

INSTALLATION INSTRUCTIONS

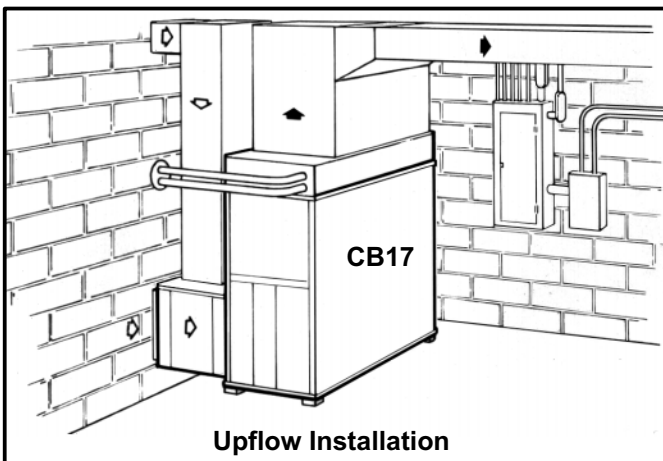
Litho U.S.A.
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General Information

These instructions are for CB17-185, CBH17-185, CB17-275, and CBH17-275. These instructions are intended as a general guide and do not supersede national or local codes in any way. Consult authorities who have jurisdiction before installation.

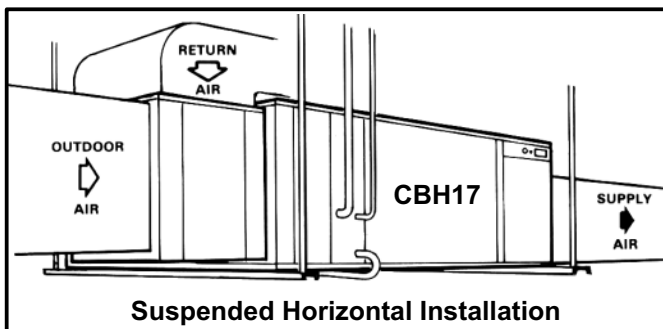
CB17 & CBH17 Series Units

CB17 blower coil units are designed for indoor vertical applications only. CBH17 blower coil units are designed for indoor horizontal applications only. Figure 1 shows a typical CB17 installation. Figure 2 shows a typical CBH17 installation.



Upflow Installation

Figure 1



Suspended Horizontal Installation

Figure 2

▲ IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs and HCFCs) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for noncompliance.

INSTALLATION INSTRUCTIONS

CB17 & CBH17 Series Units

BLOWER COIL UNITS
504,438M
11/2001
Supersedes 502,512M

TP Technical
Publications
Litho USA

Table of Contents

| | |
|-----------------------------------|---|
| General Information | 1 |
| CB17 & CBH17 Series Units | 1 |
| Shipping & Packing List | 1 |
| Blower Motor Drive Kit Selection | 1 |
| Installation | 2 |
| Refrigerant Piping Connections | 2 |
| Wiring | 3 |
| Condensate Drain Connection | 4 |
| Duct Connections | 4 |
| Determining the Unit's Air Volume | 4 |

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

Shipping & Packing List

Blower Coil Unit

Package 1 of 2 contains the following:

- 1 - Assembled blower coil unit
- 1 - Plastic bag -
 - 1 - Condensate drain plug
 - 1 - Blower drive belt
 - 6 - Plastic grommets

Blower Motor Drive Kit

Package 2 of 2 contains the following:

- 1 - Blower motor pulley
- 1 - Blower motor
- 1 - Plastic bag containing blower motor bolts and washers

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

Blower Motor Drive Kit Selection

The blower motor drive kits listed on the unit nameplate and in table 1 are available for use with the CB17 and CBH17 units.



Table 1
Blower Motor Drive Kits

| Model Number | Nominal Motor Horsepower (kW) | Maximum Usable Horsepower (kW) | RPM Range of All Available Drive Setups @ 1725 RPM Motor Speed |
|----------------------|-------------------------------|--------------------------------|--|
| DKB17-185 /275-2-10 | 2.0 (1.5) | 2.30 (1.7) | 520-660 |
| *DKB17-18 5/275-2-11 | 2.0 (1.5) | 2.30 (1.7) | 520-660 |
| DKB17-185 /275-3-12 | 3.0 (2.2) | 3.45 (2.6) | 600-750 |
| *DKB17-18 5/275-3-13 | 3.0 (2.2) | 3.45 (2.6) | 600-750 |
| DKB17-185 /275-5-14 | 5.0 (3.7) | 5.75 (4.3) | 690-830 |
| *DKB17-18 5/275-5-15 | 5.0 (3.7) | 5.75 (4.3) | 690-830 |

*Not available for U.L. listed units

** RPM (revolutions per minute)

Installation

- 1 - Remove the blower access panel.
- 2 - Use the provided bolts and washers to install the blower motor on the motor mounting plate. Refer to figure 3.
- 3 - Make wiring connections per the wiring section and figure 4.

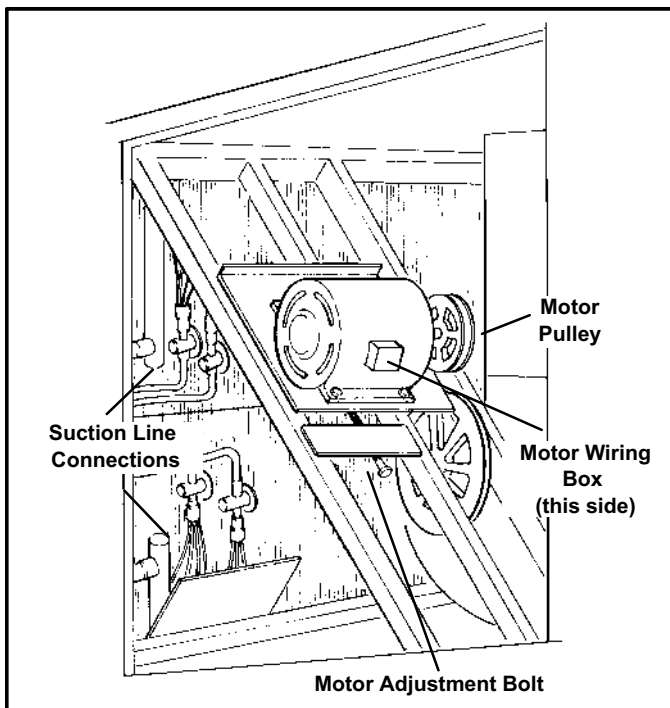


Figure 3

- 4 - Install the blower motor pulley and belt.
- 5 - Adjust the motor mounting plate for proper belt tension. Ideal tension is the lowest tension at which the belt will not slip under peak load conditions. Overtightening the belt will shorten the life of the belt and bearings.
- 6 - Tighten the motor mounting plate bolts and recheck the belt for proper tension.

Refrigerant Piping Connections

The coil is divided into two sections. Each section has its own suction line connection and expansion valve or valves. This configuration allows the use of a solenoid valve to control the flow of refrigerant into one coil section. Use this feature for capacity reduction or latent heat control. If a solenoid valve is used, install it directly ahead of the expansion valve of the coil section being controlled. Size the solenoid valve for approximately 50 percent of the total evaporator unit capacity.

Connect the refrigerant piping from the bottom coil section to the first-stage condensing unit.

The expansion valves are sized specifically for the two stages. The CB17/CBH17-185 has a 7-1/2-ton first- and second-stage expansion valve. The CB17/CBH17-275 has two 5-ton first- and second-stage expansion valves.

Because of the two-section coil configuration, take care in piping the system. Refer to the condensing unit installation instructions to properly type and size the refrigerant lines for these coils.

NOTE - CB17 and CBH17 series evaporator coils have a holding charge of nitrogen or dry air. If there is no pressure when the rubber plugs are removed, check the coil or line set for leaks before installing. After installation, pull a vacuum on the line set before releasing the unit charge into the system.

- 1 - Route piping through either side of the unit.
- 2 - Remove the knockouts from the piping mullion. Install the rubber grommets into the piping holes.
- 3 - Remove the plugs from the suction line and from the two liquid line stubs.
- 4 - Note the location of the factory-installed expansion valve bulbs. Remove the expansion valve bulbs from the manifold so that the heat of the torch will not damage them during brazing.
- 5 - After connecting the refrigerant piping to the coil suction and liquid line stubs, replace the expansion valve bulbs. Ensure that each bulb is tightly clamped to the suction manifold.

NOTE - The expansion valve bulbs must be reinstalled in their original factory location.

- 6 - Insulate the suction line with a tubular slip-on insulation

Wiring

NOTE - Complete all refrigerant piping connections before installing the blower contactor kit.

Electrical connections must comply with local codes. Refer to figure 4 for blower coil field wiring only. Electrical conduit knockouts are provided in the piping mullion.

- 1 - Remove the knockout.
- 2 - Install the plastic bushing.
- 3 - Position the box over the plastic bushing and secure the blower contactor kit (LB-51207CB). Refer to figure 4 for field wiring.

- 4 - Secure the strain relief bushing to the blower motor wiring box.
- 5 - Insert the adapter bushing into the 7/8 inch (22 mm) hole in the motor wiring box.
- 6 - Secure the strain relief bushing at the motor wiring box.
- 7 - Route the blower motor leads away from sharp edges. Motor leads may need to be trimmed.

NOTE - If an electric heat section has been installed in the unit, the blower contactor kit is not required. The cabinet is equipped with knockouts for the wiring from the blower motor to the electric heat system.

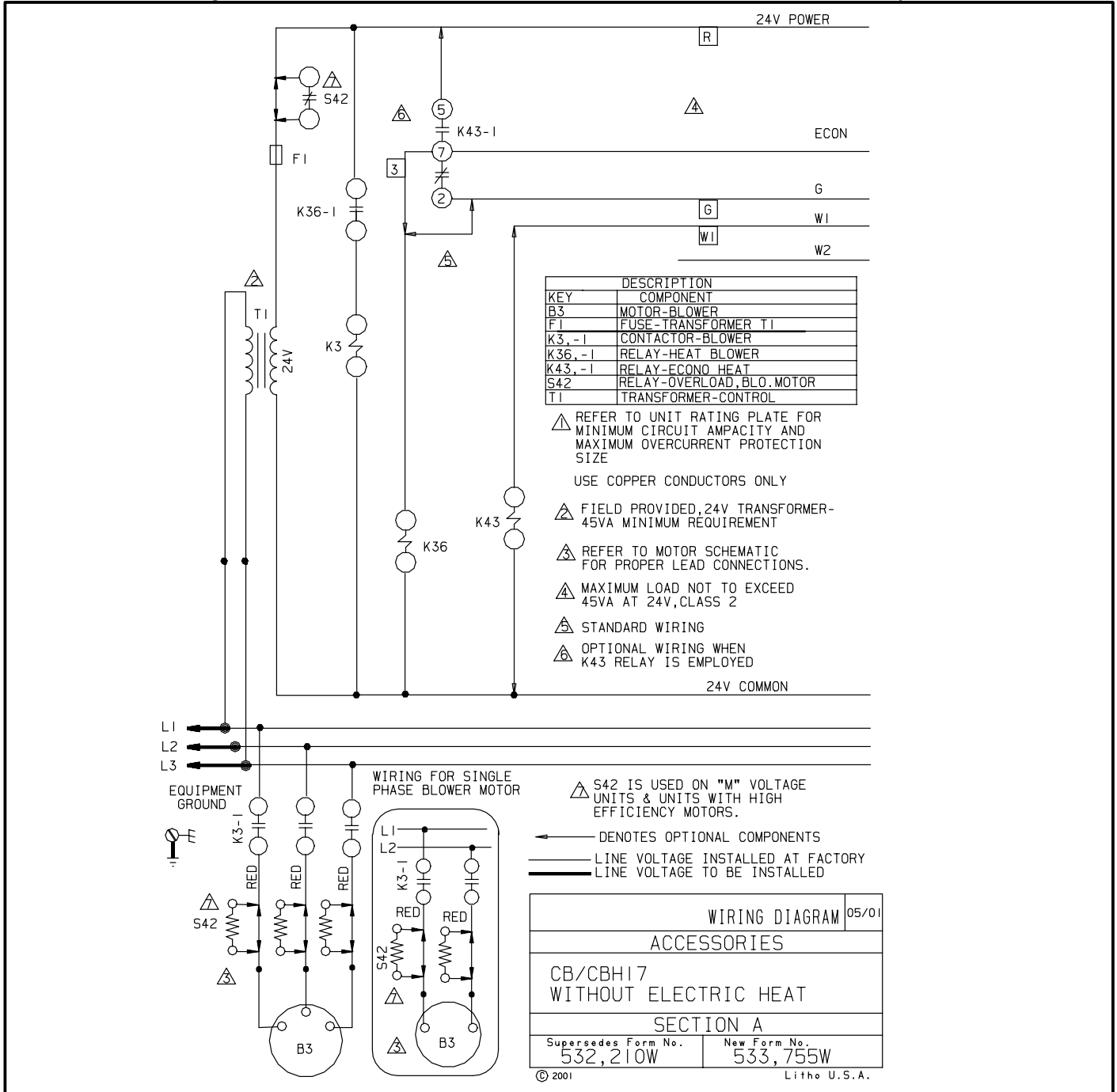


Figure 4

Condensate Drain Connection

The unit is equipped with a condensate drain outlet on each side.

- 1 - Install the provided drain plug in the condensate outlet that will not be used.
- 2 - Install condensate piping using properly sized field-provided fittings.
- 3 - Install a trap in the drain line where the drain exits the unit.
- 4 - Pitch the drain line downward to the open drain or sump.

NOTE - Never connect the condensate drain to a closed system.

- 5 - Use plugged tees where possible to facilitate cleaning the drain lines.

Duct Connections

If a return air plenum is not used, installation codes may limit installation to single-story structures only.

Do not install the supply air plenum within 18 inches (457 mm) of the blower access panel.

NOTE - Use flexible duct to eliminate vibration.

Determining the Unit's Air Volume

NOTE - The indoor coil must be dry and the air filters must be in place when the following measurements are taken.

- 1 - Run the blower without a cooling demand.
- 2 - Measure the static pressure external to the unit.
- 3 - Measure the indoor blower motor's rpm.
- 4 - Refer to tables 2 and 3. Use the static pressure and rev/min* readings to determine the unit's air volume.
- 5 - Adjust the unit's air volume at the blower motor pulley. Loosen the Allen screw. Turn the adjustable sheave clockwise to increase the air volume or counterclockwise to decrease the air volume. See figure 3.

**Table 2
CB17-185V and CBH17-185V Blower Performance**

| Air Volume cfm (L/s) | Static Pressure External to the Unit — Inches Water Gauge (Pa) | | | | | | | | | | | | | | | | | |
|-------------------------|--|------|-----|------|-----|------|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | .35 | | .45 | | .55 | | .65 | | .75 | | .85 | | .95 | | 1.05 | | 1.15 | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 5000 | 630 | 1.50 | 640 | 1.55 | 660 | 1.65 | 685 | 1.75 | 720 | 1.90 | 750 | 2.05 | 785 | 2.15 | 820 | 2.30 | 855 | 2.55 |
| 5500 | 635 | 1.65 | 650 | 1.70 | 680 | 1.85 | 710 | 2.05 | 740 | 2.20 | 775 | 2.35 | 805 | 2.45 | 845 | 2.70 | 780 | 2.80 |
| 6000 | 640 | 1.90 | 675 | 2.10 | 705 | 2.20 | 730 | 2.35 | 760 | 2.50 | 790 | 2.60 | 830 | 2.80 | 855 | 3.00 | ----- | ----- |
| *6500 | 670 | 2.25 | 700 | 2.35 | 725 | 2.50 | 750 | 2.65 | 780 | 2.75 | 820 | 3.00 | 850 | 3.20 | ----- | ----- | ----- | ----- |
| 7000 | 690 | 2.55 | 720 | 2.65 | 745 | 2.85 | 775 | 3.00 | 810 | 3.20 | 840 | 3.35 | ----- | ----- | ----- | ----- | ----- | ----- |
| 7500 | 720 | 2.90 | 740 | 3.05 | 775 | 3.25 | 800 | 3.40 | 835 | 3.55 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 8000 | 740 | 3.30 | 775 | 3.50 | 800 | 3.65 | 835 | 3.85 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

NOTE - All data is measured external to the unit with air filters in place.

*6500 cfm minimum with electric heat

**Table 3
CB17-275V and CBH17-275V Blower Performance**

| Air Volume cfm (L/s) | Static Pressure External to the Unit — Inches Water Gauge (Pa) | | | | | | | | | | | | | | | |
|-------------------------|--|------|-----|------|-----|------|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | .40 | | .50 | | .60 | | .70 | | .80 | | .90 | | 1.0 | | 1.1 | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 6500 | 635 | 2.00 | 670 | 2.25 | 690 | 2.30 | 720 | 2.45 | 740 | 2.50 | 765 | 2.70 | 795 | 2.85 | 815 | 3.05 |
| *7000 | 650 | 2.30 | 680 | 2.45 | 705 | 2.55 | 730 | 2.70 | 755 | 2.80 | 780 | 2.85 | 810 | 3.20 | 825 | 3.35 |
| 7500 | 665 | 2.55 | 685 | 2.65 | 720 | 2.80 | 740 | 2.90 | 770 | 3.15 | 800 | 3.35 | 820 | 3.55 | 835 | 3.70 |
| 8000 | 675 | 2.80 | 705 | 2.95 | 730 | 2.05 | 760 | 3.35 | 785 | 3.40 | 815 | 3.70 | 830 | 3.85 | 850 | 4.00 |
| 8500 | 690 | 3.10 | 720 | 3.20 | 745 | 3.35 | 775 | 3.60 | 805 | 3.80 | 825 | 4.00 | 850 | 4.35 | ----- | ----- |
| 9000 | 710 | 3.40 | 735 | 3.55 | 760 | 3.75 | 795 | 4.00 | 820 | 4.20 | 850 | 4.55 | 860 | 4.65 | ----- | ----- |
| 9500 | 730 | 3.75 | 755 | 3.90 | 785 | 4.15 | 815 | 4.40 | 840 | 4.65 | 860 | 4.85 | ----- | ----- | ----- | ----- |
| 10,000 | 750 | 4.10 | 775 | 4.35 | 805 | 4.55 | 835 | 4.85 | 860 | 5.15 | ----- | ----- | ----- | ----- | ----- | ----- |
| 10,500 | 775 | 4.60 | 800 | 4.75 | 830 | 5.05 | 860 | 5.40 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

NOTE - All data is measured external to the unit with air filters in place.

*7000 cfm minimum with electric heat