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MULTIGON

SILOS FOR MASS FLOW & MAXIMUM USEABLE VOLUME*

*For equal construction conditions, MULTIGON provides up to twice the useable volume as round silos.

MULTIGON

With MULTIGON, there is more in it for you!

Twice the silo volume

Installation areas are almost always angular. **MULTIGON** adapts to this according to the requirements and accurately to the centimetre. Thanks to the octagonal surface area, you gain maximum silo volume in relation to the available space. Particularly, when you require several cells, or set up the silos inside. This is because the adjacent cells of the **MULTIGON** always use common walls. Thus, you do not lose any valuable space while simultaneously gaining as far as hygiene is concerned.

Flexibility through modular design

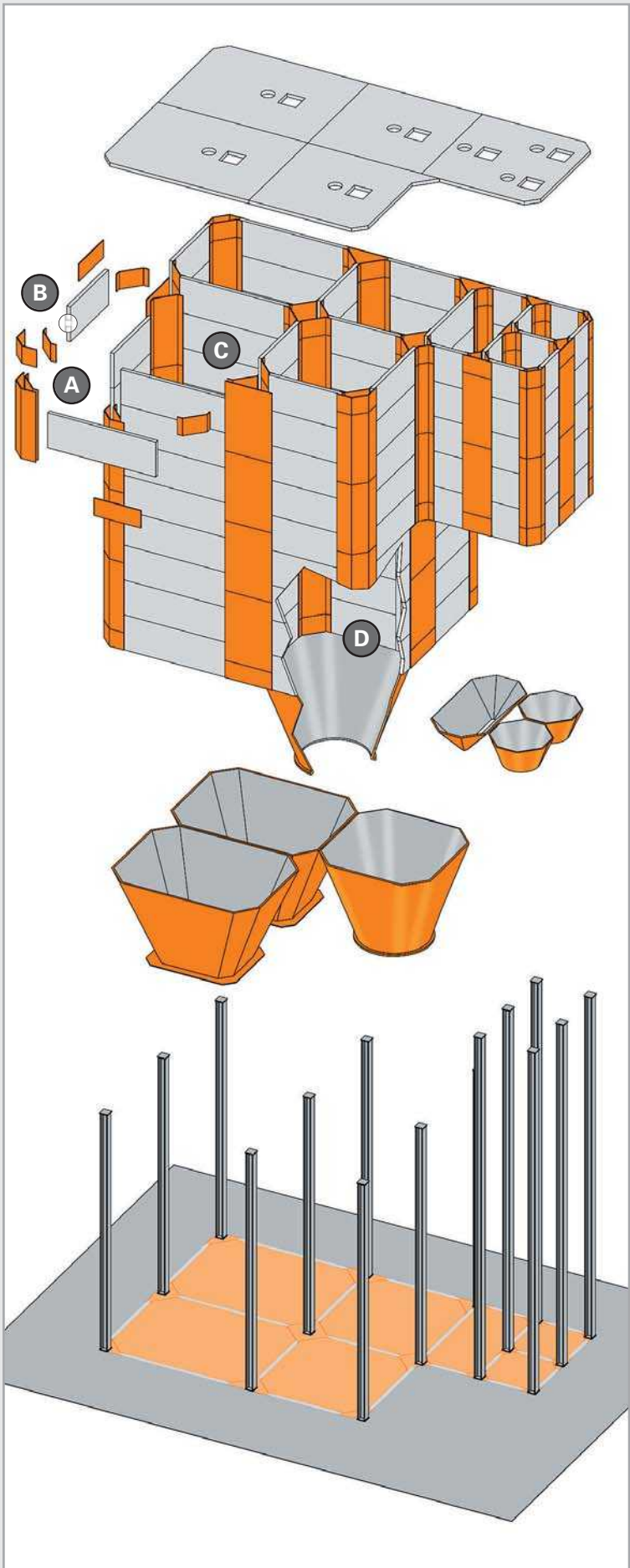
Combine your **MULTIGON** entirely according to your requirements. With different cell cross sections and construction heights, it is not only possible to create different silo volumes precisely according to your requirements in one single cell block. You can furthermore economically integrate machine rooms, a staircase, and much more in your silo building.
We will be happy to design the most economic concept jointly with you. And to ensure that you remain flexible even for your future requirements, **MULTIGON** can be extended just as mulitfunctional and without major expenses.

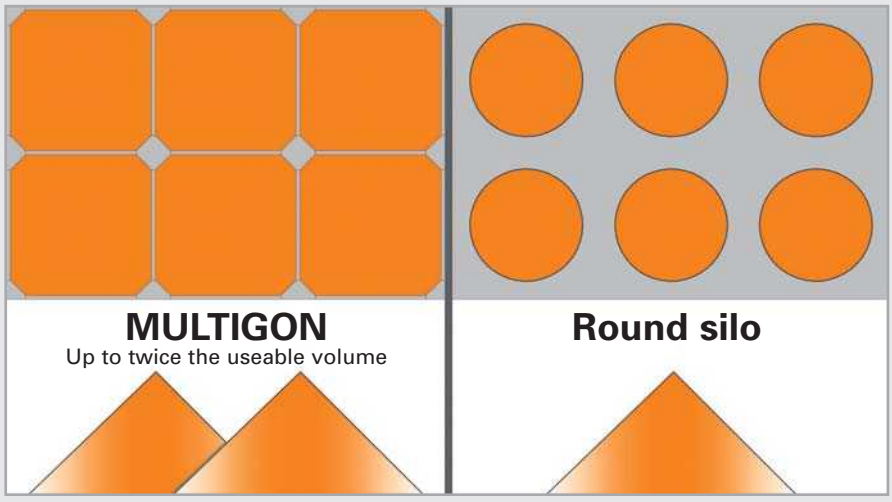
Low transport volume & convenient assembly A

MULTIGON comprises extra flat components that are manufactured at our own plant in an automated process and accurate to dimension. The elements are only mounted on the construction site by joining and bolting, without the need for welding. This results in many interesting advantages, more information on which you will find on Pages 4 and 5.

Easy maintenance and operation

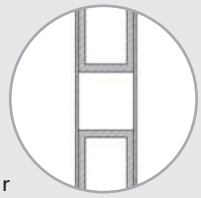
On the outside, **MULTIGON** is always enclosed by trapezoidal sheet metal. Thus, a building is created in which all fittings are protected against weather. Even if several cells are installed, only one easily accessible workspace is created in the top and bottom area. This is practical, and saves on operating costs every day.





Squaring the circle. With its octagonal cross section, MULTIGON combines the advantages of round and square silos.

Optimum insulation prevents condensation B



Air pockets are produced within the sandwich-type cell walls as well as between the silo and the sheathing. They ensure optimum insulation of your bulk solids. Please read more on Pages 6 and 7.

Price advantage for stainless steel design C

Your bulk solids require stainless steel? Due to the special design of the **MULTIGON**, we utilise high-quality stainless steels only on the inner wall of the silo that contacts the product, and in small sheet thicknesses. The remaining structure is manufactured from more cost- efficient normal steel.

MULTIGON with 2 cells of 400m³. Extension to 3 cells in preparation. The available space is maximally utilised through customised dimensions.

Mass flow ensures First-In-First Out discharge D

Silo walls that are completely smooth on the inside and on the outside, an octagonal cell cross section with 135° corners, and a sophisticated geometry in the funnel area ensure mass flow. This is always done in connection with a discharge device that delivers the material evenly over the entire outlet area. **MULTIGON** is therefore depleted without any residues and according to the FIFO principle (First-In-First-Out). **MULTIGON** is thus guaranteed to have no residues that might result in mixing of materials and thus reduced quality. The active silo volume is not reduced but rather used in an optimal manner. Even where bulk solids with poor flowing characteristics are used, it is possible to reliably safeguard against core flow, funnelling and bridging.

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For MULTIGON, no distance is too far & no construction site too narrow!

Building efficiently inside and outside

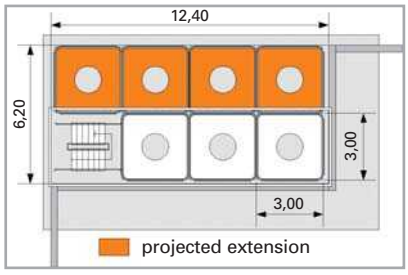
The flat components of the **MULTIGON** are mounted on the construction site by joining and bolting, without the need for welding.

It is therefore possible to install **MULTIGON** even on the smallest assembly space. Installation sites that are hard to access can be reached without difficulty. Interesting options are available, in particular for installation inside or difficult outside assemblies.

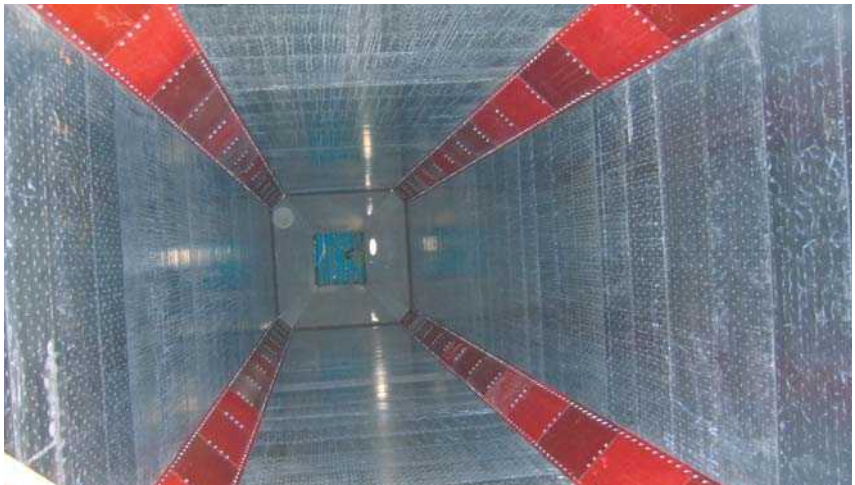
Due to the simplicity of the system, it is possible to employ cost-efficient workers to carry out the assembly on site. Naturally, our professional fitters are also available for this purpose. In either case, your **MULTIGON** will carefully be installed according to a tight time schedule that is coordinated with you to ensure that your operations are disturbed as little as possible.

All the risks that are associated with welding, such as fire, welding distortion, or damage to the coating, are avoided, making the assembly safer.

Compared to systems that require welding on the construction site, **MULTIGON** offers a significant price advantage. This is the case for square designs from a useful volume of approx. 250 m³, and for round silos of 500m³ and more.



Sudan, flour, ● cohesive, 3 cells of 90m³ (extension to 8 cells in preparation)



Austria, plastic pellets
● poor flow characteristics, 2 cells of 800m³
(extension to 5 cells in preparation)




Germany, carrier materials, ● cohesive, 4 cells of 100 m³



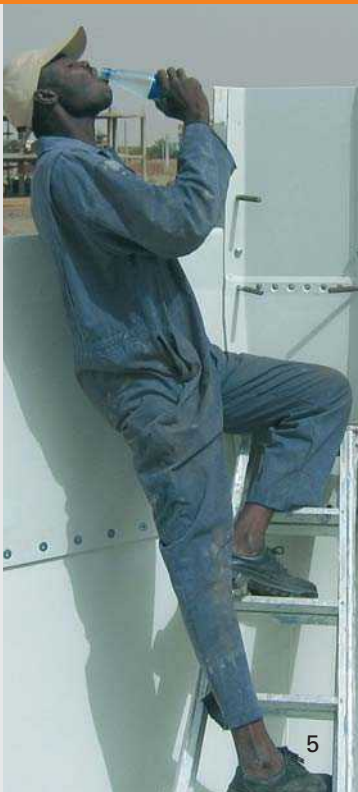

Portugal, flour, ● cohesive, 4 cells of 40 m³ and 2 cells of 120 m³

The longer the transport distance and the larger the silo volume, the more cost efficient MULTIGON becomes compared to round or conventional square silos.

The cost-efficient, quick assembly of the MULTIGON is frequently carried out by workers on site under the direction of our supervisors.

Low transport costs

The smooth wall elements of **MULTIGON** – completely without any protruding support parts – guarantee a low transport volume. The wall elements are stacked on pallets for easy handling at the installation site and economic transport in trucks or containers. **MULTIGON** can therefore produce considerable cost savings, in particular in the event of large-scale projects or far distances.



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In MULTIGON, your bulk solids are well taken care of!

Flour, salt, granulate or bulk solids with poor flowing characteristics, such as Ti02, urea, melamine, clay, and XPS flakes. **MULTIGON** has proved to be successful throughout the world, offering a unique benefit for many bulk solids.

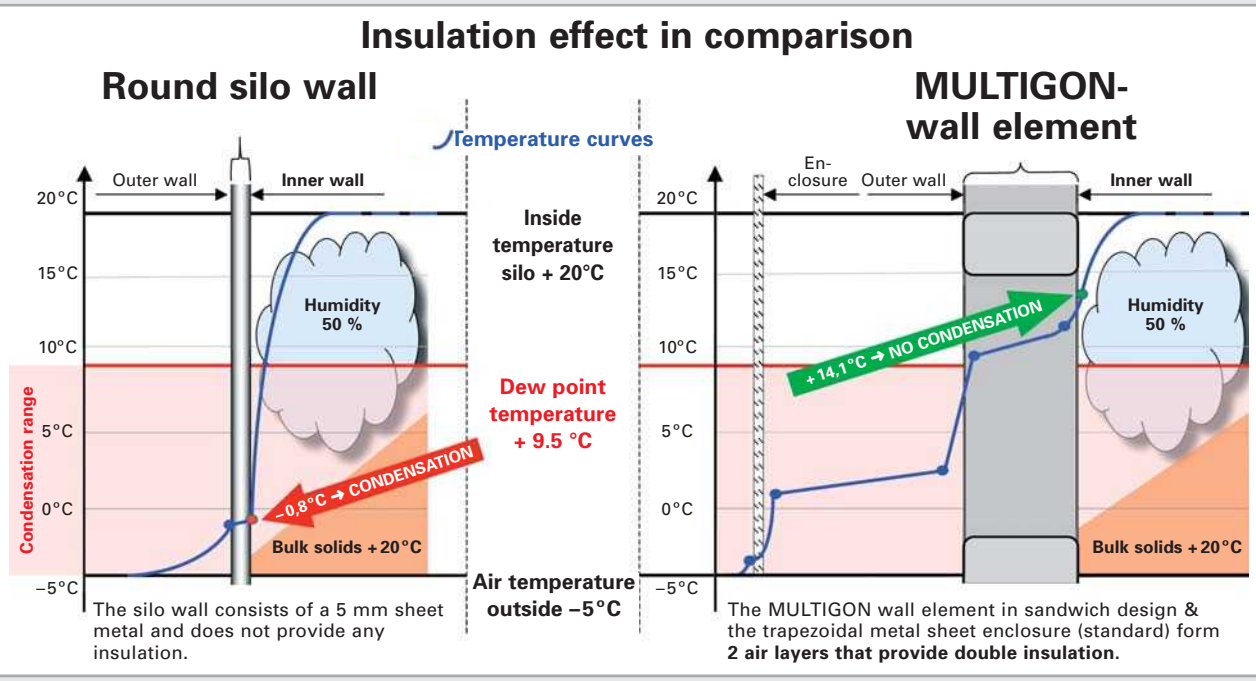
Protection against heat, cold and condensation

Air pockets within the sandwich-type cell walls as well as between the silo and the sheathing provide optimum insulation of the bulk solids.

Besides, the temperature at the inner wall of the **MULTIGON** is always above the dew point. The much feared condensation can thus be prevented. Because condensation is always generated on the inner wall of the silo, when this is to cold and at the same time teperature differences between silo interior and outdoors occur.

Sensitive bulk solids, such as XPS flakes or meat and bone meal, are protected against excessive heat due to high outside temperatures and strong sun radiation.

Insulation effect in comparison

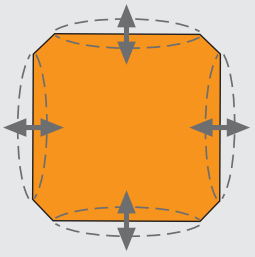


The silo wall consists of a 5 mm sheet metal and does not provide any insulation.

The MULTIGON wall element in sandwich design & the trapezoidal metal sheet enclosure (standard) form **2 air layers that provide double insulation.**

Low foundation pressure

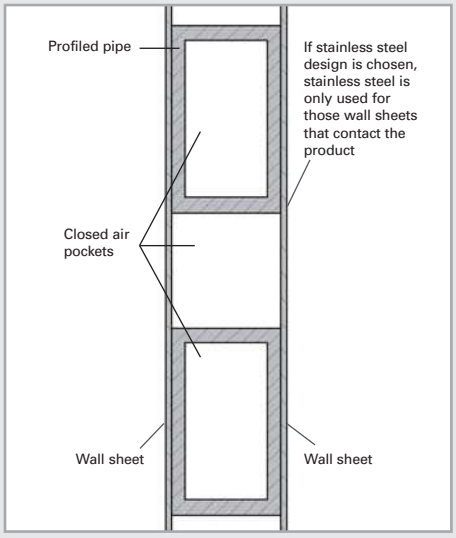
The sandwich-type walls of the **MULTIGON** are slightly flexible. The resulting foundation pressure is thus much lower than is the case with rigid containers. Apart from protecting sensitive bulk solids, the main advantage consists in reduced bridge spans. It is therefore possible to use smaller discharge systems.



No chance for caking

Minimal bending of the wall elements that changes during depletion and filling proves to be particularly useful for storing hygroscopic bulk solids. The design ensures that the layers that these materials form on a regular basis are cracked.

Wall element in sandwich design

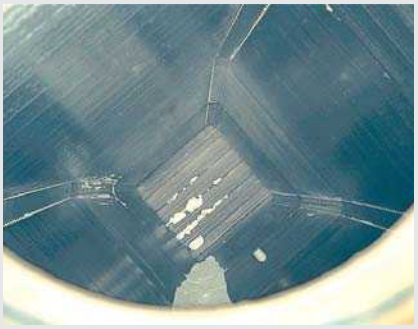


MULTIGON is perfectly suitable for

- the need for various silo cells (particularly for medium-sized or different volumes)
- bulk solids that need to be protected against humidity (condensation)
- temperature sensitive bulk solids
- safe storage of hygroscopic bulk solids in large silos
- Silos > 500 m³
- very difficult bulk solids / applications that do not allow for funnels (cone) and use rectangular or square discharge systems
- very long transport distances
- as an alternative to systems that need to be manufactured or welded on the construction site
- installation inside
- silo operation in low pressure

Differences to conventional square silo systems

- inside and outside is completely smooth
- suitable for bulk solids with very poor flowing characteristics, as the round silo effect resulting from 135° bevelled corners produces an octagonal cross section
- mass flow ensures discharge in First In Fist Out principle
- optimal insulation
- more flexible than concrete silos



Disadvantages

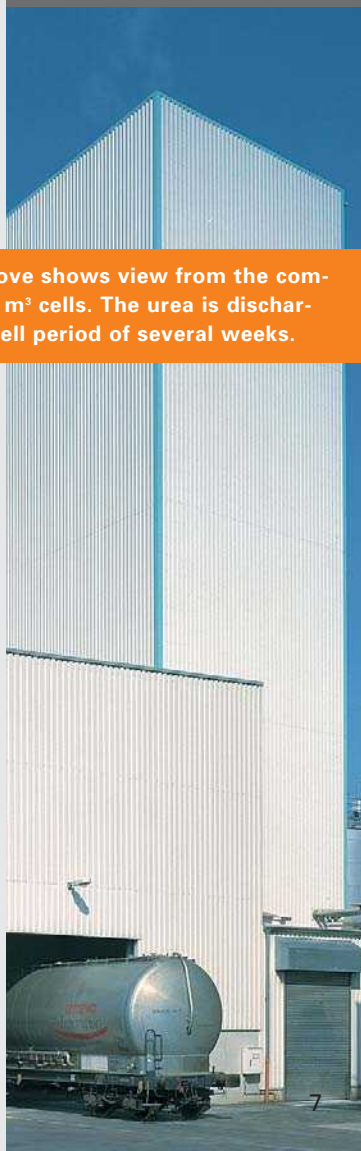
- not airtight (but dust-tight)
- relatively high purchase price compared to round silos, if financial benefits resulting from space savings are not considered
- the effects of wet cleaning in long-term operation are not known
- **MULTIGON** is often not cost-efficient if weighing of individual cells is required

Installation sizes & materials

The **MULTIGON** is available in steel (painted, galvanized or non-treated) or stainless steel and customised according to your requests in the following dimensions **per cell:**

- storage capacity: 0.5 to 500 t
- storage volume: 2 to > 1,000 m³
- cell width: 500 to 5,000 mm
- cell height: 1,000 to > 50,000 mm

MULTIGON is optimally suitable for hygroscopic bulk solids. Due to its design, it has a high insulation value, minimising moisture migration, while the design of the flexible walls ensures that the built-up layers are cracked.



MULTIGON for 3,000 t prilled urea. Pic above shows view from the common upper house into one of the five 450 m³ cells. The urea is discharged without any residues even after a dwell period of several weeks.

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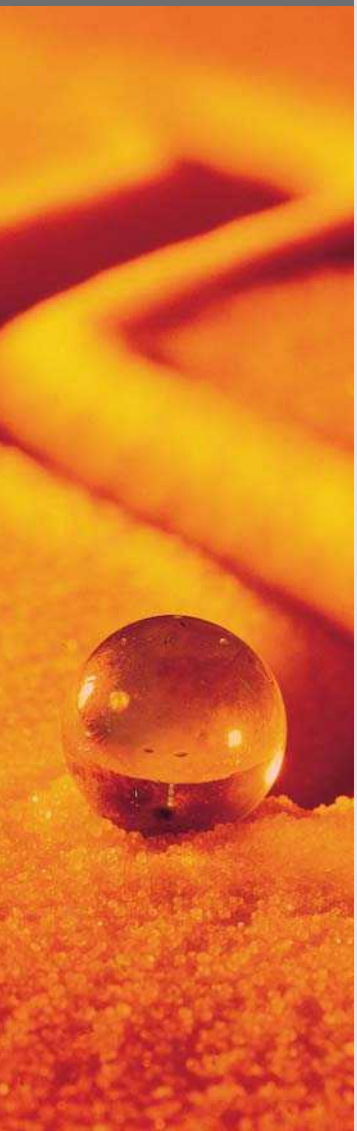
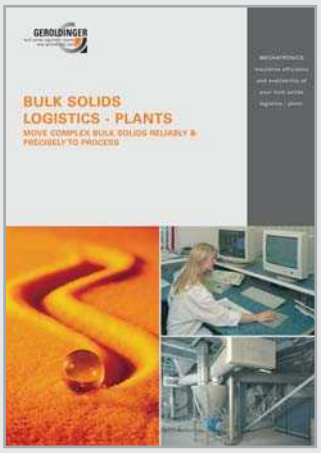
screws, chain conveyors

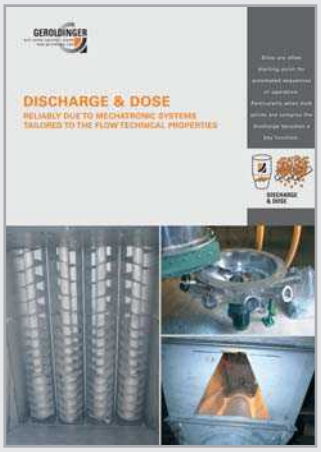
dirscharging, mixing,
dosing & weighing
systems for mass flow:
Oszillomat, screws, ...

process automation
control, record, visualize



MOVING YOUR BULK SOLIDS RELIABLY & PRECISELY TO THE PROCESS





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