

**Hydromatic®**



# Continuous Hydrostatic Sterilizer

IN-CONTAINER STERILIZATION

[jbt.com](http://jbt.com)



# JBT Hydromatic®: Adding Value to Your Products

## Tailor made shelf-life solutions.

The reputation of your brand is only as good as the quality of your products. Producing the best possible quality is one thing; making sure your production is at the highest level of efficiency and at an ever lower cost is quite another. To effectively address new consumer needs, packaging trends and opportunities in the market, you need a processing system which can be adjusted or extended and, at the same time, offers you a very strong economic proposition: you need the JBT Hydromatic.

Each JBT Hydromatic is perfectly geared to your specific products, production facilities and market requirements, allowing you to stay ahead of your competition.

### Indestructible

The JBT Hydromatic possesses a number of unique characteristics. With its high capacity and very low production costs it can, in the safest possible way, give added shelf-life to a wide variety of packaged products.

### The JBT hydromatic:

- ▶ Is available in either container-dedicated or flexible execution and comes in speeds of up to 2 000 containers per minute.
- ▶ Helps to optimize your logistics through continuous infeed, processing and discharge of your packages in a very small footprint.
- ▶ Stands out as a result of its safe and consistent processing.
- ▶ Is environmentally friendly and responsible.
- ▶ Allows you to realize significant water and energy savings; lowering production costs as a result of the hydrostatic "water recycling and heat regeneration" principle.
- ▶ Has a modular design which allows for the flexibility to accommodate modifications and additions.



*With over 700 systems supplied to date and over 60 years of in-container sterilization system know-how, JBT has a unique understanding of your market, which enables us to provide expert consultation, effective solutions and excellent service. You can rely on JBT to help you make the right choice for your processing needs.*





## JBT Hydromatic®: Cost-Effective and Flexible

The JBT Hydromatic is the solution for the sterilization of both medium and large production volumes.

Production cost of products manufactured in large quantities require the highest level of efficiency and the lowest cost. This requires adapting to a variety of recipes and processes, in different packages and relatively small production batches. To stay flexible enough to accommodate a variety of packaging types and sizes, your system must have the capability for efficient changeover. The market requires the JBT Hydromatic.





### Lowest cost per unit

The JBT Hydromatic is an advanced continuous sterilizing system which in many cases has proven to provide the lowest cost per container. This is the result of the JBT Hydromatic's incredibly efficient and fully automatic operation, energy-efficient design, long service life and low maintenance costs.

### Energy and water savings

Inherent in the JBT Hydromatic's unique design is a very high level of water recycling and heat regeneration, resulting in extremely low energy and water usage. The JBT Hydromatic reduces the processing cost of your product while helping you achieve your sustainability goals.

### Consistent Processing Quality

The JBT Hydromatic design provides a consistent high quality from the first to the last package in a batch. Each

and every package in a production run is processed exactly the same and the continuous, automatic operation prevents under- or over-processing. A comprehensive management information system gives instant access to all production and process data.

### Reduction of packaging cost

The unique process design and balanced pressure, combined with a soft touch package handling system, that protects your packages from start to finish, will help reduce packaging costs.

### Small footprint and efficient logistics

The JBT Hydromatic requires only 10 to 25 percent of the floor space of other sterilization systems. This, and a continuous flow of product packages, means much easier in-plant logistics without the risk of mixing-up processed and unprocessed product.

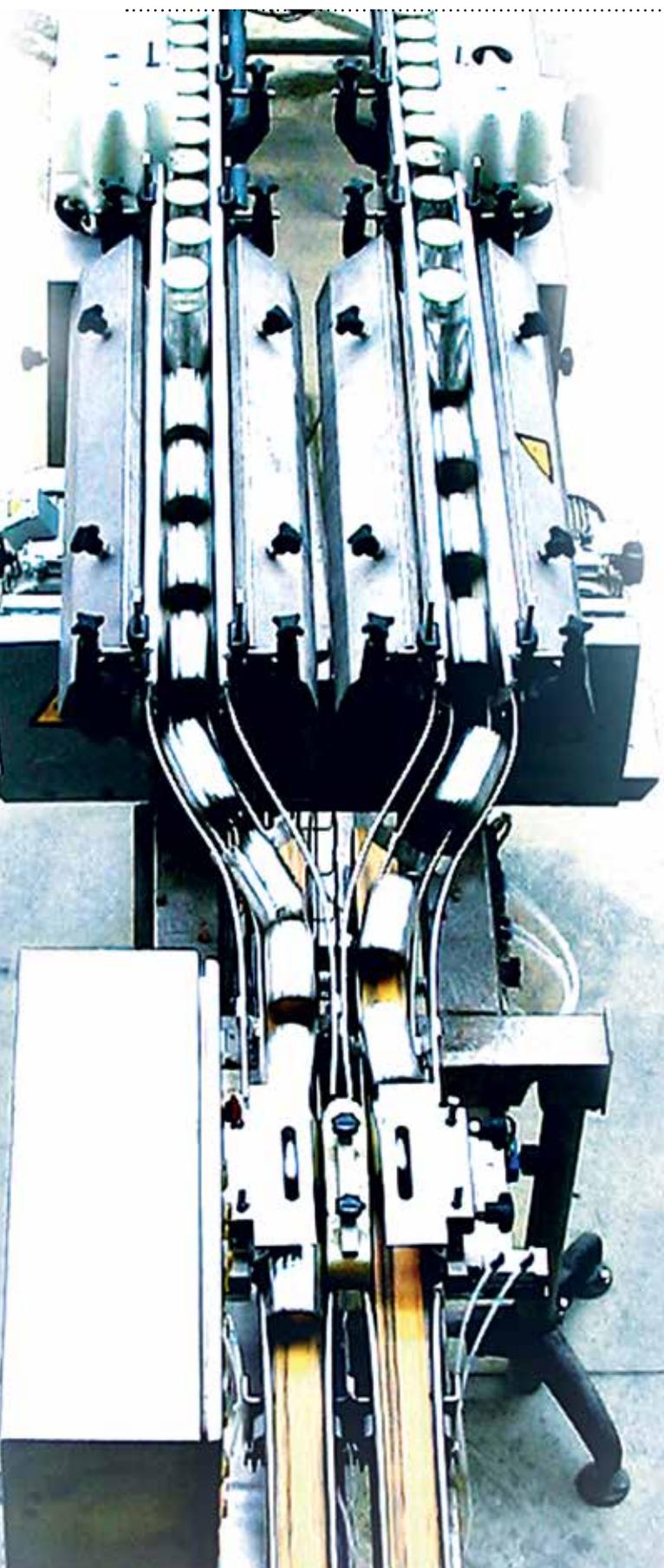
### Efficient and totally reliable

The JBT Hydromatic has been designed to ensure sustained, trouble-free operation for many years. The application of high-grade materials and sophisticated systems goes a long way to ensuring maximum efficiency, reliability and ease of maintenance.

### Flexible

The JBT Hydromatic is a very flexible system that can be easily adjusted to various recipes and packaging sizes, types or shapes within your range of products.

The JBT Hydromatic's built-in flexibility can be further exploited by adding optional components when changing over to entirely new products, new packaging or new processes in the future.



## Configurations

JBT Hydromatic sterilizers are designed and built to your requirements. Increasing product and packaging diversification has sparked the development of many new Hydromatic configurations with or without overpressure as well as other special features.

Based on a detailed analysis of your current and future needs, each JBT Hydromatic is configured from well-proven components, linked together to form a tailor-made solution. This ensures you will receive the best possible return on your investment!

### Different product/packaging concepts

High or low capacity? Flexible or container-dedicated?

Every food manufacturer and every product, has its own characteristics and requirements. Some operations focus on one or two products manufactured in large volumes. Others tend to have a wide range of products marketed in small volumes.

Depending on your specific demands regarding throughput capacity in combination with packaging sizes and material, product ranges and process requirements, any installation configuration can be devised.





## Meet the family

To provide maximum efficiency, reliability and the best possible technology for your specific requirements, the JBT Hydromatic family consists of different concepts. Each concept has specific characteristics but shares 'family values' such as great flexibility, high reliability, and very low level of energy consumption and operating cost.

### 01 Side loader

The product carrier consists of two tubes (or channels) fitted to the main conveyor chain. Product containers are loaded into and unloaded from the tubes at the side of the carriers. The carriers are closed during the entire process for full protection of your packages. Several 'sizes' of the standard product carriers are available each covering a wide range of containers to be processed.

### 02 Front loader

Containers are loaded in and unloaded from the front of the carriers. Each carrier holds a single stick of product containers. The cross-section of a front loader system carrier, generally resembles the letter 'Q'. The shape is designed to protect your packages. There are many different sizes of carriers available, with a considerable overlap in allowable container sizes.

### 03 Special configurations

JBT Hydromatic continuous sterilizers have a reputation of being high efficiency-high capacity machines for 'main stream' food products. 50 percent of the continuous sterilizers supplied by JBT are employed for the processing of up-market products packed in odd-shaped metal cans, glass jars or bottles, lightweight plastic packages, soft aluminum tubs and alike. JBT has extensive experience with specialized processing and handling concepts including: super still cook for sensitive products; soft touch handling

systems; overpressure processing and overpressure cooling for flexible containers/closures.

### Configuration for glass and/or lightweight plastic bottles

Glass and HDPE bottles are fully protected throughout the sterilizing process by an ingenious carrier design with individual pockets for each bottle. Solutions are available with different pocket dimensions and carrier length to suit a range of bottle sizes and the required throughput capacity.



# Anything Goes

A JBT Hydromatic Continuous Sterilizer is used to process any product in a wide variety of packaging. Applications include ready meals, vegetables, meat, fish, pet food, soup, low-acid drinks, dairy products, soy drinks, etc.



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## 01 Baby food

Baby food is usually packed in small decorated cans or glass jars with PT-closure requiring an overpressure process. This is achieved with a twin hydrostatic tower system configuration. A specially designed soft-touch system handles the jars with extreme care at speeds of up to 1200 jars per minute.

## 02 Vegetables and meal components

You will find many Hydromatic systems in daily use in these industries, from the processing of seasonal vegetables to formulated bean products or complete R.T.S. meals, packed in a variety of metal containers, glass jars or the like.

## 03 Long-life soy drinks

Worldwide consumption of soy milk is experiencing strong growth. Long-life soy milk is often packed in portion-size glass bottles. The high market demand and relatively small bottle volume results in the need for high-capacity production lines. JBT markets a range of Hydromatic systems dedicated to the soy milk industry.

## 04 Soup

The JBT Hydromatic forms the heart of most canning lines for world-famous brands in the processed soup industry. High and medium volume systems are used both in dedicated operations and flexible lines requiring many (automated) product and process changeovers in each working shift.





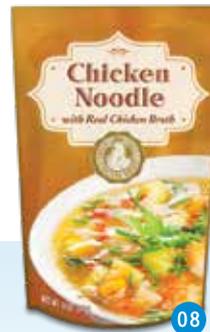
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#### 05 Pet food

Hydromatics are used by leading manufacturers in the pet food industry all over the world. The JBT Hydromatic system in many cases has proven to provide the most economical solution for the range of cans (from the smallest one-portion cat food can to the largest dog food cans). The system design accommodates the typical requirements of the industry, such as high-line speed and round-the-clock operation. A special version of the JBT Hydromatic is available for lightweight aluminum tubs (trays), using a special handling system and hanging carriers, which allows the tubs to always be kept upright, in combination with an overpressure process configuration.

#### 06 Fish and meat

JBT provides tailor-made solutions to the fish and meat industries, both commonly characterized by a wide variety of beautifully decorated packaging types. The example above shows an application for several sizes of conical cans. This system uses a specially designed loading and unloading system as well as special product carriers with individual pockets and a 'visor' to protect the packages throughout the process.

#### 07 Noncarbonated beverages

Noncarbonated beverages (NCB's) may be filled in glass or plastic bottles or in printed cans with an easy-open lid. The JBT Hydromatic family covers solutions for all these packaging needs.

#### 08 Flexible packaging

The JBT Hydromatic is also capable of handling a wide variety of flexible packages. Whether your product requires a tub, pouch or tray, the JBT Hydromatic can sterilize varying designs of flexible packaging.

#### 09 Nutraceuticals

The acclaimed product safety performance of the JBT Hydromatic makes this commercial sterilization solution particularly appropriate for manufactures of nutraceutical products.

#### 10 Long-life dairy products

The JBT Hydromatic for dairy applications is usually part of a two-stage process, whereby the product is pre-sterilized prior to filling into the bottle. This requires just a mild treatment (high temperature, short time or HTST process), resulting in a product with a long shelf-life and a great taste. The range covers any conceivable application from long-life milk in standard glass bottles to many kinds of formulated drinks in attractively shaped plastic (HDPE) bottles.

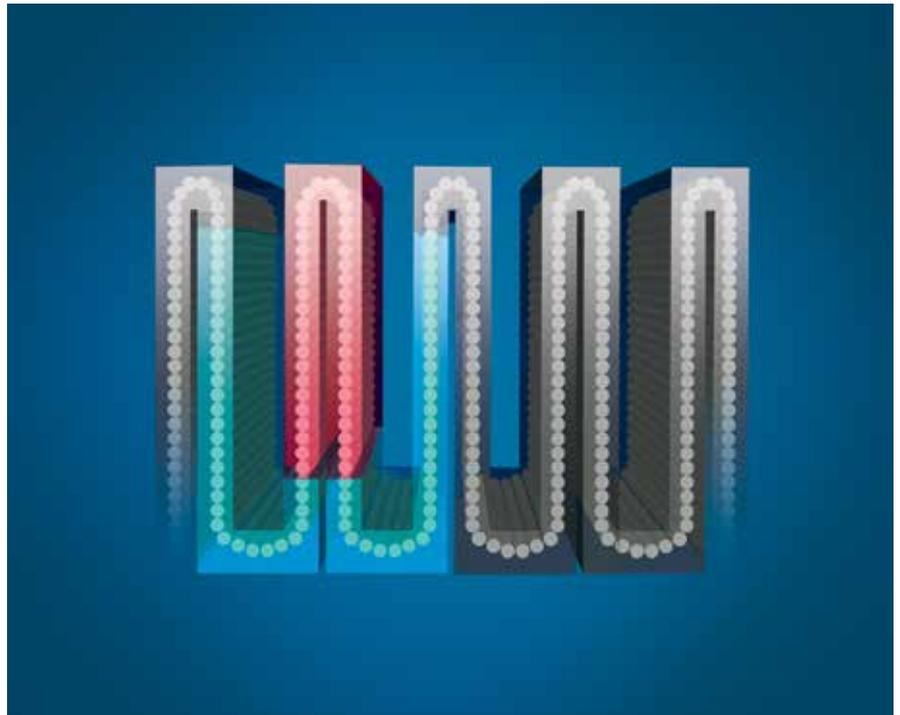
# What's Cooking in Sterilizers?

Process options with the JBT Hydromatic®.



## Basic process

In its most basic configuration, a hydrostatic continuous sterilizer consists of four sections or "legs". The first leg serves as a preheating section, in which a hydrostatic column acts as an inlet lock. The second tower comprises the sterilizing section, where the product is heated to the requisite sterilization temperature with the help of steam. The sterilization temperature is directly related to the pressure of the saturated steam. By varying the pressure, the temperature can be controlled. After leaving the sterilizing section, the product carrier ascends through the hydrostatic cooling leg. With the pressure gradually decreasing and the product gradually cooling, spray water jets provide additional cooling. Sterilization time and temperature are widely variable between generous limits within the JBT Hydromatic process concept.



### Overpressure sterilization

Much of the new generation of packages are more “sensitive” to process conditions than traditional packages. This is mainly due to the construction of the materials (plastic, very thin metal and sensitive closures).

The common process requirement for packages like trays, tubs, glass jars, plastic pots and plastic bottles is the need for an overpressure process. This means that additional pressure is required during the process. For overpressure sterilization, the JBT Hydromatic applies either a mixture of steam and compressed air (effectively homogenized by a powerful fan system) or superheated water in an environment of compressed air. In both cases, the pressure can be controlled independently from the temperature.

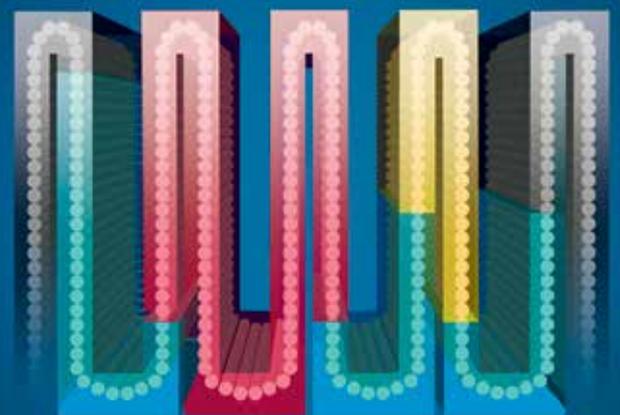
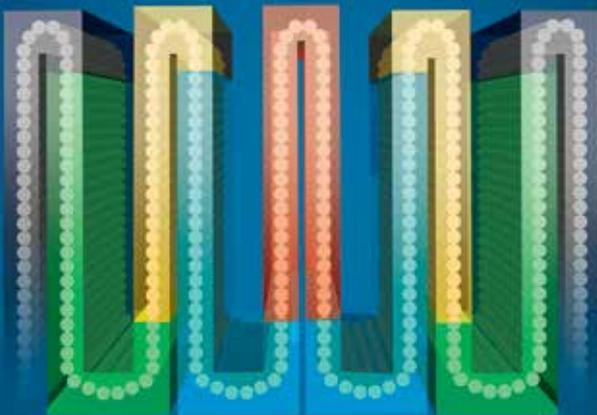


### Pressure cooling option

With modern, easy-open ends and/or peelable foil lids, an optional overpressure cooling system protects the integrity of your packages by managing the pressure differential during the cooling phase.

### Multiple process modes

To accommodate your range of products, packaging sizes and process ranges, your JBT Hydromatic can be configured with a baffle wall allowing for multiple process modes, increasing your process flexibility. A baffle wall is a configuration whereby the hydrostatic cooling leg can be transferred from one position to another, thus varying the holding capacity of the sterilizing section.





# Production Made Easy

## Advanced control system

Each JBT Hydromatic sterilizer features an advanced automatic control and management system which is FDA compliant for the US market.

The information provided by the control system keeps the operator fully informed and important data is recorded for future reference.

## Product monitoring system

The Product Monitoring and Registration System (PMR system) monitors the product in the continuous sterilizer on the basis of dwell time, temperature and events during the process. It also provides a visual tool which indicates the actual product status per group of packages.

## Variety change system

The Variety Change System includes a recipe memory in which the various process parameters and alarm limits for the relevant processes are stored.

Once a recipe is activated from the touchscreen the JBT Hydromatic will auto-configure itself to the recipe, define the right temperature and pressure settings and adjust the handling speeds. Machine downtime as a result of product changeover is minimized, eliminating the risk of human error.

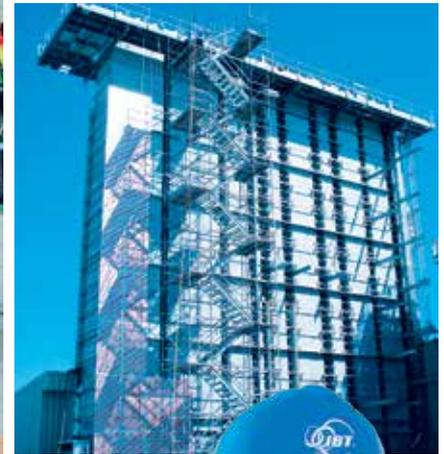
## Automatic start-up and shut-down

This optional system allows the machine to either fill, pressurize or start up automatically without operator involvement. It is also possible to run a semi-automatic activation whereby the operator is prompted to carry out specific actions in a safe and predefined order.

## Remote diagnosis

JBT's support team can remotely access your system to analyze an occurrence. Fault finding (and solving) by JBT specialists through a modem connection means no time is lost in waiting for the diagnosis.





## At Your Service

Get the most out of owning your sterilizing system with JBT PRoCARE! The concept of 'Care' means much more to JBT than simply carrying out a repair or supplying parts. JBT has vast experience when it comes to the maintenance and upkeep of Hydromatics.

Genuine JBT PRoCARE is our ongoing commitment to you: to keep your system performing smoothly long after other systems have given up.

### Project implementation

Implementation of a new system requires the disciplines of planning, organizing, and managing resources to bring about the successful completion of your project objectives. Our experts possess the skills and experience to make your project an instant success!

JBT experts will completely execute or supervise new plant commissioning for you: from safe delivery to its destination anywhere in the world, to site erection, to start-up, final commissioning and training of your staff.

### Process design and support

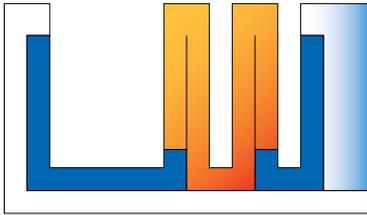
The JBT Technology and Training Center is the cradle of specialized expertise in the field of processing and packaging of shelf stable products. It houses various simulators to simulate all known sterilization processes with a view to ensuring an optimum match between product, package and system configuration.



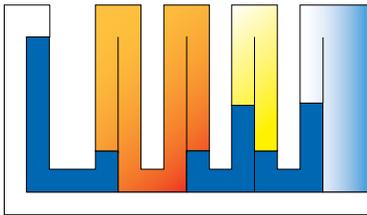
**PRoCARE®**

**The smart way to produce more tonnage per day.**

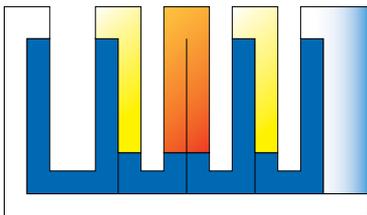




Added steam section (for increased capacity or process time).



Added steam section and pressure cooling section.



High overpressure configuration.

## Retrofits - Updating an Existing Hydromatic

JBT continues to lead the way with technical innovations incorporated into our newly built hydromatic sterilizer family. JBT believes that existing installations should also benefit from these developments. As a result of this commitment, a variety of modification and retrofit kits have been developed to bring existing systems fully up-to-date again. The objectives include increased reliability, enhanced process accuracy and control, improved efficiency and maintainability.



### Adding flexibility or capacity

JBT offers a range of solutions for adding flexibility to your Hydromatic sterilizer. JBT's extensive knowledge of soft-handling and processing of 'alternative' packages further differentiates our retrofit program.

### Tower replacement and reconfiguration

JBT has vast experience with the maintenance and upkeep of older Hydromatics. In many cases, replacing one or more towers in order to repair or possibly reconfigure your plant is both technically and economically feasible. With the necessary skills and experience, JBT can help at every step, from design through manufacturing to supply and installation on site.

### Oscillator unit

Increase throughput and capacity on JBT Hydromatics by using an oscillator unit.

### Chain greasing system

Automatically grease the main chains during production to ensure optimal greasing, avoid pollution and save on grease and labor.

### New control systems

Adding functionality and automation to an existing control system has the potential to improve product safety, efficiency, serviceability and collect quality assurance data.

### Advanced sealing system

Upgrade the shaft seals with a state-of-the-art sealing system which is easy to install, virtually maintenance-free and has a very long service life.

### Water saving systems

Dramatically reduce the amount of cooling water used by a closed-loop design.

### Improved drive systems

Replacement drive systems, featuring frequency control are accurate, reliable and virtually maintenance-free.

### Open twist discharge

An open-twist system replaces existing wire-twists on older canning Hydromatics. The system improves efficiency and minimizes damage to steel, aluminum or lithographed cans.

### Increased capacity

An indexing mechanism is available to replace the previously applied pawl and ratchet system.

The system reduces cycle time and considerably increases the capacity of the Hydromatic.

### Improved infeed and discharge solutions

The latest generation packaging handling system offers increased throughput capacity, more flexibility, less changeover time and gentler handling for more vulnerable packaging types.



## COUNT ON JBT TO HELP PROTECT YOUR INVESTMENT

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



## JBT DIVERSIFIED FOOD & HEALTH

FRESH PRODUCE TECHNOLOGIES | FRESH-CUT, ROBOTICS, STEAMING | FRUIT AND VEGETABLE PROCESSING | SECONDARY PROCESSING | ASEPTIC SYSTEMS | FILLING AND CLOSING | IN-CONTAINER STERILIZING | TRAY SEALING | SECONDARY PACKAGING | HIGH-PRESSURE PROCESSING | POWDER PROCESSING | TUNA PROCESSING

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We're with you, right down the line.™

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