SARI PUYA MODEL SSE

Steam Selection Unit Instructions

Design Conditions :
1.Design Load in Ton?
2.Chilled Water GPM?
3.Leaving/Entering Chilled water Temp?
4.Max Evap PD?
5.Cooling Water GPM?
6.Entering/Leaving Cooling water Temp?
7.Max Absorber and Condenser PD?
8.Steam Supply Pressure psig?

Step 1) Machine Size Selection :
According to design load and refer to standard specifications table (1), select a unit which will probably provide the refrigeration tons required.

Please note that the standard specifications ratings for each unit are based on the following conditions :

Chilled water temperature 12.2 °C —— 6.7 °C (54 °F —— 44 °F)
Cooling water temperature 29.4 °C —— 37.7 °C(85 °F ——100 °F)
Steam pressure 9 Psig

Step 2) Select Chilled and Cooling Passes Arrangement :
Based on the permissible head losses in evaporator and condenser and absorber the No. of passes for each head exchanger shall be decided referring to figures 1, 2, and 3 for relevant model.

Step 3) Check Design Load :
Refer to unit ratings table (2), for checking that the design load does not exceed the available load for the model selected and obtaining the steam pressure for the unit selected and check with design steam pressure.

Step 4) Determine Full Load Steam Consumption :
Using the steam rate generally (18.7 lb/hr/ton), the total steam consumption will be obtained by the following formula :
Steam Consumption = Tons x Steam Rate (18.7lb/hr/ton)

Step 5) Inspection of Cooling Tower Flow and Inlet and Outlet Cooling Water Temperature Difference:

Heat input to evaporator(Btu/hr) = Actual Refrigeration Ton(ART) × 12000 Btu/hr
Heat input to generator (Btu/hr) = ART × 18.7× 965(Enthalpy of condensation)
Total Heat Rejection (THR) from cooling tower(Btu/hr) = Heat input to evaporator(Btu/hr)+ Heat input to generator(Btu/hr)

$$\text{Cooling Water Temperature Range} = \frac{\text{THR}}{500 \times \text{Cooling Water Flow (GPM)}}$$

STEAM UNIT SELECTION SARI PUYA SSE (S) MODELS

Design conditions :

1.Design load ..... Ton
2.Chilled water ..... GPM
3.Leaving/Entering chilled water temp. (...../..... °F)
4.Max Eva PD .....
5.Cooling water ..... GPM
6.Entering/Leaving cooling water temp. (...../..... °F)
7.Max Absorber and Condenser PD .....
8.Steam supply pressure ..... psig

Step1) Machine Size Selection :
SSE ……..

Step2) Select Chilled and Cooling Passes Arrangement :
…….pass Eva ……feet PD
…….pass Abs. &1 pass cond……..feet PD

Step3) Check Design Load :
At the
LCWT …….°F & ECWT ……..°F,refer to unit rating table(2)
the available load at the ……psig steam pressure will be…….Ton
Then :
……Ton ……Ton then ...
.....psig …… psig then .....
Therefore, the pressure loss in the control valve could be selected equal to .....psi.
The size of steam control valve could be decided using control valve selection diagram.

Step4) Determine Full Load Steam Consumption :
..... Ton x (18.7 lb/hr/Ton) = ... lb/hr

Step 5) Inspection of Cooling Tower Flow and Inlet and Outlet Cooling Water Temperature Difference:

Heat input to evaporator ..... (Btu/hr) = Actual Refrigeration Ton(ART) ..... TR × 12000 Btu/hr
Heat input to generator ..... (Btu/hr) = ART × 18.7× 965(Enthalpy of condensation)

Total Heat Rejection (THR) from cooling tower ..... (Btu/hr) = ... (Btu/hr)+ ..... (Btu/hr)
(Heat input to evaporator) (Heat input to generator)

$$\text{Cooling Water Temperature Range} \ldots\ldots {}^{\circ}F = \frac{THR}{500 \times \text{Cooling Water Flow (GPM)}}$$