

# INSTALLATION INSTRUCTIONS

## High-Pressure Switch Kit

### NASA202PS, NASA402PS

These instructions must be read and understood completely before attempting installation.

#### Safety Considerations:

Installing and servicing of 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 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 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.

### Safety Labeling and Signal Words

#### DANGER, WARNING, CAUTION, and NOTE

The signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTE** are used to identify levels of hazard seriousness. The signal word **DANGER** is only used on product labels to signify an immediate hazard. The signal words **WARNING**, **CAUTION**, and **NOTE** will be used on product labels and throughout this manual and other manuals that may apply to the product.

**DANGER** – Immediate hazards which **will** result in severe personal injury or death.

**WARNING** – Hazards or unsafe practices which **could** result in severe personal injury or death.

**CAUTION** – Hazards or unsafe practices which **may** result in minor personal injury or product or property damage.

**NOTE** – Used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

#### Signal Words in Manuals

The signal word **WARNING** is used throughout this manual in the following manner:



## WARNING

The signal word **CAUTION** is used throughout this manual in the following manner:



## CAUTION

#### Signal Words on Product Labeling

Signal words are used in combination with colors and/or pictures on product labels.



## WARNING

#### ELECTRICAL SHOCK HAZARD

Failure to turn off electric power could result in personal injury or death.

Before installing or servicing system, turn off main power to the system. There may be more than one disconnect switch, including accessory heater(s).

## INTRODUCTION

These instructions cover the installation of High-Pressure Switch Kit NASA202PS on R-22 air conditioners and heat pumps, and NASA402PS on R-410A air conditioners and heat pumps.

The device is designed to shutdown the outdoor section in the event of unusually high liquid pressure, preventing damage to the compressor.

## DESCRIPTION AND USAGE

The High-Pressure Switch breaks the thermostat demand signal to the outdoor unit when liquid pressure rises above the switch pre-set value ( $400 \pm 10$  psig for R-22, and  $610 \pm 10$  psig for R-410A).

Included in the kit are:

High-pressure switch ----- 1  
 Adapter tee ----- 1  
 Pressure switch adapter tube (AC) - 1  
 Pressure switch adapter tube (HP) - 1  
 DD24FA051 Flare Gasket ----- 2  
 Wirenut ----- 2  
 Installation Instructions ----- 1

## INSTALLATION



### CAUTION

#### UNIT DAMAGE HAZARD

**Failure to follow this caution may result in unit damage**

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

**NOTE:** The liquid and vapor (suction) service valves are located outside the unit at the rear corner. The smaller valve is the liquid service valve and the larger valve is the vapor service valve.

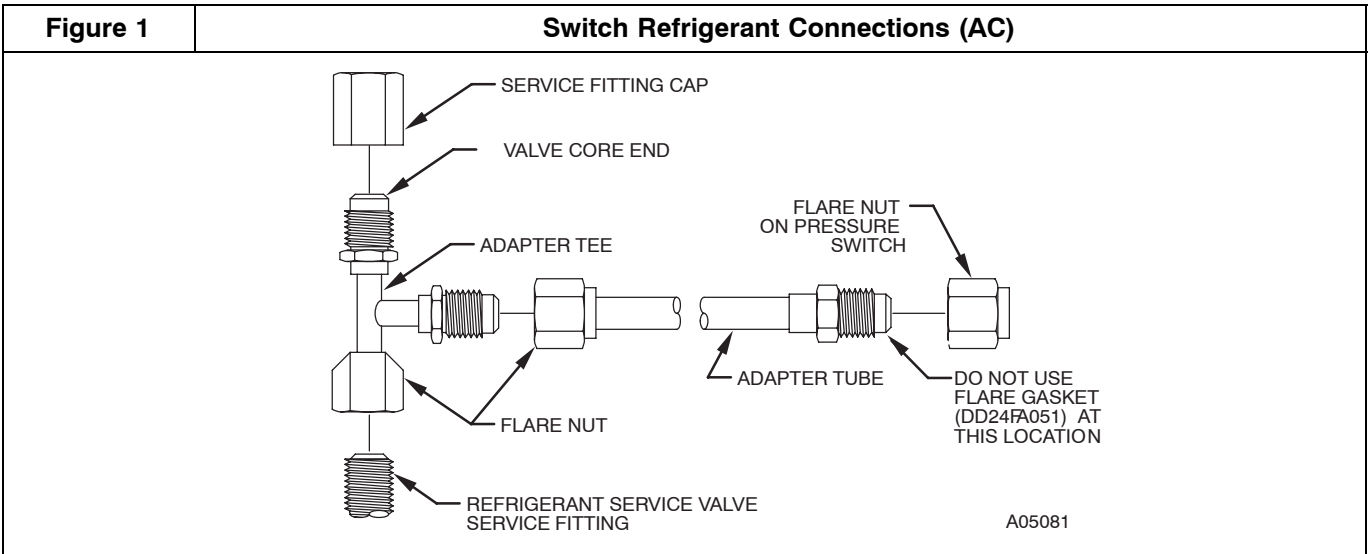
#### SWITCH REFRIGERANT CONNECTIONS (AC)

**NOTE:** Back seating service valves must be in the fully back seated (counterclockwise) position before installation. (Back seating service valves have no valve core in the service port.)

Refer to Figure 1 and proceed as follows:

**NOTE:** When installing both high-pressure and low-pressure switches on liquid service valve, connect second tee to service fitting of first tee.

1. Remove knockout in service panel next to service valves.
2. Securely connect pressure switch adapter tube flare nut to side of adapter tee without valve core.
3. Route the adapter tube completely through knockout so that tee can be attached to liquid service valve later.
4. Securely connect pressure switch flare nut to male flare fitting on adapter tube inside the unit. Using backup wrench, torque to 140 in.-lb.
5. Remove seal cap from service fitting on liquid service valve and securely connect to remaining male flare fitting on adapter tee.
6. Securely connect flare nut on adapter tee to service fitting on liquid service valve.
7. On back seating valves, remove liquid service valve stem cap and open valve 3/4 turn. Replace liquid service valve stem cap finger-tight, then further tighten cap 1/12 turn.
8. Check all refrigerant connections for leaks and repair if necessary.



### SWITCH REFRIGERANT CONNECTIONS (HP)

**NOTE:** Back seating service valves must be in the fully back seated (counterclockwise) position before installation. (Back seating service valves have no valve core in the service port.)

Refer to Figure 2 and proceed as follows:

**NOTE:** When installing both high-pressure and low-pressure switches on liquid service valve, connect second tee to service fitting of first tee.

1. Remove knockout in service panel next to service valves.
2. Route flare fitting end of the pressure switch adaptor tube through knockout hole.
3. Securely connect pressure switch flare nut to male flare fitting on the pressure switch adaptor tube inside unit. Using backup wrench, torque to 140 in. lb.
4. Remove sweat adapter from field liquid line fitting on service fitting on liquid service valve and securely connect 3/8-in. tube portion of pressure switch adaptor.

5. Braze interconnecting liquid line to belled end of pressure switch adaptor.
6. Check all refrigerant connectors for leaks and repair if necessary.
7. Evacuate indoor coil and refrigerant lines.
8. Open service valves and let charge back into system.

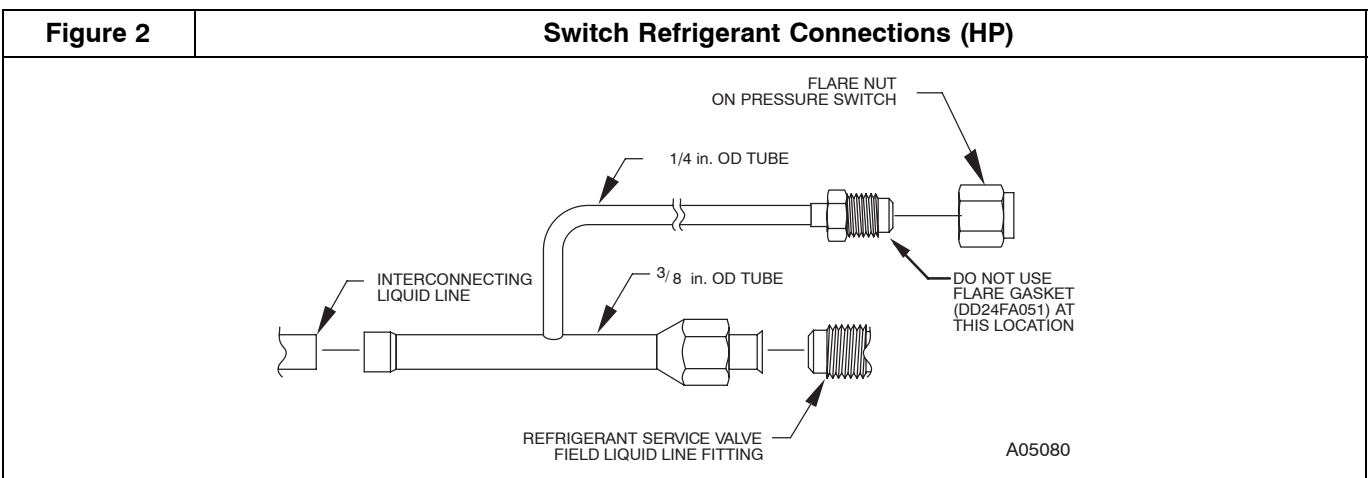


## CAUTION

### UNIT DAMAGE HAZARD

**Failure to follow this caution may result in unit damage**

**To prevent melting of the 1/4-in. OD tube joint, place a wet cloth at the joint area.**



# ELECTRICAL CONNECTIONS

**NOTE:** In some instances it may be necessary to clip the quick-connect terminals from the wire leads and strip the insulation from end of the lead to make an electrical connection. Wirenuts have been provided for this purpose.

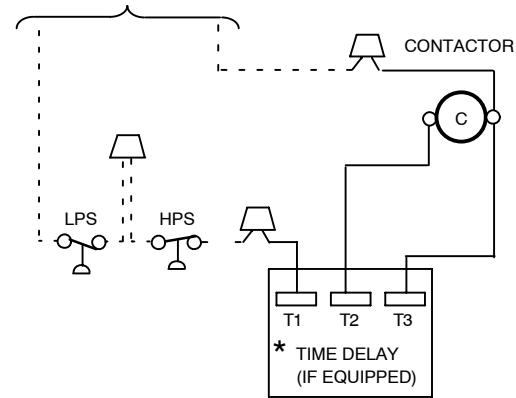
Refer to Figure 3 (AC) or Figure 4 (HP) and proceed as follows:

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: Cut Y lead approximately 4 in. from contactor coil terminal. Connect 1 pressure switch lead to 1 cut lead. Connect other pressure switch lead to other cut lead.
  - b. Both high- and low-pressure switches in unit: Cut Y lead approximately 4" from contactor coil terminal. Connect 1 high-pressure switch lead to 1 cut lead, then connect other high-pressure lead to 1 low-pressure lead. Connect remaining low-pressure lead to other cut lead.
3. On units with compressor time delay, make electrical connections as follows:
  - a. One pressure switch in unit: Cut wire leading to T1 on time delay board. Connect 1 pressure switch lead to 1 cut lead. Connect other pressure switch lead to other cut lead.
  - b. Both high- and low-pressure switches in unit: Cut wire leading to T1 on time delay board. Connect 1 high-pressure lead to 1 cut lead, then connect other high-pressure lead to 1 low-pressure lead. Connect remaining low-pressure lead to other cut lead.
4. Restore power and check unit operation.

Figure 3

## AC Electrical Connections

TO 24V NEC CLASS 2 CONTROL CIRCUIT.  
40VA MIN. TRANSFORMER OUTPUT.

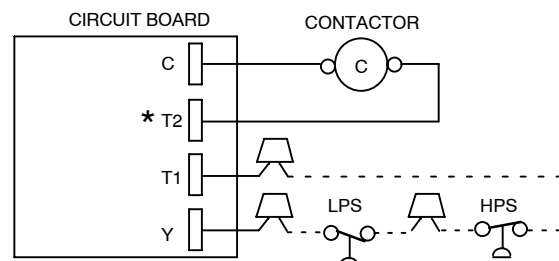


\* WHEN TIME DELAY IS NOT USED, CONNECT PRESSURE SWITCHES TO CONTACTOR COIL.

A95309

Figure 4

## HP Electrical Connections



\* T2 NOT USED ON CIRCUIT BOARDS WITHOUT TIME DELAY. WHEN T2 IS NOT AVAILABLE, CONNECT PRESSURE SWITCHES BETWEEN "Y" AND CONTACTOR COIL.