

Two-Stage CORRESIC® Shell & Tube Condenser

Technical Information

Multi-purpose condensing systems are commonly comprised of three distinct and separate elements. Typically, a main condenser, a post condenser and a condensate cooler are required. This is very expensive and bulky equipment.

GAB Neumann understand this problem and have developed a solution to deliver cost and space savings while ensuring controlled and efficient condensate cooling. To achieve this, instead of using a separate condenser and condensate cooler, we propose a two-stage split-shell design for the utility media, where the separation of chambers on the shell-side is provided by a specially designed tube sheet.

In the first stage of the shell, for the initial condensation process, we recommend a media with a higher utility temperature (e.g. 15°C/25°C) than what might otherwise be considered.

In the second stage of the shell, a utility media with a much lower temperature (i.e. -10°C/-5°C) should be run. This second stage provides extremely effective condensate cooling. Due to the large contact surface area of the tube walls, both the condensate and the vapors are efficiently cooled without further post-condenser requirements.

The key advantages of such equipment are that it saves space (one heat exchanger instead of three) as well as equipment and peripheral costs. There is no need for extra heat exchanger units, so savings apply to at least two complete units. Further peripheral savings are realized by the reduced need for piping and associated instrumentation.



Condensate cooling &
post condensation

Condensation part

Picture 1: two-stage condenser in the field



Insulated cooling

Picture 2: condenser in operation with cooling part