



HASHRATE HOUSE

INSTALLATION & SAFETY MANUAL

Hashtub Immersion Heating System

Bitcoin-mining immersion heater for cedar and acrylic hot tubs,
developed by Hashrate House in partnership with Snorkel Hot Tubs.
Read this manual in full before beginning installation.

Important Safety Information



DANGER — RISK OF ELECTRIC SHOCK AND FIRE

This system operates at 240V and involves fluid near electrical components. Improper installation can cause serious injury, death, or fire. Installation of the electrical supply circuit must be performed by a licensed electrician in accordance with the National Electrical Code (NEC Article 680 — Swimming Pools, Fountains, and Similar Installations) and all applicable local codes.



HIGH VOLTAGE

De-energize all circuits at the breaker before opening any panel. Verify zero voltage before servicing.



WATER & ELECTRICITY

GFCI/RCD protection is required by code for all spa and hot-tub circuits. Never bypass or defeat GFCI protection.



HOT SURFACE / FLUID

Internal fluid and heat-exchanger surfaces reach high temperatures during normal operation. Allow the unit to cool before servicing.



DIELECTRIC FLUID

Use only the dielectric fluid supplied or specified by Hashrate House. Do not substitute automotive, cooking, or other oils. Dispose of used fluid per local hazardous-waste regulations.

BEFORE YOU BEGIN

- Read this entire manual, including the Snorkel tub installation sheet, before starting.
- This manual covers the immersion heating system only. Tub plumbing, shell, and electric-element setup are covered in the separate Snorkel installation sheet — complete that first.
- All electrical connections must be made by a licensed electrician and inspected per local AHJ requirements.
- Do not energize the miner circuit before the fluid purge procedure (Section 04) is complete — running the miner without adequate fluid can destroy it and is not covered under warranty.
- Keep this manual with the unit for future reference and service.

System Specifications

Enclosure dimensions (H × W × L)	20.6" × 10.3" × 19.5"
Fluid reservoir capacity	~13 gal (50 L)
Fluid type	Dielectric immersion fluid only
Fluid ships as	3 × 5 gal (20 L) buckets
Miner electrical rating	220V, 30A
Pump circuit breaker	2-pole, 10A
Miner circuit breaker	2-pole, 20A (2× 20A for high-power/Auradine miners)
Whole-system supply breaker	60A, 240V dedicated spa circuit
Tub-side fill/return	1.5" ball-valve unions, 2" couplings
Heat exchanger	Cupronickel tube-and-shell
Max tub setpoint (Balboa control)	104°F



Scope note: this manual covers the Hashrate House immersion heating skid (immersion tank, integrated pump, heat exchanger, and controls) only. Hot-tub shell assembly, tub-side plumbing, water chemistry, and the tub's resistive heating element are covered by the separate Snorkel installation sheet — complete that installation first.

Pre-Installation Checklist

ELECTRICAL REQUIREMENTS

- One dedicated 60A, 240V circuit sized for the complete tub + immersion system (pump, ionizer, Balboa control, tub accessory heater, and the immersion skid), installed per local spa/hot-tub code — including GFCI/RCD protection and an approved disconnect within sight of the equipment.
- Within that system, the immersion skid's internal sub-breakers are pre-wired: 2-pole 10A for the integrated oil pump, 2-pole 20A for the miner (a second 20A pole is added for high-power/Auradine miner configurations).
- All electrical work performed and inspected by a licensed electrician in accordance with NEC Article 680 and your local Authority Having Jurisdiction (AHJ).

TOOLS & MATERIALS

- Transfer pump with 10mm hose (supplied)
- 3 × 5-gallon (20 L) dielectric fluid buckets (supplied)
- Standard hand tools for hose/clamp connections

BEFORE YOU POWER ANYTHING ON

- Confirm all tub plumbing is complete and leak-free per the Snorkel installation sheet.
- Confirm the 1" corrugated hoses between the immersion tank and heat exchanger, and the 1.5" ball-valve unions at the tub-side HX ports, are fully seated and tightened.
- Confirm the whole-system 60A breaker and all sub-breakers are OFF until instructed in Section 04.

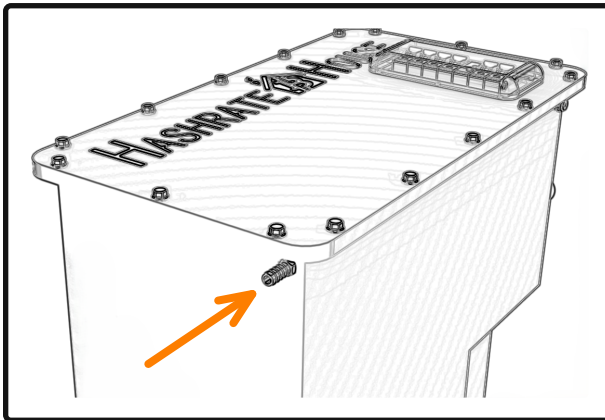
Fluid Fill & Purge Procedure

Complete only after all tub plumbing is finished and leak-tested.

1

Connect the transfer pump

Connect the transfer pump outlet to the tank's fill barb fitting. Place the pump's clear suction hose into one of the supplied dielectric fluid 5-gallon buckets.

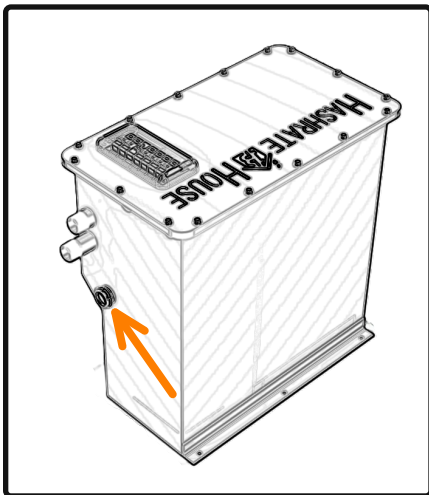


Fill barb fitting location.

2

Fill the reservoir

Fill with 10 gallons of dielectric fluid using the transfer pump. Confirm fluid is visible in the sight glass before continuing.



Sight glass — confirm fluid is visible before continuing.

3

Stage your top-up supply

Leave the pump hooked up. Stage your third 5-gallon bucket of fluid nearby to top up once the purge step is complete. Continue on the next page.

Purge & Startup

Do not skip or reorder these sub-steps.

4

Purge the system

Set the temperature on your Balboa tub display to your desired setpoint and wait until you hear a loud click — this means the contactors have engaged and the mining system is energized.

4a. Prime the pump

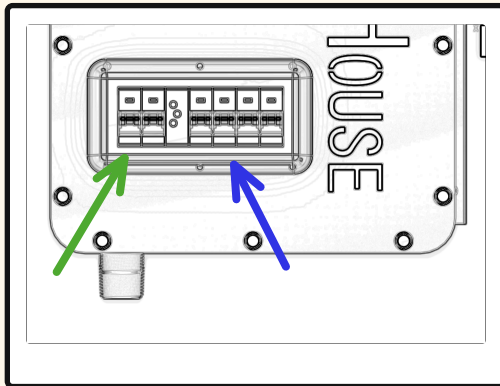
Once fluid is visible in the sight glass, pull the metal purge cable located in the breaker box. This opens a valve that floods and primes the pump body.

4b. Run the pump breaker (Green)

Flip the pump breaker (10Amp Breaker) on for 1 minute, then check the fluid level. Top up from your staged bucket as needed.

4c. Energize the miner (Blue)

Only once the system is fully purged of air and the fluid level is full, turn on the miner breaker (20Amp Breaker(s)). **Energizing the miner before the fluid level is confirmed can destroy the miner and is not covered under warranty.**

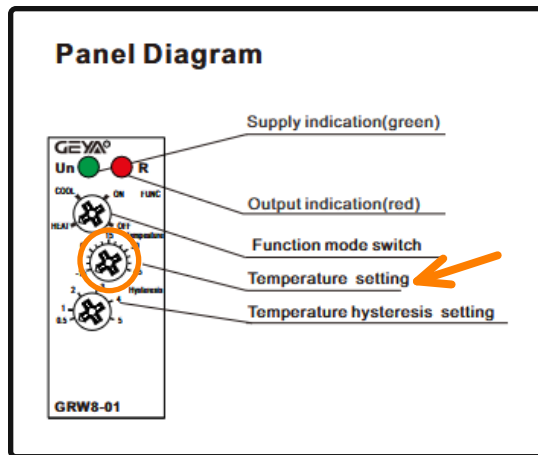


5

Configure Miner

Access your miner IP to set-up your mining pool and payout address on the miner and enjoy heated soaks powered by Bitcoin.

Setpoint & Temperature Control



This dial sets only when the electric backup heater assists the miner. The Balboa control (tub-side) sets your overall target temperature, up to 104°F.

The two other dials should remain within factory settings:

Function Mode: Heat

Temperature Hysteresis: .5

A dedicated temperature controller determines when the tub's electric resistance heater fires, alongside the miner. The factory setting is **90°F**: when filled with cold water, both the miner and the resistance heater run until the tub reaches 90°F, at which point the resistance heater shuts off and the miner alone carries the tub the rest of the way to your Balboa tub-side setpoint.

- **Turn the Temperature dial fully down** to heat using Bitcoin mining heat only.
- **Turn the Temperature dial up** to a target temperature for faster heat-up using both the 4Kw miner and the 5.5Kw resistance heater (note the next line is 40°C (104°F) which means the miner AND coil will run all the time).
- **During a soak**, if the tub is cooling faster than the miner's ~4kW output can keep up, set the controller to 2°F below your current Balboa setpoint (e.g. controller at 102°F for a 104°F setpoint). The miner will maintain the tub until it drops to 102°F, then the resistance heater fires to help catch back up.

Optional Dial Calibration Steps

1. **Determine your threshold:** Choose a backup temperature **2°F below** your target soak temperature (e.g., 102°F for a 104°F target).
2. **Calibrate the setpoint:** When the tub is at 102°F, slowly turn the controller temperature dial (middle dial) clockwise until the red light turns on.
3. **How it operates:** The miner will heat the tub independently until the temperature drops to 102°F, at which point the resistance heater fires up to help catch back up.

Troubleshooting

Symptom	Likely cause	Action
Miner underperforms or shuts down soon after startup	Low fluid level — miner not fully submerged	Power down the miner breaker immediately and check the sight glass. Top up fluid before re-energizing. Running low can permanently damage the miner and voids warranty.
No click heard during purge	Setpoint not above current fluid temp, or contactor not receiving signal	Confirm Balboa setpoint is above current temperature. Check breaker box connections.
Pump runs but fluid level doesn't rise	Pump not primed / air lock	Re-pull the purge cable (step 4a) to re-open the priming valve, then re-run the pump breaker.
GFCI/breaker trips on startup	Wiring fault, undersized circuit, or genuine ground fault	Do not repeatedly reset. Have your electrician inspect the circuit before continuing.
Tub temperature swings or won't hold setpoint	Temperature controller dial set incorrectly for your desired heat-assist behavior	Review Section 05 and adjust the controller dial relative to your Balboa setpoint.

Maintenance

- Check the sight glass fluid level monthly. Top up with Hashrate House–supplied dielectric fluid only.
- Inspect all fluid connections and ball-valve unions for seepage each season.
- Keep the spa filter free of debris for maximum flow and heat transfer.
- Have a licensed electrician re-torque electrical terminations per NEC/local code service intervals.
- Contact Hashrate House support before draining, refilling, or servicing the immersion tank.

Limited Warranty & Liability Disclaimer

Limited Warranty. Hashrate House warrants the Hashtub immersion heating system against defects in materials and workmanship for a period of one (1) year from the date of delivery, extendable to eighteen (18) months by completing online installation registration within 30 days of delivery, subject to proper installation and use as described in this manual. This warranty does not cover damage resulting from improper installation, unauthorized modification, use of unapproved fluids, failure to follow the fill/purge procedure in Section 04, freeze damage, or operation outside rated electrical specifications.

Exclusions. Damage to the miner or other components resulting from operation with insufficient dielectric fluid, or from energizing the miner circuit prior to completing the purge procedure, is expressly excluded from warranty coverage.

Assumption of Risk. Installation and operation of this system involves inherent risks associated with high-voltage electrical equipment and its proximity to water. By installing or operating this system, the installer and owner acknowledge these risks and agree to follow all safety instructions in this manual and all applicable electrical and building codes.

Limitation of Liability. To the maximum extent permitted by law, Hashrate House shall not be liable for any indirect, incidental, special, or consequential damages arising from the installation, use, or misuse of this product, including but not limited to property damage or personal injury resulting from improper installation not performed in accordance with this manual and applicable code.

The warranty and liability provisions summarized above are governed in full by the Hashrate House Terms and Conditions, available at hashratehouse.com/terms-and-conditions. In the event of any conflict, those Terms and Conditions control.

Log Your Installation, Extend Your Warranty

Your Hashtub includes a 1-year limited warranty. Scan the code below within 30 days of delivery to log your installation and receive an additional 6 months of extended coverage — 18 months total, at no cost.



WHAT YOU'LL NEED

- Serial number from the enclosure data plate
- Owner name, email, and install address
- Installer name (self-installed or professional/company)
- Licensed electrician name and license number
- Install completion date

The 6-month extension requires submission within 30 days of delivery and confirmation that the installation followed this manual. The included 1-year limited warranty applies whether or not you register.

PAPER RECORD

Complete this acknowledgment and retain a copy with the unit. Note that the 6-month extension requires online registration via the code above.

Owner name

Install date

Installer name / company

Signature

By signing above, the installer confirms this system was installed in accordance with this manual, the Snorkel tub installation sheet, and all applicable electrical and building codes.



Need help with your install?

Contact Hashrate House support before servicing the immersion tank, changing fluid, or if anything in this manual is unclear.

Web: hashratehouse.com/support
Email: Support@hashratehouse.com