

Operation Manual

Multi Position Air Handlers

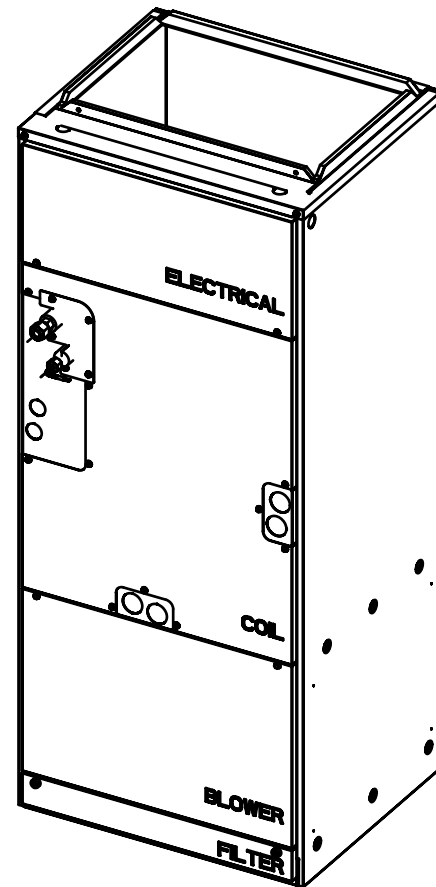
2-5 Ton

5TEM9C02AC21SA

5TEM9D04AC31SA

5TEM9D06AC31SA

5TEM9D07AC41SA



All phases of this installation must comply with National, State and Local Code.

This document is customer's property and is to remain with this unit. Please return it to customer with service information upon completion of work.

These instructions are intended as an assist to qualified and licensed personnel for proper installation, adjustment and operation of ECM air handler units. Read it thoroughly before attempting installation or service work.

Failure to follow these instructions may result in fire, electrical shock, property damage, personal injury or death

The instructions do not cover all variations in systems or provide for every possible contingency to be met in connection with the installation.

September 2025

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1. Safety precautions

1.1. Symbols used in the text



WARNING

Describes precautions that should be observed to prevent danger of injury or death to the user.



CAUTION

Describes precautions that should be observed to prevent damage to the unit.



FLAMMABLE REFRIGERANT WARNING

This unit uses a flammable refrigerant. If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.



: Indicates a part which must be grounded.

Meaning of symbols displayed on unit			
	Refrigerant Safety Group A2L	Warning! (Risk of fire)	<u>This unit uses a flammable refrigerant.</u> If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.
	Read the OPERATING INSTRUCTIONS carefully before operation.		
	Service personnel are required to carefully read the OPERATING INSTRUCTIONS and INSTALLATION MANUAL before operation.		
	Further information is available in the OPERATING INSTRUCTIONS, INSTALLATION MANUAL, and the like.		

1.2. User and operation safety precautions

- Before installing the unit, make sure you read all the “Safety Precautions”.
- The “Safety Precautions” provide very important points regarding safety. Make sure you follow them.
- Please report to or take consent by the supply authority before connection to the system.



FLAMMABLE REFRIGERANT WARNING

Do not install auxiliary devices which may be a **POTENTIAL IGNITION SOURCE** in the duct-work.

- Examples of such POTENTIAL IGNITION SOURCES are hot surfaces with a temperature exceeding 1292 °F (700 °C) and electric switching devices.

Table 1, found in the *Specifications* chapter of this operation manual, sub-section: *Approved electric heater kits*, includes electric heat kits manufactured for the manufacturer that are allowed for use with R454B refrigerant products.



FLAMMABLE REFRIGERANT WARNING

LEAK DETECTION SYSTEM installed. Continuous air circulation required for proper functioning. Indoor unit must be powered except for service.

Do not install equipment in a configuration where false ceilings or drop ceilings are used as a return air plenum.

Store the indoor unit in a room without continuously operating ignition sources (open flames, gas appliance, or an electric heater).

Ensure the indoor unit installation location is not accessible to the general public.

Be aware that refrigerants may not contain an odor.



WARNING

- The unit must not be installed by the user. Ask the dealer or an authorized company to install the unit. If the unit is installed improperly, water leakage, electric shock or fire may result.
- Do not stand on, or place any items on the unit.
- Do not splash water over the unit and do not touch the unit with wet hands. An electric shock may result.
- Do not spray combustible gas close to the unit. Fire may result.
- Do not place a gas heater or any other open-flame appliance where it will be exposed to the air discharged from the unit. Incomplete combustion may result.
- Do not remove the front panel or the fan guard from the outdoor unit when it is running.
- When you notice exceptionally abnormal noise or vibration, stop operation by setting the mode to OFF, and contact your dealer.
- Never insert fingers, sticks etc. into the intakes or outlets.
- This air conditioner is NOT intended for use by children or infirm persons without supervision.
- Young children must be supervised to ensure that they do not play with the air conditioner.
- If the refrigeration gas blows out or leaks, thoroughly ventilate the room, and contact your dealer.



CAUTION

- Never block or cover the indoor or outdoor unit's intakes or outlets.
- Do not attempt to accelerate the defrosting process nor to clean the frost, other than those recommended by the manufacturer.

1.3. Disposing of the unit

When you need to dispose of the unit, consult your dealer.

2. Operation

2.1. Operation mode select

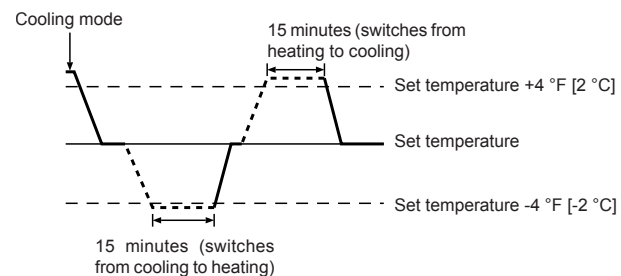
The system offers a range of modes including Cool, Dry, Fan, Heat, Automatic (Cool/Heat), and Ventilation.



NOTE

- Heat and Automatic modes are not available for units designed solely for cooling.
- Auto mode: the system adjusts its operation based on the cooling and heating set temperatures:
 - If the room temperature exceeds the set temperature, the system initiates cooling.
 - When room temperature consistently remains at least 4 °F (2 °C) above the set temperature for 15 minutes, the system switches to cooling mode.
 - If the room temperature falls below the set temperature, heating is activated.

- When room temperature stays at least 4°F (2°C) below the set temperature for 15 minutes, the system switches to heating mode.



2.2. Set point range

Settable preset temperature range	
Cooling / Drying	67 - 87 °F [19 - 30 °C]
Heat	63 - 83 °F [17 - 28 °C]
Auto	67 - 83 °F [19 - 28 °C]
Fan speed settings	Low - Medium - High - Auto

3. Care and cleaning

• Cleaning the filters

- Clean the filters using a vacuum cleaner. If you do not have a vacuum cleaner, tap the filters against a solid object to knock off dirt and dust.
- If the filters are especially dirty, wash them in lukewarm water. Take care to rinse off any detergent thoroughly and allow the filters to dry completely before putting them back into the unit.



CAUTION

- Do not dry the filters in direct sunlight or by using a heat source, such as an electric heater: this may warp them.
- Do not wash the filters in hot water (above 122° F [50° C]), as this may warp them.
- Make sure that the air filters are always installed. Operating the unit without air filters can cause malfunction.



CAUTION

- Before you start cleaning, stop operation and turn OFF the power supply.
- Indoor units are equipped with filters to remove dust and other contaminants from the return air stream. Clean the filters using the methods shown in the following sketches.

3.1. Filter removal and replacement

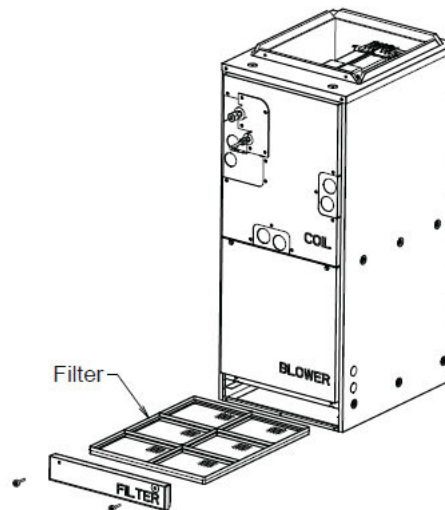


CAUTION

In removing the filter, precautions must be taken to protect your eyes from dust. Also, if you have to climb up on a stool to do the job, be careful not to fall.

When the filter is removed, do not touch the metallic parts inside the indoor unit, otherwise injury may result.

Unscrew the two thumb knobs on the panel stamped "filter" tilt forward and pull the panel out. Grasp the edge of the filter and slide out. Re-install in reverse.



4. Troubleshooting

Having trouble?	Here is the solution. (Unit is operating normally.)		
Air conditioner does not heat or cool well.	• Clean the filter. (Airflow is reduced when the filter is dirty or clogged.) • Check the temperature adjustment and adjust the set temperature. • Make sure that there is plenty of space around the outdoor unit. Is the indoor unit air intake or outlet blocked? • Has a door or window been left open?		
When heating operation starts, warm air does not blow from the indoor unit soon.	• Warm air does not blow until the indoor unit has sufficiently warmed up.		
During Heat mode, the air conditioner stops before the set room temperature is reached.	• When the outdoor temperature is low and the humidity is high, frost may form on the outdoor unit. If this occurs, the outdoor unit performs a defrosting operation. Normal operation should begin after approximately 10 minutes.		
A flowing water sound or occasional hissing sound is heard.	• These sounds can be heard when refrigerant is flowing in the air conditioner or when the refrigerant flow is changing.		
A cracking, creaking, or popping sound is heard.	• These sounds can be heard when parts rub against each due to expansion and contraction from temperature changes.		
The room has an unpleasant odor.	• The indoor unit draws in air that contains gases produced from the walls, carpeting, and furniture as well as odors trapped in clothing, and then blows this air back into the room.		
A white mist or vapor is emitted from the indoor unit.	• If the indoor temperature and the humidity are high, this condition may occur when operation starts. • During defrosting mode, cool airflow may blow out and appear like a mist.		
Water or vapor is emitted from the outdoor unit.	• During Cool mode, water may form and drip from the cool pipes and joints. • During Heat mode, water may form and drip from the heat exchanger. • During defrosting mode, water on the heat exchanger evaporates and water vapor may be emitted.		
When restarting the air conditioner soon after stopping it, it does not operate even though the ON/OFF button is pressed.	• Wait approximately three minutes. (Operation has stopped to protect the air conditioner.)		
Draining water or motor rotation sound is heard.	• When cooling operation stops, the drain pump operates and then stops. Wait approximately 5 minutes.		
Noise is louder than specifications.	• The indoor operation sound level is affected by the acoustics of the particular room as shown in the following table and will be higher than the noise specification, which was measured in an echoic room.		
	High sound absorbing rooms	Normal rooms	Low sound absorbing rooms
Location examples	Broadcasting studio, music room, etc	Reception room, hotel lobby, etc.	Office, hotel room
Noise levels	3 to 7 dB(A)	6 to 10 dB(A)	9 to 13 dB(A)

5. Specifications

Model code			5TEM9C02AC21SA	5TEM9D04AC31SA
Power source			208/230V, 1-phase, 60Hz	
Cooling / Heating capacity	Btu/h		24,000 / 27,500	34,000 / 38,000
	kW		7.0 / 7.9	10.0 / 11.1
Tonnage			2	3
Dimensions	Height	mm [in]	1378 [54-1/4]	1511 [59-1/2]
	Width		534 [21]	635 [25]
	Depth		548 [21-5/8]	
Net weight		kg [lb]	64 [141]	78 [172]
Fan	Airflow rate (low-mid-high)	CFM	613 - 744 - 875	788 - 956 - 1125
	Minimum circulation airflow		875	1125
	External static pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	

Model code			5TEM9D06AC31SA	5TEM9D07AC41SA
Power source			208/230V, 1-phase, 60Hz	
Cooling / Heating capacity	Btu/h		48,000 / 51,000	56,000 / 58,000
	kW		14.1 / 14.9	16.4 / 17.0
Tonnage			4	5
Dimensions	Height	mm [in]	1511 [59-1/2]	
	Width		635 [25]	
	Depth		548 [21-5/8]	
Net weight		kg [lb]	78 [172]	80 [176]
Fan	Airflow rate (low-mid-high)	CFM	1040 - 1262 - 1485	1155-1400-1650 (Cooling mode) 1225-1485-1750 (Heating mode)
	Minimum circulation airflow		1485	1650
	External static pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	

5.1. Specification notes

! IMPORTANT

When a refrigerant leak is detected, the fan starts up to begin circulation. The airflow during this time is shown in the tables above as "Minimum circulation airflow". Please install the duct carefully for proper ventilation.



NOTE

1. Units should be installed by a licensed HVAC and / or electrical contractor according to local and state code requirements.
2. For outdoor units to be connected, refer to the Installation manual that comes with the units.

Indoor unit rated conditions		
Cooling	Indoor	80 °F [26.7 °C] D.B.
		67 °F [19.4 °C] W.B.
Heating	Outdoor	95 °F [35 °C] D.B.
	Indoor	70 °F [21.1 °C] D.B.
	Outdoor	47 °F [8.3 °C] D.B.
		43 °F [6.1 °C] W.B.
• The indicated capacity is the value when one indoor unit is connected to the outdoor unit. • The external static pressure is set to 0.50 in. WG (125 Pa) at factory shipment		

Indoor unit guaranteed operating range		
Cooling	Upper limit	90 °F [32 °C] D.B.
		73 °F [23 °C] W.B.
	Lower limit	66 °F [19 °C] D.B.
		59 °F [15 °C] W.B.
Heating	Upper limit	82 °F [28 °C] D.B.
	Lower limit	64 °F [18 °C] D.B.

5.2. Approved electric heater kits

Table 1. Approved for use with 5TEM9 and R454B refrigerant.

Model code	EH03/05/08/10-MPA-M(B)	EH10-MPA-L(B)	EH15-MPAS-L(B)	EH17-MPAS-L(B)	EH19-MPAS-L(B)
5TEM9C02AC21SA	x				
5TEM9D04AC31SA		x	x		
5TEM9D06AC31SA		x	x	x	
5TEM9D07AC41SA			x	x	x

6. Appendix A: Apache license

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