

Installation Instructions

NOTE: Read the entire instruction before beginning the installation.

INTRODUCTION

The Time-Delay Relay permits the indoor fan to briefly continue to operate and provide additional cooling after the compressor cycles off.

SAFETY CONSIDERATIONS

Installing and servicing air conditioning equipment can be hazardous due to system pressure and electrical components. Only trained personnel should install or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions, such as cleaning coils and cleaning and replacing filters. All other operations should be performed by trained service personnel. When working on air conditioning equipment, observe precautions in the literature, and on tags and labels attached to the unit.

Follow all safety codes. Wear safety glasses and work gloves. Use a quenching cloth for brazing operations. Have a fire extinguisher available.

NOTE: Check to make sure no components inside cabinet are within drilling range.

2. Paint edges of screw holes to resist rust. Install mounting screws through time-delay relay and into screw holes. Tighten screws securely but do not overtighten.

CAUTION

ELECTRICAL OPERATION HAZARD

Failure to follow this caution may result in personal injury or equipment damage.

The time-delay relay and low-voltage wiring should be physically separated from high-voltage components and wiring.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any modification be sure the main electrical disconnect is in the OFF position. TAG SWITCH WITH A SUITABLE WARNING LABEL.

INSTALLATION

CAUTION

ELECTRICAL OPERATION HAZARD

Failure to follow this caution may result in personal injury.

Before installing this kit, be sure high- and low-voltage electrical power to indoor section is disconnected.

1. Using screws provided, mount time-delay relay to fan coil or furnace cabinet. Position time-delay relay in convenient place so that wires will be close to connection point. Drill 0.125 in. (use 1/8 drill size) screw holes into cabinet.

3. Refer to Fig. 1 for wiring connections.
4. Connect red wire from time-delay relay to terminal R on low-voltage terminal board in fan coil or furnace.
5. Connect brown wire from time-delay relay to terminal C on low-voltage terminal board.
6. Splice wire from thermostat terminal G to black wire from time-delay relay.
7. Connect orange wire from time-delay relay to terminal G on low-voltage terminal board.
8. Affix wiring label next to indoor unit wiring label.
9. Check all connections. Turn on electrical power.
10. Affix caution label on indoor unit access panel to electrical controls.
11. To check function of system, set thermostat to operate in cooling mode. With system "calling for cooling" run for minimum of 5 minutes, then slowly move cooling lever on thermostat to higher setting to satisfy thermostat. Once the thermostat is satisfied, the indoor fan will continue to run approximately 90 seconds, then shut off.

CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage.

This accessory package includes an adhesive-backed warning sticker. Affix this sticker prominently to fan coil or furnace after installation.

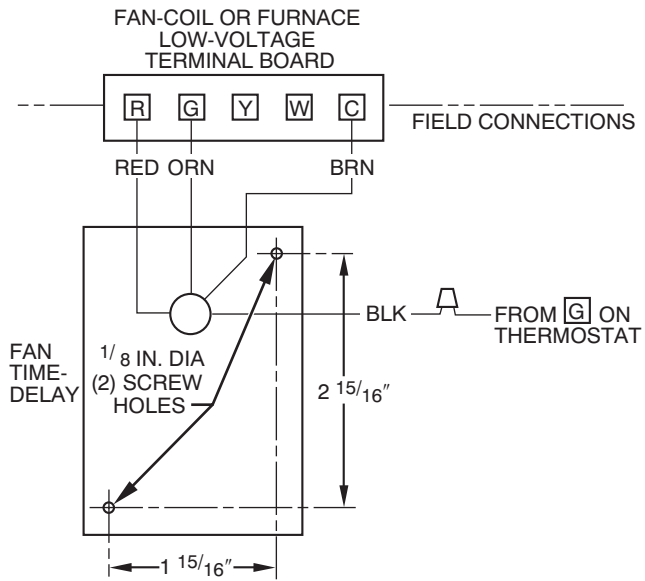


Fig. 1 - Typical Time-Delay Relay Wiring Connection

KAATD

53DS-900---075
53DS-900---076

Horizontal Discharge Systems
Accessory Stacking Kit
Cooling Only Units (Size 018-060)


Installation Instructions

NOTE: Read and become familiar with these instructions before beginning installation.

SAFETY CONSIDERATIONS

Installing and servicing air-conditioning equipment can be hazardous due to system pressures and electrical components. Only trained and qualified personnel should install or service air-conditioning equipment. When working on air-conditioning equipment, observe the precautions provided in literature, tags, and labels attached to the unit.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand these signal words: DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any modification or installation of this kit, be sure the main electrical disconnect is in the OFF position. Ensure power is disconnected to the fan coil unit. On some systems both the fan coil and the outdoor unit may be on the same disconnect. Tag the disconnect switch with a suitable warning label. There may be more than one disconnect.

GENERAL

These instructions cover the installation of the accessory stacking kit for Cooling Only and Multi-Split Units. The kit is used in applications where there is a lack of adequate installation space for more than one unit.

NOTE: Stacking kit part number 53DS-900---075 does not contain stacking rails with notched brackets. Notched brackets are not required when stacking a small unit on top of another small unit. However, Stacking Kit part number 53DS-900---076 does include rails with notched brackets for use when stacking a small unit on top of a large unit. See Fig. 1

IMPORTANT: Stacking kit not for use with any type of snow or ice stand, or with heat pump units.

INSTALLATION

Refer to Table 1 for kit contents and usage.

WARNING

PERSONAL INJURY HAZARD

Failure to following this warning could result in personal injury.

Obtain help when stacking units. Personal injury can result from lifting of heavy equipment. Additional help may be required to align stacking rails when top unit is being positioned.

CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

To avoid compressor damage, never turn unit on its side or top when installing kit components.

To avoid damage to electrical connections and refrigerant braze joints, ensure unit is fastened securely to concrete mounting pad before completing electrical and piping hookups. See Fig. 1.

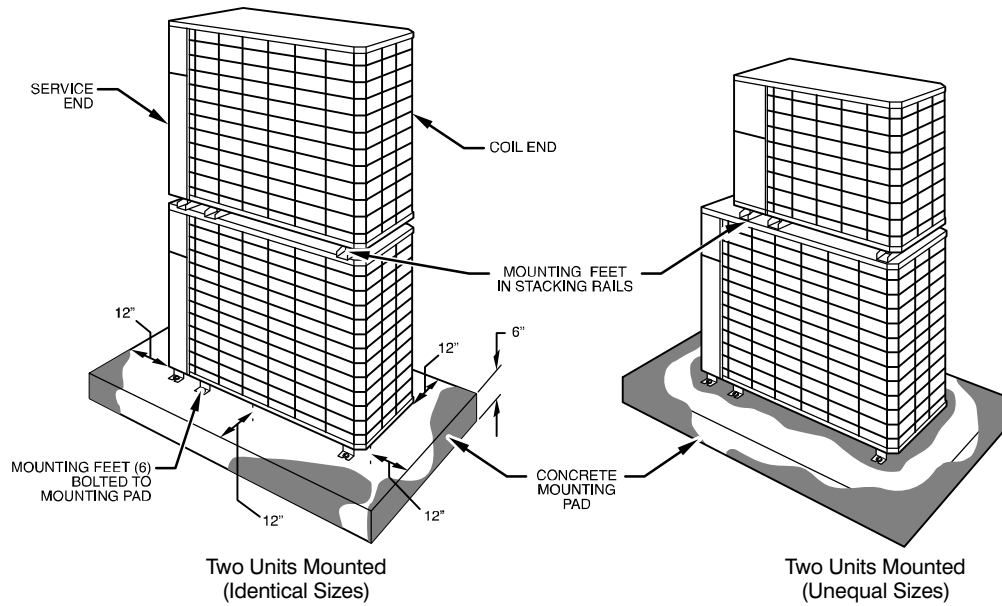
STACKING EQUALLY SIZED UNITS

1. Unpack accessory kit contents. Check to be sure contents are not damaged or missing. (See Table 1.)
2. Secure unit bottom to concrete mounting pad at the 6 mounting feet locations, using lag bolts and anchors provided in kit. Use a masonry drill to drill 1/2-in. holes in concrete base for insertion of anchors.
3. Position 3 stacking rails on top of bottom unit as shown in Fig. 2. Ensure the stacking rails are lined up with the 6 mounting feet on bottom unit.
4. Position the top unit on the bottom unit. Place top unit mounting feet in the 3 stacking rails. Align mounting feet slots with bolt holes in stacking rails. See Fig. 1.

Table 1—Kit Contents and Usage

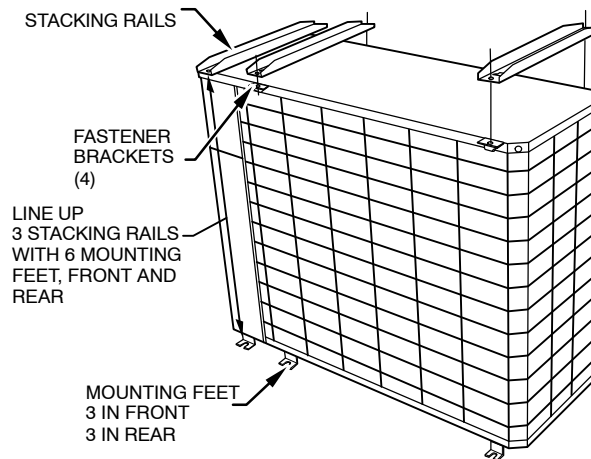
STACKING KIT PART NUMBER	USAGE UNIT SIZE		KIT CONTENTS
53DS-900---075 (Small chassis)	24AHA418, 024 38HDR018, 024 38HDF018, 024, 030	124A_S018, 024 538ANR018, 024 538ENF018, 024, 030	4 Fastener Brackets
			3 Stacking Rails
			2 Hex Head Bolts
			4 Eye Bolts
			6 Lag Bolts
			6 Anchors
			10 Lock Nuts
			10 Flat Washers
53DS-900---076* (Large chassis)	24AHA430-060 38HDF036 38HDR030-060	124A_S030-060 538ENF036 538ANR030-060	4 Fastener Brackets
			3 Stacking Rails
			2 Hex Head Bolts
			6 Carriage Bolts
			4 Eye Bolts
			6 Lag Bolts
			6 Anchors
			14 Lock Nuts
			6 1/4" Washers
			14 5/16" Flat Washers

* Use kit 53DS-900---076 when installing small chassis on top of large chassis.



A06417

Fig. 1 – Stacking Units



A06418

Fig. 2 – Positioning Stacking Rails

- Secure top unit mounting feet (coil end and middle only) to the stacking rails, using the 4 fastener brackets and 4 eye bolts. Use lock nuts and washers provided in kit. When installing fastener brackets, slip bracket flange behind top cover lip of the bottom unit. See Fig. 3.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

All 4 brackets **MUST** be used to avoid possible equipment damage to stacked systems.

- Attach service end mounting feet to the stacking rail with the hex head bolts provided. Use lock nuts and washers provided in kit. Tighten all bolts securely.

NOTE: Fastener brackets are not required for the service end.

STACKING SMALL UNIT ON LARGE UNIT

- Unpack accessory kit contents (see Table 1). Check to be sure contents are not damaged or missing.
- Secure unit bottom to concrete mounting pad at the 6 mounting feet locations, using lag bolts and anchors provided in kit. Use a masonry drill to drill 1/2-in. holes in concrete base for insertion of anchors.
- Position 3 stacking rails on top of bottom unit as shown in Fig. 2. Ensure the stacking rail closest to coil end of unit lines up with the mounting feet closest to coil end on bottom unit. Remaining stacking rails are aligned with mounting feet furthest from coil end on top unit.
- Position the top unit on the bottom unit. Place top unit mounting feet in the 3 stacking rails. Align mounting feet slots with notches in stacking rails. See Fig. 1.
- Secure top unit mounting feet (coil end and middle only) to the stacking rails, using the 4 carriage bolts provided in kit. See Fig. 4. Install the 4 fastener brackets and 4 eye bolts (coil end and middle only). Use lock nuts and washers provided in kit. When installing fastener brackets, slip bracket flange behind top cover lip of the bottom unit. See Fig. 3.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

All 4 brackets **MUST** be used to avoid possible equipment damage to stacked systems.

- Attach service end mounting feet to the stacking rail with the carriage bolts. Use lock nuts and washers provided in kit. Tighten all bolts securely.

NOTE: Fastener brackets are not required for the service end.

ROOFTOP APPLICATIONS

IMPORTANT: Special care must be taken when fastening equipment to a roof. Due to variations in roof design and construction, various fastening methods may be necessary to properly secure the equipment. Follow all local building codes when securing a unit to a roof structure. Ensure adequate condensate drainage is available to avoid water damage to the building. When securing guy wires (field-supplied) to the roof, heavy-duty anchor brackets (field-supplied) must be bolted to the roof structure.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

Attach 4 heavy duty, field-supplied guy wires to eye bolts to avoid structural or equipment damage, especially where winds over 50 m.p.h. are likely.

- Follow steps 1–6 in Stacking Equally Sized Units section, or Stacking Small Unit on Large Unit section, depending on your application.
- Secure 4 field-supplied, heavy duty anchor brackets to roof structure as shown in Fig. 5. Distance of brackets from unit must permit for a 45-degree angle between roof structure and each guy wire (see Fig. 5).

NOTE: If wind baffle accessory is to be used in conjunction with the stacking kit, it will be necessary to drill 2 holes in the wind baffle. Locate the holes to allow the coil-side guy wires to pass through the baffle without obstruction.

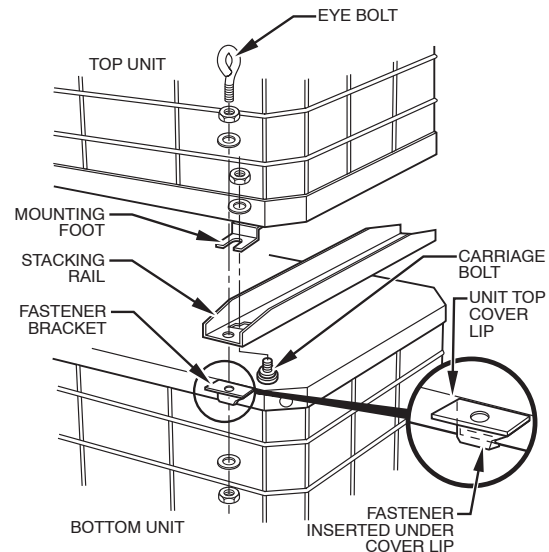
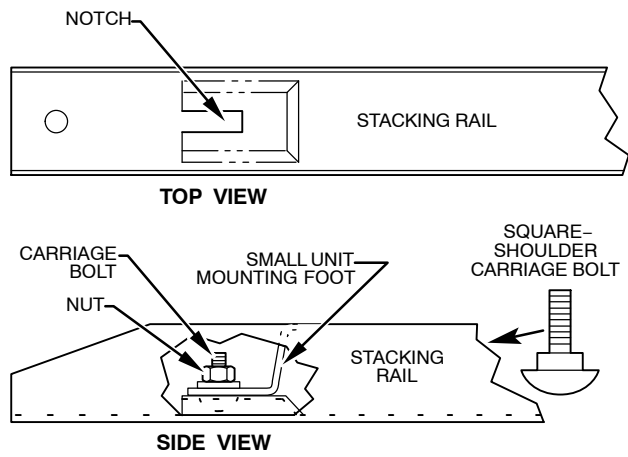


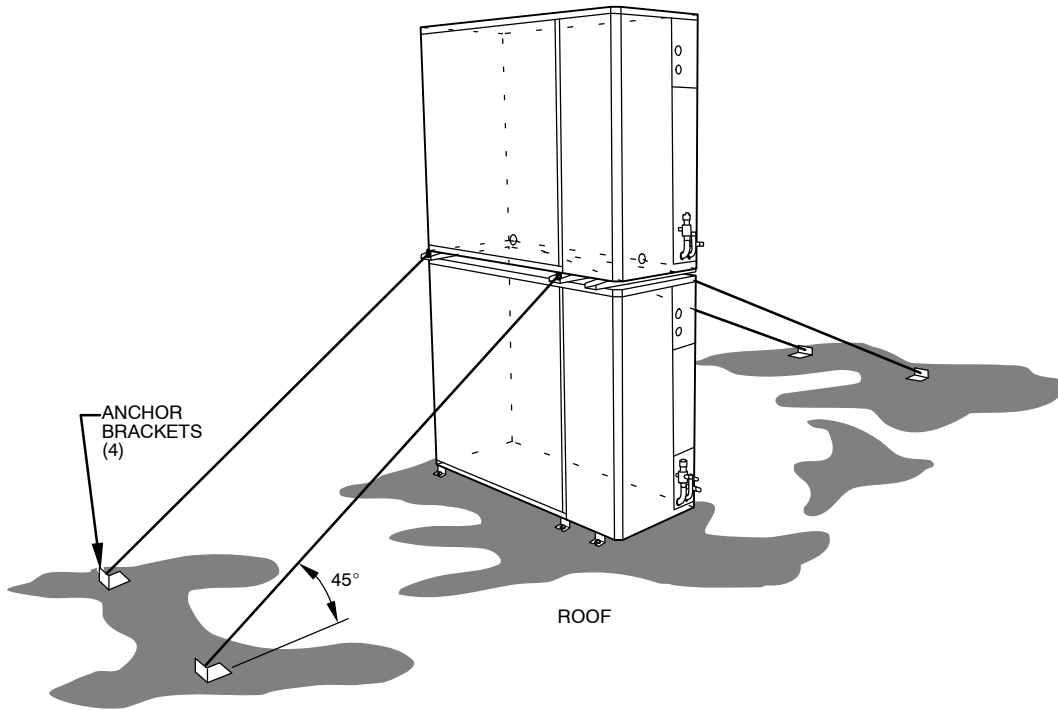
Fig. 3 — Securing Fastener Brackets, Mounting Feet, and Stacking Rails

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A06420

Fig. 4 – Secure Top Unit Mounting Feet to Stacking Rail Notches (53DS900076)



A06421

Fig. 5 – Guy Wires Installed for Rooftop Application

53DS-900---070
53DS-900---071
53DS-900---087
53DS-900---088

Horizontal Discharge Systems
Cooling Only and Heat Pump Units (Size 018-060)
Accessory Wind Baffle Kit


Installation Instructions

NOTE: Read and become familiar with these instructions before beginning installation.

SAFETY CONSIDERATIONS

Installing and servicing air-conditioning equipment can be hazardous due to system pressures and electrical components. Only trained and qualified personnel should install or service air-conditioning equipment. When working on air-conditioning equipment, observe the precautions provided in literature, tags, and labels attached to the unit.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code CSA C22.1 and local codes and ordinances for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand these signal words: DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any modification or installation of this kit, be sure the main electrical disconnect is in the OFF position. Ensure power is disconnected to the fan coil unit. On some systems both the fan coil and the outdoor unit may be on the same disconnect. Tag the disconnect switch with a suitable warning label. There may be more than one disconnect.

GENERAL

These instructions cover the installation of the accessory wind baffle kit on cooling only, heat pump, and multi-split units. The kit is used with horizontal discharge outdoor units to provide improved unit operation in areas with high winds.

INSTALLATION

Refer to Table 1 for kit contents and usage.

CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage. To avoid compressor damage, never turn unit on its side or top when installing kit components.

STEP 1 —Install Z Brackets

1. Remove existing screw from outdoor unit top cover. See Fig. 1.
2. Position top Z bracket between grille and top cover. Be sure shorter top bend of Z bracket slips between top cover flange and metal strip behind top cover flange. See Fig. 1.
3. Reinstall screw removed in Step 1, inserting it through screw hole in top cover and Z bracket. Fasten screw into grille.
4. Install bottom Z bracket in basepan corner, following same procedures. Be sure shorter top bend of Z bracket slips between basepan flange and metal strip behind basepan flange. See Fig. 1.

STEP 2 —Join End and Front Baffles

1. Using the screws provided in kit, join the 2 baffles at their center holes. See Fig. 2. Tighten screws securely.

STEP 3 —Attach End Baffle Flange

1. Remove 3 screws from coil cap. See Fig. 1.
2. Install end baffle flange to Z bracket and use 3 screws removed in Step 1 to secure one end. See Fig. 1 and 2. End baffle flange fits against coil cap. Tighten screws snugly. Do not overtighten.

STEP 4 —Attach Front Baffle Flange

1. Remove 2 screws from access panel. See Fig. 1.
2. Install front baffle flange using 2 screws removed in Step 1. Front baffle flange overlaps end baffle flange where Z brackets are installed. With baffle in place, tighten all screws snugly. Do not overtighten.

Table 1—Kit Contents and Usage

Wind Baffle Kit Part No.	Usage		Kit Contents*
53DS-900-070	25HHA418 38HDF018 38HDR018 38QRF018 38QRR018	224A_S018 538ENF018 538ANF018 538QNF018 538BNR018	1 – End Baffle 1 – Front Baffle 2 – Z Brackets 9 – No. 10-1/2 in. Screws
53DS-900-087	24AHA418, 024 25HHA424 38HDF024, 030 38HDR024 38QRF024 38QRR024	124A_S018, 024 224A_S024 538ENF024, 030 538ANF024 538QNF024 538BNR024	
53DS-900-071	24AHA430, 036, 048 25HHA430, 036 38HDF036 38HDR030, 036 38QRF030, 035, 036 38QRR030, 036	124A_S030, 036, 048 224A_S030, 036 538ENF036 538ANF030, 036 538QNF030, 035, 036 538BNR030, 036	
53DS-900-088	24AHA460 25HHA448, 060 38HDR048, 060 38QRR048, 060	124A_S060 224A_S048, 060 538ANF048, 060 538BNR048, 060	

* Kit contents are the same for both kits however, sizes of items may differ depending on application.

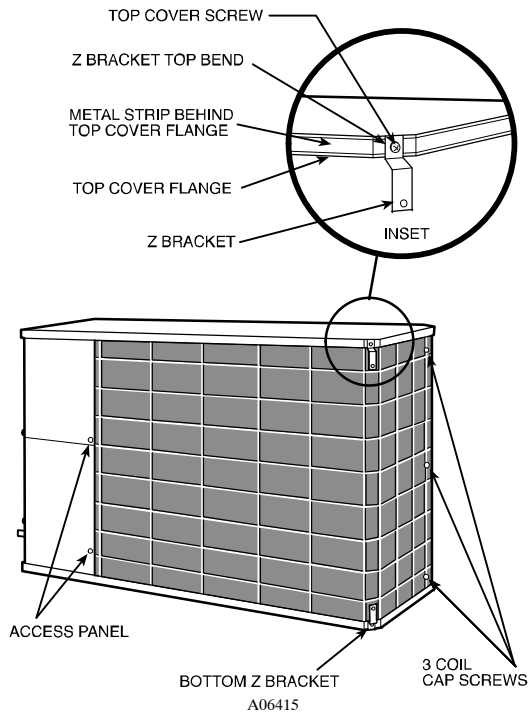


Fig. 1 – Installing Z Brackets

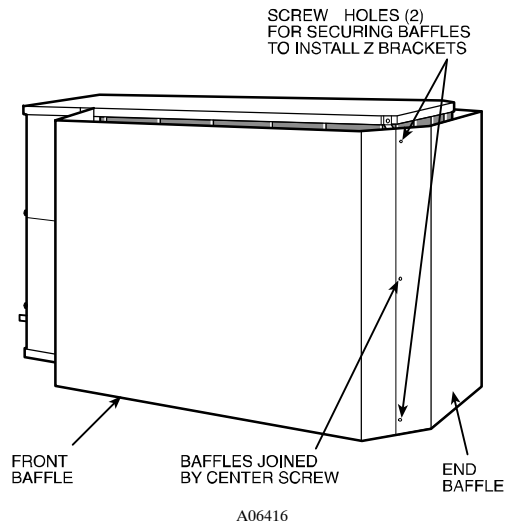


Fig. 2 – Installing End and Front Baffles

53DS-900---077
53DS-900---078

HORIZONTAL DISCHARGE SYSTEMS

Wall Mounting Kit Accessory

Size 018-060 Cooling-Only and Heat Pump Units

Installation Instructions

GENERAL

These instructions cover the accessory wall mounting kit installation. The kit is provided for mounting cooling only, multi-split, and heat pump units to a wall due to space limitations.

IMPORTANT: Read these installation instructions **thoroughly** before starting installation.

Refer to Table 1 for kit contents and usage.

Table 1—KIT CONTENTS AND USAGE

KIT CONTENTS*		MOUNTING KIT PART NUMBER	USAGE
No.	Items		
2	Long Bracket Section	53DS-900---077	24AHA418, 024 25HHA418, 024 38HDF018-030 38HDR018, 024 38QRF018-030
2	Horizontal Bracket Section		38QRR018, 024 124A_S018, 024 224A_S018, 024 538A_R018, 024 538B_R018, 024
2	Angled Bracket Section		538E_F018-030 538Q_F018-030
6	Wall Lag Bolts		
6	Lag Bolt Washers		
6	Wall Lag Bolt Shields (Anchors)	53DS-900---078 +	24AHA430-060 25HHA430-060 38HDF036 38HDR030-060 38QRF036
4	Mounting Feet Bolts (1 in.)		38QRR030-060 124A_S030-060 224A_S030-060 538A_R030-060 538B_R030-060
10	Bracket Assy. Bolts (3/4 in.)		538E_F036 538Q_F036
14	Lock nuts		
14	Star Washers		
14	Flat Washers		


*The contents for both kits are the same; however, the items are different sizes for specific applications.

SAFETY CONSIDERATIONS


Installation of this equipment can be hazardous due to system pressures, electrical components and equipment location. Only trained, qualified installers and service technicians should install, start up and service this equipment. Observe all applicable precautions.

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with kits or accessories when installing.

Follow all the safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instruction manuals, be alert to the potential for personal injury.

Understand the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTE**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards which **will** result in severe personal injury or death. **WARNING** signifies hazards which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installation, always check to be sure main power to system is **OFF**.

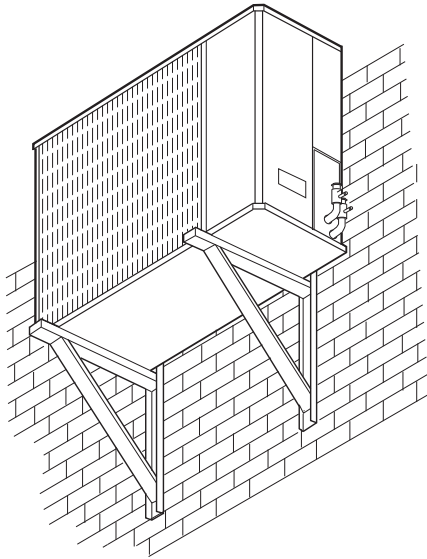
INSTALLATION

1. Unpack accessory from carton. Ensure contents are not damaged or missing. See Table 1.
2. Select a mounting location on the wall. The location must allow for use of wall studs for mounting security. Check the local building codes and building construction to ensure that there is adequate wall strength to support the mounted unit. The location must also allow for condensate drainage from the unit. Ensure this drainage does not cause a problem for the area beneath the unit.

IMPORTANT: Ensure the outdoor unit will be mounted in a location that allows proper airflow. Observe the clearance requirements in the Installation Instructions for the specific outdoor unit being installed.

IMPORTANT: Do not drill new holes in the bracket assembly.

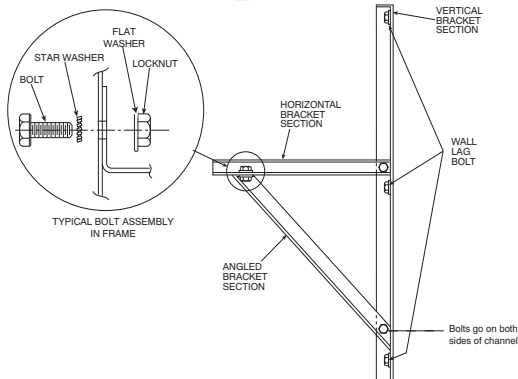
- Use the enclosed vertical bracket sections as a template for marking the mounting kit location on the wall. Both long bracket sections must line up with the middle and coil end mounting feet of the unit (see Fig. 1).



NOTE: Unit must be at least 6 in. (152.4 mm) from wall.

Fig. 1 – Typical Installation (Diagrammatic)

D06006



**Fig. 2 – Assembled Mounting Kit
(One Section, Diagrammatic)**

- Drill 6 mounting holes in marked-off locations on the wall. For wood wall mounting, drill 5/16-in. diameter holes. For masonry wall mounting, drill 5/8-in. diameter holes and insert 3/8-in. steel shields (anchors).
- Assemble the bracket sections as shown in Fig. 2, using bracket assembly bolts, lockwashers and bracket assembly locknuts. Do not tighten the bracket assembly bolts until the assembled kit is mounted on the wall. Mount the bracket assembly to the wall as shown in Fig. 2, using the 6 wall lag bolts and washers provided. Once mounted, tighten the bracket assembly bolts securely at all six mounting locations.
- Check that all bracket assembly sections are secure.

⚠ CAUTION

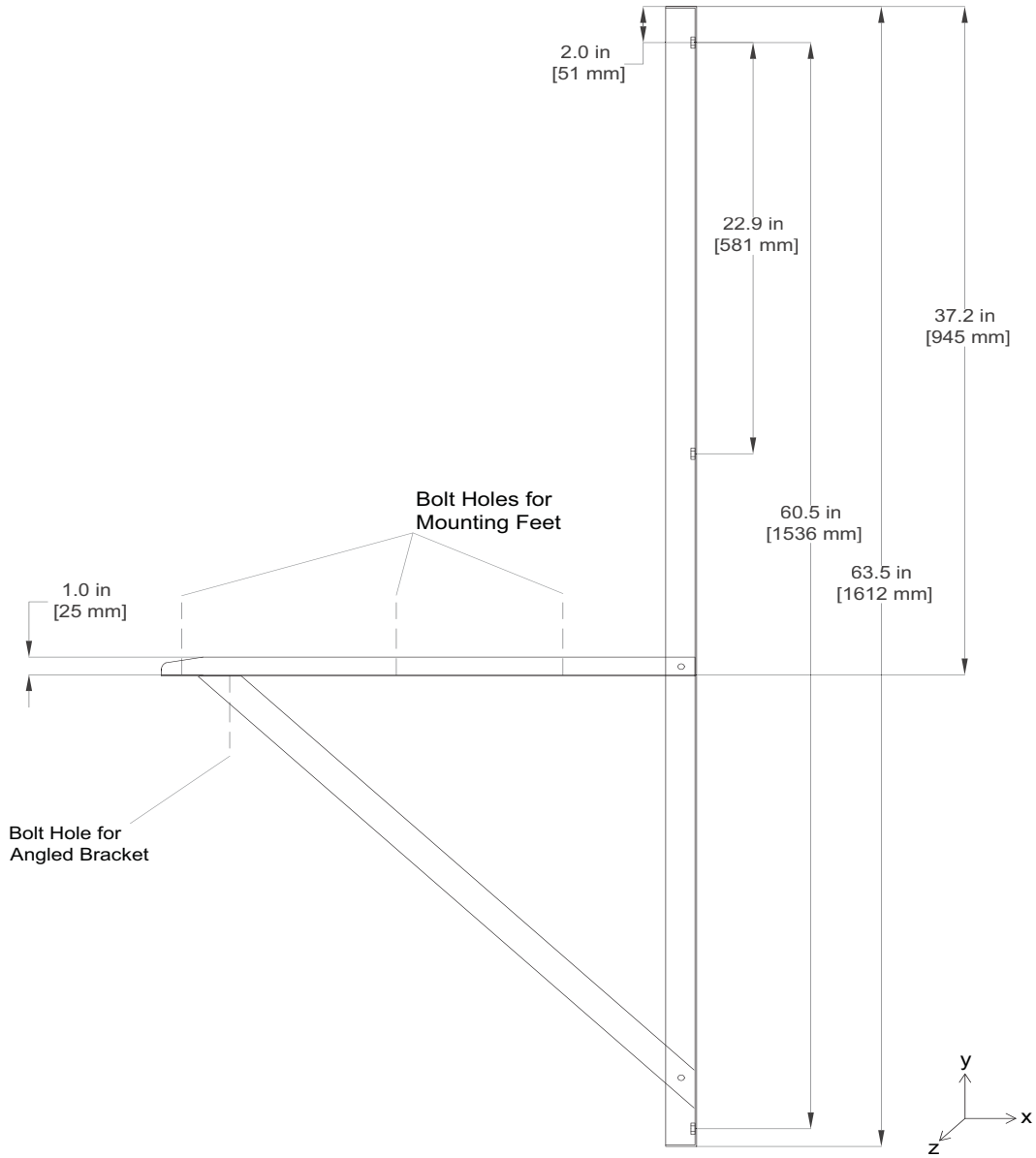
EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment and/or property damage.

To avoid damage to the wall or unit, check to be sure that all accessory parts are fastened tightly before mounting the unit on the wall brackets.

- Mount the unit on the wall brackets using the 1 in. (25.4 mm) mounting feet bolts and mounting feet locknuts provided. Tighten with the mounting feet locknuts. Use 2 bolts on the coil end of the unit, and 2 bolts beneath the compressor section (see Fig. 2, 3 and 4).

Side View (Wall Bracket)



Top View (Horizontal Section)

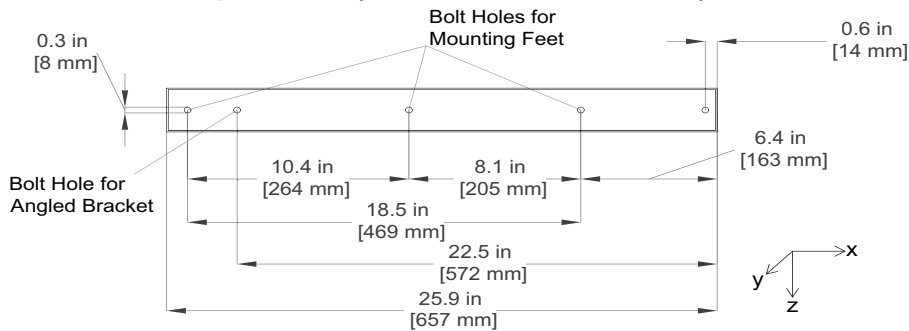


Fig. 3 – 53DS-900---077 Dimensional Drawing

Side View (Wall Bracket)

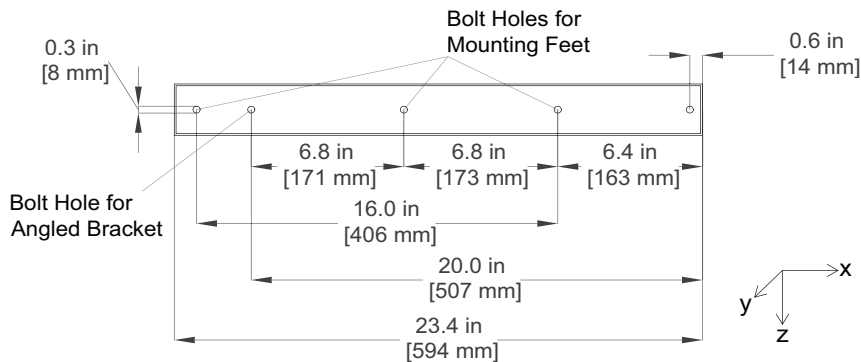
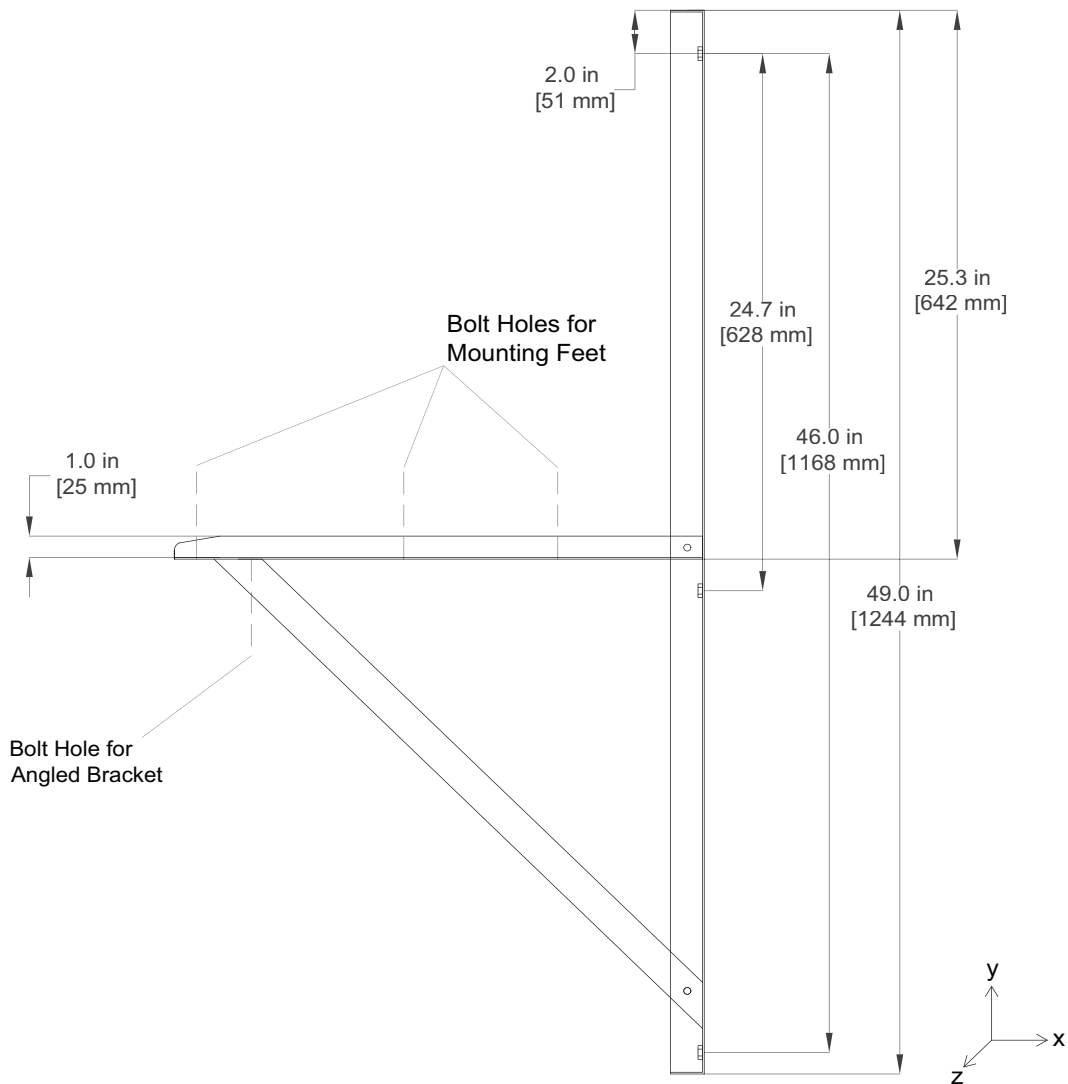


Fig. 4 – 53DS-900---078 Dimensional Drawing


Installation Instruction

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words; DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.



CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

Use only the kit components described in this installation procedure.

INTRODUCTION

These instructions cover installation of Low-Pressure Switch Kit KAALP0301R22 on split system air conditioners containing R-22 refrigerant and KAALP0401PUR on air conditioners containing Puron® (R-410A) refrigerant.

Kit contents:

- Low-Pressure Switch - 1
- Adapter Tee - 1
- Flare Gasket - 2
- Pressure Switch Adapter Tube - 1
- Installation Instructions - 1

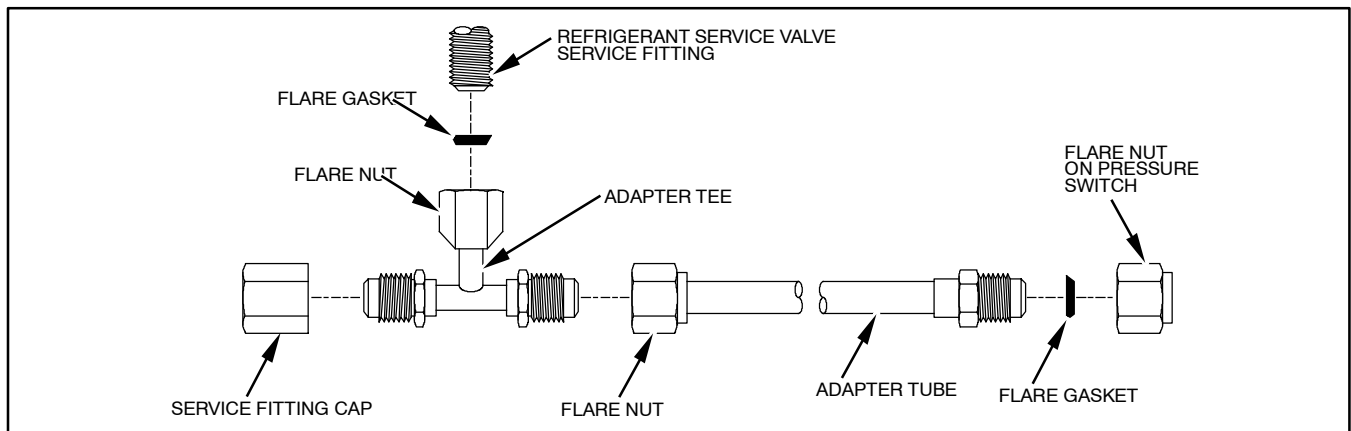


Fig. 1 - Low-Pressure Switch Refrigerant Connections

INSTALLATION

⚠ CAUTION

EQUIPMENT DAMAGE AND/OR OPERATION HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

When making flare connections, use one of the flare gaskets provided in the kit to ensure a leak-tight refrigerant connection. Use a backup wrench to avoid breaking connection or splitting flare.

NOTE: The liquid- and vapor-service valves are located outside of the unit at the rear. The smaller valve is the liquid-service valve; the larger valve is the vapor-service valve.

Switch Refrigerant Connections:

NOTE: Make sure the liquid-service valve is in the fully back seated (counterclockwise) position before installation (Back seating service valves have no valve core in the service port).

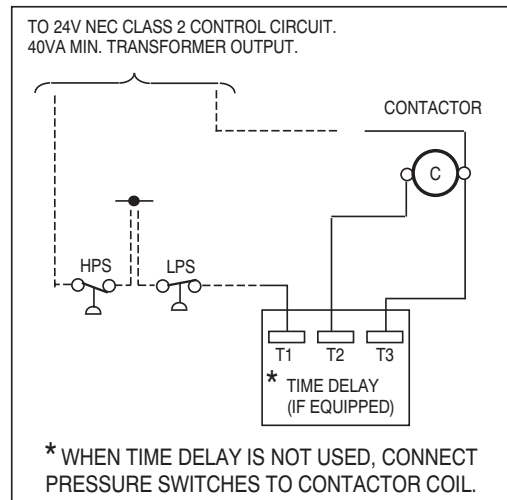
Refer to Fig. 1 and proceed as follows to install the low-pressure switch.

1. Remove knockout in service panel next to service valves.
2. Remove valve core from one end of adapter tee provided in kit.
3. Securely connect pressure switch adapter tube flare nut to side of adapter tee without valve core.
4. Route the adapter tube completely through knockout so that tee can be attached to vapor-service valve later.
5. Securely connect pressure switch flare nut, using flare gasket, to male flare fitting on the pressure switch adapter tube inside the unit.
6. Remove seal cap from service fitting on vapor-service valve on unit and securely connect to remaining male flare fitting on adapter tee.
7. Securely connect flare nut on adapter tee, using flare gasket to service fitting on service valve.
8. On back seating valves, remove service valve stem cap and open valve 3/4 turn.
9. Replace service valve stem cap fingertight and further tighten cap 1/6 turn, or 1/12 turn on back seating valves.
10. Check all refrigerant connections for leaks and repair if necessary.

ELECTRICAL CONNECTIONS

Refer to Fig. 2 and proceed as follows:

1. Locate unit contactor coil terminals or, if equipped, compressor time delay terminal T1.
2. On units without compressor time delay, make electrical connections as follows:
 - a. One pressure switch in unit: Disconnect Y lead from contactor coil terminal. Connect 1 pressure switch lead to Y lead. Connect other pressure switch lead to contactor coil terminal.
 - b. Both high- and low-pressure switches in unit: Disconnect Y lead from contactor coil terminal. Connect 1 high pressure switch lead to Y lead, then connect other high-pressure lead to 1 low-pressure lead. Connect remaining low-pressure lead to contactor coil terminal.
3. On units with compressor time delay, make electrical connections as follows:
 - a. One pressure switch in unit: Disconnect wire leading to T1 on time delay board. Connect 1 pressure switch lead to disconnected lead. Connect other pressure switch lead to T1 on time delay board.
 - b. Both high- and low-pressure switches in unit: Disconnect wire leading to T1 on time delay board. Connect 1 high-pressure lead to disconnected lead, then connect other high-pressure lead to 1 low-pressure lead. Connect remaining low-pressure lead to T1 on time delay board.
4. Restore power and check unit operation.



A07630

Fig. 2 - Air Conditioner Electrical Connections


Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. Replacement components are not available for this kit. If components are malfunctioning, replace the entire kit.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.



CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

DESCRIPTION AND USAGE

Included in this kit:

- One (1) KAAVC0101AAA Control Voltage Adapter Kit
- Two (2) 1/4 inch Phillips Mounting Screws
- These Installation Instructions
- Wire Ties
- One (1) Electrical Shock Hazard Warning Label
- One (1) Wiring Diagram Label
- One (1) Label Cover

These instructions cover installation of the KAAVC0101AAA Control Voltage Adapter Kit in single-speed air conditioners. For heat pump systems, the required kit is the KHAVC0101AAA Control Voltage Adapter Kit.

The kit is designed to allow communication between specific indoor and outdoor units that otherwise would not be compatible. The kit is compatible with 208/230V high wall ductless indoor units and 208/230/460V horizontal discharge outdoor units with single-phase or three-phase power at 60Hz.

The KAAVC0101AAA Kit converts high-voltage control signals from a high wall indoor unit into low-voltage control signals for a horizontal outdoor unit. In cooling only systems, the kit carries the compressor control signal.

The kit consists of one transformer and four wires which are designed to mount within the outdoor unit. The kit is pre-wired for cooling-only applications; there are four free wires available for the installer to connect to the indoor and outdoor units.

Parts necessary for mounting and connecting the KAAVC0101AAA Kit are included in the kit. Upon receipt of shipment, check the kit for damage. If there is any damage, forward claim papers directly to the transportation company. Manufacturer is not responsible for damage incurred in transit.

INSTALLATION

A. Procedure 1 - Mounting the Kit



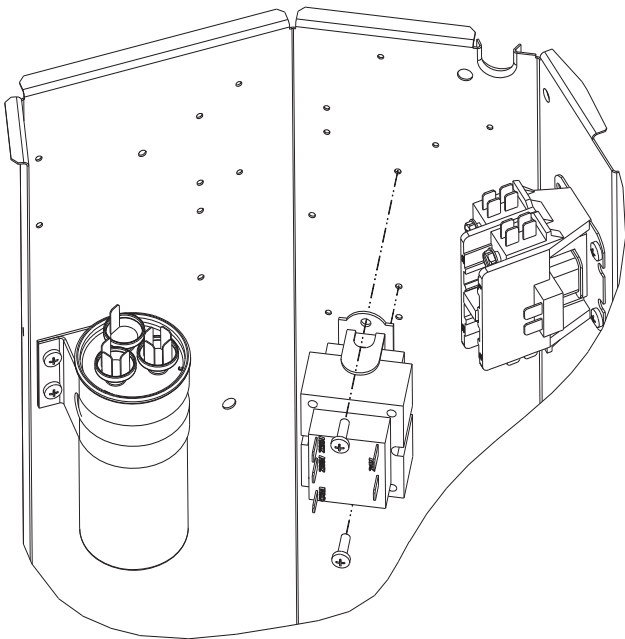
WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

1. Make sure all power to the unit is turned off.
2. Open the unit by removing the corner panel which is attached with 5/16" hex screws.
3. Attach the kit to the partition in the space to the left of the contactor using the two holes indicated in Fig.1.
4. Ensure the screws are tightened to approximately 30 ft-lbs of torque.



A150097

Fig. 1- Installing the KAAVC0101AAA Control Voltage Adapter Kit

B. Procedure 2 – Kit Connections



WARNING

ELECTRICAL SHOCK HAZARD

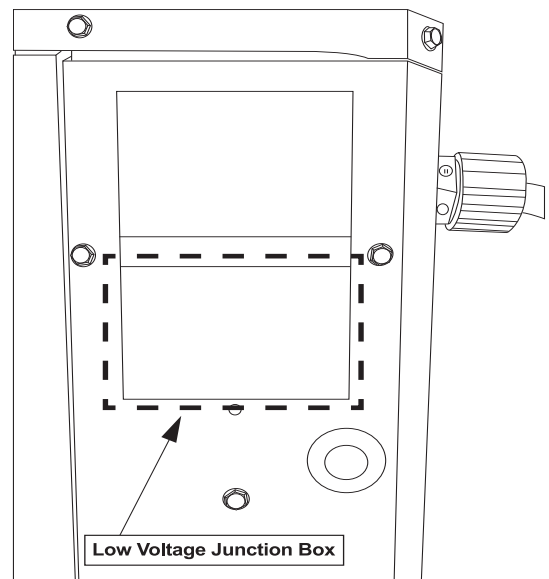
Failure to follow this warning could result in personal injury or death.

This kit requires high voltage (230V) non-metallic field wire to connect the indoor unit to the kit in the outdoor unit. Some regions may require metal conduit for this wire. Check relevant local building codes before installing. DO NOT USE regular low voltage (24V) thermostat wire with this kit.

1. After the indoor unit is installed, connect 230V field control wiring to the terminal block on the indoor unit. Use only 18 AWG non-metallic wire with an insulation thickness of at least 2/64 inches. For wires longer than 50 feet, use 16 AWG non-metallic wire.
2. Remove the rubber grommet in the control wire entry hole near the service panel on the outdoor unit. Replace this grommet with a (field-supplied) watertight strain relief.
3. After running the 230V field wire to the outdoor unit, connect the high voltage wires from the kit (INDOOR C, Y) (see Fig. 5.)
4. Connect the two low voltage wires from the kit (OUTDOOR C, Y) to the corresponding colored wires in the outdoor unit using wire nuts. To make this connection, cut the snap-in wire tie that holds the existing low voltage wires and remove them from the low voltage junction box (See Fig. 2 for location). Remove the old snap-in wire tie from the hole to make room for the new snap-in wire tie on the high voltage wires.

C. Procedure 3 – Securing Wires

1. If any of the kit wires pass adjacent to copper tubing, use one or both of the included double-headed wire ties to secure those wires, preventing them from touching the copper.
2. Use an included wire tie to relieve strain on the low voltage wires and prevent the wire nuts from coming apart. Ensure the wire nuts are pointing upwards to prevent water from collecting on the wire leads.
3. Place the high voltage connections in the low voltage junction box (See Fig. 2 for location). Use the snap-in wire tie included on these wires to secure them to the hole where the low voltage wires were connected before.
4. Place the low voltage connections in the compressor compartment, separate from the high voltage connections.

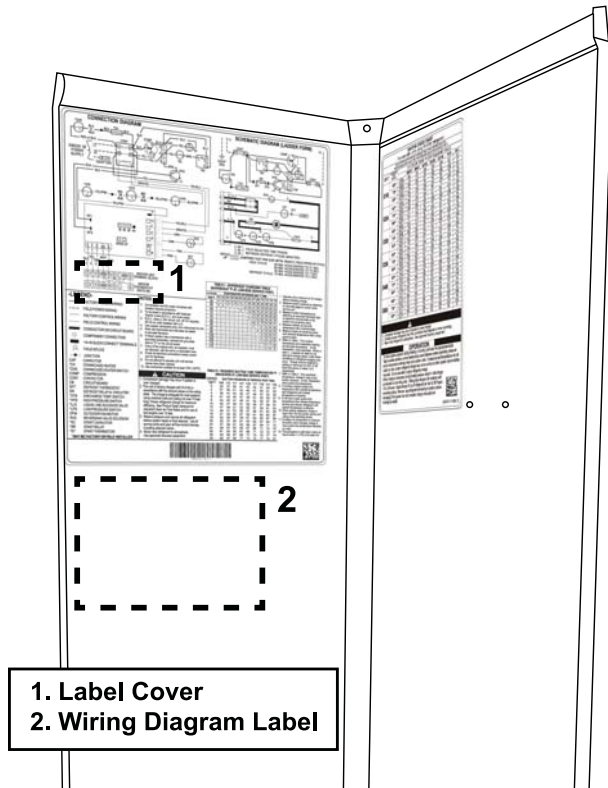


A150099

Fig. 2- Low Voltage Junction Box Location

D. Procedure 4 - Label Placement

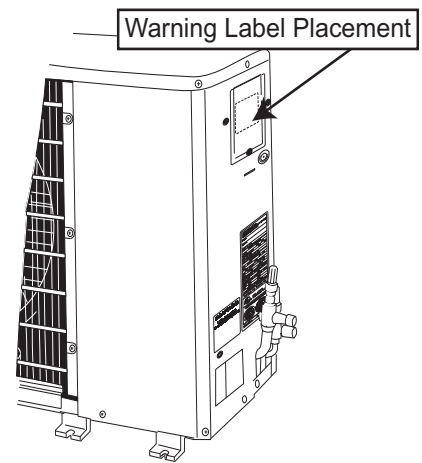
1. Apply the included wiring diagram label to the inside of the corner panel below the existing wiring diagram. See Fig. 3 for placement.
2. Apply the included Label Cover which reads "SEE VOLTAGE ADAPTER KIT WIRING DIAGRAM" to the existing wiring diagram to hide the symbol depicting the old indoor terminal block. This terminal block does not apply when the Control Voltage Adapter Kit is in use. See Fig. 3 for placement.



A150093

Fig. 3- Wiring Label Placement

3. Apply the included Electrical Shock Hazard Warning Label to the outside of the service panel door. See Fig. 4 for placement.



A150094

Fig. 4- Warning Label Placement

4. Close the unit by replacing the corner panel with the screws removed in the installation step.

FIELD RUN TEST

1. Turn the unit power on.
2. Set the thermostat below room temperature.
3. Verify that the compressor is running and the unit is providing cooling.
4. Set the thermostat above room temperature.
5. Verify that the compressor stops running.

SERVICE FOR THE KAAVC0101AAA KIT

The compressor does not turn on:

- One of the four wires on the kit may be loose or disconnected.

The compressor does not turn off:

- One of the indoor control wires may be connected to terminal L1 or terminal L2 on the indoor terminal block.

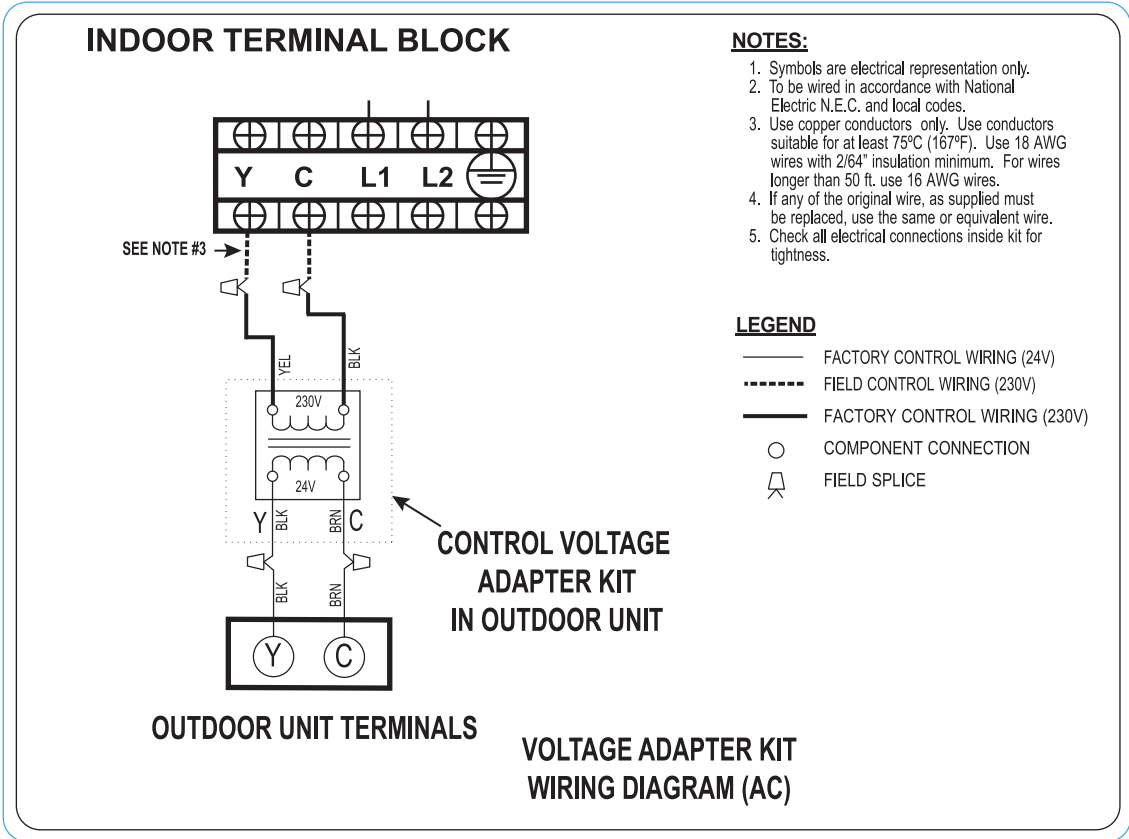


Fig. 5- Connection Diagram for KAAVC0101AAA Control Voltage Adapter Kit

A150098


Installation Instruction

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Installing and servicing air conditioning equipment can be hazardous due to system pressures and electrical components. Only trained personnel should install or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All other operations should be performed by trained service personnel. When working on air conditioning equipment, observe precautions in the literature, on tags, and on labels attached to the unit.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand these signal words; DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

Follow all safety codes. Wear safety glasses and work gloves.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any installation or modification, be sure the main electrical disconnect switch is in the OFF position. TAG THE DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL.

This kit is for 24 VAC applications **ONLY**. **Do Not** use or connect to any high voltage wiring.

Use only the kit components described in this installation procedure.

INTRODUCTION

This instruction covers the installation of winter start control Part No. KAAWS0101AAA on split-system air conditioners. The device is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

DESCRIPTION AND USAGE

Winter start control must be used where low evaporator temperatures, or nuisance tripping of low-pressure switch may be encountered.

The kit contains the following items:

- (1) Time-Delay Relay (TDR) CESO130062-00
- (1) Installation Instructions
- (1) 13" (330 mm) Blue (tap) Wire
- (1) 13" (330 mm) Yellow Wire
- (1) 13" (330 mm) Brown Wire
- (1) Insulated Tap Connector (HY89TC014)

INSTALLATION

NOTE: If a fully communicating Infinity/Evolution Control is being used for low ambient cooling, a winter start control is not required.

For outdoor units with Infinity/Evolution and TechAssist single-stage control boards:

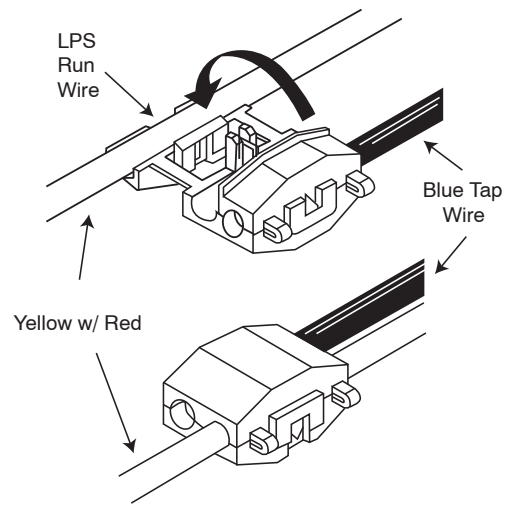
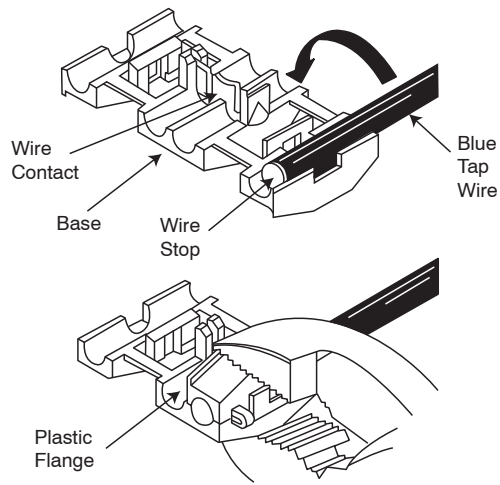
1. Mount the winter start control board in outdoor control box.
2. Connect the following wires to the TDR:
 - 13" (330 mm) Yellow wire to T1 (24 VAC input)
 - 13" (330 mm) Brown wire to T3 (24 VAC common)
 - 13" (330 mm) Blue-tap wire to T2 (N.O. relay contact)
3. Secure the open end of Blue Tap wire to the insulated tap connector (see Fig. 1). To do this, simply butt the tap-wire against the wire stop. Fold the top cover half over to meet the base. Squeeze on the top cover and base with ordinary pliers until the latch locks. DO NOT place pliers on top of the raised plastic flange.
4. Identify the LPS (low pressure switch) connector at the ODU circuit board, and identify the 24vac LPS run-wire (or main lead) for the pressure switch. The LPS run-wire is different between circuit boards (see Fig. 3 and Fig. 4).
 - Infinity/Evolution (HK38EA004) LPS run-wire is connected to pin #1 (see Fig. 3).
 - TechAssist (HK35AC005) LPS run-wire is connected to pin #2 (middle pin) (see Fig. 4).

Secure the LPS run-wire by inserting the run-wire into the remaining open section of connector. Fold the base over to meet the run-wire section. Squeeze on the base and run-wire section with ordinary pliers until the latch locks. DO NOT place pliers on top of the raised plastic flange.
5. Connect the open strip end of 13" (330 mm) Brown wire to (C) 24vac common side of the ODU and thermostat field connections.
6. Connect the open strip end of 13" (330 mm) Yellow wire to (Y) 24vac side of the ODU and thermostat field connections.

NOTE: The Winter Start Control time-delay logic is now wired in parallel with the outdoor unit low-pressure switch. When indoor thermostat calls, the TDR logic will energize (closing T1, T2) for approximately 3-minutes bypassing the LPS. After 3-minutes, the TDR logic will de-energize (opening T1, T2) and the LPS circuit is restored (see Fig. 2).

Troubleshooting Upon Startup

If the TDR does not energize, make sure LPS run and tap wires are not reversed (double check figures below). You can also apply 24vac direct to T1 and T3 to verify that the TDR relay will energize.



A07934
Fig. 1 - Installation

A07944

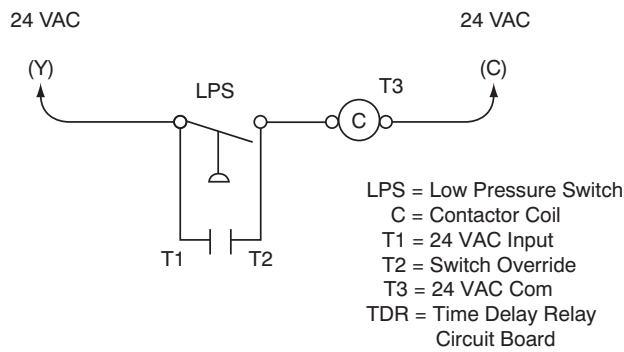
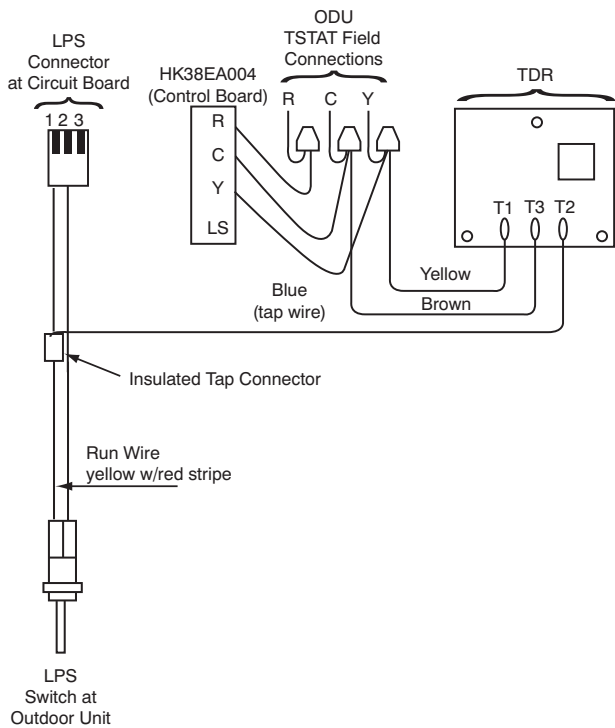


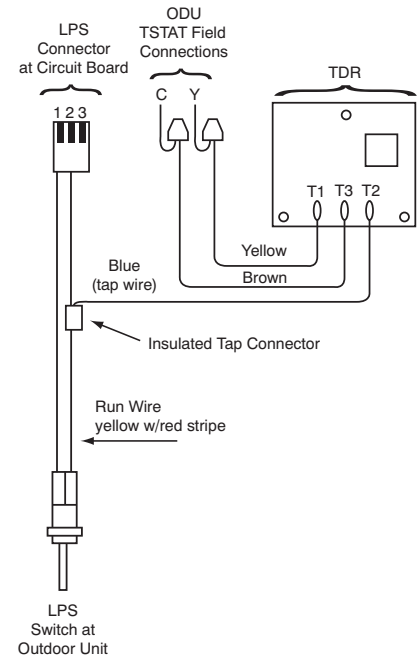
Fig. 2 - Wiring for Winter Start Control

A07933



**Fig. 3 - Infinity/Evolution (HK38EA004)
LPS Run-Wire is Connected to pin #1**

A07932



**Fig. 4 - TechAssist (HK35AC005)
LPS Run-Wire is Connected to pin #2**

A07931


Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

INTRODUCTION

These instructions cover the installation of the Evaporator Freeze Thermostat Part No. KSAFT0101AAA on residential split-system air conditioners and heat pumps.

DESCRIPTION AND USAGE

This device is designed to prevent damage to the compressor by shutting down the outdoor section in the event of indoor coil freeze- up.

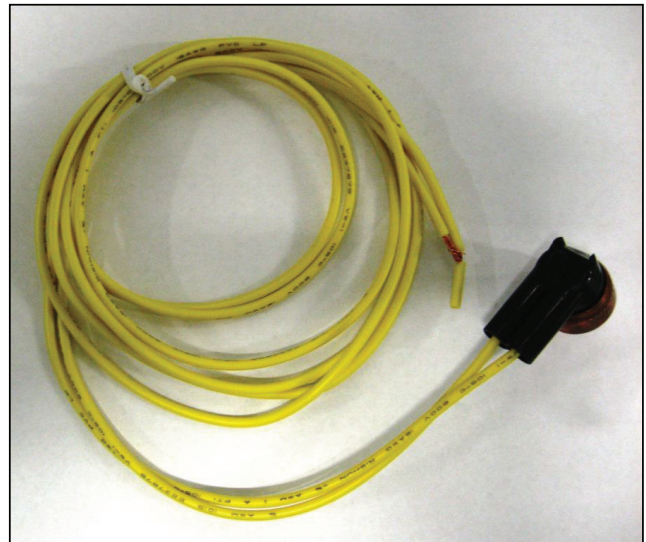



Fig. 1- Evaporator Freeze Thermostat


A14371

 **WARNING**

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

 **CAUTION**

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

Kit contents:

- Temperature switch 1
- Pipe strap with hardware 1
- Installation Instruction 1

Field supplied materials:

- Insulation to wrap switch
- Wire nuts
- Wire ties

INSTALLATION

PROCEDURE 1 — MOUNT THERMOSTAT

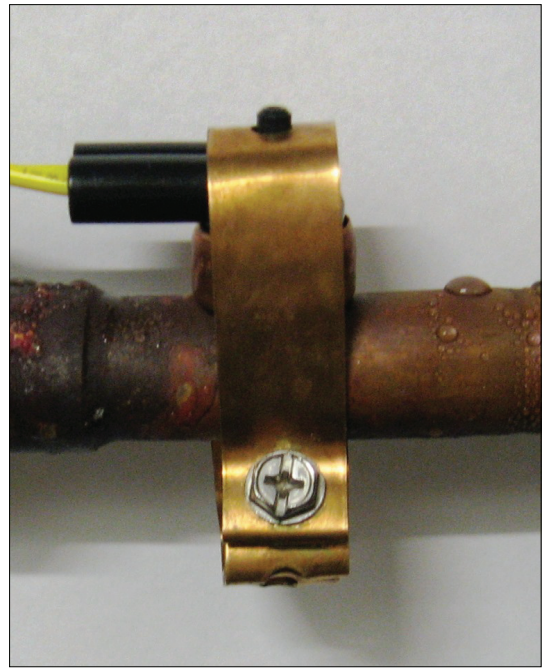
Make sure all power to unit is turned off

⚠ CAUTION

UNIT DAMAGE HAZARD

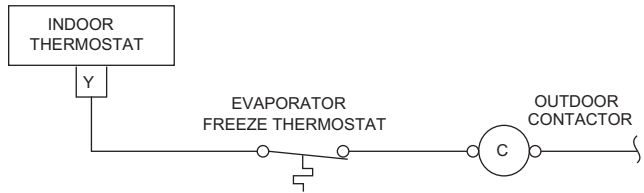
Failure to follow this caution may result in unit damage.
Exercise extreme caution when drilling holes. Do not puncture coil and/or tubing.

1. Install Evaporator Freeze Thermostat on vapor tube near indoor coil using strap provided in kit (see Fig. 2). Make sure switch is secure by tightening with provided hardware.
2. Insulate thermostat with field supplied pipe insulation or equivalent.
3. Route thermostat wires to indoor unit low voltage compartment.
4. Wire Evaporator Freeze Thermostat in series with Y (single-stage) or Y1 (two-stage) low-voltage wire from indoor thermostat at indoor unit, to outdoor unit. (See Fig. 3 through 6.)
5. Dress thermostat wires as required.



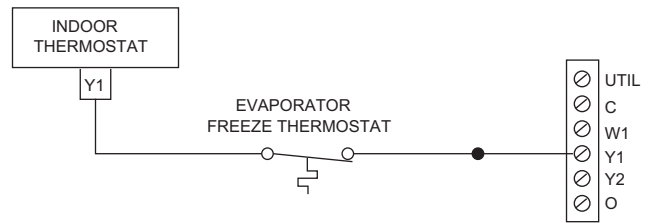
A14372

Fig. 2- Mounting Thermostat on Vapor Tube



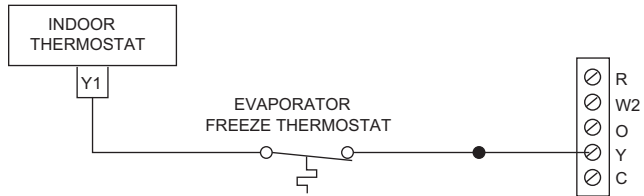
A12591

Fig. 3- Evaporator Freeze Thermostat Wiring Single Stage



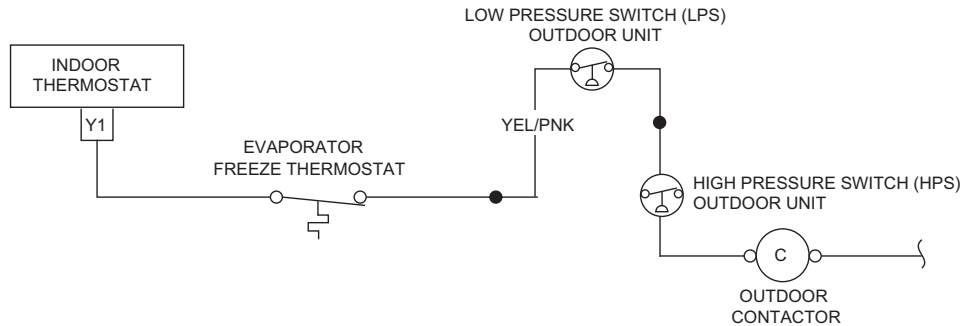
A13052

Fig. 5- Evaporator Freeze Thermostat Wiring 2-Stage Communicating AC and HP



A13054

Fig. 4- Evaporator Freeze Thermostat Wiring 2-Stage Non-Communicating HP



A13053

Fig. 6- Evaporator Freeze Thermostat Wiring 2-Stage Non-Communicating AC