

PACKAGED UNITS KITS AND ACCESSORIES

508897-01
05/2026

D4P120 & D4S SMOKE DETECTOR KITS

INSTALLATION INSTRUCTIONS FOR SMOKE DETECTOR KITS USED WITH ZG/ZC/ZH 036-150 UNITS

Shipping and Packing List

39U76; 603408-22

Single-sensor kit contains the following:

- 1- Smoke detector mounting assembly¹
- 1- Smoke detector power board assembly
- 1- Return bracket assembly (without economizer)
- 1- Smoke detector power board mount
- 1- Plastic exhaust tube
- 1- Sensor manufacturer's instructions
- 1- Economizer mounting bracket (if applicable)
- 1- Grommet
- 4- Wire ties
- 1- Sensing tube (24")
- 1- Sensing tube (36")
- 1- Magnet
- 1- Sensor harness
- 1- Power harness
- 1- Terminal - adaptor
- 1- Smoke detector sensor
- 5- #8 - 32 X 1" thread-forming screws
- 5- #10 - 16 X 3/4" sheet metal screws
- 5- #10 - 16 X 1" sheet metal screws
- 2- Supply base brackets²

39U75; 603408-21

Dual-sensor kit contains all items in the Single-sensor kit plus the following:

- 1 - Smoke detector sensor³

¹ **NOTE** - Smoke detector mounting assembly includes sensor installed for dual sensor kits.

² **NOTE** - Supply sensor bracket comes assembled for 036-074 applications. See FIGURE 12 for B-box (092-150) applications.

³ **NOTE** - Reverse pivot points of supply air sensor cradle for B-box (092-150) applications.

Application

Smoke detector will interrupt the 24VAC signal to the unit control circuit when smoke is sensed. Unit will be de-energized. After installation, place these instructions in the unit documentation packet for future reference.

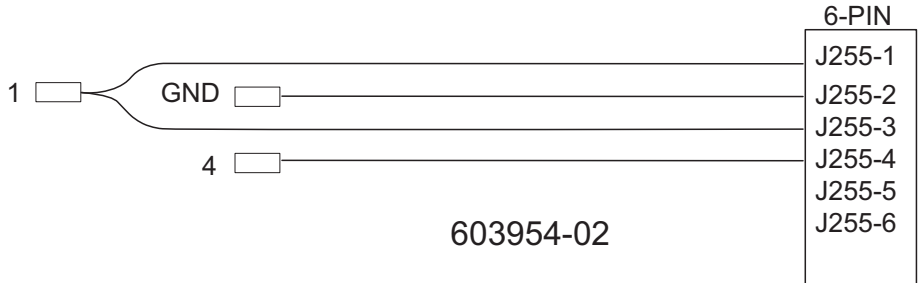
Identify Harnesses

Two harnesses are provided in both kits. Dual sensor applications will require separation of the sensor harness. Refer to FIGURE 1 for 39U76 single sensor kits and 39U75 dual sensor kits.



HARNESS IDENTIFICATION (not to scale)
 39U76 SINGLE SENSOR KITS AND 39U75 DUAL SENSOR KITS
 (SUPPLY AIR ONLY OR RETURN AIR ONLY
 APPLICATIONS)

POWER HARNESS - 6.5 FT. IN LENGTH
 Used in ZG/ZC/ZH applications.



SUPPLY AND RETURN AIR HARNESS - 4 CONNECTORS
 Used in all dual sensor applications.

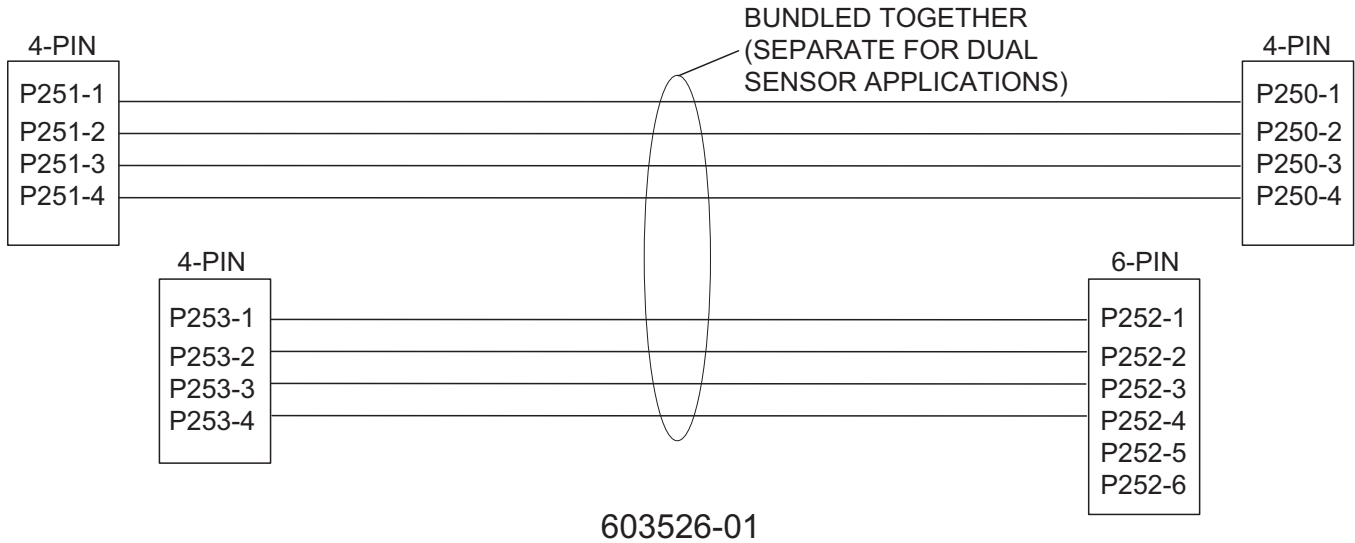


FIGURE 1

Installation

⚠️WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional installer (or equivalent), service agency or the gas supplier.

⚠️WARNING

To prevent serious injury or death:

1. Lock-out/tag-out before performing maintenance.
2. If system power is required (e.g., smoke detector maintenance), disable power to blower, remove fan belt where applicable, and ensure all controllers and thermostats are set to the "OFF" position before performing maintenance.
3. Always keep hands, hair, clothing, jewelry, tools, etc., away from moving parts.

⚠️CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

Turn the electrical power to unit OFF at disconnect switch.

Smoke Detector Sensor And Power Board Installation

Use manufacturer's instructions provided with smoke detector to install sensors and power board. Refer to FIGURE 2 and FIGURE 3 for location of power board, supply air sensor, and return air sensor.

Return Smoke Detector

- 1 - For 036-150 units without an economizer, see FIGURE 4.
- 2 - For 036-074 units with an economizer, see FIGURE 5.
- 3 - For 092-150 units with an economizer, see FIGURE 6.

Supply Smoke Detector

- 1 - Assemble supply smoke detector main bracket based on configurations below. See FIGURE 7, FIGURE 8, and FIGURE 9.

For 036-048 units, use the "A-Box - Short" configuration.

For 060-074 units, use the "ABox - Tall" configuration.

For 092-150 units, use the "B Box" configuration.

- 2 - Mount the supply air sensor to the bracket door then mount the bracket door to the main bracket. See FIGURE 10 and FIGURE 11.

NOTE - A and B box units have different door configurations. Secure screws in their proper locations and leave unused pilot holes empty. See FIGURE 11.

- 3 - Mount the assembled bracket and sensor to the blower deck.

Power Board

- 1 - Use power board bracket base as template for mounting holes.
- 2 - Mount power board per FIGURE 12 and FIGURE 13.

Sampling Tube Installation

- 1 - Slide metal sampling tube onto the back side of the sensor as shown in FIGURE 14. When sensor is installed in return air applications, slide plastic exhaust tube onto back side of the sensor as shown in FIGURE 14.

NOTE - Plastic exhaust tube is NOT used in supply air applications and should be discarded.

- 2 - For supply detectors, install sampling tube support bracket and slide tube through hole in the top of the bracket. See FIGURE 2 and FIGURE 3 for mounting locations.
- 3 - Orient sampling tube so that holes point toward the air stream.

**SMOKE DETECTOR LOCATIONS
ZG/ZC/ZH 036-074 UNITS**

SUPPLY AIR
SMOKE DETECTOR

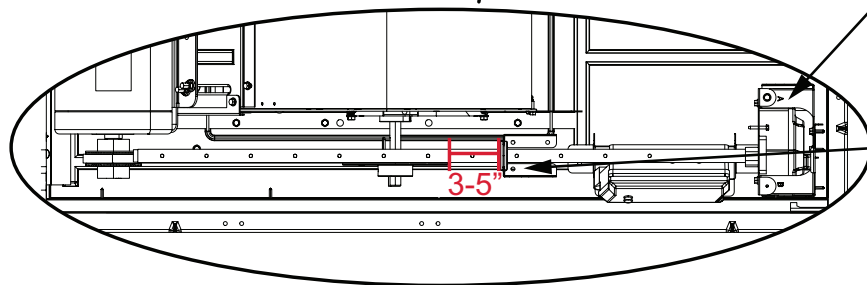
SAMPLING TUBE
SUPPORT BRACKET

POWER BOARD

BRACKET
(EXPLODED TO
REVEAL SMOKE
DETECTOR)

RETURN AIR
SMOKE DETECTOR

BRACKET

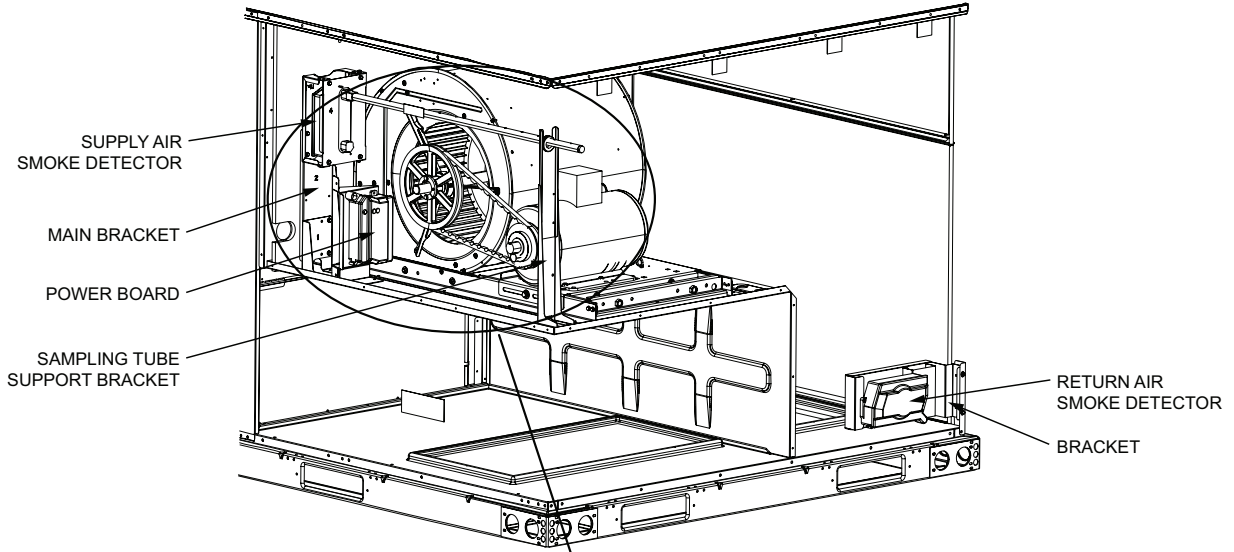


MOUNT SENSOR CARRIER
BRACKET AGAINST WALL
AWAY FROM BLOWER HOUSING.
USE MOUNTING BRACKET TO MARK
THE 4 HOLE (9/64" DIA)
POSITION
ON THE BLOWER DECK.

MOUNT SAMPLING TUBE
SUPPORT 3-5" TO THE RIGHT
OF THE BLOWER WHEEL PULLEY.
USE BOTTOM BRACKET HOLES
AS A TEMPLATE TO MARK
PILOT HOLE LOCATIONS.

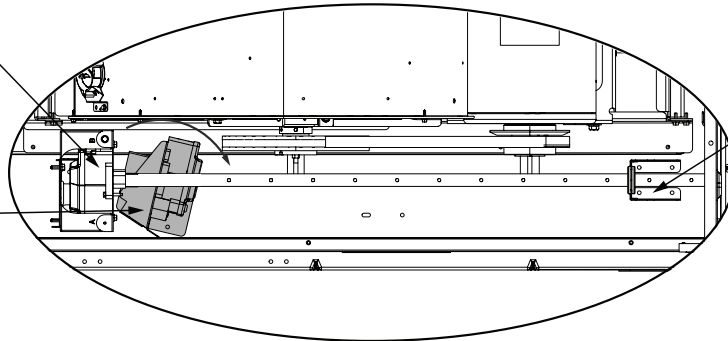
FIGURE 2

**SMOKE DETECTOR LOCATIONS
ZG/ZC/ZH 092-150 UNITS**



MOUNT SENSOR CARRIER BRACKET AGAINST WALL AWAY FROM BLOWER HOUSING. USE MOUNTING BRACKET TO MARK THE 4 HOLE (9/64" DIA) POSITION ON THE BLOWER DECK.

SLIGHTLY TILT POWER BOARD AWAY FROM BLOWER BELT DURING INSTALL FOR EASE OF SERVICING



MOUNT SAMPLING TUBE SUPPORT AGAINST WALL OPPOSITE THE SENSOR. USE BOTTOM BRACKET HOLES AS A TEMPLATE TO MARK PILOT HOLE LOCATIONS.

FIGURE 3

**INSTALL RETURN AIR SMOKE DETECTOR
036-150 UNITS WITHOUT ECONOMIZER**

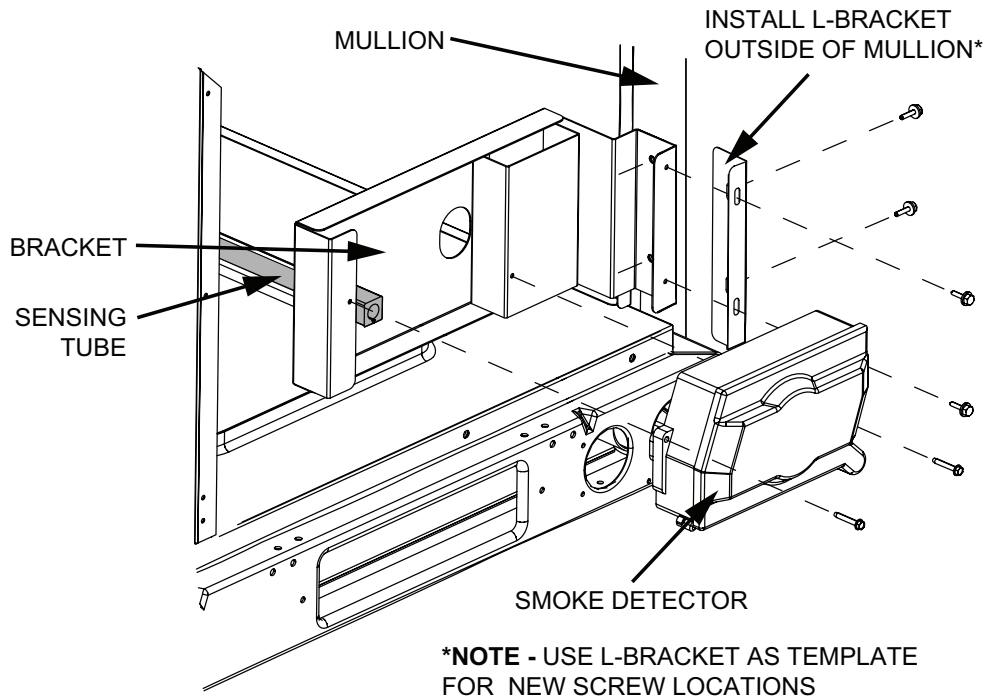
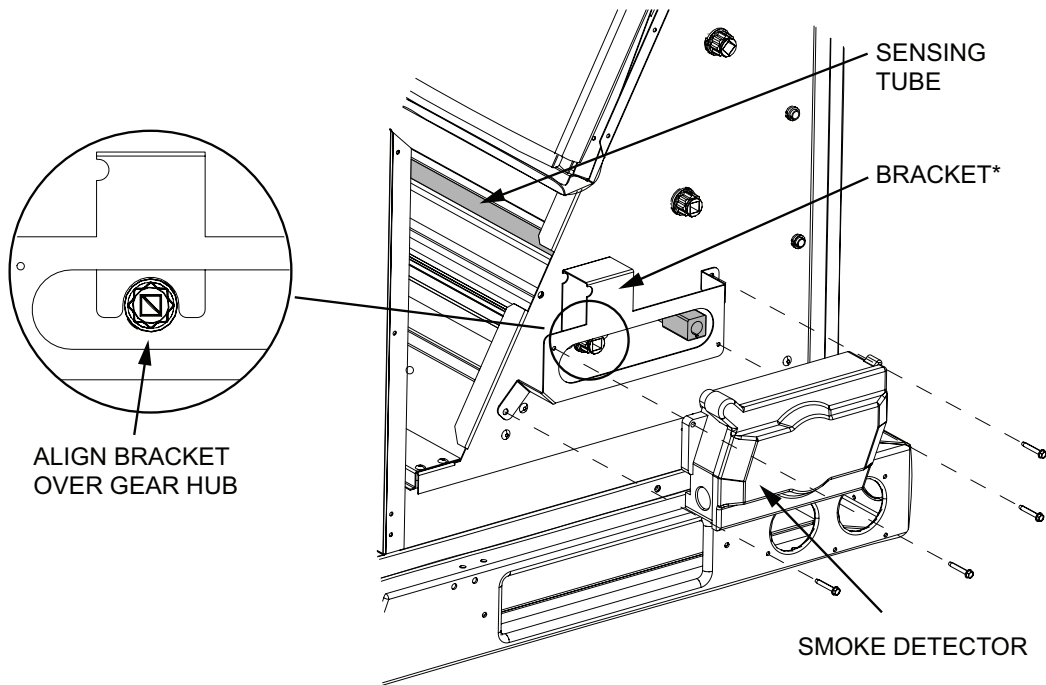


FIGURE 4

**INSTALL RETURN AIR SMOKE DETECTOR
036-074 UNITS WITH ECONOMIZER**



*NOTE - USE BRACKET AS TEMPLATE FOR NEW SCREW LOCATIONS ON APPLICATIONS WHERE ECONOMIZER LACKS EXISTING PILOT HOLES

FIGURE 5

**INSTALL RETURN AIR SMOKE DETECTOR
092-150 UNITS WITH ECONOMIZER**

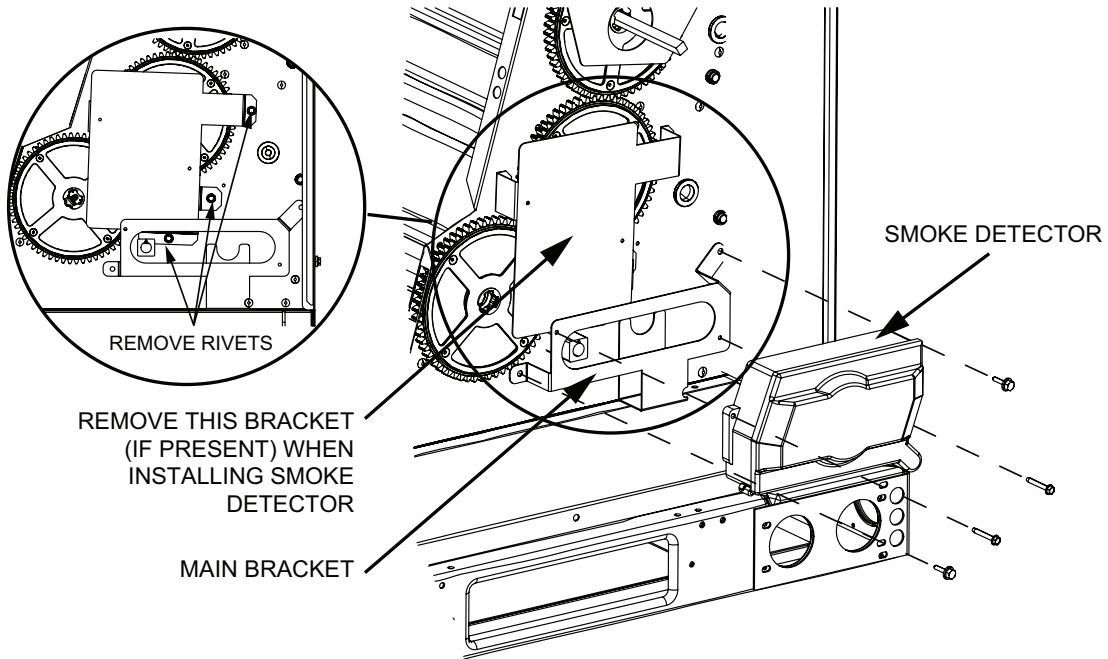


FIGURE 6

SUPPLY DETECTOR MAIN BRACKET CONFIGURATIONS

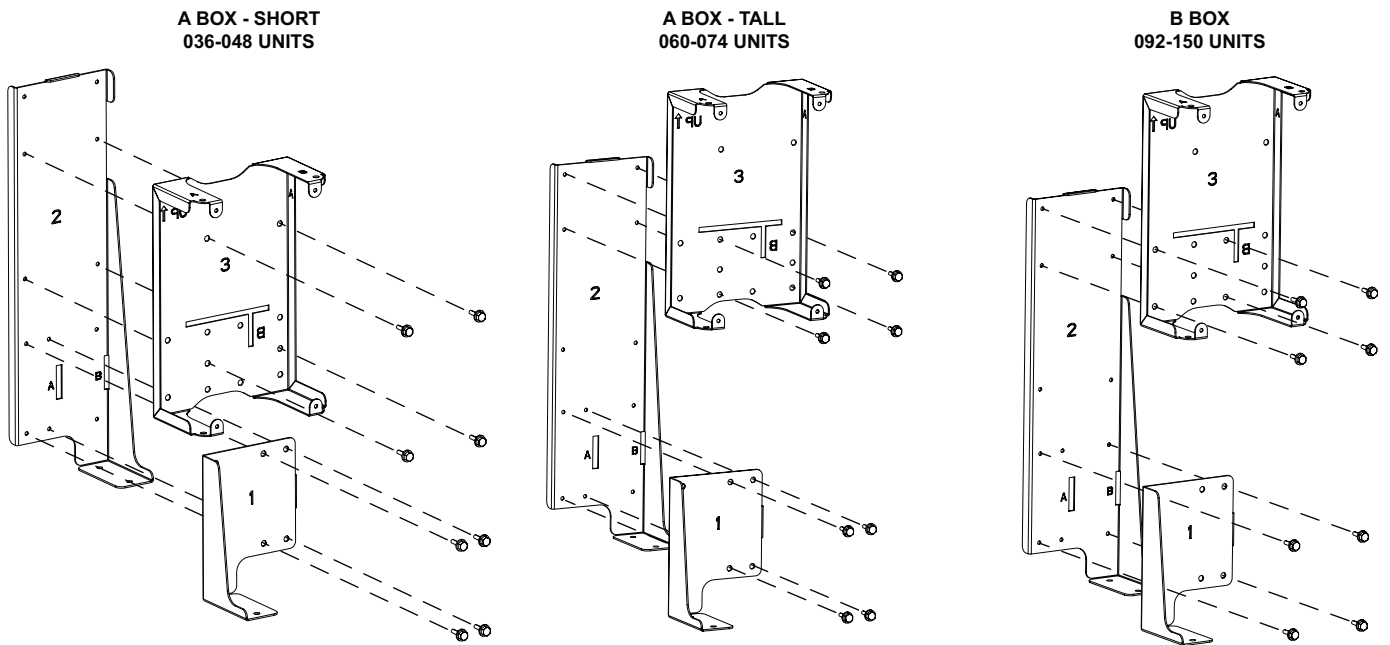


FIGURE 7

SUPPLY DETECTOR MAIN BRACKET CONFIGURATIONS - ASSEMBLED

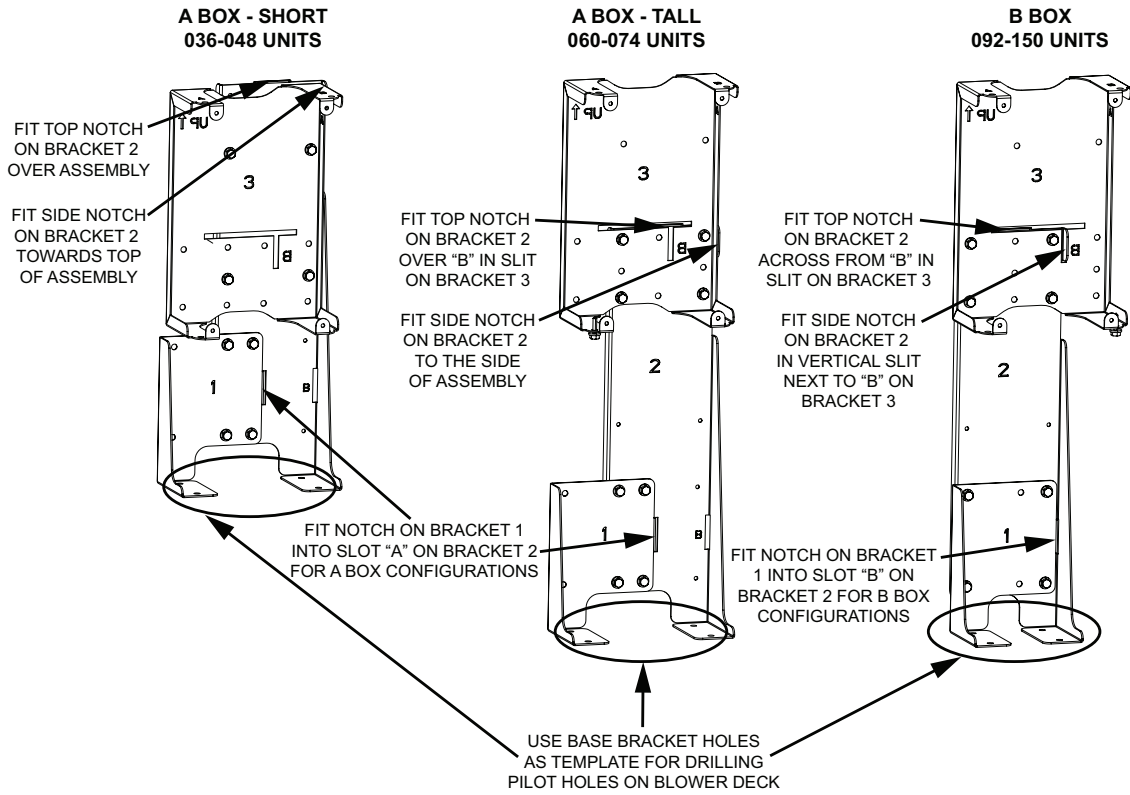


FIGURE 8

SENSOR TUBE SUPPORT BRACKET CONFIGURATIONS

**A BOX - SHORT
036-048 UNITS**

**A BOX - TALL & B BOX
060-150 UNITS**

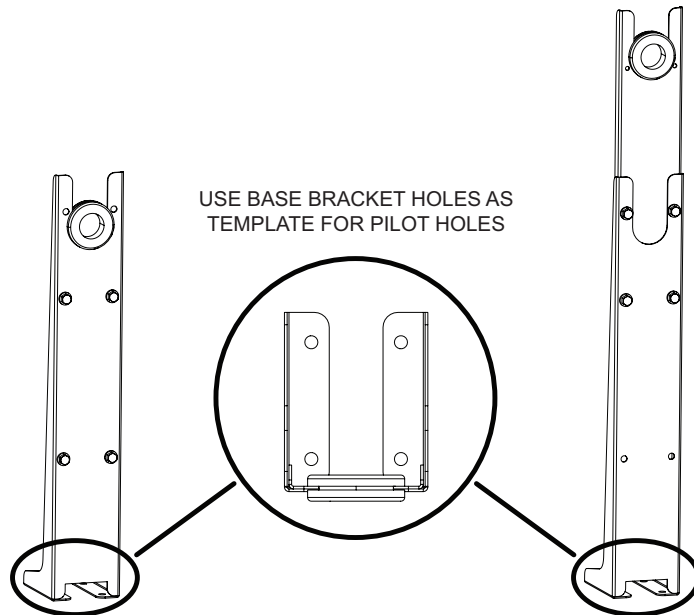
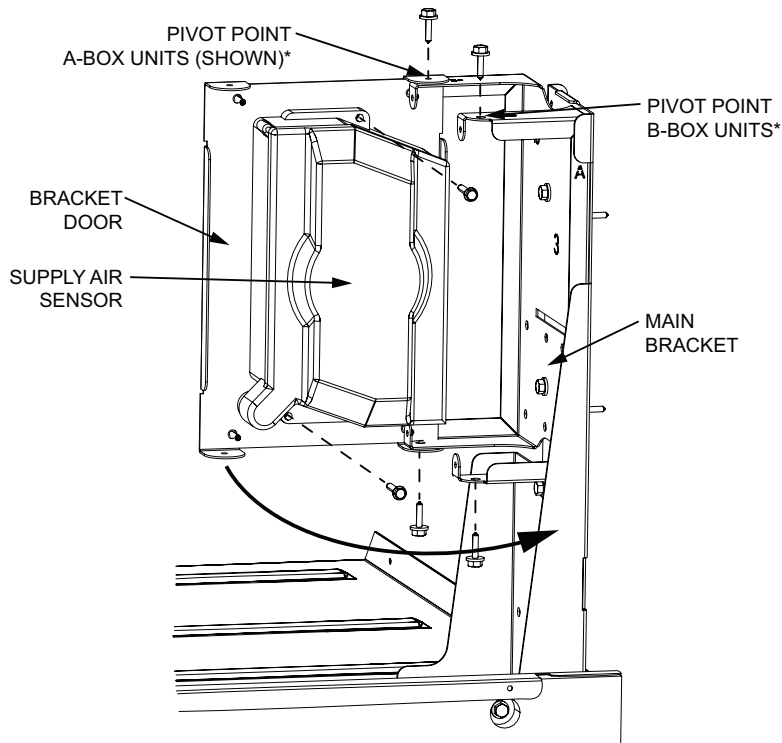


FIGURE 9

INSTALL SUPPLY AIR DETECTOR TO MAIN BRACKET



***NOTE - SEE FIGURE 10 FOR DETAILED PIVOT LOCATIONS BEFORE MOUNTING THE KIT**

FIGURE 10

SUPPLY AIR DETECTOR DOOR CONFIGURATIONS

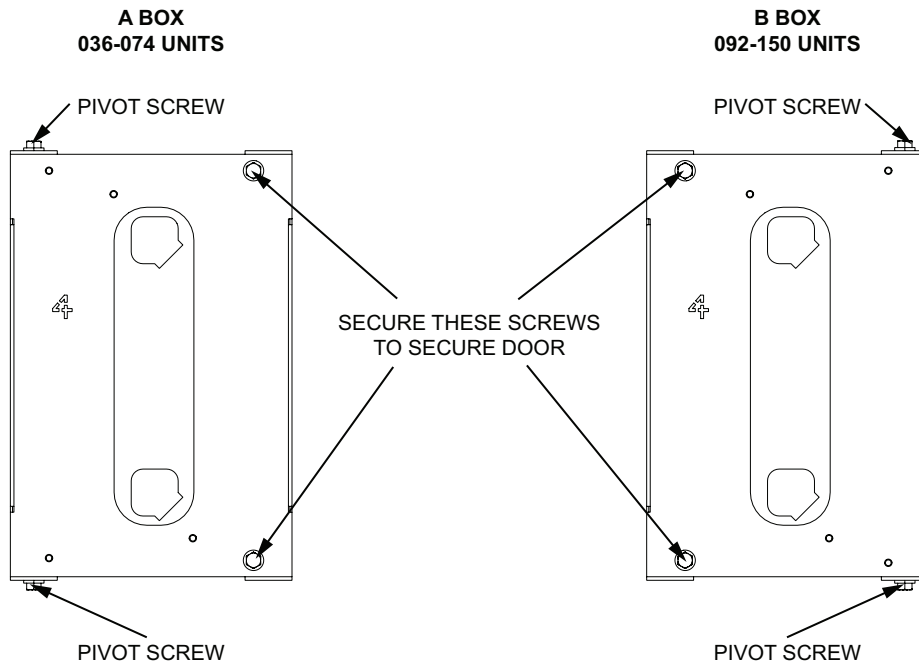


FIGURE 11

**INSTALL POWER BOARD
036-074 UNITS**

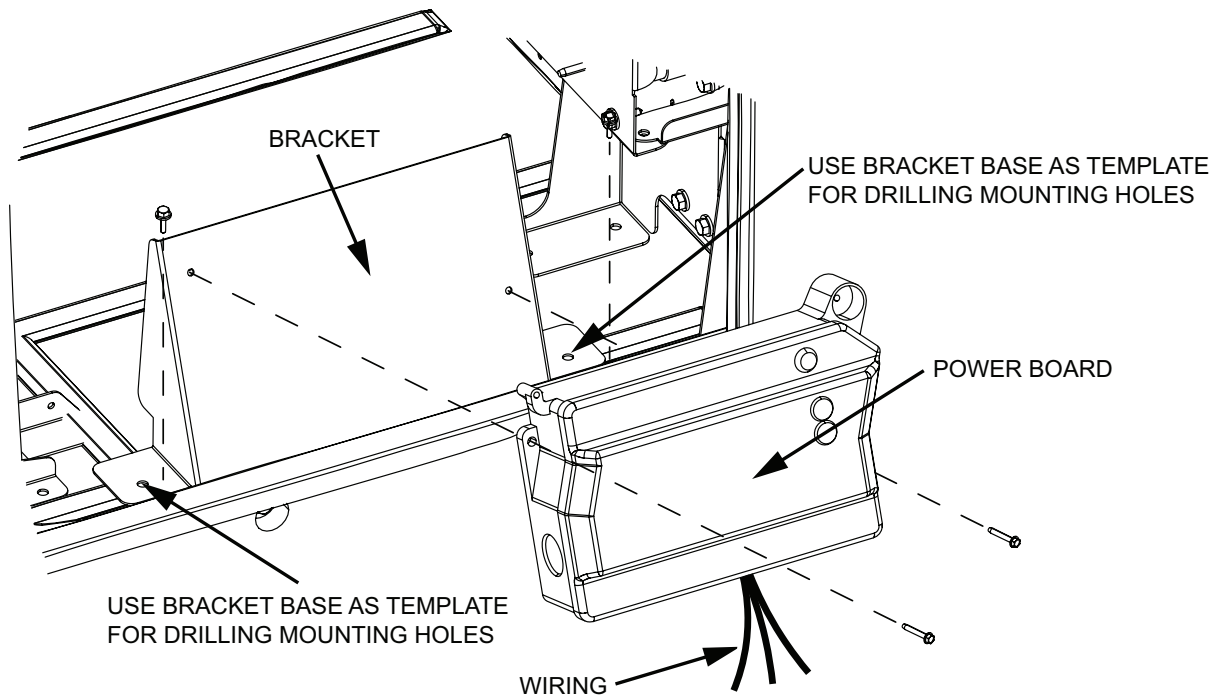


FIGURE 12

**INSTALL POWER BOARD
092-150 UNITS**

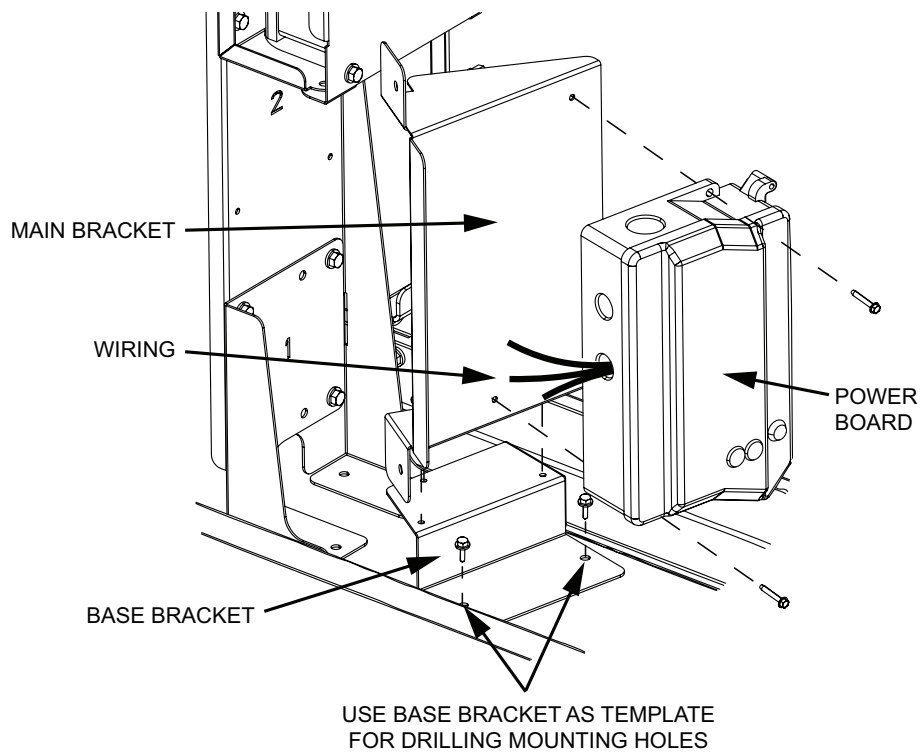


FIGURE 13

SMOKE DETECTOR SENSOR WITH SAMPLING TUBE AND EXHAUST TUBE

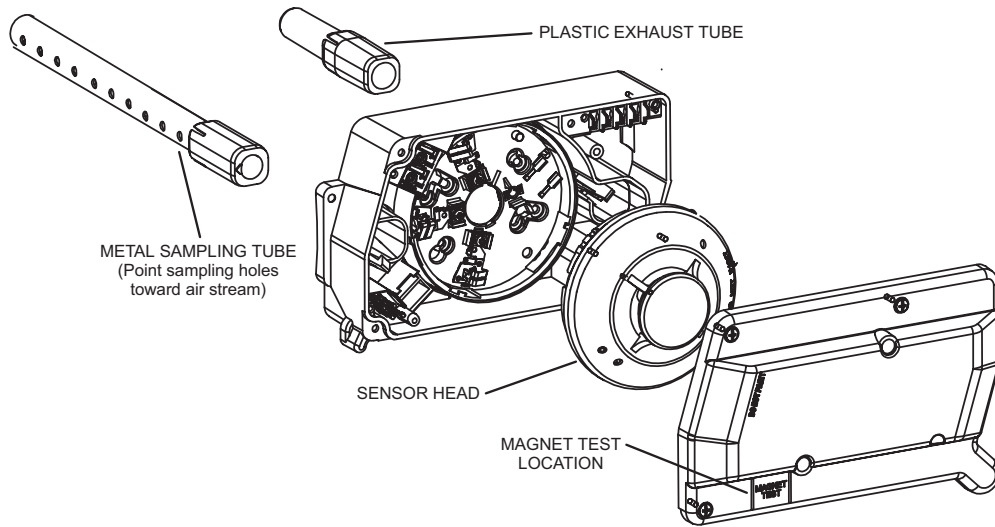


FIGURE 14

Wiring

See FIGURE 15 and FIGURE 16 to locate transformer T1.

- 1 - Remove gray wire from T1 LOAD - COMMON pin, add a Y-splitter, and reconnect. See FIGURE 17 and FIGURE 18.
- 2 - Remove pink wire from T1 LOAD - 24V pin and connect to white wire labeled << 4 / J255-4 >>. See FIGURE 17 and FIGURE 18.
- 3 - Connect gray wire labeled << GND / J255-02 >> to Y-splitter at T1 LOAD - COMMON. See FIGURE 17 and FIGURE 18.
- 4 - Connect pink wires labeled << 1 / J255-1 >> and << 1 / J255-3 >> to T1 LOAD - 24V pin. See FIGURE 17 and FIGURE 18.
- 5 - For 036-074 units, route 24V harness along the front of the blower deck to the top of the divider panel and out through the electrical knockout. Route supply detector harness to the supply detector. Route return detector harness along the blower deck over the evaporator coil and down to the return detector. Use push-in wire ties to secure harnesses. See FIGURE 19.
- 6 - For 092-150 units, route 24V harness up to the electrical knockout at the top of the divider panel. Route supply detector harness to the supply detector. Route return detector harness up above the blower wheel through the tubing above the evaporator coil and down to the return sensor. Use wire tie to fasten harness above the blower wheel. See FIGURE 20.
- 7 - Make jack/plug connections as shown in FIGURE 21 when installing return air smoke detector only, FIGURE 22 when installing supply air smoke detector only, and FIGURE 23 when installing both supply and return air smoke detectors. Refer to respective wiring diagrams in FIGURE 24, FIGURE 25, and FIGURE 26.

NOTE - In single-sensor applications, the wiring harness is sized for return air applications. There will be excess wiring in supply air applications. Gather excess wire and secure away from other components.

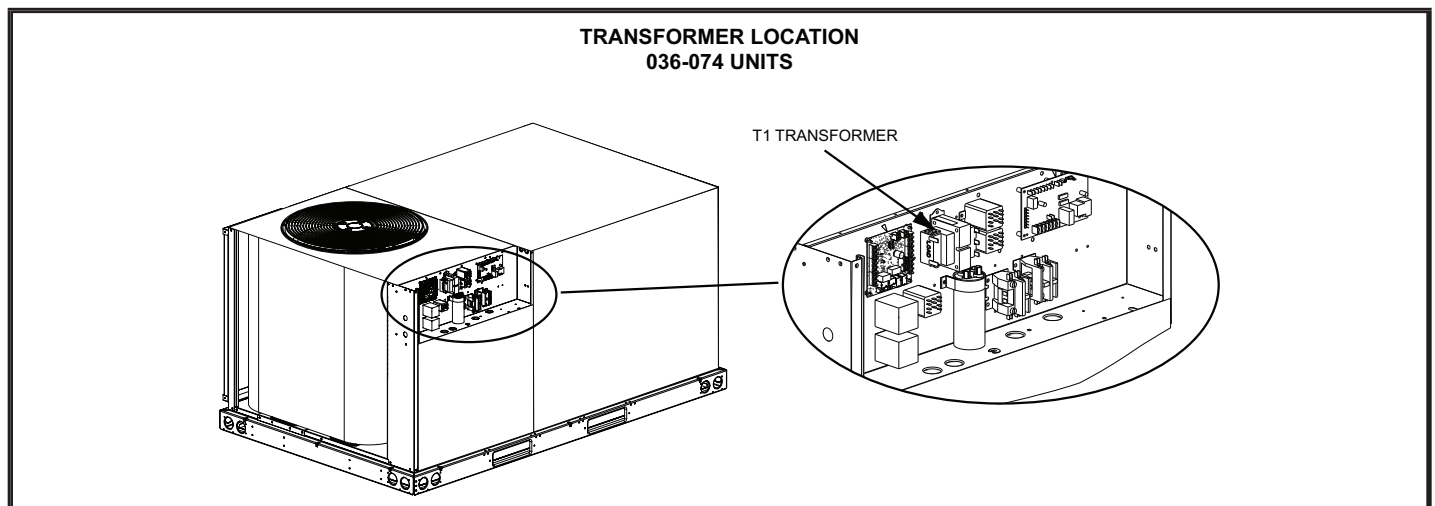


FIGURE 15

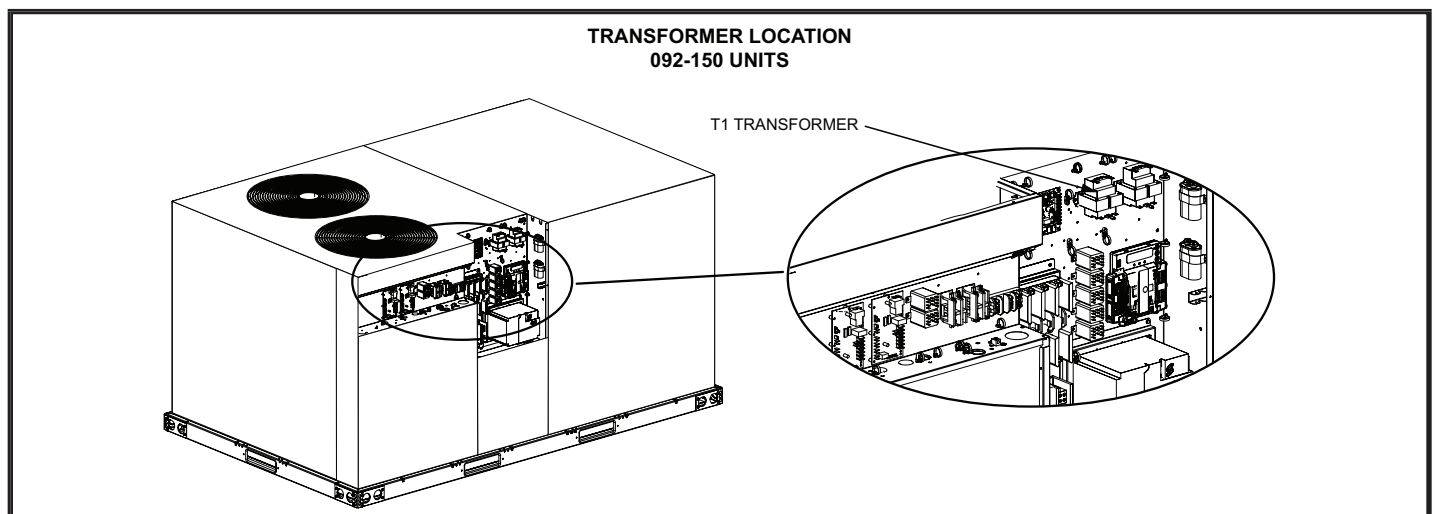


FIGURE 16

ZC, ZG & ZH CONTROLS AREA - BEFORE

T1 LOAD - COMMON
ADD Y-SPLITTER TO
TRANSFORMER AND
RECONNECT

T1 LOAD - 24V
REMOVE FROM TRANSFORMER
AND CONNECT TO WHITE WIRE
LABELED <<4 / J255-4>> FROM
SMOKE DETECTOR HARNESS

T18 TRANSFORMER
(FOR REFERENCE ONLY)

T1 TRANSFORMER

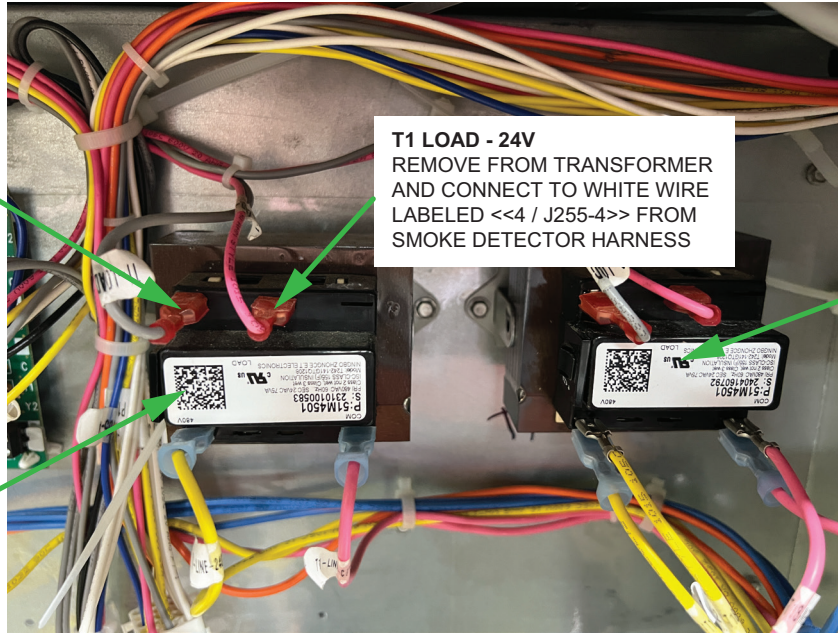


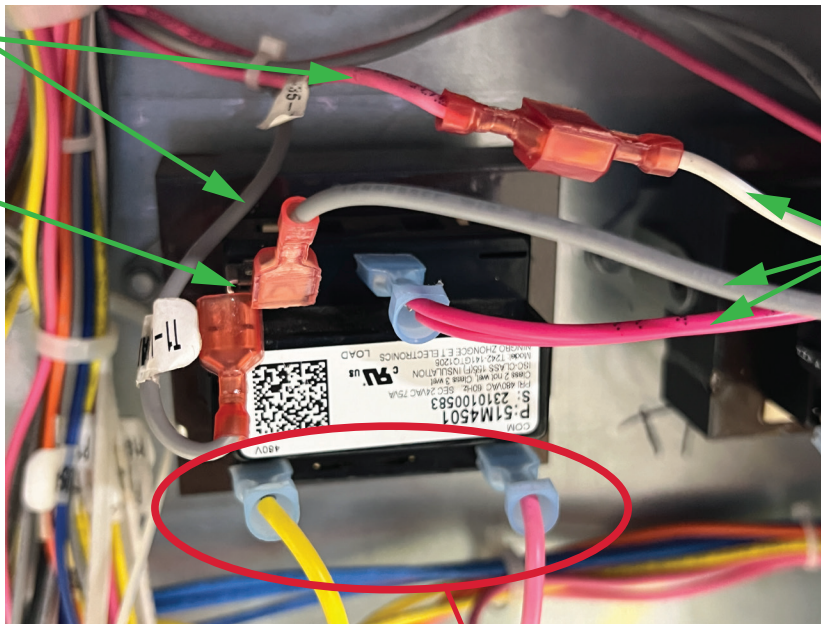
FIGURE 17

ZC, ZG & ZH CONTROLS AREA - AFTER

FACTORY WIRING

Y-SPLITTER

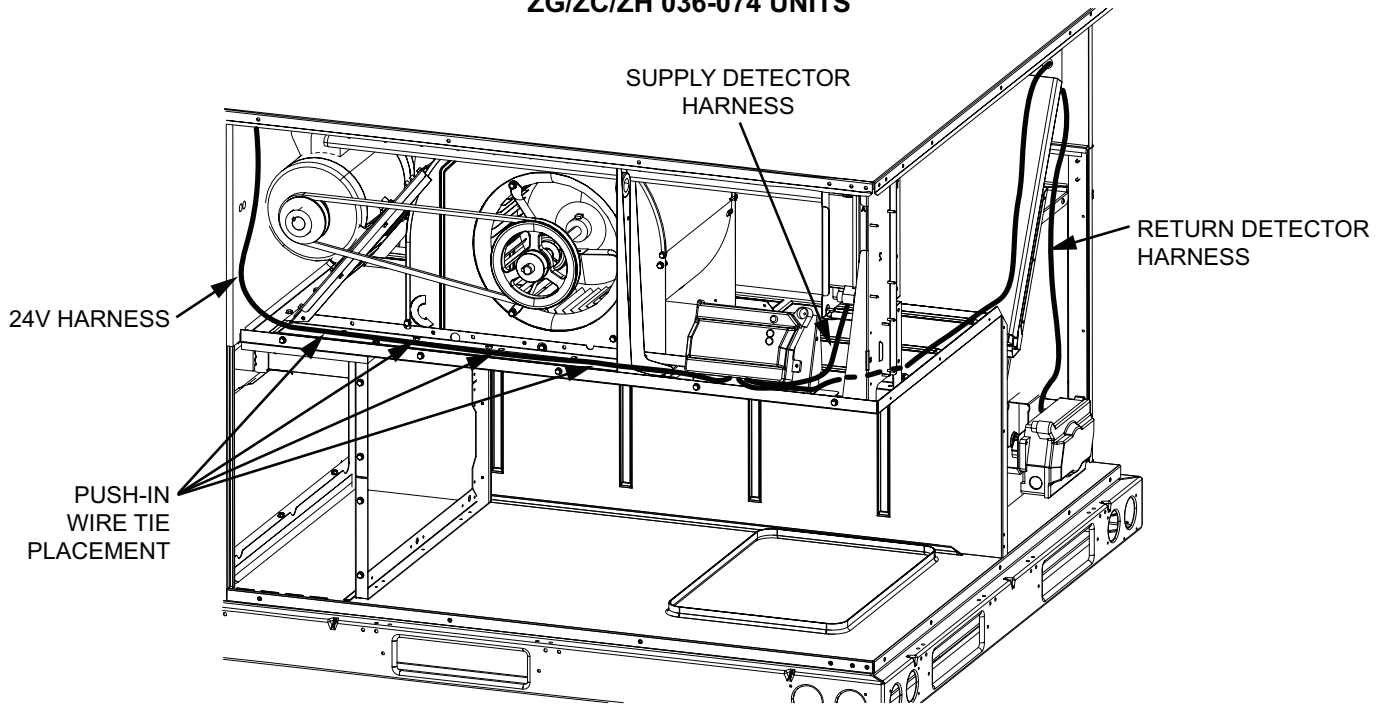
**SMOKE DETECTOR
POWER BOARD HARNESS**
WHITE: << 4 / J225-4 >>
GRAY: << GND / J255-2 >>
PINK: << 1 / J255-1 >>
PINK: << 1 / J255-3 >>



**LINE SIDE WIRING NOT AFFECTED
BY SMOKE DETECTOR INSTALLATION**

FIGURE 18

**WIRE ROUTING
ZG/ZC/ZH 036-074 UNITS**



NOTE - USE PUSH-IN WIRE TIES TO SECURE HARNESSES.

FIGURE 19

**WIRE ROUTING
ZG/ZC/ZH 092-150 UNITS**

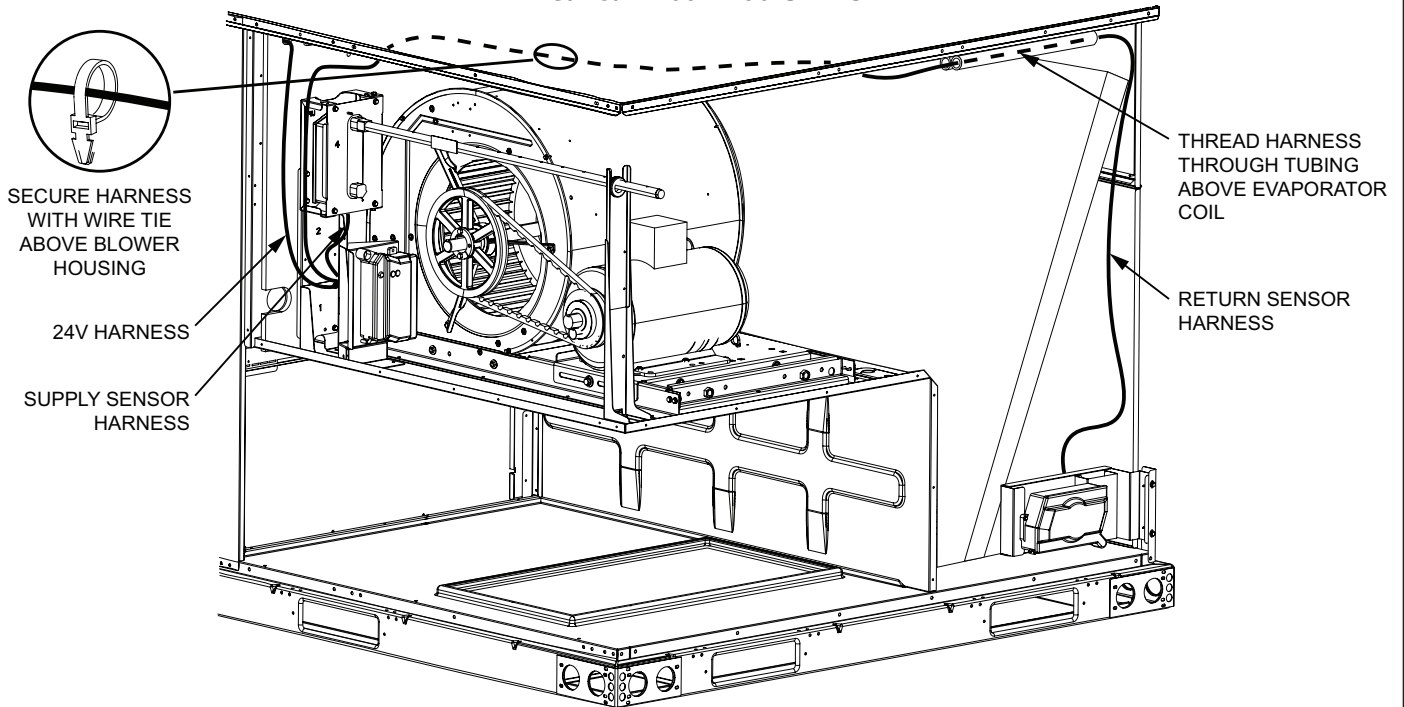


FIGURE 20

ZC, ZG or ZH Unit Application with Single Return Air Smoke Detector

(Note: Verify that power board DIP switch is set to 1)

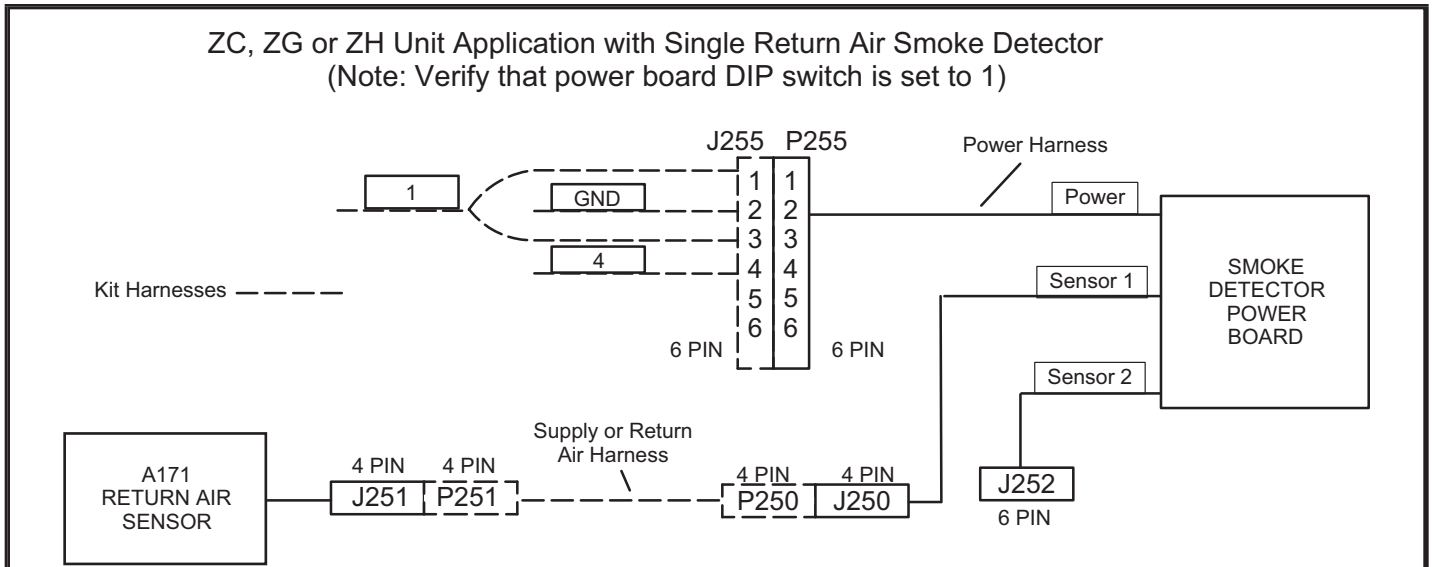


FIGURE 21

ZC, ZG or ZH Unit Application with Single Supply Air Smoke Detector

(Note: Verify that power board DIP switch is set to 1)

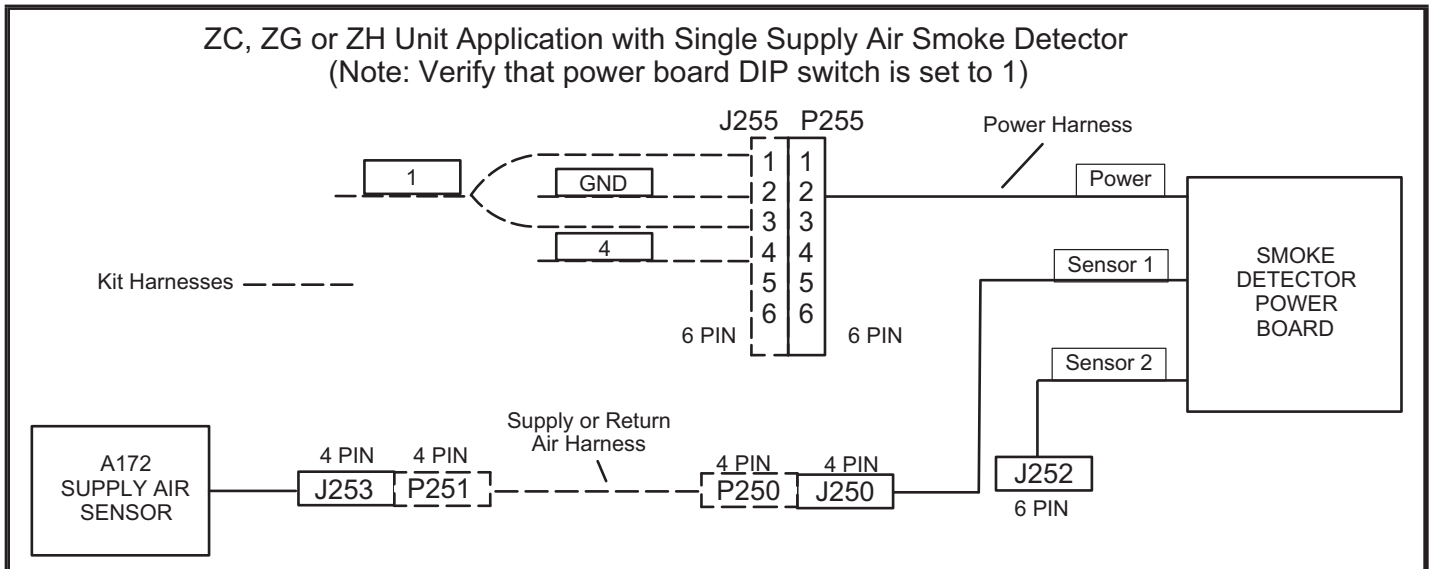


FIGURE 22

ZC, ZG or ZH Unit Application with Return Air and Supply Air Smoke Detector

(Note: Verify that power board DIP switch is set to 2)

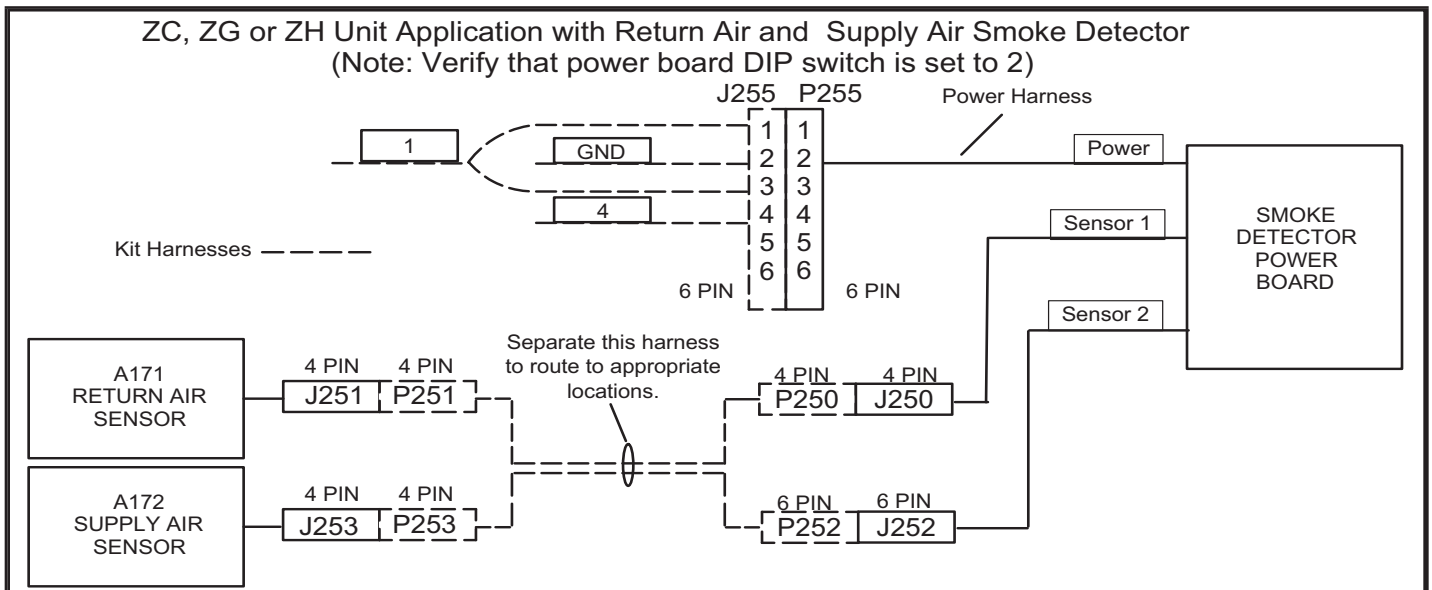


FIGURE 23

ZG/ZC/ZH SMOKE DETECTOR WIRING - RETURN AIR ONLY
(refer to unit "B" section wiring diagram)

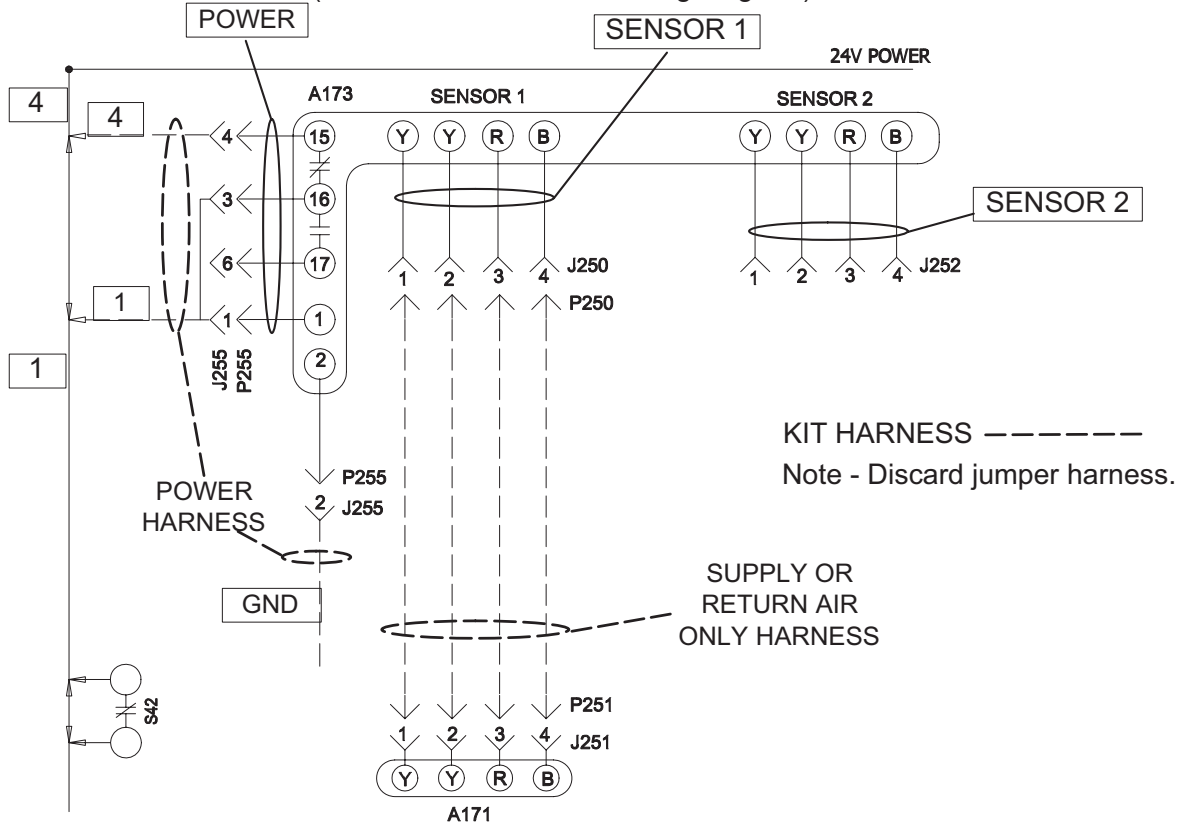


FIGURE 24

ZG/ZC/ZH SMOKE DETECTOR WIRING - SUPPLY AIR ONLY
(refer to unit "B" section wiring diagram)

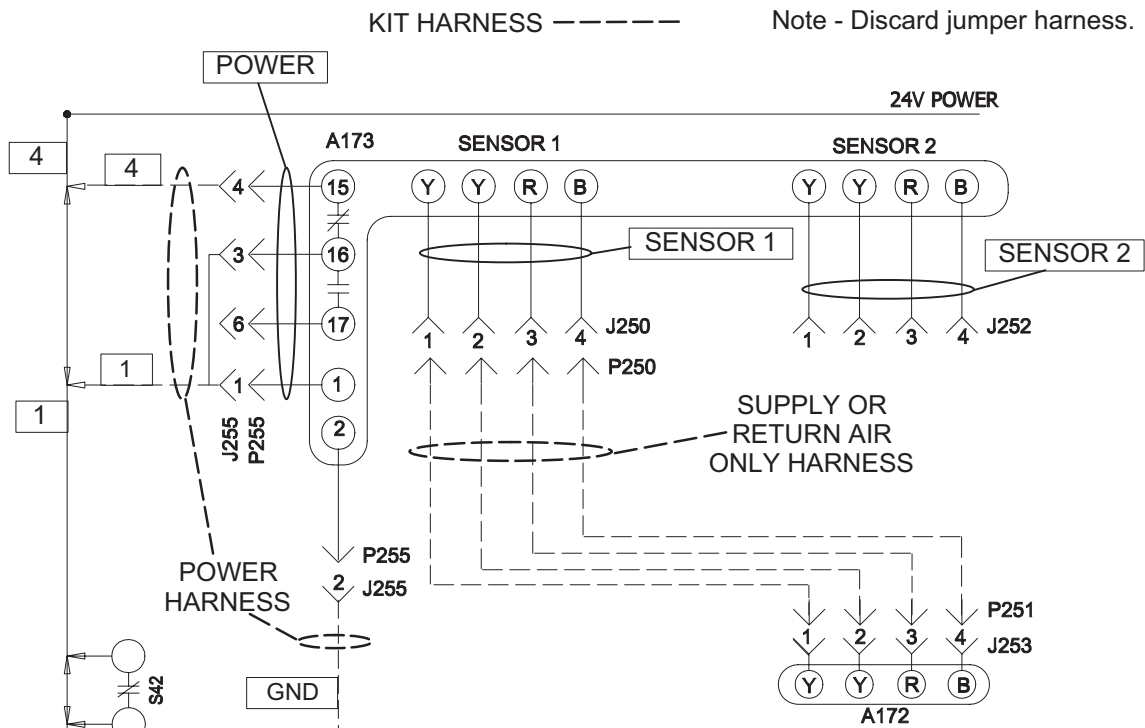


FIGURE 25

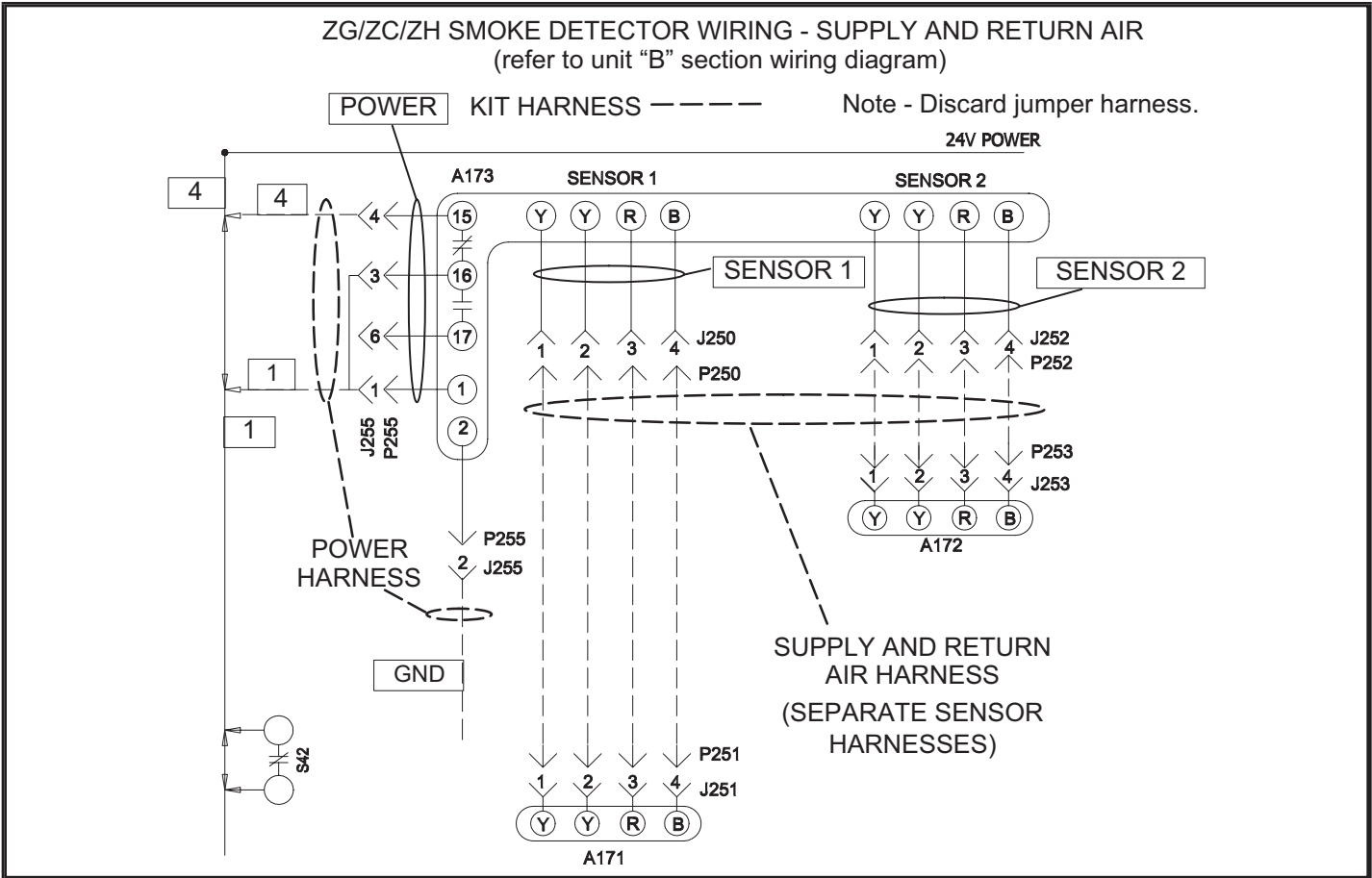


FIGURE 26

Test Magnet(s)

A test magnet is provided in a bag assembly with each sensor. Remove the magnet from the bag assembly and place it on a metal surface near the sensor. The magnet is used during test procedures.

Maintenance and Test Procedure Instructions

The sensor manufacturer's instructions, which are provided with each sensor, outline information on maintenance and test procedures. Place these instructions in the literature pouch for future reference.