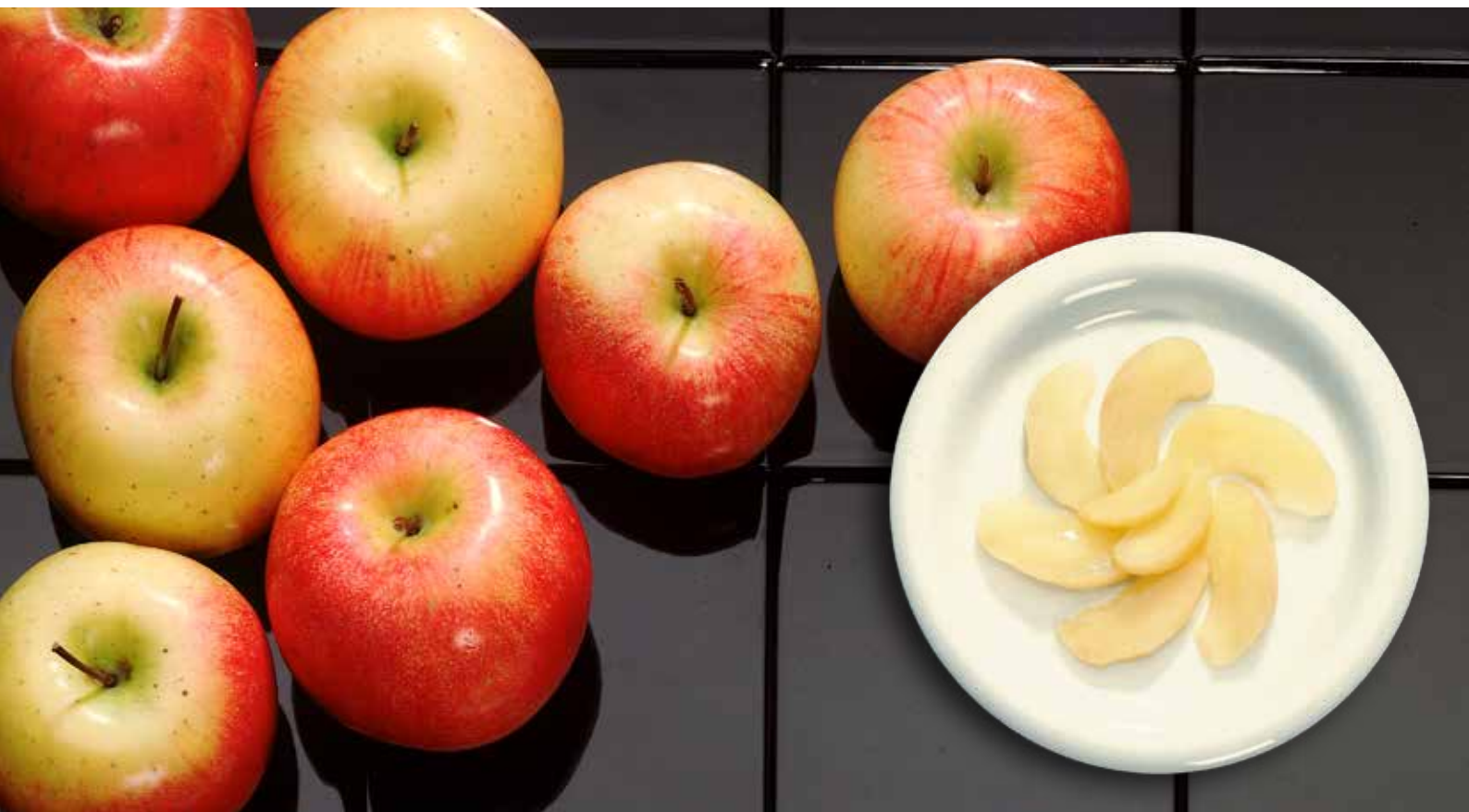


## Apple Processing Lines



Automatically peels, cores, and slices apples continuously at the rate of 400 per minute

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## Features and benefits of JBT's apple processing system Purpose of the fine

Since Apple Solid Pack represents one of the major industrial uses of apples, JBT's has created a processing line that provides all of the necessary requirements for achieving a quality product at controlled cost.

This is possible as a result of the specially designed JBT C8-A unit, which automatically peels, cores, and slices apples continuously at the rate of 400 per minute.

Also contributing to the effectiveness of the line is the JBT Apple Deaerating System, which removes the air from the product to inactivate the enzymes by a rapid product heating, then saturates the apples slices with brine.

Following this, the product is immediately canned and pasteurized.

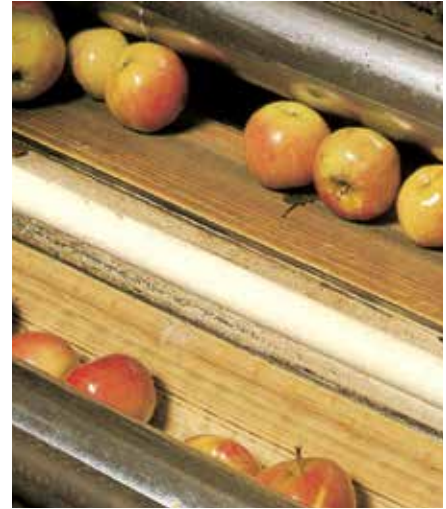
## Benefits

Using the JBT C8-A Peeling, Coring and Slicing Unit, maximum yield is achieved because only the skin of the apple is removed.

This is accomplished by, a combination process of caustic and steam peeling.

This method offers an advantage over the mechanical peeler, which removes a thick portion of the flesh with the peel, resulting in higher loss of valuable product.

Precise, self-adjusting coring knives also contribute to maximum yield.





## Better processing: increased heat penetration/reduced cooking time

By using the induced convection method, the JBT Rotary Cooker/Cooler System increases the rate of heat penetration.

This ensures the even cooking of every can thus reducing cooking time.

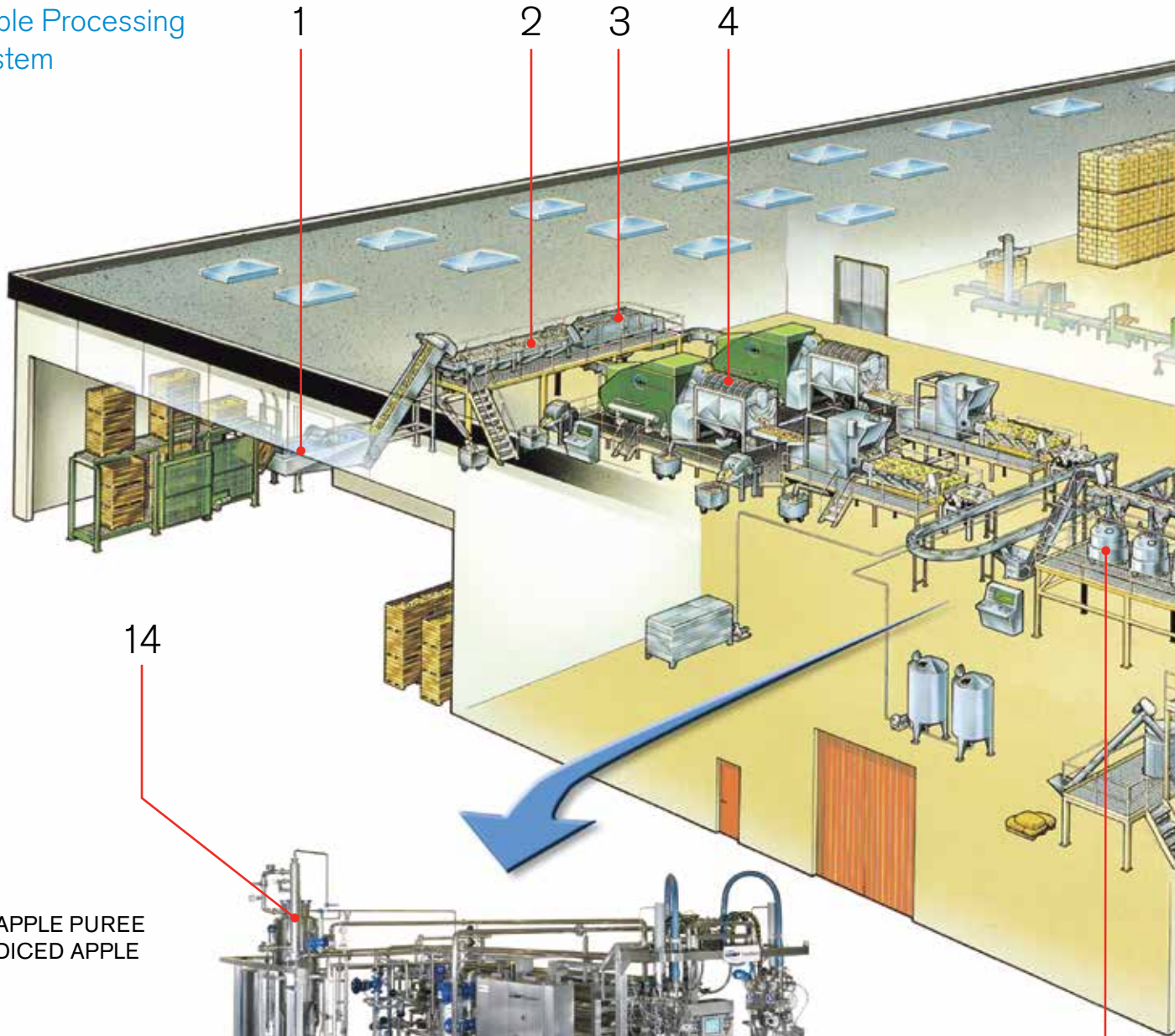
Rapid heat penetration and reduced cooking time preserve the natural flavour, nutritional value and appearance of the product.

The product is never still in the can, eliminating burning and caramelization. The JBT's sterilizer uses an operating principle which agitates the can, permitting short time, high temperature cooking, and rapid, efficient cooking in an automatic, continuous operation.

In short: Improved product quality.



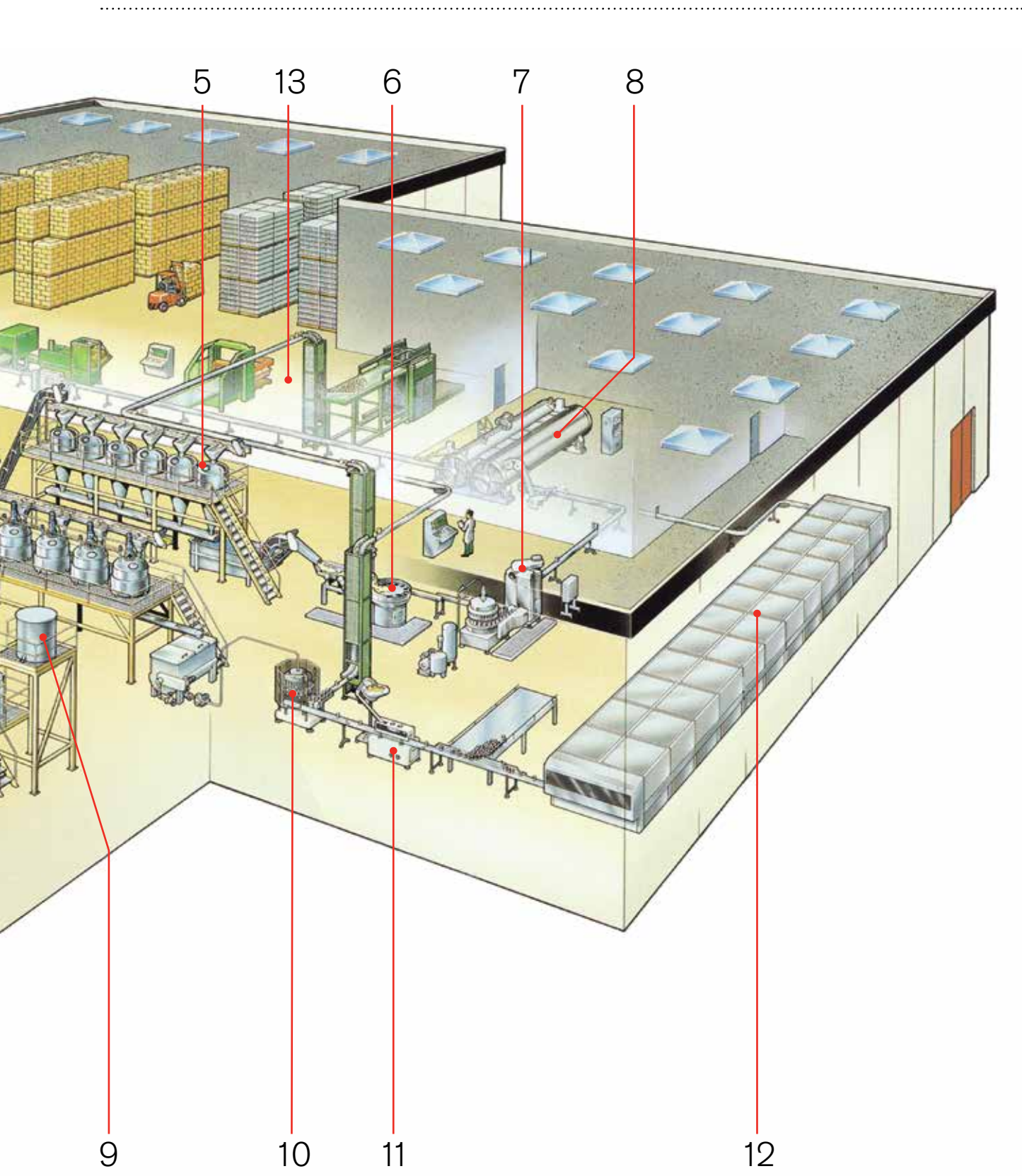
Apple Processing System



APPLE PUREE  
DICED APPLE



ASEPTIC FILLING



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## 1. Receiving - Dumping

Upon receipt at the cannery the bins are unloaded by fork trucks and stacked in holding areas. Bin Dumpers empty the bins into a water-filled tank which cushions the fall of the product. An appropriate elevator removes the apples from the water while fresh water sprays wash them before discharge.

## 2. Inspection

A properly designed Sorting Belt allows for the inspection of the product before processing. Unwholesome and immature fruits are removed at this point.

## 3. Sizing

The apples are conveyed to a mechanical sizer which eliminates the sizes of fruits unsuitable for final product. The balance of the apples are then conveyed into the feeding section of the Peeling machines.

## 4. Peeling, coring and slicing

In the JBT C-8A Peeling and Coring Unit the apples are conveyed to a shuffle-feeder, which meters the fruit into a chemical bath where it remains for a controlled period of time. Afterwards, the apples are fed into a rotary valve and introduced to pressurized steam. This activates the caustic solution of the surface of the apple, thus loosening the peel. After discharge from the valve, the apples are fed into a Rotary Rubber-Cord Washer that removes the loosened skins from the fruit. The washer employs an internal spiral that gently moves the fruit through the drum as it rotates. The apples are then flumed to the Coring Unit, where a shuffle-feeder carries them, through the aligning section. Here the fruit is automatically placed with the stem or blossom cavity in a downward position ready for coring. The apples enter the coring section at the rate of 400 per minute. The coring section consists of coring tubes, seed-celling units, and slicers mounted on an oscillating frame. This operation removes the stems, blossom cavities and seed cells. Then the fruit is carried to the slicing operation, where it is cut into equal sections.

## 5. Deaerating plant

Apple slices are flumed onto a vibrating screen, where slivers are removed. Then they are elevated to a distribution belt and introduced to the Deaerating Plant. The JBT Deaerating Plant consists of specially shaped kettles, in which the product to be canned undergoes a cycle of air removal by vacuum, followed by precooking by steam infusion, and finally, brine saturation. Once this cycle is completed, the product is discharged into a dewatering elevator. This elevator removes excess brine from the apple slices and transfers them to the Product Filler.

## 6. Product filling

The apple slices are gently discharged onto the filling plate of JBT's Product Filler, where a diverting device takes the product into the cans. The filling is completed by a manual operation, in order to obtain a solid pack consistency in the cans.

## 7. Syruping and closing

The filled cans are fed into an JBT Pre Vacuumizing Syruper. The Syruper is set for a specific can size and grade of syrup. The containers and contents are completely vacuumized and filled with syrup to a predetermined headspace. The Syruper is synchronized with a closing machine. The Closer directs a jet of steam across the top of the can to remove air from the headspace before sealing the lid onto the can. This operation provides a final vacuum in the container when the steam condenses. The closed cans now proceed to the pasteurization and cooling equipment.

## 8. Can pasterization and cooling

JBT Continuous Rotary Cookers are extensively used for applications that require a certain degree of automation and high thermal efficiency. The seamed cans enter the pasteurizer through a feed device which delivers them to the revolving reel of the Cooker. The reel, working in conjunction with the stationary spiral, carries the containers through the cooking steam. The continuous spiraling motion through the cylinder assures even cooking for every can. At the end of the cooking process the cans are fed, via transfer mechanism, into the cooling unit where a similar process slowly cools them down. Then the product is conveyed to the packaging lines, or to the warehousing operation.

## 9. Compote preparation

An option of the JBT system is apple compote preparation. Apple slices are taken from the flume conveyor, which feeds them into vacuum cooking kettles. Here the slices are mixed with a water and sugar solution (prepared in a separate plant), and vacuum-cooked until the product reaches the desired parameters. During this process, it is also possible to mix the apple slices with apricot or peach pulp, resulting in a fruitier taste and a more colorful appearance. The final product is introduced into a special jacketed holding tank, then delivered to an JBT Piston-Filler for the jar filling operation.

## 10. Jar filling

Apple compote from the holding tank is pumped into an JBT Piston-Filler. This machine is expressly designed to handle pulpy and viscous products with large particles. Jars are fed by a timing device to the feed-star, which registers the containers under the filling stations. The filling piston draws product from the bowl into the containers through the rotary valve located in the bottom of the measuring cylinder, ensuring high filling accuracy. The filler is equipped with a «no jar-no fill» device, eliminating product waste when no container is present.

## 11. Jar closing

The filled jars are transferred from the Filler to the Capper by a specifically engineered method that makes certain no product is spilled. The Capper is a linear machine that closes jars under steam vacuum, ensuring air removal from the headspace. The caps are fed to the closing chamber by means of a magnetic hopper that guarantees the proper orientation and timing of the caps.

## 12. Jar pasteurization and cooling

The capped jars are pasteurized in a JBT Draper-Type Pasteurizer-Cooler, designed for proper jar handling. In order to avoid thermal shock to the glass, the containers undergo several cycles of gradual and even heating, followed by cooling. The jars are then conveyed to the labelling and packaging lines, or to the warehousing operation.



## 13. Packaging and warehousing

Following the pasteurization and cooling process, the finished canned product may be handled in various ways. The cans and jars may be conveyed directly to packaging lines, where they are labelled, packed in fiber cartons, sealed by compression and stacked on shipping pallets. The cases can either be shipped immediately or stored in the warehouse. Alternatively, the cans may be conveyed to a palletizing machine where they are stacked in layers, unlabelled, on a warehouse pallet. This method, referred to as «bright stacking», allows the canner to delay the labelling operation. The palletizing machine can be used as a depalletizing unit during the labelling operation in off-season; the bright stacked pallet is mechanically depalletized and the cans are labelled and packaged as described above.

## 14. Aseptic Processing and Filling

READYGo™ Aseptic Monoblock, available with capacities ranging from 500 to 6000 Kg/h. Designed for the aseptic filling of 5 to 200 liter bags and can process the following products: fruit purees with or without pieces, concentrated fruit purees, and many other formulated products. The suitable configurations and type of heat exchangers are selected as a function of the product to be processed in order to guarantee the best qualitative result.

## COUNT ON JBT TO HELP PROTECT YOUR INVESTMENT

JBT's greatest value in PRoCARE® services comes from preventing unexpected costs through smart, purposeful, and timely maintenance based on unmatched knowledge and expertise. PRoCARE service packages are offered as a maintenance agreement in various service levels, depending on your production and cost management requirements.



## JBT DIVERSIFIED FOOD & HEALTH

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