

Mini-Split Line Sets — Pre-Insulated Pipe Pairs, PVC Line-Set Ducting and Wall Penetrations Done Properly

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Installing air-conditioning and heat-pump line sets that last: choosing pre-insulated copper pipe pairs (1/4+3/8 to 3/8+5/8), dressing them in 70×55 and 90×65 line-set duct with the matching bends, joints and wall terminals from the catalogue, and sealing penetrations.

The pipe: pre-insulated pairs

Split-system line sets are fastest from pre-insulated pipe pairs — two soft copper tubes, each in UV-stabilised closed-cell insulation, supplied as 20 m coils. The catalogue carries the standard pairs in black and white: 1/4" + 3/8" (small wall units), 1/4" + 1/2" and 1/4" + 5/8" (larger highwalls, small ducted), 3/8" + 5/8" (bigger heat pumps; white versions under the same sizes). Match sizes to the unit maker's table for the model and the actual run length — long runs step the gas line up one size per the OEM chart, and that decision is the OEM's, not the installer's.

Uncoil along the ground, never spiral off the coil's side (kinks); bend to generous radii by hand or spring (3/8" bending spring); keep ends taped until the minute of flaring. Flare quality decides the installation: square cut, deburr, correct projection, a drop of oil on the cone, torque per the unit manual.

The dressing: line-set duct

Externally routed line sets get mechanical and UV protection plus a finished look from PVC line-set duct. The catalogue's two sizes cover the pairs above with room for cable and condensate hose: 70 × 55 mm (2 m full-cover lengths) and 90 × 65 mm (white, with protective film). The fitting family makes the difference between tidy and taped: joint covers (70×55, 90×65), flat 90° bends (90×65), internal corner bends (70×55, 10-box), flexible transitions (70×55, 90×65), wall rosettes (70×55, 90×65), wall terminals (70×55, 90×65), end pieces (70×55) and the yellow pipe clips that hold the pair inside the duct (70×55, 90×65).

Penetrations and condensate

Drill the wall sleeve sloping outward so the sleeve drains; fit the rosette/terminal over the entry. Seal around pipes inside the sleeve with flexible sealant (Tec7 white or Sikasil-C) — never rigid foam against the insulation jacket. Condensate hose runs with continuous fall; inside duct it goes in the lower compartment so a future leak drips at the terminal, visible, instead of inside the wall. Drain fittings — rigid tees, couplings and stepped hose adapters (16 mm yellow...25 mm green) — are stocked alongside.

Finishing checklist

Insulation continuous into both units; no bare copper at the service valves.

Duct clipped at manufacturer centres, expansion gap at long sun-exposed runs, film peeled only at handover.

Cable (and any PFXP interconnect) separated from hot gas line within the duct.

Pressure test and vacuum per the unit manual before the duct lids go on — lids last.

Photograph the open duct for the handover file; it is the only moment the routing is inspectable.

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