

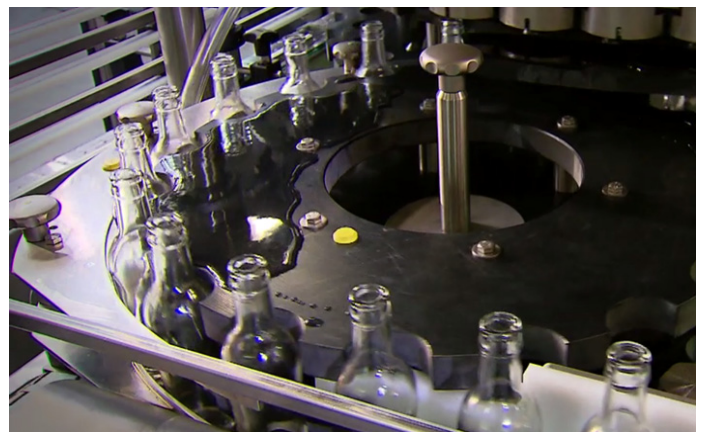


# Accurate filling of high-value products into glass jars

## Your high quality product deserves the perfect packaging

Capable of filling almost any kind of glass jar, the JBT Unifiller is a piece of technology engineered to provide you with the best quality in filling, with fast and efficient product change-over, fast Clean-In-Place procedure and total automation. No disassembly, no manual cleaning.

The Unifiller's heavy-duty, highly robust design and unique filling concept results in superior filling accuracy and trouble-free use, even after many years of operation. The JBT engineers remain at your service during the full life span of your Unifiller, providing you with years of experience, even in the toughest of scenarios.



**Put your product in the spotlight**

In glass jars, consumers can see your product: its colour and texture, the size of the particles and its viscosity. Therefore, consumers associate glass jars with quality, safety and freshness.

Glass jars offer you, as a processor, great flexibility in the formats used. Ideal packaging that obliges your marketing staff to make your products stand out on the shelf.

Whatever your product and whatever the design of your glass jars, the JBT Unifiller guarantees perfect filling every time. With its optimized design, high quality materials and unique Clean-In-Place procedure, it is made to provide you with the maximum of uptime and minimum of maintenance. Year after year. The Unifiller offers you precise, hygienic and delicate filling at the lowest cost per unit.

Need proof? Our experts will be happy to offer you a filling test with your own products at your production site. A highly flexible pilot machine proves the JBT Unifiller delivers accurate filling with easy-to-clean equipment, capable of adapting to each of your products and glass jar designs.



**Put our promise to the challenge!**

**To experience a filling test  
by simply e-mail us on  
hello@jbtc.com.**

## Glass jar packaging: what you see is what you get



Consumers associate glass jars with high quality food products. We associate it with reliability and safety when we choose baby food for our little ones. But also jams, marmalades, chocolate spreads, sauces and soups get an extra touch of quality when sold in glass jars.

### Applications involved

<b>Ready Meals</b>	Ready meals and soups
<b>Baby Food</b>	Baby food and fruit puree
<b>Honey &amp; Spreads</b>	Honey, chocolate spread, peanut butter, jams and marmalades
<b>Beverages</b>	Fruit Juices, non-carbonated beverages and nutritional drinks
<b>Dairy</b>	Cheese (liquid), cream, evaporated milk, infant formula, milk, milk-based products, sweetened condensed milk and thick cream, yoghurt
<b>Meat</b>	Pâté
<b>Sauces</b>	Dressings, cooking sauces, ketchup

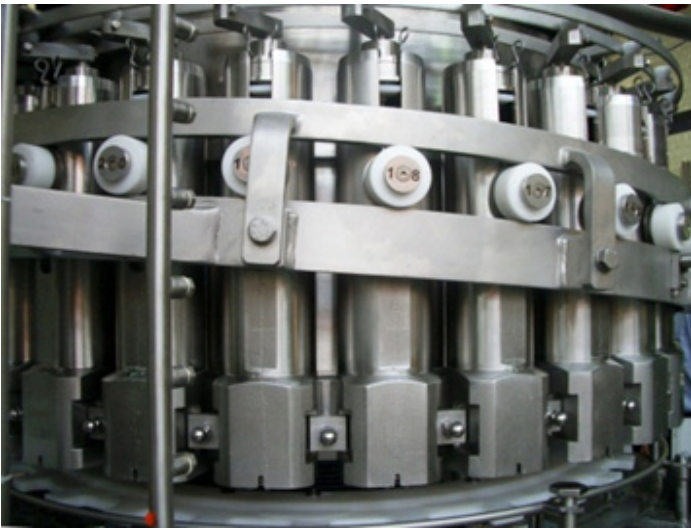
Liquid or runny; silky smooth or chunky; in small or big jars; in simple round-shaped jars or jars with complicated shapes; filled boiling hot or ice cold – anything is possible.

The product-specific challenges that come with these products require gentle and precise filling. It goes without saying that the filling process must guarantee complete hygiene and an easy-to-use, easy-to-clean and easy-to-maintain environment to meet the high 'Critical to Quality' characteristics demanded by today's customer. Moreover, the filling line requires fast and cost-efficient format and product change-over.

Meet the JBT Unifiller. Ideal for high value-added products where hygiene, filling accuracy and gentle particle handling is key.



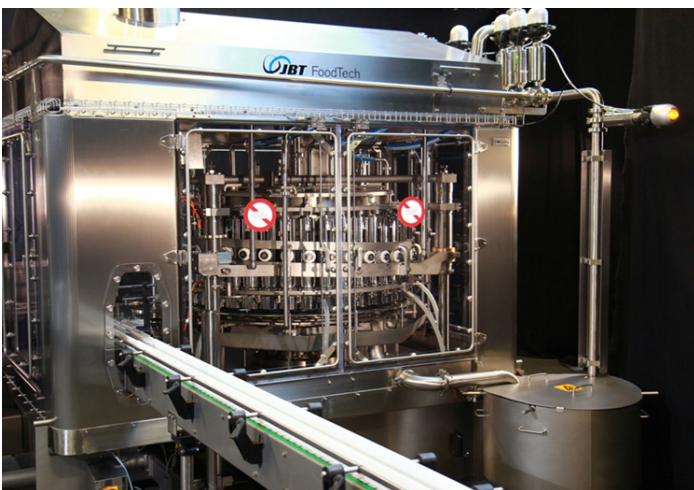
## JBT Unifiller: the perfect fit for your product



Every product has its own specific features and requirements when it comes to filling. Some are liquid, making it harder to fill at high speed without spilling and thus wasting your precious product. Others have a viscous texture, forming head-strong droplets and threads, making it difficult to keep the filling line going when product waste could pile up in different parts of the machine. And then there are products with sensitive particles, requiring the most gentle handling.

To ensure perfect filling of all these products, JBT customizes every Unifiller to meet your particular needs. It is the perfect solution for high value-added products where filling accuracy and gentle particle handling is key.

Every Unifiller is as individual as your product, like a perfectly tailored suit

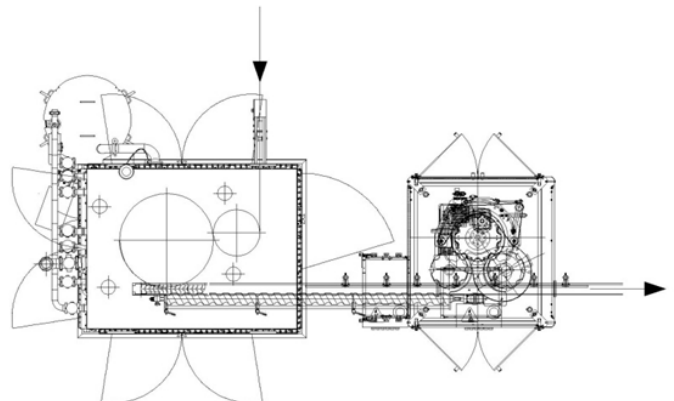


The design, number of valves, nozzles and others parts are custom-fit to suit your needs and the speed you would like to run it. In doing so, the Unifiller fits perfectly in your processing chain. A customized machine results in optimized accuracy and minimized product drip, meaning a cleaner machine, cleaner glass jars, and minimum risk of contamination of the glass rim leading to higher quality and a more consistent seal.

The Unifiller is designed for easy maintenance and a long life. The centralization of lubrication points allows for (automatic) lubrication when the filler is running. No precious production time is lost.

The Unifiller can be seamlessly integrated into different line layouts and block concepts. Its compact design and flexible layout options permit the machine in-feed and discharge to be individually configured with up- and downstream devices, such as rinsers and cappers.

JBT experts offer technical assistance and project management to achieve smooth integration with (inline or rotary) capper / rinser units.



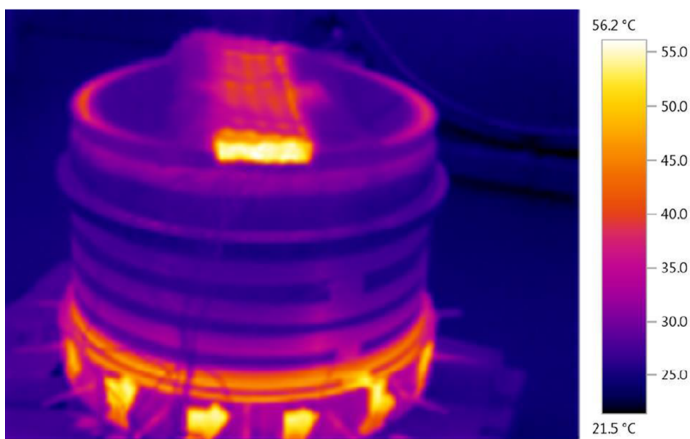
## An example of versatility: chocolate spread



A renowned producer of chocolate spread gave JBT the technical challenge of keeping the product bowl at the exact same temperature during filling.

JBT's engineers adapted the product bowl to allow a heated lower surface and insulated wall and cover to keep the spread at a pre-set temperature, even when the filler is not running. A water-circuit cools or heats the bowl with the push of a button. The middle console contains all the items like product inlet and temperature probes. This way, more space remains for two hinged access doors allowing easy access to the bowls for inspection and cleaning.

The doors are manufactured from food grade engineering polymer, known for its insulating properties and low weight. The covers can be secured both in open and closed position.



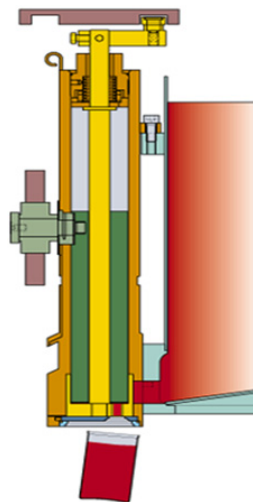
*Insulated bowl during heat transfer test*

**Want to see how the JBT Unifiller  
is customized to your needs?**

**JBT experts are at your service at  
[hello@jbtc.com](mailto:hello@jbtc.com)**

## Accuracy Perfect filling every time

All your glass jars, filled exactly as much as you want it to be. To the drop. Jar after jar, run after run. It requires accurate machine parts and a robust construction, together with an efficient filling mechanism. The JBT Unifiller is just that.



*Disassembled fill station*

Probably the only filling machine on the market that perfectly fills up every kind of glass jar, without a spill. Besides minimum product give-away, superior filling accuracy guarantees consistent head space for trouble-free, in-container thermal processing.

The Unifiller's working principle is unique. The rotary, volumetric filler with self-draining fill stations and product bowl, guarantees gentle yet fast and accurate filling. The complete absence of seals allows CIP without fill station disassembly. Banking of the jars eliminates spillage and optimizes filling speed. Gentle jar movements on the conveyor after filling without any sharp turns avoid product spilling.

Of course, all parts are made using premium materials. Surfaces that come into contact with the product are of stainless steel or another high, food-grade quality, non-corrosive material.

**In short: your product gets on shelf  
faster, cleaner and perfectly filled.**



## Filled in 4 steps

The product path is kept to a minimum to optimize filling speed and accuracy. The large product ports and short product path, allow filling of highly viscous products, with or without particles. Unifiller fill nozzles are especially designed for their application and can easily be exchanged.



The Unifiller filling operation consists of four specific phases:

### Phase 1: pre-dosing

The valve port is open to the product bowl and the piston moves upwards bringing a pre-defined volume of the product into the cylinder.

### Phase 2: nozzle opening

In a rotary movement of the valve, the fillings station is closed from the product bowl, immediately followed by the opening of the nozzle to the jar.

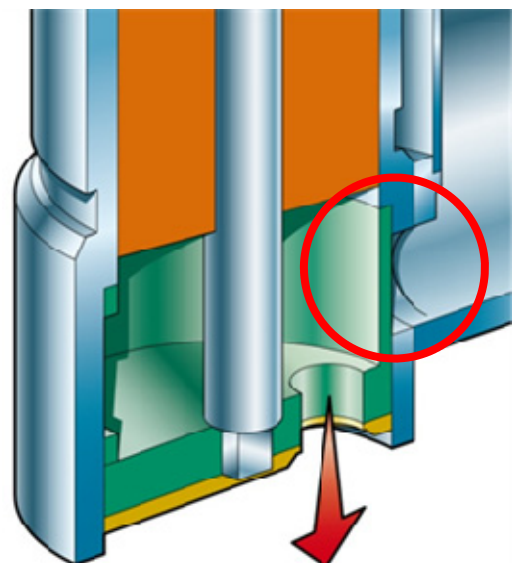
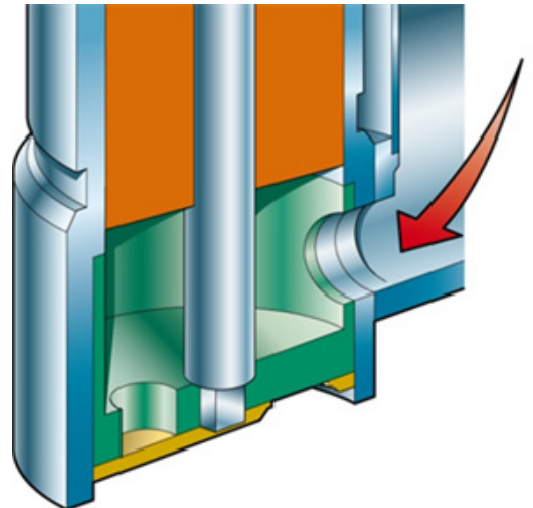
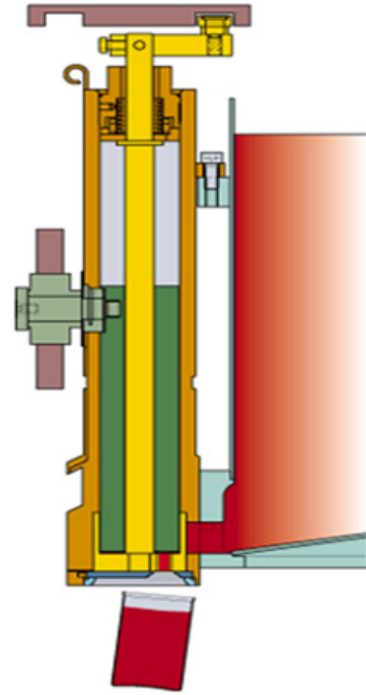
### Phase 3: filling phase

The piston moves downward and the product enters the jar.

### Phase 4: nozzle closing

The piston is at the bottom of the stroke and the jar is filled. The valve port is then opened to the product bowl and phase 1 is repeated.

A broad range of fill stations, from 100 cc to 1500 cc, allows for selecting the optimum filling station for each application. Application-specific, quick-change filling nozzles allow optimum filling quality and accuracy for each product.



## Product Versatility

The Unifiller concept offers unmatched product versatility: from low viscous products without particles, to high viscous products with particles; both cold and hot fill. The large product ports and short product path allow filling of high viscous products, with or without particles.

Unifiller fill nozzles are designed especially for their application and can be exchanged easily.

The custom-fit nozzles increase accuracy and minimize product drip for even the most complex products. The result is a cleaner machine, cleaner glass jars and minimum risk of contamination of the glass rim for a more consistent seal.

Besides minimum product give-away, superior filling accuracy assures consistent headspace for trouble-free in-container thermal processing.

### Unifiller machine range

FILLING STATION SIZE [ml]	TYPICAL BOWL PORT DIMENSIONS [mm]	TYPICAL NOZZLE PORT DIMENSIONS [mm]	FILLING SPEED (Up to # jars per hour) [JPH]
100	Ø 24	Ø 9 - Ø 10	66.000
300	Ø 30	Ø 16 - Ø 19	60.000
350	Ø 30	Ø 16 - Ø 19	57.000
420	Ø 30	Ø 19 - Ø 21.5	51.000
500	Ø 40	Ø 22 - Ø 26	30.000
850	Ø 40	Ø 26 - Ø 28	27.000
1000	Ø 45	Ø 28 - Ø 32	21.000
1500	Ø 45	Ø 28 - Ø 32	18.000

### Examples of applications and target filling accuracies

Product	Filling volume [ml]	Typical filling accuracy (1 standard deviation) [gram]
Baby food without particles	80	0,25 ± 0,15
	130	0,30 ± 0,15
Baby food with 10x10x10mm particles	250	1,20 ± 0,30
Gelee	200	0,15 ± 0,10
Apricot jam with 25x25x25 mm fruit pieces	200	0,90 ± 0,25
Sauce with particles	200	1,00 ± 0,30

# Sanitary design

## and Clean-In-Place without disassembly

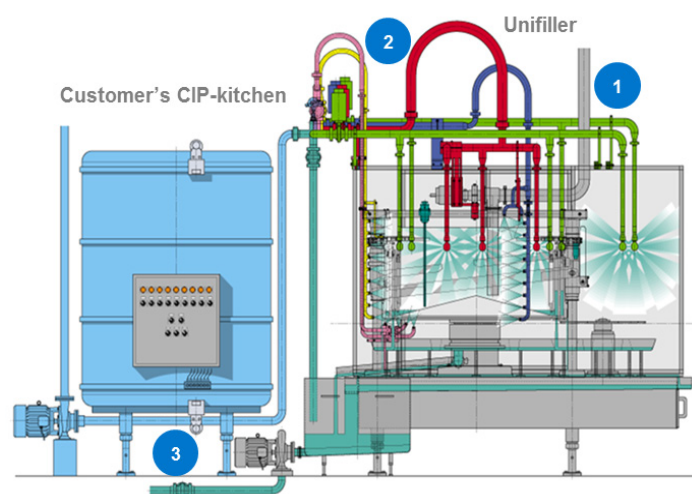
The JBT Unifiller is the only volumetric filler with Clean-In-Place capacity that does not require disassembly of the fill stations. Unique, as confirmed among others by the independent Dutch Dairy Research Institute NIZO.

The Clean-In-Place (CIP) is the result of the Unifiller's unique sanitary design. Because of the shape of the unique self-draining design and absence of seals in the filling stations the Unifiller does not need to be (partly) disassembled for cleaning. Safe. Hygienic. Effective.

Optional guarding with safety glass adds to the sanitary aspect of the machine, with every single part that comes into contact with your product made either of stainless steel or another, non-corrosive material.

The self-draining fill station design allows full CIP without disassembly. No need for labour-intensive manual disassembly or complex and maintenance-intensive motorized disassembly of the filling stations. CIP results in:

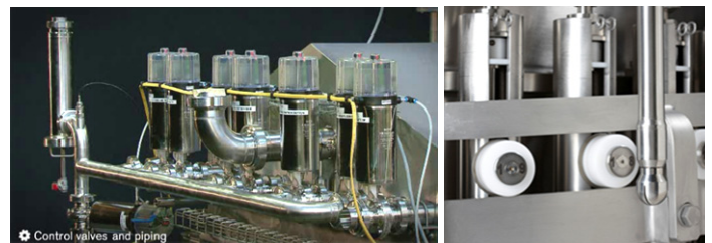
- Less downtime for cleaning and product change-over
- Consistent, recurrent cleaning, independent from the operator
- No damage and soiling of technical components



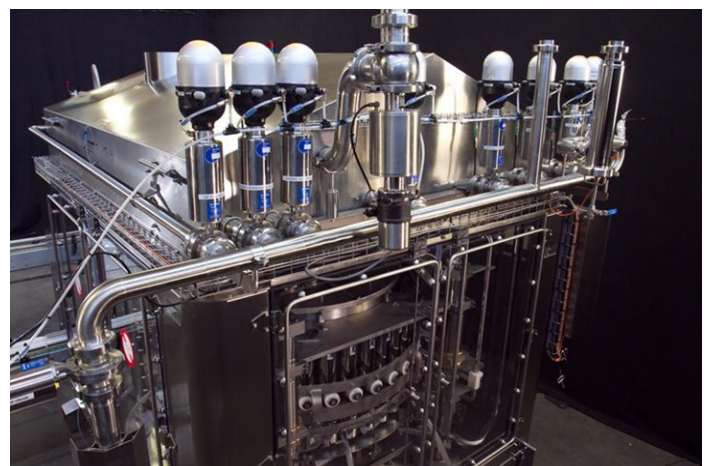
1. Piping with sprays for direct and/or indirect cleaning of food contact surfaces
2. Main manifold with sanitary valves and filter
3. Return tank with pump to customer's CIP kitchen.



- ▲ Optional guarding with safety glass
- ▼ Multiple spray balls are positioned within the guarding for cleaning of food contact surfaces



- ▲ CIP Control valves and piping
- ▼ Main manifold with sanitary valves and filter





## No jar? No fill problem

With its No-Container-No-Fill system, the Unifiller knows if there is no jar under the filling station. It simply waits for the next jar to arrive to execute the four-phase filling cycle. No product loss, no mess.

Moreover, the sensor for NJ/NF (no-jar-no-fill) detection is equipped with an air blowing unit on top. This keeps the sensor clean from CIP liquids and dust, providing more reliable detection of the jars over many years of operation.



Self-Cleaning Jar Detection

## Product & Format Change-over in 20 minutes

Ready for another round? With a few basic readjustments, your Unifiller will reset itself to handle another product, another volume, and another glass jar.

No engineers, no tools required. Simple, colour-coded change parts guarantee a very fast change-over from one glass format to another. The change parts are attached for correct mounting. Automatic height and single point, step-less volume adjustment get the job done without manual intervention. The volume can even be adjusted while the filler is running.

When fitted with the optional automatic, recipe-driven glass format change-over, the operator simply selects the glass format and the Unifiller adjusts itself automatically to the correct height and filling volume.

Thanks to the intermediate rinsing cycle, your whole filler is reset and cleaned within 20 minutes. Just in time to get back from your coffee break and watch the next product taking off.

*Typical change-over times (volume, height, diameter/shape)*

Change-over times [minutes]	(1) Jar height	(2) Filling volume	(3) Jar diameter or shape
Manual	20 – 30	10 - 15	< 10
Automatic	< 5	< 5	< 10

Change-over times [minutes]	(1)+(2)+(3) Complete change-over
Manual	< 55
Automatic	< 20

For maximum reliability and minimum maintenance costs, all electrical parts for automatic volume and height adjustment are mounted under the filler base plate, outside the CIP area.

## Glass breakage prevention

The Unifiller is fitted with an in-feed system, especially designed for gentle and controlled handling of glass jars. Any glass jar, even those with the most irregular shape. The system operates flawlessly and reliably, thanks to its robust design, making it low in maintenance



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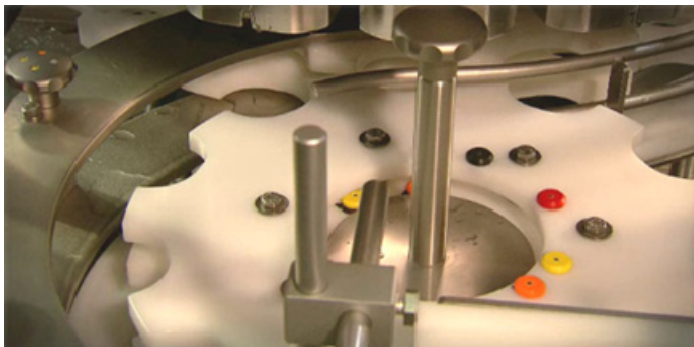
FoodTech 156 CIP Piston Side close

User 200.0 / 4104 Cans 0.6 mm

ID	Dia-meter	Height	Bowl Height mm	Fill Volume cc	Speed Limit	Color Code
Selected 7	66	114	134.00	230.0	200.0	Green
Selector 1	78	88	108.00	230.0	200.0	Black
2	78	105	125.00	283.0	200.0	Red
3	78	125	145.00	395.0	200.0	Yellow
4	88	129	149.00	482.0	200.0	Blue
5	88	142	162.00	530.0	200.0	Orange
6	88	128	148.00	580.0	200.0	White
7	66	114	134.00	230.0	200.0	Green
8	66	134	154.00	275.0	200.0	Black
9	66	138	158.00	217.0	200.0	Red
10	0	0	0.00	0.0	0.0	White

100 Filter Height Limit Up

▲ Machine display. 10 pre-set product-format combinations. Also change part colour codes are shown.



▲ Colour-marked Quick-change parts with locating pins for quick and correct positioning.  
▼ Automatic height and volume adjustment



## The JBT Process Technology Centre comes to you

Put us to the test. Invite JBT over to your plant and witness the Unifiller Pilot customize itself to your product and specific needs.

The single station, highly flexible pilot machine that conducts filling tests is a smaller version of the Unifiller. By testing your own products, you can see the accuracy, determine valve configuration, optimize filling speed range and see filled product integrity.

If you already have a Unifiller running at your facility, the Pilot is still at your service. Whether it is to perfect your processes or experimenting with new product recipes. Because we understand that the decision to market a new food product often depends whether it can be integrated into existing operations or will need new equipment capable of handling the new formulations.

The option to perform filling tests provides you with the insurance the Unifiller can handle your difficult-to-fill product with increased accuracy, optimal product quality and consistency, prior to making a key capital purchasing decision.

[hello@jbtc.com](mailto:hello@jbtc.com)



## Food processing expertise at your service, around the globe

Our mission: providing you with maximum uptime and smooth operation. Therefore, you can count on JBT for technological support, installation supervision, training and after-sales support anywhere in the world.

Established in the eighties to meet the high sanitary demands of customers to fill bottles with dairy food preparations, JBT has a long history of food processing equipment. Having sold over 40,000 machines worldwide, including more than 2000 fillers, our service technicians have faced and solved some of the toughest problems for processors within the food industry. Our differentiated service packages make sure your equipment keeps running as profitably as possible, for as long as possible. With a minimum downtime.

More than 50% of the world's shelf-stable foods are filled, seamed or sterilized on JBT equipment. With several thousands of canning lines in operation worldwide, JBT is the world's leading supplier of integrated processing solutions for metal, glass and plastic containers. From single machines to complete processing lines, we enhance product value and safety. JBT equipment captures the quality, nutrition and taste of your product at the lowest cost per unit produced.



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