



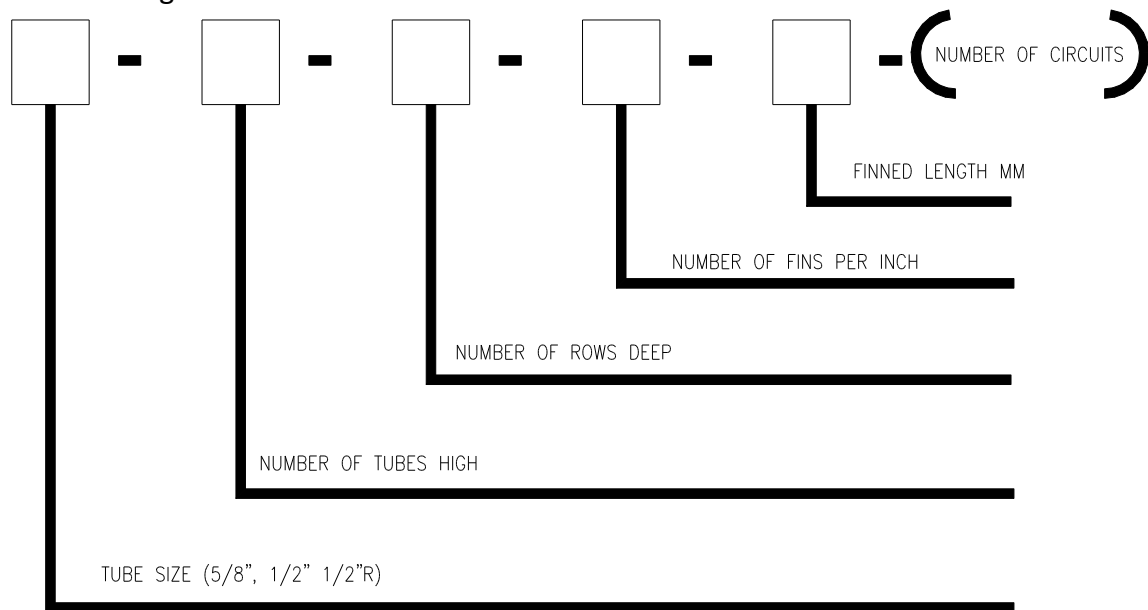
# INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

## CHILLED WATER 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**

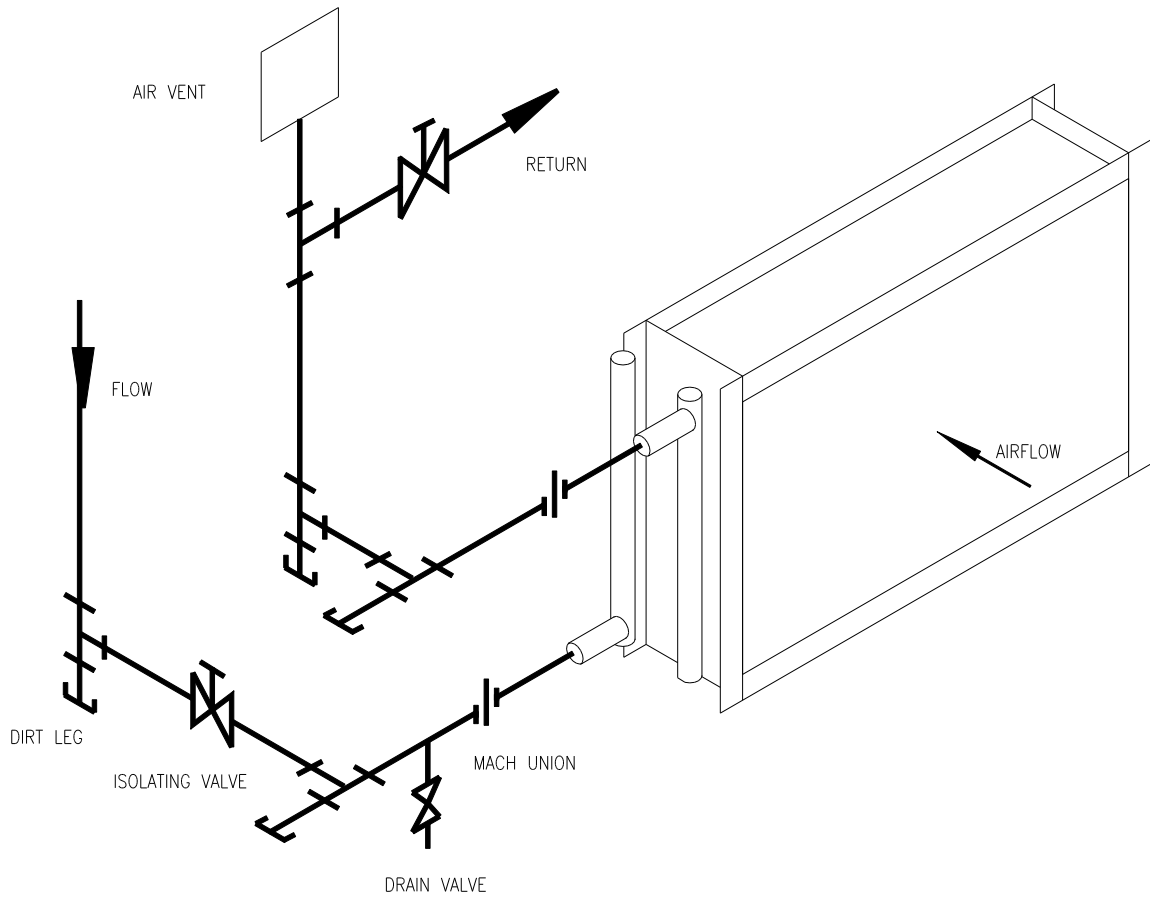
Coils should be piped such that the water flowing into the coil is at the end where the air leaves the coil. This will give counter flow and the greatest heat transfer.

Coils should be piped according to any relevant local codes of practice.

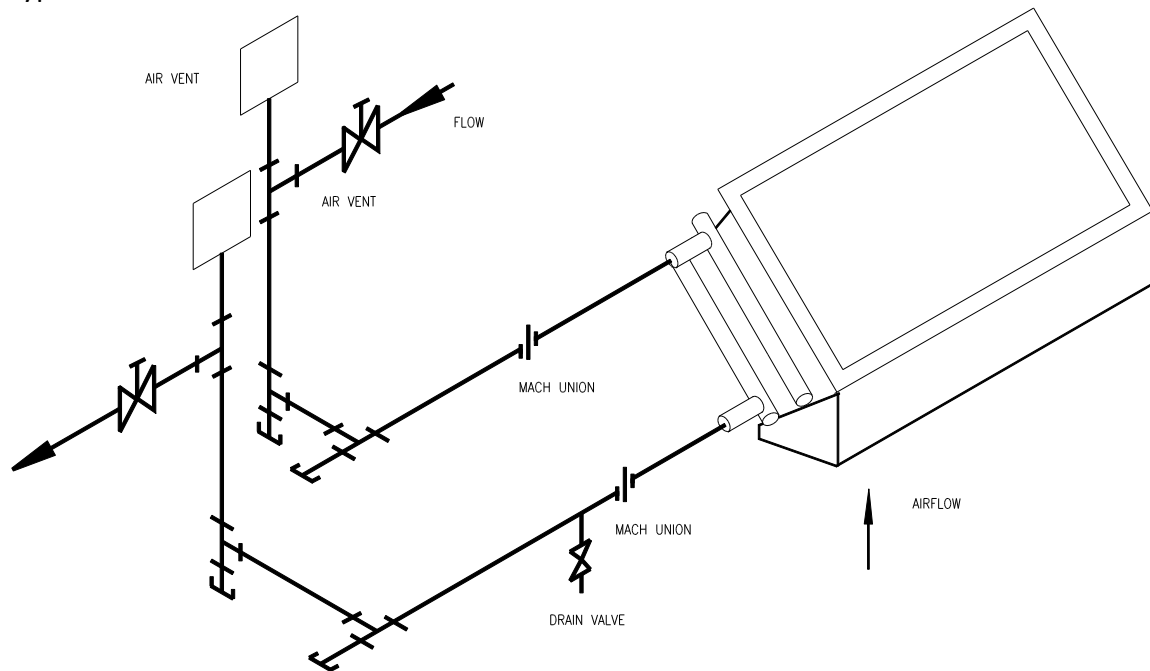
Where threaded connections are supplied, the only approved method of jointing method is by use of Boss white and hemp. The thread fitted to the coil is to be supported at all times whilst making joints. All external piping is to be supported independently from the coil.

Suitably sized traps should be incorporated into the drain lines from the drip tray. Fluid filters are recommended.

Typical piping diagrams are shown on the next page.

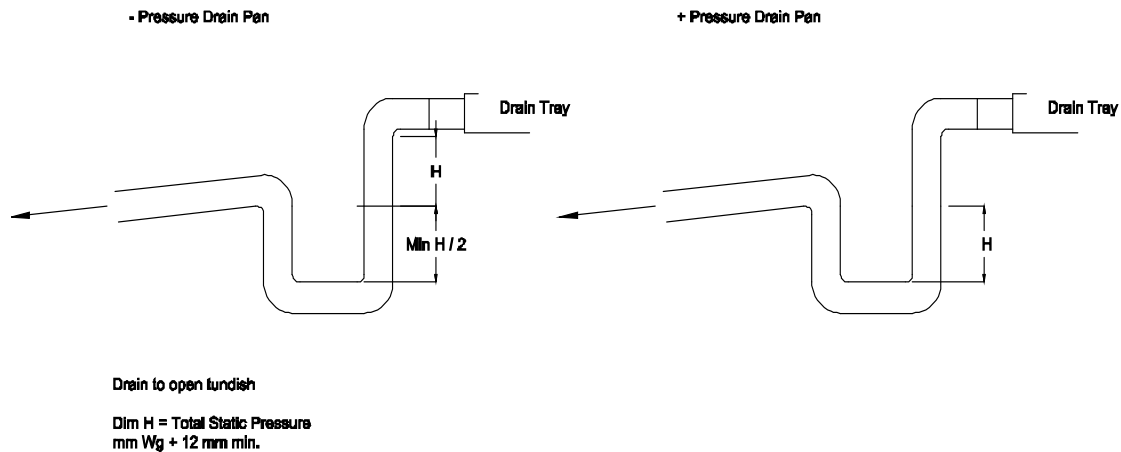


Typical installation of coil with horizontal airflow.



Typical installation of coil with vertically up airflow.

## 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 may be filled.

It is important that all air is excluded from the coil and careful attention should be paid to venting the system.

Prime trap on drain line.

## COMMISSIONING

Start fans and pumps.

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

Measure and record the air pressure drop.

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

Measure and record the water pressure drop.

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/ water side 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**

All coils should be protected from frost. This may be achieved by adding inhibited anti freeze solution to the circulating water or heating the environment the coils are exposed to.

It is not possible to fully drain water out of a coil matrix when the tubes are horizontal. If you wish to drain down the system for frost protection the following procedure should be adopted.

1. Drain water from coil.
2. Blow out remaining droplets of water with compressed air.
3. Completely fill the coil with inhibited antifreeze of appropriate concentration for the minimum temperature that will occur.
4. Drain antifreeze solution from coil and replace vents and drains.
5. The antifreeze should be recovered and may be used to repeat the procedure on other coils.

Note: Use of inhibited antifreeze is important as uninhibited product may cause formicary corrosion within the pipes.

## **MAINTENANCE**

Finned surfaces should be inspected regularly and cleaned if necessary.

Filters should be regularly changed to maintain constant air flows.

Coil should be inspected for signs of corrosion

Drain trays should be inspected and cleaned.

Circulating fluid should be kept free from impurities and corrosive elements.

Vent air from coil on a regular basis. Automatic air vents are recommended.

Check all connections and tighten if necessary.

Note: Cleaning Solutions should be compatible with the coil materials.

Disinfecting solutions must be thoroughly rinsed off with fresh water.