BBM

YOUORIENTED SOLUTIONS

BUSINESS PRESENTATION

UPGRADE BLOW-MOLDING MACHINES

FROM THE MAIN MANUFACTURERS

BY YOUR SIDE IN PACKAGING

UPGRADE OF BLOW-MOULDING MACHINES

Upgrade bottling machines can be useful to make the most of the potential of the machine, making use of energy savings and the eliminating of downtime costs in many cases.

A multi-use implementation, an upgrade, a format change or a conversion can be **the best solution to maintain the maximum efficiency of the machine**, updating it and keeping it always in step with the times.

Bringing your machines up to the state of the art, offering greater efficiency, reducing operating costs, increasing their reliability: all this through **tailor-made solutions**, characterized by cost savings and reduced payback times, installed directly by our specialists at your site.

CLOSE TO CUSTOMER

CONCRETE KNOWLEDGE

TURNKEY SOLUTIONS

FORMAT CHANGE

We are able to provide **new molds** and all the necessary equipment and software to make the format change.

Thanks to the support of our expert technicians, you can give new identity to existing blow molders and adapt your line to **new production needs** for processing new formats.

WHAT DO WE DO

- **AUDITS**
- **DESIGN AND REALIZATION OF EQUIPMENT**
- **INSTALLATION AND TESTING**

NECK-FINISHING CONVERSION

The conversion of the bottle neck is the ideal solution for a manufacturer who wants to reduce costs without changing the stylistic identity of the bottle. **With the conversion of the thread, a significant reduction in the lost preform can be achieved**.
The use of a light-weighted preform requires the necessary adaptation of the stretch-blowing machine to the new preforms. having a different neck finish than the original one.

The quality of the parts designed by engineers and materials used guarantee high performance and excellence in results, ensuring efficiency together with a small and cost-effective investment.

OUR STRENGHTS

Sensible weight reduction, preserving bottle design. PET savings

Allows the adaption of blow molding machines to new efficiency and cost requests

WEIGHT REDUCTION OF PREFORMS

Preform 1.5 Lt	Neck weight	Total preform weight
Alaska 267	3,3 g	25,3 g
26/22	1,94 g	23,5 g

Product	New neck finish	Possible weight reduction
Carbonated soft drinks	PCO 1881 PCO Corvaglia	**-1,3 g** **-1,5 g**
Still water	New 26/22	**-1,3 g / -1,6g (ref. 267 ALK)**
Soft drinks	BERICAP 33	**-1,5 g / -2,5 g**

BBM offers turnkey solutions for neck finishing conversion operating on all major blowing machines' brands, assisting its Clients from the design to supply and start-up of the equipment for neck finishing conversion.

MAIN INTERVENTION AREAS

Modification of all machine parts that are concerning loading and insertion of performs

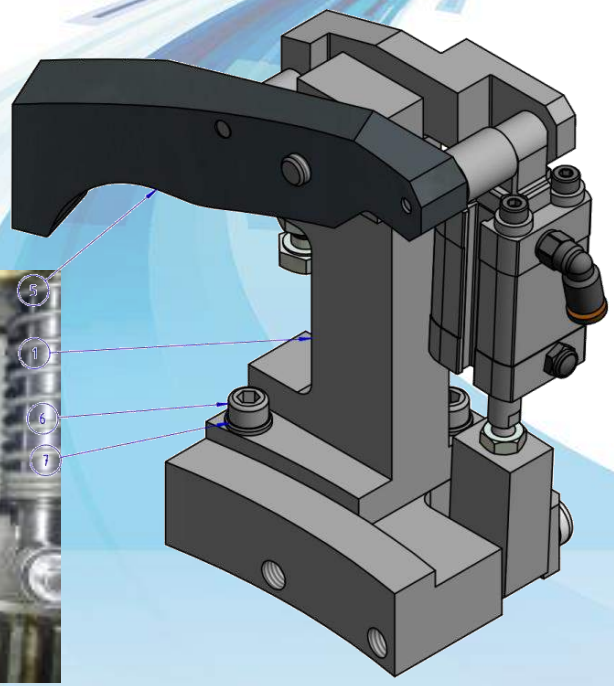
Replacing heating oven details necessary to changing diameter or height of the neck finish

Pliers and clamping preform details heated by blowing station

Modify blowing mould cavity accessory

EASY INSERTION OF THE PREFORM

The modification consists of the installation of a cam that facilitates the insertion of the mandrel into the preforms.



ADVANTAGES

- Facilitates the insertion of unsuitable preforms
- Facilitates insertion in case of overheating problems in customized mandrels
- Increased confidence that the grafting of the preform was performed correctly.
- Greater safety that the perform, once grafted, is in perpendicular position.
- Significant reduction of crashes in the furnace (e.g. lamp breakage) due to partial insertion of the preform.

PLC MIGRATION FROM SIEMENS S5 TO S7

The upgrade consists of migrating the PLC to Siemens S7 and adding an operator panel that works as an interface with the system.

The modification includes the insertion of a Siemens touch HMI panel and the possibility of remote assistance and control, both locally and on another PC, ensuring instant interchangeability.

With the installation of the upgrade, we are able to predict any troubleshooting at the electrical level and intervene immediately.

ADVANTAGES

- **Avoid problems of components out of production and market**
- **New and intuitive operator interface**

BEFORE

AFTER

HPT16 DOUBLE SKATE TRANSFERS

The upgrade has been designed to adapt and respond adequately to the lower neck finish tolerance of the new bottle fillets. With the same weight with previous transfers, the HPT16 transfer is more robust and reliable.

ADVANTAGES

- **Successfully tested on machines of the main manufacturers**
- **Reduced maintenance and machine downtime**
- **Increase in the life cycles of your blow moulder**
- **Interchangeable**

BEFORE

AFTER

PYROMAT MODIFICATION

The change consists in the elimination of an obsolete PID control, as it is out of production and therefore difficult to find.

Graphic regulator that facilitates the setting of parameters

Elimination of the communication board on PLC S5

Eliminates system communication problems with Jbus cards

The device with an installed upgrade can control the temperature of the preform and can be integrated with digital signals for the control of the various adjustment steps and set-points of the instrument.

Although with a prior study phase by our engineering team, this upgrade takes only a few hours to install, drastically reducing machine downtime.
Why should you modify the Pyromat? In order not to change the entire machine – an operation that would require machine downtime and higher costs – but replace only the defective panel. The result is a modern and interchangeable system.

1. 2.

Example of installing the new model:
1. Digital settings for stand-by management;
2. Digital settings for temperature control.

POLARIS SYSTEM SIDEL SERIES 1

Upgrade system created for blow-molding machines of the previous generation, consisting of 4 modules of intervention.

- **Module 1: changing step oven lights.**
- **Module 2: implementation relay statics PWM.**
- **Module 3: replacement of blowout valves group to control solenoid and the central manifold**
- **Module 4: implementing of compressed air recovery**




This solution gives several advantages, among them:

reducing energy consumption and allowing you to use lighter preforms with bottle output result comparable with the latest generation of blow molding machines, but with a much lower investment.

BBM UPGRADE BBM ON SIDEL MATRIX VALVES

BBM upgrade on Matrix blower valves to cut maintenance time and avoid possible errors

Problem: frequent maintenance of the valve unit of the SIDEL Matrix blow-molding machine. The maintenance technician is forced to dismantle all the valves and their pre-blown cables, with the great risk of damaging the valve itself and its threads. A way must be found to carry out the work quickly and easily, safely

Solution: thanks to the special cover designed and installed by BBM Service's engineering department, maintenance can be carried out without dismantling the valve unit's pilots. Now the pilots do not have to cover the passage to remove the cover of the solenoid valve base, thus allowing safe, easy and fast maintenance.

BEFORE

AFTER

BBM

YOUORIENTED SOLUTIONS

COMPANY PRESENTATION

ENERGY SAVING

ON BLOW MOULDERS

TARGETED STRATEGIES **TO SAVE ENERGY**

In the last period, the costs of electricity and gas supply have doubled, **while in the first days of January 2022 the cost of the energy component alone has quadrupled compared to 12 months ago**. A real drain on companies. It's important to adopt strategies to limit energy consumption in production facilities.

BBM HAS INVESTED IN THE RESEARCH AND DEVELOPMENT OF SOLUTIONS TO GUARANTEE ENERGY AND COST SAVINGS IN THE BOTTLING SECTOR.
HOW?

Thanks to a combination of upgrades designed for blow molding machines, **you can save on energy consumption** and achieving the same results

AIR RECOVERY

PRESSURE REDUCTION

CERAMIC PANELS

AIR RECOVERY

The possibility to reuse the blowing air for the machine utility

Without replacing the original blower manifold, an integrated wirelessly connected system for managing air recovery can be installed.

The system allows for automatic adjustment of the machine in operation, based on format and speed.
It is possible to manage the auto check-up of the sensors and the diagnostics of each valve directly from the panel.

An upgrade that can be done on machines of the main manufacturers.
We guarantee a certain return on investment and an intervention tailored to your needs.

PRESSURE REDUCTION

Precise and meticulous adjustment of the pressure required to blow the bottle to the right size.

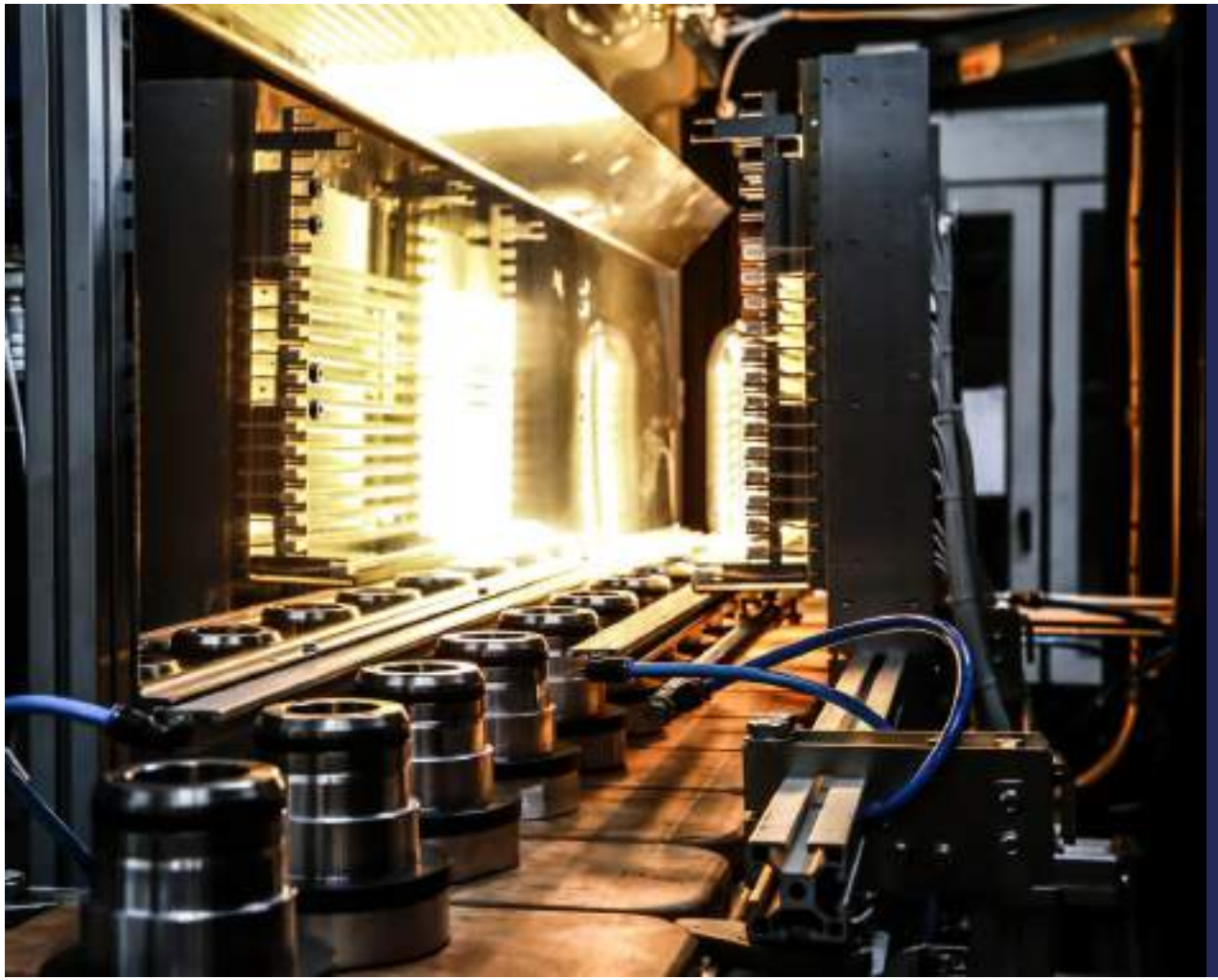
Thanks to this modification made by BBM Service, your blowing plant can work at the required pressures and no higher, while maintaining the quality of the blown bottle unaltered.

Each 1 bar reduction in pressure can decrease consumption by 5%
Why would you wait?

Compressed air pressure reduction

Intervention in a short time

Safe and immediate savings



CERAMIC PANELS

The new Ceramic Panels for Oven are panels with reflective ceramic walls, which result in faster heating of the preform.

By reducing the operating power of individual lamps, **the installation of BBM ceramic panels allows up to 35% less power consumption, resulting in cost savings.**

- **Independent and self-cleaning**
- **Prevent bottle neck deformation**
- **Applicable on blow molding machines of the main brands**
- **Return on investment in less than 6 months**

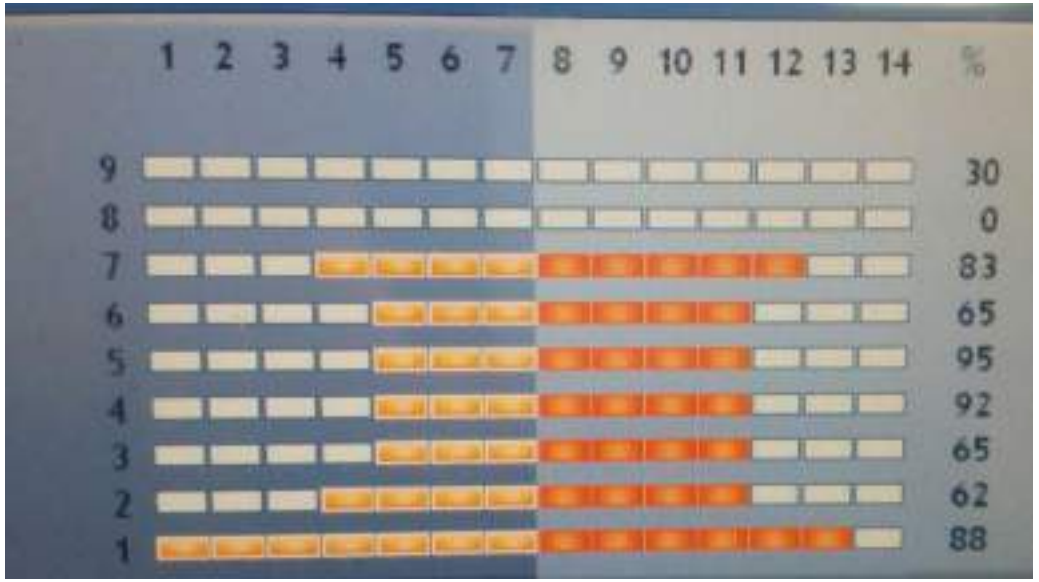
LOWERING TEMPERATURE

Lowering the temperature of the mold-holder spindle in the baga area**,**
thus, preventing bottle neck deformation

ENERGY SAVING EVALUATION FOLLOWING INSTALLATION OF CERAMIC PANELS

We report an actual evaluation of energy savings following BBM's installation of ceramic panels on a **SIDEL Universal 2 10/14 Blow Molding Machine** with 14 furnace modules, which was blowing a **1.5-liter size preform**.

In situation (1), corresponding to a stage where BBM ceramic panels have not yet been installed, given that the first row is 3000W and the subsequent 2500W, the lamp absorption, thus calculated*, is **135,115 W**.



1

Lamp absorption calculation*	
Row 9	0 W
Row 8	0 W
Row 7	2500wx4+2500x5x0.83=20375w
Row 6	2500wx3+2500x4x0.65=14000w
Row 5	2500wx3+2500x4x0.95=17000w
Row 4	2500wx3+2500x4x0.92=16700w
Row 3	2500wx3+2500x4x0.65=14000w
Row 2	2500wx4+2500x4x0.62=16200w
Row 1	3000wx7+3000w*6*0.88=36840w

The next image (2) shows the new lamp absorption, following the installation of the BBM ceramic panels, which allowed a new format recipe to be reworked.

The result is a total lamp absorption 83,175w.

2

Energy saving calculation*	
Row 9	0 W
Row 8	0 W
Row 7	2500wx2+2500x2x0.65=8250w
Row 6	2500wx3+2500x3x0.65=12375w
Row 5	2500wx2+2500x2x0.8=9000w
Row 4	2500w+2500x0.78=4450w
Row 3	2500w+2500x0.8=4500w
Row 2	2500wx4+2500x4x0.64=16400w
Row 1	3000wx5+3000w*5*0.88=28200w

RESULTS

Counting in hand: the total energy savings of the SIDEL Universal blower under consideration, expressed in Kw is: **135115w-83175w/1000= 51.9 Kw**.

Considering the current cost of energy, which is. **0.24 €/Kwh** and a use of the blower machine over a **24-hour time frame for 5 days a week**, the weekly energy savings corresponds to

51.9Kw*0.24€/Kwhx24hx5= 1494.00 €.

This is equivalent to about **€ 5,980.00 saved in one month**; ROI (return on investment) is achieved within three to four months of the initial investment.

1,5 **liters: the format**

5.980 **€: the actual savings over one month**

3 **months: the return on investment**

CASE HISTORY #1

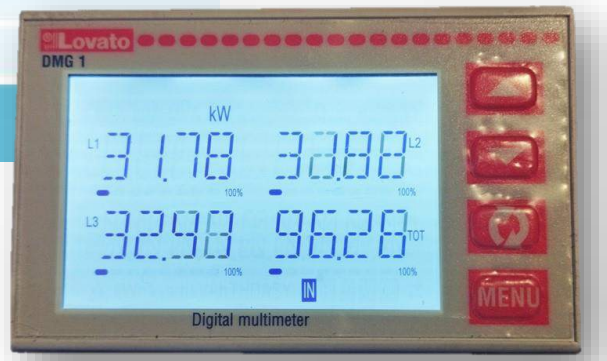
A major customer who is a leading player in the pursuit of major technical-plant and sustainable production innovations relied on BBM's expertise to curb the energy consumption of blow molding machines.

An example of ceramic application on a SIDEL SBO Universal 2 8/10 blow molding machine:

Actual energy savings of 27% were measured with a special digital device.

The action of ceramic panels combined with other upgrades, such as lowering blowing pressures and air recovery, provides immediate and exponential savings.

UPGRADE CERAMIC PANELS	BEFORE	AFTER
Absorption Why/b	77,21 kW	57,31 kW
Pressure set	31 bar	24 bar
Preform temperature	103° C	93° C
ACTUAL ENERGY SAVING IS 27%		



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CASE HISTORY #2

CERAMIC PANELS AND LOWERING PRESSURES
Machine: Sidel S2 blow molding machine - year 2000
Initial blowing pressure: 31 bar
Final pressure after pressure lowering upgrade: 21 bar

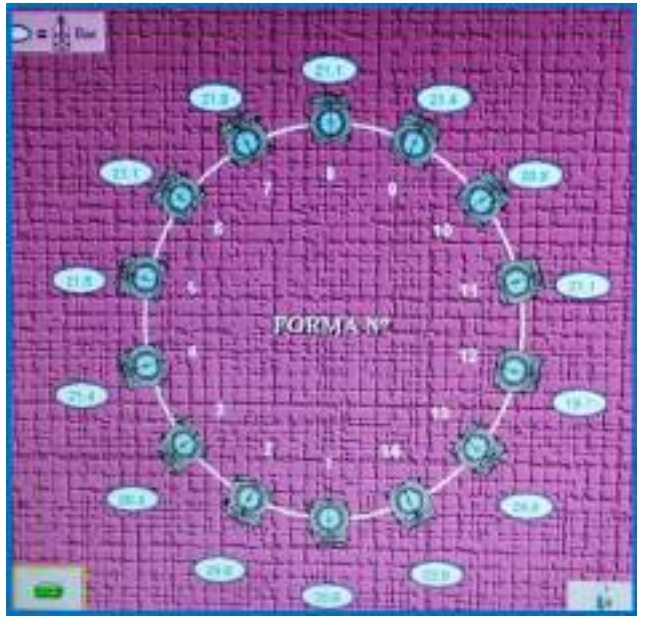
BENEFITS
1. ENERGY SAVING
2. Stable upstream pressure
3. Reactivation of pressure control for bottle rejection (solved problem of punctured bottles which did not allow continuous production)

UP-GRADE PANNELLI CERAMICI
Rilievi eseguiti a 16.000 b/h

	PRIMA (14000 b/h)	DOPO (16.000 b/h)
ASSORBIMENTO Kw	Kw	Kw
PRESSIONE IMPOSTATA	31 bar	21 bar
TEMPERATURA PREFORMA	116 °C	116°C
TEMPERATURA FORNO	240 °C	230°C
AVVIAMENTO %	93%	50%

Risparmio energetico dopo pannelli ceramici 43%

Risparmio energetico ottenuto sulle pressioni di soffiaggio 33%



HOW WE WORK

At the service of your saving project

The ideal mix
The combination of the three upgrades on the blow molding machines guarantees effective and consistent energy savings, to avoid waste in this period of rising energy bills

Fast Interventions
Don't waste time: our specialized BBM technicians can reach your plant quickly and safely

Certified Savings
We can put at your disposal a certification body, to have your savings quantified
and be able to access calls for tenders and funding

Assistance
BBM offers not only immediate technical support services, but also preventive maintenance programs to maintain the performance of your equipment over time

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THANK YOU.

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