

# Installation Instructions

## Condensate Drain Trap

### ACSC01A


For Use With BAC / ABC and BHC / HBC Series Air Handlers

## SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to electrical components and equipment location (such as a ceiling or elevated structure). Only trained, qualified installers and service mechanics should install and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply.

- Follow all safety codes.
- Wear safety glasses and work gloves.
- Use care in handling and installing this accessory.



**ELECTRIC SHOCK HAZARD**

To avoid the possibility of electrical shock, open and tag all disconnects before performing maintenance on this equipment.

**CAUTION**

Wear a hard hat and safety shoes when working in an area where there is danger of falling objects. Wear safety glasses to protect your eyes. When welding, brazing or cutting, wear gloves and goggles for personal protection. Follow safe rigging practices when handling larger coils. Refer to ANSIZ49.1 (latest edition) for American Welding Society Standards of safe welding and fame cutting practices. All field piping must conform to local codes.

## INTRODUCTION

The condensate drain trap accessory kit (figure 1) includes a compact, adjustable drain pan trap for 6 to 20 ton packaged air handling units. The trap can be used in vertical (upflow) or horizontal installations, and is easier to install and service than a conventional trap. The trap includes an overflow cutoff switch that can be wired to turn off the unit or system if the drain trap becomes plugged. The included wire harness has a lead that can be connected to an alarm if desired.

The condensate drain trap accessory also makes trap maintenance easier. The bottom of the trap is transparent to show obstructions and a flexible cleaning brush is provided for routine maintenance.

## PREINSTALLATION

**Complete Preinstallation Checks** - Remove accessory packaging and inspect shipment for damage. File claim with shipping company if accessory is damaged or incomplete.

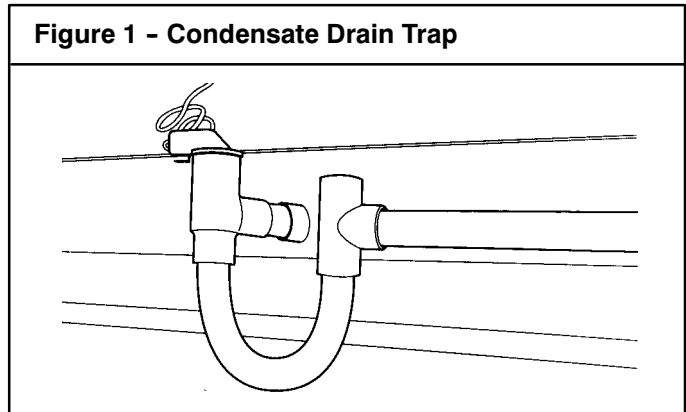


Table 1 - Accessory Contents

Quantity	Description
1	Transparent Trap Tube
1	Overflow Switch Assembly
1	1 inch PVC Nipple
1	24V Relay
1	Wire Harness
1	1 in. x 1 in. x 3/4 in. PVC Tee
1	3/4 in x 3/4 in. x 3/4 in. PVC Tee
1	Pipe Cap
1	Cleaning Brush

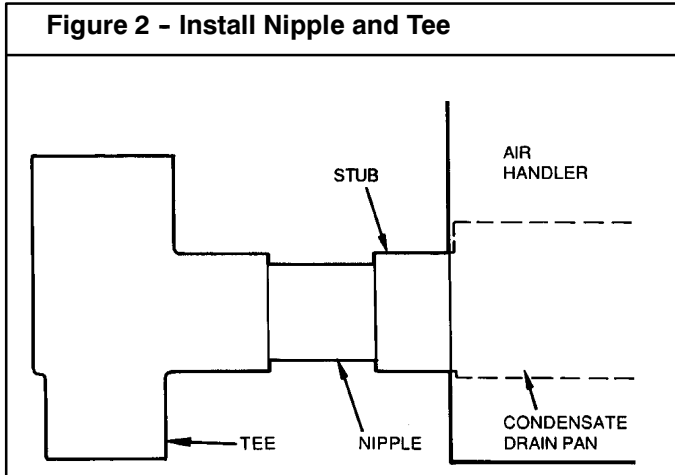
## INSTALLATION

**NOTE:** Use PVC pipe primer and cement to make all connections.

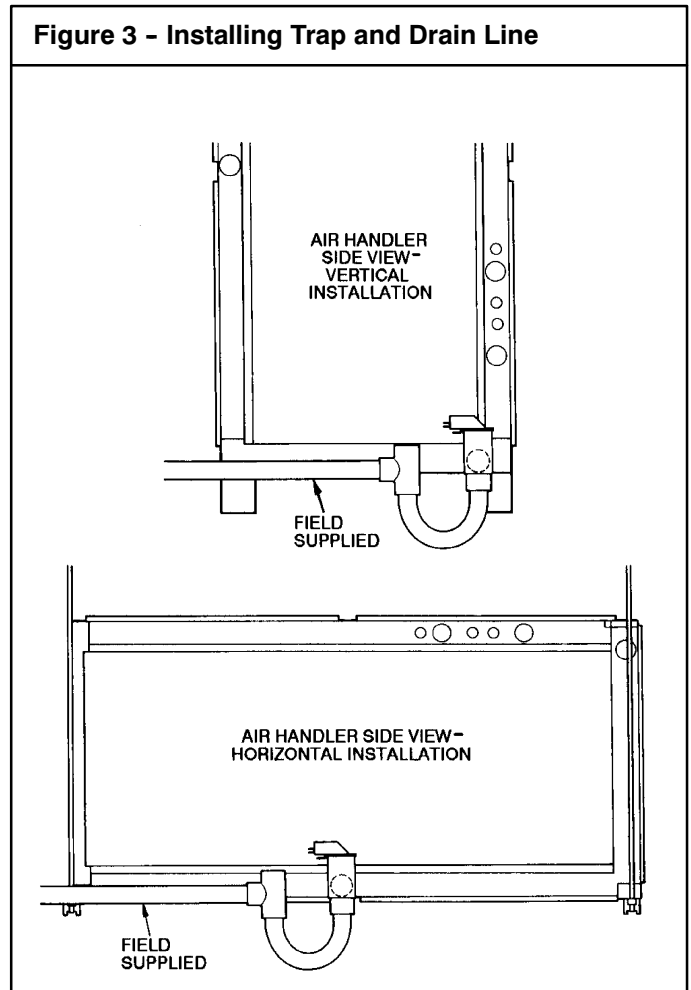
1. Cement 1 inch PVC pipe nipple (supplied) into the drain pan pipe stub. See figure 2.
2. Cement the 1 inch x 1 inch x 3/4 inch PVC tee with the stepped body onto the other end of the nipple so that the main body of the tee is vertical and the 1 inch end of the straight-thru section is up.
3. Cement the longer leg end of the transparent trap into 3/4 inch connection in bottom of tee; swivel trap towards direction where condensate drain line is to be installed.

4. Cement the 3/4 in x 3/4 in. x 3/4 in. PVC Tee onto other end of trap, with the main body of the tee vertical.
5. Cement 3/4 inch PVC condensate drain pipe in horizontal section of second tee. Slope pipe away from unit for proper drainage. Pipe must have separate supports; do not support pipe from trap.
6. Install pipe cap in top of 3/4 in x 3/4 in. x 3/4 in. PVC Tee.
7. Install overflow switch assembly in top of tee closest to unit. See Figure 3 and 4.

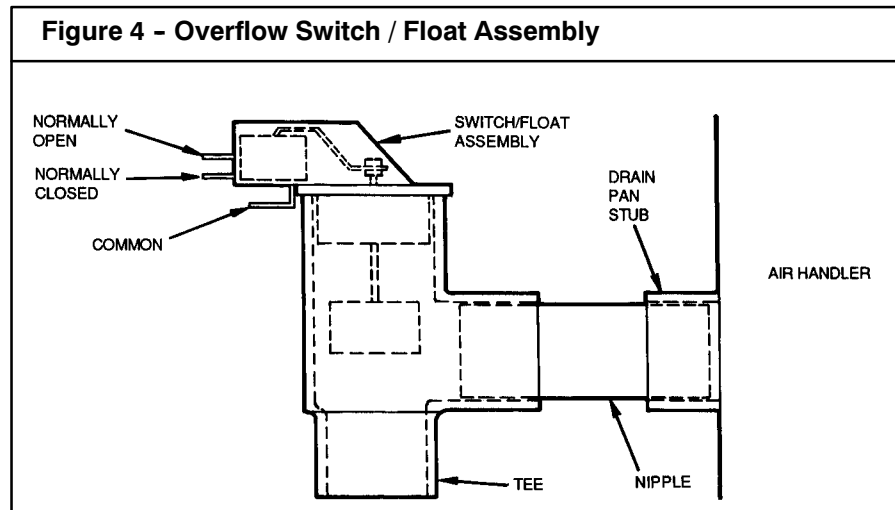
**Figure 2 - Install Nipple and Tee**



**Figure 3 - Installing Trap and Drain Line**



**Figure 4 - Overflow Switch / Float Assembly**



**Wire Overflow Switch Assembly** - The switch shuts off the air handler fan(s) and can also be used to trigger a field supplied alarm, light, or similar device. See Figure 4.

All air handlers are equipped with an overflow shutoff switch which can be wired in series with the condensing unit control circuit. A 24v relay is also supplied with the kit for this application. If the drain pan trap on the air handler becomes plugged, the overflow switch interrupts power to the condensing unit and indoor fan control, turning off the system, shutting off the condensing unit's compressors and

preventing the air handler drain pan from overflowing. Refer to Figure 4 and 5 to wire the switch as follows:

1. Disconnect all power from unit and remove access panel on control box side of unit.
2. Locate wiring harness; quick connects on one end of harness are for connection to switch.
3. Connect white wire from wiring harness to Common terminal on switch; connect red wire to Normally Closed terminal and black wire to Normally Open terminal. See Figure 5.

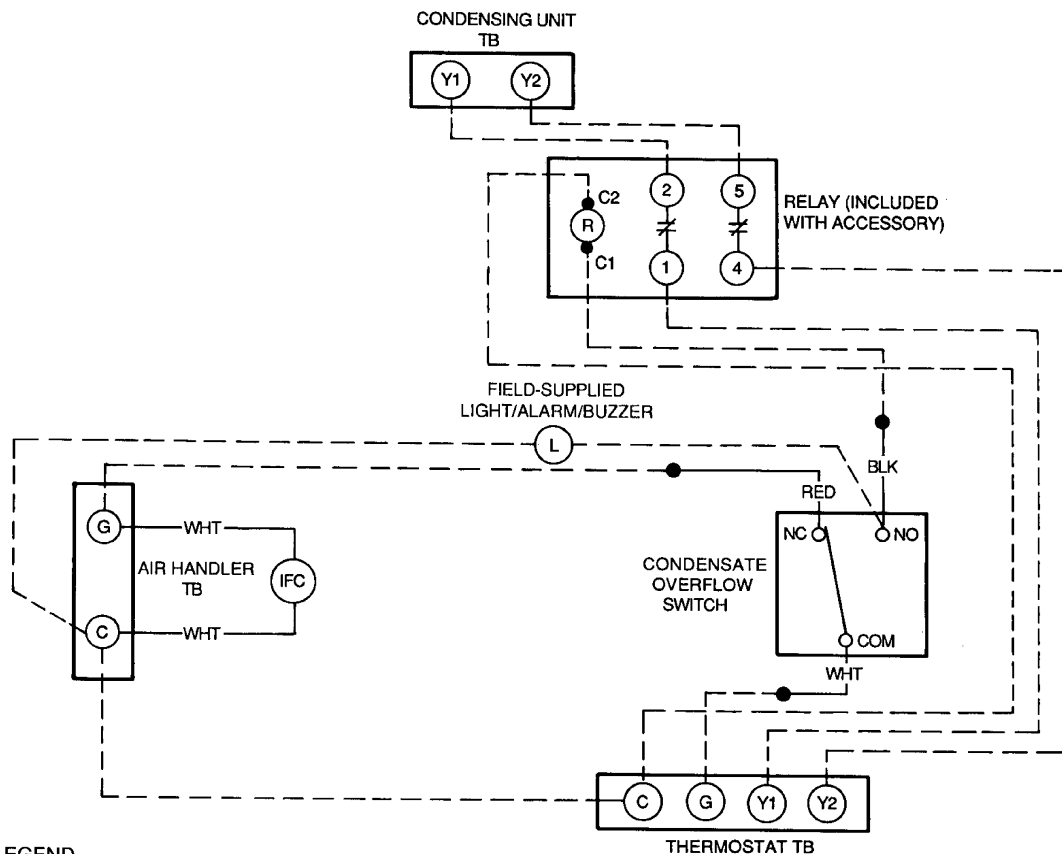
4. Route other end of wiring harness through knockout in corner post of air handler to terminal strip on control box.
5. Strip white and red wire ends.
6. Remove indoor fan wire from thermostat at terminal G and connect to the white wire with a field supplied wire nut. See Figure 5.
7. Connect red wire to terminal G on unit terminal strip.
8. Connect black wire to coil terminal C1 on supplied relay. Relay can be mounted in or near the air handler or condensing unit.
9. If alarm, bell, light, or similar device is used, wire the device between normally open terminal on switch and terminal C on the air handler's control box.
10. Complete wiring of relay as shown in Figure 5. Using field supplied wire, connect relay terminals 2 and 5 to the condensing unit, terminals 1 and 4 to thermostat terminals Y1 and Y2 and coil terminal C2 to common terminal C2 at thermostat or air handler.
11. Secure wiring harness with wire ties. Ensure wires inside the unit do not interfere with fans or other internal components. Replace access panel and restore unit power.

**Verify Operation** - With unit power on, set the thermostat fan switch to ON. Ensure fan is running. With a screw driver, carefully lift switch arm or float mechanism on overflow switch to activate switch.

Once the switch is activated, the air handler fan immediately turns off. For direct expansion systems, condensing unit also shuts off. Field supplied alarm (if present) is activated. If fan does not shut off, recheck wiring. Once operation is verified, release switch arm or float mechanism.

**Maintenance** - Inspect clear portion of trap periodically to ensure it is clean and unrestricted. Keep supplied cleaning brush near trap. If cleaning is required, remove plug from top of tee and insert brush for cleaning.

**Figure 5 - Overflow Switch Wiring**



- LEGEND**
- COM — Common
  - IFC — Indoor Fan Contactor
  - NC — Normally Closed
  - NO — Normally Open
  - TB — Terminal Block
  - Field Wiring