



Installation and Maintenance Manual

IM 745-4

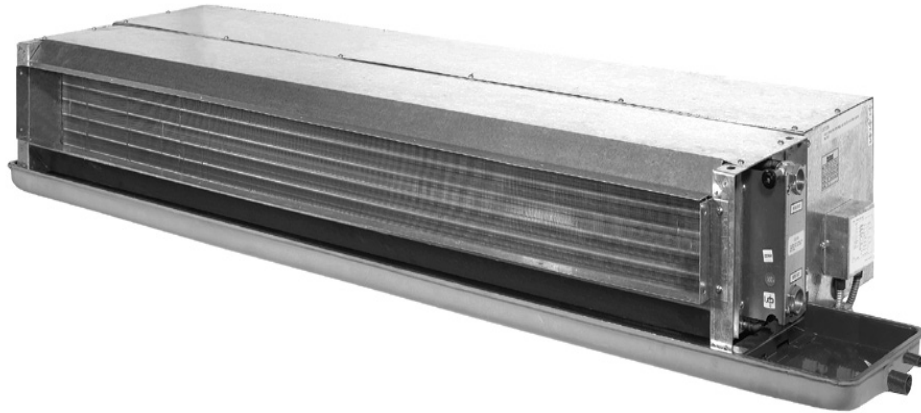
Group: **ATS**

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Date: March 2025

Horizontal Low-Profile Concealed Fan Coil Units

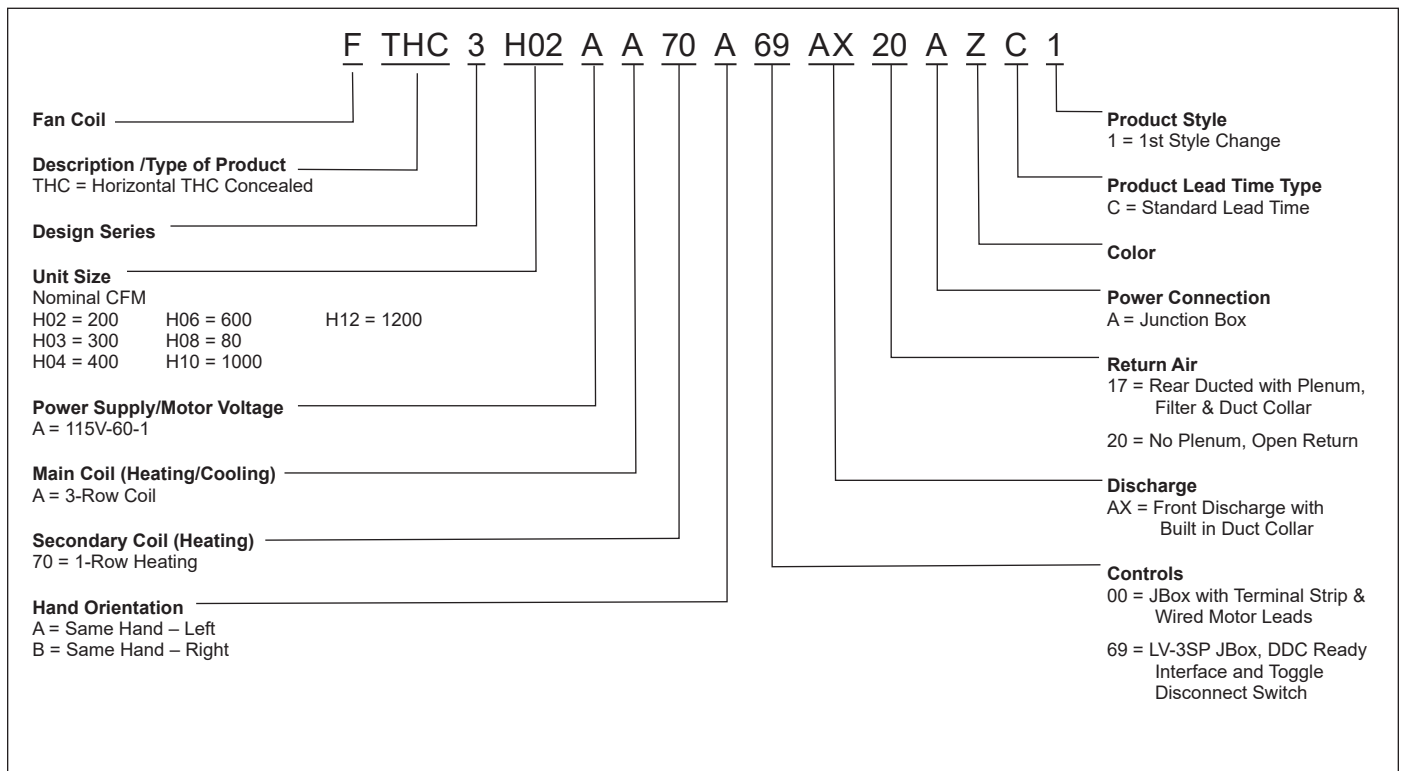
Models THC3H02–H12



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Nomenclature



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Introduction

This manual provides installation, operation and maintenance information for Daikin Applied THC horizontal fan coil.

Daikin Applied Fan Coils have been widely applied in hotels, apartments, dormitories and military barracks, assisted living facilities and offices. They have earned a reputation for quality—providing years of efficient, reliable, quiet heating and cooling and easy, low-cost installation and maintenance. The Model THC horizontal concealed fan coil unit is a slim, lightweight unit that is ideal for installation in ceilings where height is limited. Units are available in seven sizes from 200 to 1,200 CFM. The highly compact, super lightweight design of the Model THC fan coil unit makes it ideal for inside ceiling installations where height is limited.

NOTE: Installation and maintenance are to be performed only by licensed, if required by local codes and regulations, or qualified personnel who are familiar with local codes and regulations and are experienced with this type of equipment.



DANGER

LOCKOUT/TAGOUT all power sources prior to service, pressurizing, de-pressurizing, or powering down the unit. Failure to follow this warning exactly can result in serious injury or death. Disconnect electrical power before servicing the equipment. More than one disconnect may be required to de-energize the unit. Be sure to read and understand the installation, operation, and service instructions within this manual.



WARNING

Electric shock hazard. Improper handling of this equipment can cause personal injury or equipment damage. This equipment must be properly grounded. Connections to and service of the MicroTech control panel must be performed only by personnel that are knowledgeable in the operation of the equipment being controlled.



WARNING

Polyolester Oil, commonly known as POE oil is a synthetic oil used in many refrigeration systems, and may be present in this Daikin Applied product. POE oil, if ever in contact with PVC/CPVC, will coat the inside wall of PVC/CPVC pipe causing environmental stress fractures. Although there is no PVC/CPVC piping in this product, please keep this in mind when selecting piping materials for your application, as system failure and property damage could result. Refer to the pipe manufacturer's recommendations to determine suitable applications of the pipe.



CAUTION

Static sensitive components. A static discharge while handling electronic circuit boards can cause damage to the components. Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug any cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

Hazard Identification



DANGER

Danger indicates a hazardous situation, which will result in death or serious injury if not avoided.



WARNING

Warning indicates a potentially hazardous situations, which can result in property damage, personal injury, or death if not avoided.



CAUTION

Caution indicates a potentially hazardous situations, which can result in minor injury or equipment damage if not avoided.

NOTICE

Notice indicates practices not related to physical injury.

NOTE: Indicates important details or clarifying statements for information presented.

Recommendations

NOTICE

Before installation and running the unit, please check the following:

1. There must be enough space for the unit installation and maintenance. Please refer to the unit outline and dimensions in [Figure 1](#) for the minimum distance between the unit and obstacles.
2. Mount with the lowest moving parts at least 8 feet above the floor or grade level.
3. Ensure enough space for piping connection and electrical wiring.
4. Leave a means for disconnection from the electrical supply according to NEC or local codes.
5. Check whether the hanging rods can support the weight of the unit.
6. The unit must be installed horizontally for proper operation and condensate draining.
7. The external static pressure must be within the allowable static pressure range.
8. The installing contractor must supply service valves and insulation for water piping in accordance with local codes and regulations.
9. To prevent strain on the wire connections, use either conduit or approved strain relief device.
10. Confirm that the power has been switched OFF before installing or servicing the unit.

The unit is designed to be concealed in the ceiling. Installation and maintenance should be performed by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

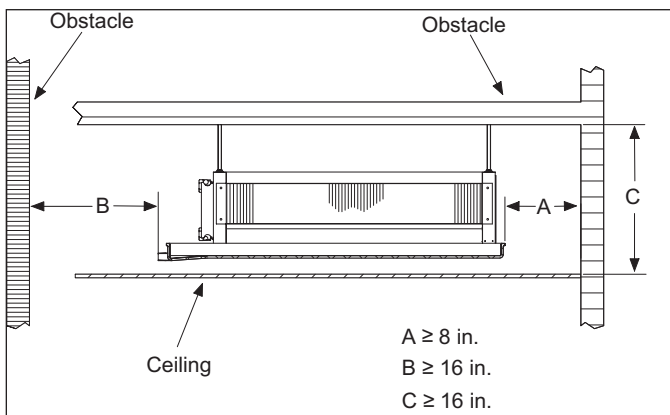
There are holes on the top of the unit for hanging the unit above the ceiling. Please refer to [Figure 2](#).

Note: Vibration isolators provided by others.

NOTICE

Make sure the top of the unit is level after installation. The drain pan is designed with a little gradient to facilitate drainage. **Do not level drain pan.**

Figure 1: Unit Clearances



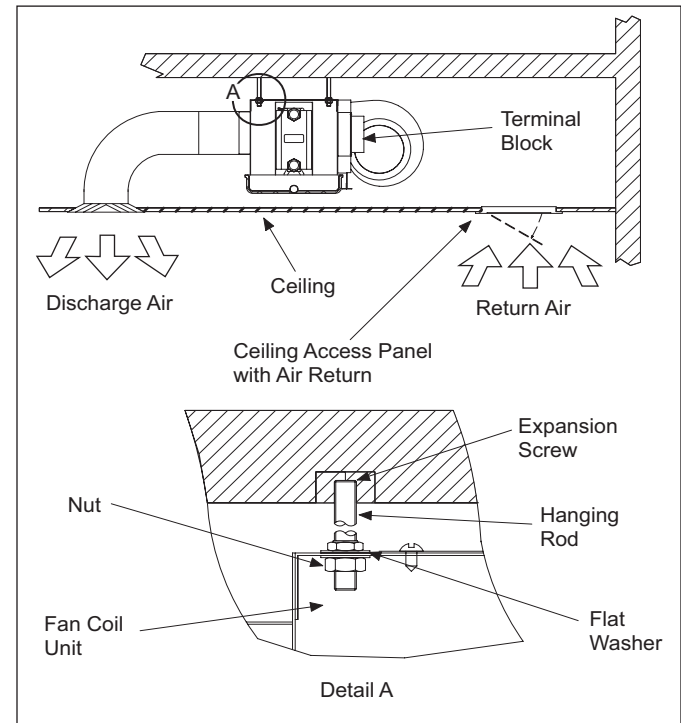
Air Duct Connection

Air ducts should be made of galvanized steel and connected to the flange of the unit with a canvas connector.

Refer to the unit dimensions. Insert the duct into the flange and fix with screws.

Duct connections must be installed in accordance with national and local codes.

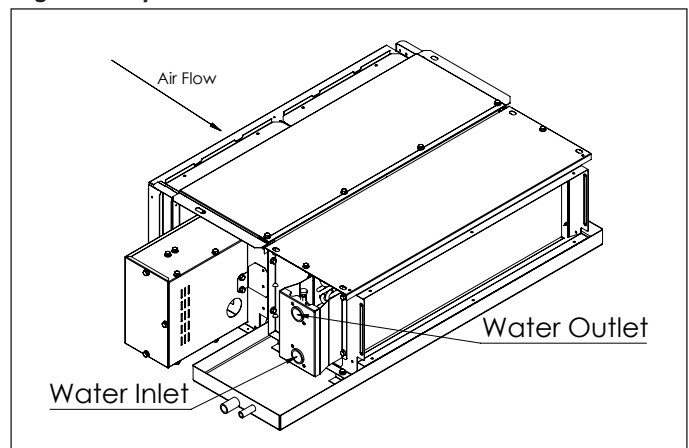
Figure 2: Air Duct Connection



Chilled Water Pipe Connection

Connect chilled water pipes to the unit. The water inlet is on the bottom and water outlet is on top.

Figure 3: Pipe Connections



Drain Pipe Connection—Per Local Codes

The drain pipe can be PVC or steel. Connect the drain pipe to the unit. Pipe insulation is recommended to avoid condensation. The suggested slope of the drain pipe is at least 1/8" per foot, but local code will prevail. Refer to [Figure 3](#) for typical piping installation.

Switching Pipe Connection Locations

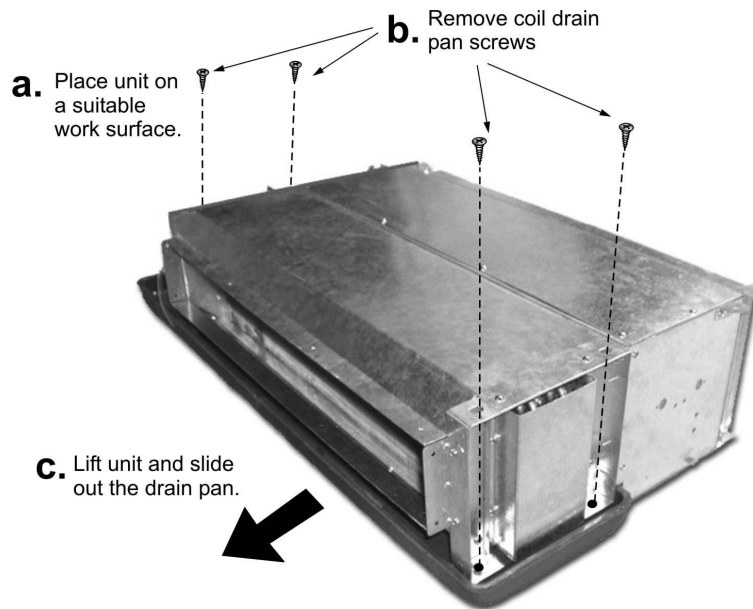
Daikin THC Fan Coils feature the capability to rotate the coil 180 degrees for applications where you want to make piping connections on the opposite end of the unit. To take advantage of this feature, carry out the following steps.

Note 1: A left-hand unit is shown (i.e. piping connections are on the left side). The same procedures used, in reverse, for a right-hand unit.

Note 2: Fan Coil units with one-row heating will be repositioned as a preheat coil.

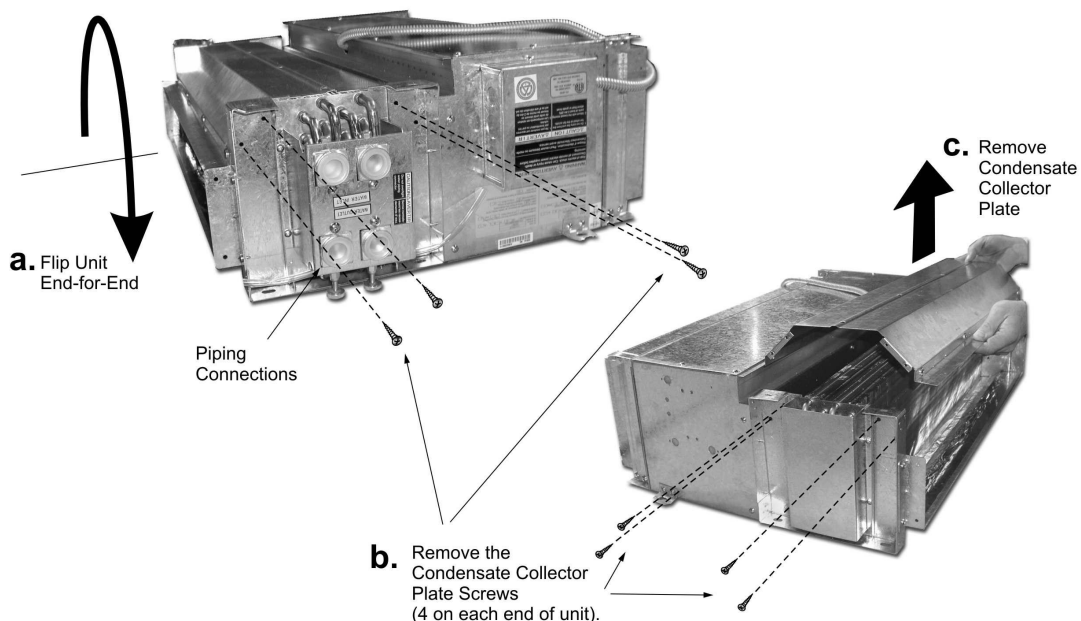
1. Remove the drain pan.

- Place the coil fan unit on a suitable work surface with the drain pan end facing you.
- Remove the four screws—two on each end—holding the drain pan in place.
- Lift the front of the unit and slide out the drain pan. Set it aside, along with the mounting screws, for later reinstallation.



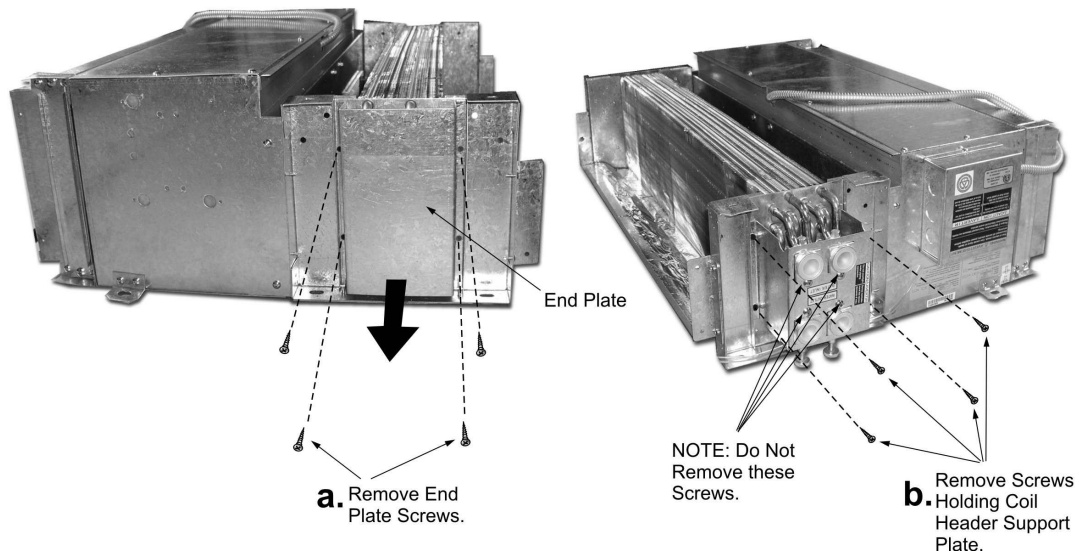
2. Remove the condensate collector plate.

- Flip the unit over, end-for-end, so that the piping connections are now on the other end of the unit.
- Remove the eight screws holding the condensate collector plate in place.
- Remove the condensate collector plate and set aside with the screws for later reinstallation.



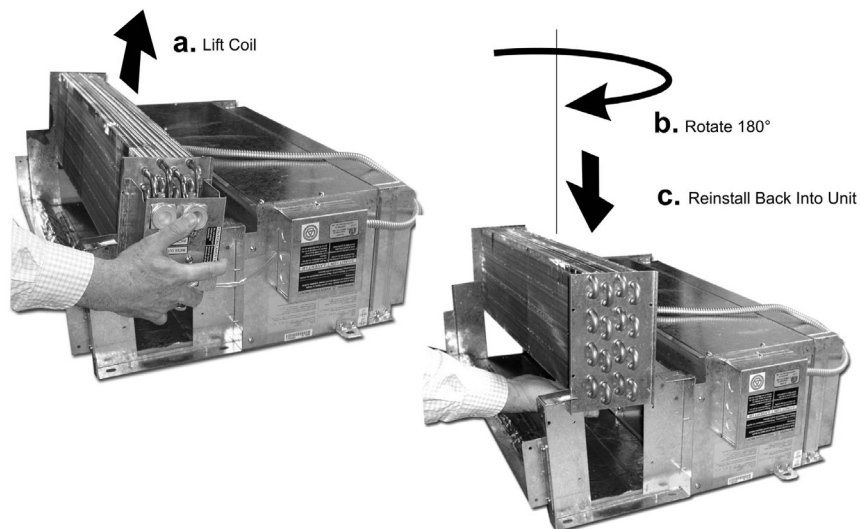
3. Remove coil end plate and coil header support plate screws.

- a. Remove the four screws holding the Coil End Plate in place and set aside the end plate.
- b. Remove the four screws holding the Coil Header Support End Plate. **DO NOT** remove the screws between the water connections (see figure below).



4. Remove coil, rotate 180° and reinstall.

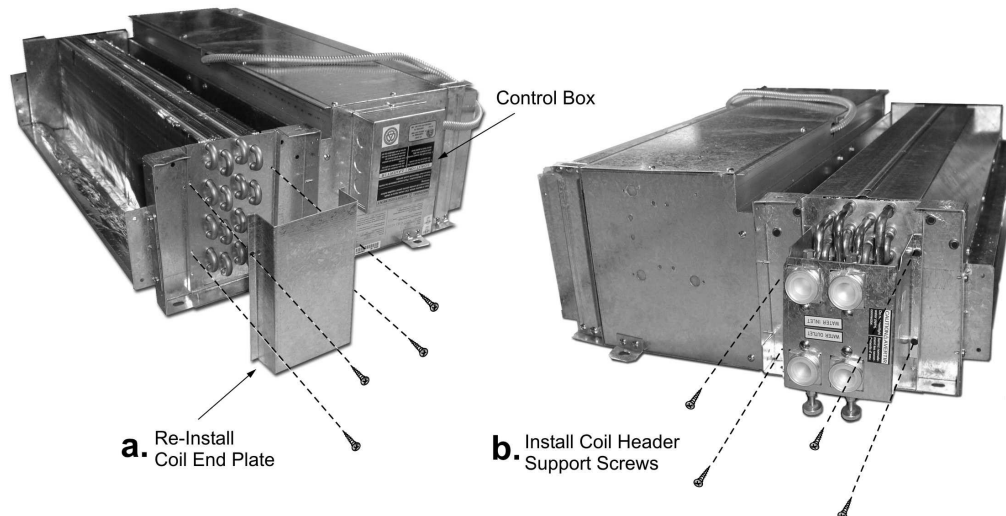
- a. Carefully lift the coil out of the unit, rotate it 180 degrees and reinstall it back into the unit.



5. Reinstall end plate and coil header support plate screws

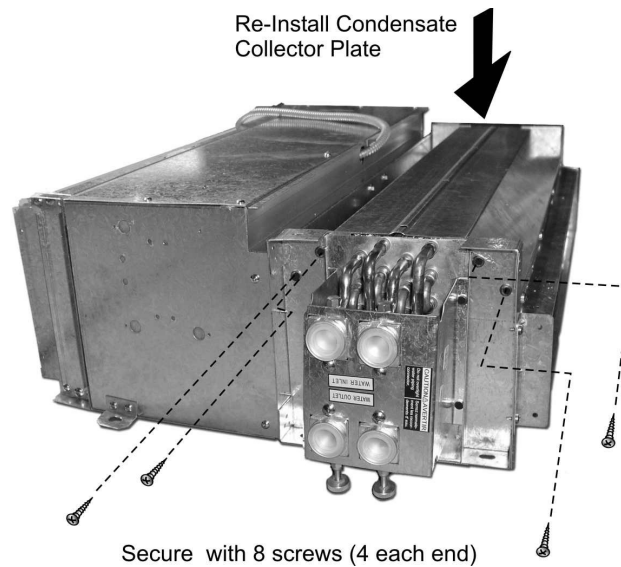
- a. Put the Coil End Plate back in place and secure with the four mounting screws you removed in Step 3.
- b. Reinstall the 4 Coil Header Support Plate screws.

Note: If desired, you may also move the Control Box to the other end of the unit at this time (to keep the piping connections and control box on the same end for servicing).



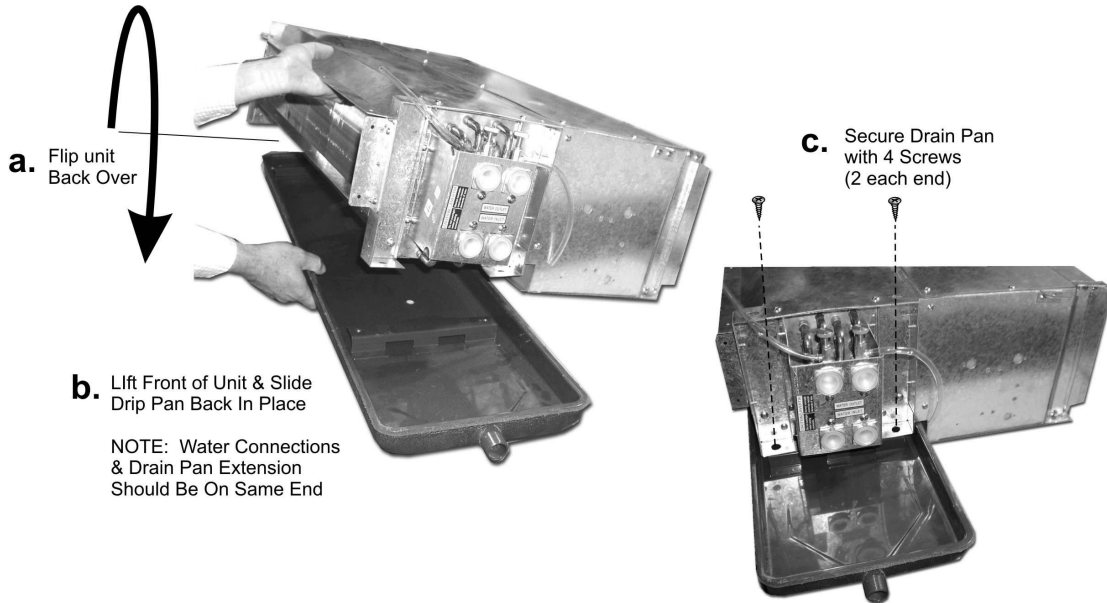
6. Reinstall the coil condensate plate

- a. Reinstall the Condensate Collector Plate back on the unit and secure with the eight mounting screws you removed in Step 2.



7. Reinstall the drain pan

- Flip the unit back over, end-for-end.
- Lift the front of the unit and slide the Drip pan back in place.
- Secure Drip Pan with the screws you removed in Step 1.



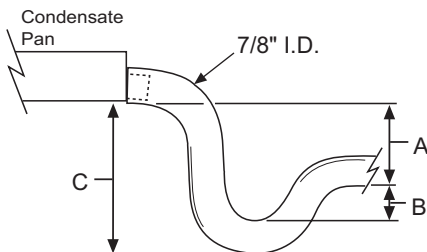
Suggested Condensate Trapping

The condensate trap provides the water seal (water level in the condensate trap) to prevent the flow of air from the condensate drain line into the coil section during normal operation.

Improper trapping can lead to several problems. If the trap is too tall, back pressure will prevent drainage, causing condensate backup. If the trap is too short the seal will be destroyed or nonexistent, producing the same effect as a non-trapped system.

The trap should be constructed of 7/8" clear plastic piping. The condensate piping from the drain trap must be sloped to facilitate proper drainage. The clear plastic trap should be clamped and removable for cleaning. It may be necessary to manually fill the trap at system start-up, or to run the unit for sufficient time to build a condensate seal. The condensate trap and condensate piping drainage should be free of any foreign debris. Foreign debris can prevent proper operation resulting in condensate buildup.

Figure 4: Suggested Condensate Trap



A	B	C
1 1/2"	3/4"	3 1/8"

Interface Control Junction Box Wiring

Wiring connection must be completed according to the wiring diagram on the unit.

The unit must be GROUNDED. Installation of all field wiring must comply with NEC and local codes.

Figure 5: Interface Control Junction Box (Left End Shown)

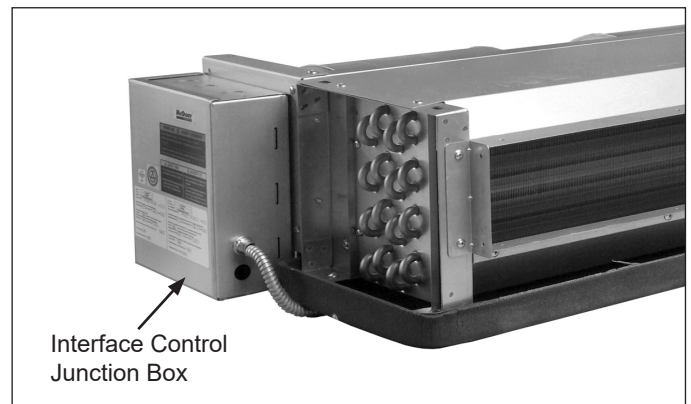


Figure 6: Interface Control Junction Box Detail

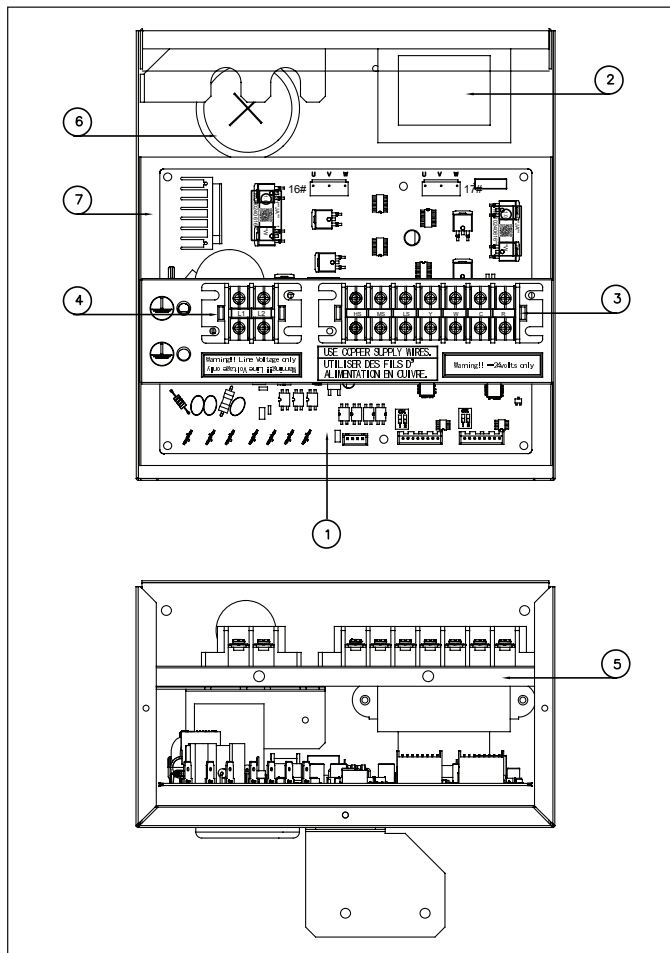


Table 1: Figure 6 Number Descriptions

Item	Description
1	Control Module, MC722
2	Transformer, 24V
3	Terminal Block, HP
4	Terminal Block, HP
5	Middle Metal Sheet for Terminal Block Installation
6	Bush, 743
7	Metal Sheet

Model C3H, 02~12AA, 115V, 60Hz

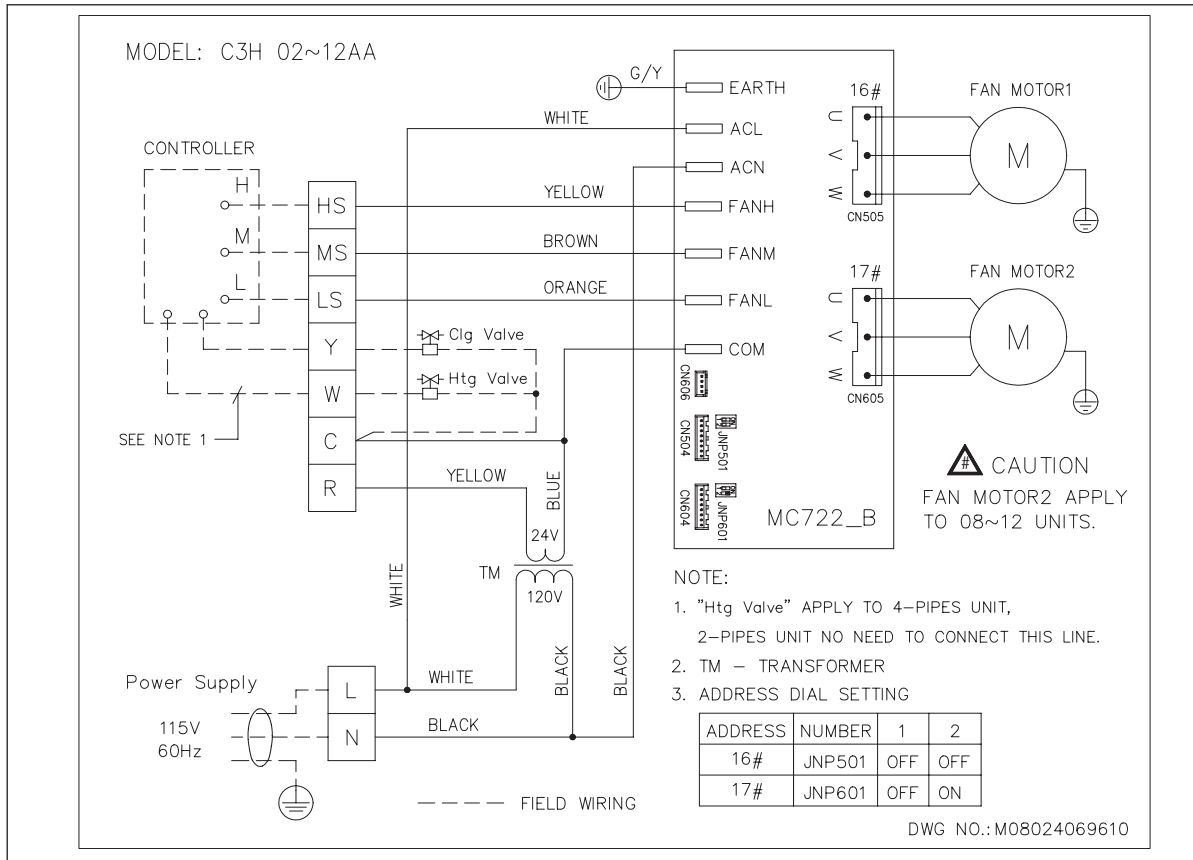
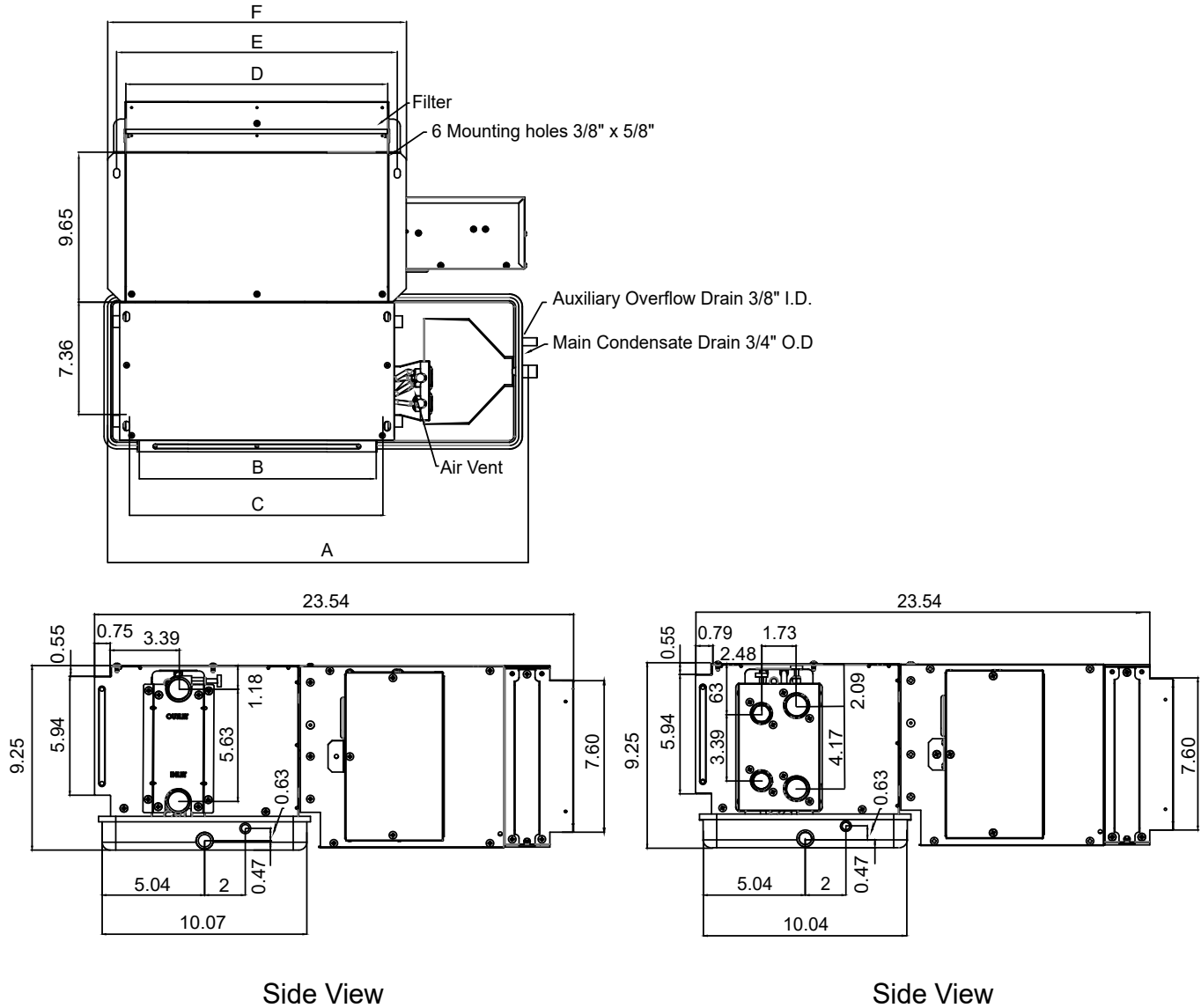


Figure 7: THC Horizontal Concealed, with Extended Drain Pan



2-Pipe System - Right Hand Unit*

4-Pipe System - Right Hand Unit*

*Factory supplied left hand units also available

Unit Size	A	B	C	D	E	F	Number of Fans	Filters	
								Size (L x W x H)	Qty
H02	32.05"	17.64"	19.17"	19.96"	18.46"	21.13"	1	16 ¹ / ₂ " x 7 ³ / ₈ " x 1"	1
H03	38.74"	24.33"	25.87"	26.65"	25.15"	27.82"	1	24" x 7 ³ / ₈ " x 1"	1
H04	43.86"	29.45"	30.98"	31.77"	30.20"	32.94"	2	26" x 7 ³ / ₈ " x 1"	2
H06	51.73"	37.32"	38.86"	39.65"	38.07"	40.82"	2	33" x 7 ³ / ₈ " x 1"	2
H08	61.57"	47.17"	48.70"	49.49"	47.91"	50.66"	3	48" x 7 ³ / ₈ " x 1"	2
H10	65.51"	51.10"	52.64"	53.43"	51.85"	54.60"	3	50" x 7 ³ / ₈ " x 1"	3
H12	75.75"	61.34"	62.87"	63.66"	62.09"	64.83"	4	57 ⁷ / ₈ " x 7 ³ / ₈ " x 1"	3

NOTE: All dimensions ± 0.10".

NOTE: Filter length is the total length of required filters, considering the quantity specified on the respective field.

General

A good general maintenance plan will avoid performance loss and unexpected shut-down of the equipment.

A dirty filter reduces air flow as well as unit performance. Changing or cleaning the filter is very important. Check the filter monthly and replace or clean as required.

Coils should be cleaned of dust, dirt and lint with compressed air or water. They can be vacuumed or brushed with a soft brush.



CAUTION

Water coils exposed to freezing temperatures should be drained or anti-freeze should be added to the water circuit to avoid freezing.

Monthly Intervals

1. Inspect and clean the condensate drain pan to help avoid clogging of drainage by dirt, dust, etc. Inspect drainage piping for proper condensate flow.
2. Check and clean the coil. Clean the coil with a low pressure water jet or low pressure air.
3. Clean and tighten all the wiring connections.

Problem, Cause and Solution

If the unit does not work properly, first check the points reported in the table below before requesting service.

If the problem cannot be solved, contact your dealer or service center.

Table 2: Troubleshooting Solutions

Problem Description	Possible Cause	Recommended Solution
The unit does not operate.	Power failure or the unit power is not on.	Wait until the power is on or turn on the unit power.
	The power plug is loose.	Plug in the power plug properly.
	The motor is damaged.	Replace the motor.
Abnormal noise and vibration occur during unit operation.	The motor bearing is damaged.	Replace the motor.
	Screws for fixing the fan and motor are loose.	Fix the screws securely.
	The fan volute is deformed and collides with the fan impeller, or the impeller is deformed.	Replace the fan.
	Debris exist in the ventilation outlet or the duct.	Remove the debris.
	The air filter is blocked.	Replace the new air filter.
The air supply is not smooth or the air flow volume is small.	The return air inlet or air outlet of unit is blocked.	Remove the obstacle.
	The air filter is blocked.	Replace with a new air filter.
The cooling or heating function fails.	The heat exchanger fins are blocked or pushed down.	Clean and repair the heat exchanger.
	Temperature of the cold water during cooling is too high, or temperature of the hot water during heating is too low.	Adjust the configured temperature of the unit.
	The air filter is blocked.	Replace the new air filter.
Water leaks.	The condensate drain pan is blocked.	Clean the condensate drain pan.
	The unit is not installed horizontally.	Adjust the unit until it is placed horizontally.
	Ambient temperature too high.	Perform dehumidification and avoid the entering of high-temperature and high-humidity air into indoor places.

Failure Code Information

When the motor is failure-free standby, the LED indicator light of the driver will be on for 1 second, off for 1 second, and flickering following the cycle.

When the motor runs normally, the LED indicator light of the driver will be always on.

If there is failure, the indicator light will be on for 0.3 second, off for 0.3 second, flickering for N times and off for 3 seconds, then flickering following the cycle. Failure code and elimination method are as shown in the following table:

Table 3: Failure Codes and Eliminations

Flicker Times (N) of the Driver Indicator Light	Failure Description	Suggested Elimination Method
1	Motor overcurrent protection	Check whether there is open circuit or short circuit on the motor lead.
3	Over-voltage protection of driver DC bus	Check the power supply voltage value.
4	Under-voltage protection of driver DC bus	Check the power supply voltage value.
5	Motor stall protection	Check whether the motor or drought fan is loosened or the air outlet is blocked.
6/8	Motor stalling/boot failure protection	Check whether the drought fan got stuck by foreign matter.
7	Motor open-phase protection	Check whether the motor or drought fan is poor repair stitching, or whether there is short circuit or open circuit on the motor lead.



Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin Applied equipment, its care should be a high priority. For training information on all Daikin Applied HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

Warranty

All Daikin Applied equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. Refer to Form 933-430285Y. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

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To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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