SPLIT HEAT PUMP WATER HEATER

Sunniva Home Split
User & Service Manual

Installation, operation, fault codes and care for the 200, 300 and 500 litre models.

SE-HS-200
Sunniva Home Split 200
200 L · Family of 3–4

SE-HS-300
Sunniva Home Split 300
300 L · Family of 5–6

SE-HS-500
Sunniva Home Split 500
500 L · Villas, homestays, PGs

Read this manual before installing or using the unit. Installation and repairs must be done by Sunniva or an authorised technician. Keep this manual for later.

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01 Safety first

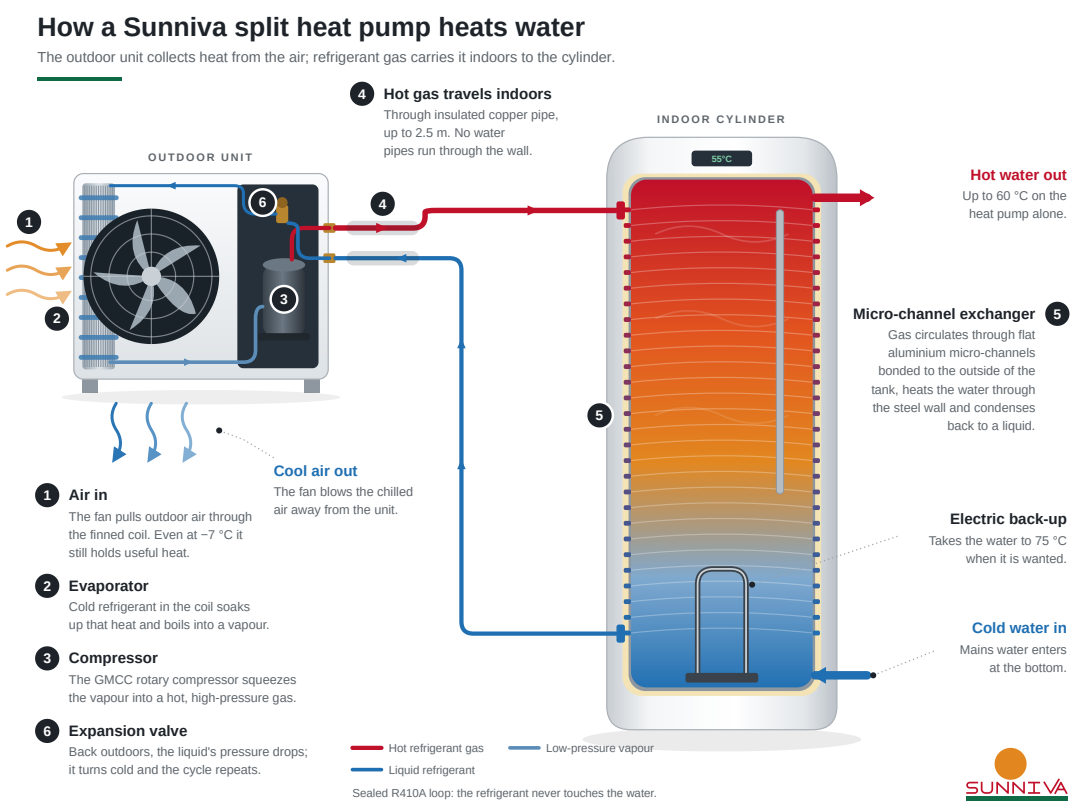
Read this manual before installing or using your heat pump, and keep it for later. Warnings marked **WARNING** can lead to serious injury; **CAUTION** can lead to injury or damage.

WARNING

- Installation, wiring, relocation and repair must be done only by Sunniva or an authorised, qualified technician. Wrong installation can cause water leakage, electric shock or fire.
- The unit must be **earthed**. Fit a dedicated circuit with a residual-current circuit breaker (RCCB, 30 mA, ≤ 0.1 s) and an all-pole isolator with at least 3 mm contact gap.
- Check that the supply voltage matches the rating plate (220–240 V, 50 Hz, single phase). Never use a fuse or cable of the wrong rating.
- Never switch the unit on with an empty tank. The backup heater will be damaged and this is not covered by warranty.
- Water above 50 °C can scald. Children, elderly and disabled users are most at risk: feel the water before bathing. A thermostatic mixing valve at the outlets is recommended.
- Do not put fingers, sticks or other objects into the fan grille. Switch off at the isolator before cleaning.
- Do not install where flammable gas can leak, or near salt spray, sulphur, chlorine, oil mist or strong acids or alkalis.
- If the hot water has not been used for two weeks or more, open a hot tap at a basin for a few minutes before using any appliance, with no flame or spark nearby, to release any gas that has collected in the pipes.
- If the power cord is damaged it must be replaced by Sunniva or a qualified technician.
- This unit is not intended for use by children or by people who need supervision, unless they are supervised. Children must not play with the unit.
- At the end of its life, do not throw the unit away with household waste. Hand it to an authorised e-waste collector.

02 How it works

Your Sunniva Home heat pump moves heat from the outside air into your water, like an air conditioner working in reverse. For each unit of electricity it uses, it delivers about three to four units of heat, which is why it costs up to 75% less to run than an electric geyser.



1. **Air in.** The outdoor fan pulls air through the finned coil; even at −7 °C it holds useful heat.
2. **Evaporator.** Cold refrigerant soaks up that heat and boils into a vapour.
3. **Compressor.** The GMCC rotary compressor turns the vapour into a hot, high-pressure gas.
4. **Hot gas travels indoors.** Through insulated copper pipe, up to 2.5 m. No water pipes run through the wall.
5. **Micro-channel exchanger.** The gas circulates through flat aluminium micro-channels bonded to the outside of the tank, heats the water through the steel wall and condenses to a liquid.
6. **Expansion valve.** Back outdoors the liquid's pressure drops, it turns cold and the cycle repeats.

Main parts

PART	WHAT IT DOES
Outdoor unit	Compressor, fan, finned air coil, expansion valve and the control board. Takes heat from the outside air.
Refrigerant pipes	Two insulated copper pipes (gas and liquid) carrying refrigerant between outdoor unit and tank, up to 2.5 m.
Enamel-lined tank	Stores the hot water. A micro-channel condenser is wrapped around the outside of the inner tank, so no refrigerant touches the water.
Backup heater, 2 kW	Electric heater in the tank with its own thermostat; switches in automatically in cold weather.
Magnesium anode	Sacrificial rod that protects the tank lining from corrosion. Checked every 6 months.
Safety valve	Relieves pressure if it rises too high. Its drain pipe must stay open to air.
Touch controller	Sets temperature, clock and timers and shows fault codes. Mounted indoors in a dry place.

03 Before installing

In the box

- Outdoor unit
- Enamel-lined tank with backup heater and anode
- Touch controller and cable
- Safety valve
- This manual and warranty card

Water quality and pressure

- Chloride below 200 mg/L and pH between 6 and 9. Hard or saline water shortens tank and anode life: fit a softener.
- Inlet water pressure 0.15–0.65 MPa. Below 0.15 MPa fit a booster pump; above 0.65 MPa fit a pressure-reducing valve.
- Maximum working pressure of the tank: 0.8 MPa.

Choosing the place

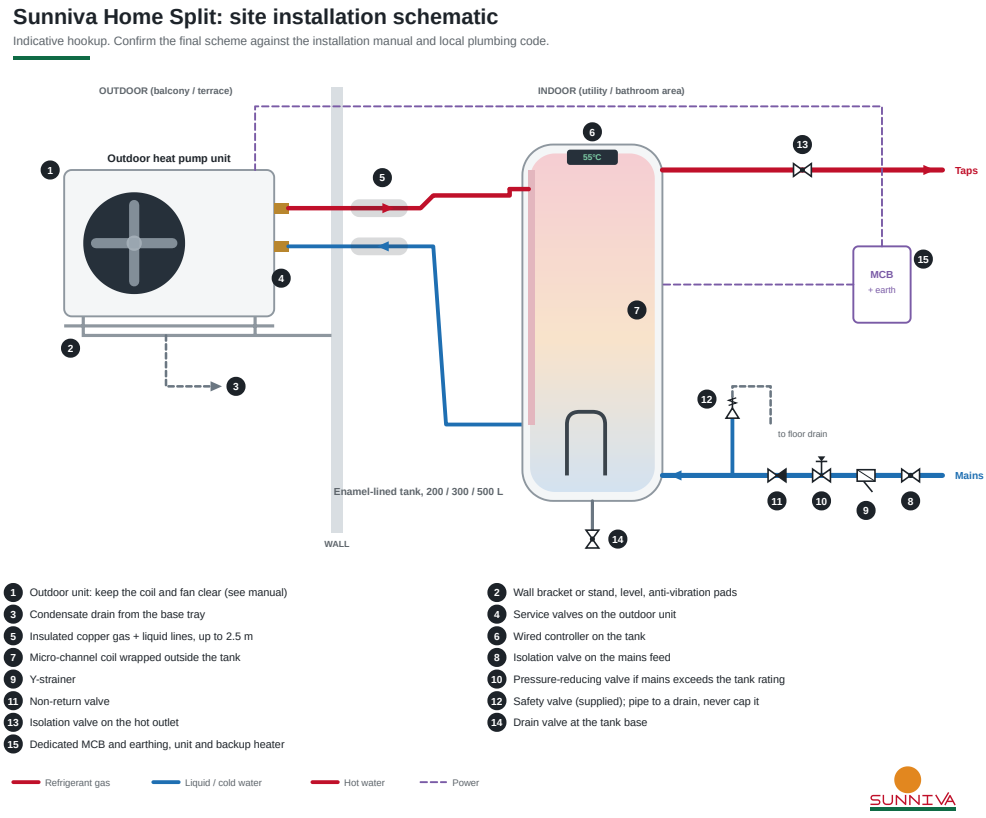
- Outdoor unit on a wall bracket or stand (stainless steel or painted angle steel) on a balcony, terrace or outside wall, in free-moving air, strong enough for the unit's running weight.
- Keep at least 300 mm behind and beside the outdoor unit and 1 m clear in front of the fan.
- Pipe run between outdoor unit and tank no longer than **2.5 m**.
- Tank on a floor or wall that can carry its full weight with water, near the bathrooms or kitchen it serves.
- Controller in a dry place out of direct rain. Never inside a bathroom. Do not cut and rejoin the controller cable.
- Easy access for service, with no flammable gas nearby.

Electrical supply

MODEL	SUPPLY	CABLE (MIN.)	BREAKER	RCCB
Sunniva Home Split 200	220–240 V, 50 Hz, 1 ph	2.5 mm²	16 A	30 mA
Sunniva Home Split 300	220–240 V, 50 Hz, 1 ph	2.5 mm²	16 A	30 mA
Sunniva Home Split 500	220–240 V, 50 Hz, 1 ph	2.5 mm²	16 A	30 mA

Use a dedicated circuit. Breaker sizes are minimums; follow local wiring rules.

04 Installation (for the installer)



Step by step

1. **Mount the outdoor unit** on its bracket or stand, level and secure, with anti-vibration pads.
2. **Place the tank** and connect the cold inlet, hot outlet, safety valve and drain as shown above. Pipe the safety valve drain to open air; never block it.
3. **Run the refrigerant pipes** (up to 2.5 m). Remove the end caps, put a drop of refrigeration oil on each flare and fit the nuts to the outdoor unit and tank connections.
4. **Tighten with two spanners**, one holding the fitting and one turning the nut, so the brass connection is not twisted or cracked. Use the flare torque for the pipe size (table below).
5. **Evacuate the pipes** with a vacuum pump and gauge for **at least 20 minutes**, then check that the vacuum holds. Do not purge with refrigerant.
6. **Open the service valves** on the outdoor unit fully (high and low side) and replace the valve caps.
7. **Leak-test** every joint and valve cap with soap solution. No bubbles should appear.
8. **Insulate** both pipes along their whole length and wrap them neatly with the controller cable.
9. **Wire the unit** to the wiring diagram on the electrical box: dedicated supply, earth and RCCB. Fit the tank sensor fully into its pocket on the tank.

PIPE SIZE	FLARE NUT TORQUE
6.35 mm (1/4")	14–18 N·m
9.52 mm (3/8")	34–42 N·m
12.7 mm (1/2")	49–61 N·m
15.88 mm (5/8")	68–82 N·m

05 First start and draining

Filling and first start

1. Open the cold water inlet valve and a hot tap.
2. When water runs steadily from the hot tap with no air, the tank is full. Close the hot tap.
3. Check every joint for leaks.
4. Open the outdoor unit's service valves fully and switch on the power.
5. Measure the running current; it must not exceed the maximum on the rating plate.

Commissioning checklist

- Unit installed and wired correctly, earth and RCCB in place
- Tank full, no air in the pipes, all valves open
- Inlet pressure 0.15–0.65 MPa
- Pipes vacuumed, leak-tested and insulated; service valves open
- Owner shown how to use the controller, the safety valve lever and the 6-monthly care routine

> **Never run the unit with an empty tank.** The backup heater burns out within seconds and this is not covered by warranty.

Draining the tank

Drain the tank before moving the unit, before a long break in freezing weather, or for cleaning.

1. Switch off the power.
2. Close the cold inlet valve.
3. Open a hot tap to release pressure.
4. Open the drain valve and let the tank empty fully.
5. Close the drain afterwards.

06 Using your heat pump

🔒 **Unlock:** the keys lock on standby. Touch the lock key for 3 s; it beeps and the backlight brightens.

⏻ Turn the unit on or off after unlocking. The heating icon lights and the fan and compressor start in turn.

▲▼ Set the tank temperature anywhere from 20 °C to 60 °C. 50–55 °C suits most homes.

🕒 Touch the clock key for 8 s to set the clock: hours with ▲▼, touch again for minutes, touch again to finish.

⏲ Two daily heating windows. Turn the unit off first, then set start and stop for period 1 and period 2.

SET While running, touch SET to read live temperatures A1–A6 (see below).

Setting the two heating timers

1. Set the clock first, then switch the unit off. Do not set timers while it is heating.
2. Touch the timer key and set the start hour and minute of period 1, then its stop hour and minute.
3. Touch again to set period 2 the same way. Period 2 must start after period 1 has stopped.
4. The timer icons show when both are set. To cancel the timers, hold the timer key for 3 s.

Use the timers to heat in off-peak tariff hours or just before the morning rush. The tank keeps water hot for hours thanks to 50 mm insulation.

Live readings

CODE	READING
A1	Outdoor coil temperature
A2	Suction (return gas) temperature
A3	Discharge temperature
A4	Outdoor air temperature
A5	Tank (water) temperature
A6	Second water sensor, if fitted

What runs by itself

- **Backup heater** switches on automatically when the outdoor air is below the temperature your installer sets.
- **Defrost:** in cold, humid weather frost forms on the outdoor coil. The unit clears it for a few minutes (you may see steam) and goes back to heating.
- **Frost protection:** on standby below 5 °C outside, the unit heats the tank to 12 °C if the water nears freezing.
- **Quiet mode:** above 26 °C outside, the fan switches to low speed.
- **3-minute start delay:** after switching on or a power cut, the compressor waits 3 minutes to balance pressures. This is normal.

07 Functions, features and benefits

FEATURE	WHAT IT DOES	WHAT YOU GET
Touch controller with key lock	Set the water anywhere from 20 to 60 °C on a backlit touch panel. The keys lock themselves when the unit is idle.	Children and guests can’t change your settings by accident
Two daily heating timers	A built-in clock and two programmable heating windows a day.	Heat in off-peak tariff hours, or just before the morning rush
Backup heater that switches itself in	The 2 kW heater starts automatically below an outdoor temperature your installer sets.	Hot water stays reliable through the coldest spells
Automatic defrost	When frost builds on the outdoor coil in winter, the unit clears it briefly and goes back to heating.	Full output on cold mornings with nothing for you to do
Frost protection on standby	Below 5 °C outside, the unit runs itself to keep the water moving and heats the tank to 12 °C if it nears freezing.	No frozen tank or burst pipes in hill stations
Quiet in warm weather	Above 26 °C outside the fan drops to low speed.	Quieter running on summer nights, when you need the least heat
Self-diagnosis with fault codes	Live readings of water, coil, gas and air temperatures, and a clear code if anything goes wrong.	Our technician knows the fault before reaching you, so most fixes take one visit
Protection built in	High- and low-pressure switches, discharge-temperature and compressor over-current protection.	The system shuts down safely before anything can be damaged
Enamel-lined tank, 50 mm insulation	Blue-crystal enamel lining resists corrosion and scale; thick foam keeps water hot for hours.	Longer tank life and hot water left over from yesterday’s heating

08 Troubleshooting and fault codes

If a code appears, note it before switching off. Most codes clear by themselves once the cause is gone; the unit runs a self-check and restarts.

CODE	MEANING	WHAT TO DO
01E / 02E	Supply phase fault	Check the supply wiring and voltage. Call service if it repeats.
05E	High-pressure protection	Heat is not reaching the water: check the tank is full and valves open. Call service if it repeats.
06E	Low-pressure protection	Possible refrigerant leak or blocked pipe. Call service.
09E	Communication fault	Check the controller cable connections at both ends. Call service.
11E	Timer limit	Cancel the preset working time (hold the timer key for 3 s).
12E	High discharge temperature	Usually low refrigerant or a blocked filter. Call service.
15E	Tank sensor fault	Check the sensor is fully in its pocket; replace the sensor.
16E	Outdoor coil sensor fault	Replace the coil sensor (below the expansion valve).
18E	Discharge sensor fault	Replace the discharge-pipe sensor.
21E	Outdoor air sensor fault	Replace the air sensor.
29E	Suction sensor fault	Replace the return-gas sensor.
35E	Compressor over-current	Check the supply voltage is steady (220–240 V). Call service.

Common questions

SYMPTOM	LIKELY CAUSE	WHAT TO DO
Unit does not start	No power, loose wire, blown fuse or tripped breaker	Check the supply and breaker; call service if it trips again
Water not hot enough	Set temperature too low, low refrigerant, dirty outdoor coil, poor pipe insulation	Raise the set temperature, clean the coil, call service for a gas check
Compressor runs but no heat	Refrigerant leaked or compressor fault	Call service
Fan does not run	Loose fan, motor or capacitor fault	Call service
Noisy compressor	Liquid returning to compressor, worn parts	Call service
Water from safety valve	Normal small drips as water expands while heating	Continuous flow is not normal: call service

09 Care and maintenance

WHEN	WHAT
Every 6 months	Check the magnesium anode and replace it when used up; clean the tank
Every year	Operate the safety valve lever and clean the outdoor coil of dust
Before a long break	Switch off, drain the tank in freezing areas, and close the valves

Checking the safety valve

Once a year, lift the lever on the safety valve for a few seconds. Water should flow freely from the drain pipe. If it does not, have the valve replaced.

Saving energy

Set the lowest temperature that gives you enough hot water: 50 °C is enough for most homes and reduces scale and heat loss. Run an occasional 65–75 °C cycle with the backup heater for hygiene.

Replacing the anode (technician)

1. Switch off the power and close the cold inlet valve.
2. Open a hot tap to release the pressure.
3. Open the drain valve and empty the tank.
4. Remove the cover over the anode and unscrew the anode rod.
5. Fit a new anode with a fresh seal.
6. Open the cold inlet and run a hot tap until water flows, then close it.
7. Switch the power back on.

Our 6-monthly check covers the anode, tank cleaning, electrical connections and the safety valve. Book it on WhatsApp. Keeping to it keeps the warranty valid and the unit efficient.

10 Specifications

MODEL	SE-HS-200	SE-HS-300	SE-HS-500
Tank capacity	200 L	300 L	500 L
Heating capacity	3.5 kW	5.2 kW	7.2 kW
Rated power input	870 W	1,200 W	1,800 W
COP*	4.0	4.3	4.0
Running current	4.0 A	6.5 A	8.6 A
Hot water	55 °C rated, up to 60 °C on the heat pump, 75 °C with backup heater	55 °C rated, up to 60 °C on the heat pump, 75 °C with backup heater	55 °C rated, up to 60 °C on the heat pump, 75 °C with backup heater
Outdoor air range	−7 °C to 43 °C	−7 °C to 43 °C	−7 °C to 43 °C
Refrigerant / compressor	R410A · GMCC rotary	R410A · GMCC rotary	R410A · GMCC rotary
Noise (outdoor unit)	≤ 42 dB(A)	≤ 46 dB(A)	≤ 48 dB(A)
Outdoor unit (W×D×H), weight	766×268×550 mm, 28 kg	766×268×550 mm, 29 kg	840×285×610 mm, 36 kg
Tank (Ø×H), weight	510×1,710 mm, 68 kg	570×1,865 mm, 92 kg	700×1,905 mm, 125 kg
Water connections	DN15	DN20	DN32
Heat exchanger	Micro-channel coil wrapped outside the enamel-lined steel tank	Micro-channel coil wrapped outside the enamel-lined steel tank	Micro-channel coil wrapped outside the enamel-lined steel tank
Backup heater	2 kW with thermostat	2 kW with thermostat	2 kW with thermostat
Power supply	220–240 V / 50 Hz / 1 ph, Class I, IPX4	220–240 V / 50 Hz / 1 ph, Class I, IPX4	220–240 V / 50 Hz / 1 ph, Class I, IPX4

Rated at outdoor air 20 °C (wet bulb 15 °C), water heated from 15 °C to 55 °C. Maximum tank working pressure 0.8 MPa. Specifications may change without notice.

11 Warranty and service

PART	WARRANTY
Enamel-lined tank	5 years
Compressor	5 years
Whole unit, parts and labour	3 years

Conditions

- Register the unit online within 30 days of installation.
- Installed by Sunniva or an authorised partner, following this manual.
- Used within the water-quality limits in section 3.
- Magnesium anode checked every 6 months and replaced when used up.
- Not covered: damage from running with an empty tank, wrong supply voltage, freezing, scale from untreated hard water, accident, misuse or repair by unauthorised people.

Need service?

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