



CASE STUDY

HPP - Liquid cooling solution for High Pressure Processing

Pfannenberg EB 400 WT units to cool process fluids

Quote:

„The HPP project has proved to be very attractive due to the specificity and the innovativity of the application. It required a detailed planning while setting up a testing ground for the development of our skills in new application fields.“

Andrea Pavarani

Industry Group Specialist - Food & Beverage
Pfannenberg Italia srl

Application

HPP Italia is the first Italian company dedicated to offer the food processing industry the HPP method - High Pressure Processing.

This innovative technology is already widespread in the US while in Europe, Asia Pacific and Latin America there has been a growth in the supply and demand, due to a growing awareness among food business operators regarding the benefits of using high pressure technology instead of traditional pasteurization techniques.

High Pressure Processing brings the advantage of providing food products that maintain unaltered their organoleptic characteristics in terms of aroma, color, texture, flavor and nutritional properties. At the same time it ensures the maximum in terms of food safety and allows a significantly longer shelf life.

The customer

HPP Italy is a company founded in 2014 to provide the Italian Food & Beverage companies strongly committed to internationalization with the ideal service to solve the problem of health rigid constraints imposed by some countries on the export of food products: think, for example, to issues related to listeria and salmonella.

HPP Italy offers the innovative HPP treatment service on several foods, both solid and liquid: meats, dairy products, fish, food products ready-to-eat, juice and fruit pulp, tomato sauce, sauces and other.

Hpp Italy has signed an exclusive agreement with Avure Technologies, which holds the global leadership in the technology of high pressures

applied to food and has installed more than 1,700 high pressure systems in the world.

This has led to the installation in the plant of Traversetolo of a high-end machine, which required worth a an investment of more than two million euros.

Application requirements

The HPP is a hydrostatic transformation treatment where prepackaged food product is subjected to high pressures with a fluid (about 6,000 atmospheres), without the need for special thermal alterations.

All with an accurate measurement of

three elements: pressure, duration of treatment and temperature (< 40°C).

The customer asked for two different chillers to be installed in a separate area, serving two different needs:

- the first one cooling the process fluid which is a 30% glycol/water mixture to be brought from +4°C to -1°C with a flow rate of 4,500 l/h;
- the second one is a refrigeration system aimed to cool down the filling pump and high pressure pump during exercise.

Moreover, the customer required them to be both as big as the first one - even if this leads to an oversizing - so that the second one can be used as a replacement of the main one in case of need.



Chiller EB 400 WT

The solution

After a site inspection and an accurate sizing of the project, Pfannenberg has proposed the installation of two **EB 400 WT** chillers, having a cooling capacity of 40 kW and a flow rate of 4,800 l / h each.

They both measure 1680 x 790 x 1410 mm.

In order to fulfill the application specifics we also provided both the units with three optionals:

- low temperature kit;
- hydraulic bypass;
- digital alarm panel.



Sample food treated in an Avure High Pressure Processing machine.

Facts at a glance

Task	Cool both process fluid and pumps for a high pressure processing machine.
Application	Food and beverage latest processing technology for safety without heat and preservatives.
Solution	n.2 EB 400 WT chillers
Success factors	<ul style="list-style-type: none"> • high quality products • detailed sizing support • service and technical support