



**BUILDING & SAFETY
MECHANICAL SECTION
RESIDENTIAL A2L REFRIGERANT
PLAN CHECK DETERMINATION CHECKLIST**

PROJECT INFORMATION

Complete all fields below.

Project Address: _____

Permit No.: _____

Contractor/Applicant: _____

HVAC Manufacturer Name and Model: _____

Refrigerant Type Proposed: _____

Refrigerant Quantity (lbs) (FACTORY CHARGE + ADDITIONAL CHARGE): _____

PLAN CHECK DETERMINATION

Mechanical Section plan check is required for new or replacement HVAC systems utilizing an A2L refrigerant unless the system meets one of Exceptions 1 through 3 below.

Select the option below that applies to the project.

- ☐ Exception 1: The total refrigerant charge is less than or equal to the quantities listed in Table 1.
- ☐ Exception 2: The system is a ducted package unit serving an individual residence and is provided with a leak detection system installed per the manufacturer's installation instructions.
- ☐ Exception 3: The total refrigerant charge exceeds the quantity listed in Table 1, the outdoor unit serves only one indoor unit, the system is provided with a leak detection system installed per the manufacturer's installation instructions, and refrigerant piping penetrates no more than one floor/ceiling assembly.
- ☐ All other systems. None of the above exceptions apply – Mechanical Section plan check is required.

Table 1	
per ASHRAE 15.2 Table 9-1	
Refrigerant	Quantity (lbs)
R-32	4.0
R-452B	4.2
R-454A	3.7
R-454B	4.0
R-454C	4.0
R-457A	2.9
R-1234yf	3.8

APPLICANT CERTIFICATION

I certify that the information provided in this checklist is true and correct. I understand that inaccurate or incomplete information may result in additional plan review requirements or permit corrections.

Applicant Name: _____

Signature: _____

Date: _____



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REQUIRED DOCUMENTATION FOR PLAN CHECK

Mechanical Section plan check is NOT required

Upload the following documentation to the permit application:

- Provide completed form with permit application.
- Manufacturer's product specifications identifying:
 - The refrigerant type
 - Charge quantity
 - Leak detection system

Mechanical Section plan check IS required

Create a complex mechanical permit application and upload complete mechanical plans.

- Provide completed form with permit application.

The following should be provided on the mechanical plans for review:

- Manufacturer's equipment schedule
- Refrigerant type
- Charge quantity
- Refrigerant piping plans for split systems
- Calculations for the smallest space served by each fan coil or packaged system using equation $m_{max} = C \times M$ per ASHRAE 15.2:9.5.

37MGHA

Multi-Zone Heat Pump Outdoor Unit Ductless System
Sizes 18K to 55K



Product Data



Fig. 1 – Single Fan (Sizes 18K – 36K)



Fig. 2 – Dual Fan (Sizes 48K – 55K)

NOTE: Images are for illustration purposes only. Actual models may differ slightly.

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Outdoor model			SIZE 18K	SIZE 24K	SIZE 30K	SIZE 36K	SIZE 48K	SIZE 55K	
Piping and Refrigerant Information	Refrigerant Type	Type	R454B	R454B	R454B	R454B	R454B	R454B	
	Charge Amount	lb. (kg)	4.89(2.22)	7.54(3.42)	8.38(3.8)	8.38(3.8)	9.48(4.3)	9.48(4.3)	
	Liquid Pipe (size - connection type)	In (mm)	3x1/4in(3x6.35mm)	4x1/4in(4x6.35mm)	5x1/4in(5x6.35mm)	5x1/4in(5x6.35mm)	6x1/4in(5x6.35mm)	6x1/4in(5x6.35mm)	
	Suction Pipe (size - connection type)	In (mm)	3x3/8in(3x9.52mm)	3x3/8in+1x1/2in(3x9.52mm+1x12.7mm)	3x3/8in+2x1/2in(3x9.52mm+2x12.7mm)	3x3/8in+2x1/2in(3x9.52mm+2x12.7mm)	4x3/8in+2x1/2in(4x9.52mm+2x12.7mm)	4x3/8in+2x1/2in(4x9.52mm+2x12.7mm)	
	Min. Piping Length per each indoor unit	ft. (m)	10 (3)						
	Standard Piping Length per each indoor unit	ft. (m)	24.6 (7.5)	24.6 (7.5)	24.6 (7.5)	24.6 (7.5)	24.6 (7.5)	24.6 (7.5)	
	Max. outdoor-indoor height difference (OU higher than IU)	ft. (m)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	
	Max. outdoor-indoor height difference (IU higher than OU)	ft. (m)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	49.21(15)	
	Max. Piping Length with no additional refrigerant charge per System (Standard Piping length x No. of Zones)	ft. (m)	73.8 (22.5)	98.4(30)	123(37.5)	123(37.5)	147.6(45)	147.6(45)	
	Additional refrigerant charge (between Standard – Max piping length)	Oz/ft (g/m)	0.16(15)	0.16(15)	0.16(15)	0.16(15)	0.16(15)	0.16(15)	
	Max. Length per each indoor unit	ft. (m)	98.4(30)	114.8(35)	114.8(35)	114.8(35)	114.8(35)	114.8(35)	
	Total Maximum Piping Length per system	ft. (m)	196.9(60)	262.5(80)	262.5(80)	262.5(80)	328(100)	328(100)	
Number of IDU		ft. (m)	3	4	5	5	6	6	
AIRFLOW SPECIFICATIONS		Outdoor (CFM)	CFM	2130.7	2148.3	3037.1	3037.1	4502.6	4502.6
SOUND DATA		Outdoor Sound Pressure Level	dB(A)	61.5	61	65	65	65	65
ENVIRONMENTAL SPECIFICATIONS	Cooling Operating Range	Indoor Min - Max DB	°F	60~90	60~90	60~90	60~90	60~90	60~90
			(°C)	(16-32)	(16-32)	(16-32)	(16-32)	(16-32)	(16-32)
		Indoor Min - Max WB	°F	59-84	59-84	59-84	59-84	59-84	59-84
			(°C)	(15-29)	(15-29)	(15-29)	(15-29)	(15-29)	(15-29)
		Outdoor Min - Max DB	°F	-22~122	-22~122	-22~122	-22~122	-22~122	-22~122
			(°C)	(-30~50)	(-30~50)	(-30~50)	(-30~50)	(-30~50)	(-30~50)
	Heating Operating Range	Indoor Min - Max DB	°F	32~86	32~86	32~86	32~86	32~86	32~86
			(°C)	(0-30)	(0-30)	(0-30)	(0-30)	(0-30)	(0-30)
		Outdoor Min - Max DB	°F	-22~75	-22~75	-22~75	-22~75	-22~75	-22~75
			(°C)	(-30~24)	(-30~24)	(-30~24)	(-30~24)	(-30~24)	(-30~24)
	Non-operating environment Storage	Temperature range (DB)	°F	-49~140	-49~140	-49~140	-49~140	-49~140	-49~140
			(°C)	(-45-60)	(-45-60)	(-45-60)	(-45-60)	(-45-60)	(-45-60)
	Operation Humidity		%	0-80%	0-80%	0-80%	0-80%	0-80%	0-80%
	Ambient Humidity		%	0-80%	0-80%	0-80%	0-80%	0-80%	0-80%

615AHAQ

High Wall Ductless System

Sizes 06 to 36



Product Data



Fig. 1 – Sizes 06K - 36K

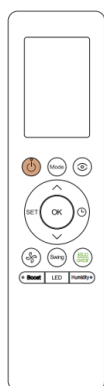


Fig. 2 – Remote Control

NOTE: Images are for illustration purposes only. Actual models may differ slightly.

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INDUSTRY LEADING FEATURES / BENEFITS

A PERFECT BALANCE BETWEEN BUDGET LIMITS, ENERGY SAVINGS AND COMFORT.

The **615AHAQ** series ductless systems are a matched combination of an outdoor condensing unit and an indoor fan coil unit connected only by refrigerant tubing and wires.

The fan coil is mounted on the wall, near the ceiling. This selection of fan coils permits creative solutions to design problems such as:

- Add-ons to current space (an office or family room addition)
- Special space requirements
- When changes in the load cannot be handled by the existing system
- When adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork

Historical renovations or any application where preserving the look of the original structure is essential.

The ideal compliment to your ducted system when it is impractical or prohibitively expensive to use ductwork. These compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors.

Advanced system components incorporate innovative technology to provide reliable cooling performance at low sound levels.

LOW SOUND LEVELS

When noise is a concern, the ductless systems are the answer. The indoor units are whisper quiet. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through ductwork.

SECURE OPERATION

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork. In addition, since the outdoor units can be installed close to an outside wall, coils are protected from vandals and severe weather.

FAST INSTALLATION

This compact ductless system is simple to install. A mounting bracket is standard with the indoor units and only wire and piping need to be run between the indoor and outdoor units. These units are fast and easy to install ensuring minimal disruption to customers in the home or workplace. This makes the **615AHAQ** ductless systems the equipment of choice, especially in retrofit situations.

GUIDE SPECIFICATIONS

INDOOR WALL-MOUNTED DUCTLESS UNITS

Size Range: 1/2 to 3 Ton Nominal Cooling and Heating Capacity

Model Number: **615AHAQ**

Part 1 - GENERAL

1.01 System Description

Indoor, wall-mounted, direct-expansion fan coils are matched with the heat pump outdoor unit.

1.02 Agency Listings

Unit are rated per AHRI Standards 210/240 and listed in the AHRI directory as a matched system.

1.03 Delivery, Storage, And Handling

Store and handle the unit per the unit manufacturer's recommendations.

1.04 Warranty (For Inclusion By Specifying Engineer)

Part 2 - PRODUCTS

2.01 Equipment

A. General: Indoor, direct-expansion, wall-mounted fan coil

Unit is complete with a cooling/heating coil, fan, fan motor, piping connectors, electrical controls, microprocessor control system, and integral temperature sensing. Unit is furnished with an integral wall mounting bracket and mounting hardware.

B. Unit Cabinet:

Cabinet discharge and inlet grilles are attractively styled, high-impact polystyrene. Cabinet is fully insulated for improved thermal and acoustic performance.

C. Fans:

1. Fan is the tangential direct-drive blower type with air intake at the top of the unit and discharge at the bottom front. An automatic, motor-driven vertical air sweep is provided as standard equipment.
2. The air sweep operation is user selectable. The vertical sweep may be adjusted (using the remote control). The horizontal air direction may be set manually.

D. Coil:

The coil is a copper tube with aluminum fins and galvanized steel tube sheets. The fins are bonded to the tubes by mechanical expansion and anti-corrosive fin coating. A drip pan under the coil has a drain connection for the hose attachment to remove condensate. The condensate pan has an internal trap.

E. Motors:

Motors are open drip-proof, with a permanently lubricated ball bearing. The fan motors is 4-speed.

F. Controls:

Controls consist of a microprocessor-based control system which controls space temperature, determine optimum fan speed, and run self diagnostics. The temperature control range is from 62°F to 86°F (17°C to 30°C) in increments of 1°F or 1°C, and have 46°F Heating Mode (Heating Setback). The wireless remote controller has the ability to act as the temperature sensing location for room comfort.

The unit has the following functions as a minimum:

1. An automatic restart after a power failure at the same operating conditions as at the failure.
2. A timer function to provide a minimum 24-hour timer cycle for system Auto Start/Stop.
3. Temperature-sensing controls sense return air temperature.
4. Indoor coil freeze protection.
5. Wireless infrared remote control to enter set points and operating conditions.
6. Automatic air sweep control to provide on or off activation of air sweep louvers.
7. Dehumidification mode provides increased latent removal capability by modulating the system operation and the set point temperature.
8. Fan-only operation to provide room air circulation when no cooling is required.
9. Diagnostics provide continuous checks of unit operation and warn of possible malfunctions. Error messages appear on the unit.
10. Fan speed control is user-selectable: turbo, high, medium, low, or microprocessor controlled automatic operation during all operating modes.
11. Automatic heating-to-cooling changeover in the heat pump mode. Control includes deadband to prevent rapid mode cycling between heating and cooling.
12. Indoor coil high temperature protection detects excessive indoor discharge temperature when the unit is in the heat pump mode.

G. Filters:

Unit have a filter track with factory-supplied cleanable filters.

H. Electrical Requirements:

Indoor fan motor to operate on 115V on model size 12 and on 208-230V on model sizes 06-36, as specified. Power is supplied by the outdoor unit.

I. Operating Characteristics:

The **615AHAQ** system has a minimum SEER2 (Seasonal Energy Efficiency Ratio) and HSPF at AHRI conditions, as listed on the specifications table.

J. Refrigerant Lines:

All units have refrigerant lines that can be oriented to connect from the left, right or back of unit. Both refrigerant lines need to be insulated.

K. Special Features (Field Installed):

Condensate Pump:

The condensate pump removes condensate from the drain pan when gravity drainage cannot be used. The pump is designed for quiet operation. The pump consists of two parts: an internal reservoir/sensor assembly, and a remote sound-shielded pump assembly. A liquid level sensor in the reservoir stops the cooling operation if the liquid level in the reservoir is unacceptable.

L. Leak Mitigation

The unit is equipped with a refrigerant leak detection sensor.