located behind the Control Panel Sub-assembly</i>	Remove power cord Replace fuse: 3.15 Amp / 250V Glass Fuse (5 x 20mm)
	Faulty Pump	Replace Pump
	12VDC Power Supply faulty	Replace 12VDC Power Supply (Medical Grade)
Pump engages when "ON" but no water flowing through system. Device Power Indication Lamp illuminated, and HEAT / DRAIN Switch in "DRAIN" position.	HEAT / DRAIN Switch faulty	Replace Heat Drain Switch
	Drain Shut Off Valve "CLOSED"	"OPEN" Shut Off Valve
	Drain Hose kinked	Inspect hose for kink and/or remove obstruction
	Pump faulty	Replace Pump
	Filter Clogged	Remove filter, clean and replace

If in any case the suggested Troubleshooting Solutions do not remedy the problem(s) you are experiencing, contact Compass Health Brands Technical Support for additional information.

TECHNICAL SPECIFICATIONS



SPECIFICATIONS

Supply Voltage	110-120VAC
Line Frequency	50/60 Hz
Power Consumption	110-120VAC; 1000 W
Adjustable Temperature Range	120°F (49°C) - 140°F (60°C) +/- 5°F (+/- 3°C)
Safety Thermal Control Accuracy	175°F +/- 5°F (79°C +/- 3°C)
Weight (Dry)	
Deluxe Model	75 lbs (34.02 Kg)
All Models (Total Working Capacity)	350 lbs (158.76 Kg)
Dimensions	30" W x 20" D x 33" H
Safety Class	<i>Equipment providing a particular degree of protection against electric shock, particularly regarding allowable leakage currents and reliability of the protective earth connection (if present).</i>

OPERATING ENVIRONMENT PARAMETERS

WORKING RANGE:

Temperature	40°F - 104°F (5°C - 40°C)
Humidity	40% - 80%
Barometric Pressure	23.6inHG - 31.3inHG (80kPa - 106kPa)

STORAGE:

Temperature	-4°F - 140°F (-20°C - 60°C)
Humidity	40% - 90%
Barometric Pressure	23.6inHG - 31.3inHG (80kPa - 106kPa)

TRANSPORT:



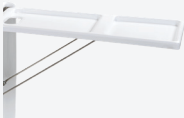


Temperature	-4°F - 140°F (-20°C - 60°C)
Humidity	40% - 90%
Barometric Pressure	23.6inHG - 31.3inHG (80kPa - 106kPa)

HYDRATHERM DELUXE MODELS

ITEM #	DESCRIPTION	VOLTAGE REQUIREMENTS
HT-TU-DLX	Hydratherm Deluxe	110-120VAC
HT-TU-D12	Hydratherm Deluxe with HydraHeat Packs	110-120VAC

PARTS & ACCESSORIES

REPLACEMENT PARTS

ITEM #	DESCRIPTION	
HT-TU-X	Power Cord	
HT-TU-DHV	Drain Hose Valve	
HT-TU-SHFKIT	Shelf Assembly	
HT-TU-CLIP	Shelf Clip	
HT-TU-DIV	Divider System	

ACCESSORIES

ITEM #	DESCRIPTION
HP-1210-ST	12" x 10" Standard HydraHeat Pack
HP-1711-LG	17" x 11" Large HydraHeat Pack
HP-1711-CX	17" x 11" Cervical HydraHeat Pack
HP-1713-OS	17" x 13" Oversize HydraHeat Pack
HP-1905-UN	19" x 5" Universal HydraHeat Pack

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC EMISSIONS

The HydraTherm Deluxe is intended for use in the electromagnetic environment specified below. The customer or the user of the HydraTherm Deluxe should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The HydraTherm Deluxe uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	
Harmonic emissions IEC 61000-3-2	Class A	The HydraTherm Deluxe is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY


TheHydraTherm Deluxe is intended for use in the electromagnetic environment specified below. The customer or the user of the HydraTherm Deluxe should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the HydraTherm Composite Heating Unit requires continued operation during power mains interruptions, it is recommended that the HydraTherm Deluxe be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A / m	30 A / m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the AC mains voltage prior to application of the test level.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY

The HydraTherm Deluxe is intended for use in the electromagnetic environment specified below. The customer or the user of the HydraTherm Deluxe should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	6 Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the [ME EQUIPMENT or ME SYSTEM], including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.^a</p> <p>Recommended separation distance</p> $d = 0.6\sqrt{P}$ $d = 1.2\sqrt{P}$ $d = 2.3\sqrt{P}$ <p>80 MHz to 800 MHz 800 MHz to 2,7 GHz</p> <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol: </p>
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,7 GHz(1)	3 V/m	

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

^aField strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the HydraTherm Deluxe is used exceeds the applicable RF compliance level above, the HydraTherm Deluxe should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the HydraTherm Deluxe.

^bOver the frequency range 150 kHz to 80 MHz, field strengths should be less than 1 V/m.

(1) Additionally the test frequencies and levels in Table 9 of IEC 60601-1-2: 2014 were applied to address higher levels of immunity to RF wireless communications equipment.

RECOMMENDED SEPARATION DISTANCES BETWEEN PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT AND THE HYDRATHERM DELUXE

The HydraTherm Deluxe is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the HydraTherm Deluxe can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the HydraTherm Deluxe as recommended below, according to the maximum output power of the communications equipment.

Separation distance according to frequency of transmitter m

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,7 GHz
	$d = 0.6\sqrt{P}$	$d = 1.2\sqrt{P}$	$d = 2.3\sqrt{P}$
0.01	0.06	0.12	0.23
0.1	0.19	0.38	0.73
1	0.6	1.20	2.30
10	1.90	3.79	7.27
100	6.00	12.00	23.00

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Manufactured for



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