

The Classic

Split system chiller — separated compressor & heat exchanger

Complete installation guide for licensed professionals, covering every stage from pre-installation to commissioning. Installation must comply with local, state and national regulations and be performed by certified electricians and refrigeration mechanics to ensure safety, efficiency and warranty validity.

Installation Summary

1



Inspect & verify

Check for transit damage and confirm the 3.9 kg R404a precharge.

2



Position outdoor unit

On a level concrete pad, with the required airflow clearances around the unit.

3



Position the indoor unit

Fit the indoor unit (heat exchanger) into the pool/spa return line, after the filters and pumps.

4



Plumb the water

40/50 mm PVC, barrel unions, bypass set to 40–100 LPM. Flush all pipes first.

5



Connect refrigeration

Licensed mechanic brazes the 7/8" suction and 1/2" liquid copper lines.

6



Connect electrical

Licensed electrician: RCD, isolation switch, terminals wired per the diagram.

7



Vacuum & leak test

Vacuum the system, then leak-test every brazed joint and connection.

8



Open valves & charge

Back-seat the three valves (under black caps) to release the R404a precharge.

9



Start up & commission

Pump and power on. Preset to 8°C; pulls down to temperature over 24–48 h, and is adjustable.

At-a-glance overview only. Follow the full instructions in Sections 1–5. Each step must be completed by the appropriate licensed trade.

1 Specifications

Description: "The Classic" Split System is a chiller with an external compressor unit separate from the heat exchanger, engineered for situations requiring optimised cooling, specific space configurations, or reduced noise levels.

UNIT DIMENSIONS		POWER INFORMATION	
Length	913 mm	Compressor phase	1 or 3
Width	476 mm	Compressor supply	230 V
Height	792 mm	Compressor MOC (1 phase)	22.4 A
Weight (net)	100 kg	Compressor MOC (3 phase)	8.86 A
		Fan phase	1
		Fan electrical supply	240 V
		Fan electrical hertz	50 Hz
		Fan MOC	1.75 A
		Sound power level	72 dBA
COOLING		HEAT EXCHANGER & REFRIGERANT	
Compressor horsepower	3.3	Receiver capacity @ 80%	3.9 kg
kW rating	6.5	Refrigerant type	R404a
Number of fans	1	Heat exchanger	Titanium shell tube, 40 mm fitting
Fan diameter	500 mm	Flow rate	40–100 LPM
Fan air flow	6720 m ³ /h	Connection copper	7/8" – 1/2"

NOTE

Specifications are approximate and subject to change. Refer to the unit's nameplate for final confirmation.

2 Pre-Installation Notes

Proper preparation is essential for a successful installation of "The Classic." The following notes outline critical considerations to ensure the unit operates as intended:

- **Placement:** Position "The Classic" on a level concrete pad in a designated outdoor area to facilitate proper ventilation and stability.
- **Ventilation:** Maintain minimum airflow clearances to prevent efficiency loss and overheating (detailed in Section 3.3). These ensure adequate ventilation and prevent warm air recirculation.
- **Professional installation:** Installation must be completed by:
 - A licensed electrician for all electrical connections.
 - A licensed refrigeration mechanic for refrigeration system setup.
 - Compliance with local, state and national regulations is mandatory; failure to use certified professionals voids the warranty.
- **Inspection:** Upon delivery, thoroughly inspect the package for visible damage (e.g. dents, crushed corners). Contact Bergs immediately if signs of mishandling are present — do not proceed with installation until resolved.

2.1 Key Pre-Installation Considerations

- **Refrigerant precharge:**
 - "The Classic" is factory-precharged with 3.9 kg of R404a refrigerant (80% receiver capacity), sufficient for a piping run of up to 10 metres between the outdoor unit and heat exchanger without additional charging.
 - Confirm this amount is labelled inside the unit; discrepancies require Bergs' attention.
- **Unit condition:** Inspect the unit for physical damage or manufacturing defects (e.g. bent fins, cracked casing) that could affect performance.
- **Plumbing setup:**
 - Connect to the pool/spa return line using 40 mm or 50 mm PVC pressure-rated pipes.
 - Use barrel unions for maintenance access and support brackets to secure piping.
- **Electrical requirements:**
 - Requires a licensed electrician to connect power; a cable gland is provided for new cable entry.
 - Terminals are clearly labelled inside the unit for wiring.
 - Verify power supply matches specifications: 230 V single or three-phase for the compressor, 240 V single-phase for the fan.

3 Installation Instructions

3.1 System Installation

LICENSED TRADES ONLY

Installation of "The Classic" must be performed by a licensed electrician and refrigeration mechanic. Unauthorised installation or repairs by unlicensed individuals are prohibited and will void the warranty, compromising both safety and performance.

Verification steps before installation

- Verify the unit is precharged with 3.9 kg of R404a for a 10 m run.
- Inspect the unit for any damage or defects.
- Ensure proper positioning, ventilation, water flow setup, and electrical connections are feasible at the chosen site.

3.2 Location of Installation

- **Outdoor installation recommended:** "The Classic" should be installed outdoors to ensure optimal air circulation around the unit. Indoor placement or confined spaces with poor ventilation will significantly reduce efficiency and may cause damage in severe cases. If outdoor installation isn't feasible, contact Bergs Technical Support for specialised guidance.
- **Positioning requirements:**
 - **Height relative to water surface:** No more than 5 m below the pool/spa water surface to maintain effective water flow.
 - **Avoid roof runoff:** Do not position where steep roofs without guttering could direct rainwater and debris through the unit; install a water deflector if necessary.
 - **Chemical exposure:** Keep the unit away from storage or use of corrosive or harsh pool chemicals to prevent corrosion or damage.
 - **Mounting surface:** Secure the unit on a level, stable concrete pad to prevent vibration or tipping.

3.3 Airflow Clearances

MINIMUM CLEARANCES	
Front	1500 mm
Sides	750 mm each
Above	500 mm
Rear	300 mm

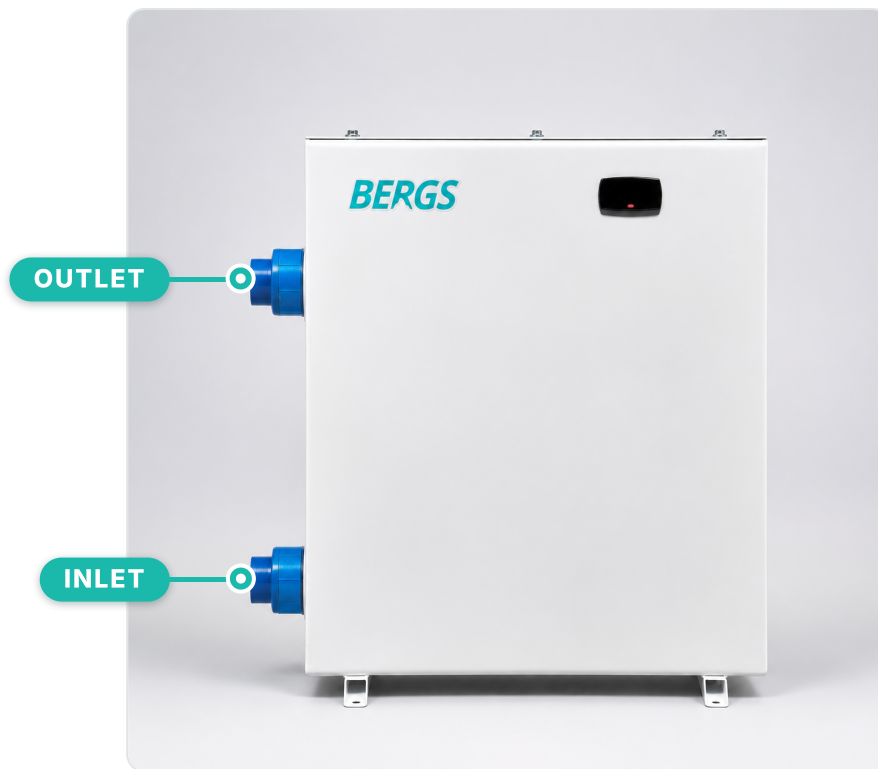
- **Purpose:** These clearances ensure ample fresh airflow (6720 m³/h from one 500 mm fan) and prevent the unit from recycling discharged warm air, which reduces cooling performance and may lead to ice buildup on the coils.
- **Site check:** Position "The Classic" in a location free of obstructions (e.g. walls, plants, structures). If the proposed site cannot meet these requirements, consult Bergs Technical Support for alternative solutions.

3.4 Adequate Water Flow

- **Importance:** Maintaining a consistent flow rate of 40–100 LPM is crucial for efficient cooling and to avoid strain on the heat exchanger. Improper flow rates can reduce performance and potentially harm the system.
- **Setup requirements:**
 - Install a bypass valve and plumbing setup OR a variable speed pump to regulate water flow to 40–100 LPM.
 - Never connect a pump with excessive flow rates directly to the chiller, as this can overwhelm the system and trigger shutdowns.
- **Pipe flushing:** Before connecting plumbing, thoroughly flush all pipes to remove debris (e.g. dirt, PVC shavings).
- **Pool cleaning note:** During pool/spa cleaning, switch off "The Classic" to avoid low-flow faults caused by reduced circulation.

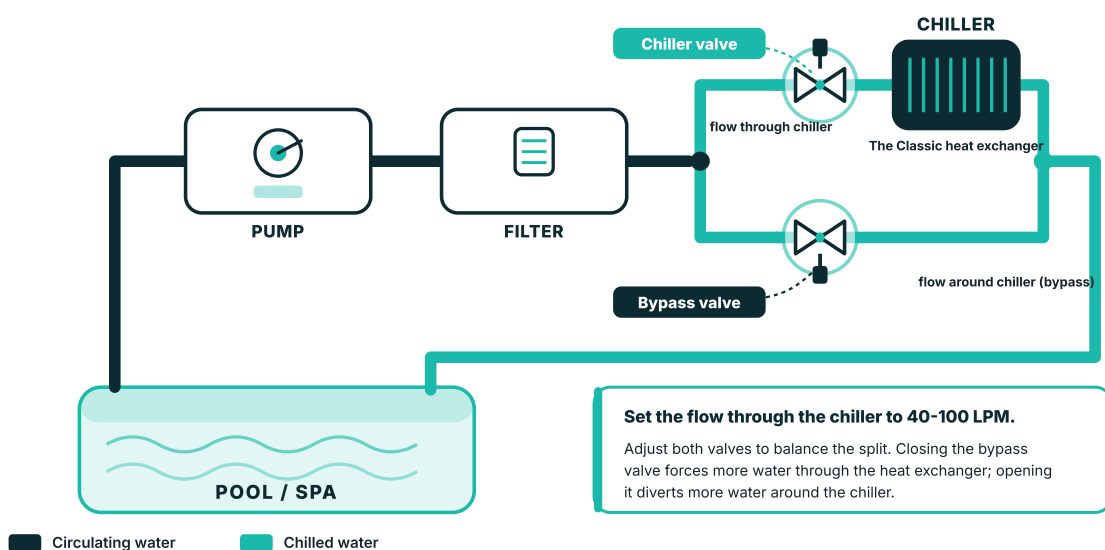
3.5 Plumbing

- **Location in system:** Install "The Classic" in the pool/spa return line, positioned after all filters and pumps but **before** any chlorinators, ozonators, or chemical dosing systems to ensure clean water enters the heat exchanger.
- **Piping specifications:**
 - Use 40 mm or 50 mm PVC pressure-rated pipes compatible with pool/spa filtration systems.
 - Standard slip glue fittings are provided; a 50NB to 40NB reducer can be used for 40NB plumbing if needed.
- **Fittings and connections:**
 - Install barrel unions (hand-tighten only) at the inlet and outlet for easy maintenance access.
 - Add quick-release couplings at the inlet (bottom) and outlet (top) for simplified drainage and servicing.
- **Sealing and support:**
 - Inspect O-rings to ensure a watertight seal.
 - Install support brackets where necessary to prevent pipe movement, which could squeeze and damage the rubber O-ring, causing leaks.
- **Pressure drop:** The premium titanium heat exchanger maintains a maximum water pressure drop of less than 10 kPa at the 40–100 LPM flow rate, requiring only bypass plumbing to adjust flow as per nameplate specs.



Heat exchanger (indoor unit) — inlet at the bottom, outlet at the top.

Install the Classic in the pool / spa return line, after the pump and filter.



Flow diagram — the chiller sits in a bypass loop with two balancing valves. Adjust the chiller and bypass valves together to set flow through the heat exchanger to 40–100 LPM.

3.6 Electrical Connection

- Requirements:**

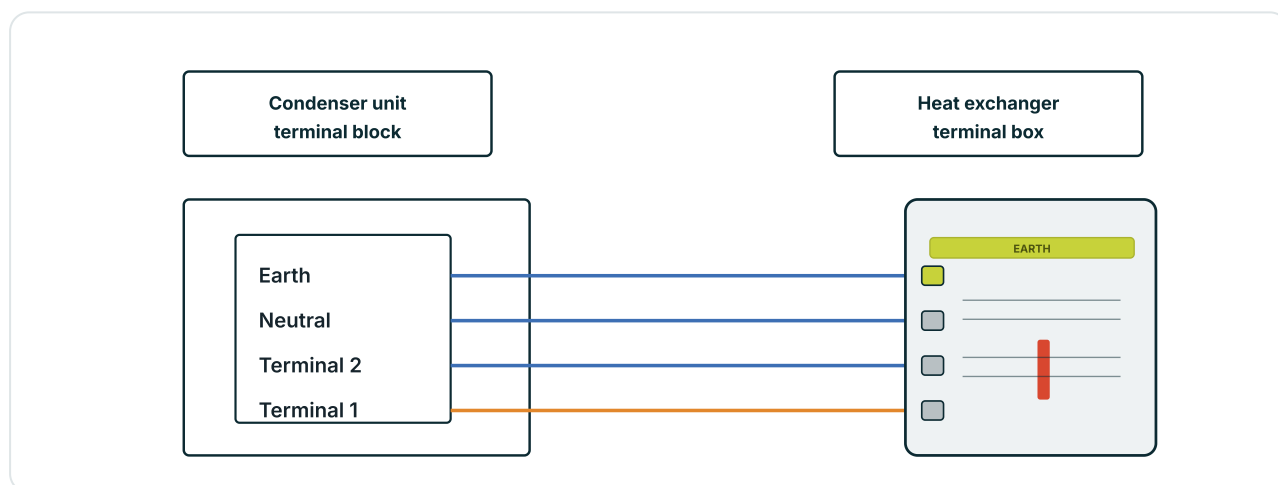
- All electrical work must be performed by a licensed electrician who has reviewed this manual, adhering to Australian Standards and local laws.
- Power supply: Compressor at 230 V, single or three-phase; fan at 240 V, single-phase.
- Acceptable voltage range: 220–240 V for single-phase units, 380–415 V for three-phase units; operating outside these ranges will damage the unit and void the warranty.

- **Safety components:**

- Isolate the power supply during installation and maintenance to prevent electrical hazards.
- Install a 30 mA Residual Current Device (RCD) to protect against leakage currents exceeding 10 mA.
- Fit a double-pole isolation switch with minimum contact gaps of 3 mm across each pole, integrated into the fixed wiring setup per electrical regulations.
- Include a circuit breaker if hard-wiring the water pump to the chiller for added protection.
- Ensure proper earthing to avoid electrical shocks.

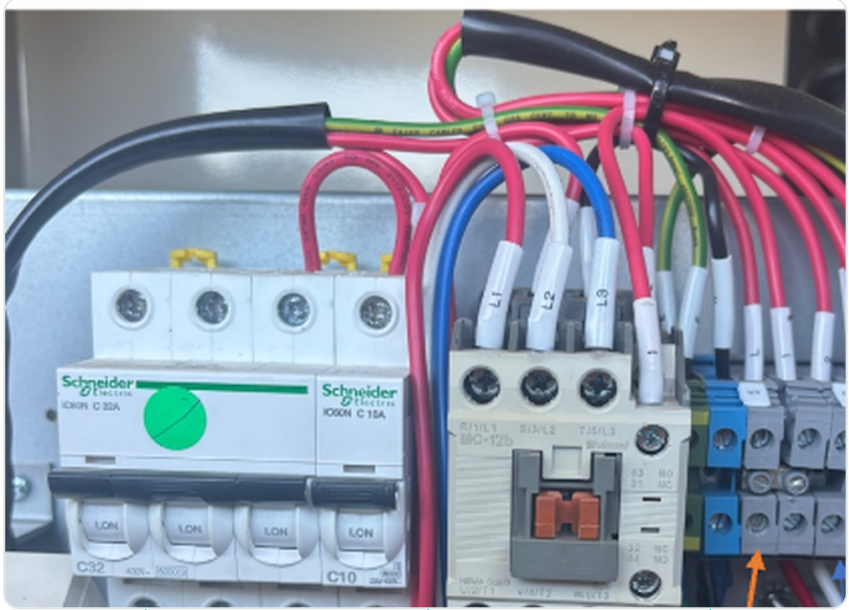
- **Wiring procedure:**

- Access electrical terminals by removing the right panel; refer to the wiring diagram located inside the front panel.
- Use the provided cable gland for new cable entry.
- Verify maximum current requirements: compressor 22.4 A (single-phase) or 8.86 A (three-phase); fan 1.75 A.
- Connect as follows: Active to the top of the circuit breaker; Earth to the far left green terminal; Neutral to the left blue terminal.
- Connect the internal (heat exchanger) and external (condenser) units with standard 4 mm cable.
- For interconnect between outdoor unit and heat exchanger: Red to terminal block 1; White to terminal block 2; Black to right neutral terminal block; Earth to far right earth terminal (this block can be unclipped for screwdriver access).



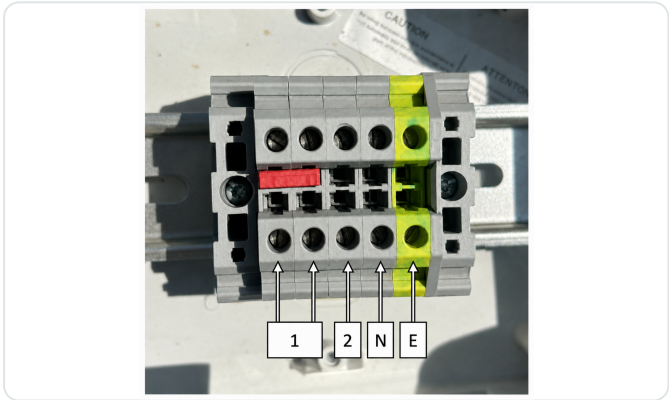
Electrical interconnection — the condenser unit terminal block (Earth, Neutral, Terminal 2, Terminal 1) wired across to the heat-exchanger terminal box with standard 4 mm cable.

THE ACTUAL WIRING — MATCH THESE TO THE DIAGRAM ABOVE



Main RCD / isolator Compressor contactor Supply terminals

Condenser unit electricals (right panel). Active connects to the top of the breaker; Earth to the far-left green terminal, Neutral to the left blue terminal.

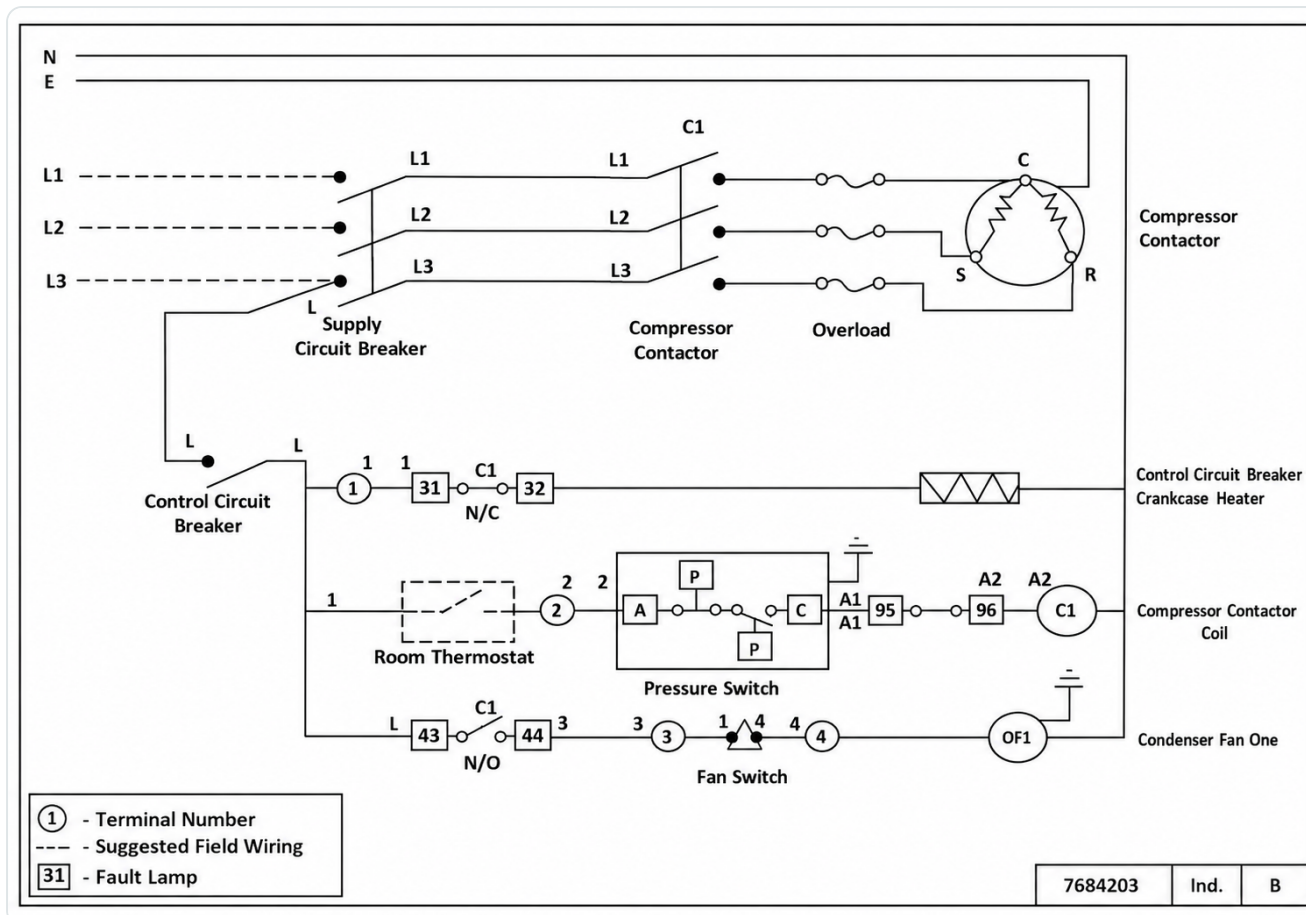


1 — Red 2 — White N — Black E — Earth

Condenser interconnect terminals — marked 1, 2, N, E (left to right).



Heat exchanger terminal box — receives the four interconnect conductors. Earth is the green/yellow terminal (top); the red link is factory-fitted.



Condenser control schematic (drawing 7684203, Ind. B) — also printed on the condenser front panel.

3.7 Refrigeration Connection

LICENSED REFRIGERATION MECHANIC ONLY

Required for all refrigeration system setup; unlicensed work is prohibited.

- Pipe sizing: 7/8" suction line and 1/2" liquid line copper connections between the outdoor unit and heat exchanger.
- Unit is precharged with 3.9 kg of R404a refrigerant (amount labelled inside).

Installation procedure

- Braze pipe connections between the outdoor compressor unit and the heat exchanger using appropriate techniques.
- Vacuum the suction line using Schroeder connections to remove air and moisture.
- Insulate (lag) the suction side with appropriate lagging material to reduce condensation and improve efficiency.
- Conduct leak testing on all brazed joints and connections to ensure system integrity.
- Vacuum the entire refrigeration system thoroughly to eliminate contaminants.
- Open/back-seat all three valves (initially closed/front-seated, located under black caps) to release the precharged R404a into the system.

3.8 Initial Start-Up & Commissioning

- **Prerequisites:** The filter pump must be operational, circulating water through the heat exchanger at 40–100 LPM, for "The Classic" to function.

- **Start-up sequence:**

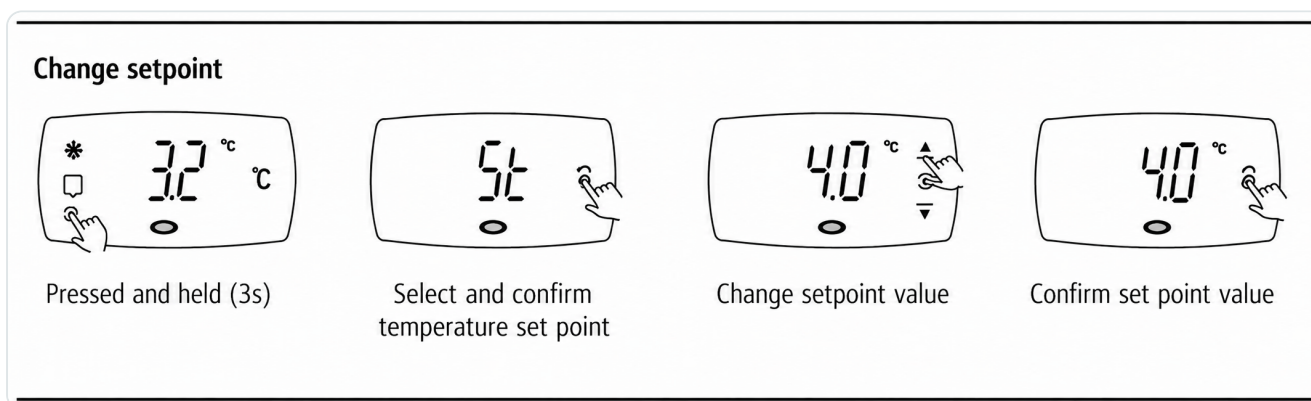
- Activate the filter pump; check for leaks at all plumbing connections and confirm water circulation to and from the pool at 40–100 LPM.
- Connect the power supply to the unit, ensuring all electrical safety components (RCD, isolation switch) are in place.
- Turn on "The Classic" using the ON/OFF button.
- Set the desired temperature on the controller (factory preset to 8°C; no additional programming required).
- Run the unit and pool pump continuously. The Classic is preset to 8°C and typically pulls the water down to temperature over 24 to 48 hours (longer for large pools or warm conditions). The setpoint is adjustable — see **Setting the Temperature** below.

- **Operational behaviour:**

- Once the target temperature is achieved, "The Classic" reduces output and may shut off if the temperature remains stable for 45 minutes or more.
- The system automatically restarts (assuming the pool pump is running) when the water temperature rises more than 1°C above the setpoint.

3.9 Setting the Temperature

- "The Classic" is preset to 8°C. To change the target temperature, use the controller buttons as shown below:
- Press and hold the set button for 3 seconds.
- **St** appears — select and confirm the temperature set point.
- Use the arrows to change the set point value.
- Confirm the set point value.



Changing the set point on the controller (32°C to 40°C shown).

4 Safety Instructions

CERTIFIED PERSONNEL ONLY

Installation, servicing, or movement of "The Classic" must be performed by licensed electricians and refrigeration mechanics. Improper handling by unqualified persons risks electrical hazards, fire, water damage, or personal injury.

Electrical safety

- Install a 30 mA RCD to protect against electrical faults; leakage current may exceed 10 mA.
- Use a double-pole isolation switch with 3 mm contact gaps, permanently integrated into the fixed wiring per national regulations.
- Ensure proper earthing to prevent shocks; verify continuity before powering on.
- Disconnect all supply circuits before accessing terminals.
- If the supply cord is damaged, it must be replaced by a qualified service agent.

REFRIGERANT SAFETY — R404A

"The Classic" uses R404a, a flammable refrigerant; be aware it may not have an odour.

- Do not pierce or burn the unit, as this could release refrigerant and pose a fire hazard.
- Install in a well-ventilated space exceeding 30 m² in floor area, free of continuously operating ignition sources (e.g. open flames, gas appliances).

General safety

- Not suitable for potable water applications — intended solely for pool/spa chilling.
- Handle with care during transport to avoid damage and potential refrigerant escape; follow all transport regulations.

5 Installation Checklist

This checklist ensures every step of the installation process for "The Classic" is completed thoroughly and correctly.

PRE-INSTALLATION

- ☐ Inspect the package upon delivery for visible damage (e.g. dents, crushed corners); contact Bergs immediately if mishandling is evident.
- ☐ Confirm the unit is precharged with 3.9 kg of R404a refrigerant (80% capacity, labelled inside) for a 10 m run between outdoor unit and heat exchanger.
- ☐ Check the unit's physical condition for damage or defects (e.g. bent fins, cracked casing).

LOCATION

- ☐ Position "The Classic" outdoors to ensure optimal air circulation around the unit (contact Bergs for indoor installation guidance if necessary).
- ☐ Confirm the unit is no more than 5 m below the pool/spa water surface.
- ☐ Avoid locations where roof runoff might flood the unit; install a water deflector if steep roofs without guttering are present.
- ☐ Keep the unit away from storage or use of corrosive or harsh pool chemicals.
- ☐ Mount "The Classic" on a level, stable concrete pad to prevent vibration or instability.

AIRFLOW CLEARANCES

- ☐ Maintain a minimum clearance of 1500 mm at the front for unrestricted air circulation.
- ☐ Ensure 750 mm clearance on each side of the unit.
- ☐ Provide 500 mm clearance above the unit.
- ☐ Keep 300 mm clearance at the rear.
- ☐ Verify the installation site avoids confined spaces to prevent warm air recycling, ensuring 6720 m³/h airflow from one 500 mm fan.

WATER FLOW

- ☐ Install a bypass valve and plumbing setup OR a variable speed pump to regulate water flow to 40–100 LPM.
- ☐ Ensure no pump with excessive flow rates is connected directly to "The Classic."
- ☐ Thoroughly flush all pipes before connection to remove debris.

PLUMBING

- ☐ Install "The Classic" in the pool/spa return line, positioned after all filters and pumps but before chlorinators, ozonators, or chemical dosing systems.
- ☐ Use 40 mm or 50 mm PVC pressure-rated pipes with slip glue fittings (optional 50NB to 40NB reducer for 40NB plumbing).
- ☐ Install barrel unions at the inlet and outlet, hand-tightening for maintenance access.
- ☐ Add quick-release couplings at the inlet (bottom) and outlet (top) for simplified drainage and servicing.
- ☐ Inspect O-rings to ensure a watertight seal.
- ☐ Install support brackets where necessary to prevent pipe movement and protect the O-ring from damage.

ELECTRICAL CONNECTION

- ☐ Engage a licensed electrician to perform all electrical work, adhering to Australian Standards and local laws.
- ☐ Confirm power supply matches specifications: 230 V single or three-phase for the compressor, 240 V single-phase for the fan.
- ☐ Isolate the power supply during installation and maintenance.
- ☐ Install a 30 mA RCD to protect against leakage currents exceeding 10 mA.
- ☐ Fit a double-pole isolation switch with 3 mm contact gaps, integrated into the fixed wiring setup.
- ☐ Include a circuit breaker if hard-wiring the water pump to the chiller.
- ☐ Ensure proper earthing of the unit to prevent electrical shocks.
- ☐ Use the provided cable gland for new cable entry into the unit.
- ☐ Verify maximum current requirements: compressor 22.4 A (single-phase) or 8.86 A (three-phase); fan 1.75 A.
- ☐ Access electrical terminals by removing the right panel; refer to the wiring diagram inside the front panel.
- ☐ Connect terminals as follows: Active to the top of the circuit breaker, Earth to the far left green terminal, Neutral to the left blue terminal.
- ☐ Connect the internal (heat exchanger) and external (condenser) units with standard 4 mm cable.
- ☐ For interconnect between outdoor unit and heat exchanger: Red to terminal block 1, White to block 2, Black to right neutral terminal, Earth to far right earth terminal (unclip block for screwdriver access).

REFRIGERATION CONNECTION

- ☐ Engage a licensed refrigeration mechanic to complete all refrigeration system setup.
- ☐ Verify pipe sizing: 7/8" suction line and 1/2" liquid line copper connections between the outdoor unit and heat exchanger.
- ☐ Confirm the unit is precharged with 3.9 kg of R404a refrigerant (labelled inside).
- ☐ Braze pipe connections between the outdoor compressor unit and the heat exchanger using proper brazing techniques.
- ☐ Vacuum the suction line using Schroeder connections to remove air and moisture.
- ☐ Insulate (lag) the suction side with appropriate lagging material to reduce condensation.
- ☐ Conduct leak testing on all brazed joints and connections to ensure no refrigerant escapes.
- ☐ Vacuum the entire refrigeration system thoroughly to eliminate contaminants.
- ☐ Open/back-seat all three valves (initially closed/front-seated, under black caps) to release the precharged R404a into the system.

INITIAL START-UP & COMMISSIONING

- ☐ Ensure the filter pump is operational and circulating water through the heat exchanger at 40–100 LPM before starting "The Classic."
- ☐ Activate the filter pump; inspect all plumbing connections for leaks and confirm water circulation to and from the pool/spa at 40–100 LPM.
- ☐ Connect the power supply to the unit, ensuring all safety components (RCD, isolation switch) are installed and functional.
- ☐ Turn on "The Classic" using the ON/OFF button on the controller.
- ☐ Set the desired temperature on the preset controller (factory default: 8°C; no additional programming needed).
- ☐ Run "The Classic" and the pool pump continuously (24 hours) until the desired water temperature is reached, noting that cool-down time may take several days depending on pool size, environmental conditions, and chiller capacity.
- ☐ Verify that "The Classic" reduces output and shuts off automatically if the temperature remains stable for 45 minutes or more.
- ☐ Confirm the unit restarts automatically (with the pool pump running) when the water temperature rises more than 1°C above the setpoint.