

Successful in operation: Multi-stage Steam Jet Chilling Plant for China



In collaboration with a Chinese Engineering Company Körting planned, constructed and put into operation a new steam jet chilling plant for the Sichuan Refinery of our customer, the largest Chinese oil concern, PetroChina. This free-standing construction without secondary steel construction as well as the so-called bridge construction form of the steam jet vacuum ejectors are only some of the unique features of this one-of-a-kind plant.

From the top platform of the steam jet chilling plant one has a good overall view of the whole petrol refinery; the unit clearly towers above all adjacent plant parts. It is easily confused with the giant columns belonging to the refinery process itself. „With a maximum construction height of 44 metres and an apparatus diameter of round about 6 metres the largest plant parts are nearly as big as a Saturn I rocket“, explained Marco Meyer, Sales and Project Engineer for process engineering plants at Körting Hannover AG.

The „risk“ of constructing this imposing plant in this size and in accordance with the requirements of the PetroChina/Sichuan Refinery as well as the unfailing commitment of all concerned has certainly paid off. „After nearly one year’s operational experience the Operator is more than satisfied with the operational behaviour and performance of this novel plant construction“, so Marco Meyer. What particularly distinguishes this plant is the bridge construction form of the up to 20 metres long steam jet vacuum ejectors whereby no secondary steel construction was needed in spite of the large apparatus dimensions. This has saved space and costs.

Second largest plant worldwide

The core of the plant is formed by the evaporation tower and the downstream condenser in connection with the Körting steam jet vacuum ejectors. The cold water generated by this plant is urgently required in the newly constructed Sichuan Refinery to cool diverse petro-chemical processes. This new steam jet chilling plant with a cooling capacity of 24 MW – following a



Highest technical standard: Körting chilling plants.

further Körting plant in Egypt (28 MW) – is the second largest steam jet chilling plant in the world.

Clear advantages for Körting

Steam jet chilling plants by Körting are often an alternative to conventional chilling plants. The prerequisite for their application is the availability of motive steam as an energy carrier for operating the

plant. If cost-saving waste steam or excess steam is available, then the steam jet chilling plant will prove to have also low operating costs in comparison to conventional compression chilling plants. Other aspects such as the utilisation of water as a cooling agent and in connection with this, particular operational reliability and low maintenance needs, speak for themselves. „The advantages of steam jet chilling plants by Körting consist, amongst others, in the fact that there are practically no turning or moving construction parts“, so Marco Meyer. This offers good handling also in the case of large volume flows and cooling performances. Furthermore, no special chilling agents are required and they can utilize waste heat already from 90°C upwards.



Free-standing construction: without secondary steel construction.



Precise manufacturing in Hannover: for the Sichuan refinery in China.

To cover peak load requirements in summer steam jet chilling plants can be supplied from the difference between summer and winter heating steam. Furthermore, corrosive media can be easily met by the application of numerous tried and tested materials from the apparatus manufacturing sector. Electrical power is not required other than for the supplying of cold water and cooling water. Further advantages can be found in the high operational reliability, minimal maintenance needs, long service life as well as the quick availability and reliability of Körting steam jet vacuum ejectors.

At a glance

Chilling performance	24 MW
Water flow to be chilled	2.300 t/h
Cooling	29 °C to 20 °C



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