



Superior Performance Fan Coil Installation, Operating & Maintenance

RECEIVING: Upon delivery, examine each unit carefully for shipping damage. A damaged unit should be reported to the freight carrier and a claim filed with them. All units are shipped F.O.B. factory; therefore, Airtherm is not responsible for damage during transit.

It is the responsibility of the installing contractor to inspect and verify that the unit shipped was in fact the correct model number, voltage, etc. Any discrepancies should be resolved prior to actual uncrating and installation. **Airtherm is not responsible for any back charges as a result of an incorrect unit being installed.**

The return of this unit will not be accepted without written authorization from Airtherm. A unit that has received a written Return Goods Authorization will be inspected by Airtherm upon receipt. Any damage, missing parts, rework, or recrating resulting from prior installation will constitute just cause for Airtherm to issue partial credit.

INSTALLATION: This unit must be installed in a manner which will allow the blower panel to be removed in order to clean the coil surface, blower, or motor. When installed in a concealed building space acting as return-air plenum, the installation must conform to the requirements of NFPA Standard 90B. It must be installed level and condensate drain lines must be trapped with proper slope for rapid drainage. Water and drain connections must be made to the unit in accordance with local codes.

NORMAL PIPING PRACTICE: The bottom coil connection, on the leaving-air-side, is the water-supply inlet. All piping must be supported independently from the coil to prevent damage to the soldered joints. Chilled water and condensate drain lines must be insulated for efficient operation and to prevent condensate formation. Pipe insulation must be closed-cell or have a vapor barrier. All joints must be properly sealed against air leaks to the piping. Control valves, shut-off valves, and uninsulated water piping must be installed over the drain pan or utilize an accessory drain pan extension. Condensate lines, one primary and one secondary, must be properly pitched to the building drain. Airtherm will not assume any liability for

damage caused as a result of the condensate drain line not being properly pitched or trapped the use of a secondary drain pan under the entire unit, with a separate drain line, is advised in areas where water damage is very critical.

WARNING: If the unit is installed during the winter months, care must be taken so that the unit is not subject to freezing temperatures while filled with water during construction. Coils damaged due to freezing are not covered by the warranty. Airtherm fan coil units are suitable for zero clearance to combustible material. All air must be bled out of the water system. Any air trapped in the hot- or chilled-water coil can be released from the system by using the manual air vent on the coil. For hot and humid areas: Do not operate during construction or renovation with windows and doors open causing outside air to enter the building. When the outside air enters inside the building, it imposes high cooling and dehumidifying loads on the units.

UNIT PROTECTION: It is the sole responsibility of the customer to provide the necessary protection to prevent vandalism and weather protection of the equipment. Under no circumstance should the fan coil be left unprotected from the elements. Protect the units from dirt, plaster and other debris during the entire construction phase. Prior to start-up, the entire interior of the unit should be inspected for debris and dirt. Clean, if necessary. Any failure of the unit, or damage to the building as a result of improperly protecting and cleaning the unit is not covered by the warranty.

START-UP: After the fan coil and piping have been installed, pressure test for 24 hours with a minimum of 2½ times the working pressure to insure that there are no leaks in the system. This test should be performed prior to hanging or installation of ceilings, floor coverings, drapes, etc. Any damage caused due to leaks is not covered under the warranty.

Wiring: The motor must be properly wired prior to start-up. The Wiring diagrams are provided with each unit and/or are part of the job submittals. The warranty on all motors is void if the motor is burned-out due to incorrect wiring. Wire used for connections to the fan coil must be rated for at



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least 90° degrees centigrade. All wiring connections must be tight. Check the rating of the unit to determine: volts, hertz, horsepower, phase, amps per motor, appropriate switching, maximum circuit fuse amps, and minimum circuit fuse amps. All wiring must be done in accordance with applicable local electrical codes and/or standards.

MAINTENANCE: WARNING – RISK OF ELECTRIC SHOCK. CAN CAUSE INJURY OR DEATH.

Disconnect all remote electric power supplies before servicing. Placing the thermostat in the "OFF" position should not be used for disconnect purposes. **"DO NOT OVER OIL"**

Float Switch: The optional drain pan float switch position is not adjustable. The float switch must be mounted flush with the edge of the drain pan for optimum performance. Any attempt in moving the float switch in any other position can result in unit failure.

Coil: Clean the coil by removing the blower panel and brushing the fins with a stiff brush, taking care not to bend or damage the fin surface. After brushing, the coil should be vacuumed to remove loose dirt. Note that if suitable air filters are used and properly maintained, the coil should not need cleaning.

Filters: Change throwaway filters a minimum of twice a year. Once before the heating season, and once before the cooling season. Periodic checks should be made during the cooling season to insure that excessive dust or lint is not accumulating to the extent of interrupting free air flow. If excessive dirt accumulates, the filter should be changed more frequently. Reusable/Cleanable air filters should be thoroughly cleaned a minimum of twice a year and have the same periodic checks as throwaway filters.

Drain: The drain pan must be inspected before summer operation. All debris in the drain pan should be removed so the condensate will flow out easily. Periodic inspection of the drain pan and condensate piping should be performed during the summer operation to prevent any possibility of in becoming clogged. Airtherm will assume no liability for damage caused as a result of the condensate line becoming plugged.

Motor: *If there are no oil tubes present, the motor is permanently lubricated.* If oil tubes are provided on the motor lubricate every six months with SAE-10 weight, non-detergent oil. Inspect the motor and blower assembly every time the motors are oiled for excessive accumulation of dust and dirt. If necessary, remove the blower and vacuum. If this situation does occur, increase routine filter maintenance.

Caution: This unit must be installed in a manner that allows it to operate according to the nameplate data and comply with all applicable codes. Airtherm will assume no liability for damage to the unit or building due to misapplication, including field installed control devices not furnished or specified by Airtherm.

REPLACEMENT PARTS: When ordering replacement parts, refer to model and serial number located on the blower and motor housing.

Superior Performance Fan Coil Piping Instructions

CHILLED- AND HOT-WATER COILS

Purpose This data is intended to explain piping arrangements for chilled- and hot-water coils to the correct inlet and outlet locations.

Two-Pipe Coils Two-pipe coils have one inlet and outlet. Horizontal fan coils may have one- to six-rows. The coil may be 100% chilled water, 100% hot water, or with the addition of a pipe sensor changeover control, it may use chilled water when the chiller is operating or hot water when the boiler is operating. A two-pipe system allows for the chiller or boiler to operate independently, one at a time. The pipe sensor must be clamped onto the supply water line as close to the incoming water source as possible. The purpose of the pipe sensor is to sense the water temperature in the inlet pipe and detect the water temperature at its' set point of approximately 88°F. The pipe sensor will change the thermostat control from the cooling mode to the heating mode and vice versa.

The inlet is always at the bottom of the coil and the outlet is always at the top of the coil. All coils are piped so that the inlet is always on the row farthest downstream from the incoming air (See diagram 1).

All coils have one or more circuits. Circuits are added to reduce the water pressure drop to an acceptable level (usually 10-ft. H₂O pressure drop or less). Due to the various circuit options available, the inlet, and outlet may change position making the inlet and outlet locations vary.

Four-Pipe Coils

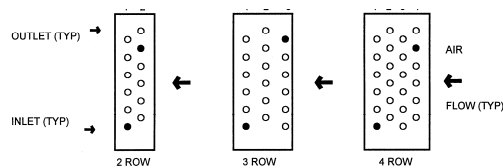
Four-pipe coils have a dedicated, chilled-water coil, and a dedicated hot-water coil; each with its' own inlet and outlet, equaling four pipes. All coils have a common tube sheet for four-pipe coils. Example: A four-row, chilled-water coil and a one-row, hot-water coil would use a five-row coil with four rows for chilled-water and one row for hot-water. Normally the one-row, hot-water coil is in the reheat position or downstream from the cooling coil. The hot-water coil may also be ordered in the preheat position or upstream from the chilled-water coil. The controls are wired so that either the chilled-water coil is operating or the hot-water coil is operating, but not both at the same time. When the conditioned space thermostat is satisfied, both the chilled- and hot-water control valves are deactivated. The same rule applies for inlet and

outlet locations as explained above in "Two-Pipe Coils" (See diagram 2). Each chilled- and hot-water coil is controlled individually so a pipe sensor is not required.

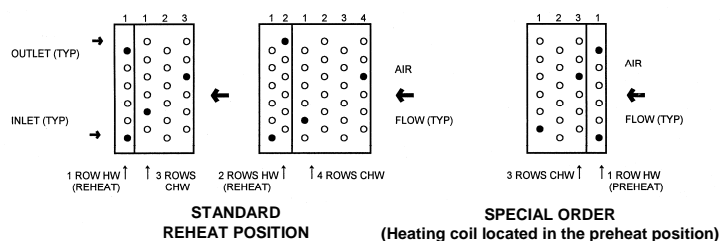
Coil Identification

The following diagrams indicate the number of rows and type of chilled- and hot-water coils. Standard coil has the hot-water coil located in the reheat position.

Two-Pipe Coil Diagrams 1 (Two) Pipe Coils (Right Hand Shown Left-Hand Opposite)



Four-Pipe Coil Diagrams 2 (Four) Pipe Coils (Right Hand Shown Left-Hand Opposite)



Because of the variations of circuiting available, the location of the inlet and outlet connections may vary up and down. However, always use the following rule to be correct. **The inlet is always the lower connection and the farthest away from the entering-air-side. The outlet connection is always the higher connection the closest to the entering-air-side.**