



Thermal degassing system with steel substructure and exhaust vapour condenser (pipelines not shown)

### Technology used

Tube bundle heat exchangers are normally used as exhaust vapour condensers. With these, the exhaust vapour is directed around the tube bundle while the water being heated flows through the tubes in the counter-current. Only stainless steel 316Ti is used as the material that comes into contact with the medium. This means that even when there are high concentrations of aggressive gases in the exhaust vapours, the condenser's corrosion resistance can be guaranteed.

The exhaust vapour condensers are available as both a horizontal and a vertical type, with the horizontal type being the preferable option due to its better condensation. Connections must be provided for the exhaust vapour infeed, for cold water infeed and discharge, for condensate discharge and to eliminate gases that cannot be condensed. Control and shut-off valves, thermometers and, if required, a safety valve are available as accessories.

Exhaust vapour condensers should generally be individually planned and configured according to the operating conditions. Feel free to contact us!

### Production of exhaust vapours

(exhaust vapours = air saturated with water vapour)

The [thermal degassing](#) of feedwater produces a small quantity of exhaust vapours that must be removed (usually 0.2 to 1 % of the degassing unit's capacity). The exhaust vapour acts here as a carrier medium for the unwanted gases. In most cases, the exhaust vapours are routed from the degassing unit's dome directly into the atmosphere via an exhaust steam pipe, this being clearly recognisable from an exiting steam plume.

### Uses of an exhaust vapour condenser

In thermal [vacuum degassing](#), the exhaust vapour condenser is of great importance particularly as far as economical dimensioning of the vacuum pump is concerned. This heat exchanger is not absolutely essential in thermal pressure degassing systems. Nevertheless, for reasons of economy it is recommended to use a condenser from a particular size of degassing system onwards, because a large amount of the exhaust vapour's thermal energy (which would otherwise be lost) can be reclaimed. Normally, this thermal energy is used to heat up supplementary water, resulting in a reduced heating steam requirement.

Another advantage is the reduction of the steam plume exiting into the atmosphere.