



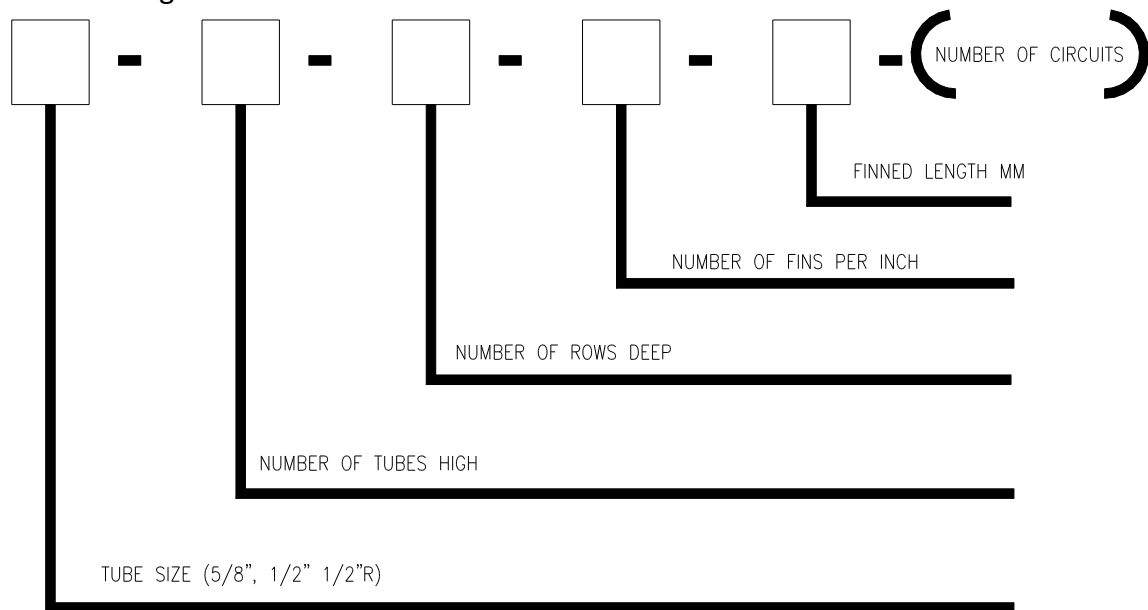
# INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

## DX COOLING COILS

## NOMENCLATURE

To enable us to quickly identify the relevant design details of our coils they have been provided with a code.

The meaning of the code is described below.



The number of tubes high will be the finned height divided by the tube pitch. The tube pitch for 5/8" is 50.8mm and for 1/2" the tube pitch is 31.75mm.

The number of circuits is the number of legs in each header.

## INSTALLATION

Before installation check the coil for any minor fin damage and use a fin comb to reinstate the fins.

Check that the handing of the coil is correct for your application. The handing is determined whilst looking in the direction of airflow and relates to the position of the connections.

Install all coils with the tubes horizontal and level. This applies whether the airflow is horizontal or vertical. The reason is that this will allow for the most effective venting of the coil.

Coils are not to be used with the tubes vertical or inclined upwards unless this was agreed at the design stage.

Where coils are incorporated into ducting, it is important that they are properly installed.

Suitable sealing methods should be employed to prevent air bypassing the finned area of the coil.

The ducting should be fitted to the coil by removing the end covers (where fitted) and drilling through the coil plate work and bolting into position. Care should be taken to protect the headers and return bends by using a piece of wood or sheet metal behind the plate work being drilled. A suitable sealant should be used to seal the joints and when replacing the end covers.

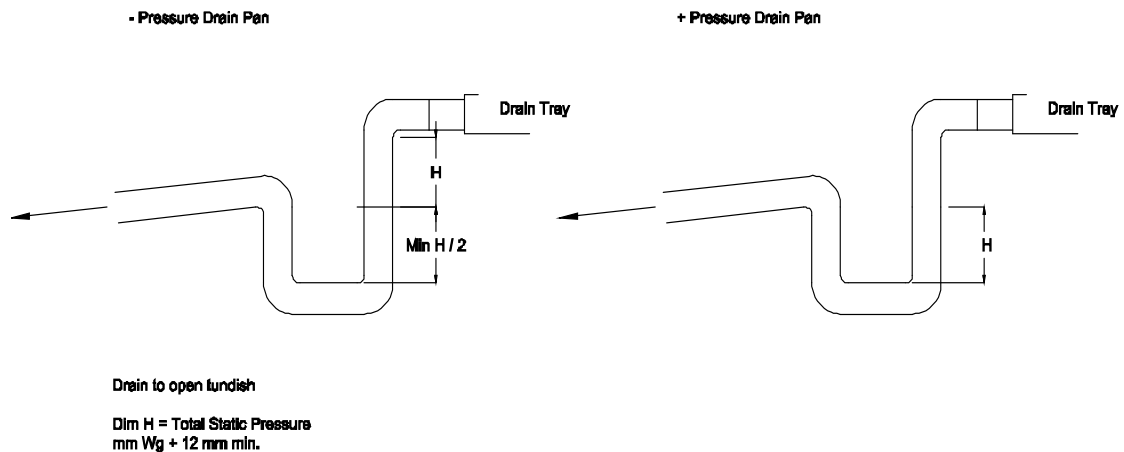
Access should be provided to both ends of the coil, without the need to remove any of the external pipework, for the purpose of inspection, cleaning and maintenance.

## PIPING

The thermostatic expansion valve should be fitted as close as possible to the liquid distributor. Thermostatic expansion valves must be capable of operating with a total superheat (static + opening superheat) of 3°C less than the temperature difference between the air entering the coil and the design evaporating temperature. The equaliser line should be piped to the suction line downstream of the expansion valve. A pressure tapping should be provided to enable accurate setting of the expansion valve superheat. Suction lines should be sized to ensure positive oil return.

Suitably sized traps should be incorporated into the drain lines from the drip tray.

## Drain Tray Trapping Arrangement.



## COMMISSIONING PREPARATION

Once the coil is installed and all joints are sealed, a nitrogen pressure test should be carried out on the system. Refer to the design working pressure of the coil to determine suitable pressures for test. Following a successful pressure test the coil must be evacuated to a level of 2 Torr or less.

Once the coil has been subjected to a suitable level of vacuum the refrigerant may be added.

Prime trap on drain line.

## COMMISSIONING

Start fans and Refrigeration system.

Measure, record and adjust the airflow to within 20% of design.

Measure and record the air pressure drop.

Measure and record the suction pressure.

Measure and record suction line temperature at expansion valve phial.

Adjust superheat on expansion valve as necessary.

Measure and record the discharge pressure.

Measure and record air on dry bulb temperature.

Measure and record air on wet bulb temperature.

Measure and record air off dry bulb temperature.

Measure and record air off wet bulb temperature.

Check Air/ compressor balance to validate commissioning figures.

Note: do not exceed maximum working pressures or velocities. For coils with eliminators peak air velocities should be within the capacity of the blade used.

## FREEZE PROTECTION

Whilst DX coils are not usually subject to frost damage unless operated at low temperatures, there are frost implications for adjacent water coils.

1. Airflow must be interlocked with the refrigeration circuit. In the event of an airflow failure sub zero air can damage water coils if no interlock is provided.
2. Low pressure switches should be fitted to the refrigeration system
3. Head pressure control is required on the condenser

## MAINTENANCE

Finned surfaces should be inspected regularly and cleaned if necessary.

Filters should be regularly changed to maintain constant airflows.

Coil should be inspected for signs of corrosion and treated as necessary

Drain trays should be inspected and cleaned.

Refrigerant should be kept free from impurities and corrosive elements.

Check all connections and tighten if necessary.

Check drain traps are free flowing and primed.