

APT Application & Installation

Chilled Beams

FUNCTION

The beam operates by natural convection, removing the heat load from the room and replacing it with a cooling airflow. The convective airflow (output) increases or decreases in proportion with the heat load within the occupied zone, securing an optimal thermal comfort.

Varying sensible cooling output requirements are met by regulating the flow of chilled water through the beam heat exchanger. This is controlled by a combination of room thermostat and 2-port valve. Operating at elevated chilled water temperatures (to avoid latent cooling), the opportunities for “free-cooling” are significant. The APT can be supplied with separate skirts (SK = 4”, 8” or 12” height). They have to be mounted to beams on site and will increase the cooling capacity with 15 - 40%.

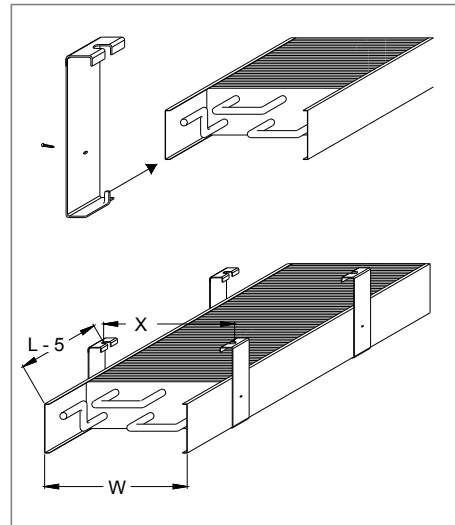
INSTALLATION

The APT chilled beam is installed above an open grid or perforated ceiling. In order to ensure effective convection, the beam should be mounted at a minimum distance from the ceiling equal to 0.25 x the width of the beam, when installed away from wall surfaces, or 0.5 x beam width when installed close to partition walls.

Each chilled beam is fixed to the ceiling with expansion anchors and threaded drop rods (not included in the delivery). Four assembly brackets are fixed one fifth of the unit length (L/5) away from the end of the beam. There will be six assembly brackets with beam length ≥ 138”.

The exact positions of the brackets are adjusted according to the rod position. The chilled beam position can be easily adjusted both horizontally and vertically. Assembly brackets are supplied as standard in the package.

The contractor shall supply threaded rods and expansion anchors.

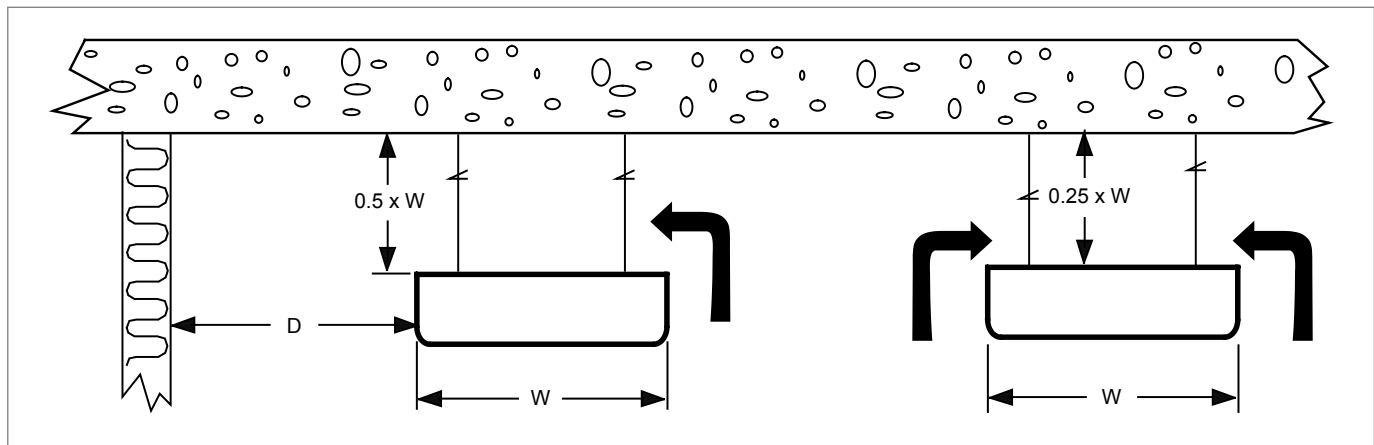


X	Y
12"	10"
18"	16"
24"	22"

ADJUSTMENT

Commissioning of the chilled beam system is carried out following standard practice:

- Fill up and flush the main pipelines.
- Fill up and vent the beam circuits.
- Adjust the flow water temperature set point.
- Adjust the water flow rates with the balancing valves for all main pipelines.
- Adjust the water flow rates in all chilled beams to correct values.



APT Service & Maintenance

SERVICING

The APT chilled beam requires little maintenance. It may be necessary to clean the cooling coils in every three to five years, depending on room conditions and air quality. The cooling coils can normally be cleaned using a vacuum cleaner.