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.

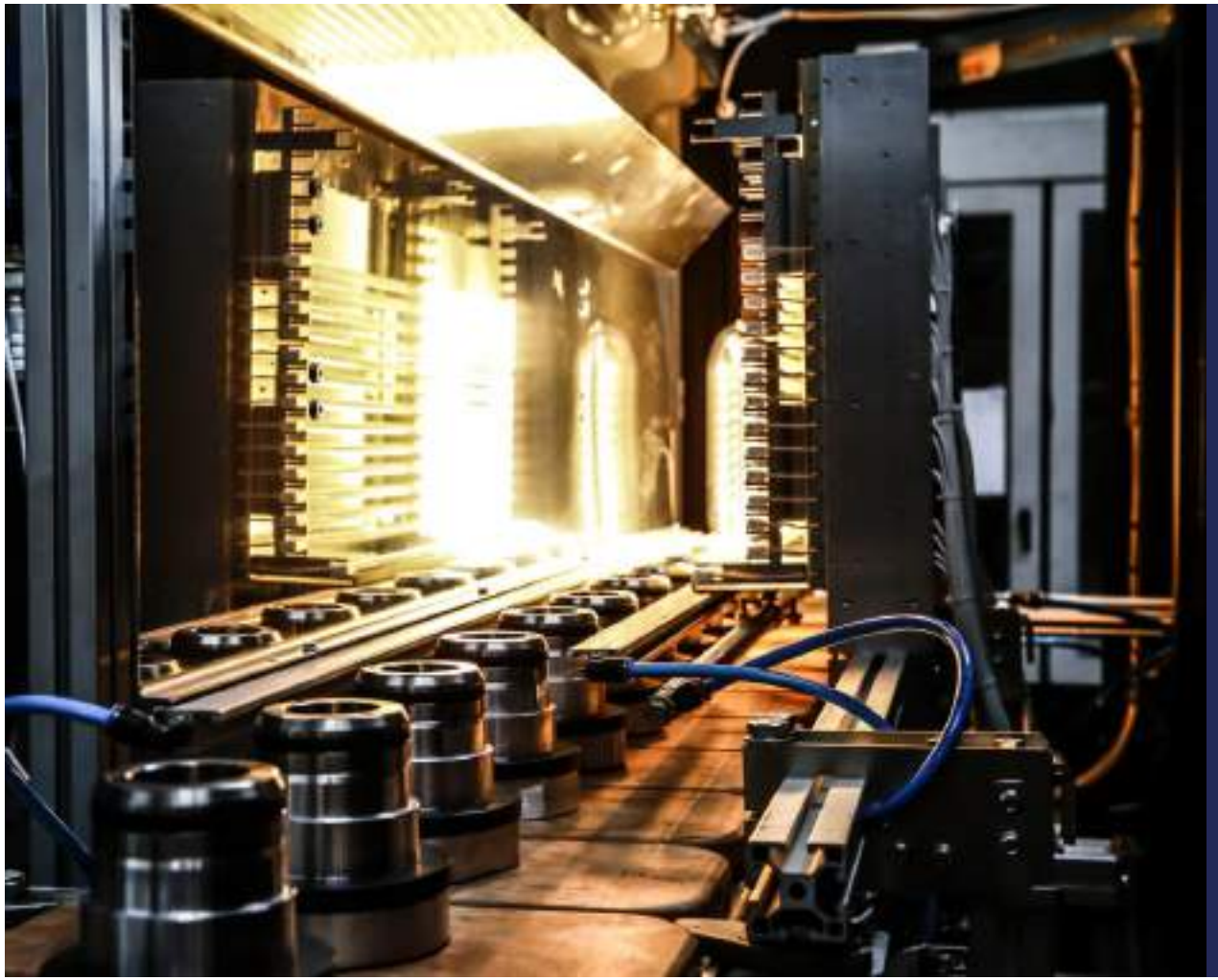
Thanks to this modification made by BBM Service, your blowing plant can work at the required pressures and no higher, while maintaining the quality of the blown bottle unaltered.

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**

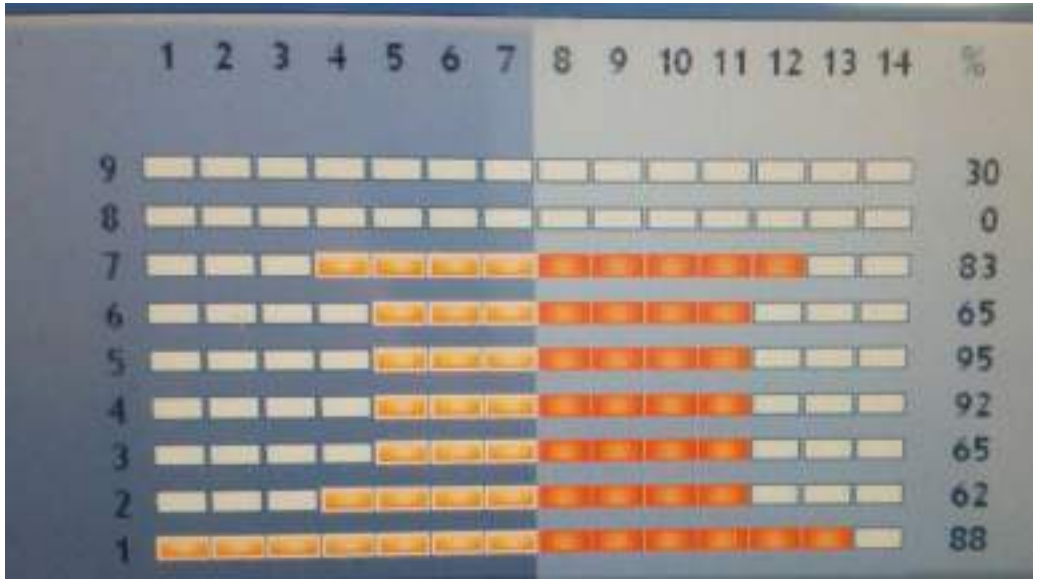
LOWERING TEMPERATURE

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

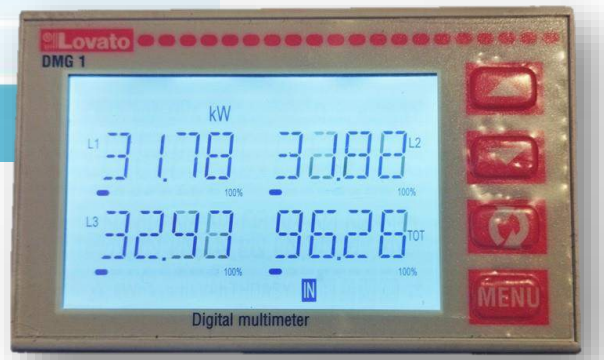
A major customer who is a leading player in the pursuit of major technical-plant and sustainable production innovations relied on BBM's expertise to curb the energy consumption of blow molding machines.

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%		



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)

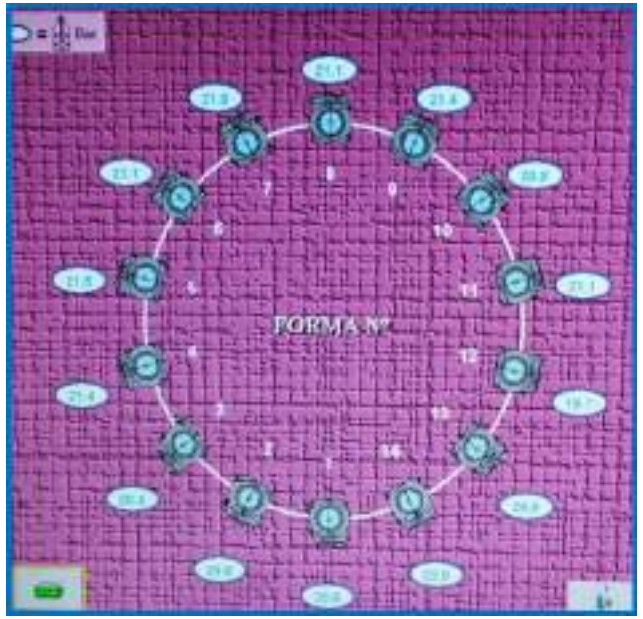
UP-GRADE PANNELLI CERAMICI
Rilievi eseguiti a 16.000 b/h

SAVE ENERGY

	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

BY YOUR SIDE IN PACKAGING

SAVE ENERGY

THANK YOU.

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