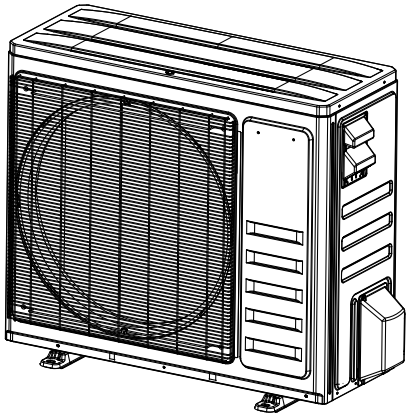
Installer’s Guide

Side Discharge Heat Pump

A5HL5024A1000A
A5HL5036A1000A
A5HL5048A1000A
A5HL5060A1000A



Notes:

- *Graphics in this document are for representation only. Actual model may differ in appearance.*
- *The manufacturer recommends installing only approved matched indoor and outdoor systems. All of the manufacture’s split systems are AHRI rated only with TXV/EEV indoor systems. Some of the benefits of installing approved matched indoor and outdoor split systems are maximum efficiency, optimum performance and the best overall system reliability.*

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

February 2026

DLR-SVN006B-EN

Introduction

Read this manual thoroughly before operating or servicing this unit.

This document is customer property and is to remain with this unit. Return to the service information pack upon completion of work.

The manufacturer recommends installing only approved matched indoor and outdoor systems. All of the manufacture's split systems are AHRI rated only with TXV/EEV indoor systems. Some of the benefits of installing approved matched indoor and outdoor split systems are maximum efficiency, optimum performance and the best overall system reliability.

Table 1. Operating Range

Mode	Model	Operating Range
Cooling	2 – 5 Ton	5 °F – 115°F
Heating	2 – 5 Ton	-4° F – 86°F

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION — Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE — Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

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⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/ sleeves, butyl gloves, safety glasses, hard hat/ bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠ WARNING

Cancer and Reproductive Harm!

This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury or property damage.

This unit is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Do not allow children to play or climb on the unit or to clean or maintain the unit without supervision.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury and/or property damage.

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

⚠ WARNING

Risk of Fire — Flammable Refrigerant!

Failure to follow instructions below could result in death or serious injury, and equipment damage.

- **To be repaired only by trained service personnel.**
- **Do not puncture refrigerant tubing.**
- **Dispose of properly in accordance with federal or local regulations.**

⚠ WARNING

Ventilation Required!

Failure to follow instructions below could result in death or serious injury or property damage.

Confirm the area is adequately ventilated before breaking into the system or conducting any hot work.

⚠ WARNING

Hazardous Voltage!

Failure to follow instructions below could result in death or serious injury.

Voltage may be present even with power disconnected due to high winds causing fan rotation. Refer to the Technical Manual for servicing instructions.

⚠ WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury and equipment or property damage.

- **Store the appliance in a room without continuously operating ignition sources(for example: open flames, an operating gas appliance, or an operating electric heater).**
- **Do not pierce or burn.**
- **Be cautious that refrigerants may be odorless.**

⚠ WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

⚠ WARNING

Grounding Required!

Failure to follow instructions below could result in death or serious injury, or property damage.

- **Reconnect all grounding devices.**
- **All parts of this product that are capable of conducting electrical current are grounded.**
- **If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.**

⚠ CAUTION

Unit Contains R–454B Refrigerant!

Failure to use proper service tools may result in equipment damage or personal injury.

Use only R-454B refrigerant and approved compressor oil.

⚠ CAUTION

Caution!

Failure to follow instructions below could result in minor to moderate injury or equipment damage.

- **For brazing, confirm all joints are brazed, not soldered.**
- **For mechanical connections, confirm a negative leak test.**
- **Inspect lines and use proper service tools.**

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Revision History

- Updated the Low Voltage wiring diagrams.
- Updated Refrigerant line and service valve connections table in the Refrigerant Line Considerations chapter.
- Updated Refrigeration Piping Limits section in Unit Location Considerations chapter.
- Updated Electrical - Low Voltage chapter.
- Updated Pressure Curves figures in the Pressure Curves chapter.

Table of Contents

Unit Location Considerations 6
- Suggested Locations for Best Reliability - Single Unit 7
- Suggested Locations for Best Reliability - Multiple Units 9
- Refrigeration Piping Limits 10
- Oil Traps 10
- Cold Climate Considerations 11
- Setting Up the Unit 11
  - Pad installation 11

Refrigerant Line Considerations 13
- Refrigerant Line Length 13
- Refrigerant Line Insulation 13
- Reuse Existing Refrigerant Lines 13
- Refrigerant Line Routing Precautions 14

Refrigerant Line Connections 16
- Flare the Refrigerant Line 16
- Braze the Refrigerant Line 18

Refrigerant Line Leak Check 19
- Check For Leaks 19

Evacuation and Servicing 20
- Evacuate the Refrigerant Lines and Indoor Coil 20
- Servicing 20

Service Valve 21
- Open the Gas Service Valve 21

Electrical – Low Voltage 22
- Mitigation Board Guidelines 25

Electrical - High Voltage 26
- High Voltage Power Supply 26
- High Voltage Disconnect Switch 26
- High Voltage Ground 26

Operation Mode Display 27
- Side Discharge Operation Mode Display 27
- Error Code Display 27

System Start-Up 29

System Charge Adjustment 30

Checkout Procedures 31

Unit Capacity Adjustment 32

Troubleshooting 33

Pressure Curves 35

Refrigerant Circuit (Only for Reference) 39

Symbols 40

Unit Location Considerations

Figure 1. Unit dimensions – models 024 and 036

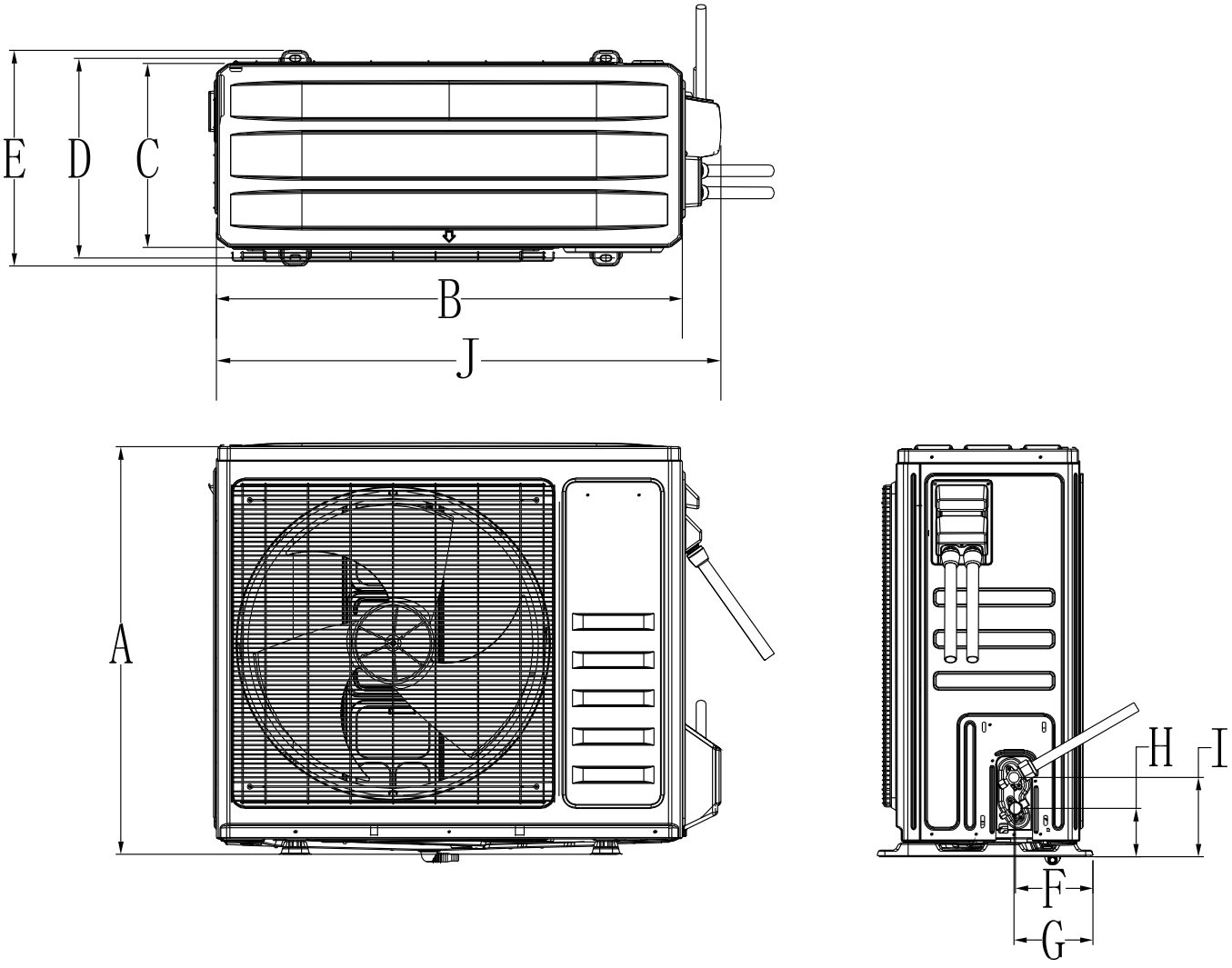


Table 2. Unit dimensions (inch) - models 024 and 036

Model	A	B	C	D	E	F	G	H	I	J
A5HL5024A1	31.35	35.83	14.13	15.36	16.59	5.97	6.07	3.71	6.09	38.54
A5HL5036A1	33.77	39.54	15.89	18.19	19.45	8.30	9.67	3.70	6.10	42.28

Figure 2. Unit dimensions – models 048 and 060

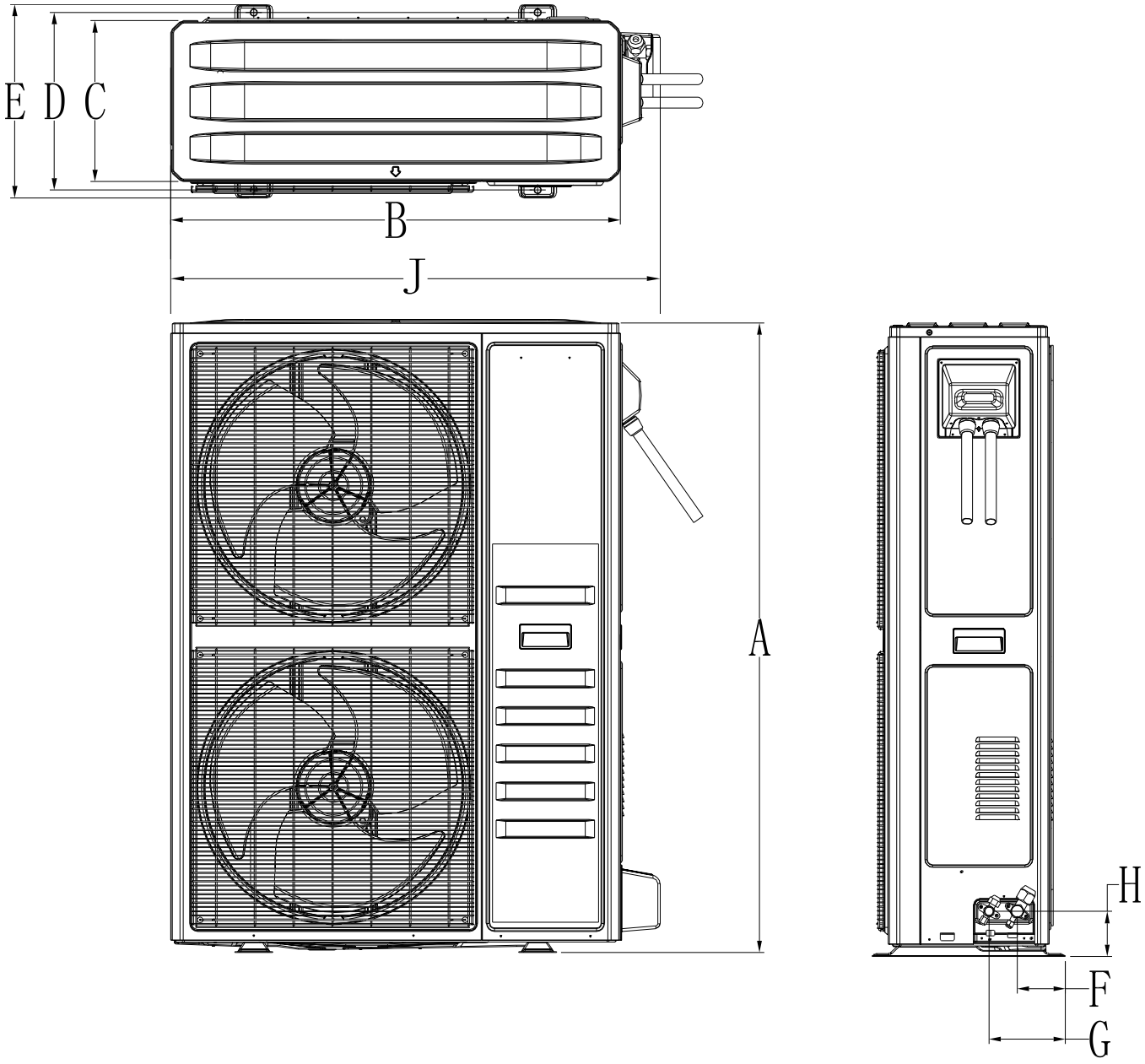


Table 3. Unit dimensions (inch) - models 048 and 060

Model	A	B	C	D	E	F	G	H	J
A5HL5048A1	52.40	37.40	13.39	14.76	16.10	4.00	6.37	3.75	40.71
A5HL5060A1									

Suggested Locations for Best Reliability - Single Unit

- Do not locate close to bedrooms as operational sounds may be objectionable.
- Avoid locations near windows and similar areas where condensation and freezing defrost vapor can annoy a customer.

Important:

- *When installing multiple units, ensure the discharge air from one unit is not drawn into another unit. When installing single or multiple units in an alcove, roof well, or partially enclosed area, ensure there is adequate ventilation to prevent recirculation of discharge air.*
- *If installation is in areas with known prevailing winds in excess of 25 mph, a wind baffle kit is suggested.*
- *Units shall not be stacked vertically.*

Figure 3. Single outdoor unit installation clearance requirement

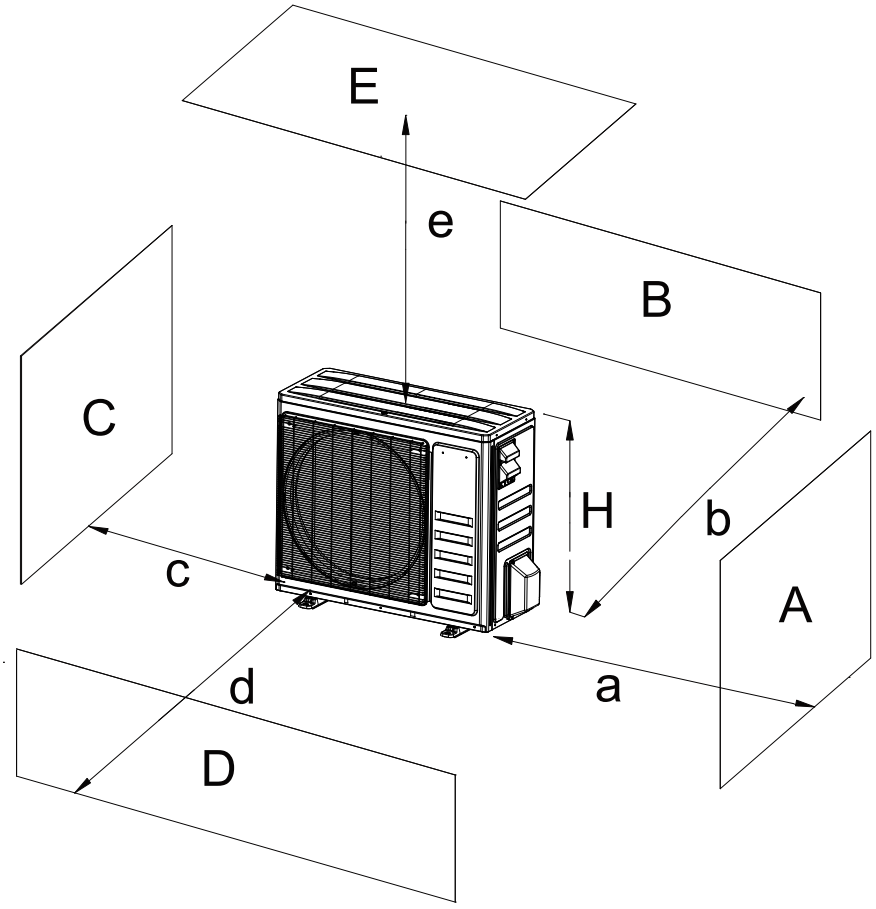


Table 4. Single outdoor unit installation clearance requirement

A-E	inches (in.)				
	a	b	c	d	e
B	—	>=3.94	—	—	—
A, B, C	>=11.81	>=3.94	>=3.94	—	—
B, E	—	>=3.94		—	>=20[a]
A, B, C, E	>=11.81	>=5.9	>=5.9	—	>=20[a]
D	—	—	—	>=39.37	—
D, E	—	—	—	>=39.37	>=20[a]
B, D	—	>=3.94	—	>=39.37	—

[a] Clearance needed for servicing.

Suggested Locations for Best Reliability - Multiple Units

- Do not locate close to bedrooms as operational sounds may be objectionable.
- Avoid locations near windows and similar areas where condensation and freezing defrost vapor can annoy a customer.

Important:

- *When installing multiple units, ensure the discharge air from one unit is not drawn into another unit. When installing single or multiple units in an alcove, roof well, or partially enclosed area, ensure there is adequate ventilation to prevent recirculation of discharge air.*
- *If installation is in areas with known prevailing winds in excess of 25 mph, a third-party wind baffle kit is suggested.*
- *Units shall not be stacked vertically.*

Figure 4. Multiple outdoor units installation clearance requirement

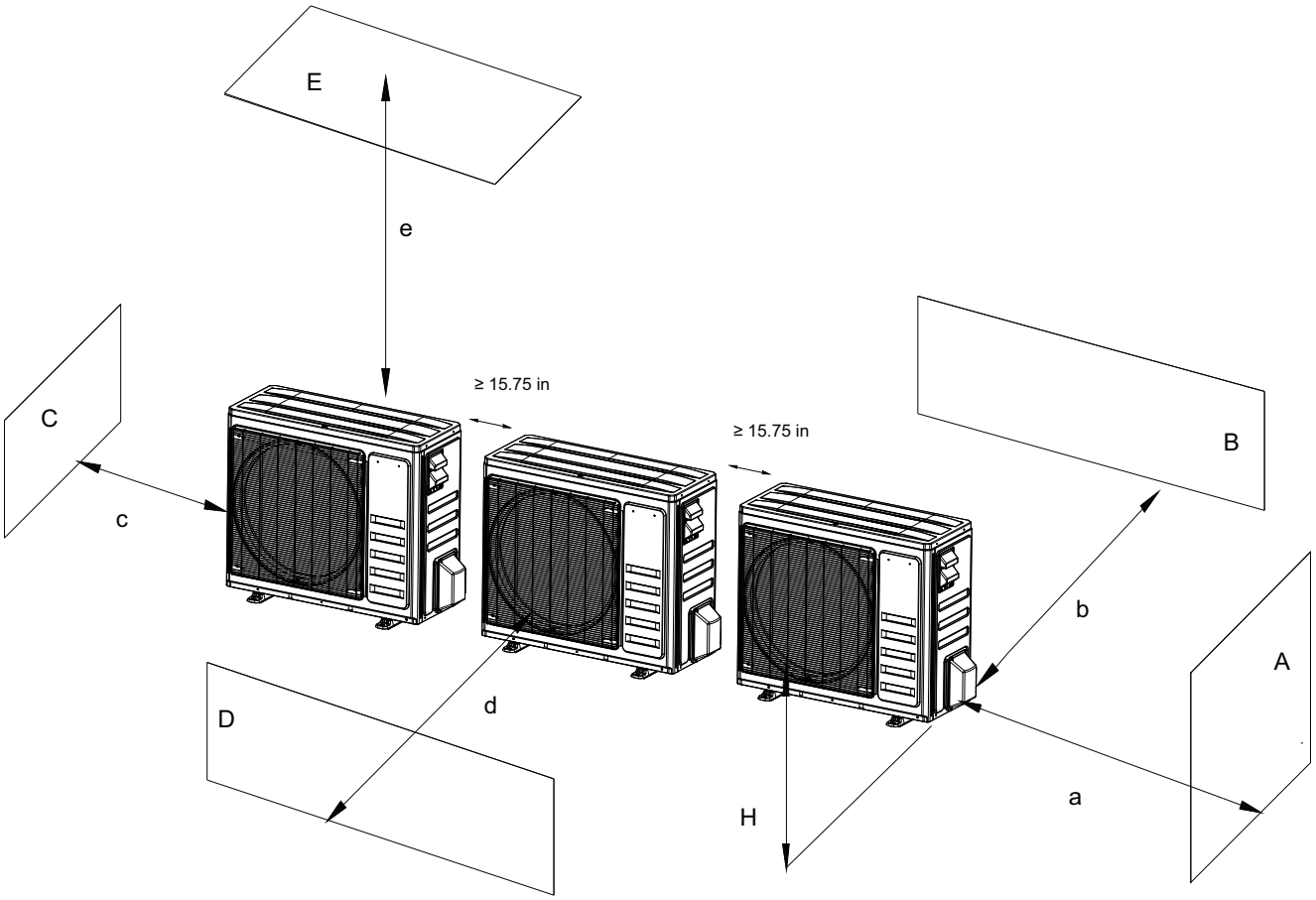


Table 5. Multiple outdoor units installation clearance requirement

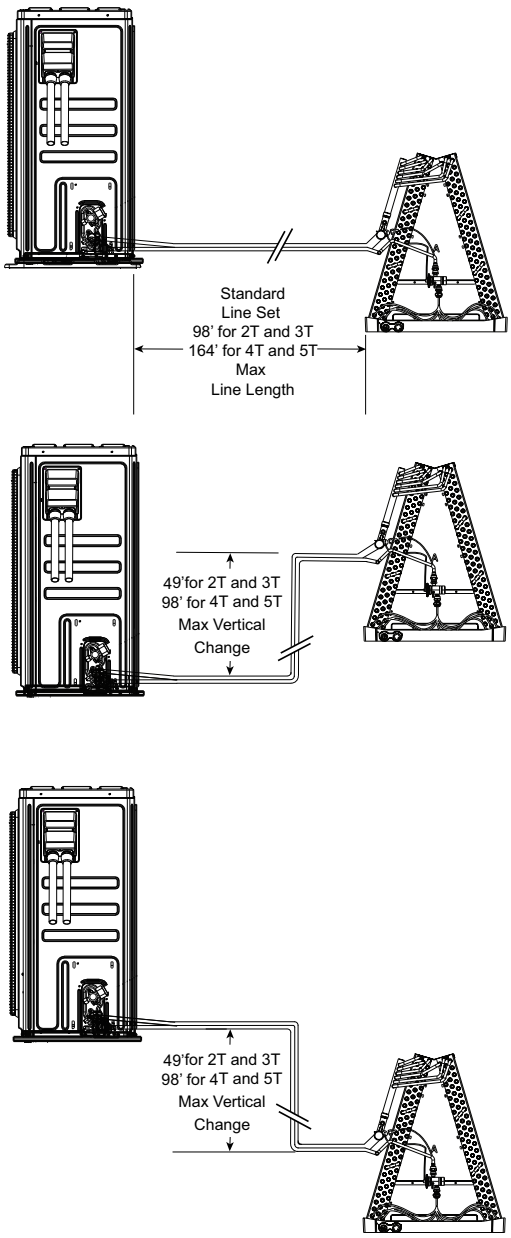
A-E	inches (in.)				
	a	b	c	d	e
A, B, C	>=11.81	>=11.81	>=39.37	—	—
A, B, C, E	>=11.81	>=11.81	>=39.37	—	>=20 [a]
D	—	—	—	>=78.74	—
D, E	—	—	—	>=78.74	>=20[a]
B, D	—	>=11.81	—	>=98.43	—

[a] Clearance needed for servicing.

Refrigeration Piping Limits

- The maximum length of refrigerant lines from outdoor to indoor unit should NOT exceed 98 feet for 2T and 3T models and 164 feet for 4T and 5T models.
- The maximum vertical change should not exceed 49 feet for 2T and 3T models and 98 feet for 4T and 5T models.
- Service valve connection diameters are shown in Table 6, p. 13.

Figure 5. Refrigerant piping limits



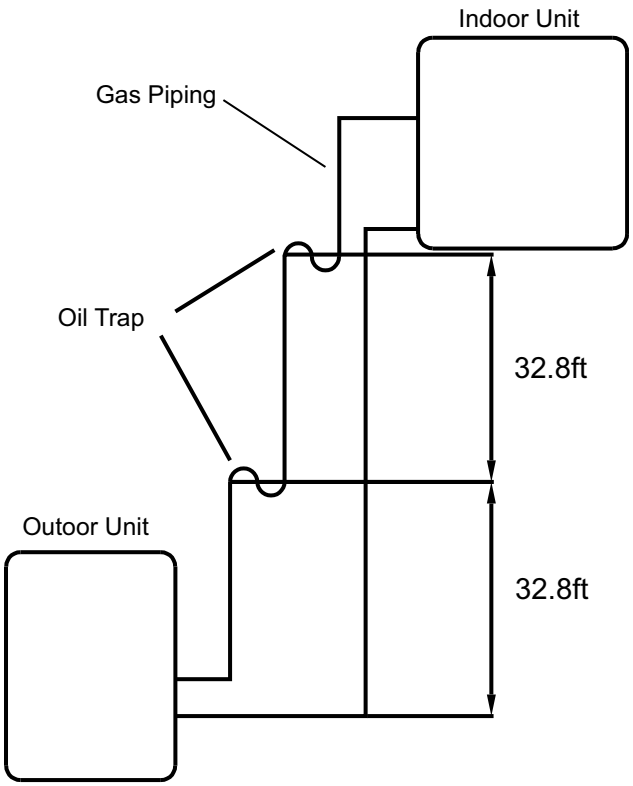
Important: *Follow charge adjustment chart.*

Oil Traps

If the indoor unit is installed higher than the outdoor unit:

If oil flows back into the outdoor unit's compressor, it might cause liquid compression or deterioration. Oil traps in the rising gas piping can prevent this. Therefore, an oil trap should be installed every 32.8 ft. of vertical suction line riser.

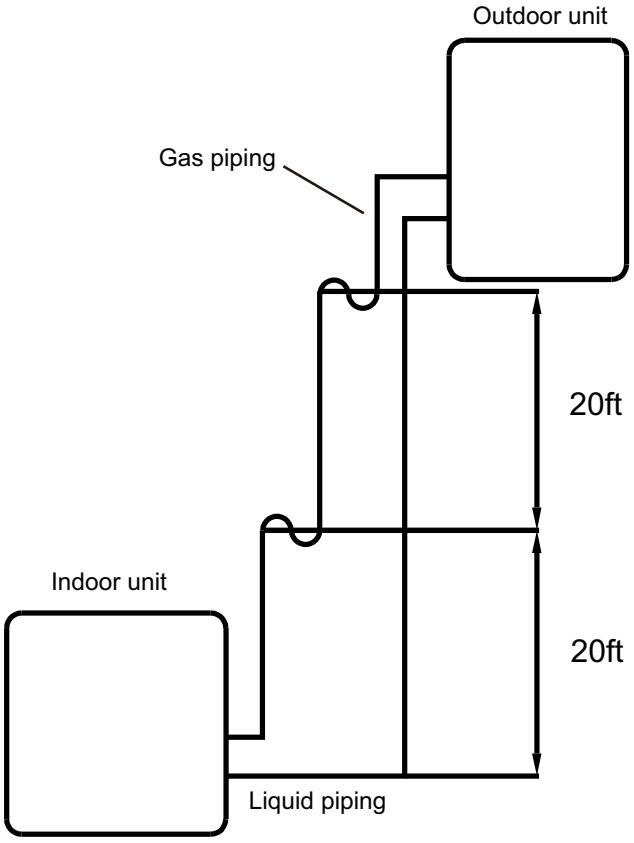
Figure 6. Oil trap installation



If the outdoor unit is installed higher than the indoor unit:

It is recommended that vertical suction risers not be up-sized. Proper oil returns to the compressor should be maintained. An oil trap should be installed every 20 ft. of vertical suction line riser.

Figure 7. Oil trap installation

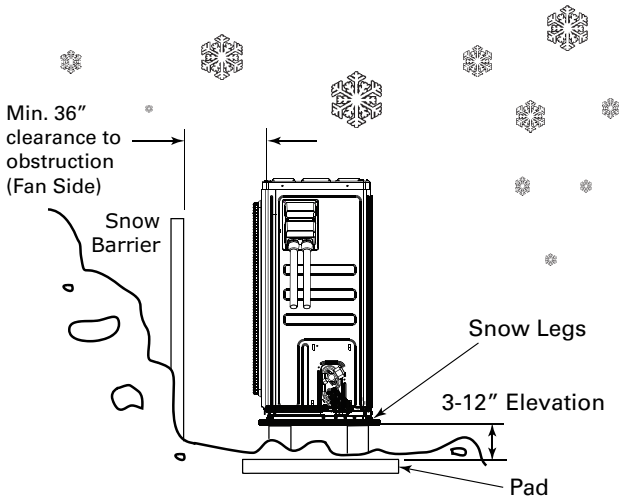


Cold Climate Considerations

Note: *It is recommended that these precautions be taken for units being installed in areas where snow accumulation and prolonged below-freezing temperatures occur.*

- Units should be elevated 3 to 12 inches above the pad or rooftop, depending on local weather. This additional height will allow drainage of snow and ice melted during defrost cycle prior to its refreezing. Ensure that drain holes in unit base pan are not obstructed, preventing drainage of defrost water.
- If possible, avoid locations that are likely to accumulate snow drifts. If not possible, a snow drift barrier should be installed around the unit to prevent a build-up of snow on the sides of the unit.

Figure 8. Cold climate considerations



Setting Up the Unit

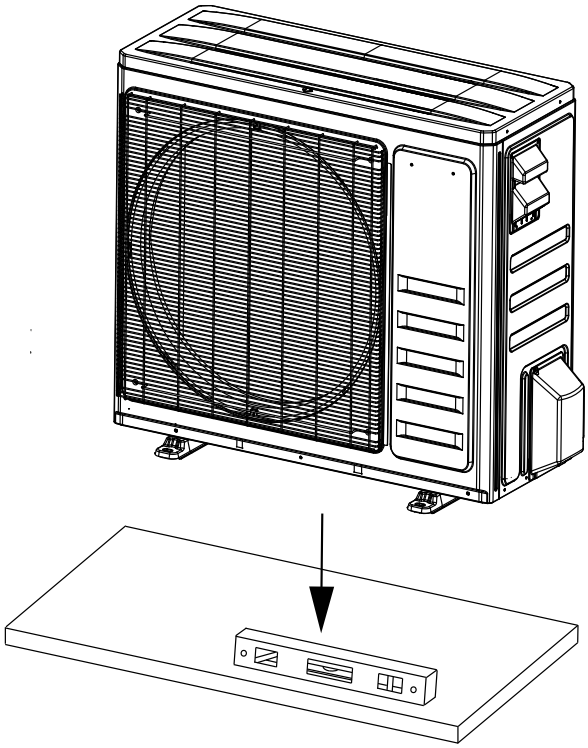
Pad installation

When installing the unit on a support pad, such as a concrete slab, consider the following:

- The pad should be at least 1 inch larger than the unit on all sides.
- The pad must be separate from any structure.
- The pad must be level.
- The pad should be high enough above grade to allow for drainage.
- The pad location must comply with National, State, and Local codes.

Important: *Unit can be secured to the pad if there is concern of the unit tipping.*

Figure 9. Pad installation



Refrigerant Line Considerations

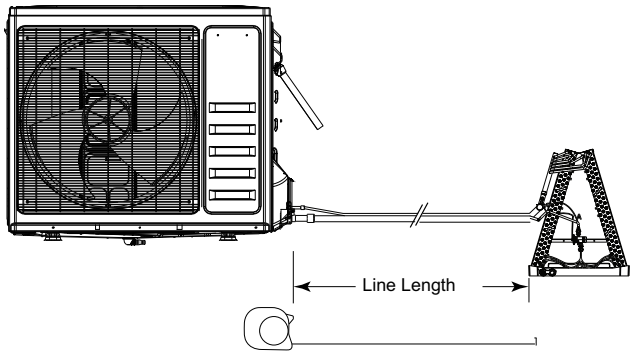
Refrigerant Line Length

Determine required line length and lift.

Total Line Length = _____ft.

Total Vertical Change (lift) = _____ft.

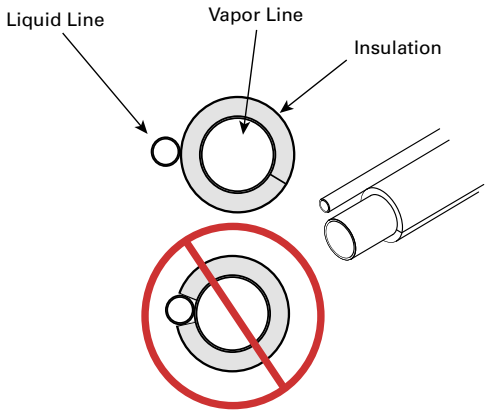
Figure 10. Required refrigerant line length



Note: *Factory charge is sufficient for 24.6 ft. of line length. See "System Charge Adjustment," p. 30 for adding additional refrigerant per line set length.*

Refrigerant Line Insulation

Figure 11. Refrigerant line insulation



Important: *The vapor line must always be insulated. DO NOT allow the Liquid Line and Vapor Line to come in direct (metal to metal) contact.*

Note: *The vapor line must always be insulated. Insulating the liquid line through attic spaces may benefit system performance by minimizing heat gain in the liquid line.*

Table 6. Refrigerant line and service valve connections

Tonnage	Service Valve Connection Sizes (in.)		Rated Line Sizes (in.)		Alternate Line Sizes (in.)	
	Vapor Line Connection	Liquid Line Connection	Vapor Line	Liquid Line	Vapor Line	Liquid Line
2 Ton	5/8	3/8	3/4	3/8	5/8	3/8
3 Ton	5/8	3/8	3/4	3/8	5/8	3/8
4 Ton	3/4	3/8	7/8	3/8	3/4	3/8
5 Ton	3/4	3/8	7/8	3/8	3/4	3/8

Notes:

1. System comes pre-charged for 25 ft.
2. Additional charge for ft pipe (454B) = 0.32OZ.
3. Field adaptor may be required for alternate line sets.
4. No published subcooling numbers. Charge by weight only.

Reuse Existing Refrigerant Lines

⚠ CAUTION

Brazed Joints!

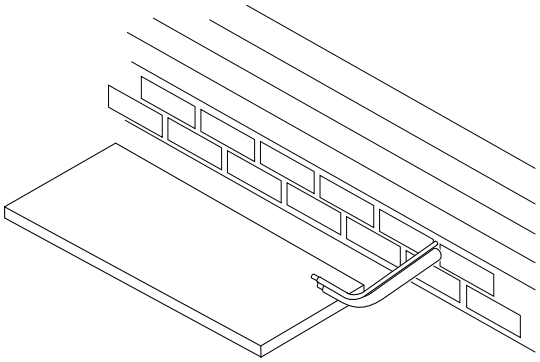
Failure to follow instructions below could result in minor to moderate injury or equipment damage.

When using existing refrigerant lines, verify all joints are brazed and not soldered.

For retrofit applications, where the existing indoor evaporator coil and/or refrigerant lines will be used, the following precautions should be taken.

- Ensure that the indoor evaporator coil and refrigerant lines are the correct size.
- Ensure that the refrigerant lines are free of leaks, acid, and oil.

Figure 12. Verify brazed joints



Refrigerant Line Routing Precautions

Important:

- *Comply with National, State, and Local Codes when isolating line sets from joists, rafters, walls, or other structural elements.*
- *Take precautions to prevent noise within the building structure due to vibration transmission from the refrigerant lines.*

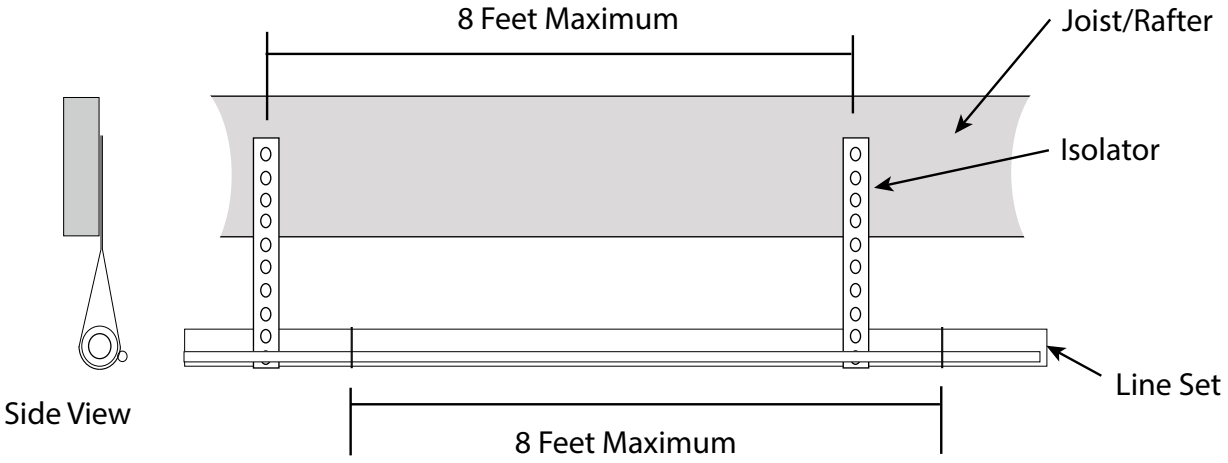
For Example:

- When the refrigerant lines must be fastened to floor joists or other framing in a structure, use isolation type hangers.
- Isolation hangers should also be used when refrigerant lines are run in stud spaces or enclosed ceilings.
- Where the refrigerant lines run through a wall or sill, they should be insulated and isolated.
- Isolate the lines from all duct work.
- Minimize the number of 90° turns.

Isolation from Joist/Rafter

Secure Vapor Line from joists using isolators every 8 ft. Secure Liquid Line directly to insulated Vapor Line using tape, wire, or other appropriate method every 8 ft.

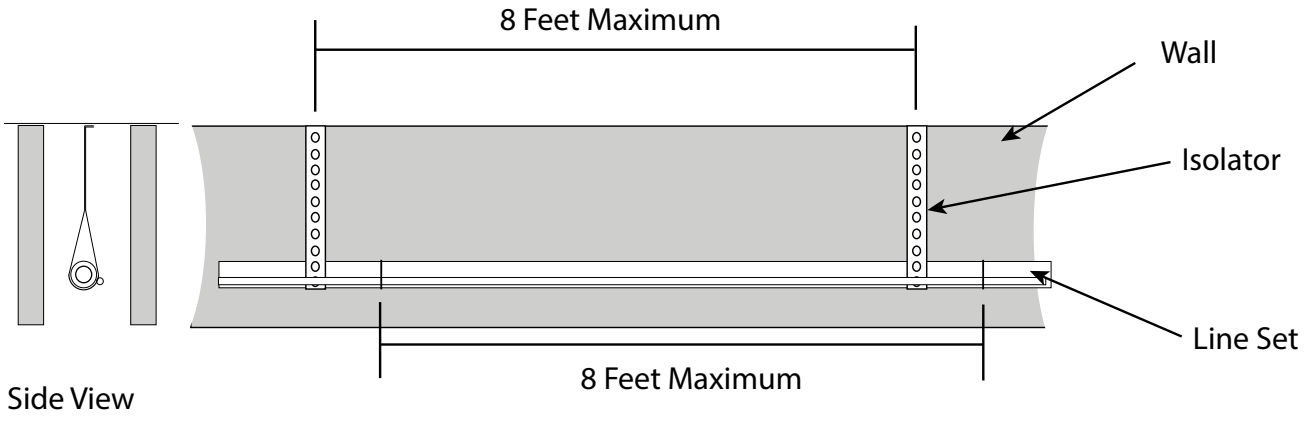
Figure 13. Isolation from joist/rafter



Isolation in Wall Spaces

Secure Vapor Line from joists using isolators every 8 ft. Secure Liquid Line directly to insulated Vapor Line using tape, wire, or other appropriate method every 8 ft.

Figure 14. Isolation in wall spaces



Isolation Through Wall

Figure 15. Isolation through wall

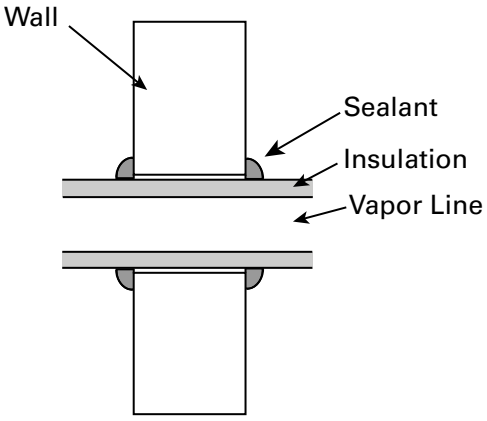
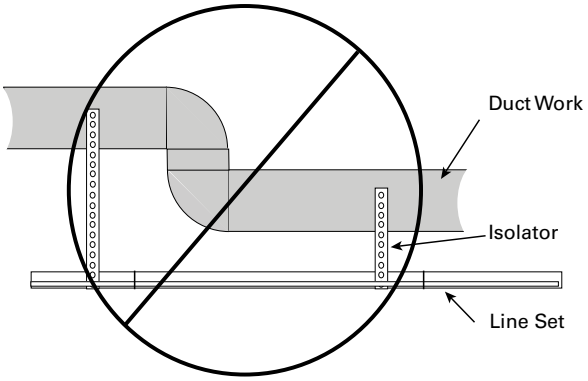


Figure 16. Isolation through wall



DO NOT hang line sets from duct work

Refrigerant Line Connections

Flare the Refrigerant Line

Important: *This side discharge unit comes with factory mechanical connections (flare). Unit will ship with stub tubes for brazing see following section.*

Note: *A2L equipment shall have red marked service ports and pipes through which refrigerant is serviced.*

NOTICE

Pipe Damage!

Failure to follow instructions below could result in pipe damage.

Be careful not to damage, dent, or deform the pipe while cutting.

1. **Cut Tubes:**

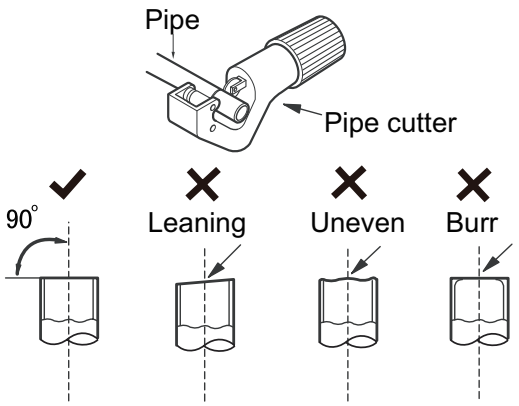
   When preparing refrigerant tubing, pay attention to cutting and flaring them properly. This will ensure efficient operation and minimize the need for future maintenance.

   a. Use the tube accessory kit or tubes purchased locally.

   b. Measure the distance between the indoor and the outdoor units.

   c. Cut the tubes longer than measured distance.

Figure 17. Cut pipes



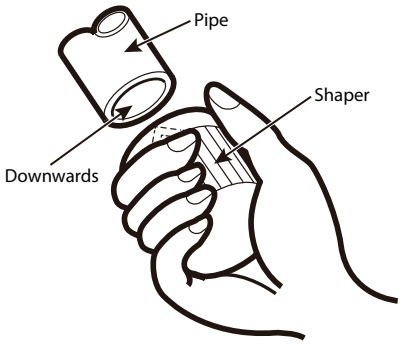
2. **Remove Burrs:**

   Burrs must be completely removed to ensure an air-tight seal.

   a. Completely remove all burrs from the cut cross section of tube.

   b. Put the end of the copper tube in a downward direction as you remove burrs in order to avoid dropping burrs into the tubing.

Figure 18. Remove burrs



3. **Flaring:**

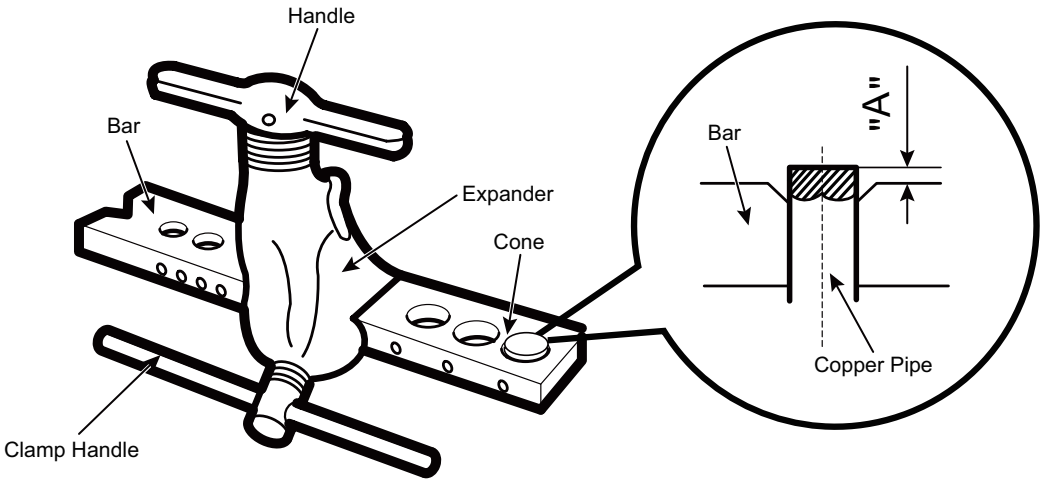
   Flare using a flaring tool as shown in the table below.

Table 7. Flaring work dimension

Outside Diameter (in.)	A (in.)	Torque Values (lbf*ft.)
3/8	0.03~0.04	27.3 to 31
3/4	0.02~0.03	51.7 to 55.3
7/8	0.02~0.03	57.5 to 61.3

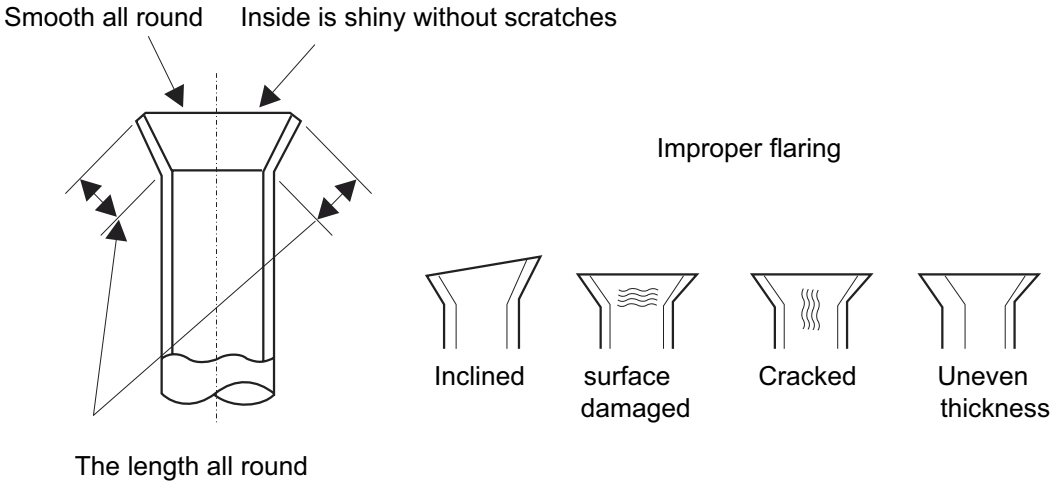
Firmly hold copper pipe in a die in the dimension shown in the table above.

Figure 19. Flaring work



4. **Check**
   a. Compare flare with the below figure.
   b. If flare is noted to be defective, cut off flared section and redo.

Figure 20. Check pipe

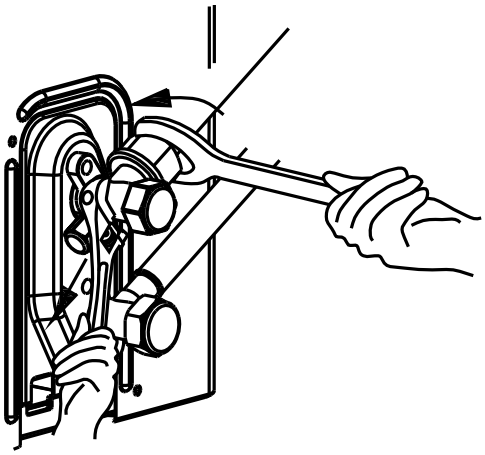


5. **Connection**
   a. Align the center of the two tube that will be connected.
   b. Tighten the flare nut as tightly as possible by hand.
   c. Using a wrench, grip the nut on the unit tubing.

   Note: *Use two wrenches to tighten to avoid cracking.*

   d. Recommended torque values are given inTable 7, p. 16 for flare nut.
   e. Insert.

Figure 21. Wrench using guide



Braze the Refrigerant Line

Note: *A2L equipment shall have red marked service ports and pipes through which refrigerant is serviced.*

1. Remove caps or plugs. Use a deburing tool to debur the pipe ends. Clean both internal and external surfaces of the tubing using an emery cloth.
2. Remove the pressure tap cap and valve cores from both service valves.
3. Purge the refrigerant lines and indoor coil with dry nitrogen.
4. Wrap a wet rag around the valve body to avoid heat damage and continue the dry nitrogen purge. Braze the refrigerant lines to the service valves.

   For units shipped with a field-installed external drier, check liquid line filter drier's directional flow arrow to confirm correct direction of refrigeration flow (away from outdoor unit and toward evaporator coil) as illustrated. Braze the filter drier to the Liquid Line. Continue the dry nitrogen purge. Do not remove the wet rag until all brazing is completed.

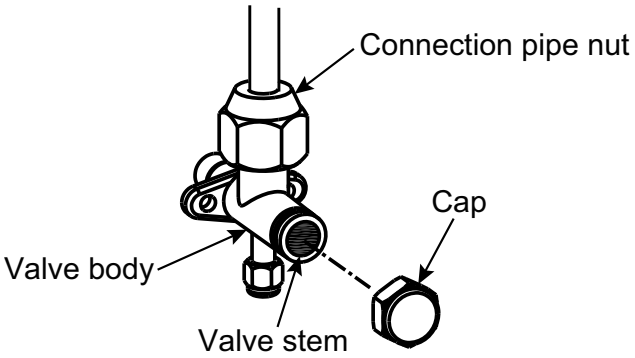
Important: *Remove the wet rag before stopping the dry nitrogen purge.*

Notes:

- *Install drier in liquid line.*
- *Precautions should be taken to avoid heat damage to basepan during brazing. It is recommended to keep the flame directly off of the basepan.*

5. Replace the pressure tap valve cores after the service valves have cooled.

Figure 22. High-pressure valve structure



Refrigerant Line Leak Check

Check For Leaks

After completion of field piping for split systems, the field pipework shall be pressure tested with nitrogen and then vacuum tested prior to refrigerant charging.

Important:

- *Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.*
- *The following leak detection methods are deemed acceptable for all refrigerant systems:*
  - *Electronic leak detectors calibrated for R-454B (with a sensitivity of 5 grams/ year).*
- *The outdoor unit should not be tested higher than 450 psig for servicing or component replacement. The indoor unit and linesets should be tested to the max pressure specified on the outdoor or indoor unit nameplate. The service valves should be closed when pressure testing the evaporator coil and linesets to separate the outdoor unit from the indoor unit.*

STEP 1 (Final Pressure Check):

Isolate the outdoor unit from the evaporator coil and linesets using the service valves. Pressurize the evaporator coil and linesets to the max pressure specified on the outdoor or indoor unit nameplate for a minimum of 60 minutes. Do not add additional refrigerant or test gas after reaching the evaporator coil specified pressure. The system should show no loss of pressure once pressurized. Once the pressure test is complete follow the steps for evacuation.

***OPTIONAL (Preliminary Pressure Check):**

Pressurize the refrigerant lines and evaporator coil to 150 PSIG using dry nitrogen. Check for leaks by using a soapy solution or bubbles at each brazed location. Remove pressure and repair any leaks before continuing.

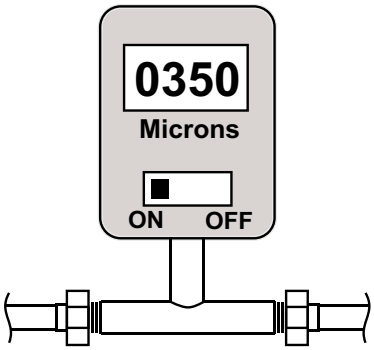
Evacuation and Servicing

Evacuate the Refrigerant Lines and Indoor Coil

Important: *Do not open the service valves until the refrigerant lines and indoor coil leak check and evacuation are complete.*

1. Evacuate until the micron gauge reads no higher than 350 microns, then close off the valve to the vacuum pump.

Figure 23. Observe micron gauge reading



2. Observe the micron gauge. Evacuation is complete, if the micron gauge does not rise above 500 microns in one (1) minute and 1500 microns in ten (10) minutes.

Figure 24. Stop watch



3. Once evacuation is complete, blank off the vacuum pump and micron gauge, and close the valve on the manifold gauge set.

Servicing

- If repairs must be made after system is charged, properly and safely remove or isolate refrigerant and purge the section of the system needing repair with nitrogen gas or oxygen-free nitrogen prior to opening the circuit.
- The REFRIGERANT CHARGE shall be recovered into the correctly marked recovery cylinders.
- Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and the ventilation is available.
- Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.
- Ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. Only use cylinders designated for the recovered refrigerant and labelled for the refrigerant. Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.
- A set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Ensure any associated electrical components are sealed.
- The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder. Do not mix refrigerants.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that FLAMMABLE REFRIGERANT does not remain within the lubricant.

Service Valve

Open the Gas Service Valve

Important: *Leak check and evacuation must be completed before opening the service valves.*

Note: *Do not vent into the atmosphere.*

1. Remove valve stem cap.
2. Using an adjustable wrench, turn valve stem 1/4 turn counterclockwise to the fully open position.
3. Replace the valve cap to prevent leaks. Tighten finger tight plus an additional 1/4 turn.

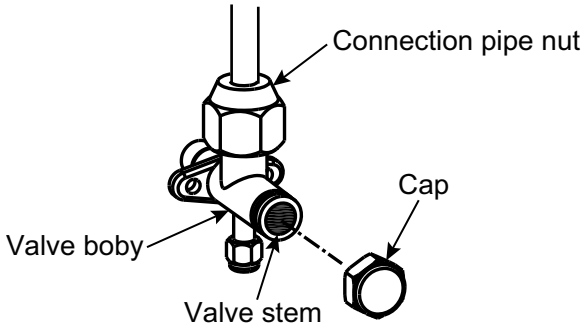
⚠ WARNING

System Charge!

Failure to follow instructions below could result in abrupt release of system charge and could result in serious injury or property damage.

When opening the suction and liquid line service valve, turn the valve stem counterclockwise only until the stem contacts the rolled edge. Do not apply torque.

Figure 25. Service valves



Electrical – Low Voltage

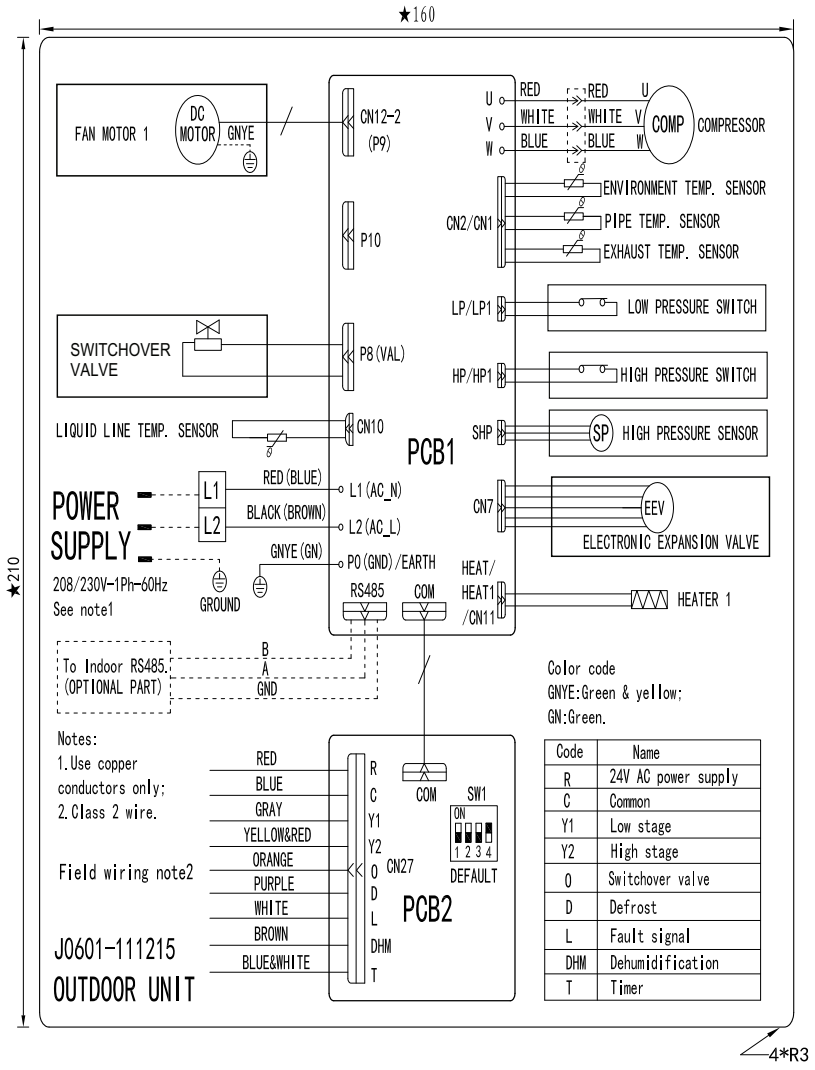
Notes:

- *Field-installed electrical conduit is required at the low voltage wire entry point to prevent pests from entering into the control box resulting in PCB damage.*
- *The use of color-coded low voltage wire is recommended to simplify connections between the outdoor unit, the control, and the indoor unit.*

Table 8. Low voltage maximum wire length

Control Wiring	
Wire Size	**Max. Wire Legth (ft.)**
18 AWG	150
16 AWG	225
14 AWG	300

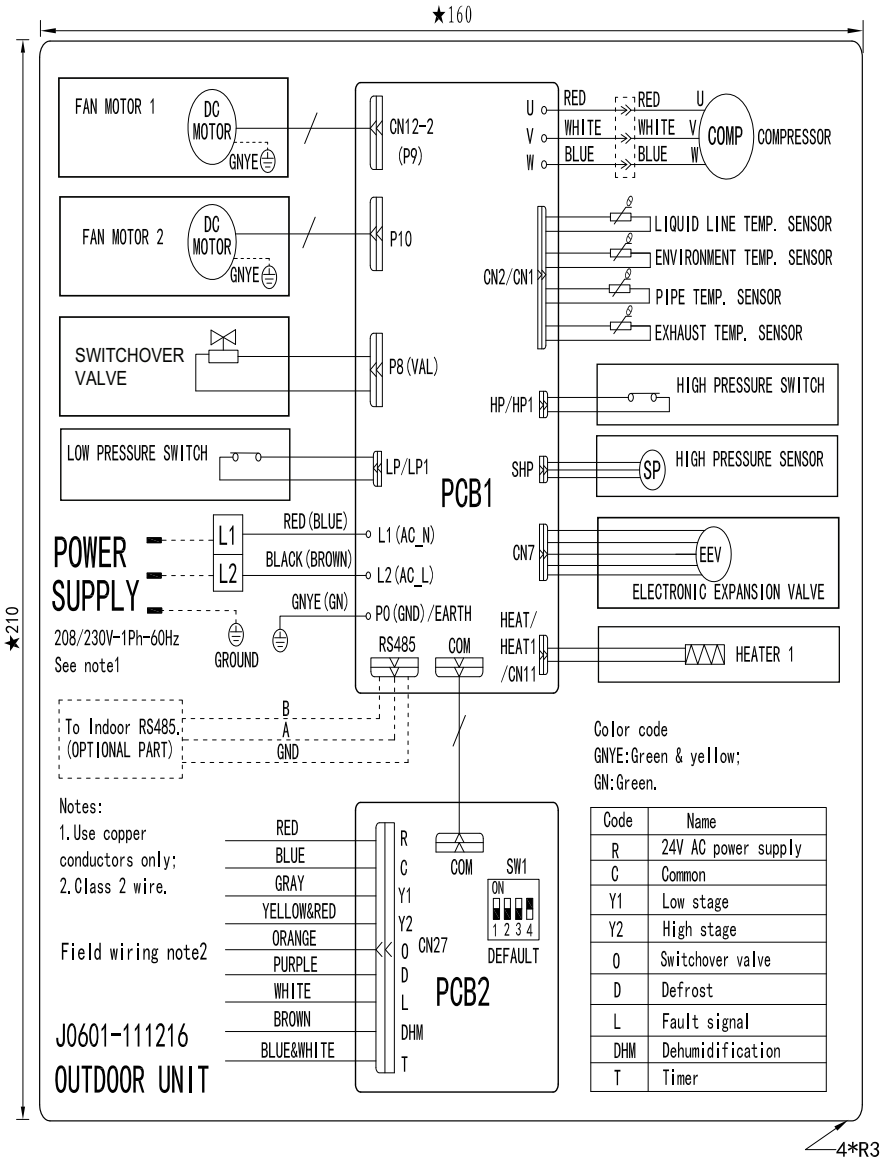
Figure 26. Wiring diagram – 2-ton and 3-ton models



Notes:

- *Class 2 low voltage control wiring should not be run in conduit with main power wiring and should be separated.*
- *See the low voltage connection diagram in Figure 28, p. 24.*

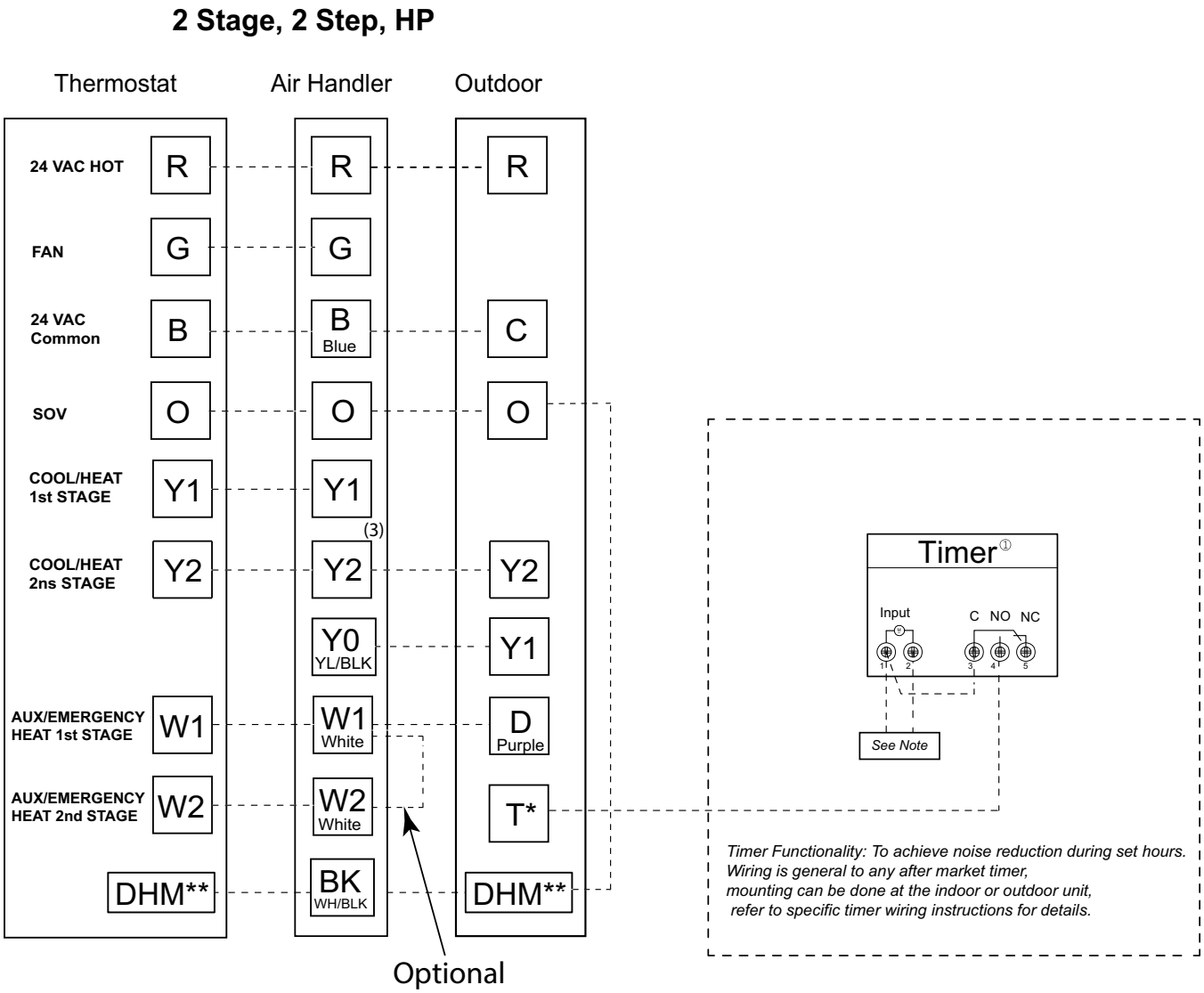
Figure 27. Wiring diagram – 4-ton and 5-ton models



Notes:

- *Class 2 low voltage control wiring should not be run in conduit with main power wiring and should be separated.*
- *See the low voltage connection diagram in* *Figure 28, p. 24**.*

Figure 28. Low voltage connection diagram



Notes:

1. *Units with pigtails require wirenuts for connections.*
2. *Cap all unused wires.*
3. *For other wiring options, please scan QR code in Figure 29, p. 25.*
4. *When BK is used, cut the jumper between R and BK on the control board. See wiring schematic for details.*
5. *In AC systems for multiple stages of electric heat, jumper W1 and W2 together if comfort control has only one stage of heat.*
6. *Reversing valve is energized in cooling.*
7. *If a standard control is used without a dehumidification function, a jumper will need to be placed between O and DHM on the Outdoor PCB.*

Figure 29. Additional wiring diagrams



Mitigation Board Guidelines

- The approved ID/OD combination will provide sufficient safe ventilation in case of a leak.
- Refer to the Indoor Unit Installer’s Guide for correct specifications on indoor unit install.
- All systems require mitigation boards, so an altitude adjustment factor may be required.
- The Mitigation Control Board needs to be included in an A2L System.

Electrical - High Voltage

High Voltage Power Supply

⚠ WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

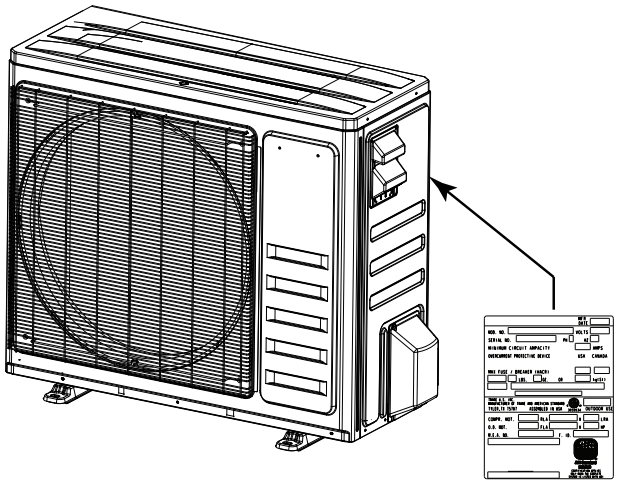
When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

The high voltage power supply must agree with the equipment nameplate.

Power wiring must comply with national, state, and local codes.

Follow instructions on unit wiring diagram located on the inside of the control box cover.

Figure 30. Nameplate location



High Voltage Disconnect Switch

⚠ WARNING

Electrical Shock Hazard!

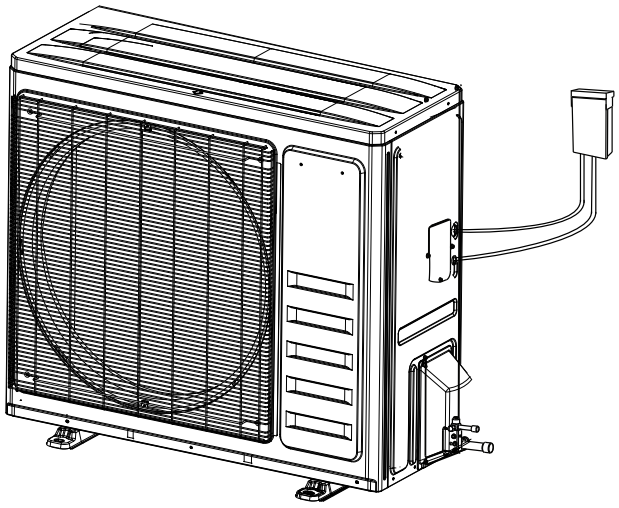
Failure to follow instructions below could result in death or serious injury or property damage.

Confirm proper grounding before connecting electrical supply.

Install a separate disconnect switch at the outdoor unit.

For high voltage connections, flexible electrical conduit is recommended whenever vibration transmission may create a noise problem within the structure.

Figure 31. High voltage disconnect switch



⚠ WARNING

Hazardous Voltage!

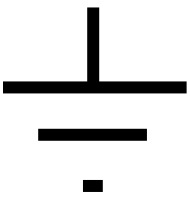
Failure to follow instructions below could result in death or serious injury.

Voltage may be present even with power disconnected due to high winds causing fan rotation. Refer to the Technical Manual for servicing instructions.

High Voltage Ground

Ground the outdoor unit per national, state, and local code requirements.

Figure 32. Grounding

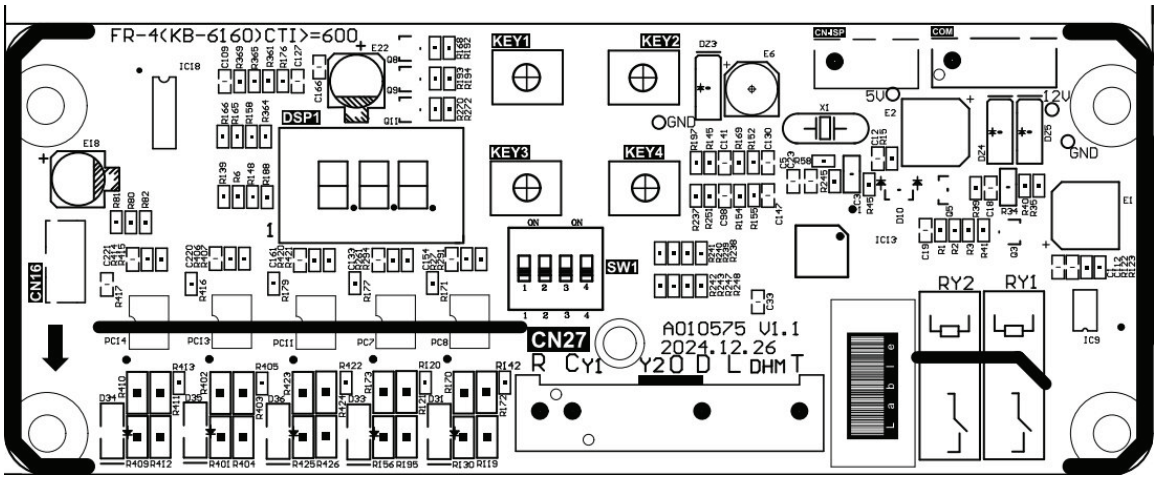


Operation Mode Display

Side Discharge Operation Mode Display

The display enables the technician to observe the unit's mode of operation. When the unit is running in normal condition, the left and center positions on the digital display will not be illuminated. The right position of the digital display will indicate the ODU operation mode. Refer to the following chart for the indicators of the different modes.

Figure 33. Operation mode display



S3 is the indicator for the ODU operation mode, the display description is as below:

Table 9. Display description

Indicator	Description
0	0 No startup signal is received, stop state
1	Startup signal has been received, ready to start up
2	Cooling mode
3	Heating mode
4	Oil return mode
5	Defrosting mode
6	Force defrosting mode
7	Force cooling mode

Table 9. Display description (continued)

Indicator	Description
8	Force heating mode
A	Failure or protection, stop state
H	Dehumidification mode
q	Low noise mode

Error Code Display

The same digital display is used for error codes using the left and center positions. In the case of multiple failures or protections, the error codes will alternate on the display. Please see the list of error codes in Table 10, p. 27.

Table 10. Error codes list

Code	Reason	Remark
E3	ODU Coil temperature sensor failure. (OPT)	ODU coil sensor and ODU PCB.
E7	ODU Ambient Temperature sensor failure. (OAT)	ODU ambient sensor and ODU PCB.
E8	ODU Exhaust Temperature sensor failure. (ODT)	ODU Exhaust sensor and ODU PCB.
E9	IPM / Compressor driving control abnormal.	ODU PCB , compressor, etc.
EA	ODU current sampling failure	ODU PCB
EB	The Communication abnormal of Main PCB and operating board (IDU failure)	Display board and main PCB.
EC	The communication abnormal of ODU main PCB and operating PCB	ODU main PCB, ODU operating PCB.

Table 10. Error codes list (continued)

Code	Reason	Remark
EE	ODU EEPROM failure.	1. ODU PCB broken? 2. Try to re-power on AC unit.
EF	ODU DC fan motor failure.	Fan motor, ODU PCB.
P0	IPM module protection.	ODU PCB
P1	Over / under voltage protection.	1. ODU PCB broken? 2. Power supply abnormal?
P4	ODU Exhaust pipe Over temperature protection.	Please check the troubleshooting for detail.
P5	Sub-cooling protection on Cooling mode.	Please check the troubleshooting for detail.
P6	Overheating protection on Cooling mode.	Please check the troubleshooting for detail.
P7	Overheating protection on Heating mode.	Please check the troubleshooting for detail.
P8	Outdoor Over temperature/Under temperature protection.	Please check the troubleshooting for detail.
P9	Compressor driving protection (Load abnormal).	Please check the troubleshooting for detail.
F5	PFC PROTECTION	Please check the troubleshooting for detail.
F6	The Compressor lack of phase / Anti-phase PROTECTION	Please check the troubleshooting for detail.
F7	IPM Module over temperature PROTECTION.	Please check the troubleshooting for detail.
F8	4-Way Value reversing abnormal.	Please check the troubleshooting for detail.
FA	The compressor Phase-current test circuit failure.	ODU PCB
H1	High pressure switch failure	1. High pressure switch damage. 2. High pressure switch connection is loose. 3. DU main PCB damage.
H2	Low pressure switch failure	1. Low pressure switch damage. 2. Low pressure switch connection is loose. 3. ODU main PCB damage.
H3	High pressure sensor failure	1. High pressure sensor damage. 2. High pressure sensor connection is loose. 3. ODU main PCB damage.
H4	Low pressure sensor failure	1. Low pressure sensor damage. 2. Low pressure sensor connection is loose. 3. ODU main PCB damage.

System Start-Up

1. Verify that sections Refrigerant Line Connections through Electrical High Voltage have been completed.
2. Set the system thermostat to OFF.
3. Turn on the disconnect(s) to apply power to the indoor and outdoor units.
4. Wait one (1) hour before starting the unit if compressor crankcase heater is used and the outdoor ambient temperature is below 70ºF.
5. Set the system thermostat to ON.

System Charge Adjustment

Table 11. Additional refrigerant per line set length

Refrigerant Pipe and Charging Specifications	
Liquid pipe diameter	3/8 -in.
Additional charge for ft. pipe (R-454B)	0.32 oz

Checkout Procedures

Final phases of this installation are the unit Operational and Checkout Procedures. To obtain proper performance, all units must be operated and charge adjustments made.

Important: *Perform a final unit inspection to be sure that factory tubing has not shifted during shipment. Adjust tubing if necessary so tubes do not rub against each other when the unit runs. Also be sure that wiring connections are tight and properly secured.*

After installation has been completed, it is recommended that the entire system be checked against the following list:

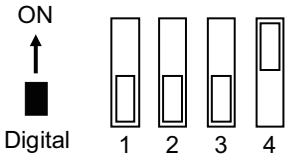
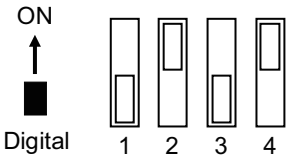
- ☐ Leak check refrigerant lines.
- ☐ Properly insulate suction lines and fittings.
- ☐ Properly secure and isolate all refrigerant lines.
- ☐ Seal passages through masonry. If mortar is used, prevent mortar from coming into direct contact with copper tubing.
- ☐ Verify that all electrical connections are tight.
- ☐ Observe outdoor fan during on cycle for clearance and smooth operation.
- ☐ Be sure that indoor coil drain line drains freely. Pour water into drain pan.
- ☐ Be sure that supply registers and return grilles are . open and unobstructed.
- ☐ Be sure that a return air filter is installed.
- ☐ Be sure that the correct airflow setting is used. (Indoor blower motor).
- ☐ Operate complete system in each mode to ensure safe operation.
- ☐ Check the MCB or RDS is operational.

Unit Capacity Adjustment

This switch allows the capacity of the unit to be adjusted during installation. The default setting (SW1-2 at the digit end (down)) represents 100% capacity. The capacity can be adjusted by positioning the SW1-2 to the ON position.

Note: *The dip switch should be adjusted only when the unit is powered off. If the dip switch is activated when the unit is powered on, there will be no change until it is power cycled.*

Figure 34. Capacity adjustment using unit dip switches

SW1-2	Unit capacity selection		100% capacity (default setting)
			2T → 1.5T, 3T → 2.5T, 4T → 3.5T, 5T → 4.5T

Troubleshooting

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury or equipment damage.

If one of the following conditions occurs, switch off the power supply immediately and contact your dealer for further assistance:

- **The operation light continues to flash rapidly after the unit restarts.**
- **The unit continually trips fuses or circuit breakers.**
- **A foreign object or water enters the unit.**
- **Other abnormal conditions occur.**

The following symptoms are not a malfunction and in most situations will not require repairs:

Table 12. Common problems

Problem	Possible Cause
Abnormal noises of outdoor unit.	The unit will make different sounds based on its current operating mode.
Both the indoor and outdoor units make noises.	The outdoor may hum during operation. This is a normal phenomenon, which is caused by refrigerant gas flowing through the indoor and outdoor units.
	When the unit is turned on, and just stopped or defrosted, a hiss may be heard. This noise is normal and is caused by refrigerant gas stopping or turning.
Unit does not turn on when pressing ON/ OFF button.	The unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.
	Cooling and Heating Models: If the Operation light and PRE-DEF (Pre-heating/ Defrost) indicators are lit up, the outdoor temperature is too cold and the unit's anti-cold wind is activated in order to defrost the unit.
The unit changes from COOL mode to FAN mode.	The unit changes its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating again.
	The set temperature has been reached, at which point the unit turns off the compressor. The unit will resume operating when the temperature fluctuates again.
Both the indoor and outdoor units emit white mist .	When the unit restarts in HEAT mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.
Dust is emitted from either the indoor or outdoor unit.	The unit may accumulate dust during extended periods of nonuse, which will be emitted when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.
The unit emits a bad odor.	The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.), which will be emitted during operations.
	The unit filters have become moldy and should be cleaned.
The fan of the outdoor unit does not operate.	During operation, the fan speed is controlled to optimize product operation.

When problem occur, please check the points in the Table 13, p. 34 before contacting a repair company.

Table 13. Troubleshooting

Problem	Possible Cause	Solution
The unit is not working	Power failure.	Wait for the power to be restored.
	The power switch is off.	Turn on the power.
	The fuse is burned out.	Replace the fuse.
	The unit's 3-minute protection has been activated.	Wait three minutes after restarting the unit.
Poor cooling performance	Temperature setting may be higher than the ambient room temperature.	Lower the temperature setting.
	The heat exchanger on the indoor or outdoor unit is dirty.	Clean the affected heat exchanger.
	The air filter is dirty.	Remove the filter and clean it according to instructions.
	The air inlet or outlet of either unit is blocked.	Turn the unit off, remove the obstruction and turn it back on.
	Doors and windows are open.	Make sure that all doors and windows are closed while operating the unit.
	Excessive heat is generated by sunlight.	Close windows and curtains during periods of high heat or bright sunshine.
	Low refrigerant due to leak or long-term use.	Check for leaks, reseal if necessary and top off refrigerant.
The unit starts and stops frequently	There's too much or too little refrigerant in the system	Check for leaks and recharge the system with refrigerant.
	There is air, incompressible gas or foreign material in the refrigeration system.	Evacuate and recharge the system with refrigerant.
	System circuit is blocked.	Determine which circuit is blocked and replace the malfunctioning piece of equipment.
	The compressor is broken.	Replace the compressor.
	The voltage is too high or too low.	Install a monostatic to regulate the voltage.
Poor heating performance	The outdoor temperature is lower than 44.5℉.	Check for leaks and recharge the system with refrigerant.
	Cold air is entering through doors and windows.	Make sure that all doors and windows are closed during use.
	Low refrigerant due to leak or long-term use.	Check for leaks, reseal if necessary and top off refrigerant.

Pressure Curves

Cooling performance can be checked when the outdoor temp is above 65° F.

To check cooling performance, select the proper indoor cfm, allow pressures to stabilize. Measure indoor wet bulb temperature, outdoor temperature, discharge and suction pressures.

On the Plots:

1. Locate outdoor temperature.
2. Locate indoor wet bulb.
3. Find intersection of OD temp. and ID W.B.
4. Read discharge or suction pressure in left column.

Example:

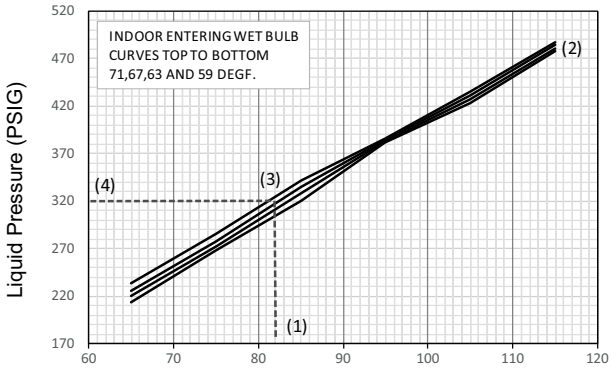
1. Outdoor temp. 82°F.
2. Indoor wet bulb 67°F.
3. At intersection.
4. Discharge pressure @ 865 cfm is 320 psig.
5. Suction pressure @ 865 cfm is 134 psig.

Actual:

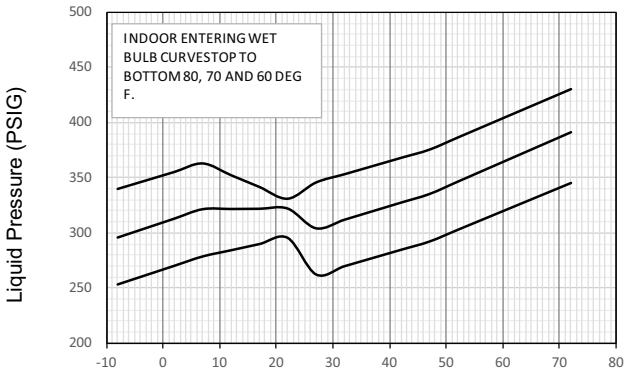
- Discharge pressure should be +/- 10 psi of chart
- Suction pressure should be +/- 3 psig of chart

Figure 35. Pressure curves – model A5HL5024A1

Cooling@SCFM
865



Heating@SCFM
980



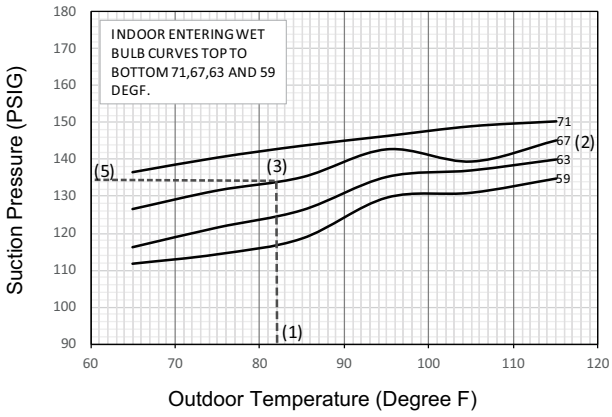
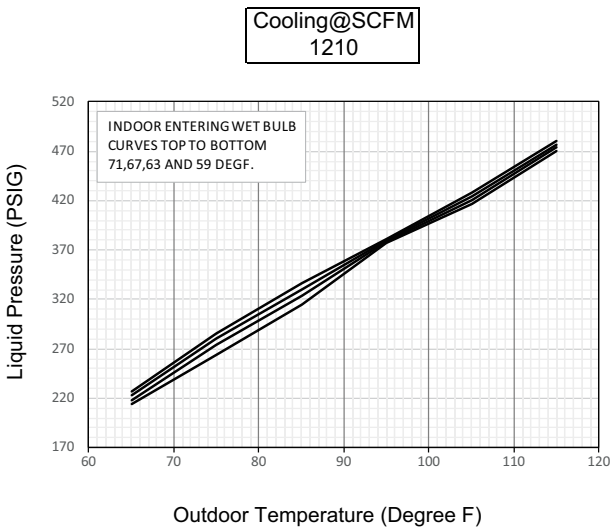
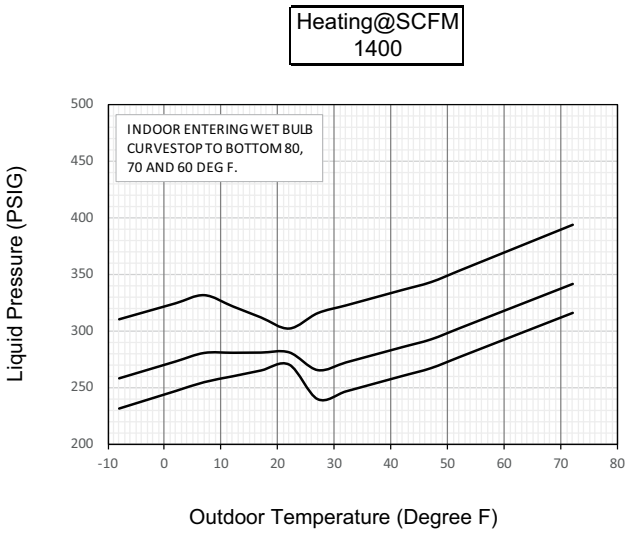


Figure 36. Pressure curves – model A5HL5036A1





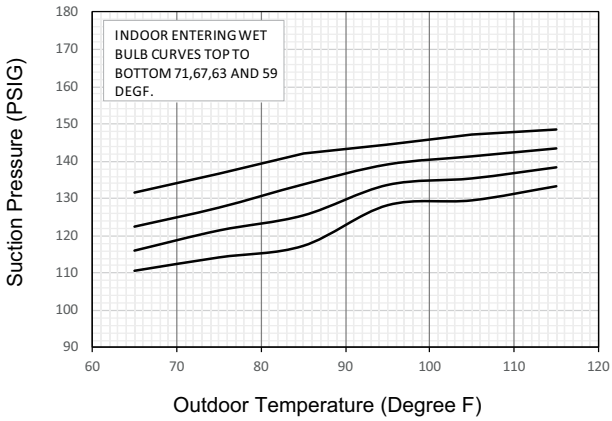
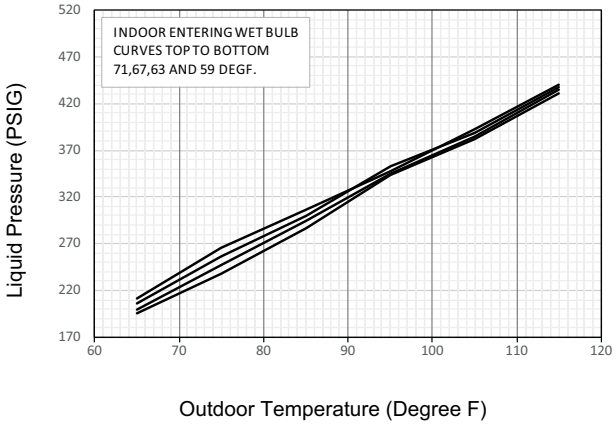
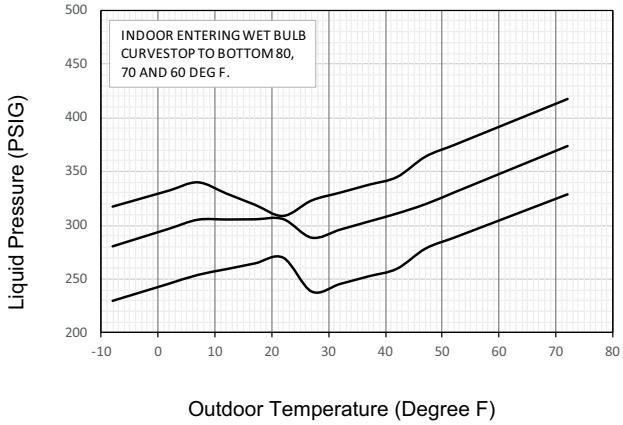


Figure 37. Pressure curves – model A5HL5048A1

Cooling@SCFM
1380



Heating@SCFM
1530



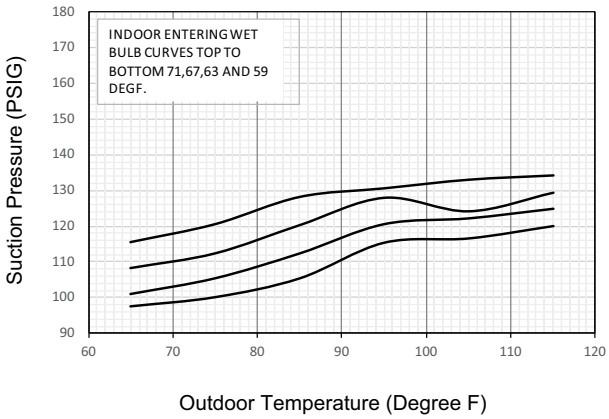
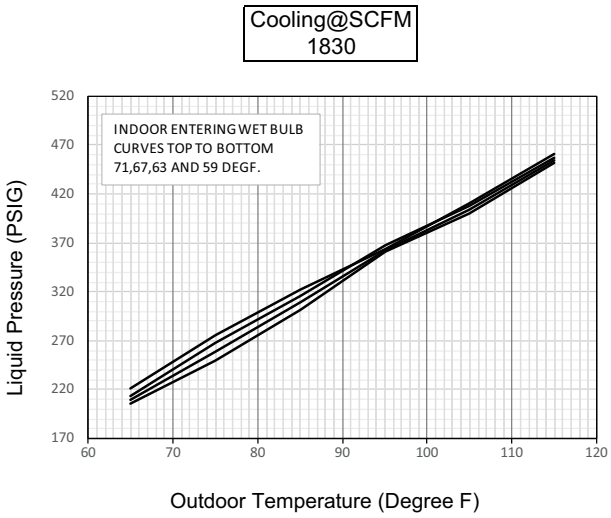
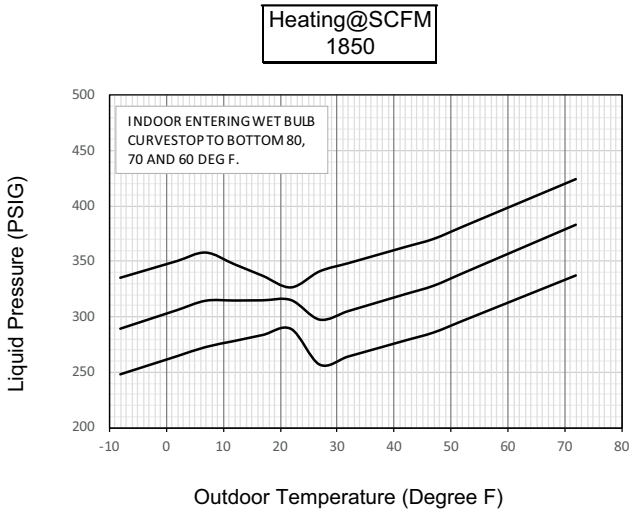
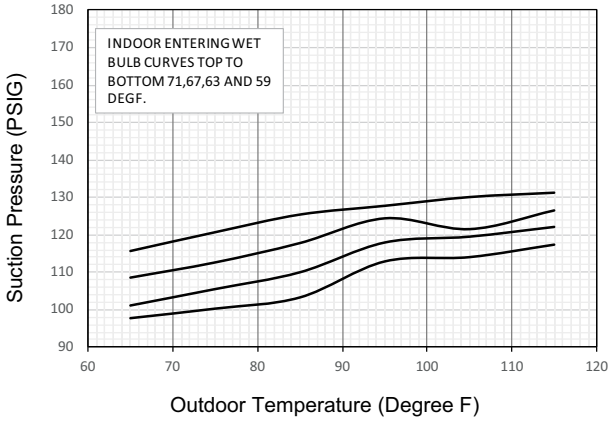


Figure 38. Pressure curves – model A5HL5060A1

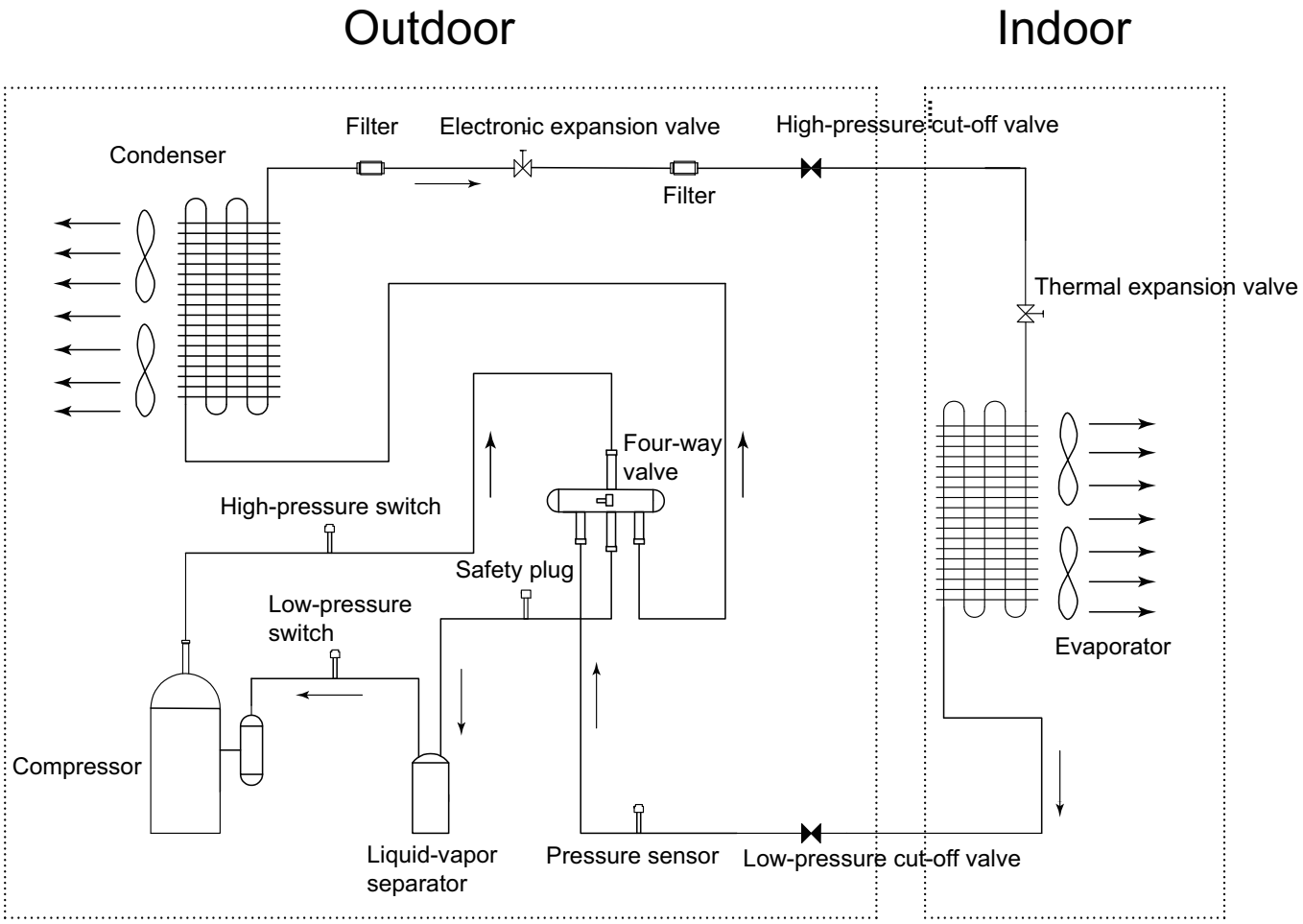




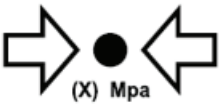


Refrigerant Circuit (Only for Reference)

Figure 39. Refrigerant circuit



Symbols

	[symbol UN GHS]	warning; flammable materials
	[symbol ISO 7000-1659 (2004-01)]	service indicator; read technical manual
	A2L symbol	warning; low burning velocity material
	[symbol ISO 7000-1701 (2004-01)]	pressure
	[symbol IEC 60417-6040 (2010-08)]	ultraviolet radiation, instructional safeguard
	[symbol ISO 7000-1641 (2004-01)]	operator's manual; operating instructions



Refrigerant class per

UN GHS

Notes

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.





The AHRI Certified mark indicates company participation in the AHRI Certification program. For verification of individual certified products, go to ahridirectory.org.

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

DLR-SVN006B-EN 25 Feb 2026
Supersedes DLR-SVN006A-EN (September 2025)

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