

AIR CONDITIONER

PREFERRED INSTALLATION GUIDE

South Africa | Compliant with SANS 10142, OHSA & Industry Standards



This guide sets out the preferred installation process for Kwikot Powered by Haier air conditioning units. It is designed for registered HVAC/refrigeration technicians and is aligned with South African industry requirements, including SANS 10142-1 (Wiring of Premises), SANS 1418 (copper pipe), SANS 10117 (pressure testing), and Haier global installation standards. All installers must hold a valid DoL Certificate of Competence or equivalent industry qualification.

SECTION 1 — LEGAL & COMPLIANCE REQUIREMENTS (SOUTH AFRICA)

1.1 Installer Qualifications

- The installer must hold a valid Certificate of Competence issued by the Department of Labour (DoL) under OHSA, or be registered with a recognized body such as SAQCC Gas or RACA.
- All electrical connections must be performed by or under the supervision of a registered electrician (ECA or equivalent).
- An Electrical Certificate of Compliance (CoC) must be issued for any new dedicated electrical circuit installed.
- Proof of qualification and company accreditation must be carried on-site at all times.

1.2 Key South African Standards

Standard / Regulation	Requirement
SANS 10142-1	Wiring of Premises — all electrical work must comply. Dedicated circuit required for units ≥ 1 kW.
OHSA Act 85 of 1993	Installer and contractor must comply with health & safety obligations on-site.
ODP / HFC Regulations	R-410A and R-32 are permitted. R-22 is prohibited for new installations.
SANS 1418	Copper pipe specifications for refrigerant lines must comply.
SANS 10117	Pressure vessel and refrigeration system pressure testing requirements.
Municipal By-laws	Wall penetrations, external brackets, and noise levels may be subject to local municipal by-laws. Verify before commencing.

⚠ IMPORTANT: Failure to comply with SANS 10142-1 or OHSA requirements may invalidate the product warranty and expose the installer and homeowner to legal liability. A Certificate of Compliance (CoC) is mandatory where a new circuit is installed.

SECTION 2 — PRE-INSTALLATION PREPARATION

2.1 Before Arriving on Site

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Confirm the Appointment

- Contact the customer within 2 hours of receiving the work order.
- Confirm appointment time, site address, unit model, and purchase date.
- Discuss the intended installation location and any consumables required.

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Check Your Tools & Materials

- Electrical drill, masonry drill, vacuum pump, manifold gauge set, hex wrenches, pipe bender, pipe cutter, flaring tool.
- Copper pipe (correct diameter per accessory schedule), insulation foam, drain hose, conduit/trunking, mounting bracket, dynabolts.
- Safety equipment: safety glasses, gloves, work boots, hard hat if working at height.
- Documentation: qualification certificate, ID, work order, receipt book, warranty card.

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Vehicle & Personal Presentation

- Inspect vehicle — tools stowed securely and ladders properly supported.
- Wear clean appropriate workwear and carry your company ID.
- Arrive 5 minutes ahead of the scheduled appointment time.
- If the customer is not home, leave a written note with contact details and next steps.

SECTION 3 — INDOOR UNIT INSTALLATION

3.1 On Arrival — Customer Engagement

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Enter the Premises Correctly

- Fit protective shoe covers before entering — one foot at a time.
- Place toolbox on a protective mat to avoid floor damage.
- Introduce yourself, present your ID/qualification card, and confirm the work order.

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Unbox & Inspect the Unit

- Check the carton for shipping damage before opening.
- Verify all accessories: connection cable, power cable, copper pipe, drain hose, remote, manual, bracket, and bandage tape.
- Power on briefly to confirm display, swing blade, wind deflector, and modes function correctly.

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Electrical Safety Check

- Test customer supply voltage using an approved multimeter — confirm 220–240V AC, 50 Hz.
- Verify earth continuity and polarity at the supply point.
- If wiring or distribution board does not comply with SANS 10142-1, advise in writing before proceeding. Do not connect to a non-compliant supply.
- Confirm a dedicated circuit breaker of the correct rating is available or will be installed.

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Agree on Location & Costs

- Select a location ensuring even airflow. Avoid positioning above electronics, power sockets, or gas appliances.
- Minimum clearances: 20 cm from ceiling, 10 cm from side walls.
- Position the outdoor unit as close as practical to the indoor unit to minimise pipe runs.
- Provide the customer with a written cost estimate for consumables before work starts.

3.2 Physical Installation — Indoor Unit

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Drill the Wall Hole

- The hole must angle downward toward the outside — inside must be ≥ 50 mm higher than outside to ensure positive drain flow.
- Use a plastic bag or dust sheet to collect drilling debris.
- Hole diameter must accommodate the pipe bundle plus insulation. Seal around the pipe bundle on completion.

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Install the Mounting Plate

- Maintain minimum 20 cm clearance from ceiling and 10 cm from side walls.
- Use a spirit level to confirm the plate is perfectly horizontal — an unlevel plate causes vibration and drainage problems.
- Fix using dynabolts into solid wall substrate. Do not fix into hollow surfaces without appropriate wall anchors.

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Connect Pipe & Wiring — Indoor Side

- Install the flare nut onto the copper pipe before flaring — omitting this requires a complete redo.
- Flare all copper pipe ends using an approved flaring tool. Inspect each flare for cracks, ovality, or scoring.
- Connect the drain hose. If the outlet must be moved right-to-left, relocate the drain plug before mounting the unit.
- Connect the interconnecting cable per the wiring diagram. Verify L and N are not reversed. Tighten all terminal screws.
- Bundle pipe, drain hose, and cable neatly with bandage tape. Cap pipe ends until outdoor connection is made.

Mount the Indoor Unit

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- Support the indoor unit against the wall with an L-bracket kickstand whilst connecting refrigerant pipes.
- Connect liquid and suction pipes using two spanners — one to hold the valve body, one to tighten the flare nut.
- Once all connections are made, hang the indoor unit on the mounting plate and slide to lock.

SECTION 4 — OUTDOOR UNIT INSTALLATION

4.1 Siting the Outdoor Unit

Select & Prepare the Outdoor Location

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- Clearances: ≥ 60 cm in front of air discharge, ≥ 30 cm from rear wall, ≥ 60 cm from side obstructions.
- Avoid flood-prone areas. The unit must not be subjected to direct water ingress.
- In coastal areas (within ~5 km of ocean), specify units with anti-corrosion treatment (Blue Fin or equivalent).
- Do not position where discharge noise will breach local municipal noise by-laws.

Install the Outdoor Bracket / Base

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- Wall brackets must be bolted into solid brickwork or concrete using minimum M10 dynabolts.
- Confirm the bracket is level before tightening all fasteners.
- For ground-mounted units, ensure a level concrete base of sufficient size to support the unit weight.

Run & Connect Outdoor Pipework & Wiring

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- Use the correct diameter copper pipe as specified per the unit model (see Accessory Schedule — Section 6).
- Use one continuous pipe length where possible. Where joints are necessary, braze (silver solder) only — compression fittings are not acceptable.
- If the pipe run exceeds 5 m, add 20 g refrigerant per additional metre. Do not overcharge.
- All external pipework must be insulated and protected with UV-resistant trunking or conduit.
- Connect outdoor wiring per terminal markings on the PCB. Verify L and N polarity. Secure all terminal screws.

4.2 Pressure Testing & Vacuuming

⚠ CRITICAL: Never skip the vacuum procedure or use refrigerant to purge the system. Moisture in the refrigerant circuit will cause premature compressor failure and will void the warranty.

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Pressure Test (Nitrogen)

- Pressurise the system to 40 bar (580 psi) with dry nitrogen. Close the nitrogen valve and monitor for 15 minutes.
- Check all flare connections, valve caps, and pipe joints using an electronic leak detector or leak detection fluid.
- If pressure drops or a leak is detected, locate and repair before proceeding.

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Vacuum the System

- Connect the manifold gauge set to the service port (three-way valve). Keep service valves on outdoor unit fully closed.
- Run the vacuum pump for a minimum of 15 minutes. Target vacuum: ≤ -0.1 MPa (-1 bar / 29.9 inHg).
- Close the manifold valves and switch off pump. Wait 3–5 minutes — if gauge rises, there is a leak or residual moisture. Rectify before proceeding.
- Once vacuum is confirmed stable, disconnect the vacuum hose.

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Release Refrigerant & Open Service Valves

- Fully open the two-way (liquid) and three-way (suction/gas) service valves using an Allen/hex key.
- Replace and tighten the service valve caps — these form part of the primary leak seal.
- Check for leaks at both service valves immediately after opening using an electronic leak detector.

SECTION 5 — COMMISSIONING & CUSTOMER HANDOVER**5.1 System Commissioning Checks**

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Leak Detection Check

- Use an approved electronic leak detector on all flare joints, service valve connections, and brazed joints.
- If any leak is detected, recover the refrigerant, repair, and re-vacuum before recharging.

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Power-On Function Test

- Power the unit on and test all modes: cooling, heating (if applicable), fan-only, and auto.
- Cycle through all fan speeds. Confirm swing blade and air deflector operate correctly.
- Check for abnormal noise or vibration in both indoor and outdoor units.

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Performance Verification

- Measure supply air temperature at the return grille and discharge air temperature at the indoor outlet.

- Temperature differential (ΔT) should be 10–14°C in cooling mode. Below 8°C may indicate low refrigerant, airflow restriction, or a dirty filter.
- Check operating pressures using the manifold gauge set against the Haier technical data sheet for the applicable refrigerant.
- Test the drain: pour water into the indoor drain pan and confirm free flow out of the drain pipe.

Aesthetic Completion

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- Fill and seal the wall penetration on the outside with approved exterior-grade foam or sealant.
- Apply UV-resistant trunking to all external pipe runs. Runs must be horizontal and vertical — no diagonal pipe runs visible.
- Apply finishing conduit cover internally, running pipes horizontally and vertically to the mounting position.
- Ensure all cable ties, bandage, and insulation are neatly applied with no exposed copper or drain hose.

5.2 Customer Handover

Demonstrate the Unit

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- Walk the customer through remote control operation: on/off, mode selection, temperature, fan speed, timer, and sleep mode.
- Explain filter cleaning frequency (every 2–4 weeks depending on environment) and how to remove and clean the filter.
- Advise on annual service requirements — Kwikot recommends a service inspection every 12 months.
- Share energy-saving tips: keep doors and windows closed, set temperature 22–24°C, use the timer function.

Complete Documentation & Sign-Off

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- Complete and issue the warranty registration. Register the unit on the Kwikot/Haier warranty system where applicable.
- Issue the Certificate of Compliance (CoC) where a new electrical circuit has been installed.
- Provide the customer with: completed work order/receipt, warranty documentation, and your contact details.
- Request the customer's signature on the job card as confirmation of satisfactory installation.

Clean the Site & Depart

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- Remove all packaging, offcuts, drilling debris, and waste from the customer's property.
- Wipe down the indoor unit (front panel and grille) and the surrounding area.
- Remove shoe covers at the door — one foot at a time stepping out.
- Leave a service card with the customer for future reference.

SECTION 6 — RECOMMENDED ACCESSORY & CONSUMABLE SCHEDULE

Accessories listed below are Haier-approved items. Always verify the correct size against the specific unit model being installed. Prices are dealer purchase reference prices (ex VAT) and subject to change.

6.1 Wall-Mounted & Floor-Standing Air Conditioner Accessories

#	Item	Specification	Applicable Models	Unit
1	Standard Mount Bracket	1P–1.5P (Standard)	Wall-mounted & Floor-standing	Set
		2P–3P (Heavy Duty)		Set
2	ELCB Safety Switch	32A (dedicated circuit)	Wall-mounted & Floor-standing	Each
3	Split AC Copper Pipe	Φ6mm (¼" liquid line)	Wall-mounted & Floor-standing	Per m
		Φ9mm (⅜" suction line)		Per m
		Φ12mm (½" suction line)		Per m
		Φ15mm (⅝" suction line)		Per m
4	Decorative Pipe Trunking	75mm × 60mm (various lengths)	Universal	Pc
5	Refrigerant — R-410A	9 kg / 11.3 kg / 22.7 kg cylinder	As applicable	Cylinder
6	Refrigerant — R-32	Confirm cylinder size with supplier	As applicable	Cylinder

⚠ REFRIGERANT NOTE: R-22 is prohibited for new installations in South Africa under Montreal Protocol obligations. Only R-410A or R-32 (as specified per unit model) may be used. Refrigerant handling must be carried out by a certified technician. All recovered refrigerant must be handled per applicable environmental regulations.

SECTION 7 — INSTALLER QUICK-REFERENCE CHECKLIST

Complete this checklist for every installation. Retain a copy with the job card.

PRE-INSTALLATION	INSTALLATION & COMMISSIONING
☐ Qualification/ID available on site	☐ Mounting plate level and secure
☐ Appointment confirmed with customer	☐ Wall hole angled ≥ 50 mm higher inside
☐ All tools and consumables loaded	☐ Flares inspected before connection
☐ Unit unboxed and accessories verified	☐ Drain tested — free flow confirmed
☐ Carton/unit inspected for damage	☐ Pressure test at 40 bar — passed
☐ Supply tested: 220–240V, 50Hz	☐ Vacuum to ≤ -0.1 MPa for 15 min
☐ Earth and polarity verified	☐ Service valves open — caps fitted
☐ Installation location agreed	☐ Leak detection — all joints clear
☐ Customer cost estimate accepted	☐ $\Delta T \geq 10^{\circ}\text{C}$ in cooling mode confirmed
HANDOVER	
☐ Unit function demonstrated to customer	
☐ Filter cleaning and maintenance explained	
☐ Warranty card completed and issued	
☐ CoC issued (where new circuit installed)	
☐ Job card signed by customer	
☐ Site cleaned — all waste removed	

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