



Installation and Maintenance Manual

IM 745-3

Group: Fan Coil

Part Number: 668708901

Date: October 2018

Ceiling Concealed Fan-Coil Unit


Models: THC02, THC03, THC04, THC06, THC08, THC10, THC12



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Safety Precautions

 CAUTION
Sharp edges and coil surfaces are injury hazards. Avoid contact with them.

 WARNING
Moving machinery and electrical power hazards may cause severe personal injury or death. Disconnect and lock off power before servicing equipment.

NOTICE
Installation and maintenance are to be performed only by qualified personnel who are familiar with and in compliance with state, local and national codes and regulations, and experienced with this type of equipment.

Receiving

All units leaving the Daikin Applied plant are inspected for quality prior to shipment.

Carefully inspect all shipments immediately upon delivery. Note visible damage on the carrier’s freight bill and request that the carrier send a representative to inspect the damage. This may be completed by telephone or in person, but should always be confirmed in writing.

The shipment should be unpacked in the presence of the agent so that the extent of the damage or loss can be determined. The carrier’s agent will make an inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

Limited Warranty

Consult your local Daikin Representative for warranty details. Refer to Form 933-43285Y. To find your local Daikin Representative, go to www.DaikinApplied.com.

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.

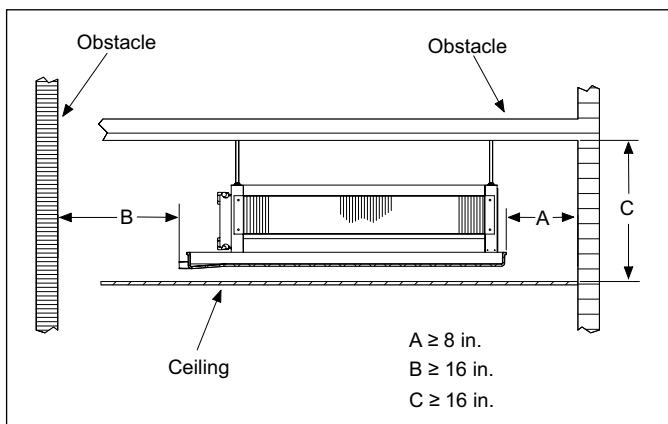
There are holes on the top of the unit for hanging the unit above the ceiling. Please refer to [Figure 1](#) and [Figure 2](#).

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

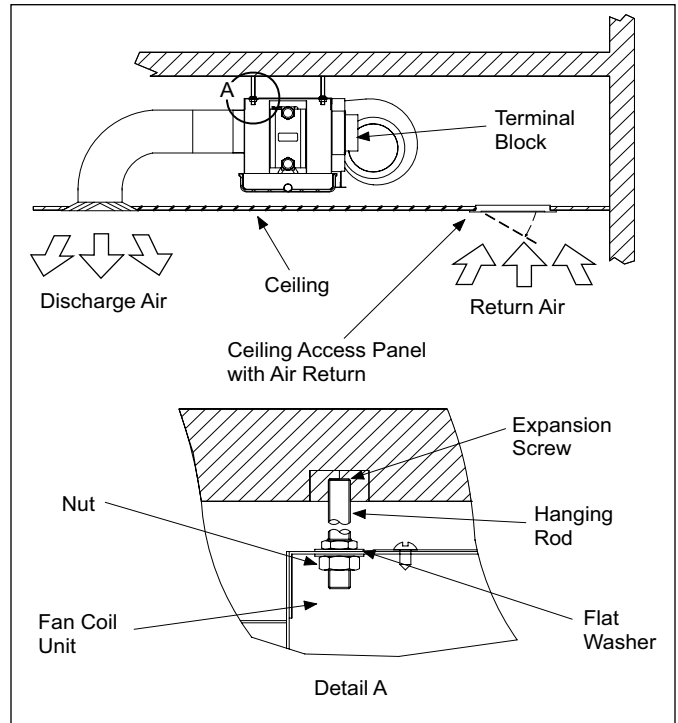


Air Duct Connection

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.

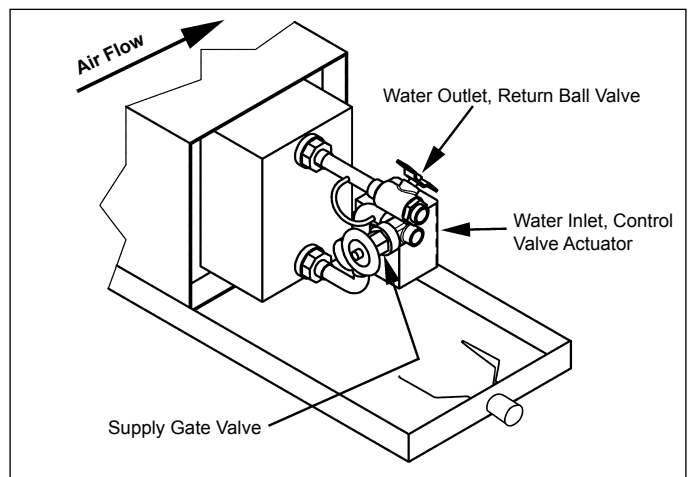
Figure 2: Air Duct Connection



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.

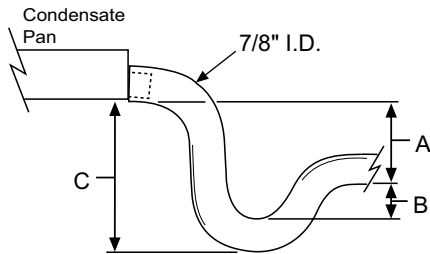
Suggested Condensate Trapping

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.

WARNING

A means for disconnect from electrical supply shall be provided according to NEC or local codes. Confirm that the power has been switched OFF before installing or servicing the unit.

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

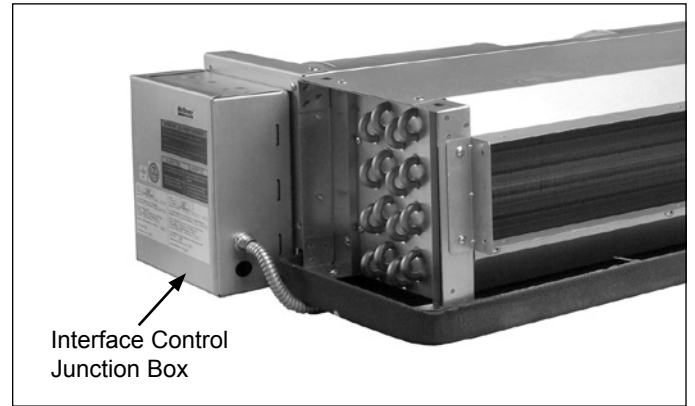


Figure 6: Interface Control Junction Box Detail

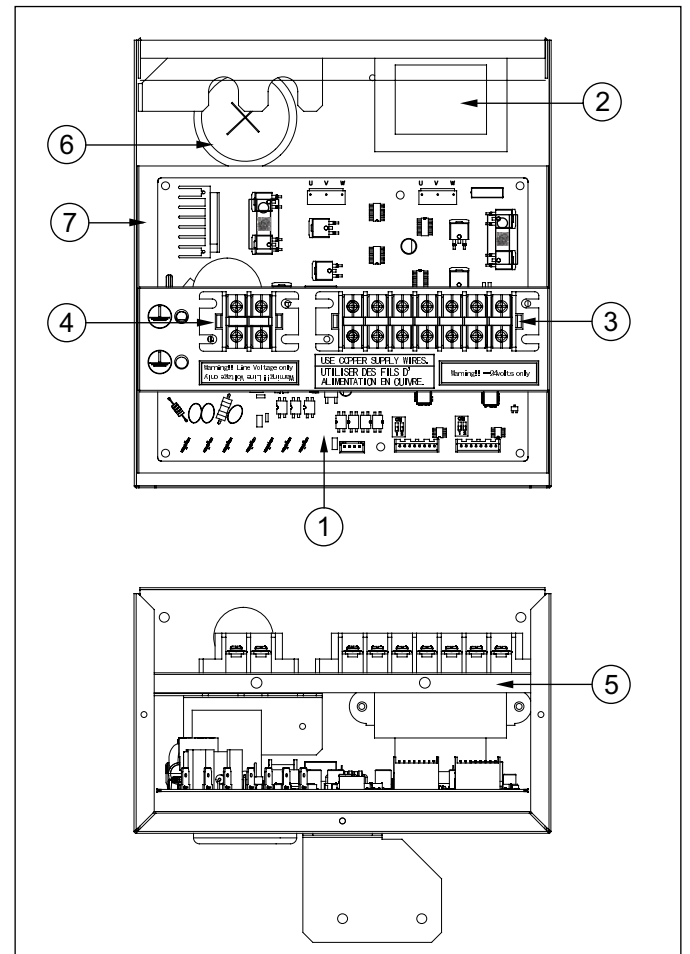
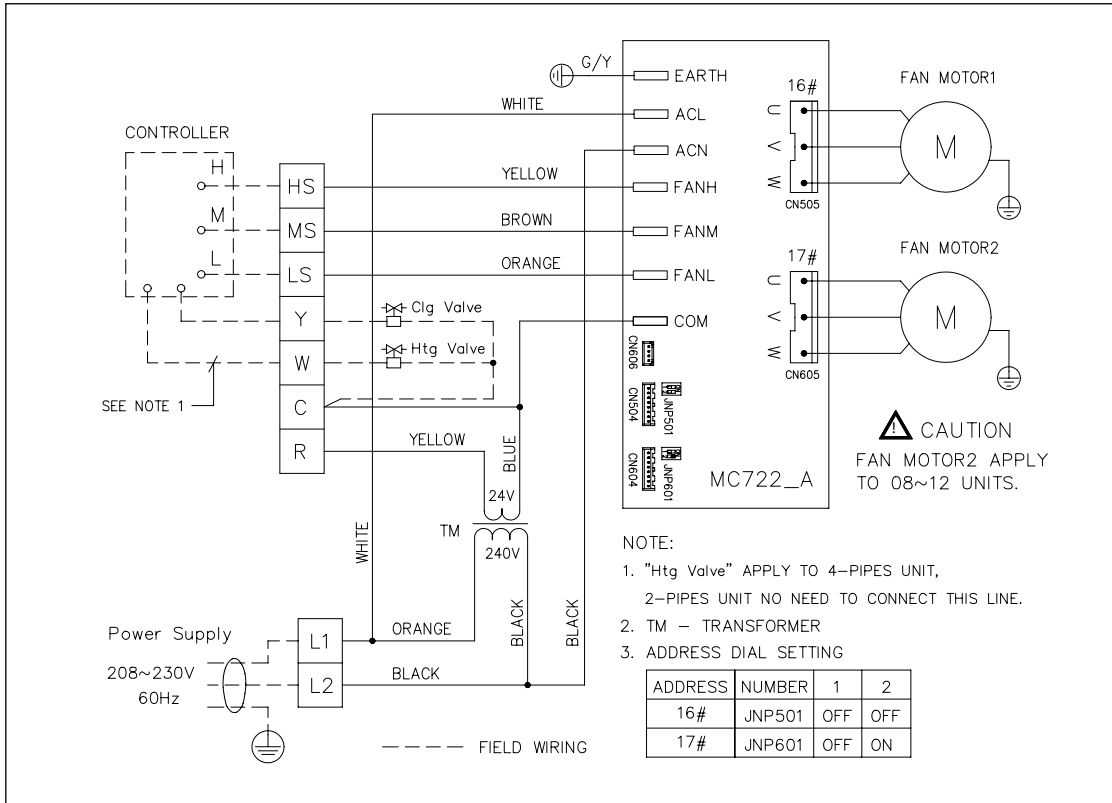


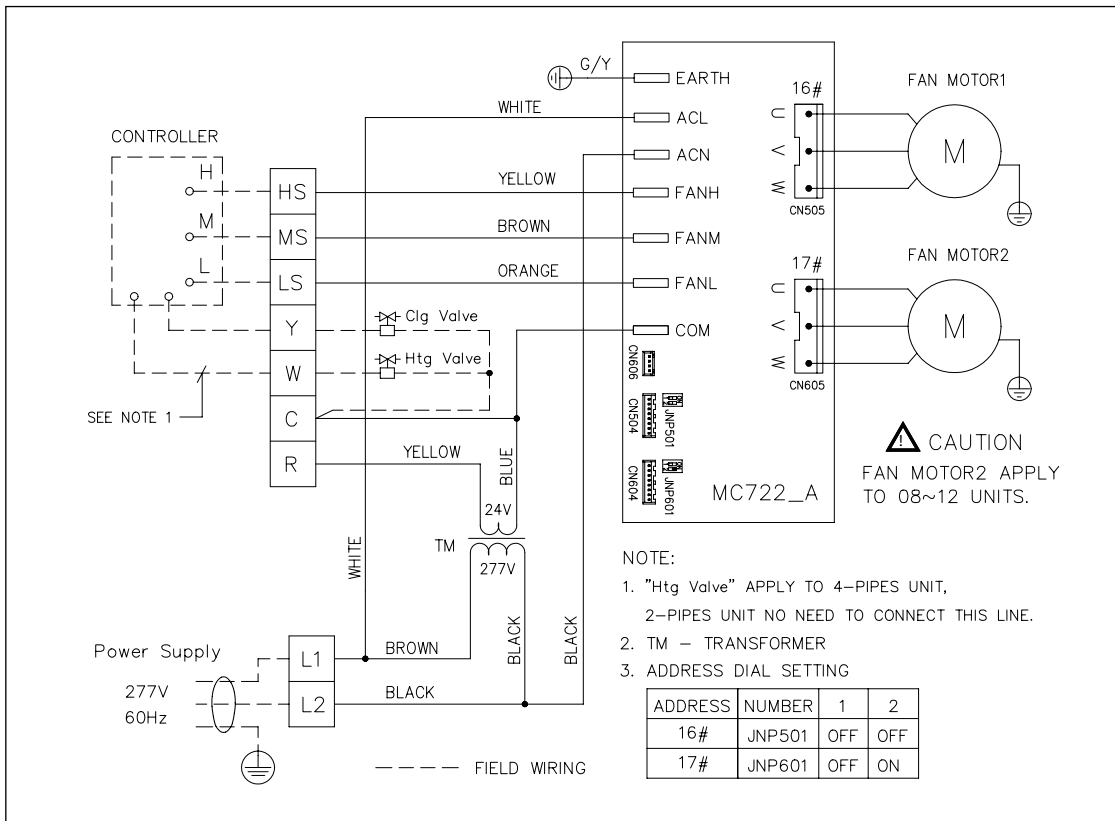
Table 1: Figure 6 Number Descriptions

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, ?43
7	Metal Sheet

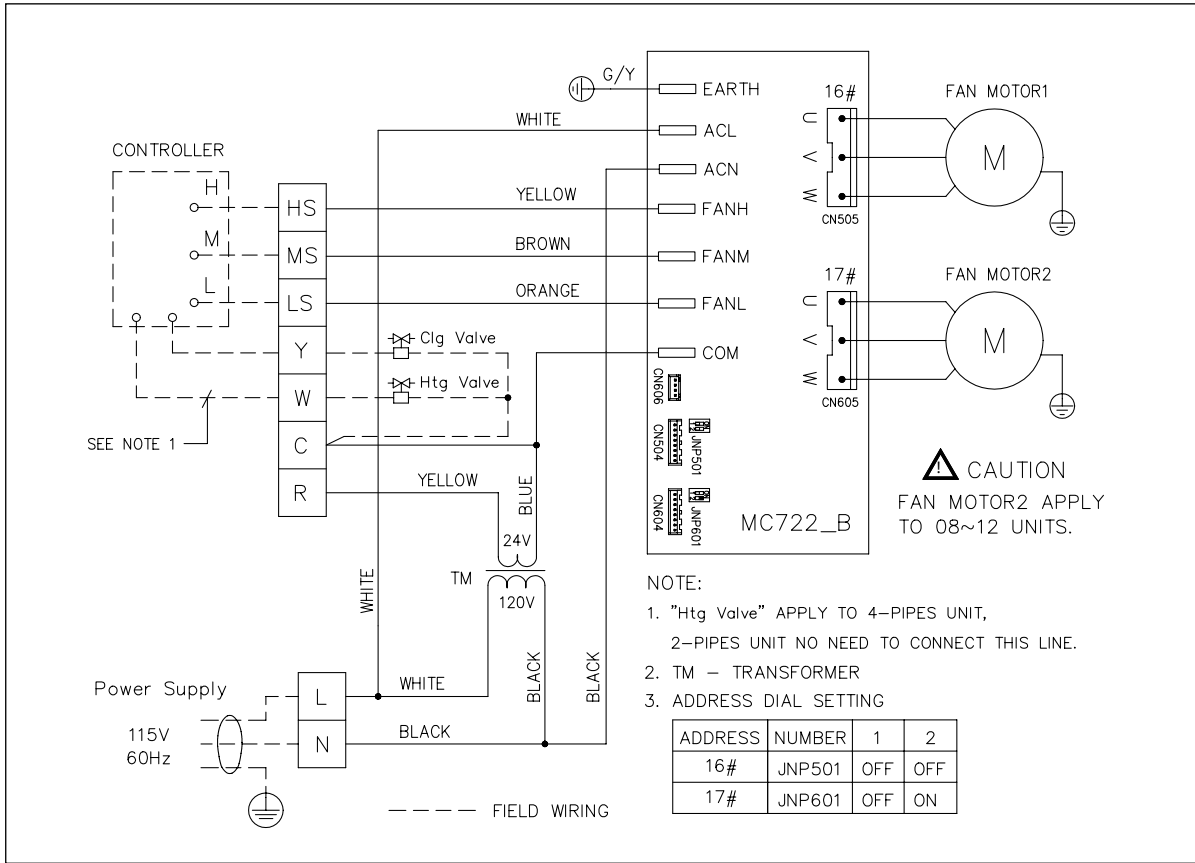
Model C3H, 02-12EA, 208-230V, 60Hz



Model C3H, 02-12JA, 277V, 60Hz



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



Models THCH02, THCH03, THCH04 and THCH06 (Basic Unit Only)

Figure 7: (115V / 1Ph / 60Hz), (208-230V / 1Ph / 60Hz)

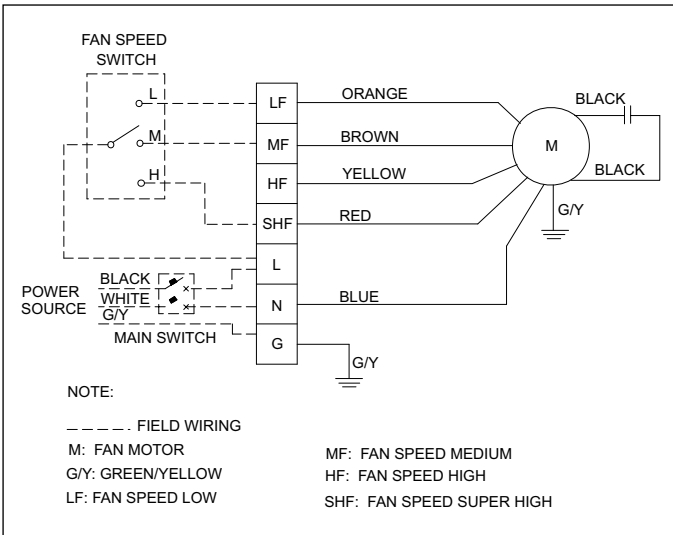
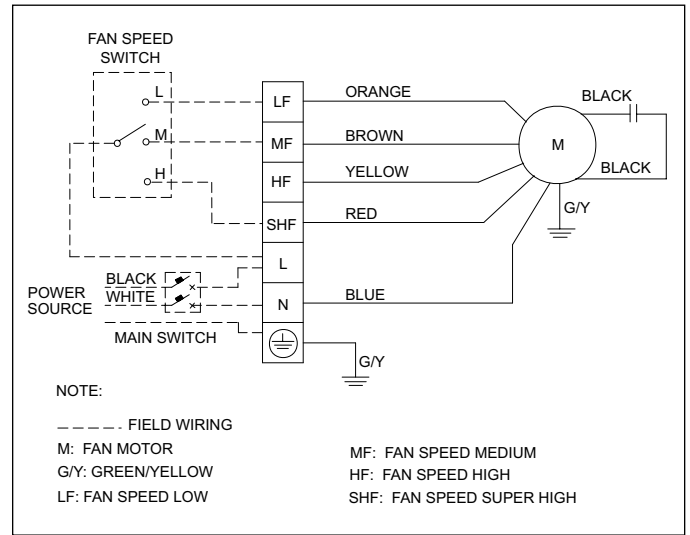


Figure 8: (220V / 1Ph / 50Hz)



**Models THCH08, THCH10 and THCH12
(Basic Unit Only)**

Figure 9: (115V / 1Ph / 60Hz), (208-230V / 1Ph / 60Hz)

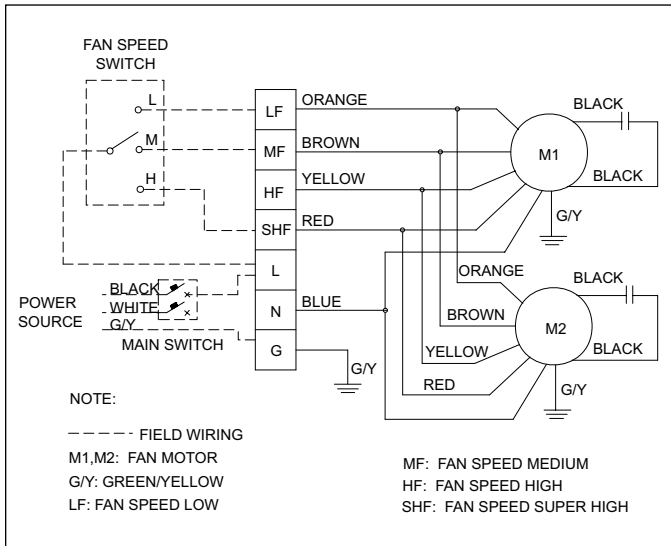
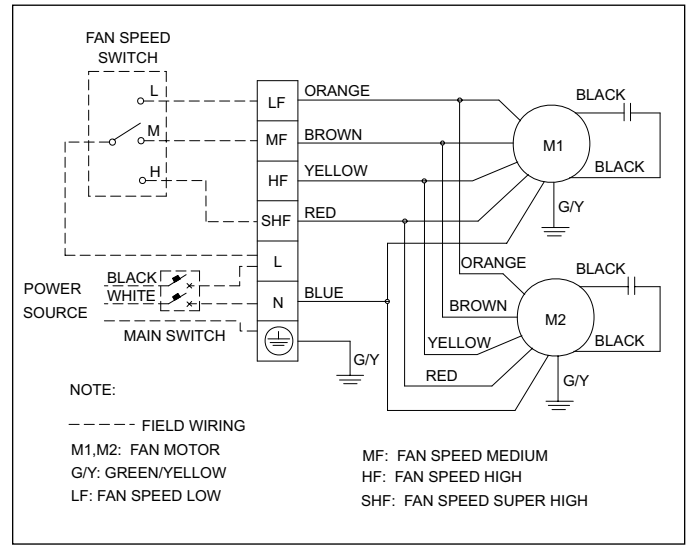


Figure 10: (220V / 1Ph / 50Hz)



Control Wiring Schematics

Figure 11: Heating/Cooling 2-Pipe With Automatic Changeover

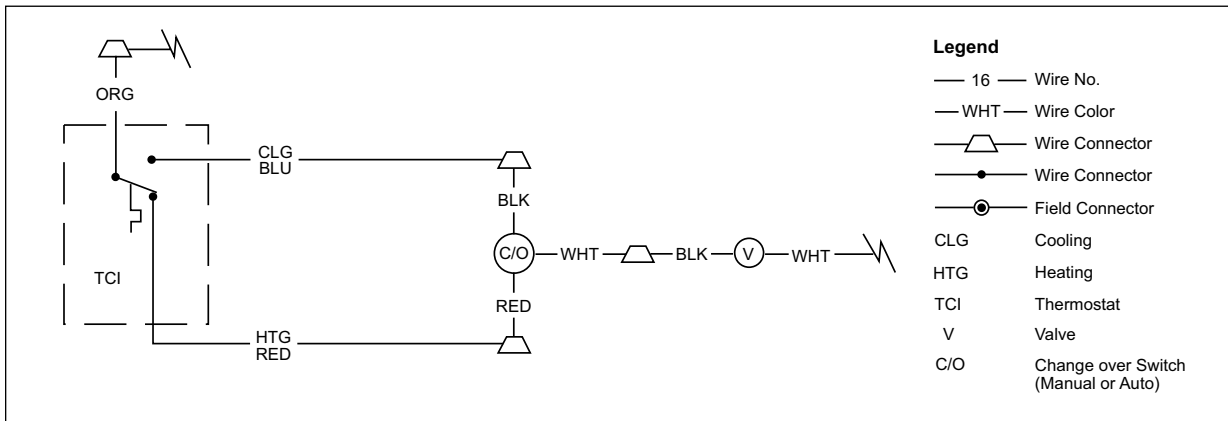


Figure 12: Heating/Cooling 4-Pipe With Sequencing Thermostat

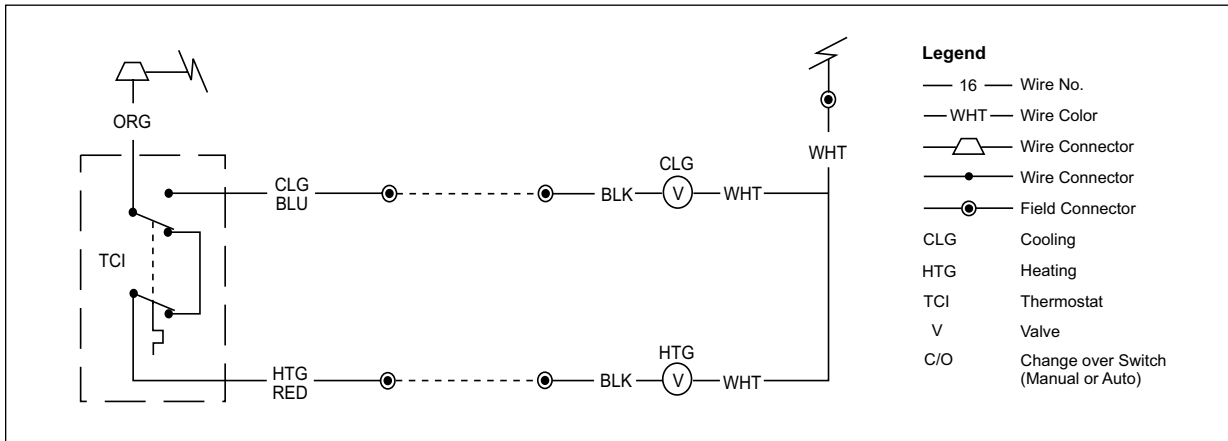
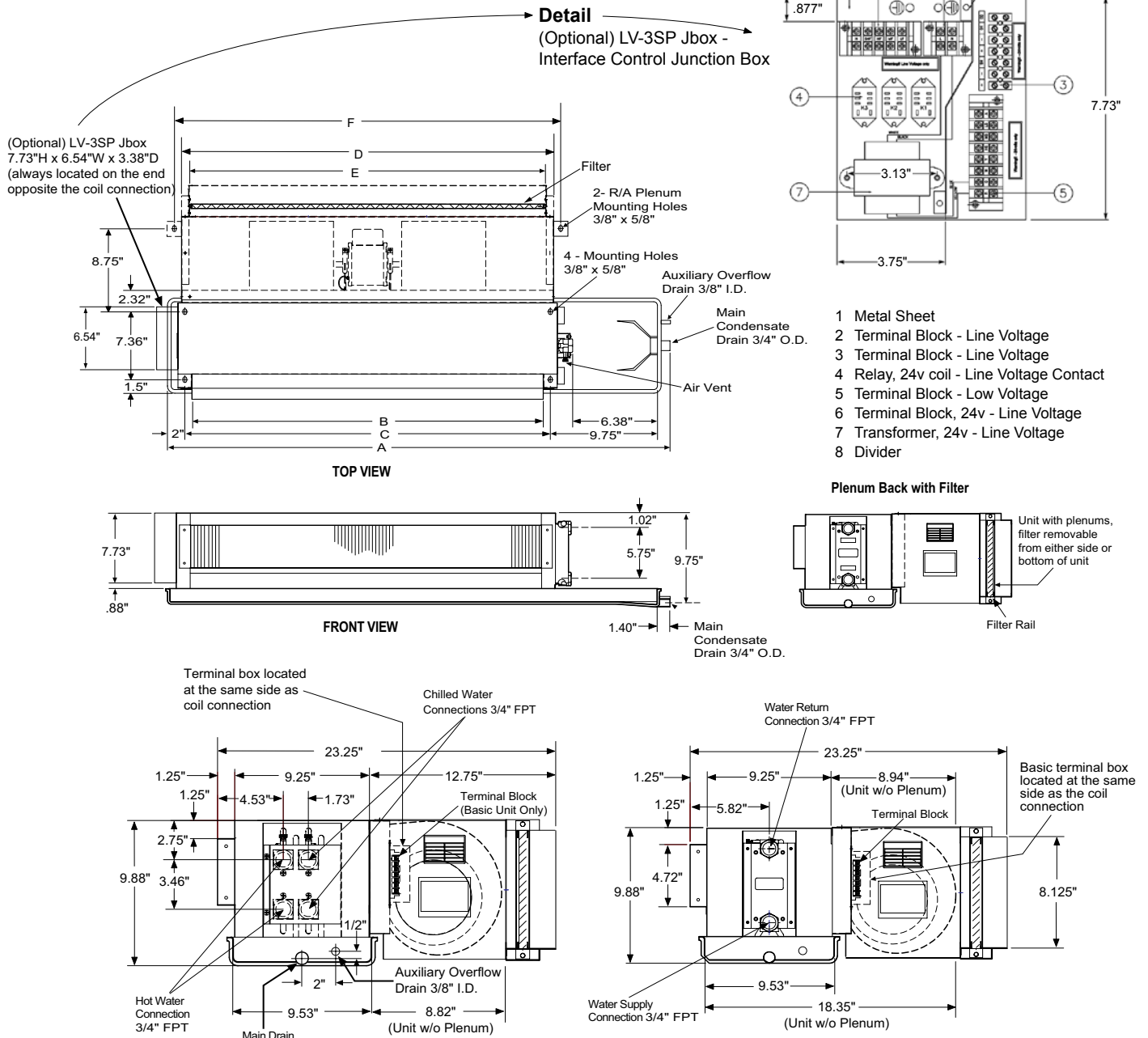


Figure 13: THC Horizontal Concealed, with Extended Drain Pan and Plenum Filter Box



4-Pipe System - Right Hand Unit*

2-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	Qty
H02	32.05"	17.64"	19.17"	19.96"	18.46"	21.13"	1	18 ¹ / ₈ " x 8" x 1"	1
H03	38.74"	24.33"	25.87"	26.65"	25.15"	27.82"	1	24 ⁷ / ₈ " x 8" x 1"	1
H04	43.86"	29.45"	30.98"	31.77"	30.20"	32.94"	2	29 ⁷ / ₈ " x 8" x 1"	1
H06	51.73"	37.32"	38.86"	39.65"	38.07"	40.82"	2	18 ⁷ / ₈ " x 8" x 1"	2
H08	61.57"	47.17"	48.70"	49.49"	47.91"	50.66"	3	23 ³ / ₄ " x 8" x 1"	2
H10	65.51"	51.10"	52.64"	53.43"	51.85"	54.60"	3	25 ³ / ₄ " x 8" x 1"	2
H12	75.75"	61.34"	62.87"	63.66"	62.09"	64.83"	4	30 ⁷ / ₈ " x 8" x 1"	2

Note: All dimensions ± 0.10"

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.

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.
	Sundries exist in the ventilation outlet or the duct.	Remove the sundries.
	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 the new air filter.
The cooling or heating function fails.	The electric control valve of unit is not started.	Start the electric control valve of unit.
	The circulating pump is not started. As a result, the cold or hot water does not flow.	Start the circulating pump.
	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 set temperature of temperature controller is inappropriate.	Adjusted the set temperature of the temperature controller.
	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 place of the unit until it is placed horizontally.
	Cold water is being provided continuously when the fan has already stopped.	Stop the electric control valve of unit or operate the unit at a low gear.
	Ambient temperature too high.	Perform dehumidification and avoid the entering of high-temperature and high-humidity air into indoor places.
	The discharge valve is loose.	Tighten the discharge valve.
	The unit piping leaks.	Contact the seller.

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:

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 equipment, its care should be a high priority. For training information on all Daikin 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 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.

Aftermarket Services

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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