

FEVB

Vertical Poise Electric Furnace

Installation Instructions & Homeowner's Information

Approved for use in manufactured homes.

NOTE: Read the entire instruction manual before starting the installation.

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Safety Considerations

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause death, personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing and work gloves. Use quenching cloths for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and the applicable editions of the National Electrical Codes (NEC) NFPA 70.

In Canada, refer to the current editions of the Canadian Electrical Code CSA C22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies hazards which could result in personal injury or death. CAUTION is used to identify unsafe practices, which may result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death. Before installing, modifying or servicing system, always turn off main power to system. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label.

CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

Introduction

Model FEVB has been designed for vertical (upflow and downflow) applications. Models are available for electric heat sizes 10 kW – 20 kW. All models use an ECM motor.

Location

Select the best position which suits the installation site conditions. The location should provide adequate structural support, space in the front of the unit for service access, clearance for return air and supply duct connections, space for refrigerant piping connections and condensate drain line connections.

NOTE: Internal filter can be accessed from a separate filter door.

CAUTION

PROPERTY DAMAGE HAZARD

Failure to follow this caution may result in poor unit performance and/or product damage.

Never operate the unit without a filter. For those applications where access to an internal filter is impractical, a field-supplied filter must be installed in the return air stream.

! WARNING

FIRE HAZARD

Failure to follow this warning could result in personal injury or death, or property damage.

When heaters are installed, maintain clearances from combustible materials as specified on the unit rating plate.

Table 1 – Required Clearances

ALL MODELS - Space, inches	
Back and Sides	0"
Front	In Closet - 6" to closet door In Alcove - 24" for access
Ducts	0"

Downflow Installation

Position Unit

Allow space for wiring, piping, and servicing unit.

! WARNING

STRUCTURAL DAMAGE

Failure to follow this warning could result in personal injury or death, or property damage.

The supplied noncombustible floor base is required for downflow applications with electric heat strips.

1. Cut a hole in the floor where the unit will be located. See [Fig. 1](#) and the floor cutout dimensions table.

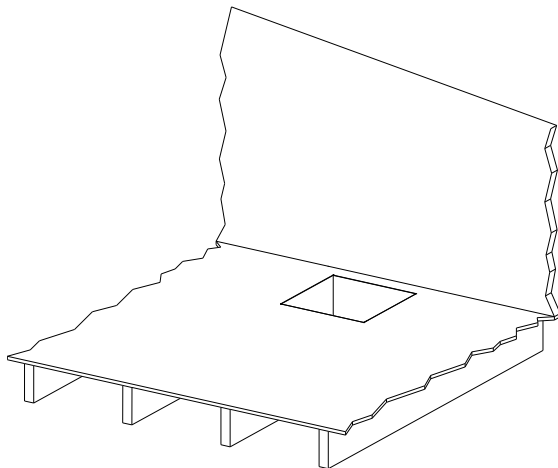


Fig. 1 – Floor Cutout Dimensions

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Furnace Model Number	Hole Size
FEV*410* thru FEV*4815*	14.5" x 14.5"
FEV*020*	17.5" x 17.5"

2. Apply a bead of UL 181 rated caulk or approved duct mastic around the perimeter of the hole, and install the plenum and make appropriate connections to the ductwork ([Fig. 2](#)).

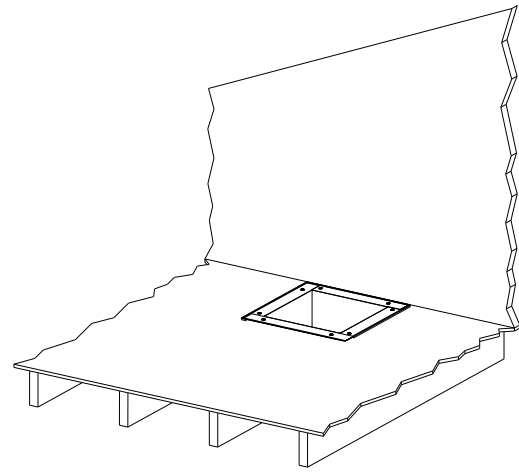


Fig. 2 – Add Plenum and Ductwork

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3. Apply a bead of UL 181 rated caulk or approved duct mastic around the perimeter of the plenum, and then install the floor base supplied with the unit over the plenum. Attach with four 1" length (min) wood screws through the plenum and into the floor ([Fig. 3](#)).
4. Place the optional accessory Floor Base supplied with the unit over the plenum and attach with 1" length (min) screws, through plenum and into floor.

NOTE: Optional floor base not required for non-combustible flooring.

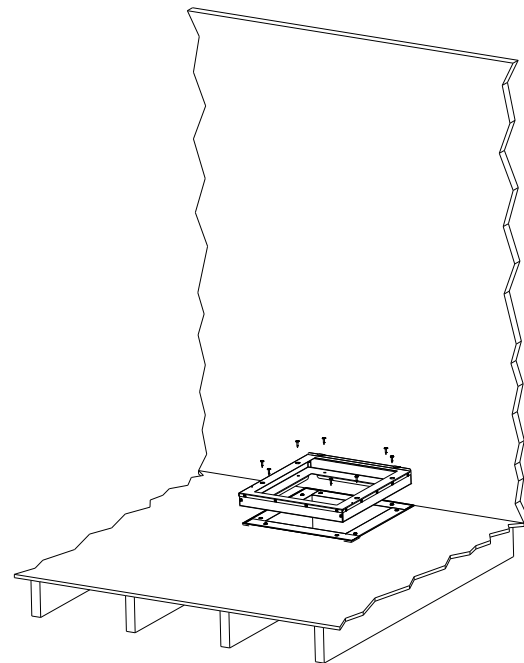


Fig. 3 – Floor Base

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NOTE: The unit is shipped with the supply air side UP. Do step 5 before inverting before installing.

5. Remove electrical knockouts from desired wire entry locations for high voltage and thermostat wire.
6. Invert the unit and place it onto the base. The unit flanges will fit into the base opening.
7. Slide the unit to the back of the base. Make sure the tabs go into the slots of the casing when you slide the unit back ([Fig. 4](#)).

IMPORTANT: Make certain that the unit is level or pitched slightly toward the front to ensure proper unit operation.

8. After the unit is installed, cover the top to prevent construction debris from entering. Remove the covering after construction is complete.

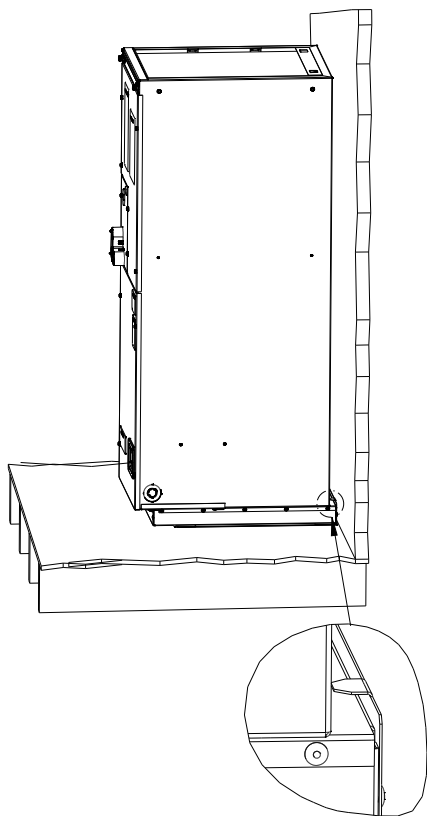


Fig. 4 – Unit Placement

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Electrical Connections

These units do not have a printed circuit board (PCB), they have a low voltage circuit protective fuse (3 amp) in-line on the wire harness. Speed selections are made at the fan motor with the WHITE wire for electric heat mode. The motor is pre-programmed with the time-delay circuit on some of the speed taps. See [Table 2](#).

Before proceeding with electrical connections, make certain that supply voltage, frequency, phase, and circuit ampacity are as specified on the unit rating plate. See unit wiring label for proper field high and low voltage wiring.

NOTE: Circuit breakers in Series B and C units are mounted horizontally, and factory supplied in the OFF position. When installed in the downflow position, slide circuit breaker switch to the right to power the unit.

! WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death. Turn off the main (remote) disconnect device before working on incoming (field) wiring.

Incoming (field) wires on the line side of the circuit breaker found in the fan coil unit remain live, even when the switch is in the OFF position. Service and maintenance to incoming (field) wiring cannot be performed until the main disconnect switch (remote to the unit) is turned off.

Line Voltage Connections

- Units with 10kW heaters are wired for single-supply circuit only ([Fig. 5](#)).
- Units with 12kW, 15kW and 20kW heaters are wired for dual-supply circuits only ([Fig. 6](#)). Run each circuit through separate holes in the cabinet using the two high-voltage knockouts provided.

- Torque all connections to the specification listed on the breaker body.

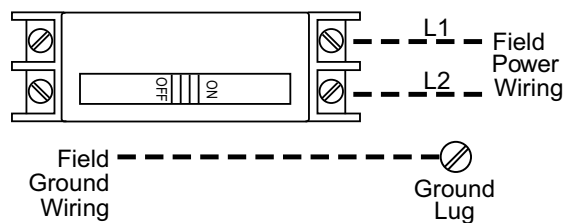


Fig. 5 – 10 kW Circuit Breaker and Disconnect Heaters

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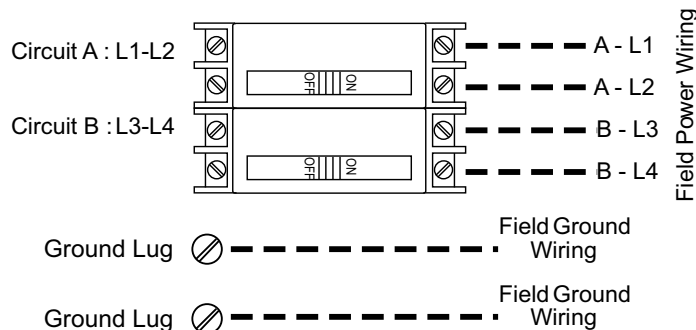


Fig. 6 – 12, 15 & 20 kW Circuit Breakers

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Thermostat Wiring

Connection to Unit

Wire thermostat in accordance with wiring label on the blower (also refer to [Fig. 7](#)). Use minimum 22 AWG color-coded, insulated (35°C minimum) wire to make the low-voltage connections between the thermostat, the unit, and the outdoor equipment. If the thermostat is located more than 100 feet from the unit (as measured along the low voltage wire), use 18 AWG color-coded, insulated (35°C minimum) wire. Refer to outdoor unit wiring instructions for additional wiring recommendations.

NOTE: A third pink wire may be present on the wiring harness. This is purely for high-static audit testing (FER) and should not be utilized in the field.

Thermostat Wiring Connections

For complete electric furnace electrical specs, see [Table 6](#).

For [Fig. 7](#):

- R = 24V
- G = Continuous Fan
- W2, W3, E = Electric Heat
- C = Common

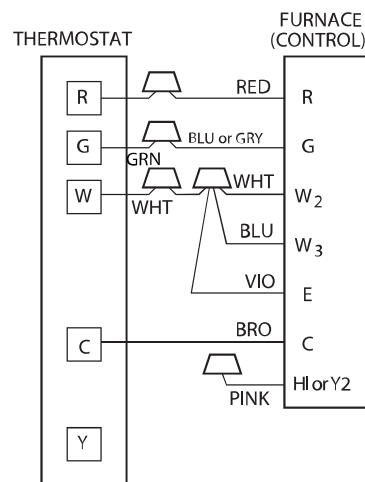


Fig. 7 – Wiring Layout - Furnace

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Transformer Information (applicable to on-site HVAC contractor)

For wiring of add-on cooling or heat pump system, see instructions included with add-on equipment.

The transformer in the furnace is factory wired for 230V operation. For 208V applications, the installing contractor should disconnect the black wire from the 230V terminal on transformer and connect it to the 208V terminal (Fig. 8).

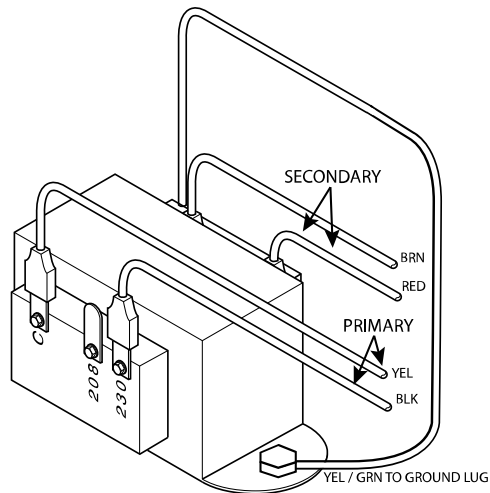


Fig. 8 – Transformer Connections

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Ground Connections

! WARNING

ELECTRICAL SHOCK HAZARD

Failure to establish uninterrupted or unbroken ground could result in personal injury or death.

According to NEC, ANSI/NFPA 70, and local codes, the cabinet must have an uninterrupted or unbroken ground in order to minimize potential for personal injury or death if an electrical fault should occur. The ground may consist of electrical wire or metal conduit when installed in accordance with existing electrical codes. If conduit connection uses reducing washers, a separate ground wire must be used.

NOTE: Grounding may be accomplished by using grounding lugs provided in the control box.

1. Remove the door (Fig. 9).

NOTE: Do not over-tighten the screws in the next step. Over-torquing will deform the cabinet.

2. Install two 3-inch flanged head screws or screws with washers in the lower front cavity of the furnace base and into the floor.
3. If desired, place an optional screw from inside the upper back panel into a stud or backer to add stability. Use a self-tapping screw or drill a pilot hole through the casing and into a stud (Fig. 10).
4. If necessary, add a spacer between the wall and back of the unit to keep the unit level.
5. Replace the filter and its access door.
6. Connect wire protection plate to downflow base after wiring is complete, and before using long screws to attach front base of cabinet to floor as shown in Fig. 9.

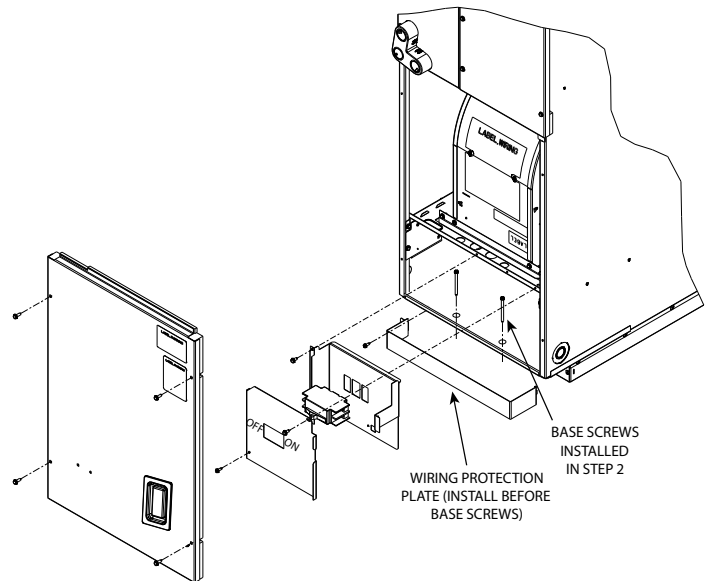


Fig. 9 – Unit Attachment

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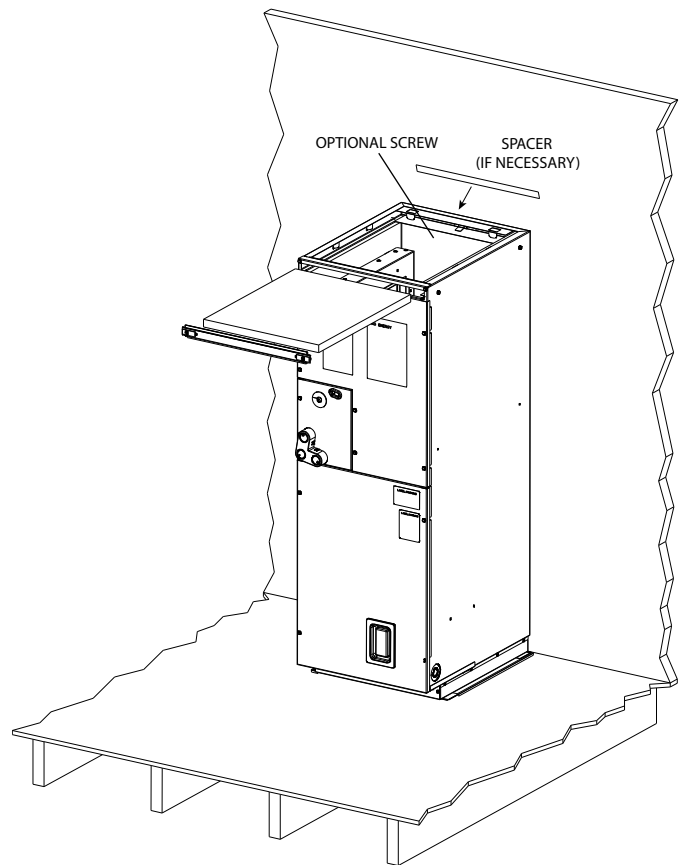


Fig. 10 – Finished Installation with Filter

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Upflow Installation

Position unit

Allow space for wiring, piping, and servicing unit.

1. Remove electrical knockouts from desired wire entry locations for high voltage and thermostat wire.
2. Place the Upflow Stand in the desired location and attach to the floor with wood screws (Fig. 11).

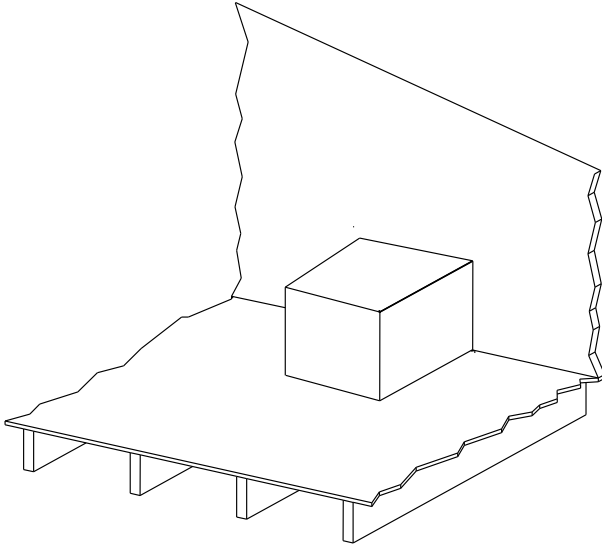


Fig. 11 – Upflow Stand

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3. Set the unit onto the Upflow Stand (Fig. 12).
4. Secure the unit to the stand using self-tapping screws, or drill pilot holes in the casing and use sheet metal screws.
5. Make overhead duct connections per other approved designs, and maintain proper clearances where required.

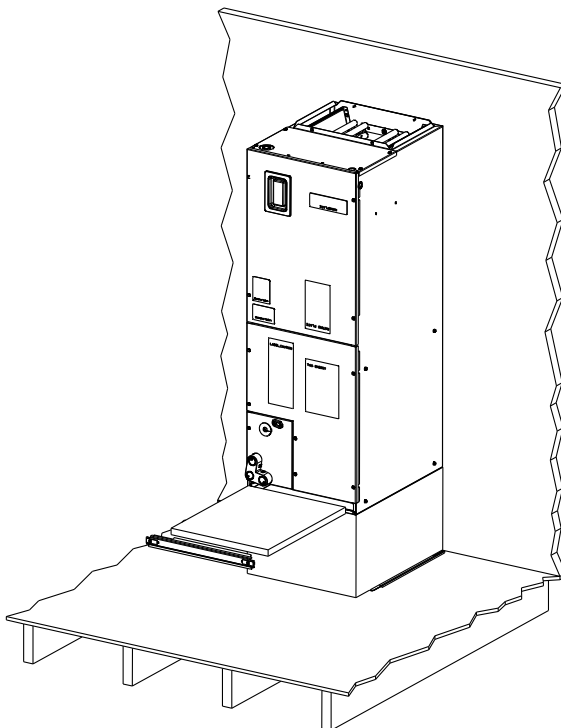


Fig. 12 – Unit with Filter

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Electrical Connections

These units do not have a printed circuit board (PCB), they have a low voltage circuit protective fuse (3 amp) inline on the wire harness. Speed

selections are made at the fan motor with the Blue wire. The motor is pre-programmed with the time-delay circuit on some of the speed taps. See Table 2 for setup to provide better efficiency for the furnace **without** a cooling coil.

Before proceeding with electrical connections, make certain that supply voltage, frequency, phase, and circuit ampacity are as specified on the unit rating plate. See unit wiring label for proper field high and low voltage wiring.

NOTE: Circuit breakers in Series B units are mounted horizontally, and factory supplied in the OFF position. When installed in the upflow position, slide circuit breaker switch to the left to power the unit.

! WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death. Turn off the main (remote) disconnect device before working on incoming (field) wiring.

Incoming (field) wires on the line side of the circuit breaker found in the furnace unit remain live, even when the switch is in the OFF position. Service and maintenance to incoming (field) wiring cannot be performed until the main disconnect switch (remote to the unit) is turned off.

Line Voltage Connections

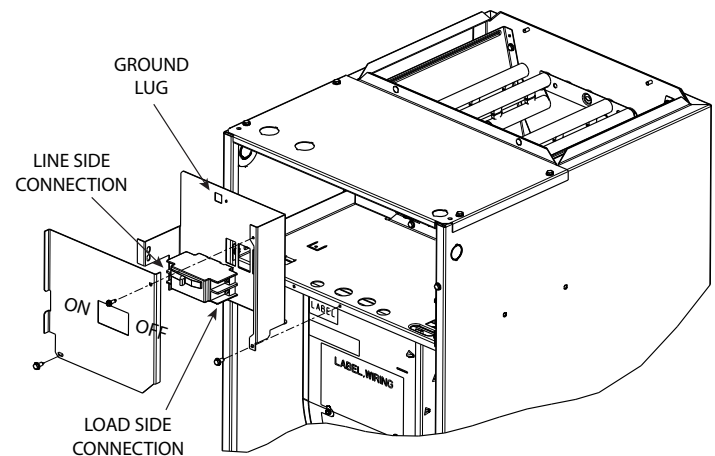


Fig. 13 – Circuit Breaker Detail View

(B series circuit breaker and top panel knockout configuration)

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High Voltage Wiring

- a. Units with 10kW heaters are wired for single-supply circuit only (Fig. 14).
- b. Units with 12kW, 15kW and 20kW heaters are wired for dual-supply circuits only (Fig. 15).
- c. Torque all connections to the specification listed on the breaker body.

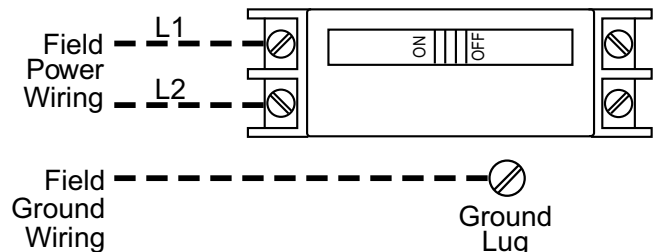


Fig. 14 – 10 kW Circuit Breaker and Disconnect Heaters

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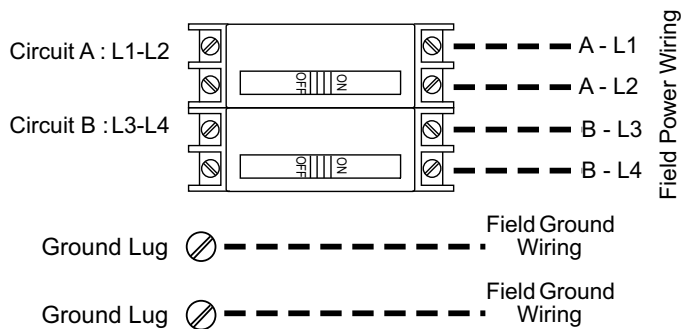


Fig. 15 – 12, 15 & 20 kW Circuit Breakers

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Thermostat Wiring

Connection to Unit

Wire thermostat in accordance with wiring label on the blower (Fig. 16 and Fig. 17). Use minimum 22 AWG color-coded, insulated (35°C minimum) wire to make the low-voltage connections between the thermostat, the unit, and the outdoor equipment. If the thermostat is located more than 100 feet from the unit (as measured along the low voltage wire), use 18 AWG color-coded, insulated (35°C minimum) wire. Refer to outdoor unit wiring instructions for additional wiring recommendations.

NOTE: A third pink wire may be present on the wiring harness. This is purely for high-static audit testing (FER) and should not be utilized in the field.

Thermostat Wiring Connections

- R = 24V
- G = Continuous Fan
- W₂, W₃, E = Electric Heat / Heat Pump Defrost

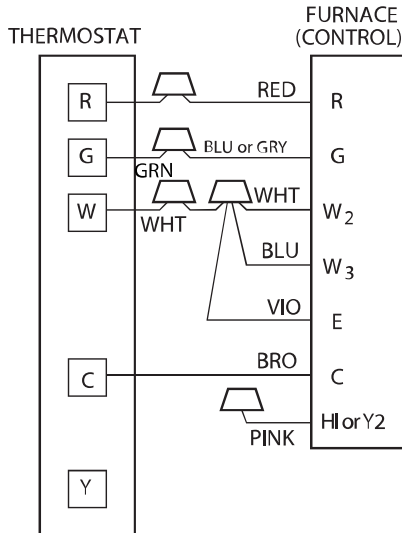


Fig. 16 – Wiring Layout - Furnace

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Transformer Information (applicable to on-site HVAC contractor)

For wiring of add-on cooling or heat pump system, see instructions included with add-on equipment.

The transformer is factory wired for 230V operation. For 208V applications, the installing contractor should disconnect the black wire from the 230V terminal on transformer and connect it to the 208V terminal (Fig. 17).

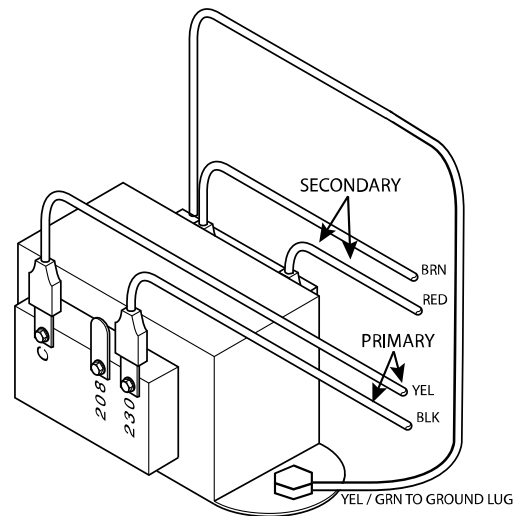


Fig. 17 – Transformer Connections

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Ground Connections



WARNING

ELECTRICAL SHOCK HAZARD

Failure to establish uninterrupted or unbroken ground could result in personal injury or death.

According to NEC, ANSI/NFPA 70, and local codes, the cabinet must have an uninterrupted or unbroken ground in order to minimize potential for personal injury or death if an electrical fault should occur. The ground may consist of electrical wire or metal conduit when installed in accordance with existing electrical codes. If conduit connection uses reducing washers, a separate ground wire must be used.

NOTE: Grounding may be accomplished by using grounding lugs provided in control box.

Filtered Grille Applications

When the unit is located within a closet, a filtered return air grille may be used as a door or through an adjacent wall into the furnace compartment.

IMPORTANT: When this application is used, the air filter within the unit must be removed.

Minimum CFM and Motor Speed Selection (applicable to on-site HVAC contractor)

Units with electric heaters require a minimum CFM. Refer to the unit wiring label to ensure that the fan speed selected is not lower than the minimum fan speed indicated.

Fan speed selection is done at the fan motor. To change motor speeds, reposition wire at fan motor speed terminals labeled 1-2-3 (Fig. 18). Units with or without electric heaters require a minimum CFM. Refer to the unit wiring label to ensure that the fan speed selected is not lower than the minimum fan speed indicated.

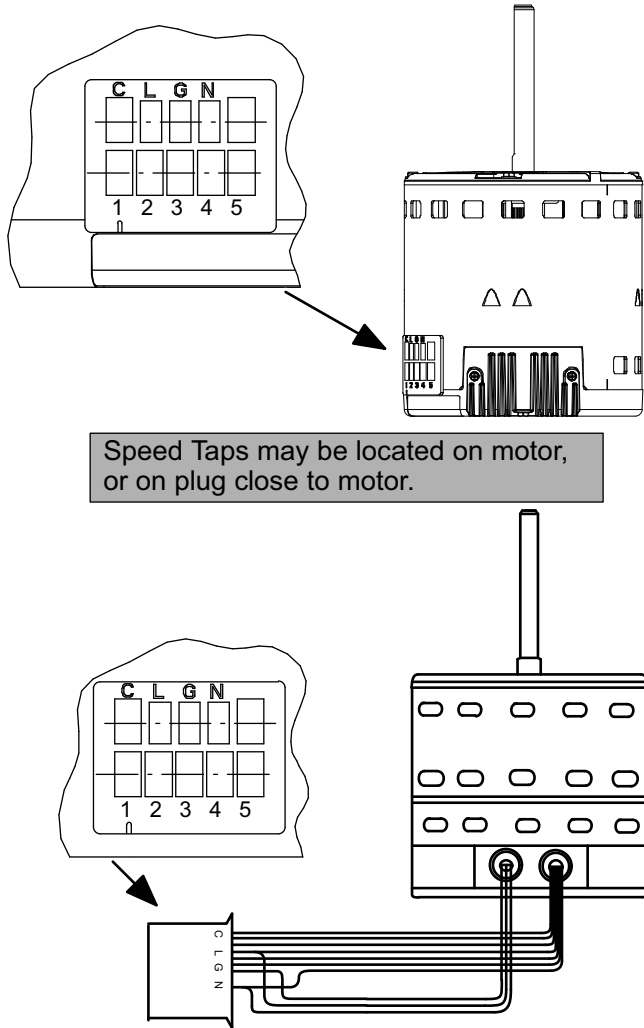


Fig. 18 – Motor Speed Selection

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To change motor speeds disconnect the WHITE fan lead from motor connector terminal #2 (factory default position) and move to the desired speed tap.

All speed taps have a 90 second blower off time delay pre-programmed into the motor. Speed tap 2 (WHITE wire) is used for electric heat only. Speed tap 5 is NOT used for electric heating. Also, see Fig. 18 for motor speed selection location.

Sequence of Operations

Continuous Fan (Whole House Ventilation)

Thermostat closes R to G. G sends signal direct to motor which completes circuit to indoor blower motor. When G is de-energized, there is a 90 second off delay before indoor blower motor stops.

Electric Heat or Emergency Heat Mode

Thermostat closes R to W. W energizes electric heat relay(s) which completes circuit to heater element(s). W also energizes the indoor blower motor. When W is de-energized, electric heat relay(s) opens and the indoor blower motor is de-energized and stops.

Table 2 – Speed Tap Selection at Motor Connector (Electric Furnace)

	FEV 024	FEV 036	FEV 048	FEV 060
Tap 1	Continuous Fan	Continuous Fan	Continuous Fan	Not Used for Electric Heat
Tap 2	Electric Heat	Electric Heat	Electric Heat	Continuous Fan
Tap 3	Not Used for Electric Heat	Not Used for Electric Heat	Not Used for Electric Heat	Not Used for Electric Heat
Tap 4	Not Used for Electric Heat	Not Used for Electric Heat	Not Used for Electric Heat	Electric Heat
Tap 5*	Not Used for Electric Heat	Not Used for Electric Heat	Not Used for Electric Heat	Not Used for Electric Heat

*. High Static Speed Tap. The wire harness may have a pink wire intended for high static testing purposes. This is not a field wire and should not be used in normal installation.

Table 3 – Airflow Performance - without Cooling Coil (CFM)

Model & Size	Blower Speed	Total Static (inches of water column)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
FEVB 024	Tap 5	1099	1079	1058	1040	1007	970	924	844	757	702
	Tap 4	1016	995	975	949	903	853	768	684	639	588
	Tap 3	1016	995	975	949	903	853	768	684	639	588
	Tap 2	934	913	893	852	796	713	622	577	531	486
	Tap 1	801	783	739	670	557	507	454	408	363	315
FEVB 036 10KW	Tap 5	1559	1535	1514	1486	1459	1430	1404	1378	1346	1311
	Tap 4	1476	1451	1424	1390	1360	1333	1304	1273	1241	1210
	Tap 3	1476	1451	1424	1390	1360	1333	1304	1273	1241	1210
	Tap 2	1318	1284	1250	1220	1190	1157	1120	1085	1050	987
	Tap 1	1132	1097	1058	1018	979.2	940	896.5	819.7	761.1	701.6
FEVB 036 12/15KW	Tap 5	1549	1525	1495	1464	1436	1411	1385	1360	1331	1303
	Tap 4	1458	1428	1399	1372	1347	1321	1293	1262	1230	1201
	Tap 3	1458	1428	1399	1372	1347	1321	1293	1262	1230	1201
	Tap 2	1303	1267	1237	1208	1179	1148	1113	1080	1036	969.9
	Tap 1	1120	1082	1046	1009	971.4	933.5	879.3	804.9	748.4	696.1
FEVB 048	Tap 5	2088	2054	2013	1974	1931	1891	1849	1806	1764	1717
	Tap 4	1887	1842	1799	1757	1712	1667	1620	1569	1516	1465
	Tap 3	1887	1842	1799	1757	1712	1667	1620	1569	1516	1465
	Tap 2	1685	1635	1587	1539	1487	1433	1377	1317	1262	1200
	Tap 1	1518	1464	1409	1354	1295	1230	1173	1109	1032	968.9
FEVB 060	Tap 5	2212	2175	2137	2100	2059	2021	1983	1942	1901	1863
	Tap 4	2212	2175	2137	2100	2059	2021	1983	1942	1901	1863
	Tap 3	2212	2175	2137	2100	2059	2021	1983	1942	1901	1863
	Tap 2	1982	1938	1895	1853	1810	1767	1723	1681	1635	1592
	Tap 1	1656	1609	1560	1511	1459	1408	1356	1304	1249	1191

Notes:

1. Airflow based upon dry coil at 230V with factory-approved filter and electric heater; airflow at 208V is approximately the same as 230V because the ECM motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.
2. To avoid potential for condensate blowing out of drain pan prior to making drain trap, return static pressure must be less than 0.40 in. wc.
3. Airflow above 400 cfm/ton on 4800 - 6000 size could result in condensate blowing off coil or splashing out of drain pan.

Table 4 – Airflow Performance - with Accessory Cooling Coil (CFM)

Model & Size	Blower Speed	Total Static (inches of water column)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
FEVB 024	Tap 5	1075	1042	1001	956	911	850	786	748	705	672
	Tap 4	991	954	904	859	801	728	686	648	609	588
	Tap 3	991	954	904	859	801	728	686	648	609	588
	Tap 2	909	864	811	748	680	634	588	545	507	466
	Tap 1	772	722	648	572	519	478	432	385	340	311
FEVB 036 10KW	Tap 5	1457	1431	1404	1376	1345	N/A	N/A	N/A	N/A	N/A
	Tap 4	1377	1349	1320	1291	1261	1226	1186	1142	1099	1048
	Tap 3	1377	1349	1320	1291	1261	1226	1186	1142	1099	1048
	Tap 2	1221	1189	1157	1123	1084	1033	987	933.7	886	848.7
	Tap 1	1044	1008	969.4	916.7	858.2	804.8	755.2	713.6	671.5	634.9
FEVB 036 12 / 15KW	Tap 5	1385	1364	1341	1314	1291	1255	N/A	N/A	N/A	N/A
	Tap 4	1310	1281	1258	1231	1205	1179	1153	1132	1112	1073
	Tap 3	1310	1281	1258	1231	1205	1179	1153	1132	1112	1073
	Tap 2	1160	1133	1104	1075	1050	1023	999	964	899	851
	Tap 1	999	970	936	905	875	831	755	704	672	631
FEVB 048	Tap 5	1876	1839	1804	1765	1726	1688	1645	1602	1547	1467
	Tap 4	1691	1653	1612	1569	1523	1478	1428	1379	1318	1262
	Tap 3	1691	1653	1612	1569	1523	1478	1428	1379	1318	1262
	Tap 2	1509	1465	1416	1367	1313	1260	1199	1142	1082	1035
	Tap 1	1361	1310	1254	1195	1133	1066	999	955	908	856
FEVB 060	Tap 5	2141	2102	2063	2017	1967	1953	1902	1855	1824	1766
	Tap 4	2141	2102	2063	2017	1967	1953	1902	1855	1824	1766
	Tap 3	2141	2102	2063	2017	1967	1953	1902	1855	1824	1766
	Tap 2	1901	1868	1825	1785	1737	1710	1662	1620	1584	1521
	Tap 1	1583	1557	1499	1451	1392	1358	1313	1259	1194	1138

Notes:

1. Airflow based upon dry coil at 230V with factory-approved filter and electric heater; airflow at 208V is approximately the same as 230V because the ECM motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.
2. To avoid potential for condensate blowing out of drain pan prior to making drain trap, return static pressure must be less than 0.40 in. wc.
3. Airflow above 400 cfm/ton on 4800 - 6000 size could result in condensate blowing off coil or splashing out of drain pan.

Table 5 – Airflow Performance – with Wet Accessory Cooling Coil (CFM)

Model & Size	Blower Speed	Total Static (inches of water column)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
FEVB 24	Tap 5	1049	1032	986	922	860	810	753	757	709	674
	Tap 4	932	909	859	791	767	697	677	649	624	594
	Tap 3	932	909	859	791	767	697	677	649	624	594
	Tap 2	851	832	788	718	673	641	602	545	534	504
	Tap 1	755	695	625	540	509	484	449	389	358	318
FEVB 36 10kW	Tap 5	1400	1371	1337	1314	1279	N/A	N/A	N/A	N/A	N/A
	Tap 4	1321	1286	1263	1235	1217	1180	1141	1106	1108	1015
	Tap 3	1321	1286	1263	1235	1217	1180	1141	1106	1108	1015
	Tap 2	1192	1146	1118	1084	1033	970	924	874	824	789
	Tap 1	1004	964	923	871	815	760	706	659	619	604
FEVB 36 12/15kW	Tap 5	1331	1307	1277	1255	1228	1201	N/A	N/A	N/A	N/A
	Tap 4	1257	1221	1204	1178	1163	1135	1109	1096	1121	1039
	Tap 3	1257	1221	1204	1178	1163	1135	1109	1096	1121	1039
	Tap 2	1133	1092	1067	1038	1001	961	935	902	836	791
	Tap 1	961	928	891	860	831	785	705	650	620	600
FEVB 48	Tap 5	1836	1789	1755	1735	1689	1676	1641	1597	1623	1555
	Tap 4	1649	1603	1582	1547	1506	1486	1447	1466	1392	1358
	Tap 3	1649	1603	1582	1547	1506	1486	1447	1466	1392	1358
	Tap 2	1528	1484	1449	1381	1362	1362	1308	1277	1221	1183
	Tap 1	1385	1321	1296	1255	1218	1154	1109	1063	1015	966
FEVB 60	Tap 5	2101	2045	2022	1964	1932	1906	1862	1812	1742	1720
	Tap 4	2101	2045	2022	1964	1932	1906	1862	1812	1742	1720
	Tap 3	2101	2045	2022	1964	1932	1906	1862	1812	1742	1720
	Tap 2	1847	1823	1782	1737	1678	1663	1613	1586	1536	1472
	Tap 1	1520	1524	1471	1406	1342	1343	1311	1224	1167	1112

1. Airflow is calculated using performance factors between dry coil and wet coil data. Original dry coil data was collected at 230V with factory-approved filter and electric heater; airflow at 208V is approximately the same as 230V because the ECM motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.

2. To avoid potential for condensate blowing out of drain pan prior to making drain trap, return static pressure must be less than 0.40 in. wc.

3. Airflow above 400 cfm/ton on 4800 - 6000 size could result in condensate blowing off coil or splashing out of drain pan.

Table 6 – Electrical Data, Fan Coil Only, with Electric Heat

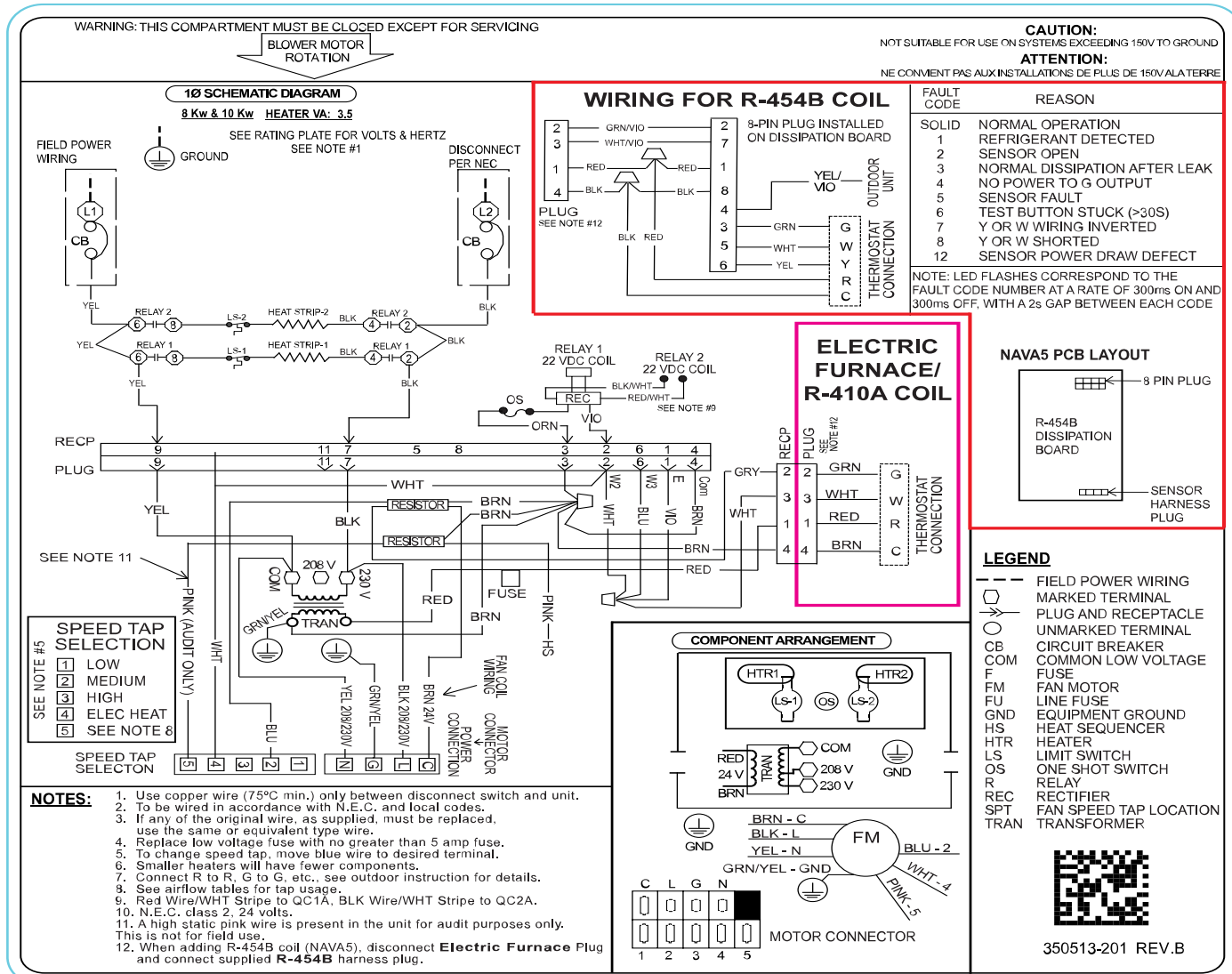
Model	Heater kW	Circuit	Motor Amps	Heater Amps	Min Circuit Amps	Breaker Size
FEVB002410*	10 KW	SINGLE	2.9	40	53.6	60
FEVB003610*	10 KW	SINGLE	4.2	40	55.3	60
FEVB003612*	12 KW	A (L1,L2)	4.2	31.7	44.9	50
		B (L3,L4)		15.8	19.8	20
FEVB003615*	15 KW	A (L1,L2)	4.2	40	55.3	60
		B (L3,L4)		20	25	25
FEVB004815*	15 KW	A (L1,L2)	6.1	40	57.6	60
		B (L3,L4)		20	25	25
FEVB006020*	20 KW	A (L1,L2)	6.1	40	57.6	60
		B (L3,L4)		40	50	50

1. All values are calculated at 230 volts.

2. Wire size must be in accordance with the applicable revision of the NEC and all other applicable codes.

3. Amperage ratings may vary. Verify correct Amperage listing to ensure adequate breaker size for over-current protection.

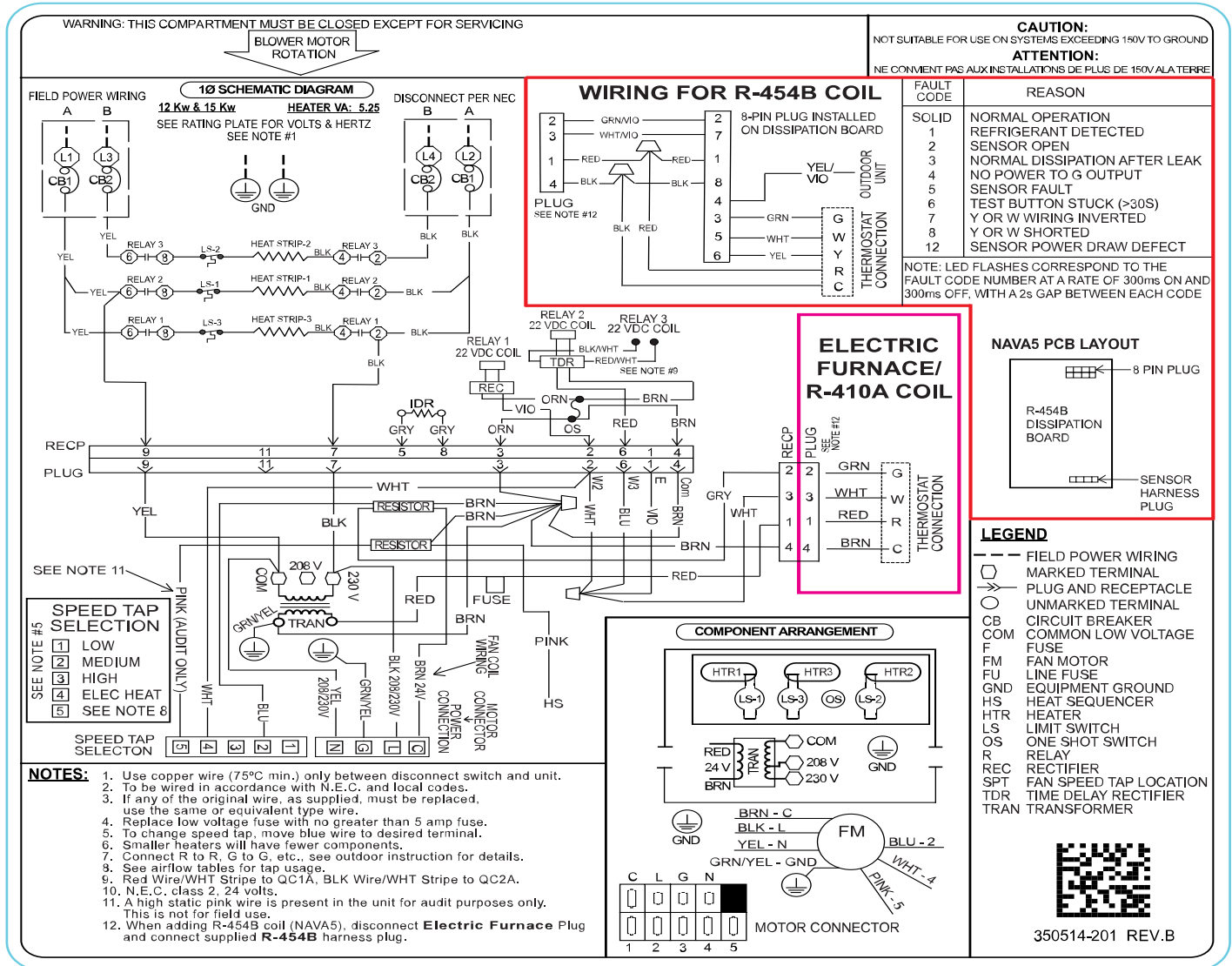
4. Use copper wire only.

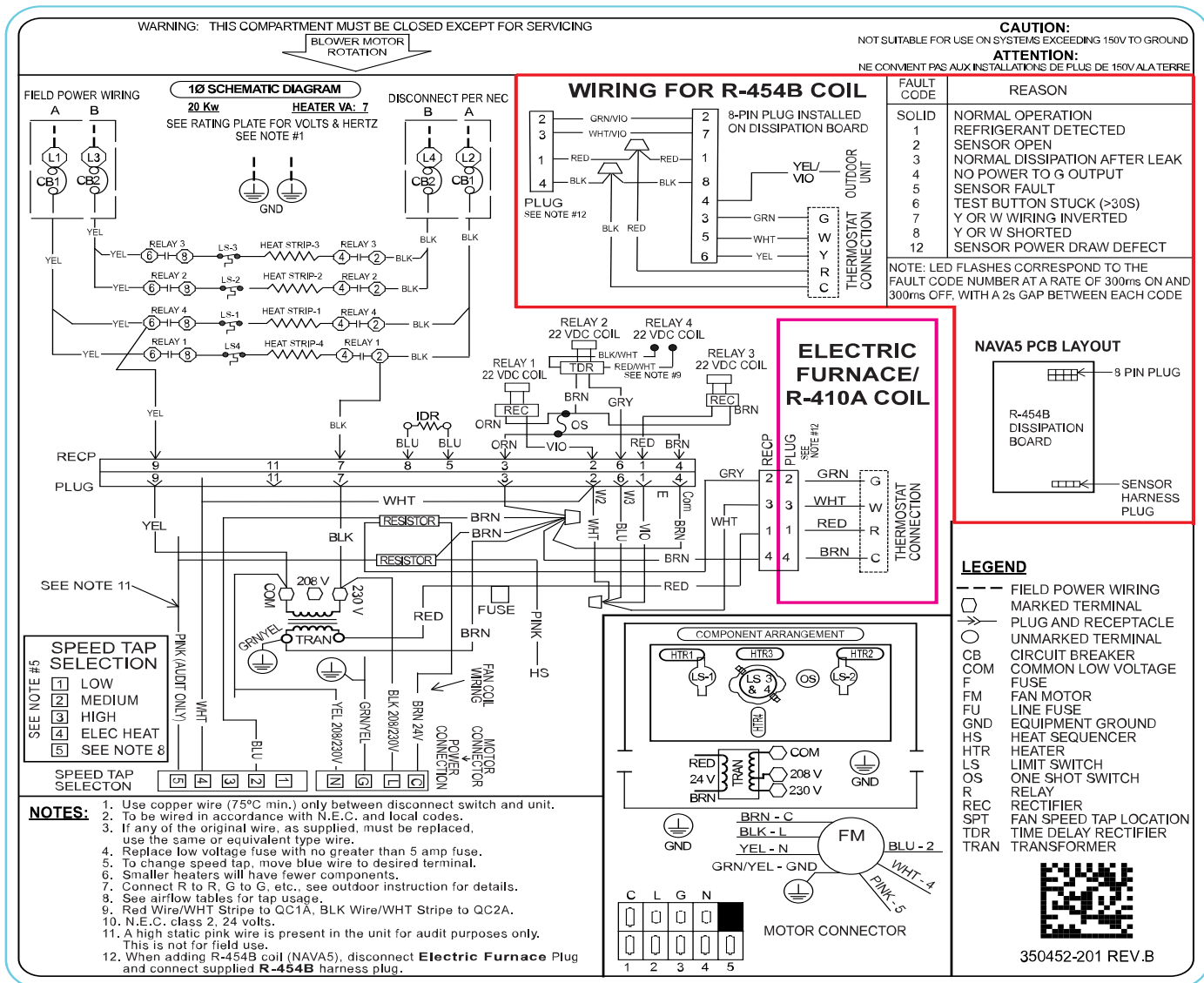
**NOTES:**

- 1) LABEL SIZE -
 - A) 7.00 in. WIDTH X 7.00 in. LENGTH (DIE CUT WITH RADIUS (4) 1/8"), +/- .125 in. TOLERANCE.
 - B) WHEN LABEL IS PER DIMENSIONS SHOWN ALL TEXT AND GRAPHIC ARE ACTUAL SIZE.
- 2) COLORS -
 - A) TEXT AND GRAPHICS TO BE BLACK ON WHITE BACKGROUND
 - B) LINE COLORS PMS 507 (PINK) & PMS 186 (RED) AS SHOWN
- 3) MATERIAL -
 - A) TAYLOR COMMUNICATIONS #131861 2 MIL POLYESTER.
 - B) PRINTING AND BACKGROUND COLOR MUST BE UV INK ON BASE MATERIAL.
OR NON-UV INK WITH TAYLOR COMMUNICATIONS #131396 OVERLAMINATE BASE MATERIAL.
OR NON-UV INK ON UV VARNISH COATED BASE MATERIAL.
 - C) MUST MEET ANSI Z21.47/CSA 2.3, CLASS IIIA REQUIREMENTS AND UL 969 REQUIREMENTS.
- 4) RELIABILITY - SEE CARRIER LABEL RELIABILITY REQUIREMENT CC15DB001.
- 5) BARCODE - SEE CARRIER BARCODE REQUIREMENTS (CARRIER AND ICP), ENGINEERING REQUIREMENT N-025.
- 6) BARCODE SPECIFICATION - PER ENGINEERING STANDARD "RES-DES-1055".

Fig. 19 – 10 kW Wiring Diagram

A221460



**NOTES:**

- LABEL SIZE -**
 - 7.00 in. WIDTH X 7.00 in. LENGTH (DIE CUT WITH RADIUS (4) 1/8"), +/- .125 in. TOLERANCE.
 - WHEN LABEL IS PER DIMENSIONS SHOWN ALL TEXT AND GRAPHIC ARE ACTUAL SIZE.
- COLORS -**
 - TEXT AND GRAPHICS TO BE BLACK ON WHITE BACKGROUND
 - LINE COLORS PMS 507 (PINK) & PMS 186 (RED) AS SHOWN
- MATERIAL -**
 - TAYLOR COMMUNICATIONS #131861 2 MIL POLYESTER.
 - PRINTING AND BACKGROUND COLOR MUST BE UV INK ON BASE MATERIAL.
OR NON-UV INK WITH TAYLOR COMMUNICATIONS #131396 OVERLAMINATE BASE MATERIAL.
OR NON-UV INK ON UV VARNISH COATED BASE MATERIAL.
 - MUST MEET ANSI Z21.47/CSA 2.3, CLASS IIIA REQUIREMENTS AND UL 969 REQUIREMENTS.
- RELIABILITY - SEE CARRIER LABEL RELIABILITY REQUIREMENT CC15DB001.
- BARCODE - SEE CARRIER BARCODE REQUIREMENTS (CARRIER AND ICP), ENGINEERING REQUIREMENT N-025.
- BARCODE SPECIFICATION - PER ENGINEERING STANDARD "RES-DES-1055".

Fig. 21 – 20 kW Wiring Diagram

A221462

HOMEOWNER'S INFORMATION

THERMOSTAT

Your unit is controlled by the thermostat mounted on your wall. The thermostat is a highly sensitive low voltage device and is available in several different configurations from different manufacturers. The details listed below are typical for most installations. Ask your dealer for more specific information regarding the model of thermostat installed.

Heating Mode

Set the system selector switch to HEAT. The unit will run until the actual room temperature is raised to the point you have selected.

NOTE: If you have a heat pump outdoor unit installed, you may see steam (may look like "smoke") occasionally coming from the outdoor unit during cold weather. This is normal as frost is removed from the coil during the defrost cycle.

Cooling Mode

If a cooling system is installed, set the system selector switch on the thermostat to COOL. The unit will run (as an air conditioner) until the actual room temperature is lowered to the point you have selected.

Temperature Control

Set the temperature selector to your desired room temperature. For heating, the unit will run any time the actual room temperature falls below the point you have selected. For cooling, it will run any time the actual room temperature rises above the point you have selected.

Fan Control (Whole House Ventilation)

The fan selector switch allows you to run the fan continuously or cycle it automatically with the heating or cooling system. Set the selector switch to ON for continuous operation or to AUTO for automatic cycling. For maximum comfort satisfaction, continuous fan operation throughout the year is recommended (selector switch set to ON).

WHAT TO DO IF YOUR SYSTEM DOES NOT WORK

Before Requesting a Service Call:

1. Check thermostat settings. If you desire heat, make sure to select a temperature above the actual room temperature, and set the system selector switch to HEAT. If you desire cooling, make sure to select a temperature below the actual room temperature, and set the system selector switch to COOL.
2. Inspect your return air filter. Replace a dirty filter or clean a reusable type filter.
3. Check circuit breakers and/or fuses. Reset breakers or replace fuses as necessary.

4. Inspect the coils and fins on the outdoor unit. Clean away any obstructions (grass clippings, leaves, dirt, dust, or lint). Check that branches, twigs, or other debris are not obstructing the fan blade.

If your system still does not operate, contact your servicing dealer.

Have the Model and Serial Numbers of the indoor and outdoor units available and be sure to describe the problem.

REGULAR MAINTENANCE REQUIREMENTS

Your system should be regularly inspected by a qualified service technician. Between visits, there are some routine maintenance procedures you can do to help keep your system operating at peak performance.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to turn off electrical power could result in personal injury or death.

Turn OFF all electrical power to both the indoor and outdoor units before performing any maintenance or removing any panels or doors. There may be more than one electrical disconnect switch.

Indoor Unit Air Filter

Inspect air filters at least monthly and replace or clean as required. Disposable type filters should be replaced. Reusable type filters may be cleaned by soaking in mild detergent and rinsing with cold water. Install filters with the arrows on the side pointing in the direction of air flow. Dirty air filters are the most common cause of inadequate heating or cooling performance, and of compressor failures.

Condensate Drain

If a cooling system is installed, the indoor coil condenses water from the air, and this water must be disposed through an appropriate drain system. During the cooling season check at least monthly for free flow of drainage. Clean if necessary.

Outdoor Unit Coils

Grass clippings, leaves, dirt, dust, lint from clothes dryers, and fall-off from trees can be drawn into coils by movement of the air. Clogged outdoor coils will lower the efficiency of your unit and could cause damage to the compressor. Clean debris away from the outdoor coils.

Use a soft bristle brush with light pressure only. Do not damage or bend coil fins. Damaged or bent fins may affect unit operation.

Painted Surfaces

In geographical areas where the water has a high concentration of minerals (calcium, iron, sulfur, etc.) it is recommended that lawn sprinklers not be allowed to spray on the unit. Spraying this type of water on the unit may result in premature deterioration of the paint finish and metal components.