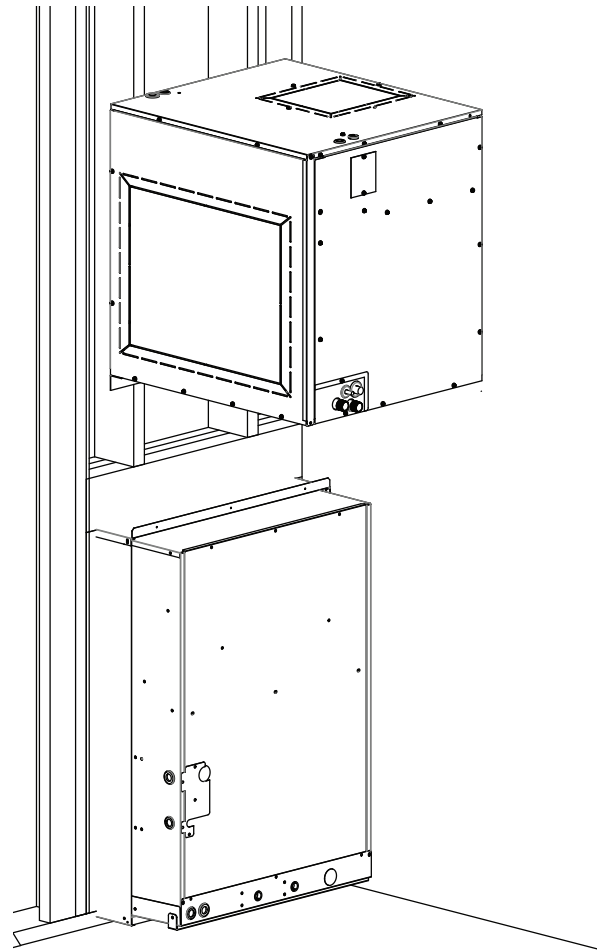


*Thru-the-Wall Comfort for all types of Multi-Family Construction*

# Installation Manual

## Multi-Family Style Air Handler

This unit is designed designated to be installed in a **CLOSET** or **UTILITY ROOM** and can also be **WALL MOUNTED**.



*Please read the entire installation guide before starting the installation.  
All phases of this installation must comply with National, State and Local codes.*

*This manual must be left with the homeowner for future reference.*

*Go Thru-the-Wall*



## Table of Contents

Nomenclature.....	page 4
Product Features.....	page 4
Safety Information .....	page 5
Unit Installation.....	page 6
Unit Dimensions .....	page 8
Clearances .....	page 9
Electric Heater Installation .....	page 10
Unit Data.....	page 11
Electric Heat Kit Data .....	page 11-12
Air Flow Data.....	page 12-13
Wiring Diagrams .....	page 15-17
No Heat Kit .....	page 15
3, 5, 7 & 10kW .....	page 16
15kW.....	page 17
Sequence of Operations .....	page 18
Operational Checkout & Maintenance .....	page 19
Replacement Parts Guide .....	page 20
Warranty .....	page 21-22

**Important: This document is customer property and is to remain with this unit.**

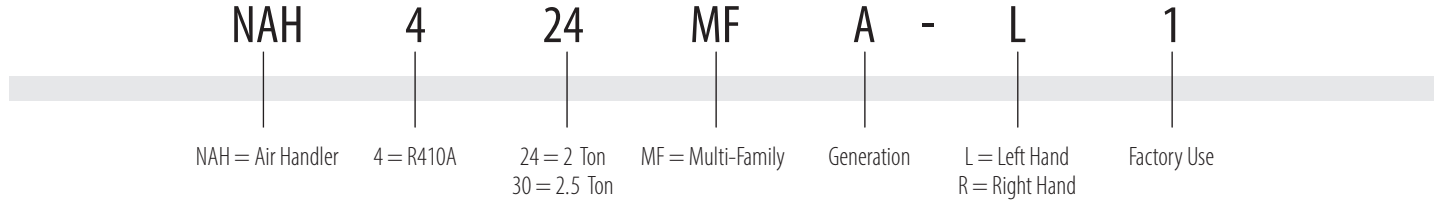
**DO NOT DESTROY OR THROW AWAY THIS MANUAL.**

**IT SHOULD BE KEPT IN A SAFE PLACE FOR FUTURE REFERENCE.**

## Multi-Family Style Air Handler Nomenclature

**Note:** These air handlers can be configured as a Left hand or Right Hand Return.

Example for Left Hand : NAH424MFA-L1, Example for Right Hand : NAH424MFA-R1



## High Efficiency Multi-Family Air Handlers 2-2.5 Ton

### Section 1. Product Features

The Multi-Family Air-Handler comes under 28 in. height and is designed for installation in a closet or utility room. The air-handler comes with the option of either a left-hand or right-hand return duct connection. It is developed to work in both air-conditioning and heat pump applications. Field installed electric heat kits are available in sizes ranging from 3kW to 15kW.

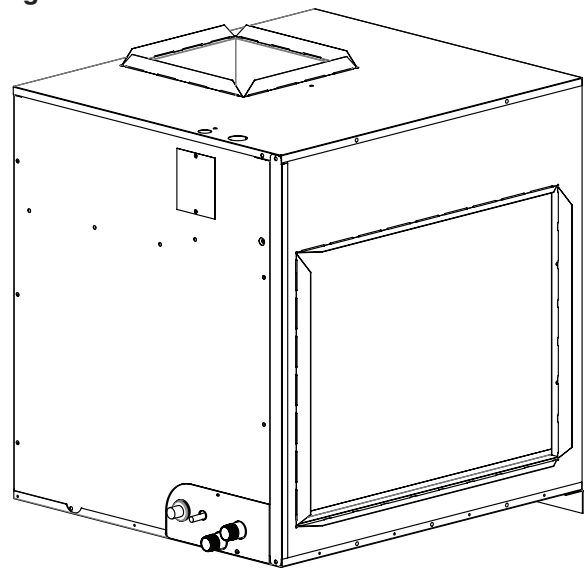
#### 1.1 Standard Features

- Left or Right-hand return options
- The Multi-Family Air-Handler comes with a stainless steel drain pan with primary and secondary drain tube connections
- 208/230 VAC operation
- Slide in/out Blower assembly
- Multi-speed Direct Drive Constant Torque ECM blower
- Factory installed R410A thermal expansion valve with built in check valve for heat pump operation
- Fully Insulated Cabinet
- 1" NPT male threaded primary and secondary drain connection

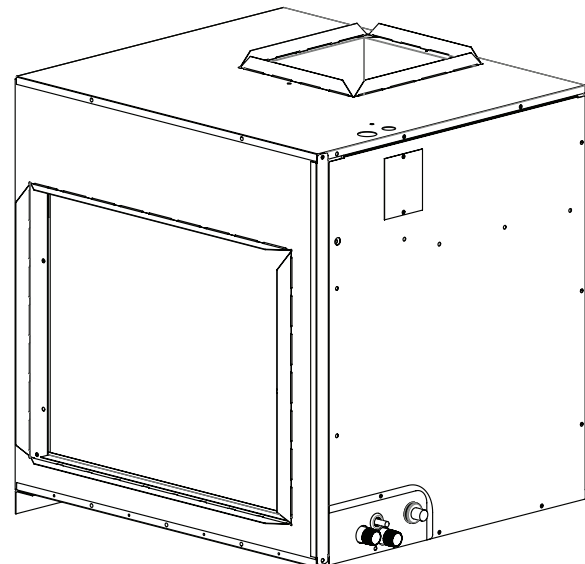
#### 1.2 Optional Accessories

- 3, 5, 7, 10 and 15kW Single-phase heat kits
- Circuit breakers are standard on all single-phase electric heat kit

Fig. 1



Right Handed Return Air Handler



Left Handed Return Air Handler

## Section 2. Safety Information

This appliance is not intended for use by those (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instructions concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

This appliance is intended to be installed up to 10,000 ft (3,000 m) above sea level.

This appliance is only compatible with an outdoor unit that uses R410A refrigerant

This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Pay particular attention to words such as **DANGER**, **WARNING** or **CAUTION**.

**DANGER** indicates an imminently hazardous situation, which will result in **serious injury or death**

**WARNING** indicates a potentially hazardous situation, which could potentially result in **serious injury or death**

**CAUTION** indicates a potentially hazardous situation, which may result in **minor or moderate injury**. It is also used to alert against practices that are unsafe and can result in property damage.

### **WARNING**

In case of improper installation, there is a potential that the operation of the product could cause personal injury or property damage.

Adjustments, improper installation, alteration, service, or maintenance can also cause injury or property damage. Please refer to this install guide for assistance and additional information, consult with your contractor or service agency. For assistance or additional information consult a qualified installer or service agency.

### **CAUTION**

This product must be installed in strict compliance with the installation instructions and any applicable local, state, and national codes including, but not limited to, building, electrical, and mechanical codes.

### **WARNING**

#### **FIRE OR ELECTRICAL HAZARD**

A fire or electrical hazard may result causing property damage, personal injury or loss of life. Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury. Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual to avoid any fire or electrical hazard. For assistance or additional information consult a qualified installer or service agency.

## 2.1 Safety Requirements

1. This air handler should be installed in accordance with all local, state, and national building and safety codes, local plumbing or wastewater codes and other applicable codes.
2. Provide clearances for servicing as indicated under section 3.3 on page 9 to allow service access to the filter, electric heater, and blower.
3. Check the rating plate and Table 1 on page 6 to ensure that the electrical characteristics match.
4. The air-handler should be installed so the electrical components are protected from water.
5. Installing and servicing HVAC equipment can be hazardous due to the electrical components. Only trained and qualified personnel should install, repair or service HVAC equipment. An untrained person can perform basic maintenance work such as cleaning or replacing the air filter.
6. When working on HVAC equipment, observe all precautions in the manuals and labels attached to the unit and other safety precautions that may apply.
7. These instructions cover minimum requirements and conform to existing national standard and service codes. In some instances, these instructions exceed certain local codes and ordinances, especially those who have not kept up with changing residential and non-HUD modular home construction practices. These instructions are required as a minimum for a safe installation.

## 2.2 Inspection

As soon as the unit is received, the installer needs to inspect the unit for possible damages during transit. If damages are evident, the extent of the damage should be noted on the carrier's freight bill. For proper inspection, a separate request for inspection by the carrier's agent should be sent in writing. The unit has foam block inside the blower to keep the fan in place during transit. Make sure to remove the foam block before installing the unit.

## 2.3 Limitations

The air-handler must be wired and installed according to the national and local safety codes. Voltage limits for these air-handlers are as follows:

**Table 1: Unit Voltage Limits**

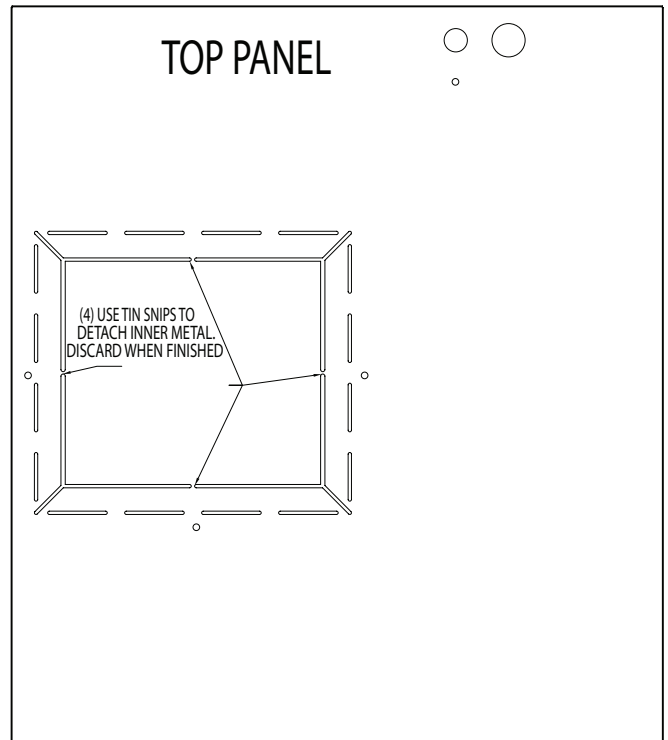
Model	Voltage-Phase-Hz	Voltage Operating Range	
		Min.	Max.
NAH424MF*-L*	208/230-1~60	187	253
NAH424MF*-R*			
NAH430MF*-L*			
NAH430MF*-R*			

## Section 3. Unit Installation

After unboxing the air handler and completing the inspection, follow the instruction step by step as follows:

- Use metal snipping tool to cut out the square piece from return and supply air side as shown in Figures 2 & 3
- Use a sheet metal hand brake to bend the supply and return air duct flanges as shown in Figure 4
- The air handler can be mounted to a wall for support using the proper wall mounting kit provided with the unit. Please follow the instructions to securely mount the air handler to the wall.

**Fig. 2**



**Fig. 3**

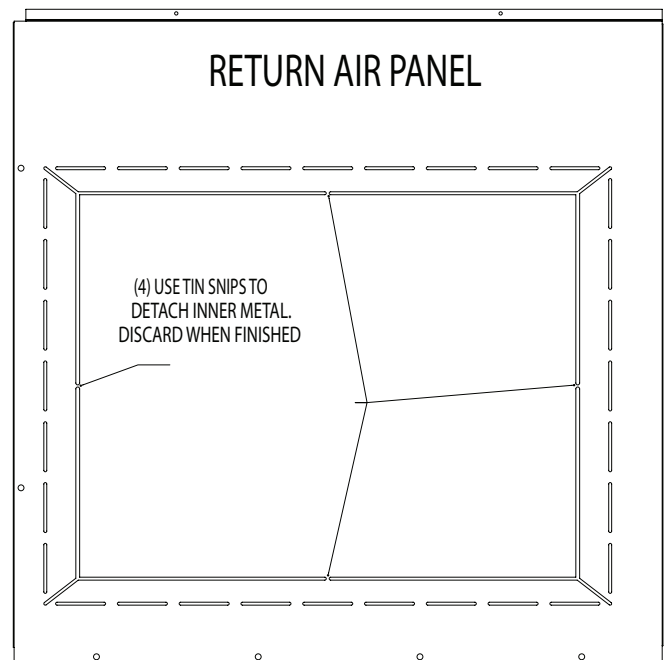
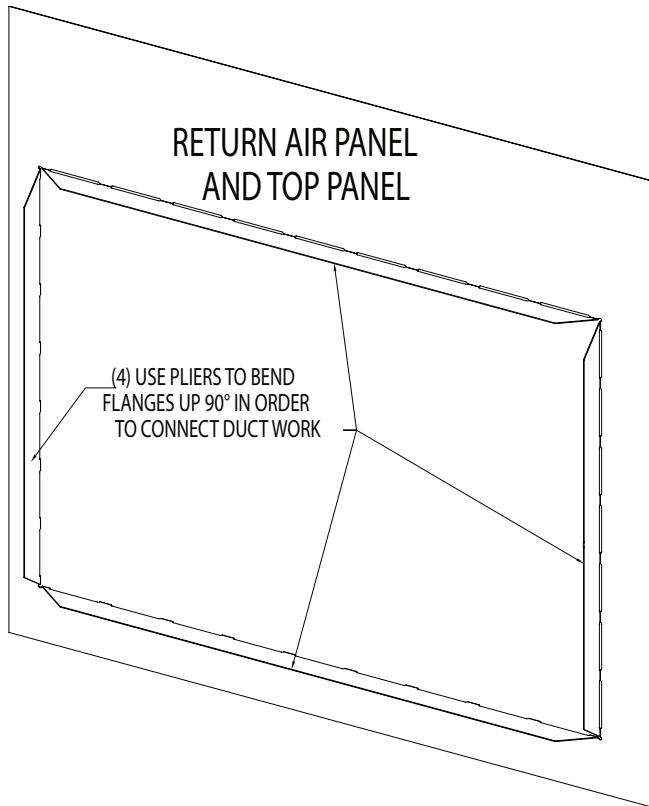


Fig. 4



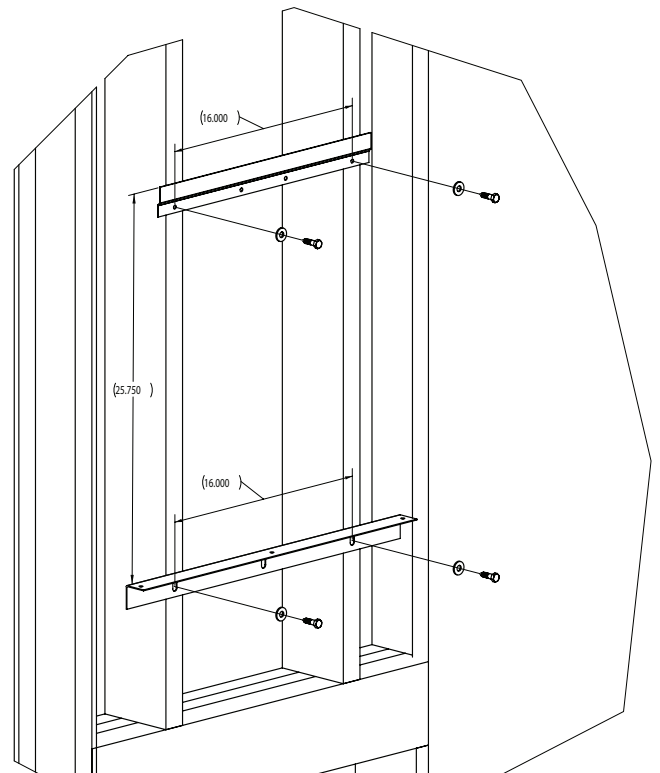
## CAUTION

The air handler should never be operated without an air filter.

## 3.1 Wall Mount Installation

The Multi Family Air Handler can be wall mounted with a French cleat style bracket. If the unit is to be installed on a wall, then the included wall mount bracket must be used. Four (4) fasteners capable of supporting a combined load of 600 lbs. are required (not included). Use the field supplied fasteners to securely fasten the bracket to the wall. Installer should follow best construction practices to ensure the bracket is installed properly and capable of supporting a 600 lb. load. **See Figure 5.**

Fig. 5



## WARNING

Wall mounting screws that are going to be used, must be capable of supporting a 600 lb. load. Failure to follow the instruction can cause a serious injury or property damage.

# Installation Manual for Multi-Family Air Handler

## 3.2 Dimensions

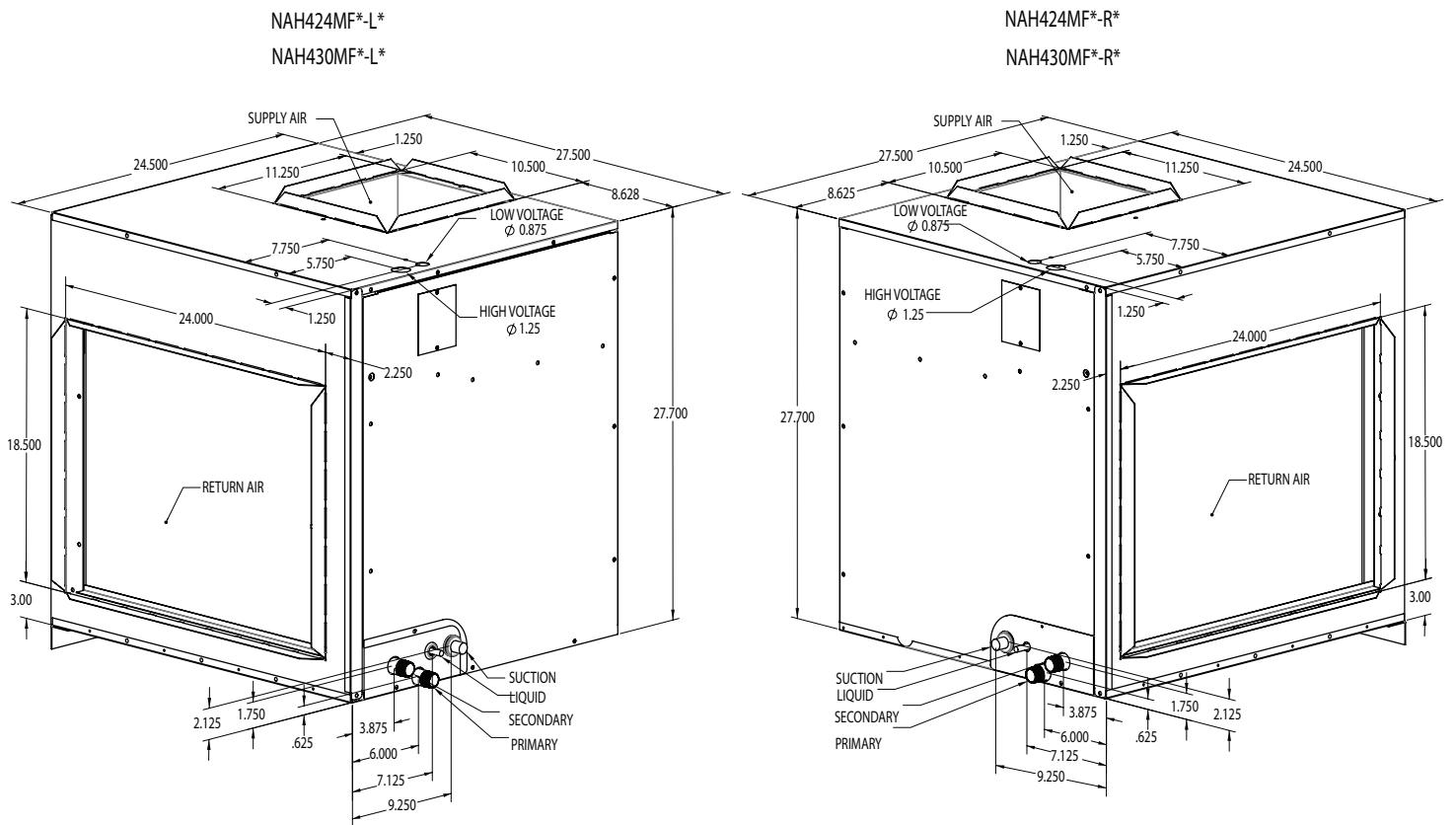
The overall dimensions are given below in Table 2.

**Table 2: Unit Dimensions**

Model	Dimensions (in.)			Drain Location (in.) <sup>1</sup>		Wiring Knockouts (in.)	
	Height	Width	Depth	Primary	Secondary	High Voltage	Low Voltage
NAH424MF*-L*	27-2/3	24-1/2	27-1/2	6	3-7/8	1-1/4	7/8
NAH424MF*-R*							
NAH430MF*-L*							
NAH430MF*-R*							

1. The primary and secondary drain location is measured from the edge of the filter access door

**Fig. 6**





## 3.3 Clearances

While installing the unit in a service closet, the following clearances must be taken into consideration:

- A minimum clearance of 12" is required for refrigerant and piping connections
- For servicing and maintenance, leave a minimum of 29" of unobstructed open area in front of the access panel
- The condensate drain connections are designed and placed to avoid interference between drain tubes and access panel
- The Multi-Family Air Handler requires 0.00" clearance to combustible surfaces

## 3.4 Drain Connections

The drain connection must include a P-trap of at least 3 inches in height and must be pitched away from the air-handler drain pan. The drain tubes should not be smaller than drain connections. For proper condensate drainage follow the instructions below.

- Route the drain line in such a way that it does not interfere with the front access panel or air filter.
- The air handler is provided with a secondary drain connection that should be trapped and piped to a location that will provide a warning that the primary drain is clogged.
- If the recommended secondary drain is not utilized during installation, it should be capped and sealed water tight.

## 3.5 Refrigerant Line Connections

Route the refrigerant tubing in such a manner that it will not obstruct the service access panel or filter access. When installing the air handler, connect the liquid and suction refrigerant lines as follows:

- Suction and liquid line connections are made outside the cabinet, both lines are swaged to accept field installed tubing. Only the service access panel must be removed for brazing, cabinet patch plate may be left in place.
- Use a damp rag around the suction and liquid tube grommets to avoid any damage to them or any other internal components.
- Purge dry nitrogen into the refrigerant lines before brazing.

- Proceed with brazing both suction and liquid lines and allow the brazed connections to cool.
- Insulate the suction line from outdoor unit to the Multi-Family Air Handler

### CAUTION

The temperature required for brazing is high enough that can cause oxidation in copper lines. Dry nitrogen should always be supplied through the tubing while brazing the connection. The flow should be continued until the brazed joints have cooled down. Make sure only low-pressure dry nitrogen is being introduced into the tubing.

## 3.6 System Charging & Adjustments

Refer to the outdoor system installation manual for instructions on charging the system and making required adjustments to the TXV. After adjustments, the system superheat and subcooling should match the appropriate factory recommended settings for the outdoor unit.

### CAUTION

Improper Charging and TXV adjustments can cause system failure and can result in damaging equipment or its components.

## Section 4. Electric Heater Installation

If the air handler requires electric heat, install the electric heat kit by following the instructions provided with the electric heat kit.

- After installing the kit, check mark the appropriate option on the air handler data tag to identify the heater kit that was installed.
- In the absence of a heat kit, mark the data tag to indicate that no heat kit was installed.
- When electric heat is present, disconnect the transformer high voltage wires from the field wire harness that came with the air handler and connect the transformer to the branched black Molex connector coming out of electric heat kit circuit breaker (follow the wiring diagram on page 16 - 17 for connection details).
- Use only CPEHK-\*\* electric heat kits as listed on the air handler data tag and in this instruction manual. Use the data from Table 4 through 8 for information on heating airflow, MOP and wiring size requirements.
- When installing the electric heat kit, affix the appropriate electric heat wiring diagram to the air handler wiring diagram label within the dotted region. The air handler wiring diagram label can be found on the front access panel.



### WARNING

#### LIVE ELECTRICAL COMPONENTS!

During Installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions could result into serious injury or death.

## Section 5. Line Power Connections

Please follow the instructions below for proper field power wire connections.

- Power wires can be routed through the conduit opening on the top panel of the air handler.
- In the absence of a heat kit, connect the field power wires to the 12 AWG power wires supplied inside the cabinet.

- When an electric heat kit is to be installed, verify the proper wire and breaker size by referring to the specific MCA and MOP rating listed in Tables 4 and 5 on page 11-12.
- All wiring and electrical connections for this unit must be made with copper conductors.

## Section 6. Control Connections

The air handler control board is supplied 24V power by an internal low voltage transformer. The transformer is factory wired to 230V incoming supply voltage, if the incoming supply voltage is 208V then wiring to the transformer must be field adjusted. Failure to do so will result in electrical damage to the unit.

The thermostat wires can be routed through the 7/8" diameter opening on the top panel.

For additional air-leakage prevention, seal the wiring entry point at the outside of the unit.



### CAUTION

All wiring for this unit must comply with the local and national electrical codes and requirements. Failure to comply with the electrical requirements can cause serious property damage.

## Section 7. Blower Motor Speed Connections

The air handler blower motor control has five speed options. Refer to the outdoor unit instruction to select the correct speed tap to meet the desired airflow requirements for your unit. For auxiliary heat, the desired airflow can be different from cooling airflow based on the heat kit installed. Make sure to select the appropriate speed tap for heating airflow if the desired heating airflow is different than cooling airflow. See Table 6 on page 12 for proper blower speed and desired airflow.

**Note:** In the case where cooling and heating motor speeds are the same, a terminal splitter and jumper wire will be required. A jumper wire and terminal splitter can be found in the accessories bag.

# Installation Manual for Multi-Family Air Handler

## Section 8. Unit Data

**Table 3: Physical/Electrical Data**  
(No Heat Kit)

Multi-Family Air Handler											
Model	Nominal Capacity (Btu/h)	Size (tons)	Nominal Air Flow <sup>1</sup> (CFM)		Motor HP	Motor RPM	FLA <sup>2</sup>	MCA <sup>3</sup>	MOP <sup>4</sup>	Shipping Weight (lbs.)	Filter Size
NAH424MF*-L*	24,000	2 Ton	600	1000	1/2	1200	3.9	5	15	140	24 x 20
NAH424MF*-R*										145	
NAH430MF*-L*	30,000	2.5 Ton	600	1000	1/2	1200	3.9	5	15	145	24 x 20
NAH430MF*-R*										145	
<b>Flow Control</b>	Adjustable TXV with internal check valve						<b>Line Size</b>		3/8" Liquid 3/4" Suction		

1. Airflow values are based on 0.3 in. wc. of external static pressure.
2. Full Load Ampacity
3. Minimum Circuit Ampacity
4. Maximum Overload Current Protection

**Table 4: Electric Heat Data - 208V**

Blower Amps.	Heater Model	Heating Capacity (Btuh)	Heating (kW)	Heater Amps.	MCA	MOP
<b>3.9</b>	CPEHK-03	8,900	2.62	12.60	20.6	25
	CPEHK-05	13,100	3.83	18.41	27.9	30
	CPEHK-07	18,400	5.37	25.82	37.2	40
	CPEHK-10	26,000	7.64	36.73	50.8	60
	CPEHK-15	39,200	11.47	36.76	49.2	50
				18.38	26.2	30

**Table 5: Electric Heat Data - 230V**

Blower Amps.	Heater Model	Heating Capacity (Btuh)	Heating (kW)	Heater Amps.	MCA	MOP
<b>3.9</b>	CPEHK-03	10,900	3.2	13.91	22.1	25
	CPEHK-05	16,000	4.68	20.35	30.2	35
	CPEHK-07	22,400	6.58	28.61	40.5	45
	CPEHK-10	32,000	9.35	40.65	55.6	60
	CPEHK-15	47,800	14.02	40.64	54	60
				20.32	28.6	30

**Table 6: Airflow Data<sup>1,2</sup>**

Model	Blower Speeds	0 in. wc	0.1 in. wc.	0.2 in. wc	0.3 in. wc.	0.4 in. wc.	0.5 in. wc.
<b>NAH424MF*-L*</b> <b>NAH424MF*-R*</b> <b>NAH430MF*-L*</b> <b>NAH430MF*-R*</b>	<b>Orange (Low)</b>	753	707	655	596	529	455
	<b>Black (Med. Low)</b>	796	758	711	656	592	519
	<b>Blue (Med.)</b>	982	944	903	860	815	769
	<b>Yellow (Med. High)</b>	1085	1046	1007	968	929	890
	<b>Red (High)</b>	1115	1079	1042	1004	965	926

1. This airflow data is conducted with a filter at dry coil conditions. Refer to the installation guide of the matching outdoor unit for appropriate blower speed to obtain factory recommended airflow.
2. Cooling fan delay is 5 seconds on a call for cooling or heating. The duration of the fan delay can be adjusted as needed by selecting the jumpers on the air-handler control board (A = 5 sec., B = 30 sec., C = 60 sec. & D = 90 sec.)

# Installation Manual for Multi-Family Air Handler

**Table 7: Electric Heat Airflow and Temperature Rise (208V)<sup>1</sup>**

Model	Blower Speeds	0.1 in. wc.	$\Delta T$	0.2 in. wc.	$\Delta T$	0.3 in. wc.	$\Delta T$	0.4 in. wc.	$\Delta T$	0.5 in. wc.	$\Delta T$
CPEHK-03-A	Orange	707	11.7	655	12.6	596	13.9	529	15.6	455	18.2
	Black	758	10.9	711	11.6	656	12.6	592	14.0	519	15.9
	Blue	944	8.8	903	9.2	860	9.6	815	10.1	769	10.8
	Yellow	1046	7.9	1007	8.2	968	8.5	929	8.9	890	9.3
	Red	1079	7.7	1042	7.9	1004	8.2	965	8.6	926	8.9
CPEHK-05-A	Orange	707	17.1	655	18.5	596	20.3	529	22.9	455	26.6
	Black	758	16.0	711	17.0	656	18.4	592	20.4	519	23.3
	Blue	944	12.8	903	13.4	860	14.1	815	14.8	769	15.7
	Yellow	1046	11.6	1007	12.0	968	12.5	929	13.0	890	13.6
	Red	1079	11.2	1042	11.6	1004	12.0	965	12.5	926	13.1
CPEHK-07-A	Orange	707	24.0	655	25.9	596	28.5	529	32.1	455	37.3
	Black	758	22.4	711	23.8	656	25.8	592	28.6	519	32.7
	Blue	944	18.0	903	18.8	860	19.7	815	20.8	769	22.1
	Yellow	1046	16.2	1007	16.8	968	17.5	929	18.2	890	19.1
	Red	1079	15.7	1042	16.3	1004	16.9	965	17.6	926	18.3
CPEHK-10-A	Orange	707	34.1	655	36.8	596	40.5	529	45.6	455	53.0
	Black	758	31.8	711	33.9	656	36.8	592	40.8	519	46.5
	Blue	944	25.6	903	26.7	860	28.0	815	29.6	769	31.4
	Yellow	1046	23.1	1007	23.9	968	24.9	929	26.0	890	27.1
	Red	1079	22.4	1042	23.2	1004	24.0	965	25.0	926	26.0
CPEHK-15-A	Orange	707	51.2	655	55.3	596	60.8	529	68.5	455	n/a
	Black	758	47.8	711	50.9	656	55.2	592	61.2	519	69.8
	Blue	944	38.4	903	40.1	860	42.1	815	44.4	769	47.1
	Yellow	1046	34.6	1007	36.0	968	37.4	929	39.0	890	40.7
	Red	1079	33.6	1042	34.8	1004	36.1	965	37.5	926	39.1

1. The grey highlighted cells are not recommended.

# Installation Manual for Multi-Family Air Handler

**Table 8: Electric Heat Airflow and Temperature Rise (230V)<sup>1</sup>**

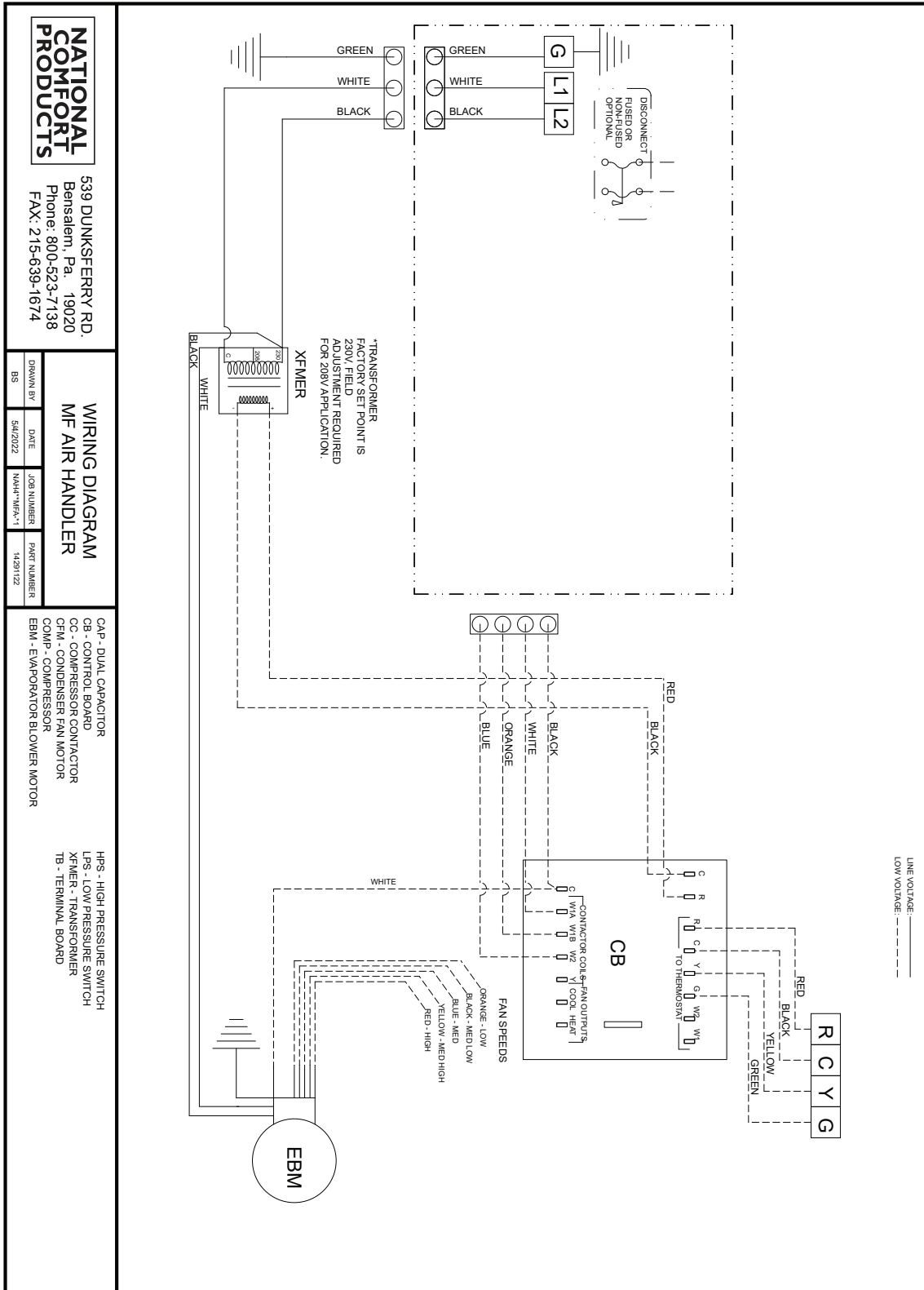
Model	Blower Speeds	0.1 in. wc.	$\Delta T$	0.2 in. wc.	$\Delta T$	0.3 in. wc.	$\Delta T$	0.4 in. wc.	$\Delta T$	0.5 in. wc.	$\Delta T$
CPEHK-03-A	Orange	707	14.3	655	15.4	596	17.0	529	19.1	455	22.2
	Black	758	13.3	711	14.2	656	15.4	592	17.1	519	19.5
	Blue	944	10.7	903	11.2	860	11.7	815	12.4	769	13.1
	Yellow	1046	9.7	1007	10.0	968	10.4	929	10.9	890	11.4
	Red	1079	9.4	1042	9.7	1004	10.1	965	10.5	926	10.9
CPEHK-05-A	Orange	707	20.9	655	22.6	596	24.8	529	27.9	455	32.5
	Black	758	19.5	711	20.8	656	22.5	592	25.0	519	28.5
	Blue	944	15.7	903	16.4	860	17.2	815	18.1	769	19.2
	Yellow	1046	14.1	1007	14.7	968	15.3	929	15.9	890	16.6
	Red	1079	13.7	1042	14.2	1004	14.7	965	15.3	926	16.0
CPEHK-07-A	Orange	707	29.4	655	31.7	596	34.9	529	39.3	455	45.7
	Black	758	27.4	711	29.2	656	31.7	592	35.1	519	40.0
	Blue	944	22.0	903	23.0	860	24.2	815	25.5	769	27.0
	Yellow	1046	19.9	1007	20.6	968	21.5	929	22.4	890	23.3
	Red	1079	19.3	1042	19.9	1004	20.7	965	21.5	926	22.4
CPEHK-10-A	Orange	707	41.7	655	45.1	596	49.6	529	55.8	455	64.9
	Black	758	38.9	711	41.5	656	45.0	592	49.9	519	56.9
	Blue	944	31.3	903	32.7	860	34.3	815	36.2	769	38.4
	Yellow	1046	28.2	1007	29.3	968	30.5	929	31.8	890	33.2
	Red	1079	27.4	1042	28.3	1004	29.4	965	30.6	926	31.9
CPEHK-15-A	Orange	707	62.6	655	67.6	596	n/a	529	n/a	455	n/a
	Black	758	58.4	711	62.2	656	67.5	592	n/a	519	n/a
	Blue	944	46.9	903	49.0	860	51.5	815	54.3	769	57.6
	Yellow	1046	42.3	1007	43.9	968	45.7	929	47.6	890	49.7
	Red	1079	41.0	1042	42.5	1004	44.1	965	45.9	926	47.8

1. The grey highlighted cells are not recommended.

# Installation Manual for Multi-Family Air Handler

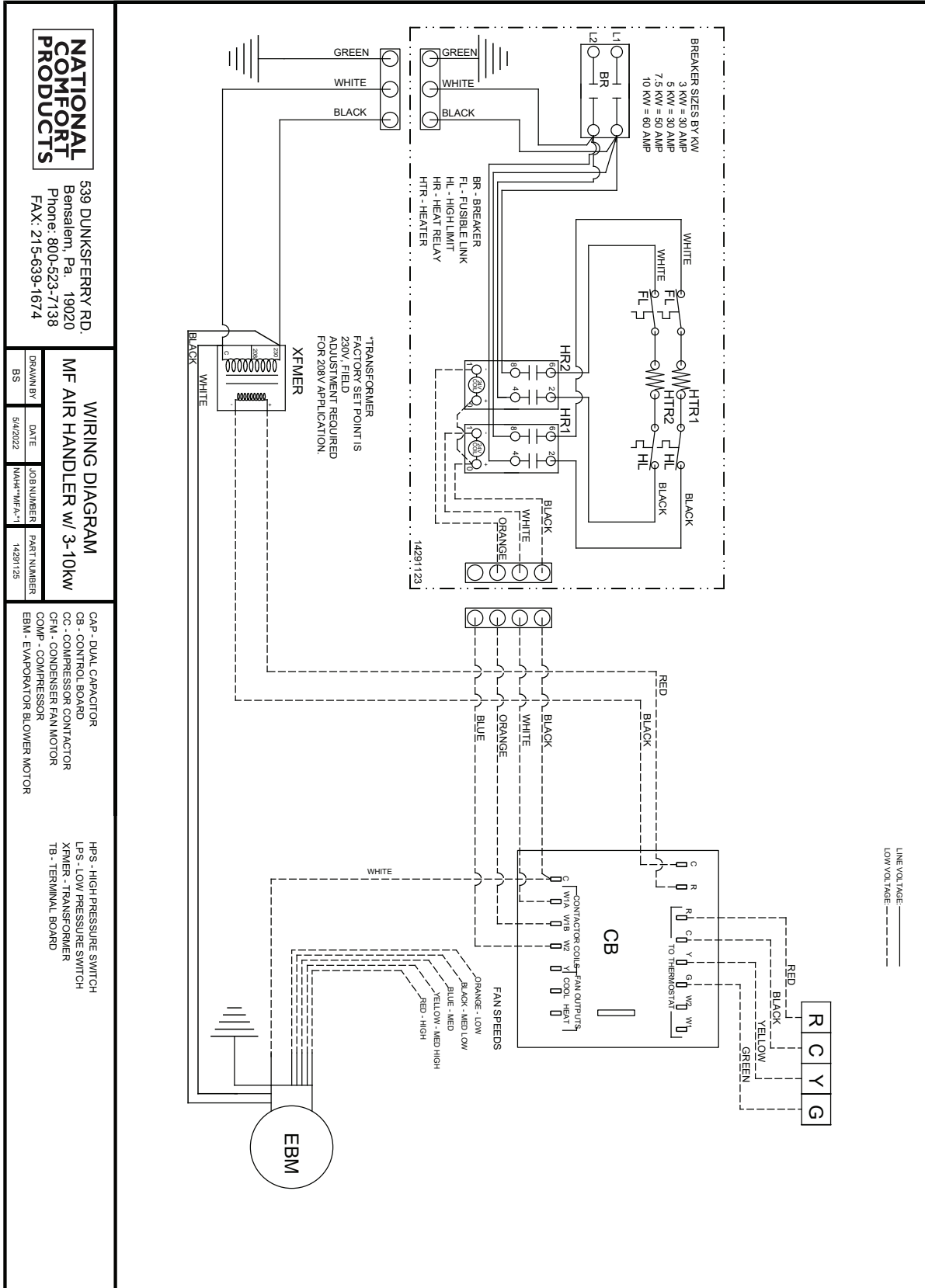
## Section 9. Wiring Diagrams

### 10.1 Air Handler Wiring Diagram (No Heat Kit)



# Installation Manual for Multi-Family Air Handler

## 10.2 Air Handler Wiring Diagram (3, 5, 7 & 10 kW)



**NATIONAL COMFORT PRODUCTS**

539 DUNKSFERRY RD.  
Bensalem, Pa. 19020  
Phone: 800-523-7138  
FAX: 215-639-1674

**WIRING DIAGRAM**

**MF AIR HANDLER w/ 3-10kW**

DRAWN BY	DATE	JOB NUMBER	PART NUMBER
BS	5/6/2022	NAH-MFA-1	14291125

Cap - DUAL CAPACITOR  
CB - CONTROL BOARD  
CC - COMPRESSOR CONTACTOR  
CFM - CONDENSER FAN MOTOR  
COMP - COMPRESSOR  
EBM - EVAPORATOR BLOWER MOTOR

HPS - HIGH PRESSURE SWITCH  
LPS - LOW PRESSURE SWITCH  
XFMER - TRANSFORMER  
TS - TERMINAL BOARD





## Section 10. Sequence Of Operations

### 10.1 Fan Operation

When the control receives a call from the thermostat to the G terminal only the control will operate the fan in the selected HEAT speed.

### 10.2 Cooling Operation

When the control receives a call from the thermostat for cooling to the Y terminal only or both the Y and G terminals together the blower will start with the control selected delay in the selected COOL speed.

### 10.3 Heating Operation<sup>1</sup>

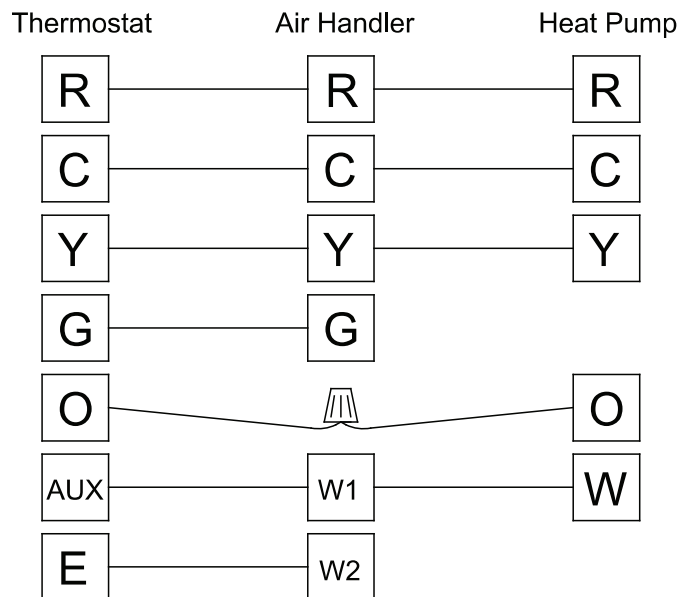
- When the control receives a call from the thermostat and/or heat pump AUX to the W1 terminal only the control will energize the W1A output 3 seconds after W1 input and the W1B output 28 seconds after W1 input, energizing the first stage of the electric heat option. The blower will operate in the selected heating speed as soon as any heating output is energized.
- When the control receives a call from the thermostat and/or heat pump AUX to the W1 terminal and a call from the thermostat to the W2 terminal the control will energize the W1A output 3 seconds after W1 input, the W1B output 28 seconds after W1 input and the W2 output 45 seconds after W2 input, energizing both stages of the electric heat option. The blower will operate in the selected heating speed as soon as any heating output is energized.
- When the control receives a call from the thermostat to the W2 terminal only the control will energize the W1A output 3 seconds after W2 input, the W1B output 28 seconds after W2 input and the W2 output 45 seconds after W2 input, energizing both stages of the electric heat option. The blower will operate in the selected heating speed as soon as any heating output is energized.
- When the control receives a call from the thermostat and/or heat pump AUX to the W1 terminal and a call from the thermostat to the Y terminal the control will energize the W1A output 3 seconds after W1 input and the W1B output 28 seconds after W1 input, energizing the first stage of the electric heat option. The blower will operate in the selected cooling speed after a 5 second delay.

- When the control receives a call from the thermostat and/or heat pump AUX to the W1 terminal and a call from the thermostat to both the W2 and Y terminals the control will energize the W1A output 3 seconds after W1 input, the W1B output 28 seconds after W1 input and the W2 output 45 seconds after W2 input, energizing both stages of the electric heat option. The blower will operate in the selected cooling speed after a 5 second delay.
- When the control receives a call from the thermostat to both the W2 and Y terminals the control will energize the W1A output 3 seconds after W2 input, the W1B output 28 seconds after W2 input and the W2 output 45 seconds after W2 input, energizing both stages of the electric heat option. The blower will operate in the selected cooling speed after a 5 second delay. The fault light will illuminate indicating an Emergency Heat operation.

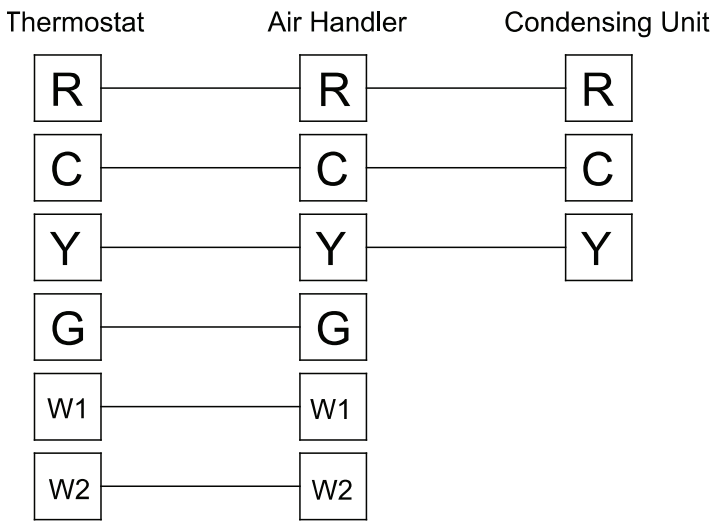
<sup>1</sup> If the control receives a call from the thermostat to the G terminal during or at the same times as any heating option the control will operate as described in the specific heating operation.

## Section 11. Controls Wiring Connection

### 11.1 Heat Pump Systems



## 11.2 Cooling Systems



- For Heat pump systems, while running heating mode verify the defrost operation by pressing the push button on the outdoor unit defrost board.
- Make sure the transformer is set for the appropriate line voltage (208V or 230V).
- Confirm the fuses or breaker sizes match table 4 & 5 based on the air-handler configuration and electric heater size.

## 12.2 Maintenance

The system air filter should be inspected on a monthly basis and cleaned or replaced if needed to avoid excessive restriction in the air stream. Once maintenance is completed, reinstall the filter access panel. If the access panel is opened for maintenance, make sure to replace it before placing the unit back in operation. Periodic maintenance should be scheduled and conducted by trained professional service personnel. System maintenance should be conducted at least annually and must include inspection of all electrical and refrigeration components. The heat transfer surfaces should be cleaned.

## Section 12. Operational Checkout and Maintenance

### 12.1 Operational Checkout

For proper performance, all units must be operated, TXV and charge adjustments must be made in accordance with procedures found in the installation guide of the outdoor unit.

After installation has been completed, it is recommended to check the following to ensure appropriate system operation:

- The unit is secured to the wall appropriately and there are no tools or loose debris in, around or top of the unit.
- Properly insulated suction lines are used.
- Properly secure and isolate all refrigerant lines.
- All electrical connections are tight and none of the wires are exposed or in contact with any metal parts.
- Supply and return air ducts are connected properly with no air leakages or with any restriction.
- All drain connections are secured and tight and the drain pipes don't have any restrictions.
- On the return air section, air-filter is properly installed.
- Operate complete system in each mode to verify proper performance.
- In presence of electric heat kit, verify the operation of supplementary electric heater

# Installation Manual for Multi-Family Air Handler

<b>Replacement Parts Guide   NAH Air Handler</b>					
Item	Description	NAH424MF*-L*	NAH424MF*-R*	NAH430MF*-L*	NAH430MF*-R*
1	<b>Evaporator Coil</b>	142-08-394	142-08-395	142-08-391	142-08-393
2	<b>TXV+Distributor</b>	142-75-954	142-75-954	142-75-955	142-75-955
3	<b>Blower Motor</b>	142-70-061 or 142-70-068	142-70-061 or 142-70-068	142-70-061 or 142-70-068	142-70-061 or 142-70-068
4	<b>Blower Assembly</b>	142-14-046	142-14-046	142-14-046	142-14-046
5	<b>Motor Power Harness<sup>1</sup></b>	142-30-064	142-30-052	142-30-064	142-30-052
6	<b>Motor Speed Control Harness<sup>1</sup></b>	142-30-063	142-30-051	142-30-063	142-30-051
7	<b>Electric Heat Control Harness</b>	142-30-060	142-30-060	142-30-060	142-30-060
8	<b>Air-handler Transformer Harness</b>	142-30-062	142-30-062	142-30-062	142-30-062
9	<b>Transformer</b>	142-62-087	142-62-087	142-62-087	142-62-087
10	<b>Control Board</b>	142-62-098	142-62-098	142-62-098	142-62-098
11	<b>Air Filter</b>	142-31-069	142-31-069	142-31-069	142-31-069
12	<b>Air Filter Cover</b>	142-56-701	142-56-701	142-56-701	142-56-701
13	<b>Top Panel Assembly</b>	152-00-026	152-00-038	152-00-026	152-00-038
14	<b>Blower Deck</b>	142-56-691	142-56-691	142-56-691	142-56-691
15	<b>Control Board Breaker Bracket</b>	142-56-696	142-56-397	142-56-696	142-56-397
16	<b>Access Panel Assembly</b>	152-00-028	152-00-029	152-00-028	152-00-029
17	<b>Base Pan Assembly</b>	152-00-002	152-00-002	152-00-002	152-00-002
18	<b>Side Panel Assembly</b>	152-00-001	152-00-034	152-00-001	152-00-034
19	<b>Wall mounting Bracket Top</b>	142-56-704	142-56-704	142-56-704	142-56-704
20	<b>Wall mounting Support Bracket Bottom</b>	142-56-705	142-56-705	142-56-705	142-56-705
21	<b>No Breaker Patch Plate</b>	142-56-697	142-56-697	142-56-697	142-56-697
22	<b>Single Breaker Patch Plate</b>	142-56-698	142-56-698	142-56-698	142-56-698
23	<b>Dual Breaker Patch Plate</b>	142-56-699	142-56-699	142-56-699	142-56-699
24	<b>Drain Pan</b>	142-56-682	142-56-683	142-56-682	142-56-683
25	<b>Drain Pan Patch Plate Assembly</b>	152-00-024	152-00-025	152-00-024	152-00-025
26	<b>Suction Line</b>	142-75-957	142-75-958	142-75-957	142-75-958
27	<b>Liquid Line</b>	142-75-956	142-75-956	142-75-956	142-75-956

1. The Motor Power and Control Harness is only required for 142-70-061



A Division of National Refrigeration & Air Conditioning Products, Inc.

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## AIR HANDLER LIMITED WARRANTY

1. National Comfort Products warrants to its customers that its product shall be free from defects in material and workmanship under normal use and regular service and maintenance as follows:

ALL PARTS. For all parts, for one year from the date of original installation.

Customer must register the product within 60 days of purchase. If Customer cannot adequately document date of installation, then, for purposes of determining the warranty period, the date of installation shall be 60 days from the date of purchase.

2. This warranty does not extend to any damages or losses due to misuse, accident, abuse, neglect, normal wear and tear, negligence (other than National Comfort's), unauthorized modification or alteration; use beyond rated capacity; unsuitable power sources or environmental conditions; improper installation, repair, handling, maintenance or application; damage as a result of fire, wind, floods, lightning, or corrosive conditions; or any other cause not the fault of National Comfort. By way of example and without limitation, the following do not constitute a defect in workmanship and materials and are not covered by this warranty: slugging of liquid refrigerant or oil, unstable line voltage, lightning, operating without proper lubrication, and operating without factory provided safeties. Any installation that impairs or impedes air flow negatively impacts performance and causes premature equipment failure that voids this warranty. For example, installation behind a brick façade or the addition of a brick pattern façade, i.e. pigeon holes impedes air flow and shall void this warranty.

### 3. SOLE WARRANTY

The warranties identified herein constitute National Comfort's sole and exclusive warranties with respect to the goods and are in lieu of and exclude all other warranties, express or implied, arising by operation of law or otherwise, including without limitation, merchantability and fitness for a particular purpose whether or not the purpose or use has been disclosed to National Comfort in specifications, drawings or otherwise, and whether or not National Comfort's goods are specifically designed and/or manufactured by National Comfort for Customer's use or purpose. No employee or representative of National Comfort is authorized to change this warranty in any way or grant any other warranty.

### 4. LIMITATION OF REMEDY

The sole and exclusive remedy for breach of any warranty hereunder (other than the warranty provided herein) shall be limited to repair, replacement, credit or refund of the purchase price to distribution as set forth herein.

National Comfort is not responsible for any other item including but not limited to local transportation, freight, removal of any compressor or part, any labor associated therewith, service or diagnosis calls, refrigerant, or costs for returning any defective compressor or part.

### 5. LIMITATION OF WARRANTY

NATIONAL COMFORT MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, RELATED TO THE GOODS, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED. NATIONAL COMFORT SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OR LOSSES FROM ANY CAUSE WHATSOEVER, INCLUDING, WITHOUT LIMITATION, LOSS OF USE, COMMERCIAL PROFITS, OR CUSTOMER GOODWILL, AND ANY OTHER CLAIMS BASED ON CONTRACT OR TORT, WHETHER OR NOT ARISING FROM NATIONAL COMFORT'S NEGLIGENCE.

National Comfort shall not be liable for damages caused by delay in performance and the remedies of Customer set forth in this agreement are exclusive. In no event, regardless of the form of the claim or cause of action (whether based in contract, infringement, negligence, strict liability, other tort or otherwise) shall National Comfort's liability to Customer and/or its customers exceed the price paid by Customer for the specific goods or portion of the goods provided by National Comfort giving rise to the claim or cause of action, and Customer shall indemnify and hold harmless National Comfort for any damages incurred by National Comfort in excess thereof. Customer agrees that in no event shall National Comfort's liability to Customer and/or its customers extend to include incidental, consequential, or punitive damages.

The term "consequential damages" shall include, but not be limited to, loss of anticipated profits, business interruption, loss of use, revenue, reputation and data, costs incurred, including without limitation, for capital, fuel, power and loss or damage to capital or equipment. Customer agrees that all instructions and warnings supplied by National Comfort will be passed on to those persons who use the Goods. National Comfort's Goods are to be used in their recommended applications and all warning labels adhered to the Goods by National Comfort are to be left intact.

It is expressly understood that any technical advice furnished by National Comfort before or after delivery in regard to the use or application of the Goods is furnished without charge, and National Comfort assumes no obligation or liability for the advice given or results obtained, all advice being given and accepted at Customer's sole risk.

Continued on next page

# Installation Manual for Multi-Family Air Handler

## 6. WARRANTY PROCEDURE

For All Warranty Claims. Customer must register the product with National Comfort within 60 days from purchase. Failure to timely register the product may void the warranty. Any claim for warranty shall be made within thirty days of discovery and in any event, within thirty days from removal of the compressor or part from the unit. Failure to make a timely claim shall void the warranty. Prior authorization from National Comfort is required for all warranty claims. Any claim for warranty must be first reported to National Comfort in writing specifying the unit, serial number, date of purchase and date of original installation. Customer shall also request a Return Material Authorization (“RMA”) from National Comfort to initiate the warranty claim process. Issuance of an RMA by National Comfort is not an acknowledgment that the defect is covered by this Warranty. Any replacement compressor or part is warranted for the original product warranty, or for one year from the date of shipment of the replacement compressor/part, whichever is later.

A. Parts. In addition to the above-referenced requirements, Customer is required to purchase a replacement part for the original part for which Customer is making a warranty claim. The original part for which warranty is claimed is to be returned to National Comfort at National’s discretion, freight prepaid. If National Comfort determines that there is a defect in material or workmanship in the part that is covered by this Warranty, then National Comfort shall credit Customer for the cost of the new replacement part. If National Comfort determines that the defect in material or workmanship is not covered by this Warranty, then no credit shall be issued. A copy of the invoice of the replacement part and completed RMA must accompany the original part for which warranty is claimed. National Comfort reserves the right to request additional documentation. The failure to follow this procedure shall render the warranty void.

## 7. SHIPPING INSTRUCTIONS

A. Parts. All other returned parts must be securely packaged and clearly marked with its corresponding RMA number provided from NCP.





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