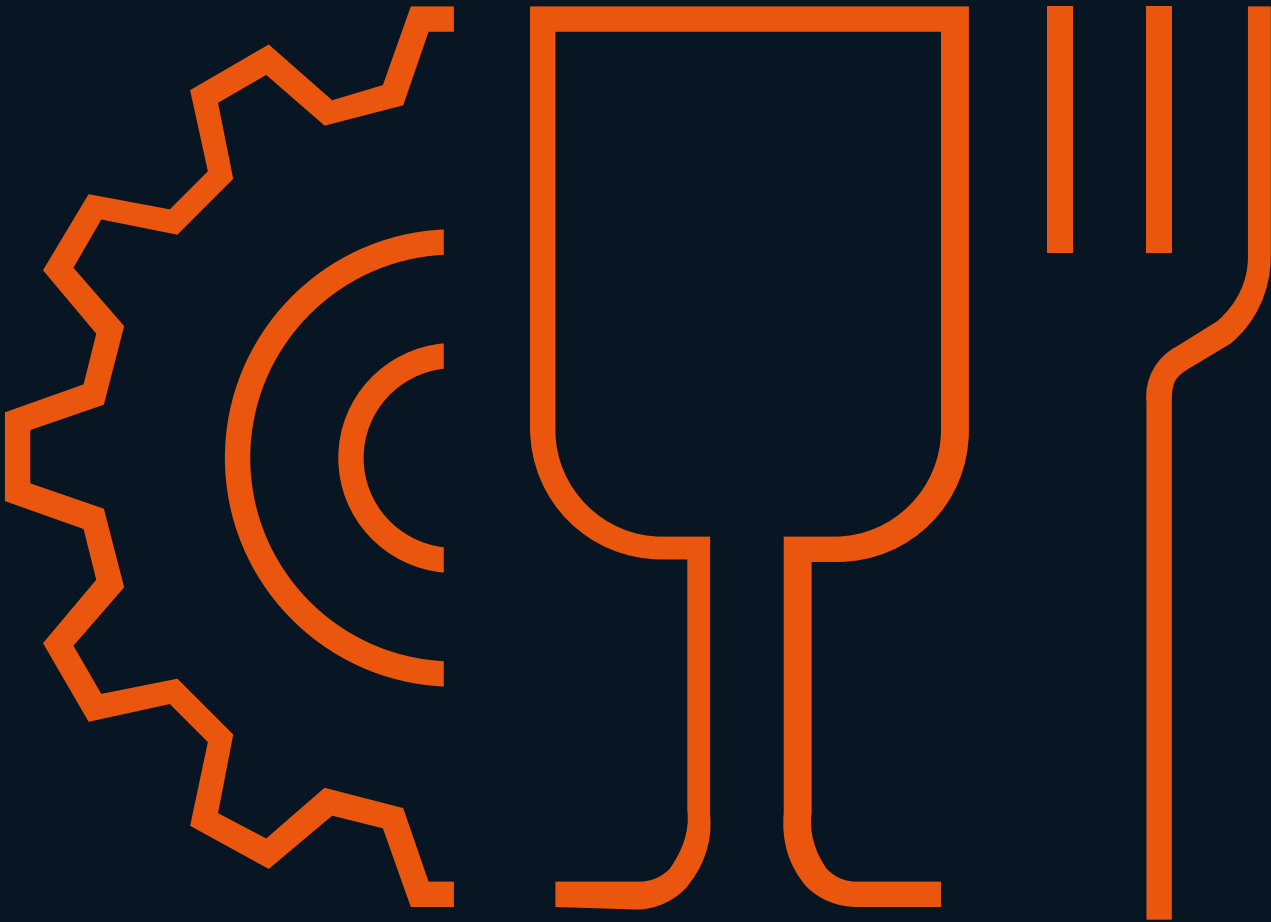


**FOOD**  
INDUSTRY



# HEAT EXCHANGERS FOR FOOD APPLICATIONS

The increasing consumer awareness of food requires food processing companies to meet higher and higher technological requirements. Standards related to cooling, storage, cleaning, and drying remain crucial for the food industry. The food industry is constantly investing in efficient solutions with high quality and reliability.

We offer a wide range of heat exchangers that are crucial components in the food industry. Our devices streamline the processes of heating, cooling, and pasteurization, thereby increasing production efficiency. They also enable the maintenance of high hygienic standards while saving energy.

## APPLICATIONS

-  DAIRY
-  OILS PRODUCTION
-  BREWING INDUSTRY
-  INDUSTRIES WITH SANITARY REQUIREMENTS
-  FOOD & BEVERAGE PRODUCTION
-  CIP STATIONS
-  SUGAR INDUSTRY

## BENEFITS

 HIGH EFFICIENCY

 HIGH LEVEL OF HYGIENE

 EFFECTIVE ENERGY RECOVERY

 MADE OF STAINLESS MATERIALS

 GENTLE PRODUCT TREATMENT

 CORROSION RESISTANCE

 ENERGY SAVINGS

 FDA APPROVED GASKETS

 POSSIBILITY OF EXPANDABILITY

 WIDE RANGE OF PRODUCTS



## TECHNICAL DATA

### JAG STAINLESS STEEL HEAT EXCHANGERS

#### WORKING PARAMETERS

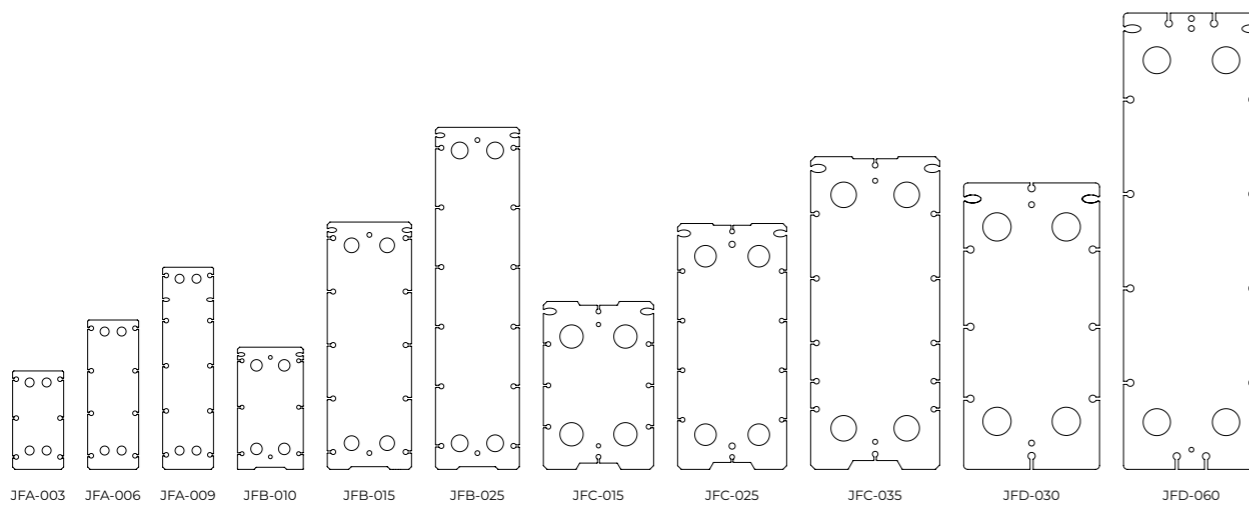
MAX. TEMPERATURE — 170°C

MIN. TEMPERATURE — -20°C

MAX. PRESSURE — 6, 10, 16, 25, 30 BAR

#### TYPELINE

JAG	Max. Heat exchange surface area	Connection size	Max. flow rate
JFA-003	2,7	5/4" (DN32)	18,8
JFA-006	5,4	5/4" (DN32)	18,8
JFA-009	8,1	5/4" (DN32)	18,8
JFB-010	15	2" (DN50)	51,6
JFB-015	22,5	2" (DN50)	51,6
JFB-025	37,5	2" (DN50)	51,6
JFC-015	27	DN80	117,7
JFC-025	45	DN80	117,7
JFC-035	63	DN80	117,7
JFD-030	153	DN100	184
JFD-060	306	DN100	184

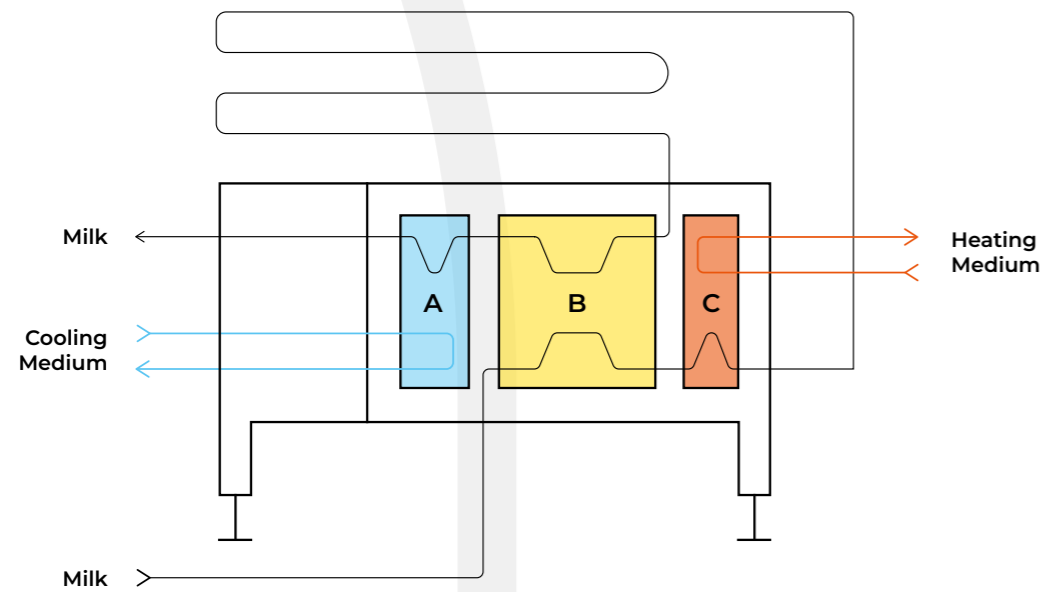


# DAIRY INDUSTRY

The main issues related to the dairy industry are increasing system efficiency, ensuring gentle milk treatment, and improving the quality of the final product. In the dairy industry, the pasteurization process involves the thermal treatment of milk to minimize the presence of pathogenic microorganisms in the product. This process requires maintaining safety and hygiene, as well as effective heat exchange.

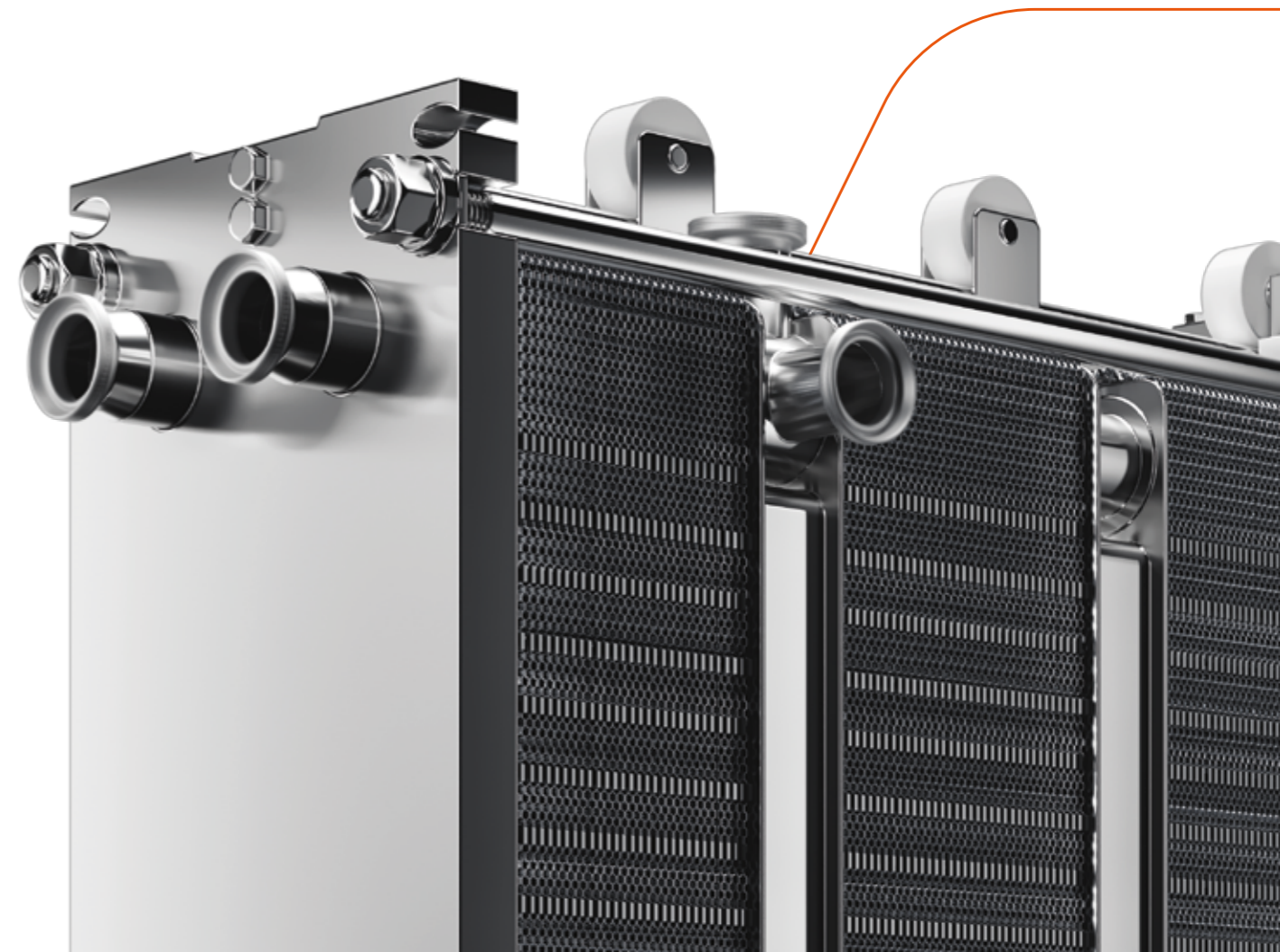
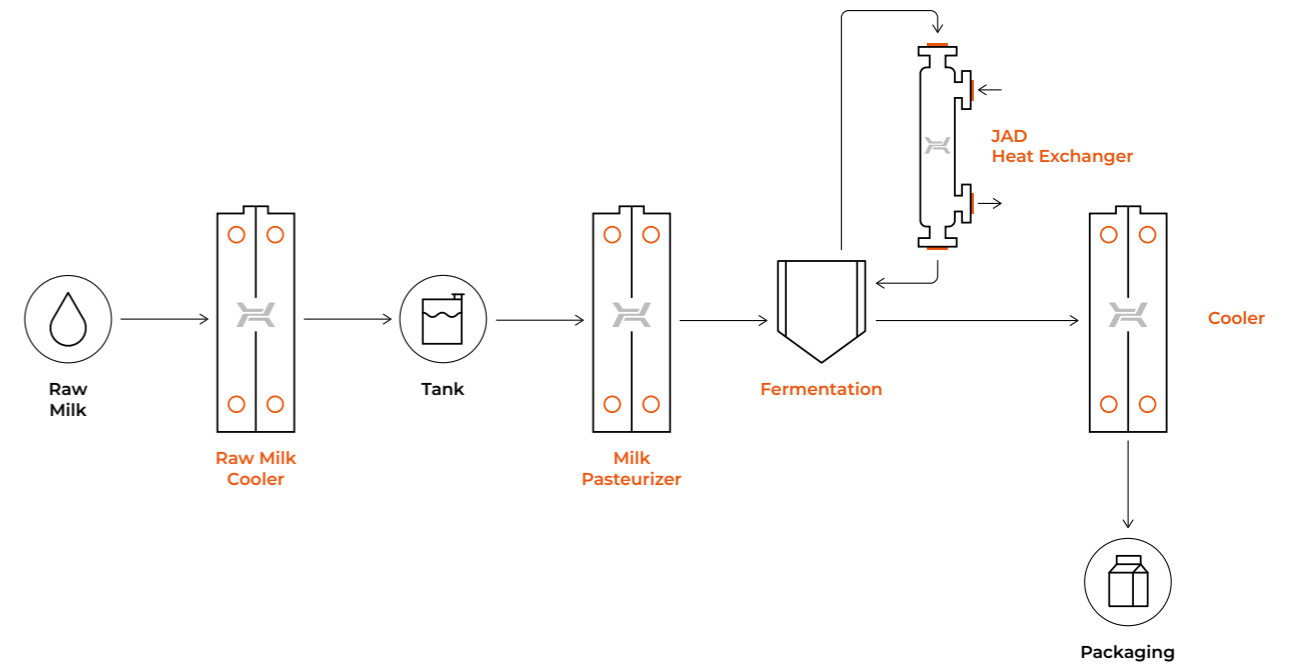
JAG heat exchangers serve as pasteurizers in dairy systems. They help heat the milk to a temperature of 74–95°C (depending on the product) and hold it at this temperature for 15–20 seconds before cooling it to the packaging temperature (4–5°C) or fermentation temperature (25–42°C). The JAG plate heat exchanger also serves as a cooler in the system.

## SCHEME OF PASTEURIZER OPERATION

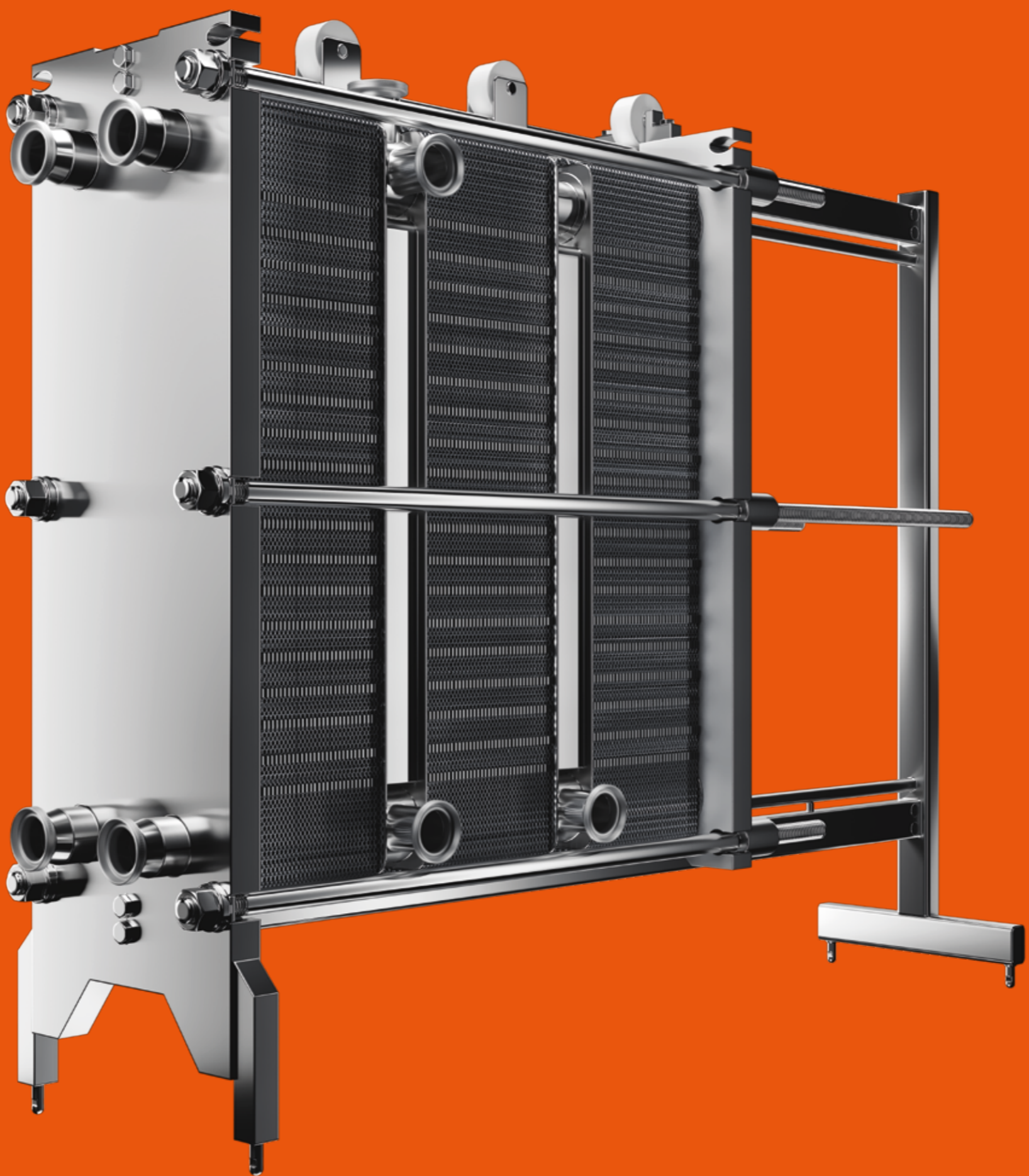


- A** Cooling Section
- B** Heat Recovery Section
- C** Heating Section

## SCHEME OF FERMENTED DAIRY PRODUCT PRODUCTION PROCESS



# PASTEURIZER



# BREWING INDUSTRY

The brewing industry has become an automated industry thanks to the application of advanced technological equipment, which significantly supports the production process and ensures the highest quality of the final product.

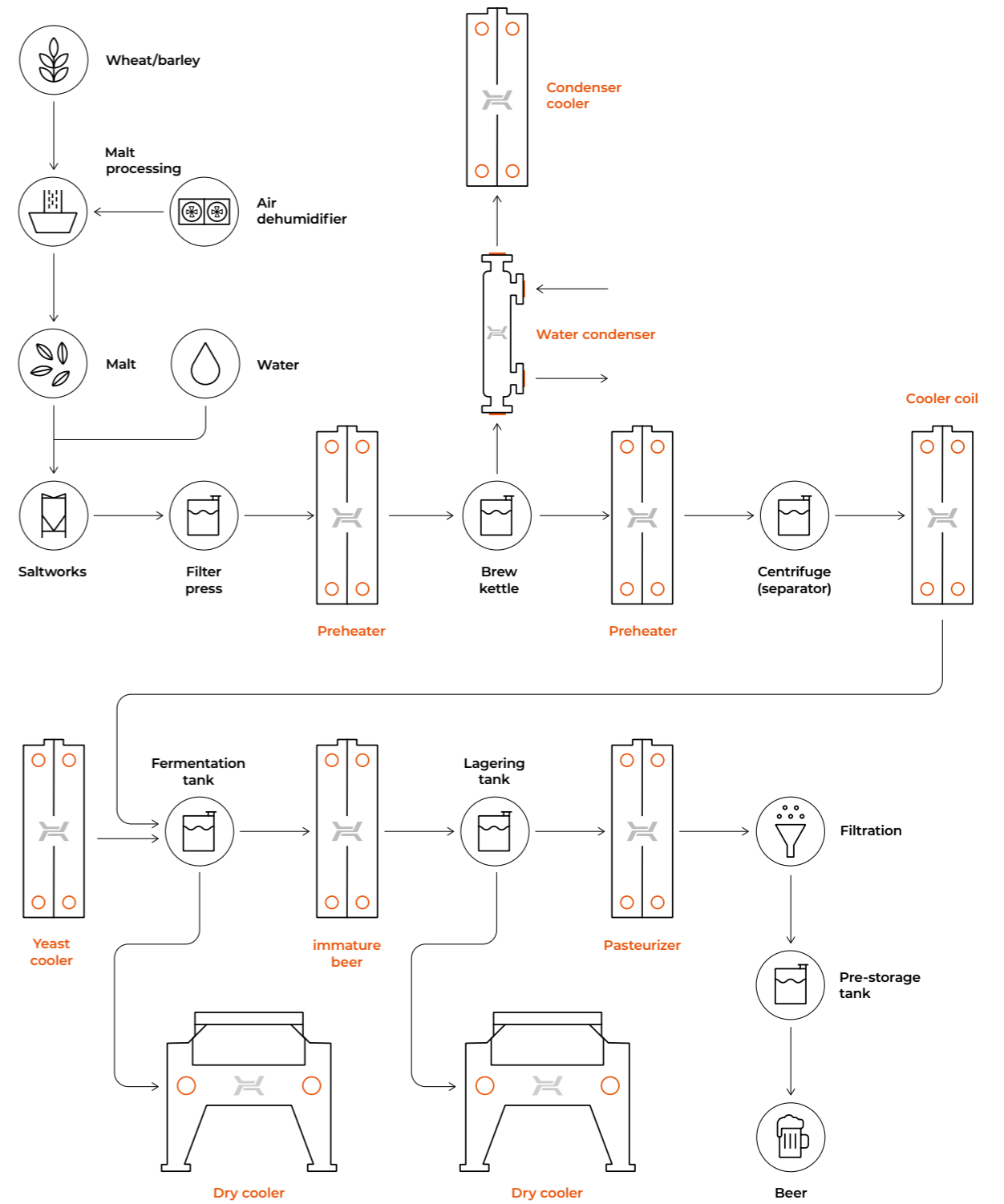
The most crucial factors for the brewing process are efficient energy consumption, equipment efficiency, and reliability. Production processes are also dependent on temperature and pressure control. Hexonic heat exchangers working in installations ensure gentle and hygienic product treatment and maximum efficiency. Both brazed plate and shell & tube heat exchangers are suitable for industrial and craft brewing.

### HEXONIC RECOMMENDED PRODUCTS:

- JAG F stainless steel plate and frame heat exchangers
- JAD shell and coil heat exchangers
- L series brazed plate heat exchangers
- D.COOL dry coolers



### PROCESS DIAGRAM OF BEER PRODUCTION

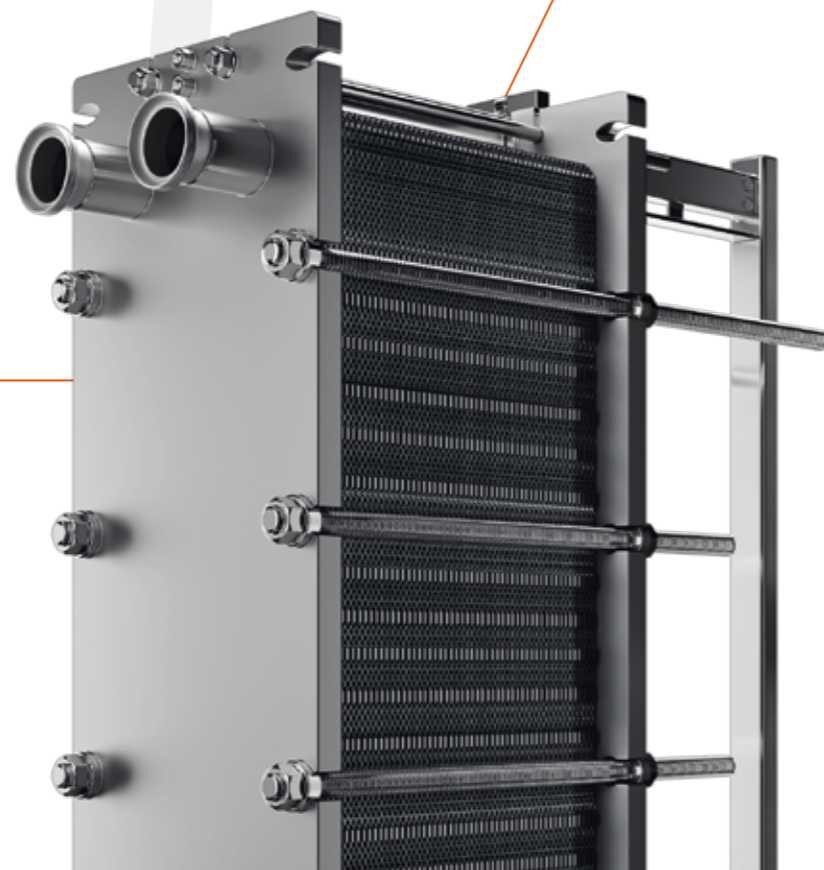


# BEVERAGE PRODUCTION

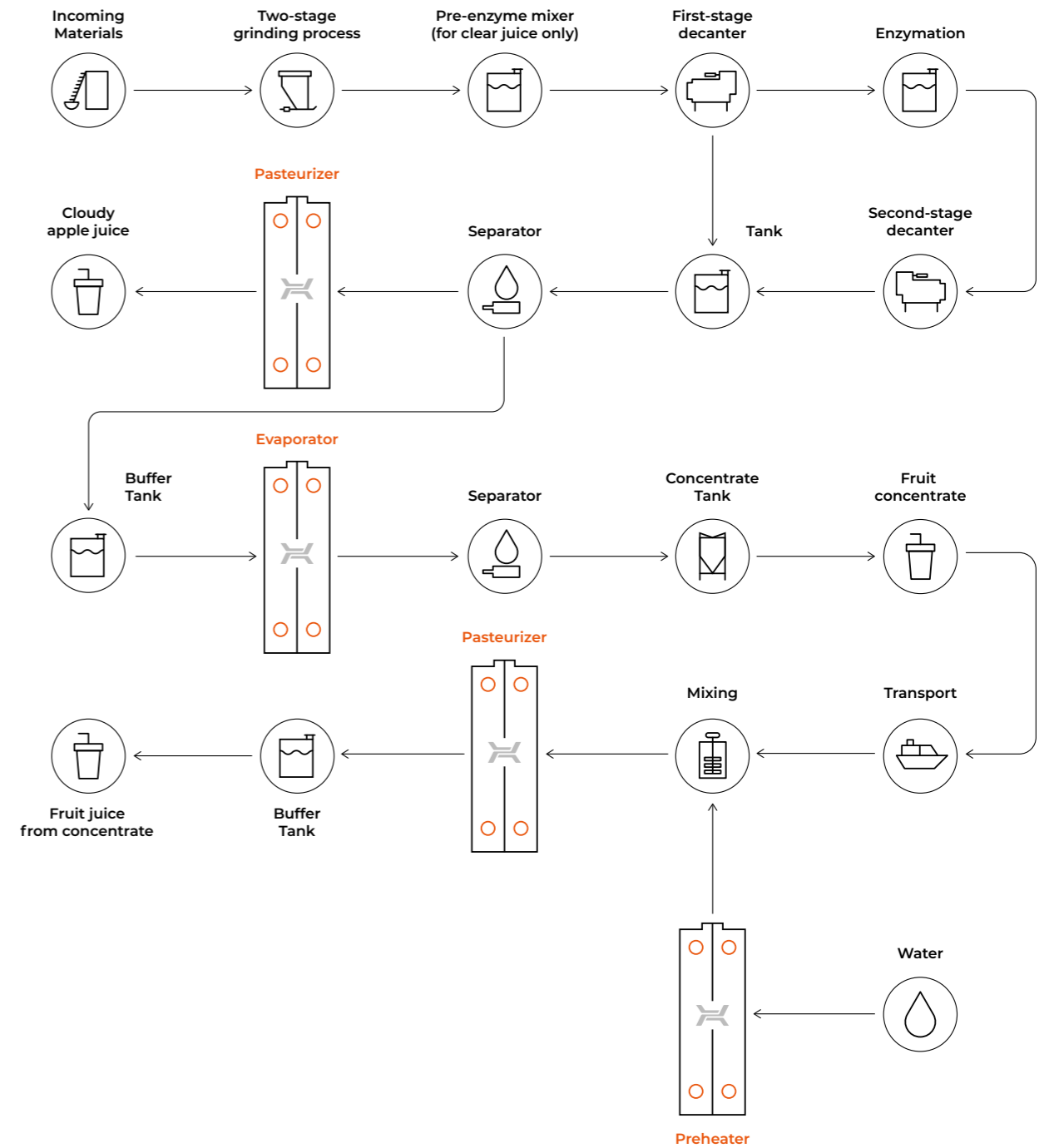
Beverages must be produced according to hygiene standards applicable to food production. They are prepared at precisely defined temperatures. The water creating the solution is cooled in a heat exchanger. In later production stages, the syrup is added in separate containers. The mixed water and syrup are reheated and cooled one more time to the storage temperature, passing through the heat exchanger. In this case, glycol serves as a cooling agent, absorbing heat from the beverage. Optimal heat exchange with low-pressure losses ensures low operating costs, which is extremely important in mass production. The wide range of heat exchangers offered by Hexonic includes suitable devices for pasteurization, cooling, heating of juices, heating of hot water, and CIP systems.

## HEXONIC'S RECOMMENDED PRODUCTS FOR BEVERAGE PRODUCTION ARE:

- JAG F stainless steel plate and frame heat exchangers
- JAD shell and coil heat exchangers



## PROCESS FLOW DIAGRAM FOR BEVERAGE PRODUCTION



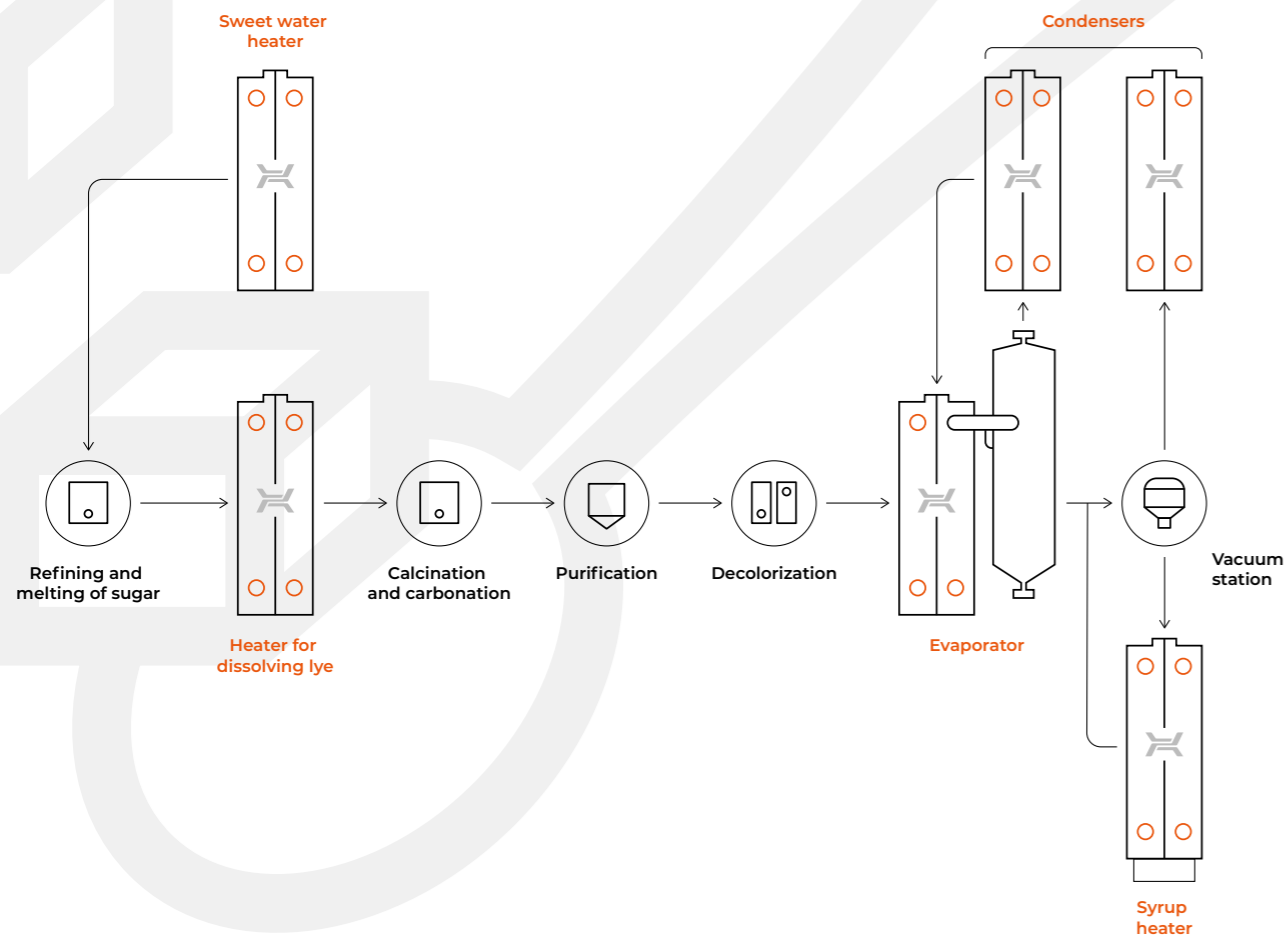
## SUGAR INDUSTRY

Before sugar cane or sugar beet enters the sugar juice heater, it undergoes special treatment. The raw, sweet juice is filtered to remove large particles from the liquid. Then, it is clarified and heated in a heat exchanger. In order to achieve optimal clarification, the juice is heated to a temperature of 50-85°C in a plate heat exchanger (JAG) before liming. The clarified and decolorized juice goes into a plate evaporator (JAG F), which enhances installation efficiency. The syrup is then heated in another gasket heat exchanger to achieve clean and granulated sugar. As the sugar industry develops, production costs also increase. Modern heat exchange technology allows for efficient and effective use of energy. Heat exchangers are the best, energy-efficient solutions that maximize work efficiency in the sugar industry.

### HEXONIC RECOMMENDS THE FOLLOWING PRODUCTS FOR USE IN SUGAR PRODUCTION:

- JAG F stainless steel plate and frame heat exchangers

#### SCHEME



## CIP STATIONS

The legal regulations related to food production impose an obligation to comply with rules concerning the health and quality of manufactured products. The automated process involves cleaning the internal surfaces of pipes and other elements without disassembly. Cleaning in a closed cycle saves time, media, and chemicals and reduces the amount of wastewater. These devices are used not only in the food industry, brewing, beverage, dairy production, and processed food production but also in pharmaceutical and cosmetic facilities. The cleaning cycle begins with pre-rinsing with water for intermediate rinses. The water from pre-rinsing is directed strictly to the wastewater. Metering pumps deliver defined amounts of chemicals to the main tank, where the liquid heating occurs. Then, the cleaning solution circulates in a closed circuit until the equipment is cleaned precisely at the set temperature. After completing the cycle, the entire system is rinsed, to obtain a pH at the neutral level. During cleaning, the CIP system is separated from the production line.

### RECOMMENDED HEXONIC PRODUCTS:

- JAG F stainless steel plate and frame heat exchangers
- HAD shell and coil heat exchangers
- JAD shell and coil heat exchangers

#### SCHEME

