

Penta Automazioni Industriali SRL, 40062 Molinella (Bologna), Italy

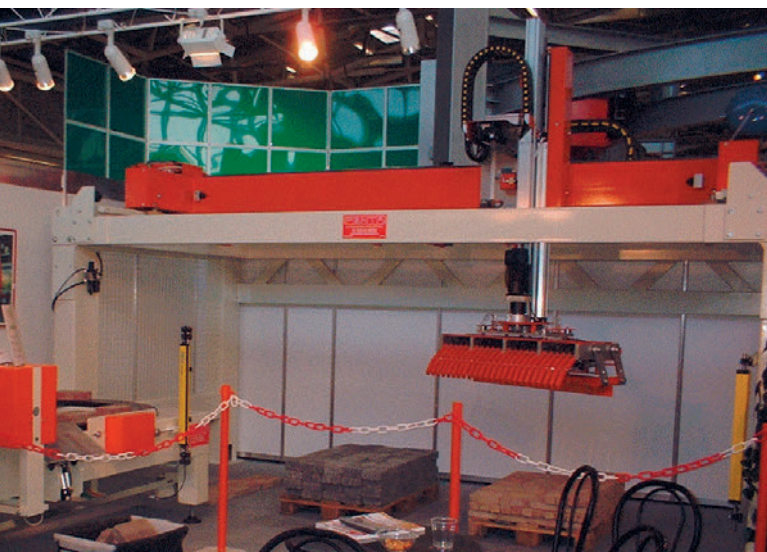
# bauma fair year by year

Since its foundation in 1991, Penta Automazioni Industriali has been involved in studying the concrete industry and its market trends. This family-owned company has always been attentive to customers' needs, trying to imagine, design and build equipments and machinery that could meet customers' final expectations.

It's in particular for this reason that Penta has attended all bauma fairs since 2004. bauma, this year at its 33rd edition, is the world's most important meeting point for the construction machinery, building material machine and mining machine industry. The leading trade fair of the concrete industry takes place in Munich every three years and it gives to public and exhibitors the possibility to have access to international markets and most innovative technology.

## 2004 - Caleidos stacking gripper

In 2004, the first bauma attended, the equipment exposed was "Caleidos gripper". This is the stacking gripper of Caleidos rumbering plant, a home-made studied and designed installation, able to tumble and repack concrete blocks and pavers with different shape and size. This controlled-axis manipulating cuber picks the rows up (1 up to 4 according to the packaging strategy and the stacking needs) and stacks them on an empty pallet. The head of this gripper is equipped with 24 gripping fingers, divided into 8 group of six fingers. Each finger is controlled and enabled thanks to a pneumatic cylinder and this independent control gives the gripper the possibility to be more accurate during the pick-up of the products.



bauma 2004 - Caleidos gripper



bauma 2007 - Nippy pitching machine

## 2007 - Nippy pitching machine

In 2007, Penta presented "Nippy pitching machine", an automatic machine designed to pitch concrete and natural stones to create an elegant and natural effect. The pitching process is carried out on the split surfaces, so the machine is installed just after the splitting machine and thanks to its compact design it can be integrated in almost all the existing splitting lines.



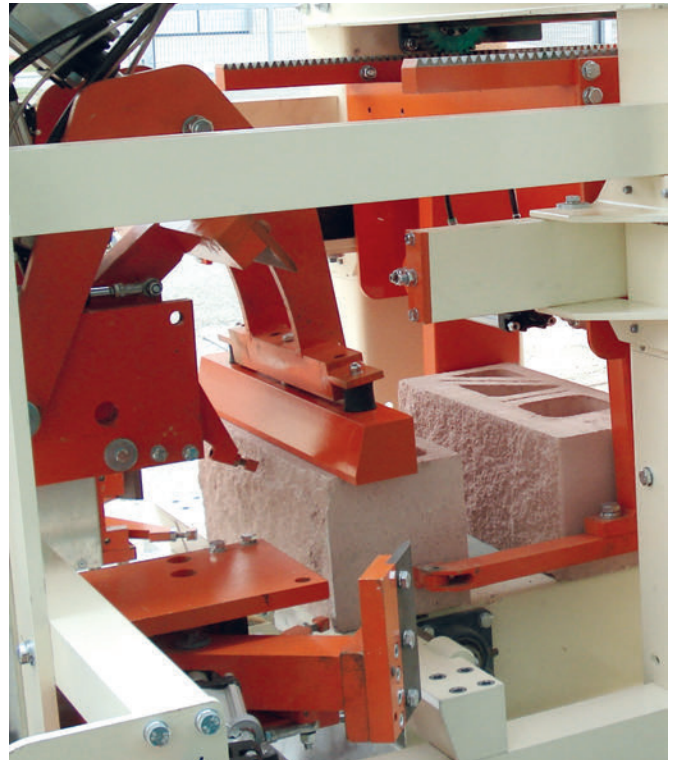
The pitching process is carried out using 4 special blades made of Widia hard steel, working at high speed on the four edges of the split face simultaneously.

The blocks are held in the process position by means of a locker that holds the stone while the blades are working.

**2010 - Caleidosline machine**

Caleidos rumbling plant has always been the top equipment for Penta company and it was increasingly known among customers and potential customers too. The ageing effect that tumbling drum can give to the products is mainly concentrated on the edges and on the corners. That's why Penta technical department dedicated some time to study a new machinery able to age products in a cost effective way.

It has been for this reason that Penta developed "Caleidosline machine", exposed at bauma in 2010. This is a machine with a compact and simple design that should be installed directly on the dry line, between the lowerator and the cubing station. In this case, the aged effect is given by aging rollers.



FRENCH MANUFACTURER of Equipment for the Concrete Industry

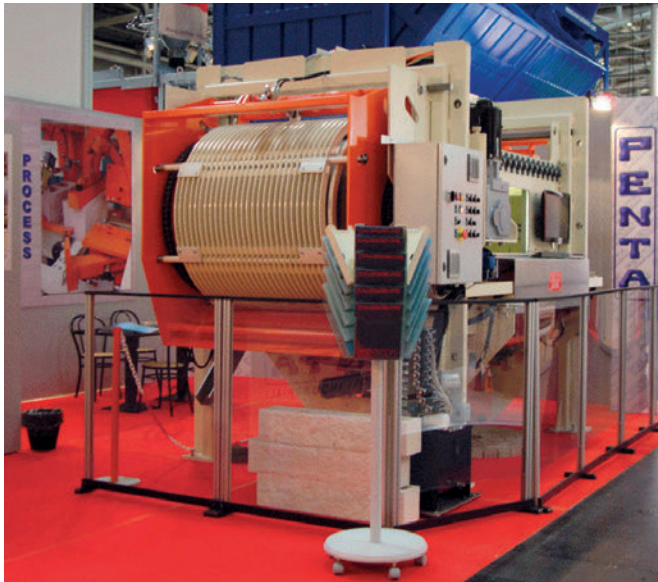
**TURN-KEY PLANTS**

**VIBRATING PRESS**  
«High efficiency»

State-of-the-art  
handling system

Robotic solutions  
for tailor-made installation





bauma 2010 - Caleidosline machine



bauma 2013 - Robot scanning system to build preset pattern



### 2013 - Robot scanning system to build preset pattern

In bauma 2013 Penta decided to show how Penta installations can be integrated with extremely reliable and precise robots. The robots are equipped with one or more heads duly designed according to the materials to be handled.

The idea was to re-build a layer after any secondary process, with a pre-set pattern. The scanning system determines the sizes of each incoming paver and the robot picks it up and places each stone in the position of the pre-set layer.

### 2016 - Nippy pitching machine

In 2016 Penta chose to expose the newly renovated Nippy pitching machine.

Basically, the machine concept was the same as presented in 2004, but some technical features changed.

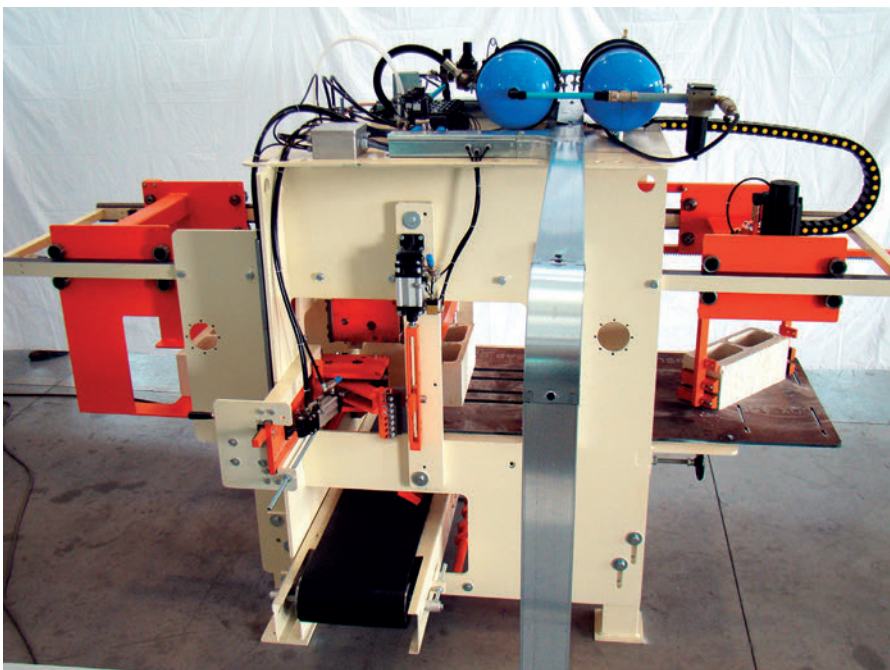
The in-feeding system, the blocker method and the extractor device has been improved to make the machine process faster and more efficient and reliable.

### 2019 - Automatic quality control for rumbled pavers

Since Caleidos rumbering plant has always been the top product for Penta, the company has never stopped studying improvements to be made.

As a result, in bauma 2019 Penta exposed the new in-house developed automatic quality control system on pavers and concrete blocks.

At the bauma the automatic quality control system was integrated with a plate chain line, a scanner device and a sorting gripper.



# TOP IN FORM!

## Concrete block molds for the whole world!

With more than 60 employees and state of the art technology we manufacture molds for the concrete block industry worldwide. Due to our high level of vertical integration, from design to production, we are able to meet the constantly growing demands in mold construction. Together with our customers we are also able to implement unique innovative special shapes.

### From paving stones to garden and landscaping products:

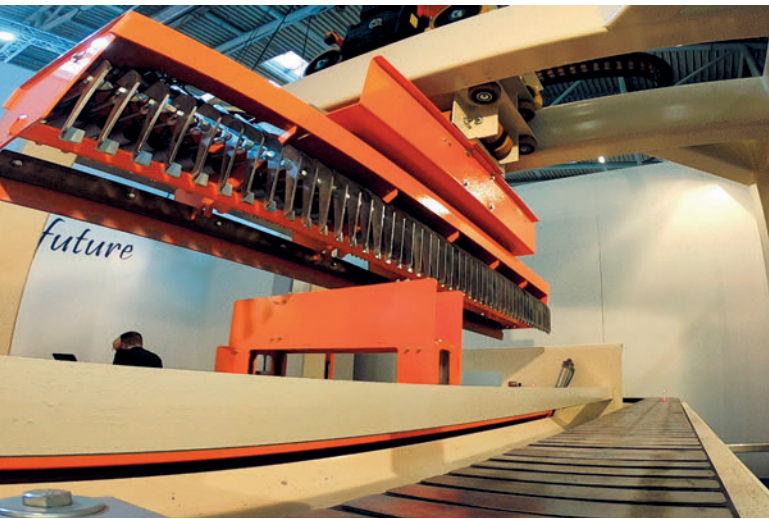
As a family-run company Lammers Formenbau is one of the worldwide leading manufactures of concrete block molds.

At our site in Haren-Erika molds for paving stones and curbs, as well as garden and landscaping construction elements and hollow block molds are produced.

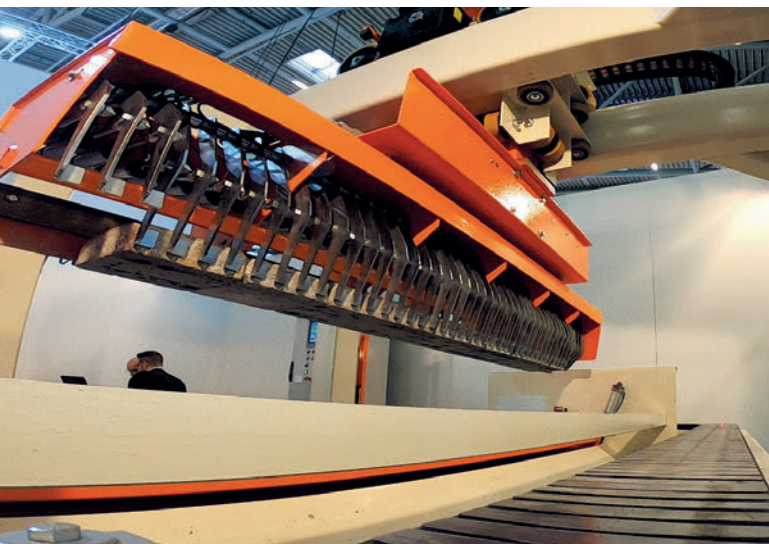


**MADE IN GERMANY**  
SINCE 1953

bauma 2016



1. Scanner device



2. Sorting gripper picks up the products



3. Sorting gripper deposits the products

The products have been placed on the plate chain line. This line opens the plates in order to separate the pieces one from each other. In this way the scanner device, that goes forward and backward upon the pieces, can easily identify their features: position in the line, size, possible edges or corners broken, possible breakages on the surface and orientation of the piece (face mix up or down).

Once the scanner detection has been carried out, the sorting gripper picks up all the products from the line. This gripper is equipped with 48 independent gripping fingers that let the gripper pick up safely even pavers of different width.

Then the gripper deposits the products on the line. The plant is then equipped with a programming bench with several lines. The sorting gripper puts the pavers on each line according to their sizes. The pavers are then moved to the stacking area of the plant.

This overview of Penta equipment shown in the various editions of bauma allows you to understand the attitude of the company. Penta's technical office is always looking for innovative solutions that could grant better performances and more reliability and the sales department will study the best solution to meet the needs identifying which is the most suitable equipment according to production requirements and goals to attain. ■

FURTHER INFORMATION



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