



# SBO Universal<sup>TM</sup>

**Cut your bottle blowing costs  
by up to 20 %**



SIDEL'S NEW GENERATION OF SBO UNIVERSAL™ BLOWING MACHINES SLASHES PET BOTTLE BLOWING COSTS BY UP TO 20 % COMPARED WITH ITS SBO SERIES2 EQUIPMENT WHILE MAINTAINING YOUR PACKAGE'S QUALITY.

# SBO Universal™

delivers top quality plastic packages  
at high speeds

The culmination of three years of intense R&D work based on Sidel's renowned expertise in blowing, this equipment has been entirely redesigned. Its development has led to new high-speed manufacturing solutions aimed at productivity, lower bottle costs, and package quality for plastic bottles ranging from 0.25 to 3 liters.

These performance improvements stem from efforts that have not only targeted blowing machine advances, they have also involved a full-blown "bottle solutions" development program, from PET bottle design to mold manufacturing, specifically developed for high-speed applications.

When it comes to your needs for high yield and high quality bottles, the new SBO Universal™ equipment delivers.

Sidel has devoted unparalleled means to qualifying the new generation of SBO Universal™ blowers. Versatility, yield, reduced operating costs: these unavoidable goals force us to innovate. A record number of patent requests guarantee the commercial and industrial success of the future.



*SBO Universal™ blowing equipment  
meets the technical challenges  
of all your packages.*



## Versatile SBO Universal™ blowing machines

It is the huge array of applications, shapes and capacities served by the new range that makes Sidel SBO Universal™ blowing machines so multi-faceted.

### **BLOWING MACHINES FOR ALL YOUR PACKAGING LINES**

Whether it's still or sparkling water, carbonated or sensitive drinks, sauces or detergents, Sidel's SBO Universal™ blowing machines can meet the challenges of all of your food and non-food products and liquids produced in packages from 0.25 L to 3 L. This new generation of blowing machines accommodates a wide variety of product applications while adapting to the particular specifications of your packaging line.

### **SINGLE BLOWING MACHINE FOR BOTH PET AND PP**

As new polymers have hit the market, Sidel has led industry research efforts particularly in raw materials and processes. These efforts have enabled its SBO Universal™ equipment to be used for both PET and PP package production without modifying the machine's configuration; and both can be manufactured at similar output rates.



# Productivity up to 23% higher

With the launch of its new range of SBO Universal™ machines, Sidel leaves no doubt that it is determined to help you find ways to produce packages more quickly and economically. The key to success, increased productivity, is the result of higher output rates and greater overall availability.

Ergonomics play a vital role in maximizing equipment availability. Sidel's SBO Universal™ blowing machines are functional, accessible, and user-friendly, designed for maximum uptime.

## COMPACT

Preform infeed rollers and rails are more compact, significantly reducing the blowing machine's footprint. Electrical boxes are located under each oven module for heating regulation reducing the size of the main cabinet built into the end of the oven. With more space,

customers can add additional equipment or can use the area to store molds and custom parts close to the machine.



*The main cabinet built into the end of the oven eliminates wires along the ground.*

## ACCESSIBLE

With the electrical cabinet built into the end of the oven on the new SBO Universal™ equipment and utility supply lines located overhead, wires on the floor are eliminated making the blowing machine fully accessible. A new catwalk to the feeder, more functional side door openings on the oven, and a new frame on the blowing wheel all greatly facilitate operator access to various blowing machine systems for maintenance and format changeovers.

## USER-FRIENDLY

The honeycomb panels on the new housing guarantee a noise level of 83 dBA at the workstation for greater operator comfort levels in accordance with international standards. Equipped with a 17" screen and XP interface, the new control station is more user-friendly and intuitive. It simplifies operation of the blowing machine, supervision of production quality and process, yield tracking, machine settings, and maintenance.

## QUICK INSTALLATION

Integrating the electrical cabinet into the oven and locating cable runs over-head at the feeder make the blowing machine easier to install. The electrical and mechanical interface between the oven and wheel is designed so that all connections that must be made at start-up are in one place. All of the fluid supply connections – for water and air – are fully accessible making it easy to connect them to peripheral equipment.



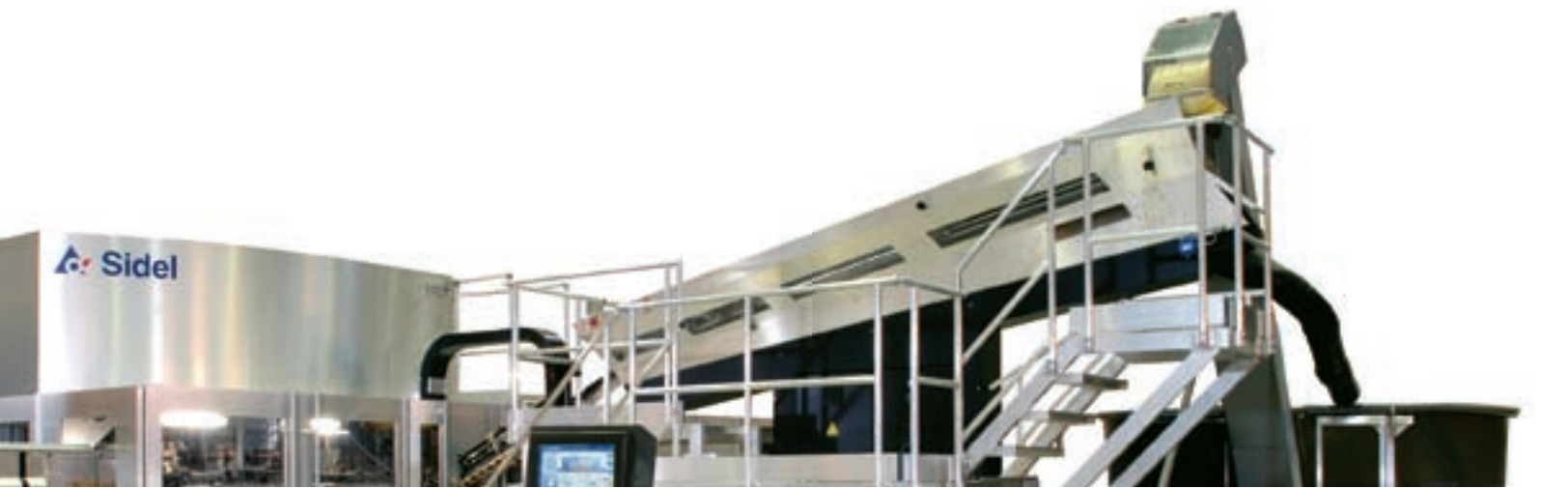
*Moving the electric boxes reduces the size of the main electric cabinet.*



*Water and air supply connections are fully accessible.*



*The new Human Machine Interface (HMI) at the control station simplifies blowing machine operation.*



1	
2	3

- 1 - New preform infeed system improves yield on the blowing machine by at least 2 %.
- 2 - The new oven, with a 40 mm pitch, helps reach speeds of 1,800 b/h/m.
- 3 - The new mold base concept reduces format changeover times.

## **OUTPUT RATES UP 12.5 % TO 1,800 BOTTLES PER MOLD**

Thanks to new machine kinematics and a new oven with a 40 mm pitch to maintain heating times, the new generation of SBO Universal™ blowing machines easily reaches output rates of 1,800 bottles per hour per mold for many types of packages. In addition to a completely new machine design, new designs for bottles, molds, and modifications to the process itself have all been adapted for a global solution that achieves the rate of 1,800 b/h/m.

## **IMPROVED PREFORM INFEED**

The new preform infeed design improves the blowing machine's yield by at least 2 %. The recycling belt on the new hopper keeps preforms from getting jammed inside one another. Orienting rollers feature a novel design. If preforms are stuck together or are too numerous, they are automatically ejected and returned to the hopper

via a recycling conveyor built-in underneath the rollers. The new automatic control on the blowing machine manages preform feeding with a control loop to drive roller speed and the elevating column to maintain the correct number of preforms to feed the blowing machine.

## **SECURE PRODUCTION**

A retractable guide ejects poorly loaded preforms before they ever enter the oven. Ejection zones for defective, nonconforming, or poorly "engaged" bottles are located at each transfer and at the bottle exit. A chute collects the ejected preforms and bottles at the transfers keeping them from getting caught in the machine's kinematics. A new, patented mold base design and a new stretching stopper without fastening device both help reduce format changeover times. A more accessible machine and a remote control box help cut times by 20 % for each changeover. Finally, all of the feeder parameters and preform dimensions are recorded in the process recipe making production restarts much faster.

## **MAINTENANCE TIMES 25 % FASTER**

A new blowing station, stronger spindle chain, new transfer arms, a new air rotary union as well as new maintenance-free components help streamline the machine's maintenance plan and scheduled machine shut-downs for less production downtime.

## **BOTTLE SHAPES ESPECIALLY FOR HIGH SPEEDS**

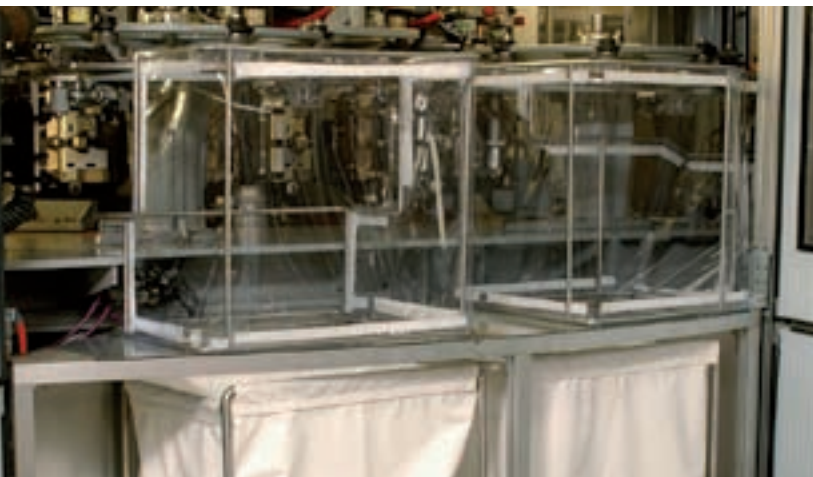
Bottle quality has not been sacrificed to increase output rates. Quite the opposite: for Sidel, package quality is always top priority as it puts its unique experience in bottle design to work. From crafting better preform and bottle designs to manufacturing molds that are better adapted to new shrinkage laws, Sidel has poured its extensive know-how into this new equipment to create packages that can withstand the unique challenges of high-speed applications.

*Shrinkage laws applied to new Universal molds guarantee your bottle's specifications even at high speeds.*



*Chutes collect ejected preforms and bottles for a more secure production environment.*

*New transfer arms help reduce maintenance time.*



# Bottle costs cut

With less energy consumption, lower maintenance costs, and better use of PET material, the production costs on SBO Universal™ blowing machines have been reduced. Combined with the blowing machine's impressive productivity levels, these reductions lead to a drop in bottle blowing costs of up to 20 % without affecting the quality of your packages in any way.

## **ELECTRICITY CONSUMPTION 15 % LOWER**

Even as speeds increase to 1,800 b/h/m, preform heating times remain much the same thanks to a reduction in the spindle chain pitch to 40 mm. No additional heating power is necessary. The individual settings on all oven lamps are fully controlled from the PCC, and lamps are positioned individually in order to reduce electricity consumption by an average of 15 %. A measuring device is built into the system to measure electricity consumption during blowing machine production. The system then posts that information on the HMI (Human Machine Interface) screen.

## **CAREFULLY CONTROLLED AIR CONSUMPTION**

Integrating the cylinder assembly, solenoid, and flow limiter significantly reduces dead space in the air circuits and cuts down on blowing air consumption. The air recycling option accompanied by an electronic flow meter saves at least another 15 % in air consumption. Special package shapes have been developed for low pressure blowing, which also saves energy. And any decrease in air consumption allows customers to reduce the size of their compressor for a lower overall purchase price.

## **LOWER MAINTENANCE COSTS**

Some of the new features on the equipment – the blowing station, transfer arms, air rotary union, and maintenance-free components – help cut consumable spare parts costs. And the equipment's new kinematics, featuring reduced inertia and fewer mechanical stresses, also lower maintenance costs.

## **HYGIENE UNDER CONTROL**

The new housing has no sound insulating foam, which considerably improves hygiene in the blowing machine's enclosure. The housing is made of brushed aluminum making exterior maintenance of the housing exceptionally simple.

Plastic rollers on the transfer arms and mold locking system do not require lubrication, which also improves hygiene on the blowing machine.

## **PACKAGES CLOSELY CONTROLLED AT HIGH SPEEDS**

Vision inspection systems for preform and bottle quality control are options that further ensure production security at high output rates and reduce the risk of scrap generated on the new SBO Universal™ equipment. Another option measures bottle weight by zone on the blowing machine to control all bottles in line. This control guarantees bottle quality and increases savings in PET material. These three quality control options have been developed in partnership with Pressco. A version of our EIT (Efficiency Improvement Tool) system used on packaging lines comes standard on the SBO Universal™ equipment to track production, analyze primary causes of shutdowns, diagnose and troubleshoot problems.

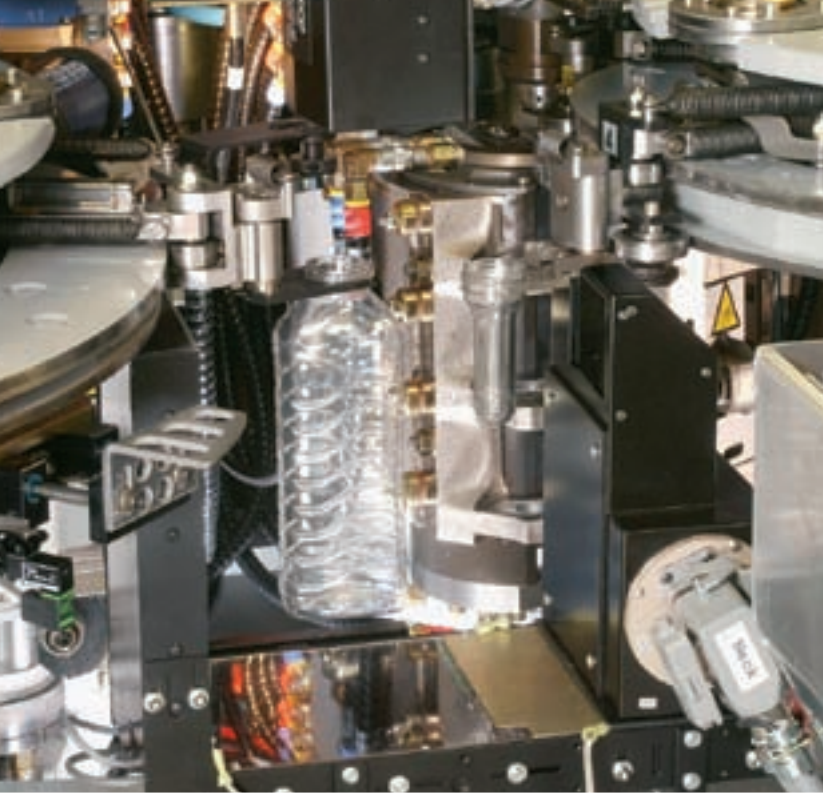
## **BOTTLE QUALITY WITHOUT FAIL**

Sidel has unveiled significant advances in thermal conditioning of preforms based on proven radiation oven technology. The heating flexibility and superior control of all production parameters significantly increase process ranges. These advances provide excellent heating profile stability while improving the bottle's mechanical features and paving the way for the production of lighter bottles. Optional separating ventilation systems for bottle body and neck in the oven keeps necks from becoming overheated at high output rates.

Sidel has designed its molds to adapt perfectly to shrinkage laws so that all packages are up to spec even at 1,800 b/h/m. Finally, Sidel has made significant progress in mold cooling by increasing water flow and introducing a new mold base circuit.



*The electrical consumption is displayed in the HMI (Human Machine Interface) window.*



1	2
3	

- 1 - Pressco control systems guarantee bottle quality.
- 2 - With 27 % less dead space at the blowing station, lower air consumption costs are guaranteed.
- 3 - A new brushed aluminum housing makes maintenance of the blowing machine's exterior a breeze.

# For all your plastic packages, there's an SBO Universal™ solution

Whatever liquid you are packaging, Sidel offers an extensive range of blowing machines to produce bottles in the widest variety of shapes at the highest output rates.

## SPEEDS UP TO 51,000 BPH

The latest generation of blowing machines, SBO Universal™, comes in sizes ranging from 6 to 30 cavities and rates from 10,800 to 51,000 bottles/hour.

## BLOWING PROCESSES

SBO Universal™ blowing machines are not only designed to produce standard packages for mineral water, carbonated beverages and juices. They are also suitable for producing complex shape packaging (SBO Universal PH) and containers for hot filling (SBO Universal HR).

## A COMPREHENSIVE ARRAY OF OPTIONS

From process to maintenance, energy consumption, and process accessories, Sidel has developed a comprehensive catalogue of options customized for your package's specifications. These options will help you maximize production performance to manufacture high quality bottles at low cost.

### SBO UNIVERSAL™:

bottle production for flat and carbonated beverages in sizes from 0.25 L to 3 L

**Applications:** flat water, sparkling water, sodas, beer



Number of cavities	Maximum output rate (bottles/hour)
6	10,800
8	14,400
10	18,000
14	25,200
16	28,800
20	36,000
26	44,200
30	51,000

### SBO UNIVERSAL HR (HEAT RESISTANCE):

bottle production for hot filling and pasteurization

**Applications:** fruit juice, tea, coffee, isotonic drinks



Number of cavities	Maximum output rate (bottles/hour)
6	10,800
8	14,400
10	18,000
14	25,200
16	28,800
20	36,000

Performance	Options
Energy consumption	<ul style="list-style-type: none"> <li>- Air recovery</li> <li>- Electronic flow meter</li> <li>- 40 bar/7 bar pressure reduction</li> </ul>
Process	<ul style="list-style-type: none"> <li>- Separate neck and body ventilation</li> <li>- Regulation of cooling ramps</li> <li>- Air recycling in the oven (patented)</li> </ul>
Quality	<ul style="list-style-type: none"> <li>- Camera for temperature control</li> <li>- SPC</li> <li>- Vision inspection system for preform and bottle control</li> <li>- In line infrared control of weight by zone</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>- Protection of the preform infeed system</li> <li>- Treatment of preforms before they enter the machine (dust removal, UV rails)</li> <li>- Treatment during blowing (air filtration in the oven)</li> </ul>
Maintenance	<ul style="list-style-type: none"> <li>- Centralized lubrication</li> <li>- Maintenance contract</li> </ul>
Flexibility	<ul style="list-style-type: none"> <li>- Customized neck changeover based on format</li> <li>- Mold trolley</li> </ul>
Process accessories	<ul style="list-style-type: none"> <li>- Black bar</li> <li>- Quartz bar</li> <li>- Atomizer</li> </ul>
Peripheral equipment	<ul style="list-style-type: none"> <li>- Oven hood</li> <li>- Customized layout (separate hopper, etc.)</li> </ul>
Standards	Compliance with international work safety and electrical power supply standards

### **SBO UNIVERSAL PH (PREFENTIAL HEATING):**

production of flat bottles or bottles in complex shapes

**Applications :** sauces, alcohol, detergents and cosmetics



Number of cavities	Maximum output rate (bottles/hour)
6	8,400
8	11,200
10	14,000
14	19,600
16	22,400
20	28,000

# At every step in the service life of your blowing machines

Over 600 Sidel specialists are at your service, bringing you Solutions and Services that maximize the quality of your packages and the productivity of your facilities.

Throughout the service life of your equipment, the responsiveness, expertise, and commitment of Sidel specialists contribute to superior performance of your blowing equipment.

## **BOTTLE SOLUTIONS, FOR PACKAGE INNOVATION AND PERFORMANCE**

Your package is a vital marketing tool. Whatever liquid you package, Sidel is constantly researching and innovating to make your bottles more ergonomic, stronger, lighter weight, and less costly.

Sidel will assist you in **package design** working with you on customized shape projects to create innovative, competitive plastic packages featuring unrivaled performance.

We use **structural analysis** to fully control all technical constraints by simulating shape behavior using tests to ensure compliance with your specifications.

Every year we perform over **300 shape validation tests** in a completely confidential, industrial setting.

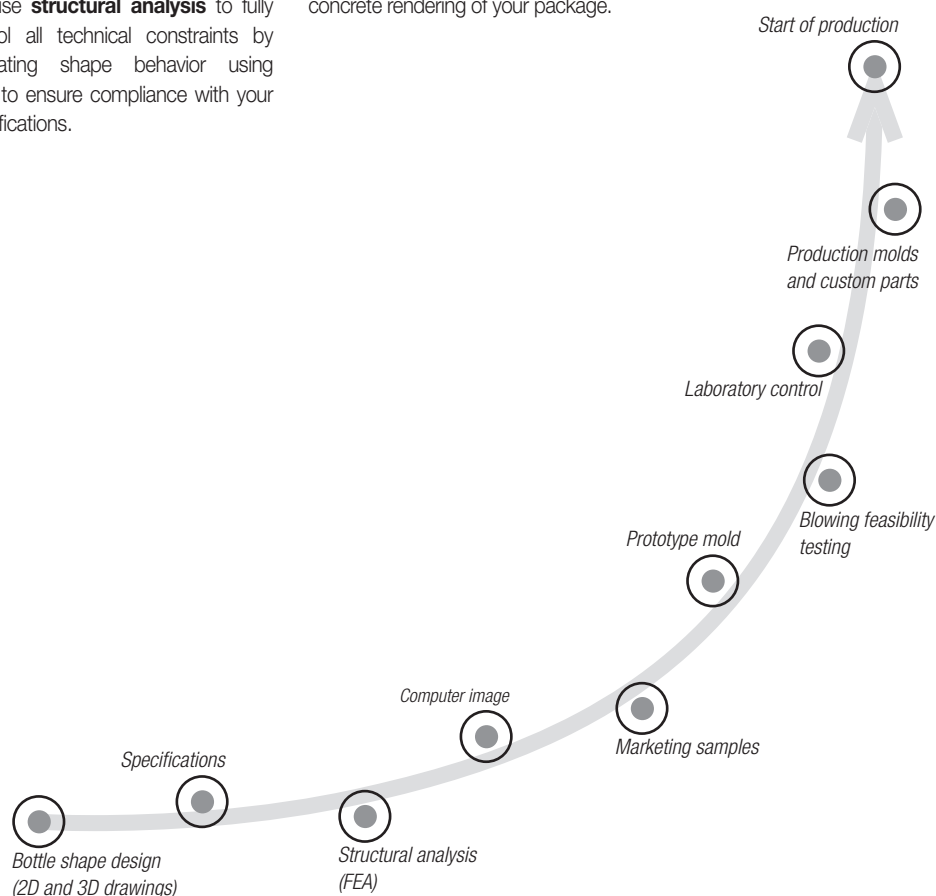
The latest advances in new shapes create **lighter weight bottles**, that lead to lower costs for raw materials, which represent 85 to 92 % of a package's cost.

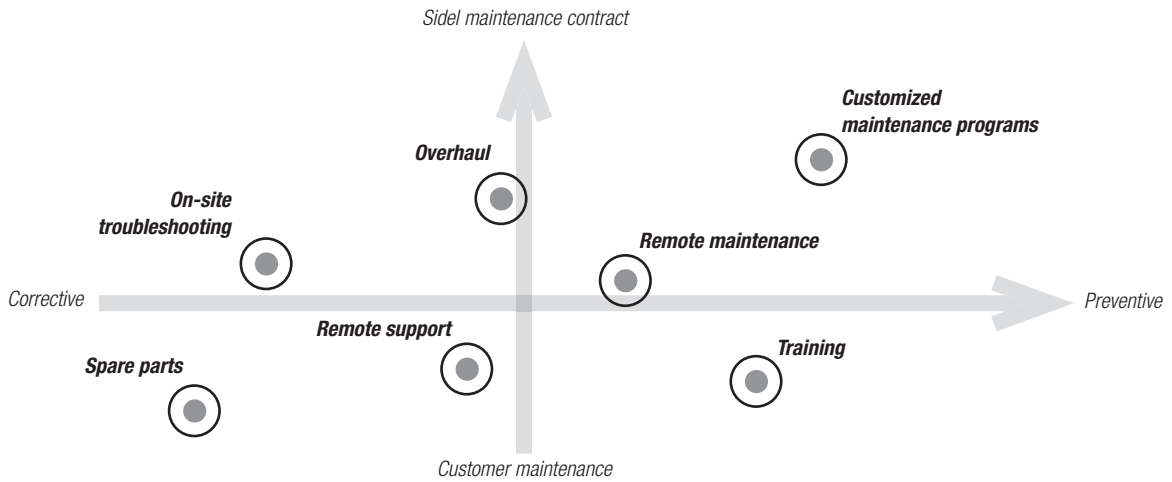
**Marketing samples**, can be produced in **7 days** following approval of a shape drawing offering you a realistic, concrete rendering of your package.

With **300 new shape drawings** and **13,000 molds produced** every year at three international production sites in France, the United States, and China, Sidel is the world's largest mold manufacturer. It employs **15 draftsmen** who have access to a database of **30,000 bottles shapes** to serve you.



Sidel helps you with package design.





Marketing samples can be produced in 7 days.



15 Sidel instructors help you better use and maintain your equipment.



Sidel remote services increase availability and enhance performance of your equipment.

## MAINTENANCE & UPGRADES SOLUTIONS, MAXIMIZE EQUIPMENT AVAILABILITY

From diagnostic visits to tailor-made maintenance programs, Sidel can analyze and maintain your equipment to improve productivity, reduce maintenance investments, even while guaranteeing you the best rate of return on your investment.

A Sidel specialist will make a **diagnostic visit** to identify areas of wear, evaluate breakdown risks, inspect machine systems and special settings.

At technical training centers around the world, **15 Sidel instructors** help you better use and maintain your equipment. Their mission is to increase your productivity while improving the quality of your process and your bottles.

Sidel specialists provide consulting services proposing the best investments for you from a catalogue of 200 **Options & Upgrades**. Their goal is to improve your equipment's performance.

Sidel will consult with you about how to effectively manage your **spare parts** inventory in order to minimize machine shutdowns. Several thousand different parts for your equipment's most critical needs are available within 24 hours, with a 95 % availability rate.

**Pressco vision systems** control preforms and bottles to identify defects, guarantee blowing machine efficiency, and increase line yield.

An **air recovery system** built into the blowing equipment reduces the compressor's electricity consumption by reducing the blowing machine's need for air.

With secure, remote, fast access to PCCs and PLCs on Sidel equipment anywhere in the world, our **remote services** increase availability and enhance performance of your equipment.

# Benefits

## for the entire packaging line

The 2 % increase in yield of the SBO Universal™ blowing machine translates to better yield on the entire line.

Because output on the blowing machines has been increased to 1,800 bottles/hour/mold customers can choose a smaller model blowing machine and keep line output rate at the same level. This lowers the line's overall investment cost.

Format changeover times on the blowing machine generally take longer than any other equipment on the line. Since these times are reduced, this results in a drop in format changeover times for the entire line.

*Choosing a smaller model blowing machine at 1800 b/h/m lowers the line's overall investment cost.*



*Sidel advises you on financing solutions.*

Because air consumption is lower, customers can select a smaller size compressor, thus reducing investment costs even further.

When purchased in the Combi version, the SBO Universal™ offers even greater efficiency in an integrated blowing, filling, capping solution.

### PERSONALIZED FINANCE OPTIONS

Sidel provides consultation to help you find the best financing solutions when investing in Sidel equipment.

A team of specialists works closely with the sales team to find the best short or medium-term financing based on an array of options.



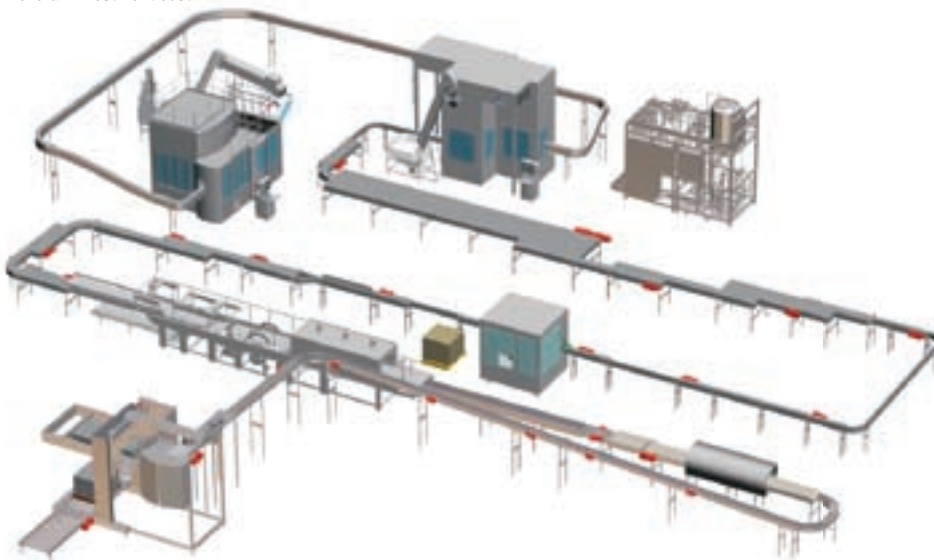
*Packaging guarantees equipment protection.*

### SAFETY IN SHIPPING

Your equipment is handled with utmost care, from design to final shipping.

We will meticulously package your equipment to properly protect it based on international standards, geographical considerations, and type of transport used.

Whether equipment is shipped by ground, sea, or air, Sidel will find the best solution for your type of equipment taking costs and deadlines into consideration.







[www.sidel.com](http://www.sidel.com)

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