HASHRATE HOUSE

INSTALLATION, COMMISSIONING & OPERATION MANUAL

Aqueon Hydro System

A water-cooled bitcoin miner that sits under your water heater and turns mining heat into domestic hot water, radiant floor or forced-air heat. Read this manual in full before beginning installation.



Document Rev. A · 10.29.2026 · Initial release

For homeowners and licensed installers

hashratehouse.com

SECTION 01

Important Safety Information

DANGER: RISK OF ELECTRIC SHOCK, FIRE AND SCALDING

The Aqueon runs on 240 V and is connected to pressurized hot-water plumbing. The receptacle or circuit must be installed by a licensed electrician, and the water connections by a licensed plumber, following the National Electrical Code, your local plumbing and mechanical codes, and your Authority Having Jurisdiction (AHJ).

HIGH VOLTAGE

Unplug the Aqueon, or switch off its breaker, before opening any panel. There are no user-serviceable parts inside.

SCALD HAZARD

Outlet water can reach 176°F (80°C). Water above 120°F can scald. Fit a thermostatic mixing valve if the tank is set above 120°F.

POTABLE WATER

The DHW loop carries drinking water. Use lead-free, potable-rated materials only. Never put glycol in the DHW loop.

PRESSURE RELIEF

The water heater's T&P relief valve is required. Pipe its discharge to code. Install a check valve and expansion tank where your local code requires them.

BEFORE YOU BEGIN

- Read this entire manual before you start. Plumbing layouts are in the separate **Installation Examples** sheet (Appendix A).
- The miner loop is filled at the factory. If you see a leak or fluid in the packaging, contact support before installing (Section 09).
- Do not plug in the Aqueon until the water connections are made, filled and leak-checked (Section 04). Never run it dry.
- Keep this manual with the unit for future reference and service.

SECTION 02

System Specifications

Dimensions	**24 in × 10 in tall**
Load rating	**Supports a full water heater**
Integrated miner	**Whatsminer M64, 19.9 J/TH**
Normal mode	**210 TH at ~4,180 W**
High-power mode	**Up to ~4,900 W**
Input	**240 V single-phase**
Rated load	**5,000 W (size circuit for 5,500 W)**
Plug	**9 ft cord, NEMA L6-30P**
Max outlet temperature	**176°F / 80°C**
Heating loops	**2, independent (DHW + secondary)**
Heat exchangers	**2, integral and fully isolated**
Water connections	**4 × ¾" NPT, stainless, lead-free**
Thermostat input	**24 VAC call (R / W)**
Controls	**Web dashboard, MQTT, Home Assistant**



IN THE BOX

- Aqueon unit with M64 miner, pump, 2 heat exchangers, controller, PDU and network switch
- 9 ft NEMA L6-30 power cord (attached)
- 4 × corrugated stainless water-heater flex connectors
- Ethernet patch cable

Scope note: this manual covers the Aqueon unit, its first start-up and the controller. Water-heater tank, radiant or furnace-coil plumbing are shown in the Installation Examples sheet (Appendix A). Plumbing and electrical work are done by licensed trades (Section 03).

SECTION 03

Pre-Installation

Two trades visits, then you commission the unit yourself.

ELECTRICIAN

NEMA L6-30 receptacle within 8 ft

- 240 V, 30 A circuit rated for 5,500 W. The cord is 9 ft, so keep the receptacle within 8 ft of the unit.
- **Often no new wiring:** the electrician can replace the electric water heater's hardwired connection with the receptacle and reuse that circuit.
- If the tank's electric elements must stay powered as backup, run a new dedicated circuit instead.
- Hardwiring in place of the plug is allowed where local code requires it.

PLUMBER

Lines per the Installation Examples

- Pipe the DHW loop between the tank and the Aqueon as shown on sheet P-1, including the circulator, check valve and tees.
- For a secondary loop, pipe radiant (P-2) or a furnace coil (P-3). Treat the Aqueon as a boiler: supply hot, return cold.
- Stub each line to the Aqueon ports with a ball valve. The flex connectors go on in Section 04.

SITE

- A level, dry floor with a 24 in diameter footprint. The Aqueon can sit directly under the water heater.
- Room to reach the ports and the rear panel (Ethernet and 24 VAC terminals) after the tank is set.
- Indoor, conditioned or freeze-protected space.

NETWORK & CONTROLS

- An Ethernet run from your router to the unit. The built-in switch connects both the miner and the controller.
- Secondary loop only: thermostat wire (R / W) from your thermostat to the Aqueon, and a 24 VAC source (see Step 4).

HAVE READY

- Pipe-thread sealant rated for potable water, and two adjustable wrenches.
- A phone, tablet or laptop with Wi-Fi.
- Your mining pool URL and payout address.

SECTION 04

Initial Commissioning

Part 1: connect water, network and thermostat. Do not plug in until Step 5.

Port	Label on unit	Service	Size
P1	DHW · Hot Out	Heated water to the tank	¾" NPT
P2	DHW · Cold In	Water from the tank needing heat	¾" NPT
P3	Secondary · Hot Out	Supply to the heating load	¾" NPT
P4	Secondary · Cold In	Return from the heating load	¾" NPT

1 Plumb the domestic hot water (P1 / P2)

Following the Installation Examples (sheet P-1), connect your DHW lines to the Aqueon's built-in pipes and heat exchanger, labeled **Cold In** and **Hot Out**. Use the included stainless flex connectors; no unions are needed. Open the valves, purge the air and check every joint for leaks.

2 Plumb the secondary loop (P3 / P4), if used

Follow sheet P-2 (radiant) or P-3 (furnace coil), or your own system's design. Treat the Aqueon as a boiler: **Hot Out** is supply, **Cold In** is return. This loop is closed (water or propylene glycol). Fill, purge and pressurize it per the sheet.

3 Plug in the Ethernet cable

Connect the Ethernet port on the back of the Aqueon to your router. This puts both the miner and the controller on your home network.

4 Connect the 24 VAC call for heat, if using a secondary loop

Wire your thermostat's **R** and **W** to the 24 VAC terminals on the back. This input is a contactor coil: when the thermostat calls, it closes internally and tells the Aqueon the loop needs heat.

> The Aqueon does **not** supply 24 VAC and has no transformer. The 24 VAC comes from your existing furnace or boiler. With no furnace or boiler, use a plug-in 24 VAC transformer to power the thermostat, then send its call to the Aqueon.

5 Plug in the Aqueon and boot

Plug in only after Steps 1–4 are complete and leak-free. **Never power the unit with the DHW loop empty or valved off.** Continue with Part 2.

Boot-Up & First Connection

Part 2: reach the controller from your phone or laptop. No app or account needed.

6 Join the controller's Wi-Fi

Join **`HashrateHouse_Control-XXXX`**. The last 4 characters are unique to your unit and printed on the label. Password: **`admin123`** (also on the label on the back, next to the Ethernet port). If your phone says the network "has no internet", choose **stay connected**.

7 Open the control page

In a browser, go to **`http://192.168.4.1`**. The **HASHRATE HOUSE CONTROL** page opens with four tabs: BASIC, SCHEDULE, $ and ADVANCED. The controller sets its clock from your phone automatically.

8 Write down your addresses (important)

- **Controller address:** next to **LAN:** at the top of the page. Use it from now on from any device on your home Wi-Fi. Bookmark it.
- **Miner address:** ADVANCED → Safety & Tuning Limits → Static Miner IP (grey "auto-found" text). Needed only for the miner's own pool and payout settings.
- **Unit ID:** at the bottom of the page, e.g. `unit 3F2A`. Support may ask for it.

Recommended: reserve fixed addresses for both the controller and the miner in your router ("DHCP reservation"). Record everything in Section 09.

Secure & Set Up

Part 3: finish setup, then tick off your commissioning checklist.

9

Change the Wi-Fi password

Every controller ships with the same password. ADVANCED → Safety & Tuning Limits → **AP WiFi Password**, enter 8–63 characters, tap **SAVE LIMITS**. It takes effect on the next restart. Write it down.

10

Check the clock and daylight saving

SCHEDULE tab: confirm the controller clock; tap **Sync clock** if a yellow note appears. Set Daylight saving to **Automatic – US rule**, **Automatic – EU rule**, or **Off** (e.g. Arizona, Hawaii).

11

Match the secondary loop setting to your plumbing

In ADVANCED, switch the **secondary loop off** if nothing is connected to P3 / P4. If you plumbed a secondary loop, make sure it is **on**, then have the thermostat call for heat and confirm the Secondary badge on BASIC reads PENDING or HEATING.

12

Set temperatures, pool and payout

BASIC tab: set the DHW dial (and secondary, if used) and tap **APPLY SETTINGS** (Section 05). Open the miner address in a browser and enter your mining pool and payout address.

13

Calibrate the heat meter

With the miner running steadily, go to ADVANCED → **Calibrate Heat Meter**, then $ tab → **Reset all** so earnings start clean. Enter your rates (Section 07).

COMMISSIONING CHECKLIST

Tick each item · record details in Section 09

- ☐ Wi-Fi password changed and recorded
- ☐ Controller address (LAN) logged
- ☐ Unit ID logged
- ☐ Mining pool and payout address set
- ☐ Secondary loop on / off matches plumbing
- ☐ Heat meter calibrated, $ rates entered
- ☐ **Product activated** at hashratehouse.com/activate (+6 months warranty, Section 11)
- ☐ Clock and daylight saving correct
- ☐ Miner address logged
- ☐ Router reservations set (recommended)
- ☐ DHW setpoint applied
- ☐ Thermostat call verified (secondary only)
- ☐ Hardware Check all green, screenshot saved

SECTION 05

Everyday Control: BASIC Tab



SYSTEM STATUS

Sup / Ret: fluid leaving and returning to the miner. **ASIC:** chip temperature. **Heat Route:** DHW TANK or SEC DUMP ("HARVESTING" = collecting leftover heat). **Flow / Heat:** pump flow and heat delivered in kW.

TEMPERATURE DIALS

DHW Loop Control 90–160°F · **Secondary Control** 80–150°F. Drag or tap – / +, then **APPLY SETTINGS**. The badge reads HEATING, PENDING or IDLE.

Harvest Residual Heat: after a run, send leftover heat to this tank. Recommended on for DHW. The miner starts when the tank drops a set amount below target and stops at target.

> **Scald safety:** above 120°F, fit a thermostatic mixing valve.

HARD STOP

The red button at the bottom turns the miner off, even through a power cut, until you tap it again. The pump keeps clearing leftover heat.

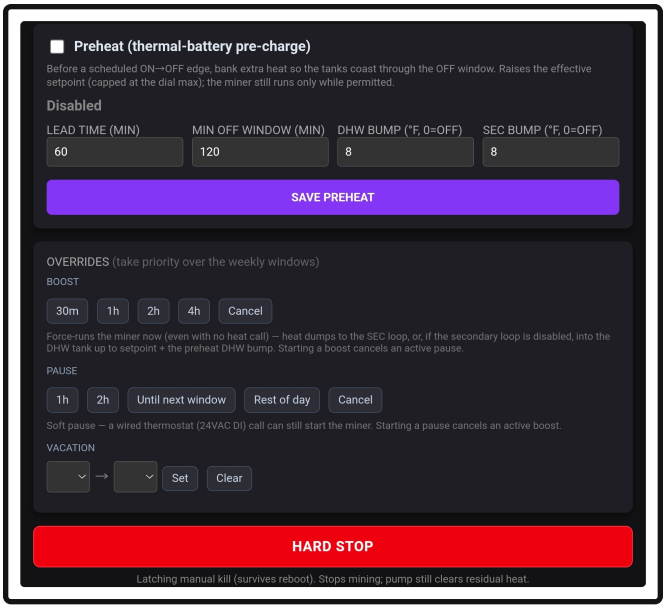
SYSTEM STATUS MESSAGES

Status	Meaning
`STANDBY - MONITORING`	All fine; nothing needs heat.
`DEEP SLEEP`	Idle a long time; pump checks hourly.
`PRE-FLIGHT PRIMING`	Proving flow before the miner starts.
`ACTIVE HASHING`	Mining and heating.
`VALVE TRANSITION`	Switching between tank and loop.
`COOLDOWN CYCLE`	Miner off; pump clears heat to tank.
`WAIT (ANTI-SHORT CYCLE)`	Short rest between runs.
`SCHEDULE OFF`	Heat needed; schedule holds miner off.
`FAULT (...)`	Safety shut-off; restarts by itself.
`SENSOR LOST`	A probe stopped reading; miner off.
`NEEDS ATTENTION`	Repeated fault. See Section 08.

SECTION 06

Schedules & Overrides





WEEKLY SCHEDULE (OPTIONAL)

Mine only at certain times, e.g. to avoid peak rates. With the schedule off, the miner runs whenever heat is needed.

1. Tick **Enable Schedule** and pick one of 3 schedules.
2. **Green = mining allowed.** Drag to paint half-hour blocks; ⇆ flips a day.
3. Shortcuts: 24/7, Weekdays 9-5, Clear, Copy Mon → Mon-Fri.
4. Tap **SAVE SCHEDULE**. The saved schedule becomes active.

PREHEAT (OPTIONAL)

Before a scheduled off period, heat the tank a little extra so hot water lasts through it.

- **Lead time:** minutes before the off period to start.
- **Min OFF window:** preheat only if the off period is at least this long.
- **DHW / SEC bump:** degrees above target. 0 = off.

Tap **SAVE PREHEAT**.

Override	What it does
Boost (30m / 1h / 2h / 4h)	Runs the miner now, even without a heat call. Cancels a Pause.
Pause (1h / 2h / next window / rest of day)	Holds the miner off. A wired 24 VAC thermostat call can still start it. Cancels a Boost.
Vacation (start → end date)	Holds the miner off for those days, then returns to normal.
Cancel / Clear	Ends the override. Active overrides show as a banner on BASIC.

Freeze protection is automatic and overrides everything, including HARD STOP. In cold conditions it runs the pump, and the miner if needed, to keep the pipes from freezing.

SECTION 07

Earnings & Advanced Settings

THE $ TAB

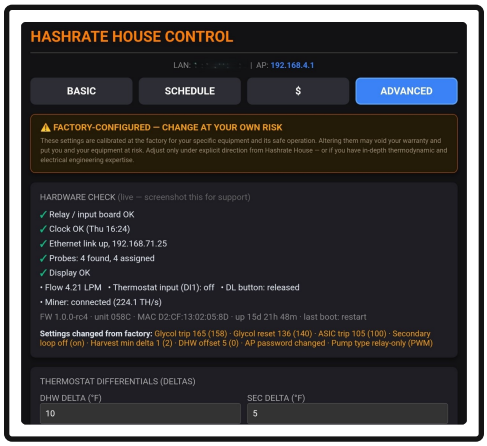
Live	Power (W), hashrate (TH/s), efficiency (W/TH), est. $/day, power mode
Profit	Today's net ("heat-adjusted" and "bare"), sats earned, projected month
Energy & Heat	Electricity used, heat delivered, net $ and run hours: today, week, month, lifetime
Daily net chart	Net earnings for each of the last 31 days

Rates: enter Hashprice (sats/TH/day) and BTC price every week or two, Electricity ($/kWh) from your bill, and Heat offset: how much of the miner's power you'd have spent on heating anyway. Presets: **Resistive 100%** (electric water heater; all bitcoin earned is profit), **Heat pump 33%**, **Gas 45%**, **Dry cooler 0%**. Tap **SAVE RATES**.

"Heat-adjusted" values the heat at your offset; "bare" counts the full electricity cost. Reset buttons clear today, lifetime or all history.

ADVANCED: WHAT YOU CAN SAFELY CHANGE

ADVANCED is set at the factory. Change only these items unless Hashrate House support asks you to.



- **Hardware Check:** live health summary. Send a screenshot of this card whenever you contact support.
- **Critical Fault Snapshots:** the last 10 events. **Clear log** empties it.
- **AP WiFi Password** (Step 9).
- **Secondary loop:** "ON" if P3 / P4 are plumbed, "OFF" if not (Step 11).
- **Static Miner IP:** leave blank so the controller finds the miner automatically.
- **Network:** Lock Current IP as Static (a router reservation is better). WiFi Access Point can be turned off if you only use your home network. If you then lose access, see the network reset in Section 08.
- **Firmware Update:** turn the miner off first. Use only the `..._UPDATE.bin` file made for your controller; other files are refused.
- **Smart home:** MQTT for Home Assistant integration.

SECTION 08

Banners & Troubleshooting

Banner	What to do
FREEZE EMERGENCY / CIRCULATE	Nothing. The system is protecting your pipes.
HARD STOP ACTIVE	Tap HARD STOP again when you want mining back.
BOOST / PAUSE / VACATION	Override active. Cancel it on the SCHEDULE tab.
NEEDS ATTENTION	The same fault happened 5 times in 2 hours. Check pump power, leaks and closed valves. Screenshot Hardware Check and the fault log, then tap CLEAR & RESUME. If it returns, contact support.
SETUP REQUIRED	Temperature probes not assigned. Contact your installer.
Lost connection	Your device can't reach the controller. Check you're on the right Wi-Fi or home network.

Problem	Try this
Can't find the control page	On your home network, use the LAN address you recorded (Section 09) or find it in your router's device list. Still stuck? See Appendix B. On the controller's Wi-Fi, use http://192.168.4.1.
Forgot Wi-Fi password / locked out	**Network reset:** hold **DL** for 5 s. Wi-Fi returns with password admin123; other settings are kept.
Start completely fresh	**Factory reset:** hold **DL** for 15 s. Settings and earnings return to defaults; probe setup is kept.
Clock is wrong	SCHEDULE → Sync clock. Check the daylight-saving setting.
Miner shows OFFLINE	Normal while the miner is off. If running, check Ethernet and that the miner API is enabled.
Miner runs a lot, or not at all	Check the dials, the schedule and any override banner.
Secondary loop never heats	Confirm the thermostat has 24 VAC (furnace/boiler or plug-in transformer) and R / W reach the Aqueon terminals.
Breaker trips	Do not keep resetting it. Have your electrician confirm a 30 A, 240 V circuit rated for 5,500 W.

SECTION 09

My System Info & Maintenance

Fill in at handover and keep with the unit.

HashrateHouse_Control-

Controller Wi-Fi name

Controller Wi-Fi password

http://192.168.

Controller address (home network)

192.168.

Miner address

Unit ID

Electrician / plumber

Installer / company

Install date

Leak or fluid in the packaging? Contact support immediately, before installing. We'll walk you through checking the fluid level and topping up with the correct fluid.

MAINTENANCE

- **Every year, check the fluid level.** Remove the front panel (6 screws) and look at the sight tube on the right. The level should rest about halfway between the two ports. If any has been lost, Unplug the unit, and top up with Hashrate House fluid only.
- **Every 5 years, replace the fluid.** Contact support for fluid and the procedure.
- The front panel also gives access to the internal breakers: **10 A** for the pump and peripherals, **30 A** for the miner.
- Check the four port connections and flex connectors for seepage each season.
- Check secondary-loop pressure (cold fill ~12–15 psi) and glycol strength each heating season.
- Test the water heater's T&P relief valve per the tank maker's schedule. Install firmware updates from Hashrate House.

SECTION 10

Limited Warranty & Liability Disclaimer

60 days
Money-back guarantee

1 year
Manufacturer warranty, included

+6 months
Free when you activate (Section 11)

Money-Back Guarantee. If you're not satisfied, return the Aqueon within sixty (60) days of delivery for a refund, as set out in the Hashrate House Terms and Conditions.

Limited Warranty. Hashrate House warrants the Aqueon Hydro System against defects in materials and workmanship for one (1) year from the date of purchase, extendable to eighteen (18) months by completing online activation within 30 days of delivery, subject to proper installation and use as described in this manual. This warranty does not cover damage from improper installation, unauthorized modification, use of unapproved fluid, running the unit without water flow, freeze damage, or operation outside rated electrical specifications.

Assumption of Risk. This system involves high-voltage equipment and pressurized hot water. By installing or operating it, the installer and owner acknowledge these risks and agree to follow this manual and all applicable electrical, plumbing and building codes.

Limitation of Liability. To the maximum extent permitted by law, Hashrate House is not liable for indirect, incidental, special or consequential damages arising from the installation, use or misuse of this product, including property damage or injury from installation not performed per this manual and applicable code.

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

SECTION 11

FREE 6-MONTH EXTENSION

Log Your Installation, Extend Your Warranty

Your Aqueon includes a 1-year manufacturer warranty from the date of purchase. Scan the code below within 30 days of delivery to log your installation and get an extra 6 months of coverage: **18 months total, at no cost**.

WHAT YOU'LL NEED

- Unit ID, from the bottom of the control page (Section 09)
- Owner name, ZIP code and email (optional)
- Installer name (self-installed or company)
- Electrician and plumber names and license numbers
- Install completion date

Or visit **hashratehouse.com/activate**

The 6-month extension requires activation within 30 days of delivery and confirmation that the installation followed this manual. The included 1-year warranty and 60-day money-back guarantee apply whether or not you activate.

PAPER RECORD

Complete and keep with the unit. The 6-month extension requires online activation via the code above.

Owner name _____ Install date _____

Installer name / company _____ Signature _____

By signing, the installer confirms this system was installed per this manual, the Installation Examples sheet, and all applicable electrical, plumbing and building codes.

APPENDIX A

Installation Examples (Plumbing)

Piping layouts are published as a separate download so they can be updated on their own. Always use the latest sheet set; give it to your plumber before work begins.

DOWNLOAD

hashratehouse.com/support

Aqueon manual → **Installation Examples**

Aqueon Heating System Integration: drawing set, sheets P-1 to P-3. Check the sheet's REV block against the version you have.

Sheet	Shows	Use when
P-1	System overview: DHW tank, check valves, expansion tank, circulator, T&P, and the secondary loop tie-in	Every install
P-2	Radiant floor: 4-loop PEX manifold, air & dirt separator, purge & fill, thermostat 24 VAC call	Secondary loop to radiant
P-3	Furnace plenum coil (upflow): hydronic coil in return air, thermostat W / G wiring	Secondary loop to forced air

KEY RULES (FROM THE SHEETS)

- All four Aqueon ports are ¾" NPT. Connect with the included stainless flex connectors; unions are not required.
- DHW loop (P1 / P2): potable, lead-free materials only. No glycol.
- Install the DHW circulator on the return, directly before the Aqueon. Install a check valve on the heated-water line.
- Secondary loop (P3 / P4): closed loop, water or propylene glycol. HX-2 is built in, so no external heat exchanger is needed.
- Drawings are diagrammatic and not to scale. Verify all work with a licensed installer and local code.

APPENDIX B

Internal Status Display

For troubleshooting, or if you are locked out of the control page.

> **!** The display sits behind the **rear panel** and is not visible in normal use. Live 240 V parts are inside. Look only; do not touch internal components while the unit is plugged in, and refit the panel before leaving the unit.

On power-up the screen shows `BOOTING SYSTEM...` and the firmware version, then the status screen:

Line	Shows
1	What the system is doing, e.g. `STANDBY - MONITORING`
2	Alternates: home-network address `LAN 192.168.x.x` and Wi-Fi ID `WiFi ...-XXXX`
3	Miner address `MNR: 192.168.x.x`
4	Hot-water tank: current / setpoint
5	Secondary loop: current / setpoint

WHEN TO USE IT

- **Lost the controller address:** read it from line 2 (`LAN ...`).
- **Can't find the controller's Wi-Fi:** line 2 shows the Wi-Fi ID it is broadcasting.
- **Miner unreachable:** line 3 shows the miner address the controller found.
- **Control page won't load:** line 1 confirms the controller is running and what state it is in. Compare with the status table in Section 05.
- **Locked out:** use the network reset in Section 08, then reconnect with the default password.

Need help with your install?

Have your Unit ID, a screenshot of ADVANCED → Hardware Check, and the fault log ready.

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