

Addendum

Installation Instructions

B2BV-Series Electric Furnaces— For HUD approved installations in manufactured homes and modular homes.

INTRODUCTION

The B2BV Series electric furnaces are approved for use in HUD code manufactured homes (HUD Manufactured Home Construction and Safety Standard (Title 24, Part 3280)) and other modular home applications.

The B2BV Series electric furnace may be installed in down-flow or up-flow applications as “freestanding” units, and in closet or alcove installations.

B2BV Series electric furnaces are supplied with factory installed electric heat. Approved NORDYNE heat-pump/air conditioning coils may be installed in the field.

GENERAL INFORMATION

Codes

All electrical power wiring for the B2-series electric furnace must be installed in accordance with:

- 1) HUD Manufactured Home Construction and Safety Standard
- 2) NFPA 70 - National Electric Code (NEC)

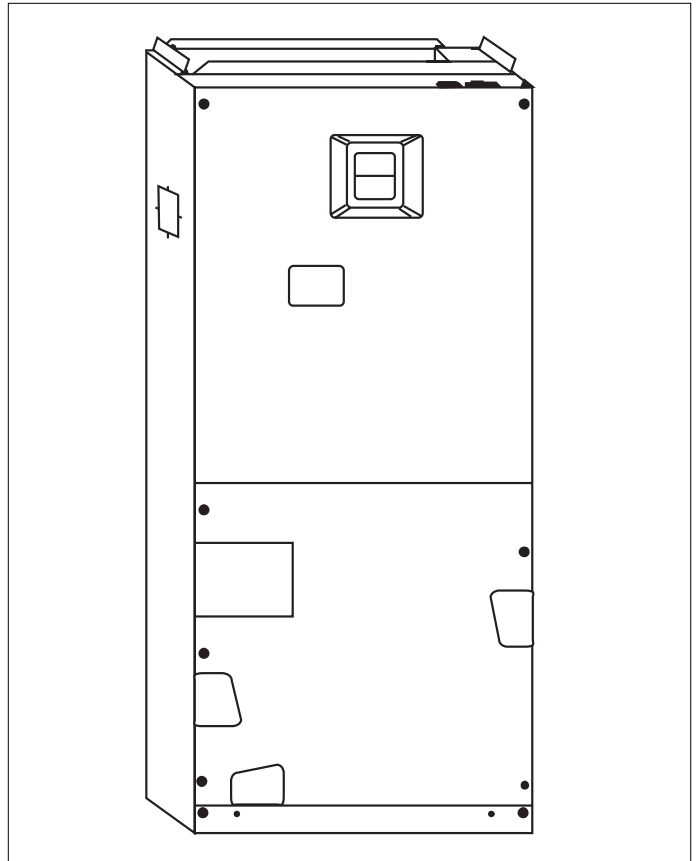
NOTE : Circuit breakers installed in the B2 electric furnace are for short-circuit protection of the internal wiring and to serve as a unit disconnect. Circuit breakers installed in the B2BV electric furnace **DO NOT** provide over-current protection of the supply wiring. Over-current protection of the supply wiring must be provided at the distribution panel and sized as shown in the installation instructions or on the unit data label, and per the NEC.

Location

Reference the installation instruction included with this unit for location requirements.

Clearance

All electric heater kits less than 20 kw are approved for use in air handler installations with zero-clearance to combustibles at any blower speed. For horizontal and upflow configuration, air handlers equipped with 20 kw electric heater kits are approved for installation with zero clearance to combustibles at any blower speed. When using a 20 kw electric heat kit in a downflow installation, the blower must be set for high speed for both heating and cooling.



VENTILATION

The B2BV electric furnace has a cut-out on each side for ventilation air. Use NORDYNE part number 914120 or 914427 adaptor with VentilAire III or IV to supply the proper amount of ventilation air. The VentilAire connections must be made for the system to conform to H.U.D. rules. Do not leave disconnected after servicing or adding A/C to the system.

RETURN AIR

In closet or alcove installations provide at least 235 square inches free opening for return air for B-cabinet (19 3/4" wide) models and 300 square inches for C-cabinet (22 1/2" wide) models.

The return air opening can be located in a closet door or a sidewall. If the return air opening is directly adjacent to the side (or front) of the air handler, 6" minimum clearance must be provided between the side of the furnace and the return air opening. If no part of the return air opening is directly adjacent to the unit no clearance is required.

These instructions are intended to assist qualified individuals experienced in the proper installation of heating and/or air conditioning appliances. Some local codes require licensed installation/service personnel for this type equipment. All installations must be in accordance with these instructions and with all applicable national and local codes and standards. Improper installation, service, adjustment, or maintenance can cause, fire, electrical shock or other conditions which may result in personal injury or property damage. Unless otherwise noted in the instructions, only factory authorized kits or accessories may be used when modifying this product.

DESCRIPTION	Cabinet Size	
	B	C
Downflow Plenum Connector, 6.25"	913840	914969
Downflow Plenum Connector, 8.25"	913841	914970
Downflow Plenum Connector, 10.25"	913843	914971
Upflow Pedestal Mounting Stand	913872	913873
Downflow Coil Adaptor	914630	914631

Table 1. Optional Accessory Kits

If an upflow pedestal mounting stand is fabricated in the field it must be constructed strong enough to support the unit with all accessories installed (approximately 130 lbs. for B-cabinet models and 200 lbs. for C-cabinet models). The construction of the pedestal stand must also allow for at least 235 square inches free opening (300 square inches for C-cabinet models) in the application. Field fabricated upflow pedestal mounting stands must be constructed of noncombustible materials.

Reference the installation instruction included with this unit for other return air details.

SUPPLY AIR DUCTS

The duct system must be designed so that the external static pressure of the system does not exceed the maximum external static pressure indicated on the unit data label.

Downflow applications require the use of a plenum connector shown in Figure 1 or its equivalent if the supply air ducts pass through the floor of the structure. See Table 1 for plenum connectors available.

The plenum connectors are designed for use with trunk ducts having a minimum width of 12 in. If sufficient space is not available to adequately bend and secure plenum tabs it may be necessary to attach the connector to the duct using sheet-metal fasteners and seal with an approved foil tape.

Plenum connectors may be field constructed but must meet requirements as stated in the unit installation instructions.

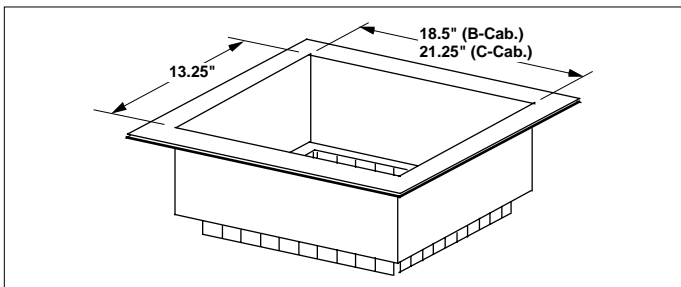


Figure 1. Plenum Adaptor

INSTALLATION

Install the unit as directed in the Installation Instructions. NOTE: Secure the unit to the structure using metal strap and/or fasteners at the top of the unit and at the bottom of the unit.

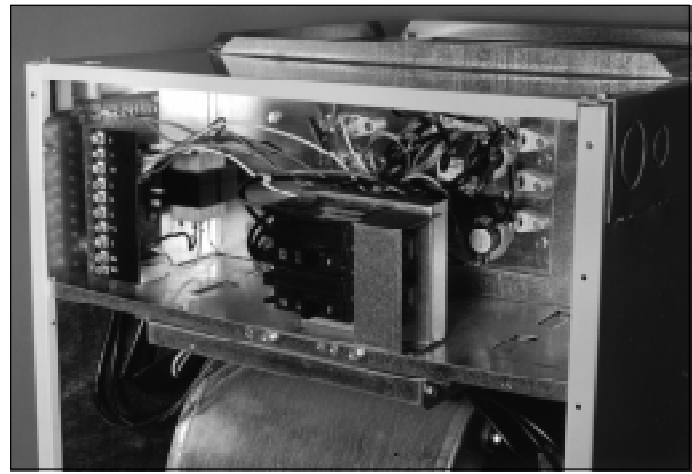


Figure 2. Sample Installation.
Shown without top cover and access door.

POWER WIRING

! WARNING:

To avoid risk of electric shock, personal injury, or death, disconnect electrical power to the unit before performing any maintenance or service. The unit may have more than one electric power supply.

All wiring must comply with the current revision of the National Electric Code and must be sized for the minimum ampacities as listed on the unit data label or in Table 2.

			B2BV					
			Min. Circuit Ampacity			Max. Over-Current Protection		
Model Number	Voltage	KW	Circuit A	Circuit B	Single Circuit	Circuit A	Circuit B	Single Circuit
15 KW	240	14.4	55.0	25.0	80.0	60	30	90
20 KW	240	19.2	55.0	50.0	105.0	60	50	125

Table 2. Electrical Data

If a single circuit adaptor kit is used it may need to be re-configured for some applications. Remove the single circuit adaptor kit cover and verify that the lugs are configured correctly for the application. If the lugs are not configured for the application, reference the instructions included with the kit and modify the configuration. Install the single circuit adaptor kit (if used) in the line side ("on" end) of the circuit breakers. Tighten the lugs securely (45 in-lbs recommended).

Connect the supply wiring to the circuit breakers, single circuit adaptor kit, or terminal block. Tighten the lugs securely.

When using dual supply circuits verify that the supply sized for circuit "A" is connected to the circuit breaker that is connected to the top element assembly.

Replace metal circuit breaker line cover. Reference Figure 3 for thermostat wiring examples.

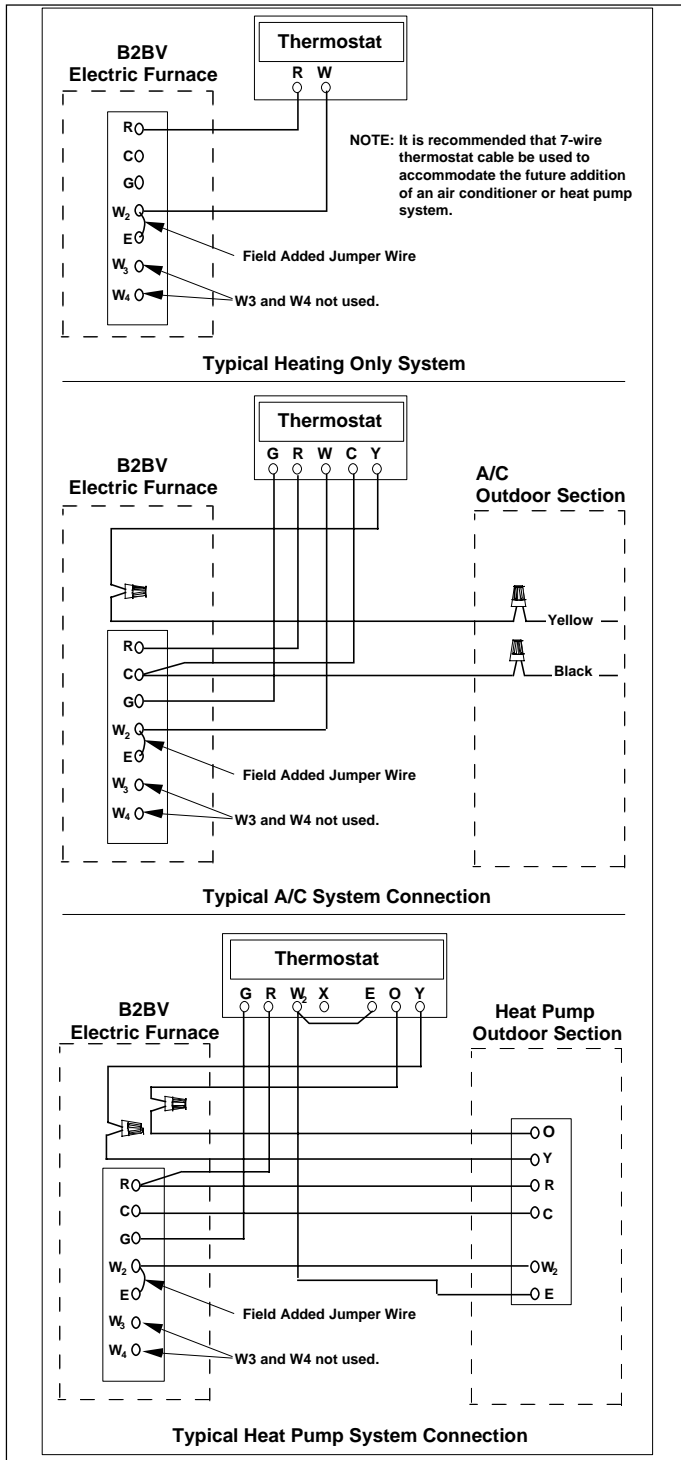


Figure 3. Thermostat Wiring Examples

A/C OR H/P COIL INSTALLATION

Approved air conditioning and heat pump system components are listed on the unit nameplate.

To install the indoor coil:

1. Remove door cover plate, door and coil close-off plate (with insulation). Discard door cover plate.
2. For upflow applications slide the coil into the track located in the bottom of the unit.

3. For downflow applications the downflow adaptor (see Table 1) must be used. Install the downflow adaptor and coil as directed in the instructions included with the kit.
4. Reinstall the door and coil close-off plate (with insulation). NOTE: In downflow applications the door is rotated 180° so that the refrigerant and condensate lines remain on the left side.
5. Install the refrigerant and condensate lines as directed in the instructions included with the outdoor unit.

MOTOR SPEED SELECTION

The air handler is shipped from the factory with a jumper wire between the heating speed contact and the cooling speed contact on the blower relay. If the heating/cooling speed desired is the speed set at the factory then no further modification is necessary. If a different heating/cooling speed is desired remove the blower lead attached to pin #4 on the blower relay (leave the jumper in place), cut the wire tie holding the blower motor lead bundle, and connect the desired blower motor lead to pin #4 on the blower relay. Motor leads are color coded as shown in Table 3. If a heating speed different from the cooling speed is desired, remove and discard the jumper wire from the blower relay. Cut the wire tie holding the unused blower leads. Connect the desired heating speed to pin #6 on the blower relay and the desired cooling speed to pin #4.

IMPORTANT: After making any changes to the blower speed setting be sure to bundle and insulate any unused blower motor leads so that they will not come in contact with the air handler cabinet or non-insulated live parts.

High speed operation is required when using a 20 kw electric heater kit in a downflow application.

“A” and “B” Cabinet

Pin Number	Wire Color	Motor Speed
1	Red	Low
2	N/A	N/A
3	Blue	Medium
4	Black	High
5	N/A	N/A
6	White	Common

“C” Cabinet

Pin Number	Wire Color	Motor Speed
1	Red	Low
2	Orange	Med.-Low
3	Blue	Med.-High
4	Black	High
5	N/A	N/A
6	White	Common

Table 3. Blower Motor Lead Color Code

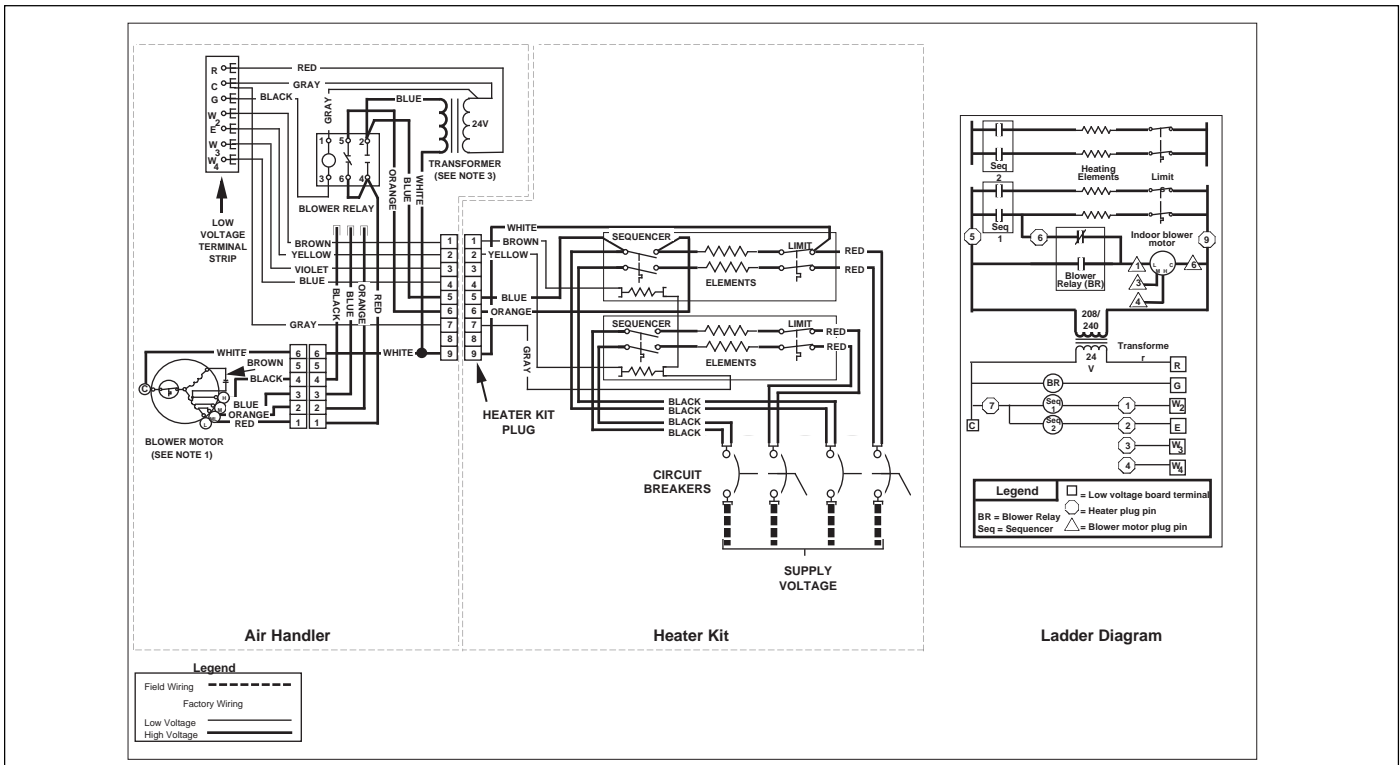


Figure 4. Typical System Wiring Diagram (20 kw, 2-Stage Shown)

ITEM NO.	PART NO.	DESCRIPTION	B2BV-015K-B	B2BV-020K-C
1	491214	Element Ass'y - 4.8 kw	1	
	491225	Element Ass'y - 9.6 kw	1	2
2	621380	Sequencer, 2-pole, Blower Timing	1	1
	621381	Sequencer, 2-pole, Aux. Timing		1
	621383	Sequencer, 1-pole, Aux. Timing	1	
3	626409	Limit, 2-pole, 155°F	1	2
	626410	Limit, 1-pole, 155°F	1	
4	632249	Circuit Breaker, 2-pole, 60 amp (not shown)	2	2

