

Max-Blast  **Pressure Gas Blockblaster**

Introduction

Max-Blast's technology was originally developed in the 1920's for the underground coal mining industry.

The basic idea at that moment was to receive a combination of an effective and assured procedure sub-days with sufficient material-refractive effect for the coal-reduction and stretch-propulsion.

Now, it is being more and more specialized in the removal of build-ups and cross-sectional obstructions in a wide range of industrial applications.

Experience like these teaches you important engineering, especially dealing with hot materials. That is how **Max-Blast** have been able to continually develop for new products, innovated solutions/procedures and safety features to make it the safest, most reliable and most effective system of its kind world-wide.

24 hours a day, seven days a week, our clients have to keep their materials moving. But, at every stage of their operation, build-ups and chokes can shut them down.

Changing raw material conditions and the rising amount of secondary fuel components are leading to more unwanted deposits and build-ups.

Production losses and downtimes can be the expensive consequences.

Max-Blast is especially engineered to reach the requirements for its use during the production with none or minimum shutdown time and feeding reduction; ***it offers the on-line-removal of build-ups under heat.***

Regardless where the problems are located, rotary kilns, furnace flues, waste incinerators, cupolas and their peripheries as pre-heater towers, lepol grates, cyclones, feed pipes, coolers and storage facilities.

The Applications

Cement Industry

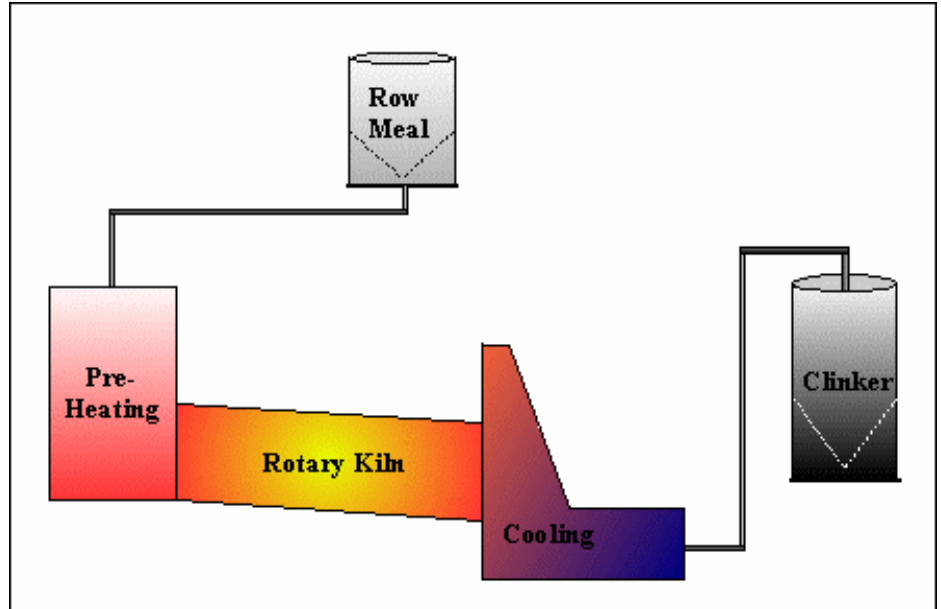
Max-Blast is developed for usage on nearly each stage of the cement production.

Indeed, with firing of ever changing waste fuels, build-ups are occurring more often with the added difficulty to predict where and when they take place.

Especially for clearing build-ups under heat, the operators need to be sure of being well prepared for the job and of using a reliable system reflecting a lot of experience and know-how.

Max-Blast offers the optimum combination of an effective and economical solution while meeting the high industrial safety standards.

At the same time, the operators achieve the fast and flexible reacting even on changing build-ups conditions by easy converting of clear operating instructions and installation.



Lime Industry



Blockages of the materials flow or the gas stream in shaft furnaces are often caused by partial build-ups formation on the shaft walls or by incrustations of the materials itself.

With **Max-Blast**, these build-ups can be removed even when they are some distances from the *MB-Base Socket* entrance. The *MB-Pressure Gas Tube* can support a high volume of pressurized CO₂ needed to clear blockages.

The *MB-Base Socket* can be conveniently attached to any existing opening in the structure.

Waste Incinerator

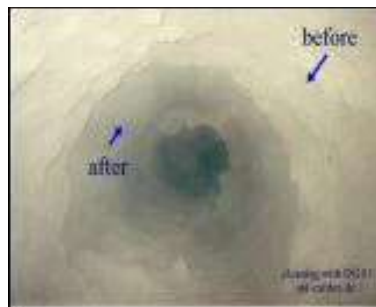
Build-ups in waste and garbage incinerators can be removed with **Max-Blast** excellently.

Again, cleaning can take place during normal production time, eliminating expensive shutdown times and increasing the firm's output.

Specially designed installation units located in the vessel shell, can help to ensure the continuous access to waste build-ups and can protect the most sensitive insulation materials and outer structures. In most cases a few well placed installation units are sufficient to keep the vessels clean at all times.



Paper Industry



The removal of large build-ups can lead to shutdown for hours, even days, costing the firm time and money.

Using **Max-Blast**, these long expensive cool-down periods in the kiln can be avoided.

By properly installing the *MB-Pressure Gas Tube* into *MB-Base Socket* located on the kiln shell, the tube blasts CO₂ inside destroying build-ups, while

leaving the brick lining intact.

Compared to the conventional methods, the use of **Max-Blast** is quick, efficient and cost-saving. In 6 to 8 hours, **Max-Blast** can remove a build-up of 10m without even sending one man into the kiln.

Other Industries

Today's applications of **Max-Blast** in modern industry are varied and specially designed for production requirements. Others reflect the original application of **Max-Blast** principle used in the break-up of solid and compacted materials, i.e. :

- Loosening of fertilizer and other bulk storages.
- Breaking of concrete.
- Prospecting of tunnel and shafts.
- Cleaning steel ladles.
- Cleaning petrochemical production lines.
- Sinter plant.



The Advantages

Max-Blast offers counting advantages for the benefit of industrial producers :

- Effective - Powerful, fully controlled capacity of **Max-Blast** suited to the special requirements.
- Fast - Build-ups removal within minutes by using *MB-Pressure Gas Tube* “ ready for action“.
- Flexible - By easy placing of *MB-Base Socket* to react on changing build-ups conditions.
- Economical - Well-aimed "blasts" only where the build-ups really occur.
- Safe
 - Dramatically enhanced safety by working from outside the plant without the risks of opening doors and poking holes that expose the workers to the hot materials.
 - Precisely definition of the capacity and effect of the *MB-Pressure Gas Tube*.
 - No damaging of the plant by using safety distances to the refractory.
 - Exclusive use of controlled and authorized equipments by the valid laws and regulations.
 - To be used by well trained operators according to clear Operating Instructions.
 - *MB-Pressure Gas Tube* is safe to handle and transport.
 - *MB-Pressure Gas Tube* works with cold CO₂ gas. It is therefore, considered safe to use in the presence of flammable gases.
 - **Max-Blast** is especially suited and approved for loosening ammoniated compound granular fertilizer.
 - *MB-Pressure Gas Tube* offers a high rock-breaking capacity while reducing the amount of dust and loose fragments.

The Safety Features

Max-Blast is manufactured according to modern production standards and undergo very stringent quality controls; often single-piece control.

The testing of the *MB-Pressure Gas Tube* is controlled and stored digitally for their lifetime.

Max-Blast fully correspond to all necessary international legal and safety-technical requirements.

The *MB-Pressure Gas Tube* and associated accessories are pressure controlled and tested to high standard in order to withstand the high pressure involved.

The goods are delivered with the appropriate certificate. The *MB-Chemical Energizer Cartridge* itself is a safe component since it can only ignite under the surrounding CO₂ pressure within the charged *MB-Pressure Gas Tube*.

The complete *MB-Pressure Gas Tube* can be stored safely even when assembled as long as it is not energised.

Energising is by a manually operated condenser generator. Batteries are prohibited for safety reasons.

How Max-Blast Works ?

A *MB-Pressure Gas Tube* is filled with 150 to 600 litres of liquid CO₂.

Immersed in the liquid CO₂, a *MB-Chemical Energizer Cartridge* is energised remotely via a sulphur pill and an electrical supply.

Once energised, the *MB-Chemical Energizer Cartridge* releases gaseous CO₂ and intense heat instantly, thus turning the liquid CO₂ into gas expanding 500 times resulting in an increase of pressure between 1500 to 2700 bar.

The reaction time is approximately 40 ms.

A *MB-Shear Disk* then releases that pressure, the gas blasting through a *MB-Discharge Head* into the build-ups to be destroyed.

How Max-Blast Is Used ?

The *MB-Pressure Gas Tube* is used directly where the build-ups occur.

As the entry to the obstruction, *MB-Base Socket* is installed i.e. on the steel shell of the plant.

Through the insertion hole, the *MB-Pressure Gas Tube* will be inserted into the build-ups with the *MB-Discharge Head* in safe distance behind the refractory.

Locked with the *MB-Gripcase* to the *MB-Base Socket*, the *MB-Pressure Gas Tube* is breaking up the deposits by the strong release of its CO₂ charge.

