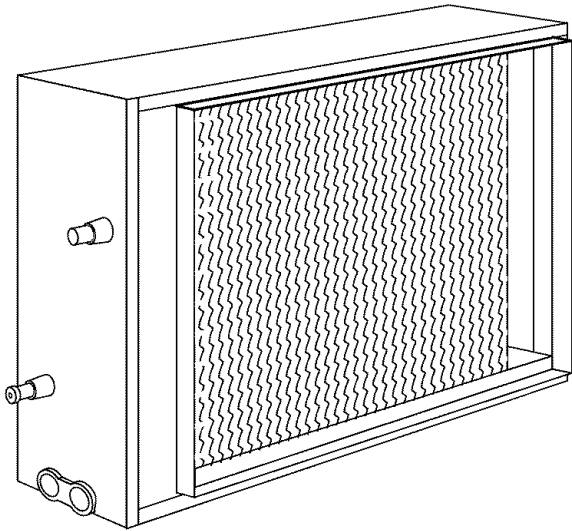




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Dallas, Texas, USA



**RETAIN THESE INSTRUCTIONS
FOR FUTURE USE**

CH23 Series Coils

The Lennox CH23 series horizontal coils are designed for installation with a horizontal furnace and a matched remote outdoor unit. These units are for indoor installation only. Refer to the Lennox engineering handbook for match-up information.

General

These instructions are intended as a general guide and do not supersede local or national codes in any way. Authorities having jurisdiction should be consulted before installation.

Check contents for shipping damage. If any damage is found, contact the last carrier immediately.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

INSTALLATION INSTRUCTIONS

CH23 Series Coils

HORIZONTAL EVAPORATOR COILS
503.486M
04/08
Supersedes 03/00



Table of Contents

Litho U.S.A.

CH23 Series Coil	1
General	1
CH23 Coil Dimensions	2
Shipping & Packing List	2
Installation	2
CH23 Refrigeration Systems	3
Refrigerant Line Connections	3
Condensate Drain Connections	4
Evaporator Coil Air Pressure Drop	4
Clean-Up	5

⚠ IMPORTANT

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

⚠ WARNING

Product contains fiberglass wool.

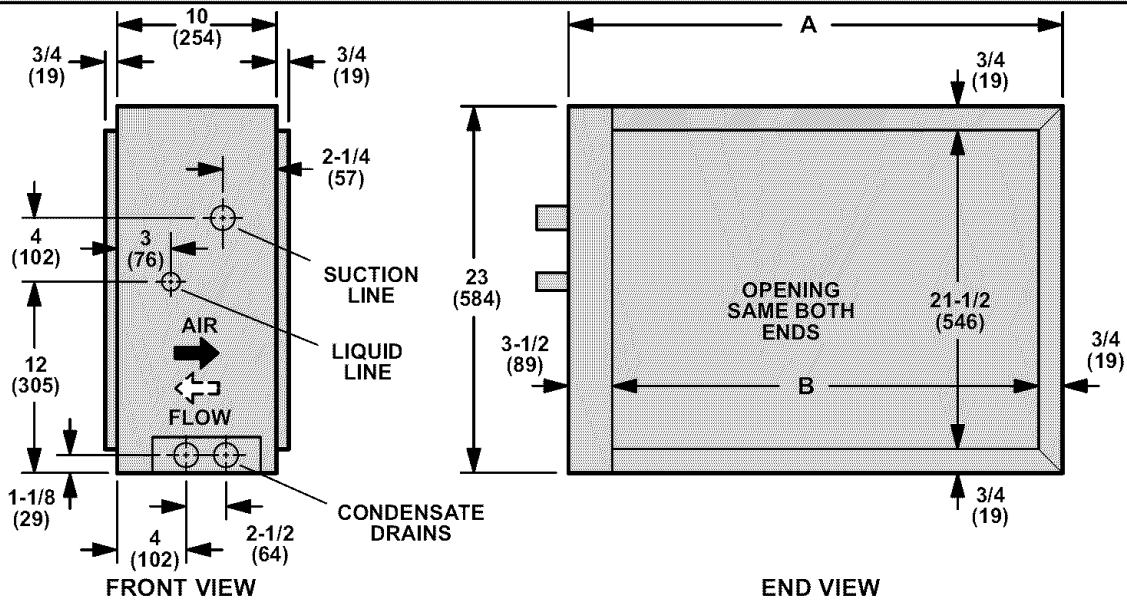
Disturbing the insulation in this product during installation, maintenance, or repair will expose you to fiberglass wool dust. Breathing this may cause lung cancer. (Fiberglass wool is known to the State of California to cause cancer.)

Fiberglass wool may also cause respiratory, skin, and eye irritation.

To reduce exposure to this substance or for further information, consult material safety data sheets available from address shown below, or contact your supervisor.

**Lennox Industries Inc.
P.O. Box 799900
Dallas, TX 75379-9900**

CH23 Coil Dimensions



Model No.	A		B	
	in.	mm	in.	mm
CH23-21	27	686	22-3/4	578
CH23-31	31	787	26-3/4	679
CH23-41	31	787	26-3/4	679
CH23-51	35	889	30-3/4	781
CH23-65	41	1041	36-3/4	933
CH23-68	47	1194	42-3/4	1086

Shipping & Packing List

Package 1 of 1 contains the following:

- 1- Coil cabinet assembly
- 1- Bag assembly containing the following:
 - 1-Suction line elbow with equalizer port
 - 1-90° liquid line stub
 - 1-O-ring
 - 1-Heat shield
 - 1-3/8 inch x 5/16 inch reducer coupling (-21, -31 only)
 - 1-7/8 inch x 5/8 inch reducer bushing (-21, -31 only)
 - 1-7/8 inch x 3/4 inch reducer bushing (-41 only)

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

Installation

NOTE - To remove the coil from its casing after installation, remove the two shipping screws from the coil flange. See figure 1.

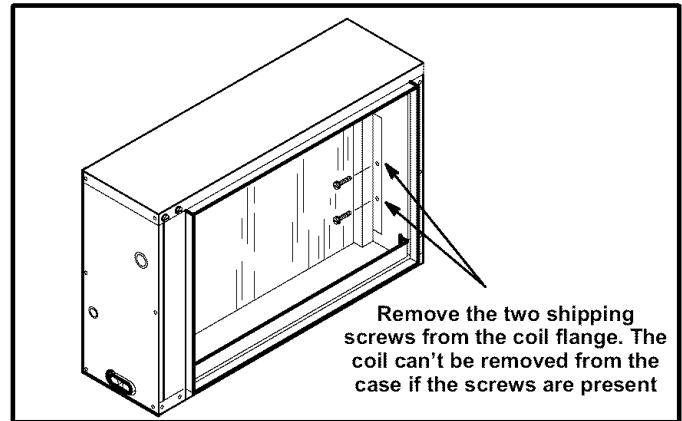


FIGURE 1

- 1- CH23 cabinet must be installed for horizontal air flow.
NOTE - Coils are designed for air flow from either direction.
- 2- Use field-fabricated transitions or adaptors (recommended 18 inches min. width) to connect CH23 and blower unit.
- 3- Connect supply and return duct work.

CH23 Refrigerant Systems

CH23 coils are factory equipped with a fitting that may incorporate either an RFCIV metering device (orifice or bullet) or an expansion valve.

A 90° liquid line stub and an o-ring (provided in the bag assembly) are used with the seal nut to accommodate installation of either refrigerant metering device.

Also shipped with the coil is a 90° suction line elbow with a 1/4 inch port to facilitate the use of an expansion valve. The size of the suction line elbow allows the suction line piping to be routed as desired and allows room to install the TXV bulb close to the port before insulating.

For RFC applications, use the orifice shipped with the condensing unit to ensure proper match-up.

For TXV applications, refer to the engineering handbook heat pump or condensing unit data for appropriate expansion valve part number.

Refrigerant Line Connections

Liquid line connections on CH23 units are 3/8 inch sweat connections. Suction line connections on CH23 units are 7/8 inch sweat connections. Apply line sets and refrigerant control devices to correspond with matching remote condensing unit.

NOTE - CH23 evaporators use nitrogen or dry air as a holding charge. If there is no pressure when you remove the rubber plugs (step 2), check the coil or line set for leaks before installing. After installation, pull a vacuum on the line set and coil before releasing the outdoor unit charge into the system.

RFC Applications

- 1- Remove plastic cap from distributor's orifice body.
- 2- Install one of the o-rings supplied to the distributor orifice body. See figure 2.
- 3- Install the refrigerant metering device (bullet) shipped with the condensing unit into the distributor orifice body and the liquid line seal nut section.

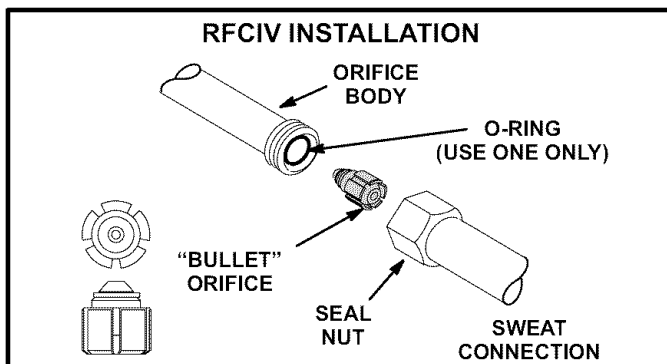


FIGURE 2

- 4- Place heat shield against the piping plate and around the suction line connection. Heat shield must be in place to guard against damage to the paint.
- 5- With heat shield in place, sweat in suction line. Suction line elbow service port has no core. Secure cap to port to prevent leakage. After procedure is completed, remove heat shield.
- 6- Refer to instructions provided with condensing unit for leak testing, evacuating and charging procedures.

TXV Applications

- 1 - Loosen the liquid line seal nut at the point that the liquid line exits the coil.
- 2 - Remove and discard the rubber grommet and metal slug from the inside of the seal nut.
- 3 - Slide the liquid line stub (provided in the bag assembly) through the seal nut.
- 4 - Braze the liquid line to the liquid line stub/seal nut assembly.
- 5 - Apply a small amount of refrigerant oil to the O-ring (provided in the bag assembly) and install it on the liquid line orifice housing. Insert the stubbed end of the expansion valve into the liquid line orifice housing and tighten the expansion valve seal nut. See figure 3.
- 6 - Apply a small amount of refrigerant on the provided Teflon washer provided with the expansion valve kit. Install the washer on the threaded side of the expansion valve. Tighten the liquid line seal nut on the threads of the expansion valve. See figure 3.
- 7 - Place the provided heat shield over the piping plate and around the suction line connection.
- 8 - With the heat shield in place, sweat in suction-line elbow (provided) and the suction line.
- 9 - Attach the expansion valve sensing bulb on a horizontal section of the suction line in the 2, 4, 8, or 10 o'clock position. **The position of the sensing bulb is critical to ensure that the systems performs properly.** Refer to figure 4.

NOTE - Do not position the sensing bulb at the bottom of the suction line. The refrigerant/oil mixture will not allow a true temperature reading to be transferred to the sensing bulb.

- 10 - Refer to the instructions that are provided with the condensing unit for leak testing, evacuating, and charging procedures.

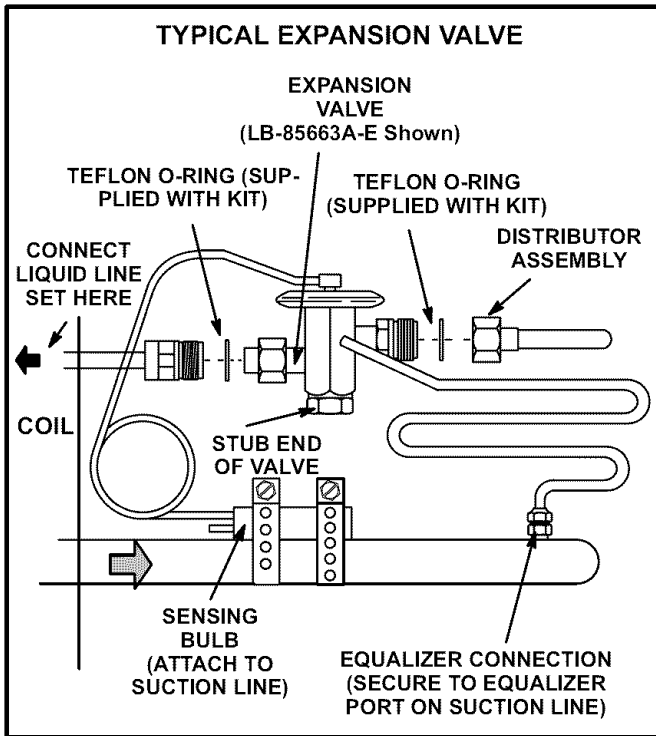


FIGURE 3

NOTE - After you have installed the valve, insulate the complete valve to prevent sweating.

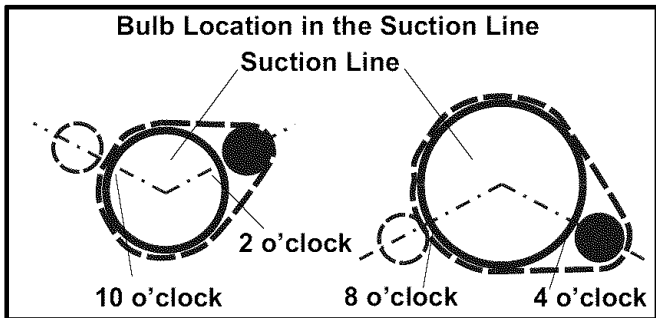


FIGURE 4

Condensate Drain Connections

CH23 coil has both main and auxiliary drains. Auxiliary drain removes condensation should main drain become plugged. Refer to figure 5 for auxiliary and main drain locations.

NOTE - It is recommended a trap be provided in the main drain line. If a vent tee is required in the line, the trap should be between the unit outlet and the vent tee.

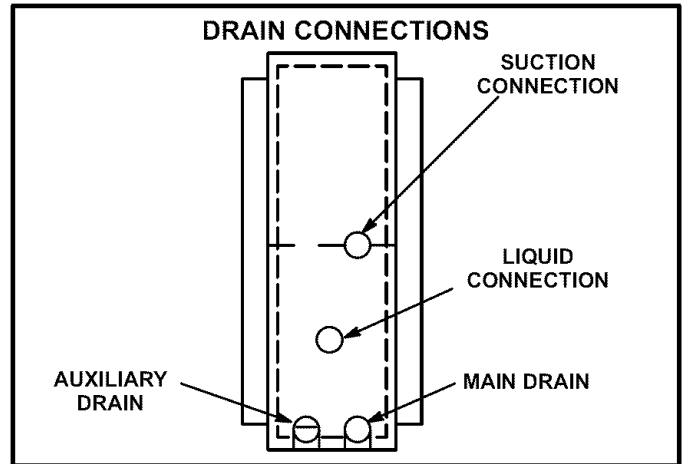


FIGURE 5

Make drain connections from 3/4 inch pipe nipples using condensate lines of the same size. Pitch main drain down to an open drain or sump. Connect auxiliary drain to an exposed drain which can be readily noticed by owner.

- 1- Drain piping should not be smaller than drain connections at drain pan.
- 2- Install trap in condensate line. Trap must be deep enough to offset difference in static pressure between drain pan and atmosphere. Generally 2 inches (51 mm) is satisfactory for medium static applications. Refer to figure 6.

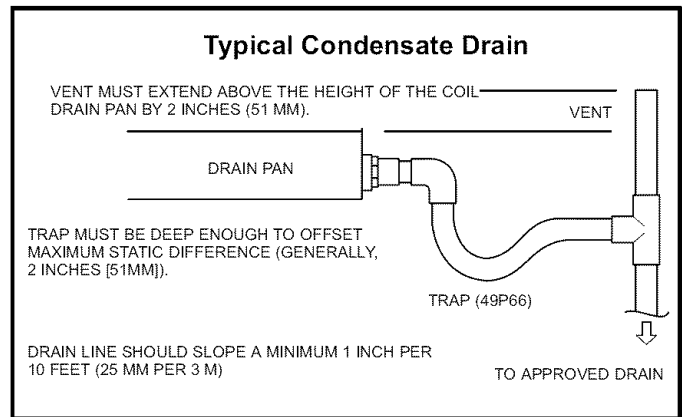


FIGURE 6

- 3- Horizontal runs must be pitched down 1 inch per 10 feet (25 mm per 3 m) of drain line for proper condensate flow.
- 4- An open vent in the drain line may be required due to line length friction and static pressure.

- 5- Drains should be constructed in a manner that will facilitate future cleaning.
- 6- Auxiliary drain should run to an area where homeowner will notice it draining. The auxiliary drain line does not require venting or a trap. Refer to local codes.

Evaporator Coil Air Pressure Drop

- 1- Drill test holes in supply duct to read pressure drop across CH23 coil. See figure 7.

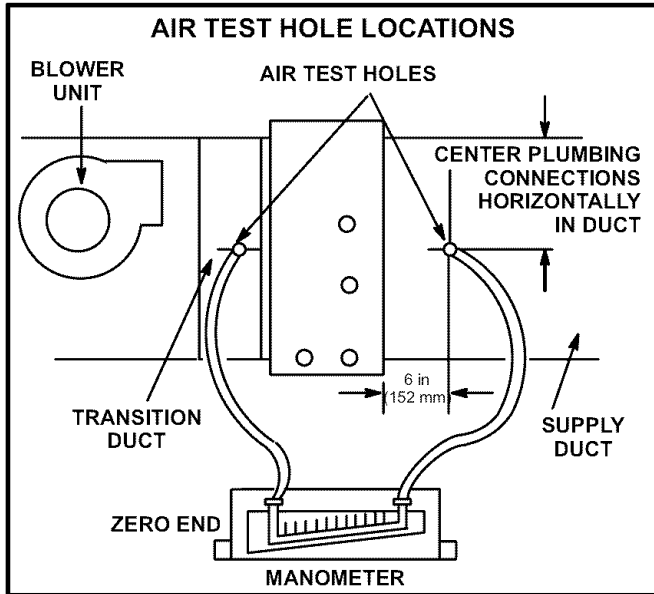


FIGURE 7

- 2- Connect draft gauge with zero end of scale at air entering side of coil. Insert 1/4 inch (6 mm) of test holes inside cabinet. Seal around test hose with permagum.
- 3- Table 1 lists a range of air volumes and equivalent draft gauge readings, as well as maximum operating CFM. Observe draft gauge readings with blower access panel in place and blower operating. If reading is low, close adjustable pulley or wire direct drive blower to higher speed. If reading is high, open adjustable pulley or wire to a lower blower speed. Close blower access panel each time to eliminate false readings.

Clean-Up

- 1- Insulate refrigerant connections at CH23 coil system suction line. Use a wrap-around insulation.
- 2- Set room thermostat at desired setting.
- 3- Pick up all shipping cartons, metal scraps, extra insulation and clean up the installation area.

TABLE 1
DRAFT GAUGE READING (DRY EVAPORATOR)
400 CFM/190 L/S PER TON

Model No.	Air Volume		Total Resistance	
	cfm	L/s	in. w.g.	Pa
CH23-21	600	285	.05	12
	800	380	.07	17
CH23-31	1000	470	.04	10
CH23-41	1200	565	.09	22
CH23-51	1600	755	.17	42
CH23-65 CH23-68	1800	850	.20	50
	2000	945	.24	60
	2200	1040	.28	70
	2400	1135	.32	80