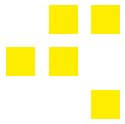




 **serie BICARMILL®**  
**serie JCF**

Capacity of Sodium Bicarbonate from 10 up to 1.800 Kg / h





# A company at your service



**STM** is one of the leading manufacturers with regard to R & D, the design and the construction of plants for the dry grinding and dosing.

Our company offers to its customers a wide and complete service range from a single dry grinding mill to complete turn key plants, from a feasibility study to the after market service and maintenance.

Our team of engineers can provide every kind of technical assistance for the construction of new plants or the modification of existing plants or the improvement of its capacity by utilizing at its best the wide range of STM products.

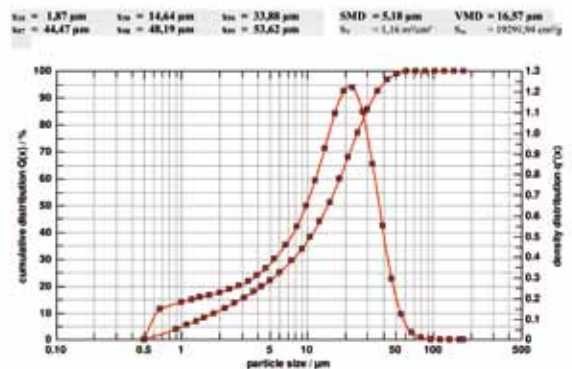
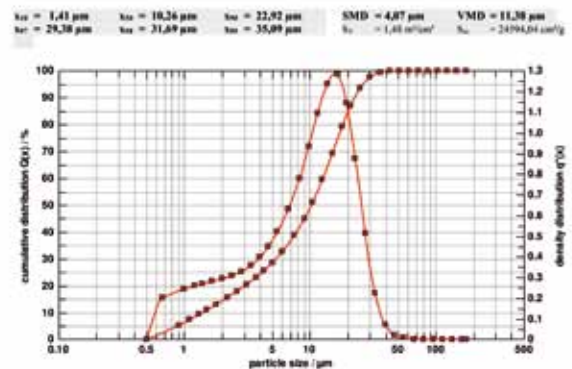
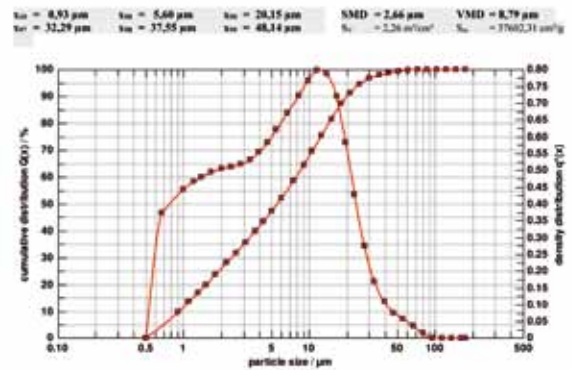
## What do you expect from a mill?

First of all: maximum efficiency and reliability. These characteristics are influenced from totally different factors: during the operating life of a mill the energetic costs exceed the investment expenses by far, therefore that an efficient employment of the energy seems to be of fundamental importance.

Only a system of the maximum reliability can guarantee the availability and the continuity of rendering.

Reliability means production of milled product with constant quality, and that presupposes the efficiency of the treatment system.

For what concerns the noisiness of the equipment, it is more favorable to adopt from the beginning mills already equipped of suitable soundproof box, than not to install measures of acoustic isolation later on.





# More results, less consumptions

The new mills of series BICARMILL® represent the answer to the demands of the customers:

- Low energy consumptions
- Low sonorous emission
- Minimal maintenance cargo
- Elevated reliability and quality of the system

For such scope, many innovative solutions in the operation system, in the system of opening and the maintenance have become necessary.

The result is the mill of series BICARMILL®, an **excellent** and **reliable** product, in which you can find all the STM quality and experience.



Mod. BICARMILL® 400

Mod. JCF 400

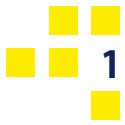


## Technical data series BICARMILL® and JCF

Model	Total installed power	Total absorbed power	Air capacity m <sup>3</sup> /h	Pressure mm H <sub>2</sub> O	Fineness	Capacity per hour	Consumption per hour kW/Ton	Noisiness
300	18,4 kW	14,8 kW	800	500	d90 < 30 μ d50 < 15 μ	10 - 250 Kg	60	< 75 dBA
					d90 < 20 μ d50 < 5 μ	10 - 150 Kg	100	
400	29,2 kW	23,5 kW	1.500	800	d90 < 30 μ d50 < 15 μ	40 - 450 Kg	55	< 75 dBA
					d90 < 20 μ d50 < 5 μ	40 - 300 Kg	85	
630	64,2 kW	51,5 kW	2.700	800	d90 < 30 μ d50 < 15 μ	100 -1000 Kg	52	< 75 dBA
					d90 < 20 μ d50 < 5 μ	100 -600 Kg	85	
800	98,0 kW	78,5 kW	4.700	1000	d90 < 30 μ d50 < 15 μ	100 -1400 Kg	55	< 75 dBA
					d90 < 20 μ d50 < 5 μ	100 -900 Kg	83	
1000	129,0 kW	103,0 kW	6.000	1300	d90 < 30 μ d50 < 15 μ	100 -1800 Kg	54	< 75 dBA
					d90 < 20 μ d50 < 5 μ	100 -1200 Kg	82	



# BICARMILL<sup>®</sup>: 8 fundamental advantages



## 1 JCF mill with horizontal geometry

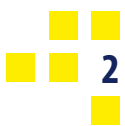
Since 1980 STM develops and proposes advanced technologies in the field of the fine and ultrafine grinding and in particular, from nearly twenty years, in the field of the sodium bicarbonate milling for the cleaning of the flue gases.

Thanks to this long experience, STM has planned an innovative machine that, thanks to perfect integration of the mechanical and electronic technology, guarantees great performance of reliability, productivity and energetic saving.

The confirmation of the optimal energetic exploitation allowed from the new horizontal disposition of the grinding wheel bound together to a classifier with high efficiency, can be found in the minimal increase of temperature inside the grinding chamber, index that nearly all the employed power is used for the grinding and not dissipated as thermal energy.

Considering that, during the operating life of a mill, the energetic costs exceed by far the investment expenses, the efficient employment of the energy is currently, and it will be more and more in the future, a factor of fundamental importance from the economic and environmental point of view.

Moreover, it is important to remember that the JCF mill permits to micronize sodium bicarbonate to a finenesses till now never caught up industrially ( $D_{90} < 20\mu$ ;  $D_{50} < 5\mu$ ) opening new and interesting opportunities of employment for this product.



## 2 Total control of the air flow

On the BICARMILL<sup>®</sup>, considering the longest experience of STM in the field of the application of sodium bicarbonate for the cleaning of the flue gases, has been installed instruments to guarantee the reading and the regulation on all the values of capacity and pressure of the air in the crucial points of the system.

Starting from the regulation in continuous of the air capacity, obtained modulating through inverter the speed of the fan, in order to guarantee the perfect correspondence to the wished final size and in order to obtain a correct dilution of sodium bicarbonate also in the case of sensitive variations of the air capacity of the main fan of the incinerator.

The pressuremeters installed in the grinding chamber and on the exit pipe of the fan, evidence the forming of incrustations or obstructions and signal, on the control panel, the necessity to program an intervention of cleaning.

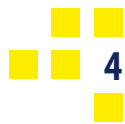




### 3 Vibration control of the mill and fan

Always to remain connected to a concept of maximum reliability and duration of the system, we have equipped the BICARMILL® with innovated vibration sensors that monitor in continuous the correct operation of the grinding and the fan group. Anomalous vibrations that can be generated from sodium bicarbonate incrustations or from the wearing of the bearings, are suddenly found and marked.

Using these information correctly, the operations of cleaning and maintenance are reduced to the necessary and can be programmed in advance.



### 4 Temperature control of the grinding chamber

The sodium bicarbonate is a chemical product that, if milled with temperatures higher than 45-50°C, loses a water molecule and becomes very more incrusting / sticky causing obstructions in the mill and an increase of the vibrations. On the BICARMILL®, in order to limit this serious problem, it has been installed a probe that measures the temperature inside the grinding chamber and has been previewed two fixable thresholds of intervention, one fixed at 35°C that normally actives a signal of alarm, and the second one at 45°C that executes the stop of the mill.

Based on the ambient temperature and to the characteristics of the milled product (fineness, humidity...) it is possible to fix the two thresholds of temperature to the values which are more adapted for every single installation.



### 5 From a complex system to a machine ready to use

The BICARMILL® takes an important revolution in the market of mills for sodium bicarbonate; it's no longer than a system that must be assembled and be installed at customer care, with economic and organizational aspects, but a complete system with all the mechanical and control parts, tested and ready for the operation. The customer has only to make the power connection, the feeding of the sodium bicarbonate and the connections to the injection point.





## 6 Automatic controlled greasing

As well known, the greater cause of breaking of the bearings is given from the lack or wrong lubrication. Managing correctly this problem on machinery like mills, is of fundamental importance not only for the remarkable speeds of the rotating element, but also because they are normally used with continuous cycle.

On the BICARMILL<sup>®</sup>, in order to guarantee a right lubrication, STM has installed the advanced programmable central greasing station in order to distribute to every point of greasing, frequently and in small doses, the correct quantity of grease. Moreover it is interfaced with the PLC in order to signal eventual obstructions of the lubrication pipes or the necessity to recharge the grease in the tank. The increase of reliability achieved with this approach, takes to important economic savings on the extraordinary maintenance and a remarkable reduction of the unprogrammed stops of the machine.



## 7 Automatic cleaning system

To avoid forming of incrustations on the wheels of the mill, of the fan and on the piping system, the BICARMILL<sup>®</sup> is equipped of a peristaltic pump for the dosing of non-sticky additives. The control system regulates the quantity considering the sodium bicarbonate capacity during the grinding in order to maintain it constant to the desired value (normally the 1,5‰).

One of the most used anti-sticky additive in this application is DARAGRIND 136 that, formulated with non-toxic glycols, combines the extreme efficiency also with low dosages with the full compatibility with sodium bicarbonate.



## 8 Easy to install and to maintain

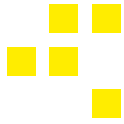
The BICARMILL<sup>®</sup> is created for being installed in the fixed point and to be put on level with a simple regulation on the silent-block of support. It is not necessary to fix it on the ground because the control system of the vibrations always guarantees a functioning under perfect stability.

In order to improve the work atmosphere and to respect the more and more restrictive norms on the acoustic level, the BICARMILL<sup>®</sup> is placed inside of a soundproof cabin with inner lighting system and easily disassembling panels so that the operator can access to the BICARMILL<sup>®</sup> with facility and in complete security.

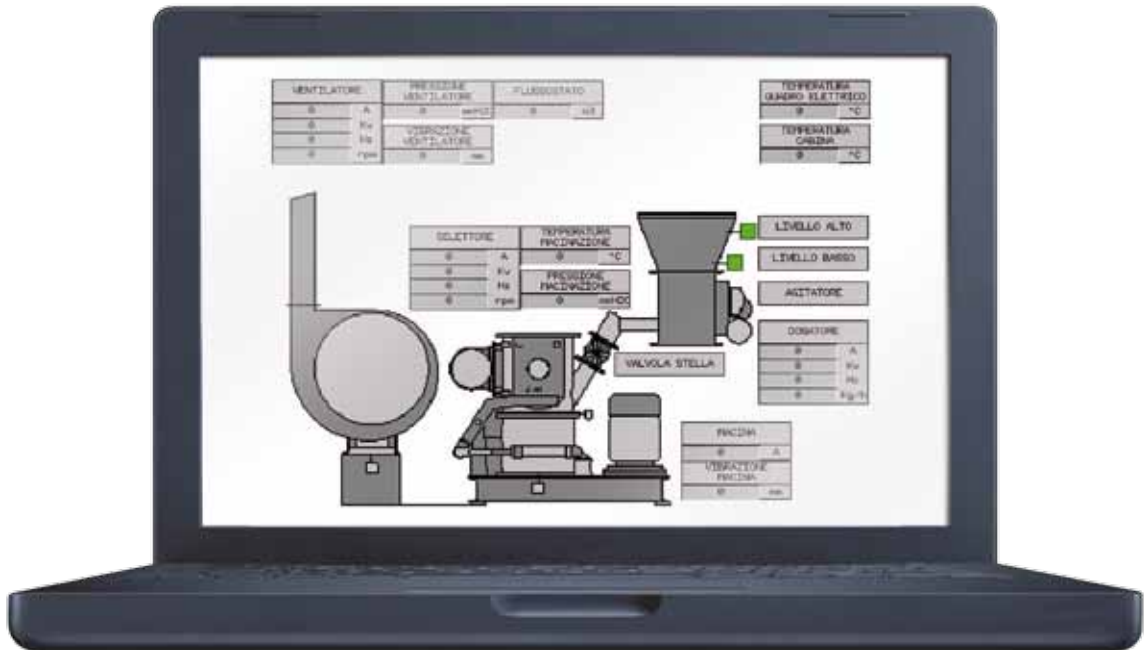




Dimensions and weight	A	B	C	D	D1	D2	WEIGHT
BICARMILL® 300	2.000 mm	2.120 mm	1.600 mm	2.270 mm	154 mm	114 mm	1.780 Kg
BICARMILL® 400	2.200 mm	2.120 mm	1.750 mm	2.270 mm	154 mm	154 mm	2.150 Kg
BICARMILL® 630	3.000 mm	2.300 mm	2.000 mm	2.450 mm	154 mm	180 mm	3.200 Kg



# Programmed Maintenance and Tele-Assistance



A system of efficient grinding allows the micronisation of sodium bicarbonate with characteristics always perfectly conform to the desired values, and guarantees the better relationship between capacity and results. A reliable system must guarantee to being able to use the mill for the greater number of hours/year without that small problems not monitored and consequently neglected can carry to important mechanical breaches. The efficiency and the reliability can be guaranteed during the time only if together with a careful construction of the machinery, there is a good and regular maintenance.

STM aware of this requirement, proposes the service of programmed maintenance that foreseen:

- Tele assistance for the verification and optimization of all the functioning parameters from the STM technicians with opportunity to solve little anomalies without going on site using the technology of communication through GSM.
- 1 intervention each six months for a visual control and with a complete verification of all the system
- 1 intervention per year with changing of the wearing elements (bearings fan – grinding hammers...)

**Milling bicarbonate with BICARMILL® it's easier than ever.**



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