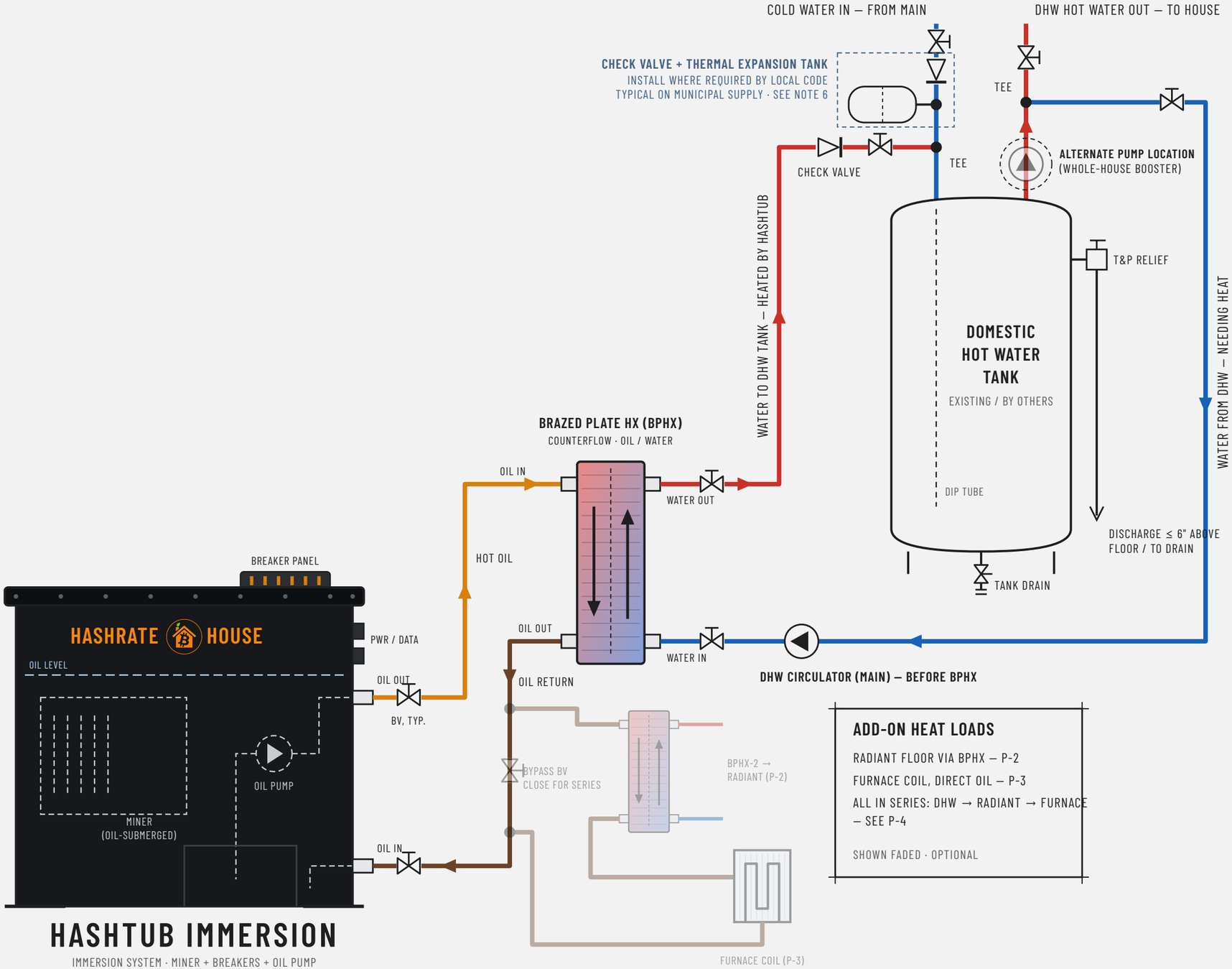


1 / P-1

SYSTEM PIPING SCHEMATIC — HASHTUB + BPHX + DHW TANK

SCALE: NOT TO SCALE · DIAGRAMMATIC

HASHRATE HOUSE

Heating integration drawings

PROJECT

HASHTUB IMMERSION HEATING INTEGRATION

SHEET TITLE

SYSTEM OVERVIEW — HASHTUB + BPHX + DHW

LEGEND

- Oil supply (hot)
- Oil return
- Water supply / hot
- Water return / cold
- Internal / hidden
- Brazed plate HX
- Ball valve
- Check valve
- Circulator pump
- T&P relief valve
- Drain valve
- Expansion tank

GENERAL NOTES

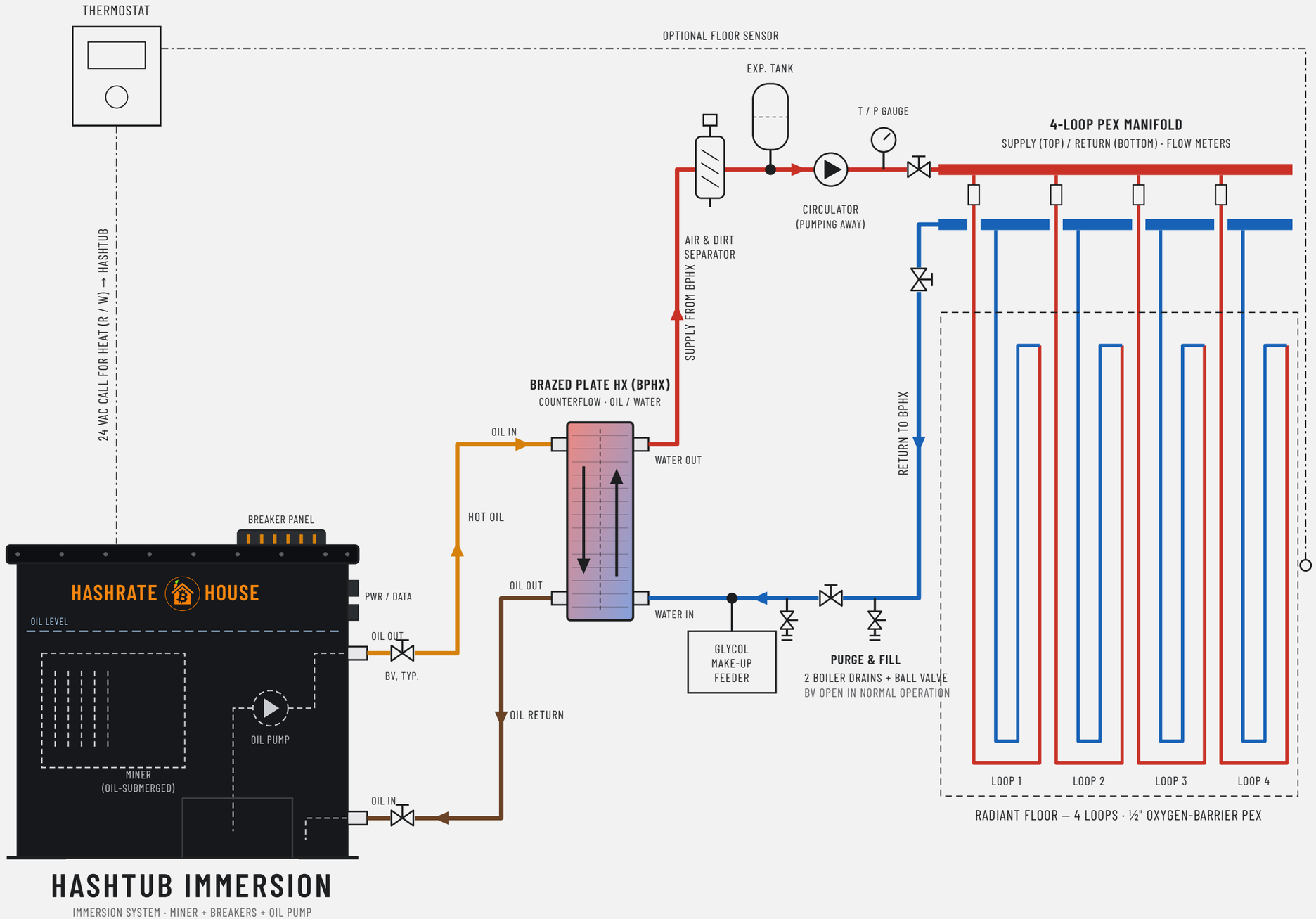
1. Diagrammatic only, not to scale. Verify against local plumbing / mechanical code and the HashTub installation manual.
2. HashTub includes the miner, breakers and oil pump; its pump drives the BPHX oil side.
3. BPHX piped counterflow: hot oil in top-left, out bottom-left; water in bottom-right, out top-right.
4. Water side is potable: lead-free materials, potable-rated BPHX, no glycol.
5. Main circulator on the return before the BPHX; alternate (faded) on the tank hot outlet as a booster. Install one.
6. Cold-inlet check valve and expansion tank: per local code or installation recommendation. Typical on municipal supply; often not needed on a well.
7. Tank T&P relief valve is required; pipe the discharge per code.
8. Ball valves at HashTub and BPHX ports. Oil loop: oil-compatible hose, fittings and seals.

DRAWN BY	DATE	SCALE
Hashrate House	10.29.2026	NTS

REV	REVISION
B	B · 10.29.2026 · HashTub immersion system, external BPHX

Some items are shown for representation only. Not for construction. Verify with a licensed installer.

SHEET **P-1** of 4



HASHTUB IMMERSION

IMMERSION SYSTEM · MINER + BREAKERS + OIL PUMP

1 / P-2

RADIANT FLOOR PIPING — HASHTUB + BPHX

SCALE: NOT TO SCALE · DIAGRAMMATIC

HASHRATE HOUSE

Heating integration drawings

PROJECT

HASHTUB IMMERSION HEATING INTEGRATION

SHEET TITLE

RADIANT FLOOR — HASHTUB + BPHX, 4-LOOP

LEGEND

- Oil supply (hot)
- Oil return
- Water supply / hot
- Water return / cold
- Control wiring 24 VAC
- Brazed plate HX
- Ball valve
- Circulator pump
- Expansion tank
- Air & dirt separator
- Drain valve
- Temp. / press. gauge

GENERAL NOTES

1. Diagrammatic only, not to scale. Verify against local mechanical code and the HashTub installation manual.
2. HashTub pump drives oil through the BPHX; the BPHX isolates the oil from the radiant water loop.
3. BPHX piped counterflow: hot oil in top-left, out bottom-left; water in bottom-right, out top-right.
4. Circulator pumps away from the expansion tank; air & dirt separator ahead of the pump on the supply.
5. Thermostat sends a 24 VAC call to the HashTub. Circulator: switch on the same call (relay), or leave an ECM pump in PP / CP mode always on (~5–40 W). The HashTub only makes heat on a call.
6. Purge: close the center ball valve, fill through one drain and purge out the other. Valve stays OPEN in normal operation.
7. Use propylene glycol where freeze risk exists. Make-up feeder holds ~12–15 psi cold fill.
8. Oxygen-barrier PEX. Balance loops at the manifold; keep each ½" loop ≤ 300 ft.

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SHEET **P-2** of 4

THERMOSTAT

G — FAN CALL → FURNACE BLOWER (24 VAC)

W — 24 VAC CALL FOR HEAT → HASHTUB

BREAKER PANEL

HASHRATE HOUSE

PWR / DATA

OIL LEVEL

OIL OUT

BV, TYP.

OIL PUMP

MINER
(OIL-SUBMERGED)

OIL IN

HASHTUB IMMERSION

IMMERSION SYSTEM · MINER + BREAKERS + OIL PUMP

WARM SUPPLY AIR TO HOUSE

SUPPLY PLENUM

A/C EVAPORATOR COIL (EXISTING)
NOT HEATED — COIL IS DOWNSTREAM

BURNER / HEAT EXCHANGER (EXISTING)
BACKUP / AUXILIARY HEAT

TUBE & FIN COIL · OIL-TO-AIR
IN RETURN AIR · UPSTREAM OF BLOWER

RETURN AIR

BLOWER

FILTER

UPFLOW FURNACE (EXISTING)

BV + UNION
(TYP.)

HOT OIL SUPPLY TO COIL — FROM HASHTUB OIL PUMP

OIL RETURN TO HASHTUB

1 / P-3

FURNACE COIL — HASHTUB DIRECT OIL LOOP

SCALE: NOT TO SCALE · DIAGRAMMATIC

NO SEPARATE CIRCULATOR, HX OR EXPANSION TANK
HASHTUB INTERNAL PUMP DRIVES THE LOOP · TUB IS THE RESERVOIR

HASHRATE HOUSE

Heating integration drawings

PROJECT

HASHTUB IMMERSION HEATING INTEGRATION

SHEET TITLE

FURNACE COIL — DIRECT OIL LOOP, UPFLOW

LEGEND

- Oil supply (hot)
- Oil return
- Control wiring 24 VAC
- Internal / hidden
- Ball valve
- Union
- Tube & fin coil
- Airflow

GENERAL NOTES

1. Diagrammatic only, not to scale. Verify against local code, the HashTub manual and the furnace manufacturer.
2. Direct oil loop: the HashTub internal pump circulates oil through the coil. No BPHX, circulator, expansion tank or fill assembly; the tub is the reservoir.
3. Coil sits in the return air between filter and blower, upstream of the furnace HX and A/C coil, so cooled air is never reheated.
4. Thermostat W sends a 24 VAC call to the HashTub; G runs the furnace blower. No aquastat or fan delay needed.
5. Oil-compatible materials only: copper coil and piping, oil-rated hose and seals.
6. Oil is more viscous than water. Size the coil and piping to the HashTub pump; keep runs short.
7. Ball valve + union at the HashTub and at the coil. Manual air vent at the coil high point.
8. Size the coil to the duct; seal the cabinet, provide an access panel and a drip pan under the coil.

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Hashrate House	10.29.2026	NTS

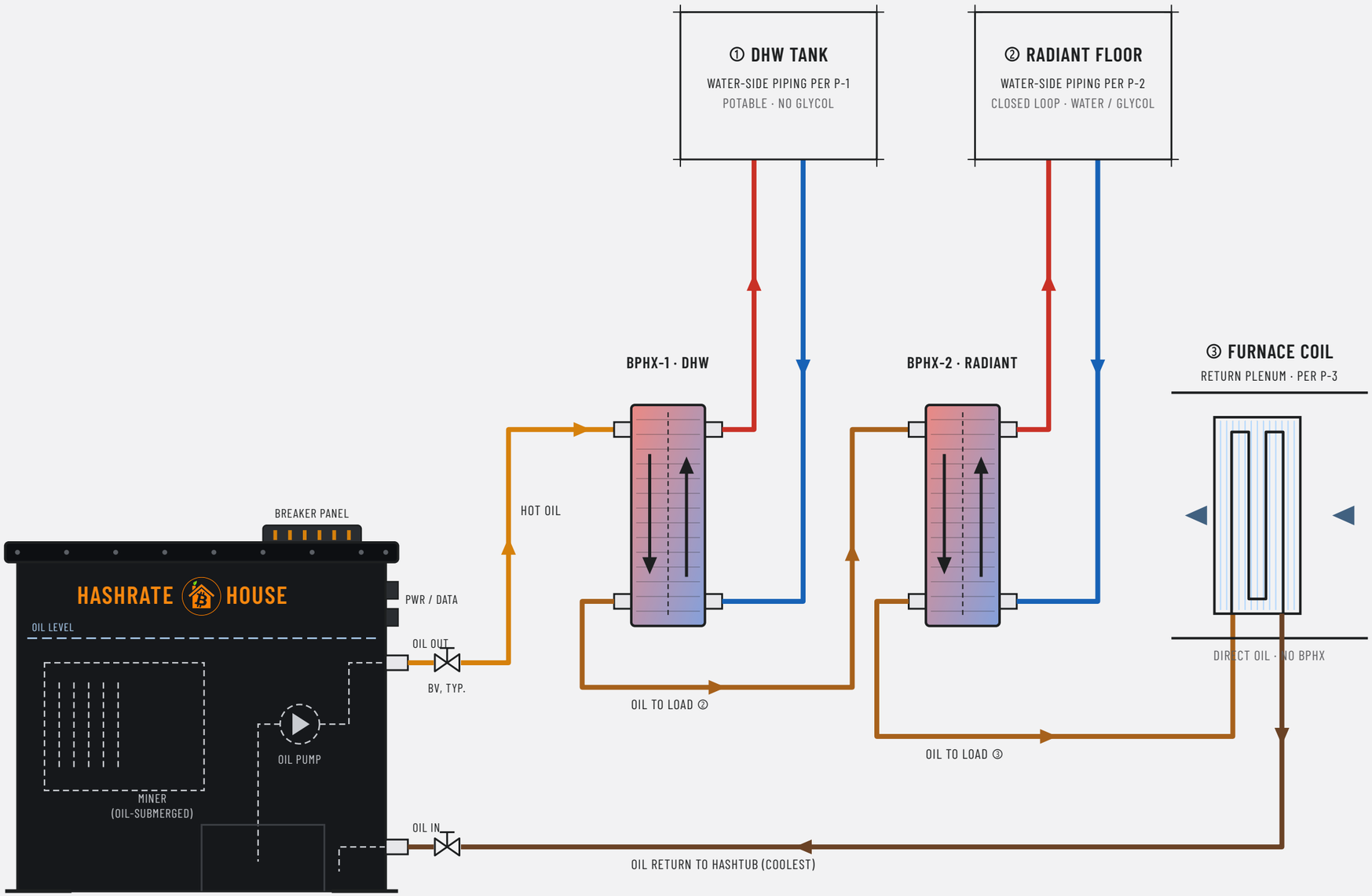
REV	REVISION
B	B · 10.29.2026 · HashTub immersion system, external BPHX

Some items are shown for representation only. Not for construction. Verify with a licensed installer.

SHEET **P-3** of 4

ONE OIL LOOP, LOADS IN SERIES: ① DHW → ② RADIANT → ③ FURNACE → HASHTUB

OIL COOLS AT EACH LOAD · ANY LOAD CAN BE OMITTED OR BYPASSED



HASHTUB IMMERSION

IMMERSION SYSTEM · MINER + BREAKERS + OIL PUMP

1 / P-4 **SERIES OPTION — HASHTUB + DHW + RADIANT + FURNACE**

SCALE: NOT TO SCALE · DIAGRAMMATIC

HASHRATE HOUSE

Heating integration drawings

PROJECT

HASHTUB IMMERSION HEATING INTEGRATION

SHEET TITLE

SERIES OPTION — DHW + RADIANT + FURNACE

LEGEND

- Oil supply (hot)
- Oil return
- Water supply / hot
- Ball valve
- Airflow
- Oil between loads
- Brazed plate HX
- Water return / cold
- Tube & fin coil

GENERAL NOTES

1. Diagrammatic only. Loads are shown as blocks; detailed piping is on P-1 (DHW), P-2 (radiant) and P-3 (furnace coil).
2. One HashTub oil loop runs in series: BPHX-1 (DHW) → BPHX-2 (radiant) → furnace coil → back to the HashTub.
3. Oil cools at each load, so the hottest-demand load goes first. Swap ② and ③ if the furnace coil needs warmer oil than the floor.
4. Each BPHX isolates the oil from its water loop. Water-side pumps, expansion tanks and valves per P-1 / P-2.
5. The HashTub pump must overcome the combined pressure drop of all loads; check its pump curve and keep oil runs short.
6. Bypass + isolation ball valves at a load let the system run without it (see faded option on P-1).
7. Oil-compatible materials throughout the oil loop: copper, oil-rated hose and seals.

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Hashrate House	10.29.2026	NTS

REV	REVISION
B	B · 10.29.2026 · HashTub immersion system, external BPHX

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SHEET **P-4** of 4