

Abstract

**ENERGY SAVING AND ENVIRONMENTALLY FRIENDLY
ATMOSPHERIC DEHUMIDIFIER CHILLER FOR DRINKING PURPOSES**

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A method and machine to produce drinking water from fresh air using an energy saving and environmentally friendly chiller is comprising the following steps of :

10 Filtering and sterilize fresh air, then passed to several evaporator coils to condensate the moisture and the condensate collected to a pan.

Passing secondary condenser by cold air after passing evaporator coil and dipping tertiary condenser to a cold
15 condensate water tank, so the refrigerant after the condenser will be subcooled and after passing through the expansion valve, will heat exchange with the brine as a secondary refrigerant in the heat exchanger.

Where brine is passed to several evaporator coils in air
20 handling unit to cool and condensate the moisture passing through the air handling unit, a part of the air will condensate and the other part will passed to a cooled room where the cold air of the room then will exhaust and used to cool the main condenser through the exhaust air
25 duct.

Figure 1

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