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### **PROCESS SYSTEM. PASTEURIZATOR - COOLER**

The equipment designed by INDETEC allows the user to set the heating-holding-cooling operating cycle to the needs that best fits the product. This allows operating in the HTST "High Temperature Short Time" method, which heats the product for a short time lapse. This achieves a high performance in the operation because sterilization is achieved at the same time that organoleptic and nutrient properties are assured and low energy is required.

**Based on:  
High Temperature  
Short Time (HTST)  
pasteurization**

## INSTALLATION TYPE

The product is stored in a regulation tank where the product is first stored, to make sure the continuous operation, after which the thermal sequence occurs as described below:

### Sections:

1- pre-heating

2- heating

3- holding

4- cooling

1.- *Preheating section.* The product is preheated using the same heated product from the output.

2.- *Heating section.* In this section the product is heated to pasteurizing temperature in a coaxial exchanger. The heating fluid used is water so high temperature shock is avoided.

3.- *Holding section.* Once the product achieves the pasteurization temperature it is mandatory to keep the product at that temperature during a period of time (holding time). For achieving this, the holding module is placed after the heating module, where all the particles of product reach the desired residence time (typically 15 s), and the pressure drop is minimized. This section is monitored by 2 Pt-100 probes and a visual thermometer to assure the correct performance of the installation.

4.- *Cooling section.* The cooling takes place in a coaxial exchanger, using first the same cool un-treated product and later cooling water.

The whole installation is controlled by SCADA monitoring software attached to a PLC that retrieves information from different probes, performs the needed actuations to valves and pumps, and can perform, if needed, a recirculation loop to assure the product reaches the desired working conditions. The system is provided with a touch screen from where all parameters can be view and manipulated.

## APLICACIONES

Grape must and juice

Fresh and concentrate fruit juices

Horchata

