

Installation Instructions

Discharge Air Sensing (DAS) Kit Precedent™ Packaged Rooftop Units

Model Numbers:	Used With:
FIADAST001*	Precedent A cabinet, 3 to 5 tons, Cooling/Electric models (digit 1 = T/W, digit 39 = A)
FIADAST002*	Precedent A cabinet, 3 to 5 tons, Gas heat models (digit 1 = Y/D, digit 39 = A)
FIADAST003*	Precedent B cabinet, 6 to 10 tons, Cooling/Electric models (digit 1 = T/W, digit 39 = B)
FIADAST004*	Precedent B cabinet, 6 to 10 tons, Gas heat models (digit 1 = Y/D, digit 39 = B)
FIADAST005*	Precedent C cabinet, 10 to 12.5 tons, Cooling/Electric models (digit 1 = T/W, digit 39 = C)
FIADAST006*	Precedent C cabinet, 10 to 12.5 tons, Gas heat models (digit 1 = Y/D, digit 39 = C)
FIADAST007*	Precedent D cabinet, 12.5 to 25 tons, Low gas heat models (digit 1 = Y/D, digit 11 = L, digit 39 = D)
FIADAST008*	Precedent D cabinet, 12.5 to 25 tons, Cooling/Electric and Gas heat models (digit 11 = O/M/H/B/C/E/G/K/N/P/R, digit 39 = D)
FIADAST009*	Precedent B cabinet, 3 to 5 tons, Gas heat models (digit 1 = Y/D, digit 39 = B)

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.

Introduction

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.

⚠ 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 Labeling 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

R-454B Flammable A2L Refrigerant!

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage. The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use **ONLY** R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

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Revision History

- Used with model number information updated.
- Updated General Information and Installation chapters.

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General Information

Note: Discharge air sensing tube is standard on SZVAV, MZVAV, hot gas reheat, heat pump, modulating gas, eFlex, and economizer units.

- Carefully review installation instructions.
- This discharge air sensing kit is designed to sense the supply air temperature downstream of the fan and/or heat exchanger.

Inspection

1. Unpack all components of the kit.
2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

Parts List

Table 1. FIADAST001* T/W models (digit 39 = A)

Qty	Description
1	Temperature sensing module
3	Sensing tubes
2	Mounting brackets
2	Air block offs bracket
2	3/4-in. Aluminum dots
10	10-16 UNC × 1/2-in. Screws
1	Installation instructions

Table 2. FIADAST002* Y/D models (digit 39 = A)

Qty	Description
1	Temperature sensing module
4	Sensing tubes
2	Mounting brackets
1	Tube end cap
2	Air block offs bracket
4	3/4-in. Aluminum dots
10	10-16 UNC × 1/2-in. Screws
1	Installation instructions

Table 3. FIADAST003* T/W models (digit 39 = B)

Qty	Description
1	Temperature sensing module
7	Sensing tubes
3	Mounting brackets
1	Pipe insulation
16	Screws

Table 4. FIADAST004* Y/D models (digit 39 = B)

Qty	Description
1	Temperature sensing module
5	Sensing tubes
4	Mounting brackets
1	Pipe insulation
16	Screws

Table 5. FIADAST005* T/W models (digit 39 = C)

Qty	Description
1	Temperature sensing module
6	Sensing tubes
3	Mounting brackets
1	Pipe insulation
12	Screws

Table 6. FIADAST006* Y/D models (digit 39 = C)

Qty	Description
1	Temperature sensing module
4	Sensing tubes
2	Mounting brackets
1	Pipe insulation
12	Screws

Table 7. FIADAST007/8* (digit 39 = D)

Qty	Description
4	Sensing tubes
1	Temperature sensing module (including Sensor bracket, Harness assembly, Insulation, Wire ties, Sensor bracket screw, and Cap to sensing tube screw connection)
1	Mounting bracket
4	Screws for mounting bracket to fan wall
3	Screws for sampling tube connections

Table 8. FIADAST009* Y/D models (digit 39 = B)

Qty	Description
1	Temperature sensing module
5	Sensing tubes (extra tubes included)
2	Mounting brackets
1	Air blockoff bracket
1	Pipe insulation
13	10-16 UNC × 1/2-in. Screws
2	Wire cable ties - screw -in

Installation

⚠ WARNING

Hazardous Voltage!

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

Power down the outdoor unit before making contact with the inverter circuit board. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Wait for at least 15 minutes to allow the unit to fully discharge high DC voltage. Confirm the unit is fully discharged using a CAT III or IV voltmeter rated per NFPA 70E.

FIADAST001*/002*

Field Installed DAS Assembly and Installation

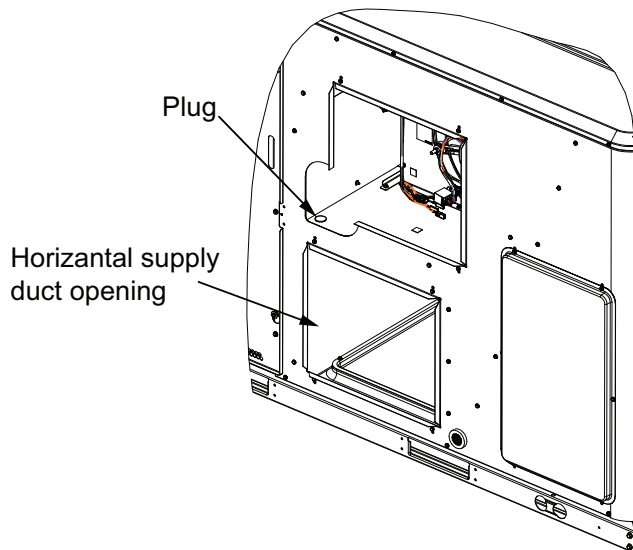
This section covers installation of DAS not installed in the rooftop unit at the factory.

Note: DAS installation must be performed prior to installation of equipment at the job site.

Below installation Instructions are generic and [Table 9, p. 12](#) must be used to determine the correct DAS configuration.

1. Turn OFF the main power disconnect switch.
2. Remove the rear access panel directly above the horizontal supply duct cover and remove the plug from DAS tube hole on the panel. See [Figure 1](#).
3. Remove the supply air duct cover on the rear side of the unit [Figure 1](#).
4. Prepare two separate sub-assemblies with tubes, brackets and screws provided based on unit model number. Refer to [Table 9, p. 12](#).

Figure 1. DAS plug



5. Once assemblies are ready, insert the vertical tube (assembly 1) through the DAS hole from the bottom and then connect the second tube assembly to the first tube assembly using a screw. See [Figure 2, p. 9](#) and [Figure 3, p. 9](#).
6. Close any unused screw holes on the tubes using aluminum dot tapes.

Figure 2. Vertical tube through the DAS hole - FIADAST001*

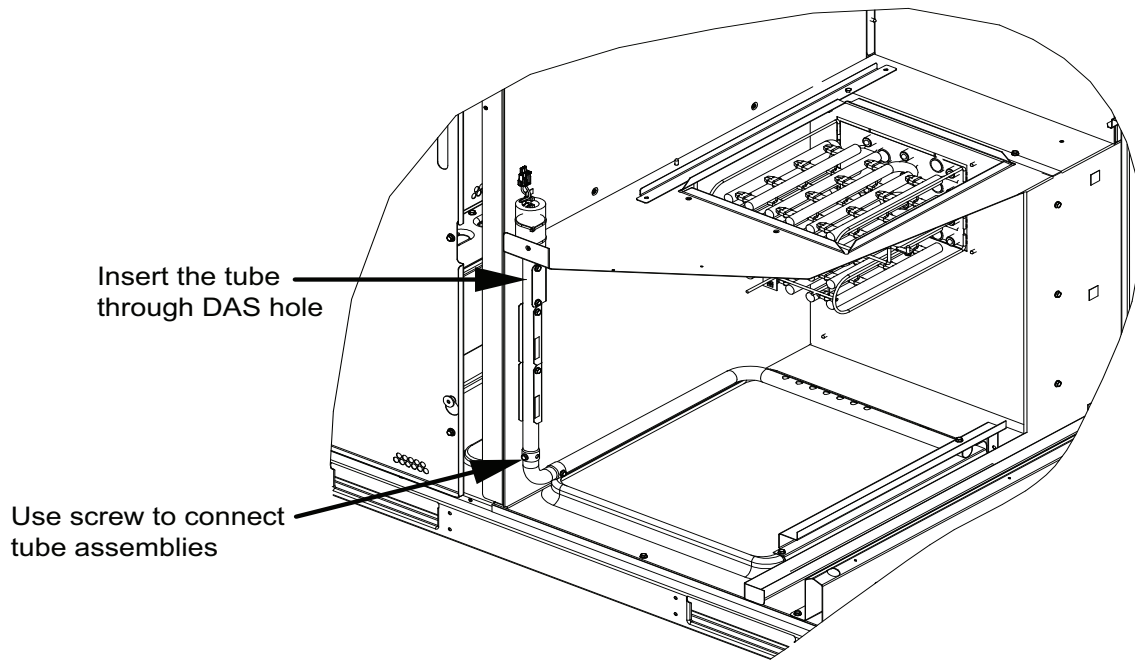
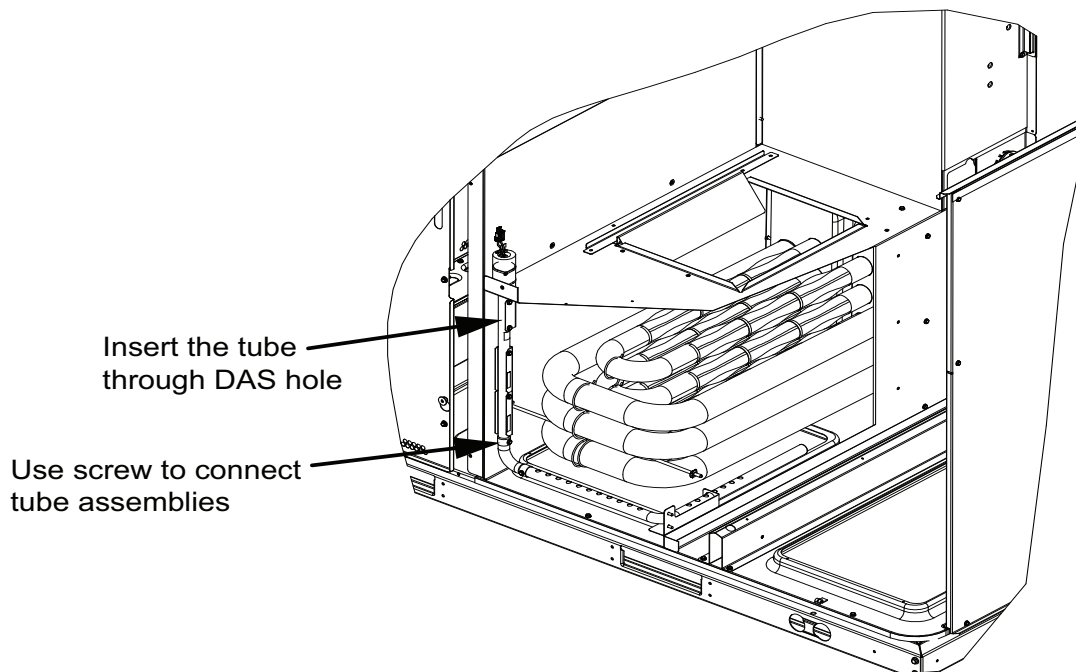


Figure 3. Vertical tube through the DAS hole - FIADAST002*



Installation

7. Use two screws to secure condenser wall bracket and use one/two screws to secure ID Fan wall bracket as shown in [Figure 4, p. 10](#) and [Figure 5, p. 10](#).

Figure 4. Installing FIADAST001* into the unit

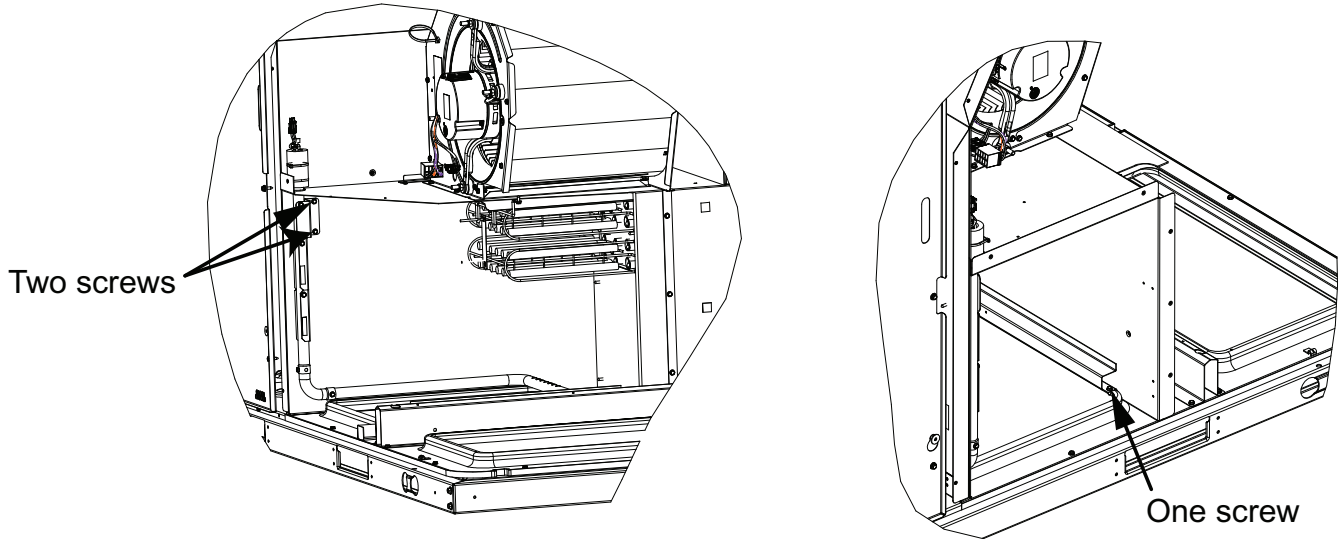
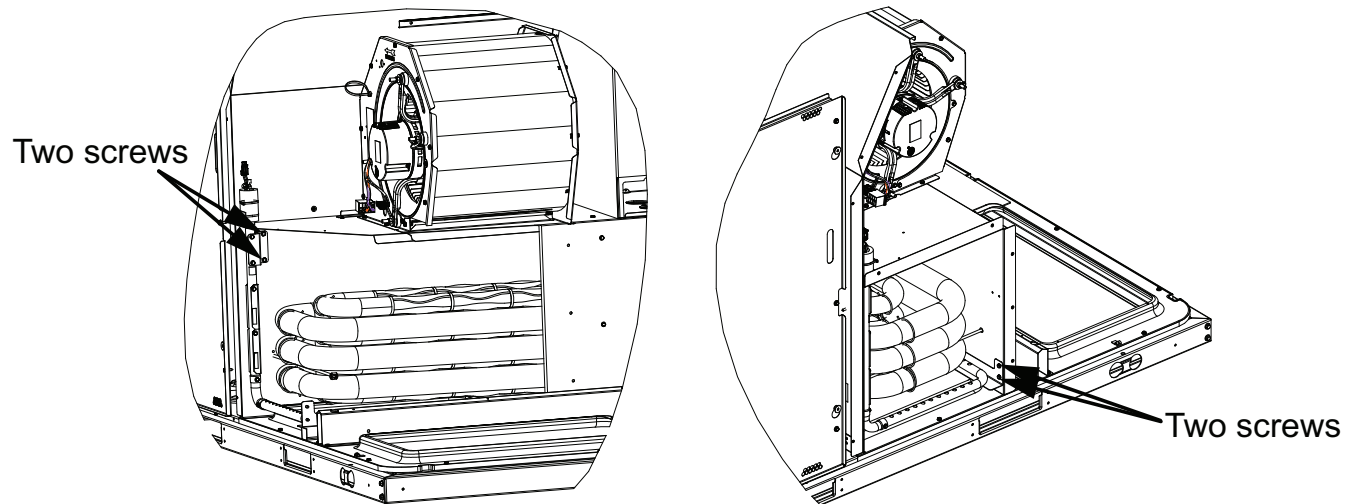


Figure 5. Installing FIADAST002* into the unit



8. Make sure temperature sensing module provided with the kit matches with [Figure 6, p. 11](#) and is covered with insulation.
9. Assemble the temperature sensing module using a screw.

Figure 6. Temperature sensing module for FIADAST001*/002*

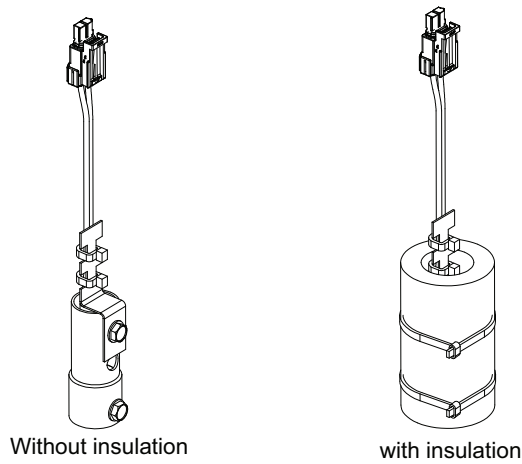
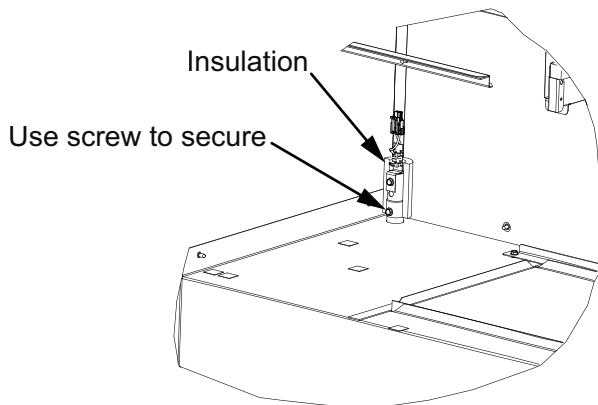


Figure 7. Temperature sensing module for FIADAST001*/002*



10. Connect temperature sensor connector to factory installed harness. Harness will be near the temperature sensor with a like colored connector.
11. After installation is complete, the Symbio™ 700 UC configuration will need to be updated to enable this installed feature.
12. Install the rear access panel and supply duct cover.

Factory Installed DAS Assembly and Installation

This section covers the DAS setup for horizontal flow configuration.

DAS is installed in downflow configuration when shipped from factory. No further DAS setup is needed for downflow unit configuration.

Below installation instructions are generic and [Table 9, p. 12](#) must be used to determine the correct DAS configuration.

Note: *DAS conversion must be performed prior to installation of equipment at the job site.*

Horizontal Flow DAS Conversion

1. Turn the main power disconnect switch OFF.
2. Remove the rear access panel directly above the horizontal supply duct cover.
3. Remove the supply air duct cover on the rear side of the unit [Figure 1, p. 8](#).
4. Find the DAS installed in downflow configuration from factory as shown in [Figure 2, p. 9](#) or [Figure 3, p. 9](#).

Installation

T/W Models (Digit 39 = A)

1. Discard block-off brackets 436917890001.
2. Use aluminum dot tapes to close the unused screw holes.
3. Install the rear access panel and supply duct cover.

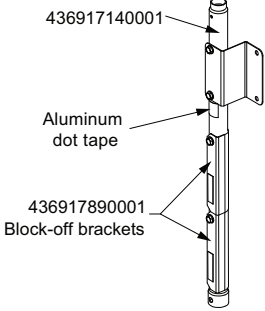
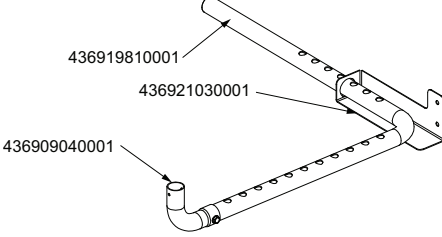
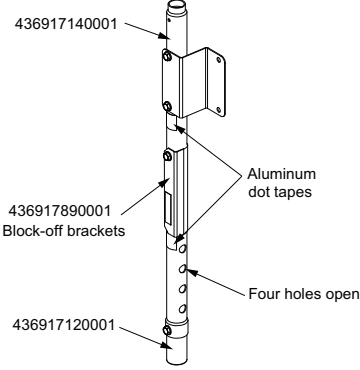
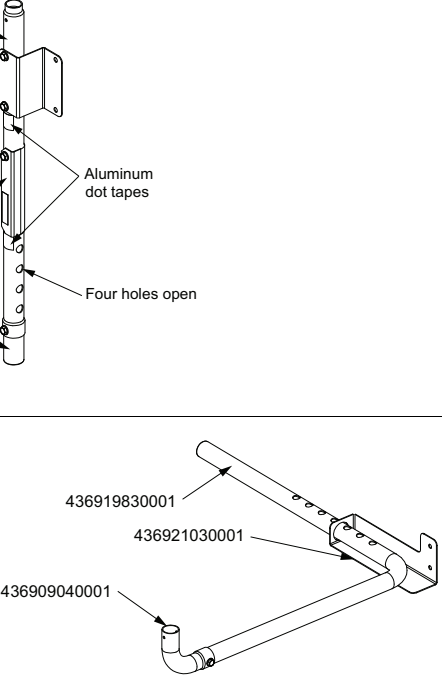
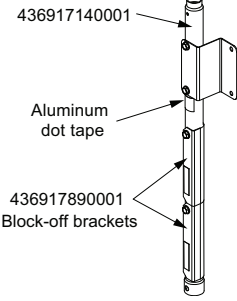
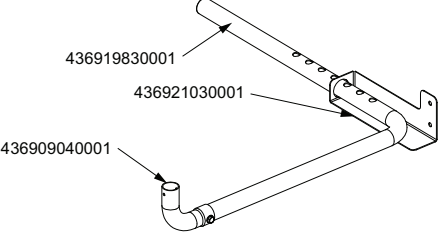
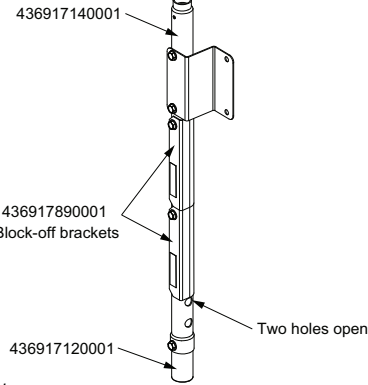
Y/D Models (Digit 39 = A)

1. Remove the screws shown in [Figure 3, p. 9](#) and [Figure 5, p. 10](#).
2. Discard 436919830001 or 436919810001 and 436909040001.
3. Secure the tube end cap 436917120001 to the tube 43691714000 using a screw.
4. Follow [Table 9, p. 12](#) and adjust the location of the block off brackets to expose sensing tube holes based on the heating capacity (digit 11).
5. Use aluminum dot tapes to close unused screw holes.
6. Install the rear access panel and supply duct cover.

Table 9. DAS configuration

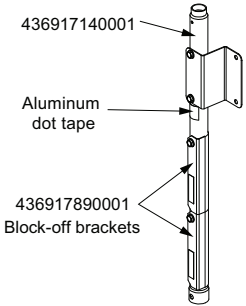
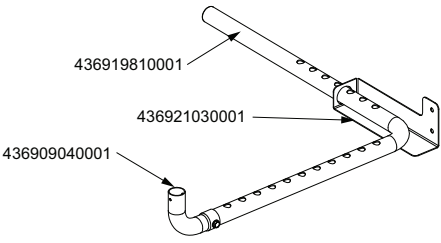
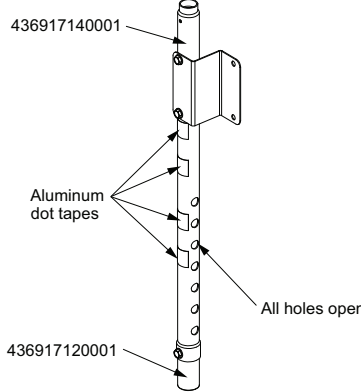
FIA Kit	Unit Configuration	Tube assembly 1	Tube assembly 2
FIADAST001 T/W Models (digit 39 = A)	Downflow	<p>436921230001</p> <p>436917890001 Block-off brackets</p>	<p>436614820130</p> <p>436917130001</p> <p>436909040001</p>
	Horizontal Flow	<p>436921230001</p> <p>Aluminum dot tapes</p> <p>All holes open</p> <p>No block-off brackets.</p>	<p>436614820130</p> <p>436917130001</p> <p>436909040001</p>

Table 9. DAS configuration (continued)

FIA Kit	Unit Configuration	Tube assembly 1	Tube assembly 2
FIADAST002 Y/D Models (digit 39 = A)	Downflow 2 x 3 Gas Heater (digit 11 = L)		
	Horizontal Flow 2 x 3 Gas Heater (digit 11 = L)	 <p data-bbox="634 1104 911 1125">Note: Four holes open from below.</p>	
	Downflow 3 x 4 Gas Heater (digit 11 = M)		
	Horizontal Flow 3 x 4 Gas Heater (digit 11 = M)	 <p data-bbox="634 1875 911 1896">Note: Two holes open from below.</p>	

Installation

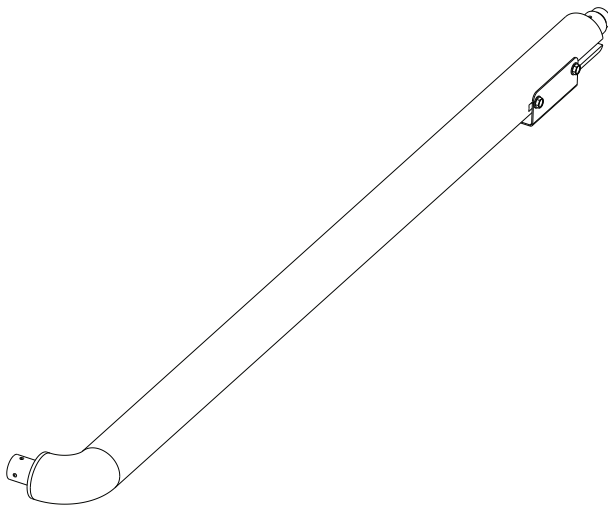
Table 9. DAS configuration (continued)

FIA Kit	Unit Configuration	Tube assembly 1	Tube assembly 2
	<p style="text-align: center;">Downflow 4 x 5 Gas Heater (digit 11 = H)</p>		
	<p style="text-align: center;">Horizontal Flow 4 x 5 Gas Heater (digit 11 = H)</p>	 <p style="text-align: center;"><i>Note: No block-off brackets.</i></p>	

FIADAST003 to 006 and FIADAST009

1. Attach insulation to long tube (for FIADAST003 to 006) or to short tube (for FIADAST009). Attach bracket to tube through insulation.

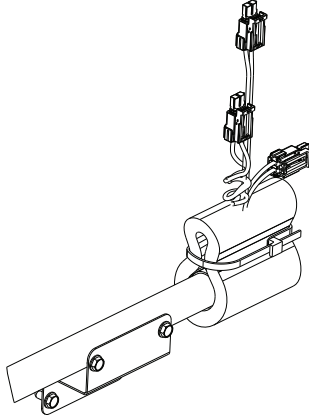
Figure 8. Airside assembly



Note: Long tube (for FIADAST003 to 006) is shown. A shorter tube is used for FIADAST009.

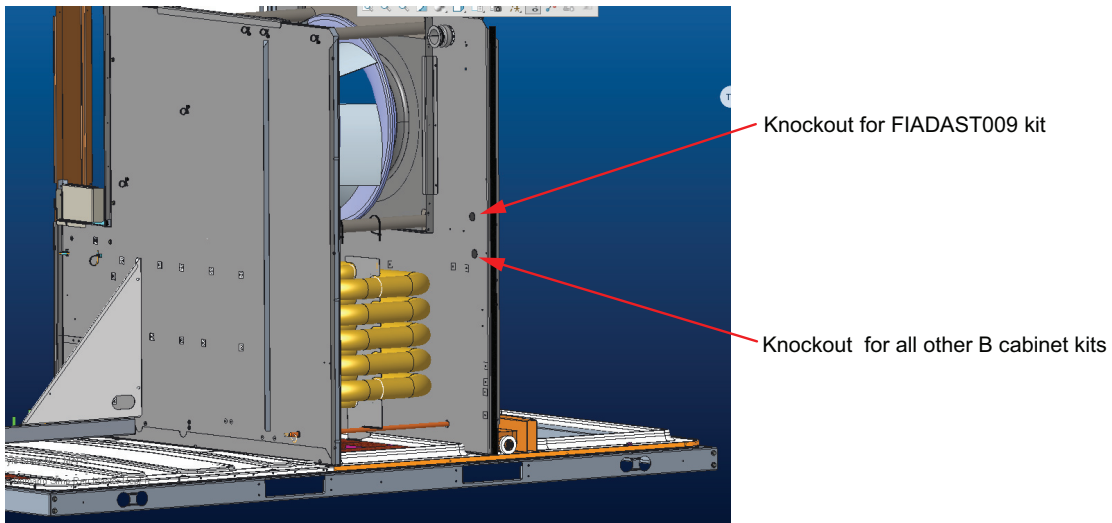
2. Attach sensor module assembly to end of tube. Verify that insulation is installed around the temperature sensing assembly with a wire tie.

Figure 9. Sensor module



3. Remove discharge duct cover of unit and remove knockout in fan wall.
 - B cabinet units include two knockout hole options for sensing tube installation. See [Figure 10](#).
 - All other cabinet sizes include one knockout hole.

Figure 10. Knockout removal

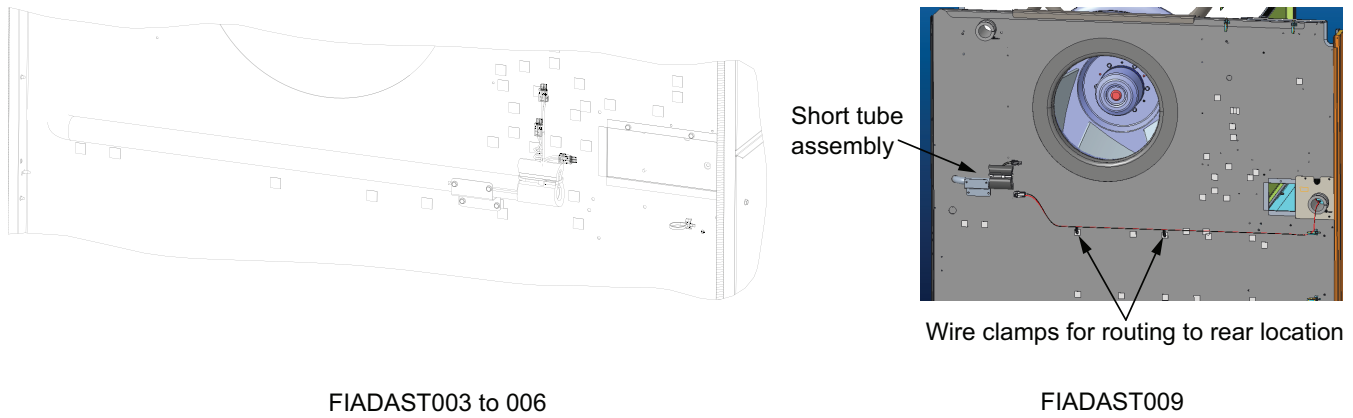


4. Remove filter access panel or open filter access door.
5. Install tube assembly to indoor divider wall. The bent section of tube should protrude divider wall where knockout was removed in [Step 4, p. 15](#). Install two screws from bracket into divider wall.

Note: For FIADAST009 kit, remove cabinet top to attach the short tube assembly to the divider wall on the unit rear.

Installation

Figure 11. Tube assembly installation



FIADAST003 to 006

FIADAST009

- Use remaining components to build supply-side assembly. Refer to correct assembly for downflow or horizontal flow discharge configurations. Be sure to note the direction of the holes.

Note: For FIADAST004*, the last tube has two different mounting configurations. See below table for proper configuration.

Unit Type	Airflow Configuration	B.0 Cabinet	C.0 Cabinet
Electric Heat/No Heat	Downflow	<p>FIADAST003*</p>	<p>FIADAST005*</p>
	Horizontal	<p>FIADAST003*</p>	<p>FIADAST005*</p>

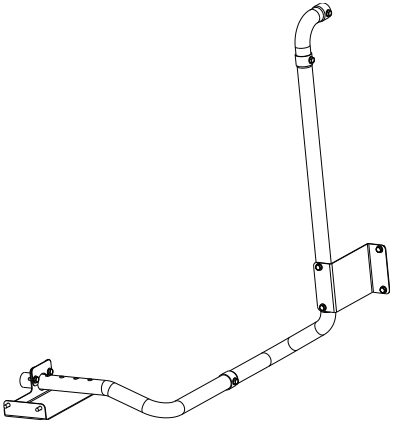
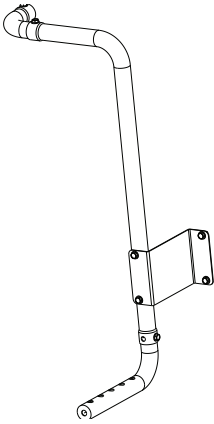
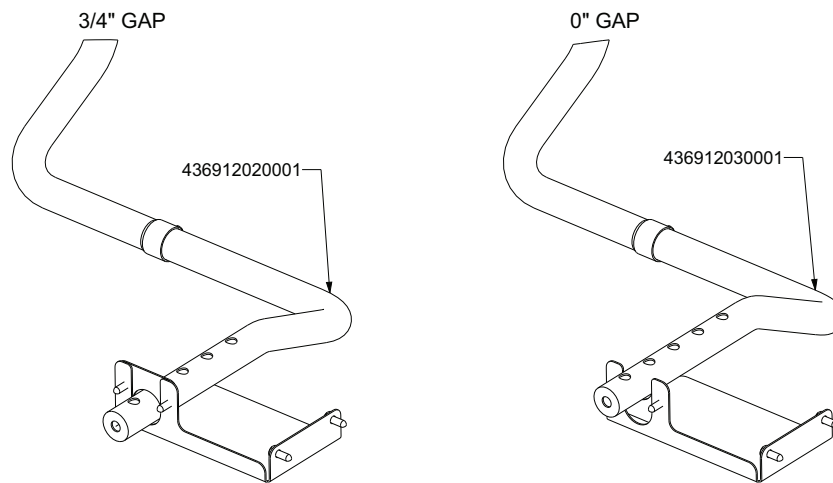
Unit Type	Airflow Configuration	B.0 Cabinet	C.0 Cabinet
Gas Heat	Horizontal/Downflow	 <p>FIADAST004*</p>	 <p>FIADAST006*</p>

Table 10. Gap analysis chart – B.0 and C.0 cabinet

Heater Type	HZ Gap Low	DF Gap Low	HZ Gap Med	DF Gap Med	HZ Gap High	DF Gap High
TLSP; GAS heat, B0 Cabinet, 3×3, L2	3/4 in.	3/4 in.				
TLSP; GAS heat, B0 Cabinet, 3×4, L2	3/4 in.	3/4 in.	3/4 in.	3/4 in.		
TLSP; GAS heat, B0 Cabinet, 4×5, L2	3/4 in.	3/4 in.	3/4 in.	Tight	3/4 in.	Tight
TLSP; GAS heat, B0 Cabinet, 6×7, L2			3/4 in.	Tight	3/4 in.	Tight
TLSP; GAS heat, C0 Cabinet, 4×5, L3	1/8 in.	1/8 in.	1/8 in.	1/8 in.		
TLSP; GAS heat, C0 Cabinet, 6×7, L3					1/8 in.	1/8 in.

Figure 12. FIADAST004 gap setting



7. Install supply-side assembly to unit. two screws will attach to each divider wall and one screw will attach to assembly installed in Step 5, p. 15.

Note: Some assemblies only attach to one divider wall. See images above for connection points.

8. Connect temperature sensor connector to factory installed harness. Harness will be near the temperature sensor with the same colored connector as the sensor connector.

9. After installation is complete, update Symbio™ configuration to enable the new feature.

Installation

Figure 13. FIADAST003 and FIADAST005 - Installed

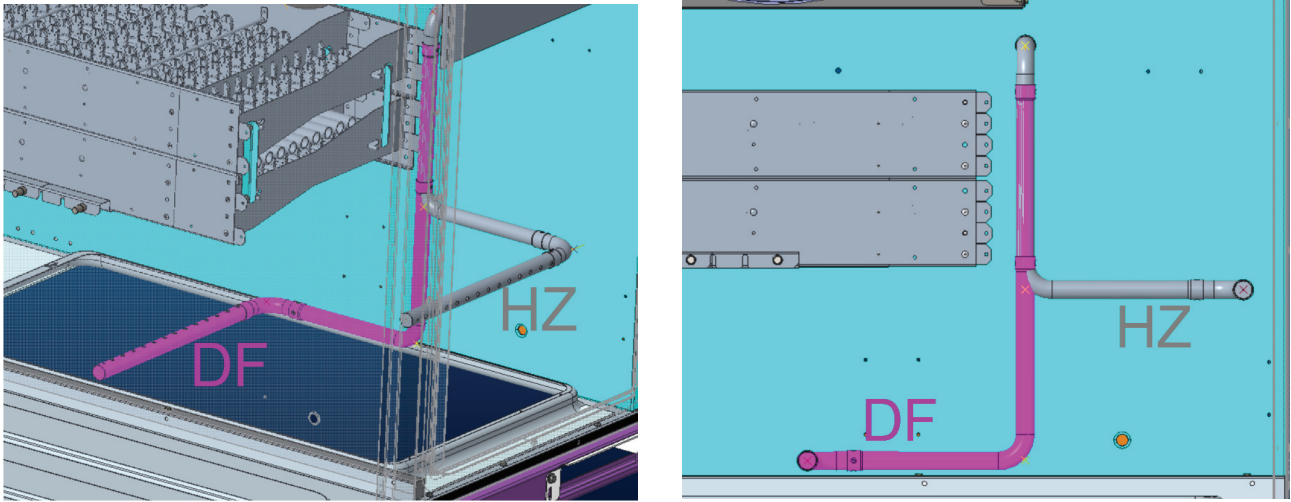


Figure 14. FIADAST004 and FIADAST006 - installed

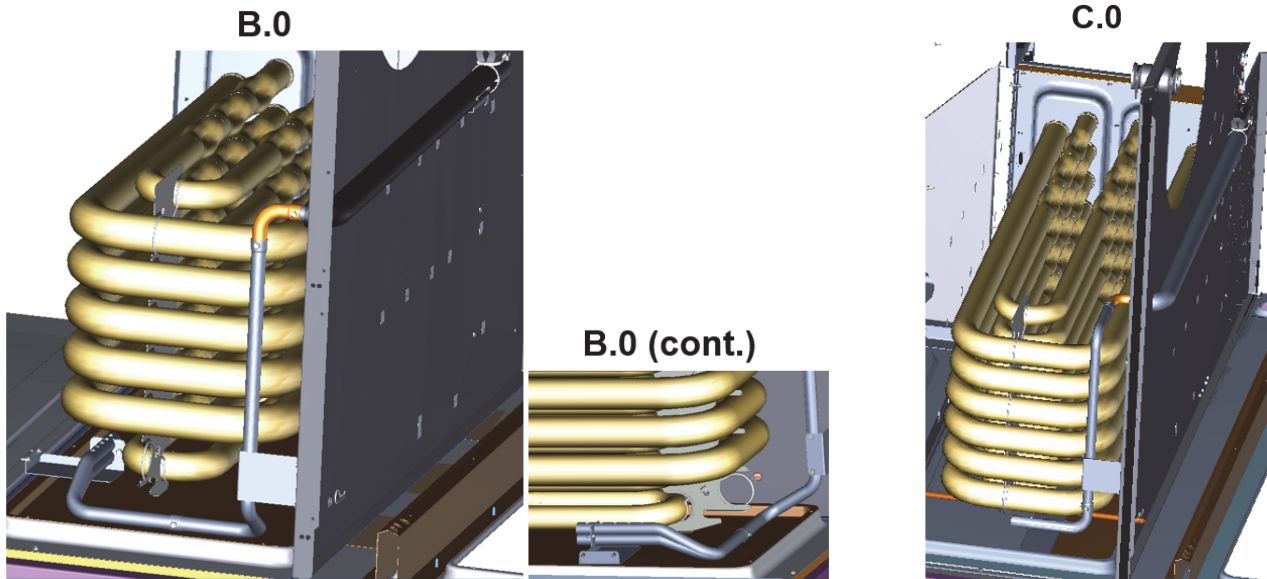
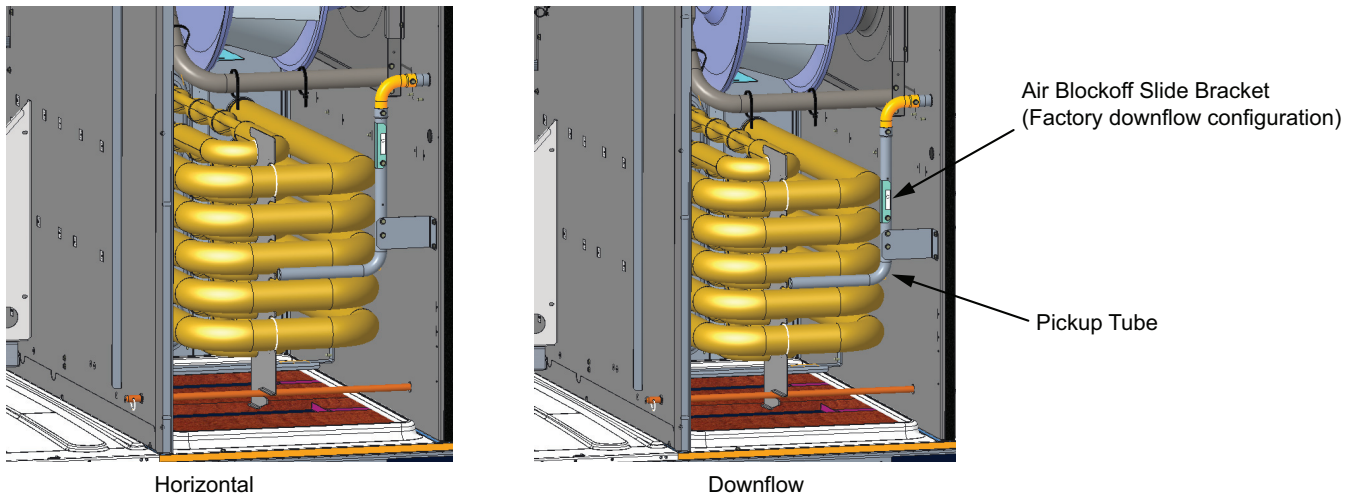
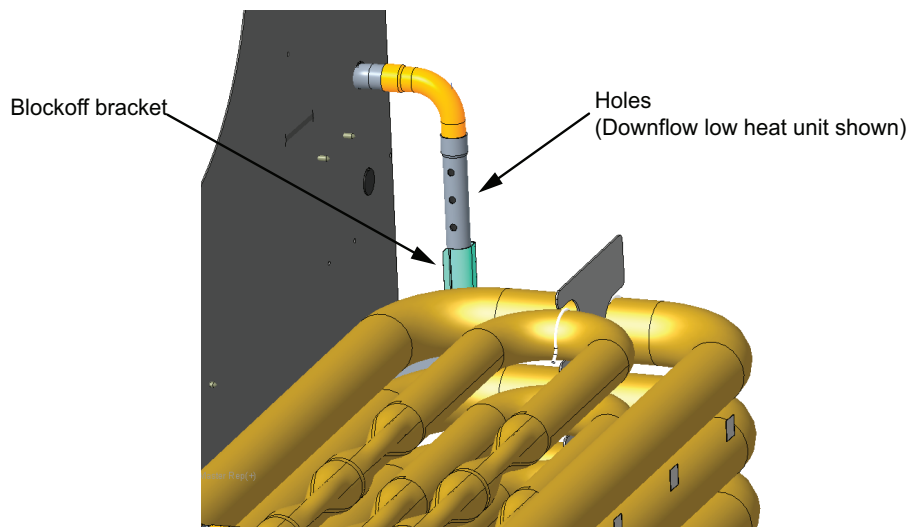


Figure 15. FIADAST009 installed



- Figure above shows FIADAST009 supply side tubing with a high-heat exchanger.
- Factory downflow configuration is shown. For field-installed downflow applications, blockoff is not used and can be discarded.
- Position the air blockoff bracket as shown above per unit configuration. The bracket is held in position by one screw, and can be adjusted up and down for optimal position. (The tube hole configuration will accommodate bracket adjustment.)
- The holes on the vertical leg of the pickup tube will be fully covered for horizontal configurations. For downflow configurations, the number of holes is determined by configuration (LOW, MED, or HIGH HEAT). See the following figure.

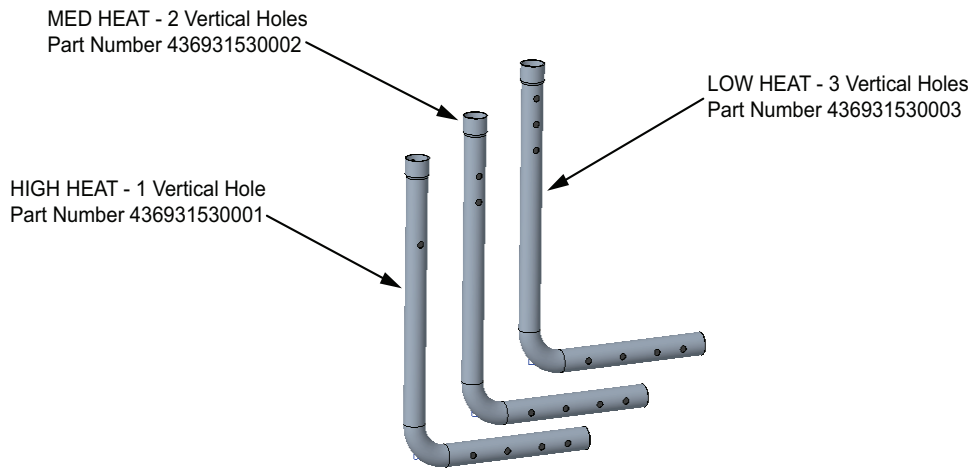
Figure 16. Pickup tube - vertical leg holes



- The FIADAST009 kit is shipped with additional pickup tubes specifically tuned for heat level.
- See the following figure to chose the proper tube for unit configuration heat level. Discard the others.

Installation

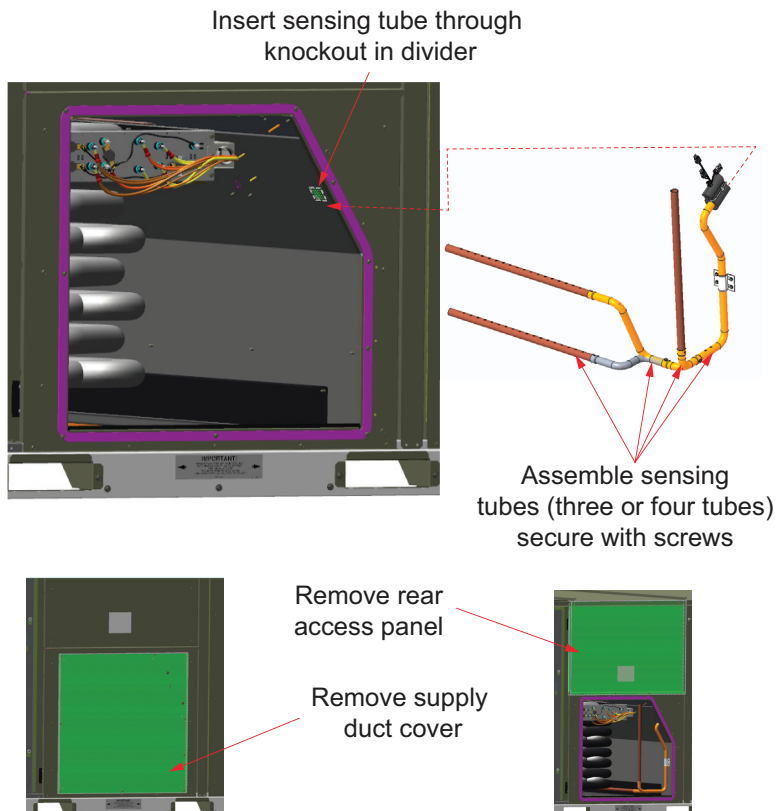
Figure 17. Pickup tubes



FIADAST007 to 008

1. Remove the filter access panel.
2. Remove the horizontal supply duct cover and rear access panel directly above the horizontal supply duct cover.
3. Remove knockout in divider wall.

Figure 18. D cabinet (digit 39 = D), sensing tube installation



4. Assemble DAS as shown in the following figures.

Figure 19. D cabinet (digit 39 = D) horizontal installation

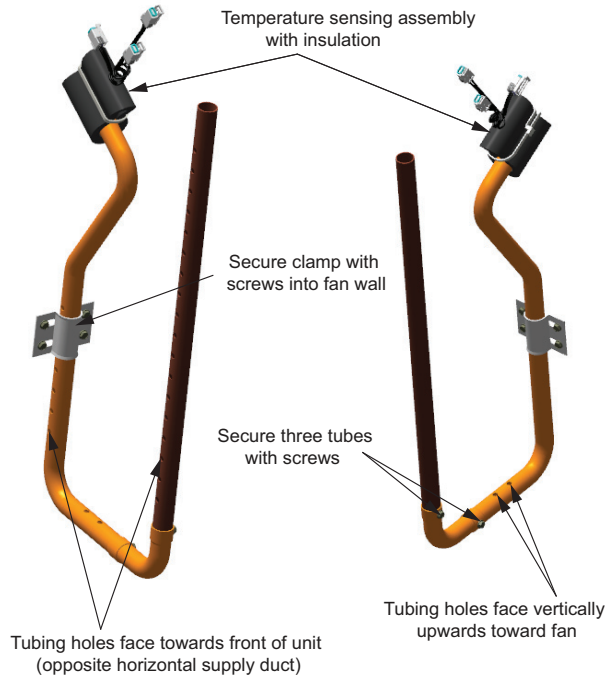
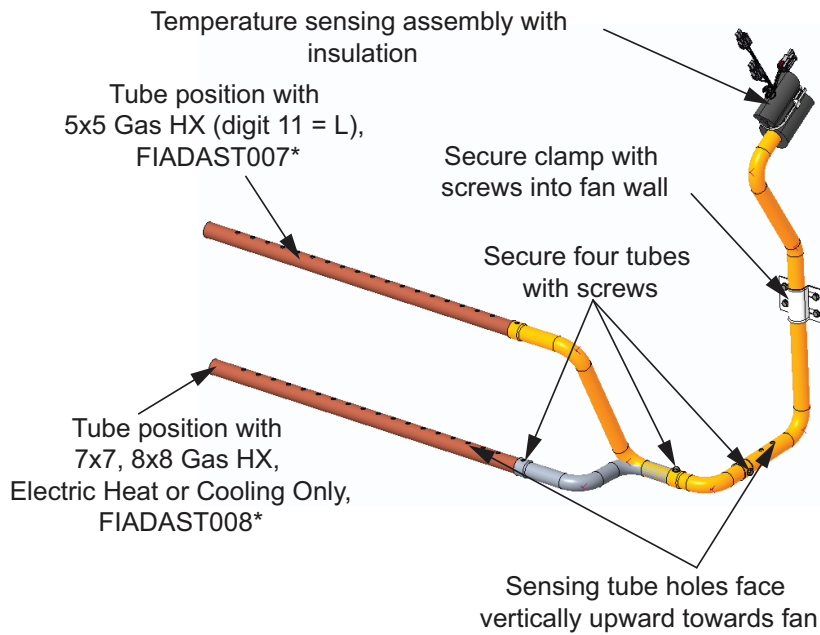


Figure 20. D cabinet (digit 39 = D) downflow installation



5. Install sensing tube through fan wall.
6. Secure the mounting bracket to divider with four screws holding the sensing tubes in place against the fan wall.

Installation

Figure 21. D cabinet (digit 39 = D) downflow installation

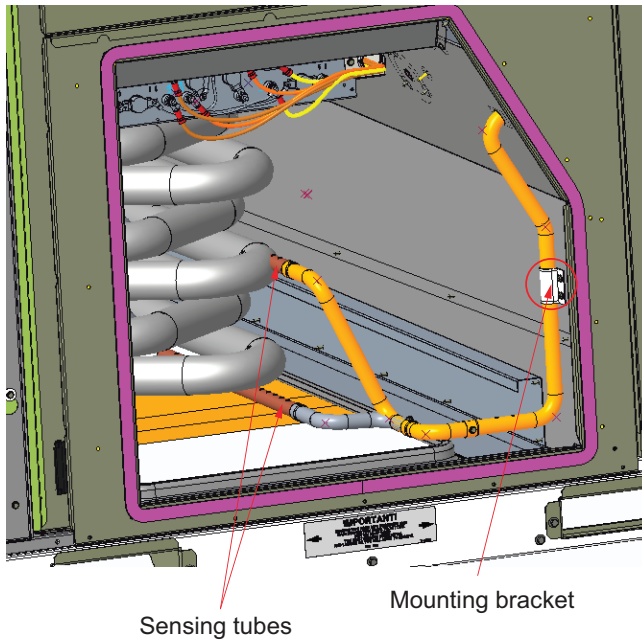
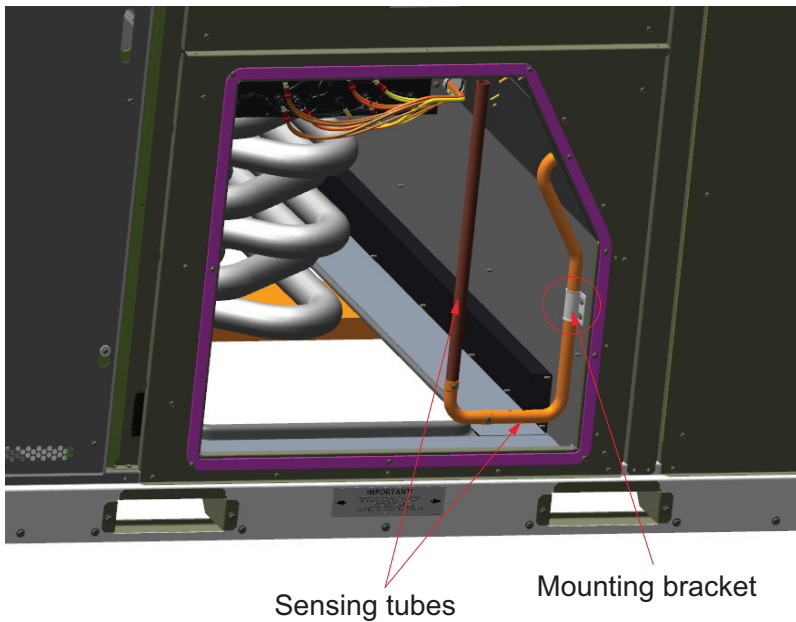


Figure 22. D cabinet (digit 39 = D) horizontal installation



7. Confirm the temperature sensing module assembly matches [Figure 23, p. 23](#). Place the sensor assembly over the sensor tube. Secure sensor assembly to sensor tube with the single screw. Verify that insulation is installed around the temperature sensing assembly with a wire tie.

Figure 23. D cabinet (digit 39 = D) temperature sensing module installation

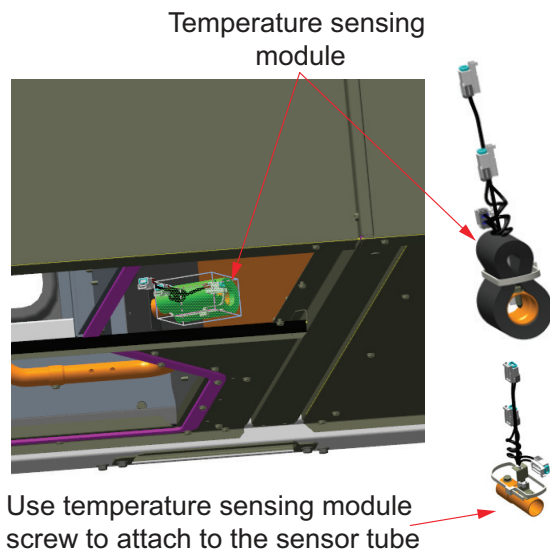
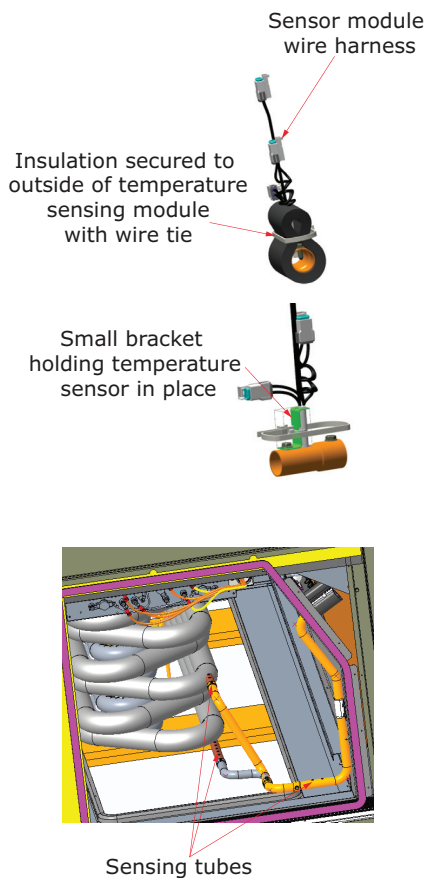


Figure 24. Insulation installation around temperature sensing assembly



8. Connect temperature sensor connector to factory installed harness. Harness will be near the temperature sensor with a like colored connector.
9. After installation is complete, the Symbio™ 700 UC configuration will need to be updated to enable this installed feature.

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