

## NAVA4

### Accessory Coil

## Installation Instructions

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

### 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 current 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

These kits are designed to be installed in FEV fan units. Accessory Coil Kit/Fan Unit match-ups, and approved applications are listed in [Table 2](#).

### PROCEDURE 1 — CHECK EQUIPMENT

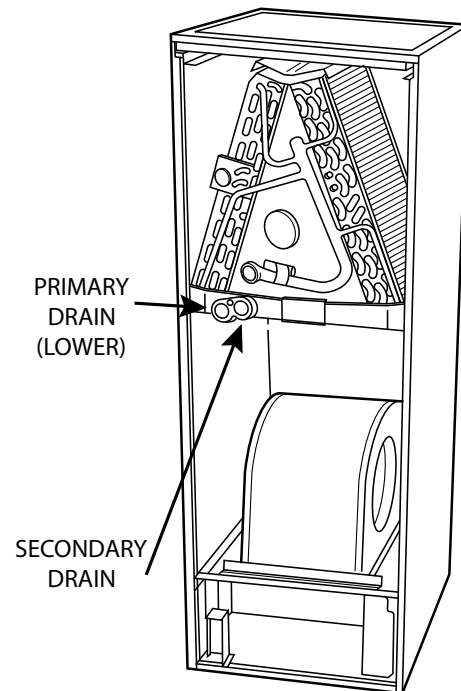
Inspect equipment for damage prior to installation. File claim with shipping company if shipment is damaged or incomplete. Locate the rating plate attached to the coil assembly. Check the rating plate model number, [Table 2](#), and the AHRI Directory to ensure outdoor and indoor units are properly matched and meet job specifications.

#### A. Downflow Applications ([Fig. 1](#))

**IMPORTANT:** Make certain that the electric furnace is level or slightly pitched toward the drain lines to assure proper condensate drainage.

1. Remove the coil access panel.
2. For A-coil downflow installations, remove and discard the plastic cap that covers the drain hole in the access panel. Do not discard the plastic cap for upflow units.

**NOTE:** There is a small weep hole between the primary and secondary drains. For downflow applications, this is a safety feature and must not be blocked.



A-COIL

Fig. 1 – Downflow

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## B. Upflow Application

Remove coil access panel/fitting panel assembly (6 outside screws). Slide coil assembly into coil area of fan unit.

For upflow applications, do not discard the plastic cap in the drain hole of the access door. Remove the knockouts in the plastic cap to allow primary and secondary drain connections.

The coil and pan are shipped separately in the same box:

- Remove the coil and pan from the box.
- Attach the pan to the coil using the four supplied screws.
- Install the coil/pan assembly onto the two shelves provided in the coil area of the furnace.

3. Re-attach the coil door and go to the refrigerant tubing and drain installation.

## Label Installation

As this coil is used with R-410A refrigerant, additional warnings are required. The NAVA4 Coil Kit comes with a Literature Kit/Bag that contains the Installation Instructions and Regulatory Required Labels. This bag contains an “\*\*Important Notice\*\*” sheet to draw your attention to the Installation Instructions and labels. Place the label in the indicated location based on Fig. 2 and Table 1.

Table 1 – Label Identification

| Label Number on Fig. 2 | MFG Part Number | Description |
|------------------------|-----------------|-------------|
| 1                      | 349029-101      | Caution     |

R410A

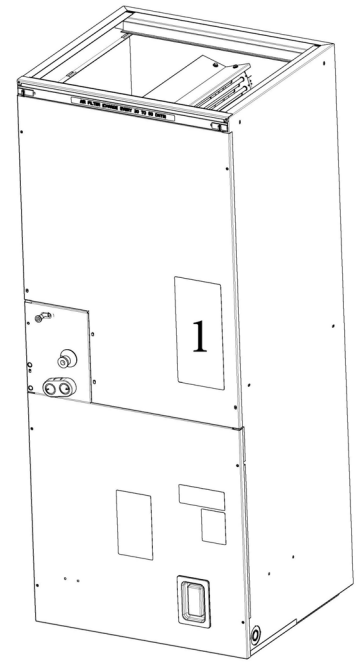


Fig. 2 – Refrigerant Label Locations

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Table 2 – Product Offering and Application

| Accessory Coil | Matched Electric Furnace                                 | Downflow / Upflow | Coil Type |
|----------------|----------------------------------------------------------|-------------------|-----------|
| NAVA43601CK    | FEV*002410B<br>FEV*003610B<br>FEV*003612B<br>FEV*003615B | Both              | A         |
| NAVA44801CK    | FEV*004815C                                              | Both              | A         |
| NAVA46001CK    | FEV*006020D                                              | Both              | A         |

NOTE: Check AHRI Directory for approved outdoor/indoor unit combinations.

## Indoor Unit Airflow Setup

The unit is factory provided for electric heat operation only. A cooling coil adds airflow restriction and requires speed tap changes (Table 3, Table 5).

Table 3 – Cooling and HP Airflow Settings

| Recommended Setup Assuming 0.3" w.c. Static Pressure |                   |                                     |                                      |                                               |                                                  |                                  |
|------------------------------------------------------|-------------------|-------------------------------------|--------------------------------------|-----------------------------------------------|--------------------------------------------------|----------------------------------|
| Indoor Unit                                          | Outdoor Unit Size | No Coil                             |                                      | With Coil                                     |                                                  | Change Required When Adding Coil |
|                                                      |                   | Recommended Tap no coil (blue wire) | Recommended Tap no coil (white wire) | Recommended Tap with Cooling coil (blue wire) | Electric Heat Tap with Cooling Coil (white wire) |                                  |
| FEV*0024**                                           | 18                | 1                                   | 2                                    | 1                                             | 4                                                | Electric Heat Only               |
| FEV*0024**                                           | 24                | 1                                   | 2                                    | 2                                             | 4                                                | Electric Heat and Cool Taps      |
| FEV*0036**                                           | 30                | 1                                   | 2                                    | 1                                             | 4                                                | Electric Heat Only               |
| FEV*0036**                                           | 36                | 1                                   | 2                                    | 2                                             | 4                                                | Electric Heat and Cool Taps      |
| FEV*0048**                                           | 42                | 1                                   | 2                                    | 1                                             | 4                                                | Electric Heat Only               |
| FEV*0048**                                           | 48                | 1                                   | 2                                    | 2                                             | 4                                                | Electric Heat and Cool Taps      |
| FEV*0060**                                           | 60                | 2                                   | 4                                    | 3                                             | 4                                                | Electric Heat Only               |

Table 4 – Speed Tap Selection at Motor Connector (AC, with coil)

|        | FEV*024              | FEV*036              | FEV*048              | FEV*060              |
|--------|----------------------|----------------------|----------------------|----------------------|
| Tap 1  | Cooling Low          | Cooling Low          | Cooling Low          | Cooling Low          |
| Tap 2  | Cooling Nominal      | Cooling Nominal      | Cooling Nominal      | Cooling Nominal      |
| Tap 3  | Cooling High         | Cooling High         | Cooling High         | Cooling High         |
| Tap 4  | Electric Heat        | Electric Heat        | Electric Heat        | Electric Heat        |
| Tap 5* | Max Static / Airflow | Max Static / Airflow | Max Static / Airflow | Max Static / Airflow |

\*. Do not use Tap 5 for heating.

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

### A-coil

The coil and pan are shipped separately in the same box.

**NOTE:** For the A-coil model NAVA436A1CK, a fitting panel will also be shipped separately in the box. Replace the factory-supplied fitting panel with the fitting panel shipped with the coil.

1. Remove the coil and pan from the box.
2. Attach the pan to the coil using the four supplied screws (Fig. 3).
3. Install the coil/pan assembly onto the two shelves provided in the coil area of the furnace.
4. Re-attach the panels and go to the refrigerant tubing and drain installation.

**NOTE:** Caulk around the pan fitting to door joint to avoid air leakage.

### PROCEDURE 2 — REFRIGERANT TUBING

Use accessory tubing package or field-supplied tubing of refrigerant grade. Suction tube must be insulated. Do not use damaged, dirty, or contaminated tubing because it may plug refrigerant flow-control device. ALWAYS evacuate the coil and field-supplied tubing before opening outdoor unit service valves. Refer to the outdoor unit instructions for evacuation information.

Braze connection using silver bearing or non-silver bearing brazing materials. Do not use solder materials that melt below 800 °F (427 °C). Consult local code requirements.

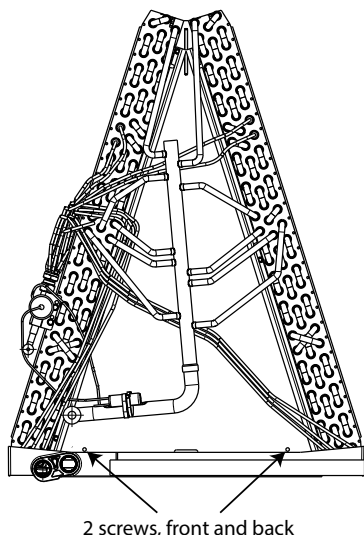


Fig. 3 – Attach Pan to Coil

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### PROCEDURE 3 — CONDENSATE DRAIN

Units are equipped with primary and secondary 3/4" FPT drain connections. It is recommended that PVC fittings be used on the plastic condensate pan. Do not over-tighten. Finger-tighten plus 1-1/2 turns. For proper condensate line installation review Fig. 1 and Fig. 4.



### CAUTION

#### UNIT OR PRODUCT DAMAGE HAZARD

Failure to follow this caution may result in unit or product damage.

BOTH primary and secondary drain lines should be installed and include properly sized condensate traps. Shallow, running traps are inadequate and do not allow proper condensate drainage. Use pipe dope. Do not over-torque. Hand tighten plus 1-1/2 turns.

**NOTE:** When connecting condensate drain lines, avoid blocking filter access panel, thus preventing filter removal. After connection, prime both primary and secondary condensate traps.

**IMPORTANT:** The owner of the structure must be informed that when condensate flows from the secondary drain, the unit requires servicing or else water damage will occur.

Optionally, a float switch may be used in lieu of a secondary drain. If so, make sure the float switch is installed so that it will trip before the water exits the weep hole between the drain pans. The float switch may be installed in the primary drain line or inside the pan. If installing in the secondary drain, make sure the float switch is below the exit of the drain.

**NOTE:** Do not install the float switch at the same level as the secondary drain exit.

Install traps in the condensate lines as close to the coil as possible (Fig. 4). Make sure that the outlet of each trap is below its connection to the condensate pan to prevent condensate from overflowing the drain pan. Prime all traps and test for leaks.

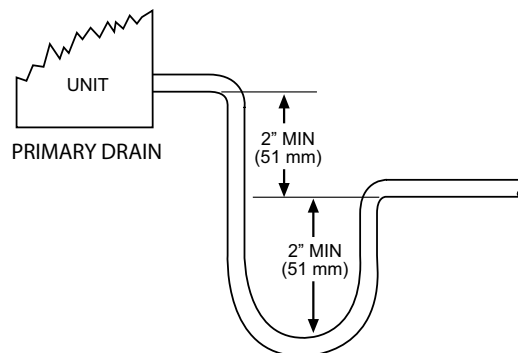
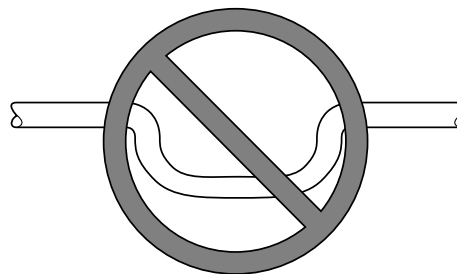


Fig. 4 – Recommended Condensate Trap

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DO NOT USE SHALLOW RUNNING TRAPS!

Fig. 5 – Insufficient Condensate Trap

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Condensate drain lines should be pitched downward at a minimum slope of 1" for every 10 feet of length. Consult local codes for additional restrictions or precautions.

UNIT START-UP

Refer to outdoor unit Installation Instructions for system start-up instructions and refrigerant charging method details. Also refer to the NAVA wiring layout diagrams (Fig. 6, Fig. 7).

!

CAUTION

UNIT OR PRODUCT DAMAGE HAZARD

Failure to follow this caution may result in unit or product damage.  
Never operate the unit without a filter. Damage to the blower motor or coil may result. For those applications where access to an internal filter is impractical, a field supplied filter must be installed in the return duct system.

CARE AND MAINTENANCE

To continue high performance and minimize possible equipment failure, it is essential that periodic maintenance be performed on this equipment. Consult your local dealer as to the proper frequency of maintenance and the availability of a maintenance contract.

The ability to properly perform maintenance on this equipment requires certain mechanical skills and tools. If you do not possess these, contact your dealer for maintenance. The only consumer service recommended or required is filter replacement or cleaning on a monthly basis.

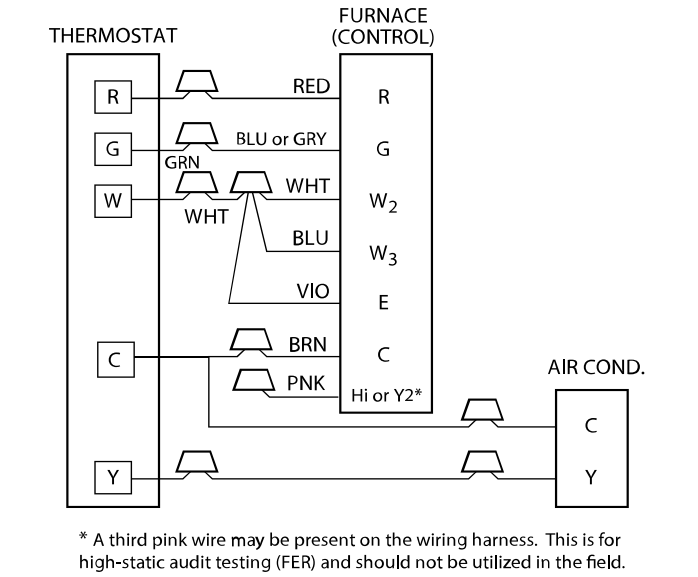


Fig. 6 – Wiring Layout - Air Conditioning Unit (Cooling and 1-Stage Heat)

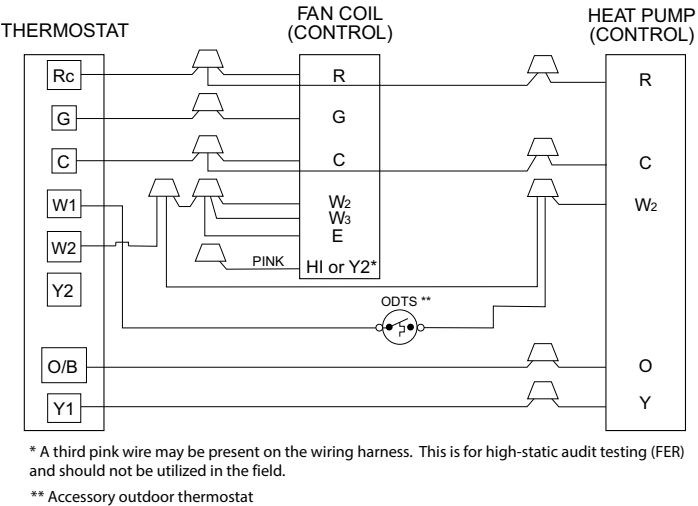


Fig. 7 – Wiring Layout - Heat Pump Unit (Cooling and Heat)

**Table 5 – 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     |
| <b>FEV 024</b>               | 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   |
| <b>FEV 036<br/>10KW</b>      | 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 |
| <b>FEV 036<br/>12 / 15KW</b> | 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   |
| <b>FEV 048</b>               | 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   |
| <b>FEV 060</b>               | 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.