



**QUIETSIDE MINI SPLIT
AIR CONDITIONERS**

13 SEER

**INSTALLATION &
OPERATION
MANUAL**



Installation and Maintenance Manual

Report all Shipping Damage to Carrier IMMEDIATELY, Check units and box exterior for damage

Note to Installer

This manual is to aid the qualified HVAC contractor in the Installation and Maintenance of this Quietside R410a Ductless Mini Split

Please read and understand these instructions prior to installing the unit, failure to comply with these instructions may result in improper installation, operation and maintenance, possibly resulting in fire, electrical shock, property damage, personal injury or death

Installers please retain this manual for future reference, please pass warranty registration to end user
If Technical Assistance is required during installation or start up, please visit our website at

www.quietside.com

or call 1-562-699-6066 or 717 243 2535 to speak to a Technical Service Assistant

When calling please have the Model numbers and Serial numbers available

Safety Instructions



Read all the Instructions, Install and apply the system per those instructions

Use the unit only in the manner described in this manual

- 1 Check Rating Plate for correct system voltage before installing the unit
Installing and operating a unit with the incorrect voltage may result in malfunction or other issues and **will void the warranty**
- 2 Units must be connected to a correctly grounded Electrical Supply
- 3 Do not use the units if they have been dropped or otherwise damaged or installed incorrectly

The manufacturer of the unit will not be liable for any damages caused by failure to comply with the installation and operating instructions in this manual

The unit Rating Plate contains pertinent information to the unit operation, please refer to it as required



This symbol is an indication of Important Safety Information



Completely read all Instructions prior to assembling, installing, operating, or working on these units

Inspect all parts for damage prior to installation and start up

Units must be installed by a Qualified HVAC Contractor



Installation and Maintenance Manual

Installer Supplied Items

- Refrigerant Line Set : Flare Connection only, suitable for R410A with both lines insulated, max length 45ft
- Main System Breaker : Sized per unit requirements, to be mounted adjacent to Outdoor unit
- High Voltage Interconnect Wiring : 14 AWG wiring from Outdoor unit to Indoor unit for Power and Control
- Mounting Hardware : Wall Anchors, Condenser Pad etc
- Refrigerant : R410A required for additional line set charge
- Condensate Piping : Per local codes to remove condensate from the indoor unit

Items for Consideration

Application

Check the application of the unit prior to installation, certain applications require additional components or installation parameters

Computer or Data Server Rooms,

These require ballpark sizing of approximately 12,000 Btu/h Capacity per 250 SqFt of room size
The units will be running 24/7, so a Low Ambient Head Pressure Controller (See accessories), a Crankcase Heater and possibly a Wind Baffle (Field Supplied for cooling below 32 DegF) **must** be installed

Offices and Commercial Spaces, Churches etc

These require ballpark sizing of approximately 12,000 Btu/h Capacity per 400 SqFt of room size
The units could have the possibility of providing cooling with ambient's below 65 DegF, so a Low Ambient Head Pressure Controller (See accessories) is required as is a Crankcase Heater (field supplied)

Residential, Bedrooms, Family Rooms etc

These require ballpark sizing of approximately 12,000 Btu/h Capacity per 600 SqFt of room size
Low Ambient is typically not needed, unless a home office application is required.
Heat Pumps are a great application, however the units do not feature any back up resistance heat, so we do not recommend their use as a primary source of heat in areas where the winter temperatures fall below 25 DegF.

Installation

Determine the best location for mounting the Indoor unit, it must be located a minimum of 4 ft from the floor
Pay attention to the air circulation in the room, 9 & 12k units throw air 15ft, 18 & 24k units throw air 25ft, ensure no obstacles to airflow exist

Locate the Indoor and Outdoor units as close together as possible, maximum line set run and lift CANNOT BE EXCEEDED, then determine how the Interconnect piping, wiring and condensate hose is to be run

Unit	Max Line Set Run	Max Vertical Lift	Line Sizes
QSCE-09/12	50 Feet	20 Feet	1/4" & 1/2"
QSCE-18/24	50 Feet	20 Feet	3/8" & 5/8"
QSHE-09/12	50 Feet	20 Feet	1/4" & 1/2"
QSHE-18/24	50 Feet	20 Feet	3/8" & 5/8"

Ensure that all panels can be removed for service as required

Certification

All Quietside Ductless Mini Splits are certified by UL under UL standard 1995 in both Canada and the US
Performance is certified by our certification under the ARI 210/240 Program



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Controls and Components

Units are supplied with a wireless remote controller, which communicates with the unit Microprocessor controller
The return air temperature sensor mounted on the unit then controls the unit operation
Several modes of operation are available to the end user depending on the type of comfort required
All unit operating functions are controlled via the remote controller
Unit operating modes are :

Optional Controls and Components

Low Ambient Controller : ICM 326H must be used in Data Room or Commercial applications

For a wiring diagram please contact Quietside or follow general diagram supplied with ICM Controller
Probe must be located in the fin pack or on a return bend that measures approx 100 DegF during normal operation

Condensate Pump : Field Installed Mini Pump, Quietside recommend the Aspen brand of Condensate Pump, follow their wiring diagram recommendations. This pump is installed externally to the unit

Unit Installation



Follow Instructions, failure to follow instructions may cause possible malfunction and void any warranty

Step 1

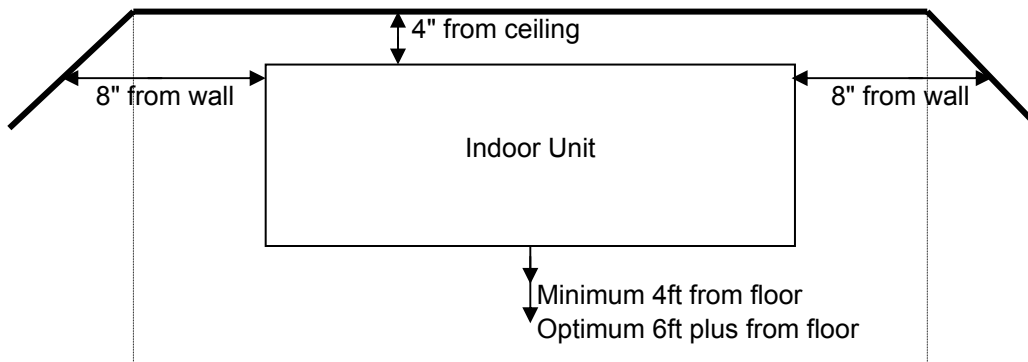
Remove Indoor and Outdoor units from the carton/box

Indoor unit carton contains Remote Control and Batteries, ensure these are kept in a safe place during installation

Step 2

Locate area to Install Indoor unit

Indoor unit must be located a minimum of 4ft from the floor and 6" from the ceiling
Choose an area where the wall is plumb and determine how to best to run the unit interconnects



Ensure no obstacles to Airflow are directly in front of the unit, for a minimum of 12ft for 9/12,000 Btu/h units and 16ft for 18/24,000 Btu/h units

Do not install the Indoor unit units in areas exposed to high humidity (RH of 80% plus), direct sunlight and direct heat from stoves or other devices



Installation and Maintenance Manual

Unit Installation (Cont)

Step 3

Drill Hole for Line Set etc

Remove mounting bracket from the rear of the Indoor unit, use a Phillips head screwdriver to remove the unit pipe strap, and if unit is a heat pump the defrost sensor also must be undone from its retainer. If mounting the unit on an outside wall measure from the edges of the unit to the center of the line set stub 90° bend to locate the center of the wall penetration. Drill a \varnothing 3" hole through the wall Angle the wall penetration slightly down towards the outside to assist in draining the condensate away from the unit

If mounting the unit on an inside wall, use the knockouts provided on the LHS and RHS of the unit to route the piping and wiring connections through



Step 4

Install Mounting Bracket

Locate and secure the mounting bracket to the wall, the Indoor unit weighs a maximum of 20Lbs, use wall anchors and mount to a wall stud to ensure that the wall is capable of holding the weight of the unit Use a level to ensure mounting bracket is leveled, so condensate can drain properly



Step 5

Prepare Unit Line Set Connections

Rotate refrigerant line stubs set gently through 90° (if mounting on an outside wall), for other line set configurations align the stubs as required

Tip : Use Duct tape to tape the Condensate hose (make sure it is below the Line set stubs) and the Defrost Sensor (Heat Pump Only), this makes it easier to guide them through the hole drilled in the wall

Also if possible feed the 14 AWG Interconnect wiring between Indoor and Outdoor (Maximum # of wires required is 6) through the unit electrical connection (if required by local codes an electrical connector can be attached to the rear of the unit). Tape the loose wire to the line set stubs.

These two tips save time and prevent damage to the stubs when mounting the Indoor unit



Note :

Condensate hose is taped below line set stubs

Wrap Duct tape to the end of the condensate hose for easier installation





Installation and Maintenance Manual

Unit Installation (Cont)

Step 6

Install unit on Mounting Bracket

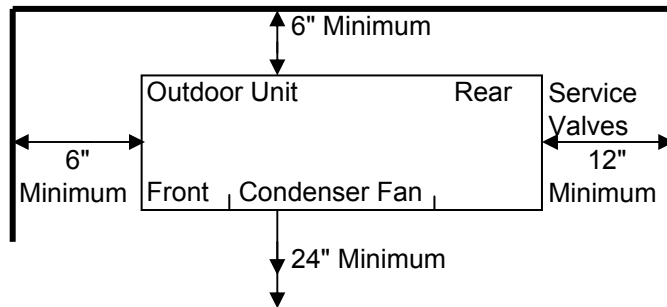
Feed the line set stubs/condensate hose/wiring connections through the \varnothing 3" hole, then locate the unit key slots onto the tabs on top of the mounting bracket. Bottom of the unit then latches onto the mounting bracket. Indoor unit is now installed, it should be plumb, level and flush with the wall. If it is not check that the line set stubs are completely through the wall penetration, and also that the wall is plumb



Step 7

Locate Outdoor unit

Clearances for the Outdoor unit are :



Install the Outdoor unit on a Condenser Pad or if a Heat Pump use feet to raise unit up approx 6" to allow for defrost to drain away

Do not install the Outdoor unit in a location exposed to high winds (field fabricated and installed wind baffle may be required).

Ensure location does not impede access around unit and pose a disturbance to neighboring areas

Step 8

Refrigerant Line Set Piping

Interconnecting line set between the Outdoor unit and the Indoor unit, must have both refrigerant lines insulated as condensing device is located in the Outdoor unit

Gently bend the line set stubs from the Indoor unit to the desired location

Using 2 x 10"/12" Crescent wrenches remove the flare nuts from the Indoor unit line stubs. Unit is filled with a dry gas, check for release of this to ensure that no leaks are present

Use a small amount of vacuum pump oil on the male flare threads to ease installation. Connect the line set to the stubs. Using the 2 wrenches, 1 on the male & 1 on the female tighten the flare nuts

DO NOT INSTALL A LIQUID LINE SIGHT GLASS OR FILTER DRIER IN THE SYSTEM

Run the line set to the Outdoor unit, avoid tight bends and kinking the lines. Quietside does not recommend brazing line sets together or to the unit connections

If line set length is in excess of that required, cut line set and re-flare or coil excess vertically to facilitate oil return to the compressor



Line Set Connections under the GRAY caps

Installing the Line Set on the Indoor unit stubs





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Unit Installation (Cont)

Step 11

Controls Wiring



Electrical Wiring should be done in accordance with all National Electrical Code (NEC) and local state/city building codes

ALL CONTROLS WIRING BETWEEN INDOOR AND OUTDOOR UNIT IS HIGH VOLTAGE MINIMUM 14 AWG WIRE MUST BE USED

Remove terminal covers from Indoor unit and wire to the terminals, small electrical screwdriver required
Control wiring from the Outdoor Unit must be a point to point i.e. the terminal that the wire is attached to on the Outdoor unit must be the same terminal it is wired to in on the Indoor unit

This is extremely important : Switching the L3 - L4 or N1 - L1 wires over will allow the Indoor unit to operate but it will not provide controls signals for the Outdoor unit so that the compressor will not operate
Ground connection should be made to ground screw marked in Indoor unit

If unit is a Heat Pump Defrost Sensor must be connected from the Indoor unit to the Defrost Sensor in the Outdoor unit. Standard lead length is 25ft, if a longer length is required then cut the lead and extend using thermostat wire



Control Wiring at Outdoor unit (Heat Pump unit shown)
Note use of colored wire (supplied with Line Set) and defrost sensor connected (Heat Pump only)

Ground wires connected to the terminal plate
Indoor and Outdoor units must be grounded

Step 12

Condensate Hose

Unit is provided with approximately 18" of Condensate Hose
Hose connection is sized to accept a 3/4" OD or 5/8" ID Clear Plastic Hose to then extend to building drain
All condensate hose extensions should be in accordance with local building codes
Remember water only flows downhill to ensure positive draining from the unit
Check using water for a positive flow of Condensate



The basic system installation is now complete

The unit is now ready for start up -

Use this time to ensure that worksite is tidy. Quietside recommend the use of Slimduct products to hide the refrigerant line set interconnects - available from your Quietside distributor



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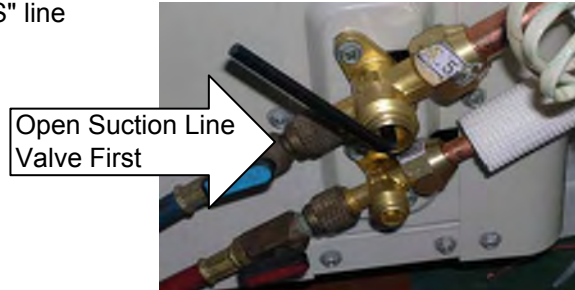
Unit Start Up

With the refrigerant system completely evacuated the system can now be opened to allow the refrigerant charge in the Outdoor unit to be released into the line set

The Service Valves require a 6mm and a 5mm Allen wrench respectively to undo the valve stems
Remove the BRASS caps from the Service Valves

Open the SUCTION line Valve first to prevent any possible oil logging of the Capillary tube

This can occur if the liquid line valve is opened first with the rest of the system in a deep vacuum
Then open the "LIQUID or EXPANDED GAS" line



Unscrew both valve stems until they come to a stop against the valve body, replace the Brass Caps and then tighten the caps to prevent leaks

Energize the breaker to allow system to be powered

Start Indoor unit, Cooling mode is only allowed when the Outside Ambient Temperature is above 65 DegF to prevent damage to the compressor

Unit has a 3 minute time delay for the compressor start up operation

Unit is charged with enough R410A refrigerant for a line set of 25ft length

For longer line set lengths additional charge must be WEIGHED in per the following table

Unit	Added Charge required for a line set of			
	30ft	35ft	40ft	45ft
QCIC-09 & 12	1.5oz	3.0oz	4.5oz	6.0oz
QCIC-18 & 24	2.5oz	5.0oz	7.5oz	10.0oz
QCIH-09 & 12	1.5oz	3.0oz	4.5oz	6.0oz
QCIH-18 & 24	2.5oz	5.0oz	7.5oz	10.0oz

Standard Operation of the unit - Cooling

Indoor Temperature Split 30 DegF
Suction Pressure 115 Psig, approx 37 DegF
Suction Line Temperature 45 DegF
Schraeder connection on the "Liquid" line DOES NOT READ HEAD PRESSURE - it is an expanded gas pressure

Standard Operation of the unit - Heat Pump

Indoor Temperature Split 30 DegF
High Side Pressure 400 Psig, approx 117 DegF
(Measured at Liquid Line Schraeder)
Discharge (Liquid) Line Temperature 130 DegF





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Wiring Diagrams