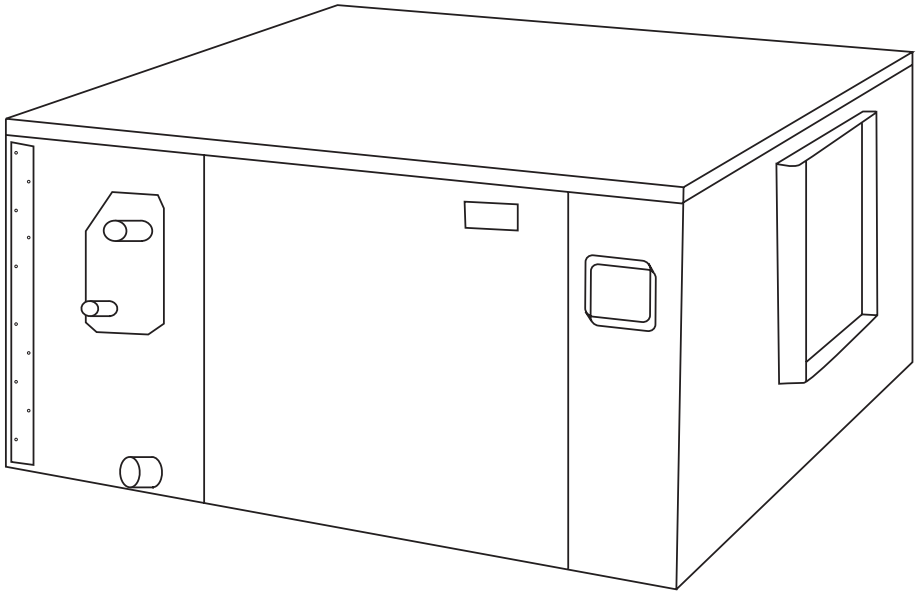
Light Commercial Air Handler

Installation Instructions

90/120 CHX Series



GENERAL

The manufacturer assumes no responsibility for equipment installed in violation of any code requirement.

These instructions give information relative to the installation of these air handlers only. For other related equipment refer to the proper instructions.

Material in this shipment has been inspected at the factory and released to the transportation agency in good condition. When received, a visual inspection of all cartons should be made immediately. Any evidence of rough handling or apparent damage should be noted on the delivery receipt and the material inspected in the presence of the carrier's representative. If damage is found, a claim should be filed against the carrier immediately.

INSTALLATION

The installer must adhere strictly to all local and national code requirements pertaining to the installation of this equipment.

CHX units are designed for installation in a horizontal position with discharge air in a horizontal direction. Unit models need to be leveled in such a way that there is slope toward the condensate drain nipple.

Standard unit configuration is to the right, in the direction of airflow. The unit can be field converted to left facing by repositioning the coil and remounting the motor and pulleys.

NOTE: Motor rotation must be reversed for left facing configuration. See motor nameplate for details.

MOUNTING

Sufficient clearance must be provided on the side of the unit to allow access to electrical controls and to service the motor assembly.

CHX air handlers are intended to be mounted with a support angle or channel located under the unit. There are 7/8" knockouts located at all four corners top and bottom which permits field supplied hanging rods to extend through the unit to secure to the field supplied angle or channel. (See Figure 1)

NOTE: Before mounting unit remove red headed shipping bolts and metal bushing at blower base and blower outlet.

AIR DISTRIBUTION DUCTS

All duct work must be installed in accordance with National Fire Protection Association Codes 90A and 90B. The return air duct must have the same free area as the opening provided on the blower coil unit.

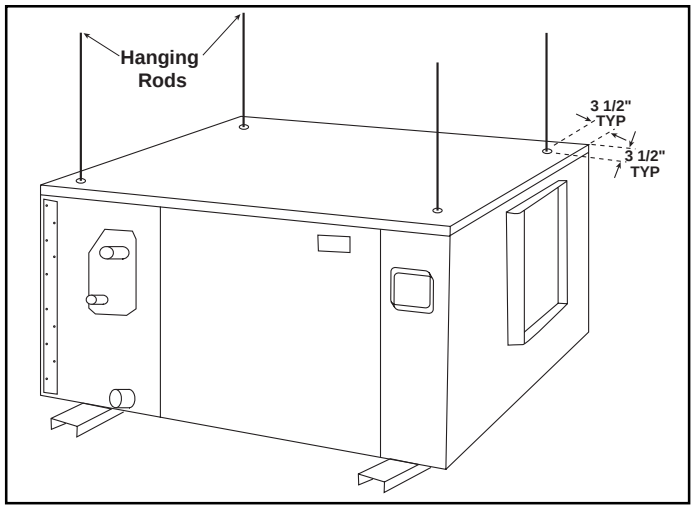


Figure 1.

PIPING

These air handlers are supplied with a direct expansion refrigerant coil and have thermostatic expansion valves standard. The 120 air handlers have dual circuit coils. Refer to the installation instructions supplied with the outdoor unit for more piping details.

The suction and liquid lines must be sized in accordance with the condensing unit manufacturer's recommendations and require sweat connections at the air handler unit.

Condensate drain lines must be installed with adequate slope away from the unit to assure positive drainage. Since the drain pan is located on the suction side of the blower, a negative pressure exists at the drain pan and a minimum trap of 2 inches must be provided in the drain line to assure proper drainage.

MOTOR DRIVE KIT INSTALLATION

Motor Wiring - All wiring must comply with local and national code requirements. Drive kits are provided with wiring diagrams and nameplate data to provide information required for necessary field wiring.

NOTE: Wiring diagram is to be applied to sheet metal plate provided near bottom inside of blower access panel. Electrical rating nameplate is to be applied to front side of blower access panel.

Locate wire harness shipped with motor drive kit and double check that the wire gauge provided is correct for the load of the motor. Install the wire harness to the motor, following the wiring instructions on the motor nameplate. Make certain that the wiring harness is secured to the motor with strain relief protection.

Motor Mounting - Locate motor mounting plate and install securely on motor/blower tracks within the air handler. The mounting bolts are shipped already installed on the tracks. Install the motor onto the motor mount using the proper bolt tracks. There are four 5/16" - 18 x 3/4" bolts and nuts supplied with the kit.

Motor Pulley Installation - The motor pulley is a variable pitch style pulley that is to be installed on the motor. Install the pulley onto the motor shaft with the setscrew closest to the motor housing. Be careful not to engage the pulley so far onto the shaft that the key and setscrew are on the radius of the keyway. Tighten the setscrew on the pulley securely.

Pulley Alignment and Belt Tension - Install drive belt(s) onto pulleys and check for proper belt and pulley alignment. If realignment is necessary, loosen either the motor pulley or blower pulley and complete proper alignment. Belt tension is adjusted by means of the tailpiece adjusting bolt or the position of the motor on the base style motor mount. A deflection of about 3/4" to 1" per foot of span should be obtained by pressing on the belt firmly (See Figure 2). The motor mount bolts should be tightened securely after the adjustment is made.

Wire Harness Routing - The wiring harness should be routed away from the pulley/belt area. Run the harness through the metal hose clamp on the blower housing over to the 4" x 4" electrical box provided on the outside of the cabinet.

⚠ WARNING!

Disconnect electrical power and allow all rotating equipment to stop before servicing the unit. Failure to do so may result in personal injury or death from electrical shock or entanglement in moving parts.

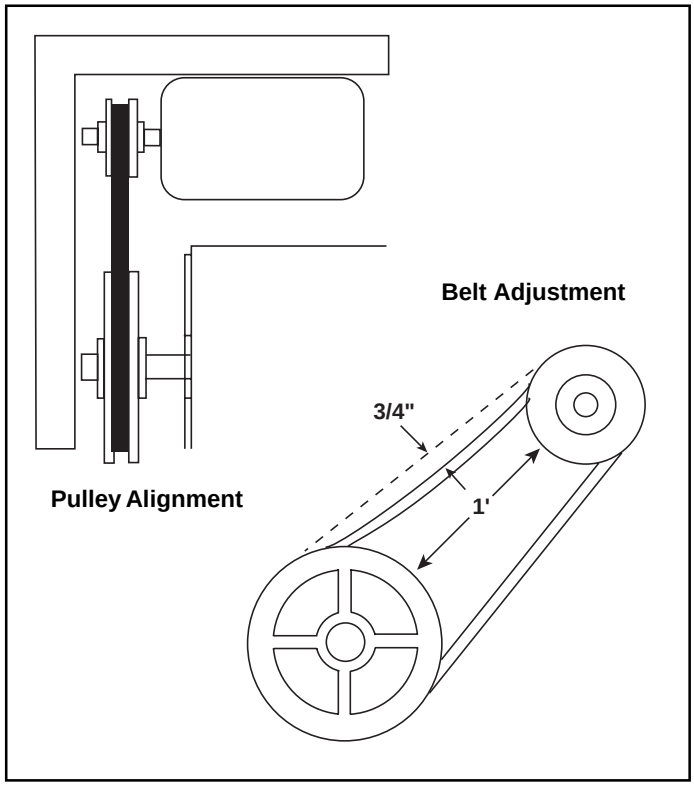


Figure 2. Belt and Pulley Adjustment

BLOWER SPEED ADJUSTMENT

Adjustment of blower speed is made by loosening the set screw in the outer (moveable) pulley face and turning this face half or full turns only so that the adjusting set screw will be positioned precisely over the flat on the pulley hub. Speed is reduced by adjusting the pulley faces so that they are further apart; speed is increased with faces closer together. Check all of the pulley setscrews for tightness.

START-UP

Prior to start-up, complete the following inspection:

- Check that the unit is mounted securely.
- Check that the unit is level and that proper condensate drainage will occur.
- Check all ductwork connections.
- Check coil connections for leaks and condensate line for proper slope and trap.
- Inspect all electrical connections. Ensure that all filters and unit panels are in place.

MAINTENANCE

The following is provided as a recommended maintenance schedule. Specific instructions for maintenance procedures are given after the check list.

MONTHLY CHECK LIST

Inspect the unit air filters. Clean or replace as required.

Inspect the drain pan to be sure it is clean to permit the flow of condensate through the drain lines.

Inspect the fan belt for wear and alignment. Replace or adjust as required.

YEARLY CHECK LIST

Clean and oil the blower motor. Inspect the blower coil unit casing for corrosion and loose fasteners. Inspect the blower wheel and housing.

Check the motor pulley and blower pulley for alignment and tighten their set screws. Adjust belt tension if necessary.

Inspect all coil connections for leaks. Inspect the coil fins for excessive dirt or damage. Clean or repair if required.

FILTERS

To clean permanent filters, remove the filter and wash in water to remove the old filter oil. Rinse in clean, hot water and allow drying. Re-coat both sides of the filter with RP filter coat, or an equivalent. Allow to drain and dry thoroughly before reinstalling the filter.

DRAINPAN

The drainpan and the drain lines should be cleaned to allow condensate flow. Remove any accumulation of residue from the drainpan and inspect for rust and leaks.

PULLEY ALIGNMENT AND BELT TENSION

Belt tension and pulley alignment should be checked. Belt tension is adjusted by the position of the motor on the motor mount. A deflection of about 3/4" to 1' per foot of span should be obtained by pressing the belt firmly.

Alignment of pulley grooves is made by moving the pulley on the motor or blower shaft. For blower speed adjustment refer to that section.

BLOWER SPEED ADJUSTMENT

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MOTOR

Bearing oilers are provided on the blower motor. Use electric motor oil or a good grade of SAE 20 non-detergent oil annually. Normally a few drops of oil in each bearing is sufficient.

BLOWER

Inspect the bearings for wear. They are ball bearing, self-aligning and grease packed. Replace if required. Inspect the thrust collars for end play and alignment of wheel. Check the blades for accumulations of dirt and clean as required. Check mounting brackets, base bolts and isolation material.

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