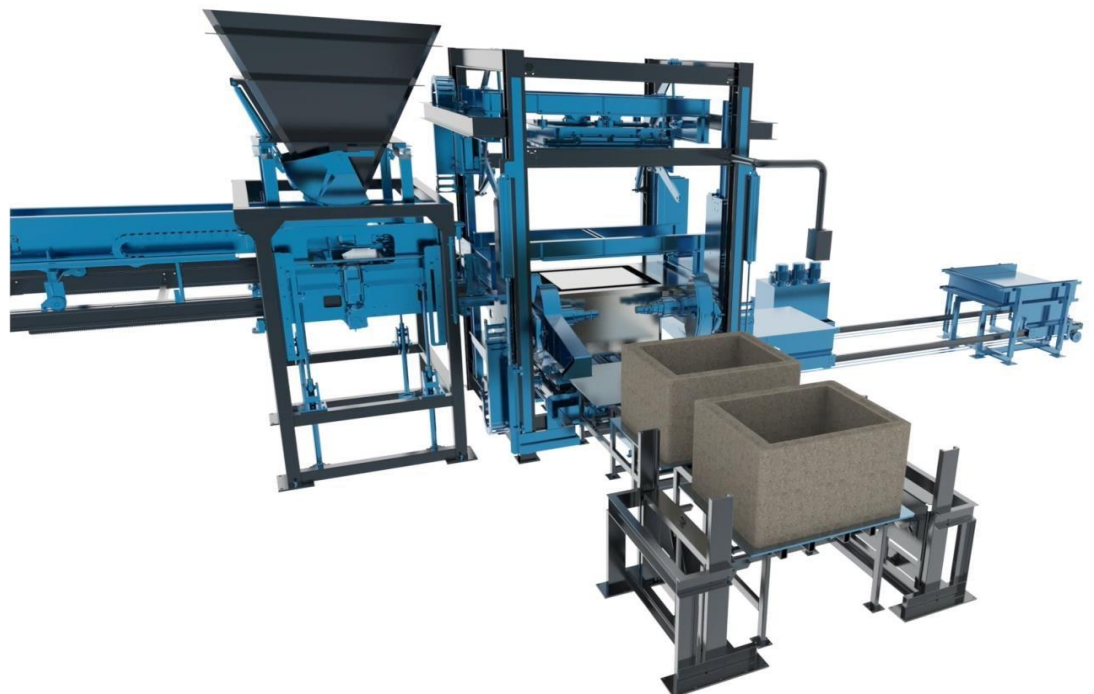


Boulleville, le 03/06/2023

MACHINE UNIVERSA



PRESENTATION OF THE MACHINE UNIVERSA

The machine UNIVERSA is:

- A dry or semi-dry cast technology machine with continuous demolding, that allow the production in a completely and autonomous process.



- Allow the production of small or big series of several kinds of products



- Production per hour from 5* à 60** cycles
- Mold change in less of 30 min
- Filling system change in less of 1 hour.
- Min production for Basic **Max production for OPTIMAL



- Allow the production of one great variety of concrete elements.



Possibility of realization of more than 100 types of standard products
 Height of products between 40 et 750mm
 Maximum dimensions of the products: 1630x1350 mm
 Maximum weight of the product: 800kg

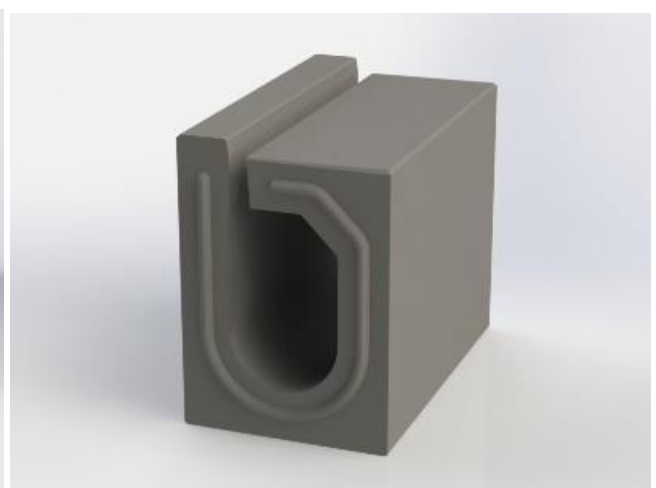


Non-comprehensive list of realizable products

- Allow the production of simple or complex shape of concrete elements



Curbs (production capacity: from 28 to 240 pcs/h)



Slotted channel (production capacity from 6 to 10 pcs/h)

- Offer several optional to improve product quality, cycle time or ergonomic amelioration of the workplace.



Optional: tamper head vibrators

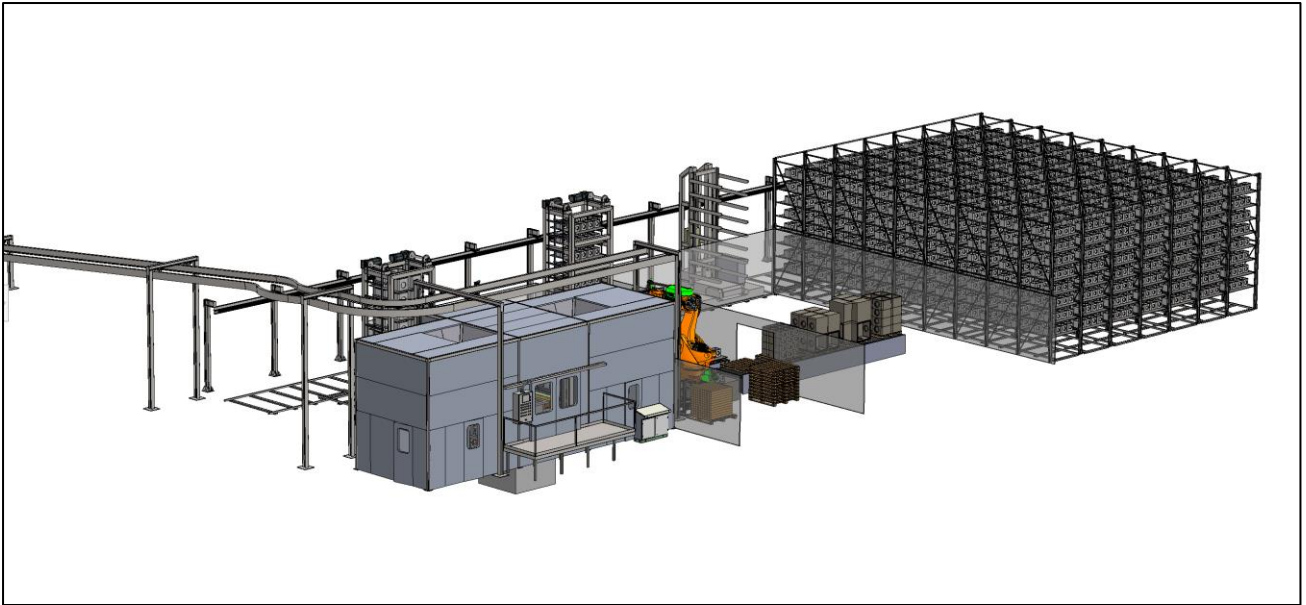
Other optional to improve quality and productivity

Second filling box for double layer elements
Over mold technology

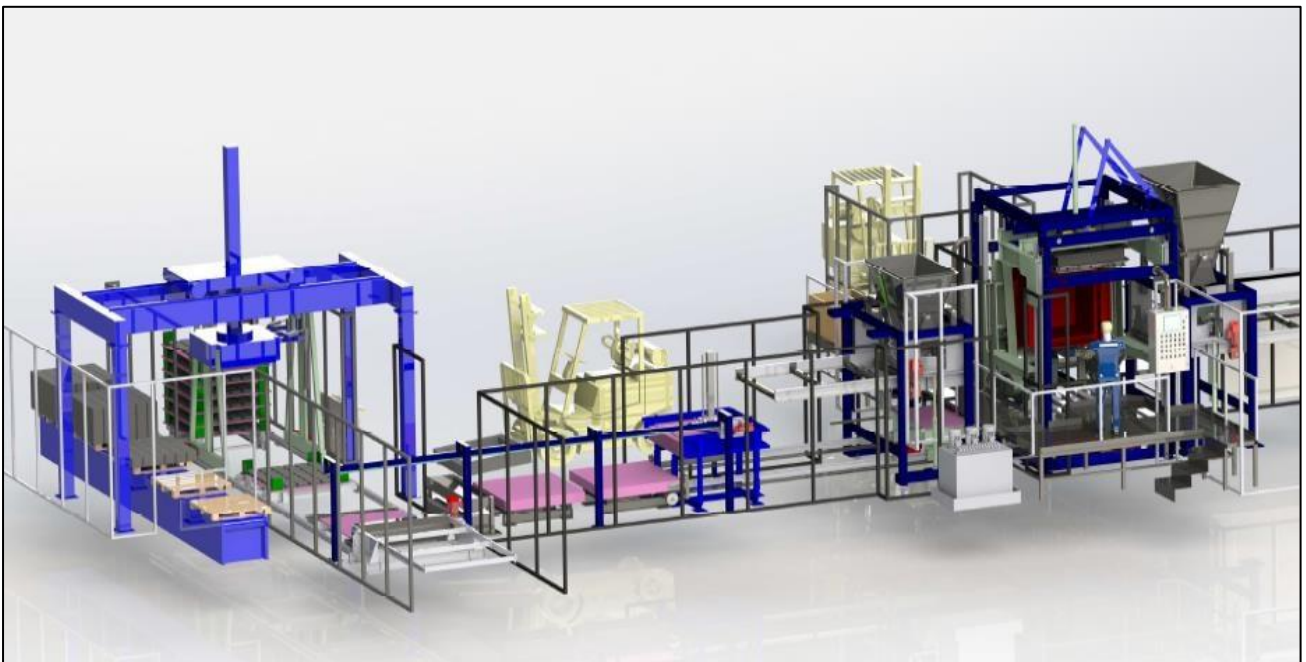
Other optional to improve ergonomic workplace

Automatic mold changing
Automatic mold oiling
Robotized steel cages insertion
Robotized bottom rings insertion
Automatic smoothing system.

We can offer you a complete plant from production to fully automatic palletizing



General view of a solution proposed by FAMETO INDUSTRIE SAS



Example of UNIVERSA OPTIMAL machine with fresh product output line: board feeder and palletizing

VERSION OF UNIVERSA MACHINE

We propose two version of UNIVERSA:

1-OPTIMAL

2-BASIC

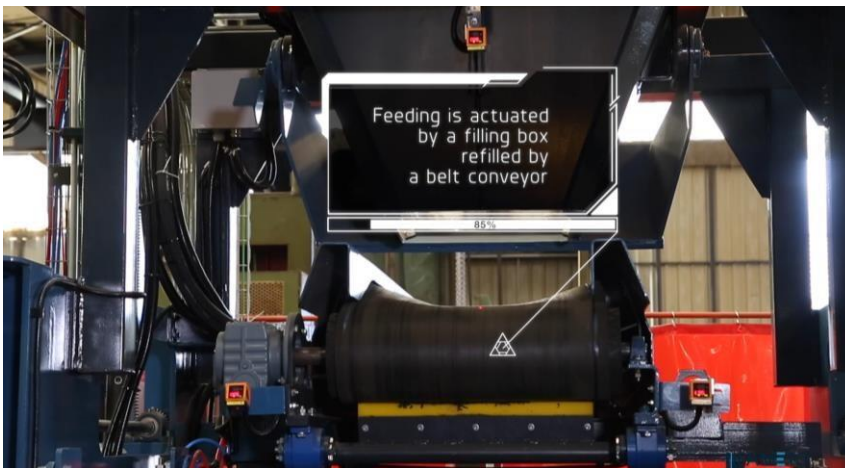
The UNIVERSA OPTIMAL is the solution to produce a large series of concrete product of high quality.

ACCESSORI E TECNOLOGIE PRESENTI SU OPTIMAL		
	BASIC	OPTIMAL
Sformatura verticale diretta		X
Sformatura a ribaltamento	X	X
Pressa per stampaggio		X
Riempimento mediante nastro	X	X
Riempimento mediante cassetto		X
Vibratori sulla pressa		X
Controllo della ampiezza di vibrazione		X
Controllo della frequenza di vibrazione	X	X
Livellamento automatico tra cassetto e altezza stampo		X
ACCESSORI OPZIONALI		
Cabina antirumore		X
Linea di uscita prodotto fresco		X
Impilatore per prodotto fresco		X
Caricatore automatico delle tavole		X
Accumulatore di tavole vuote		X
Cassetto per secondo impasto		X
Centrale idraulica con variazione di portata		X
Robot per inserzione armature		X
Robot per oliatura		X
Robot per inserimento anelli di base		X
Sistema di frattazzatura		X
Sistema "Over mold"	X	X

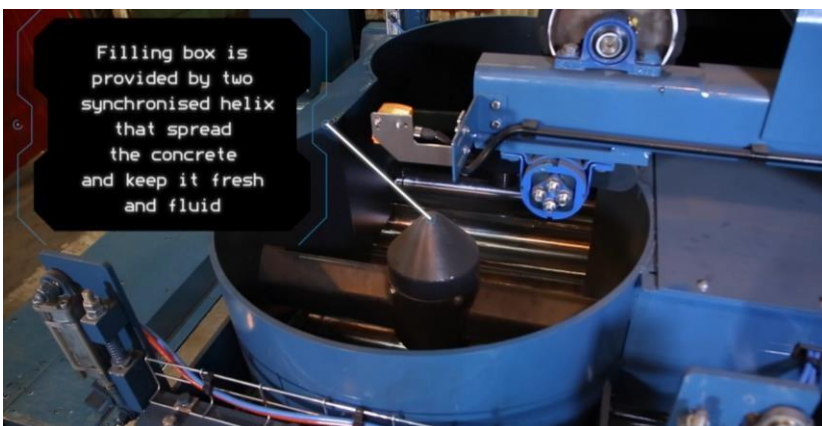
DESCRIPTION OF UNIVERSA OPTIMAL MACHINE

The UNIVERSA is composed by the following elements:

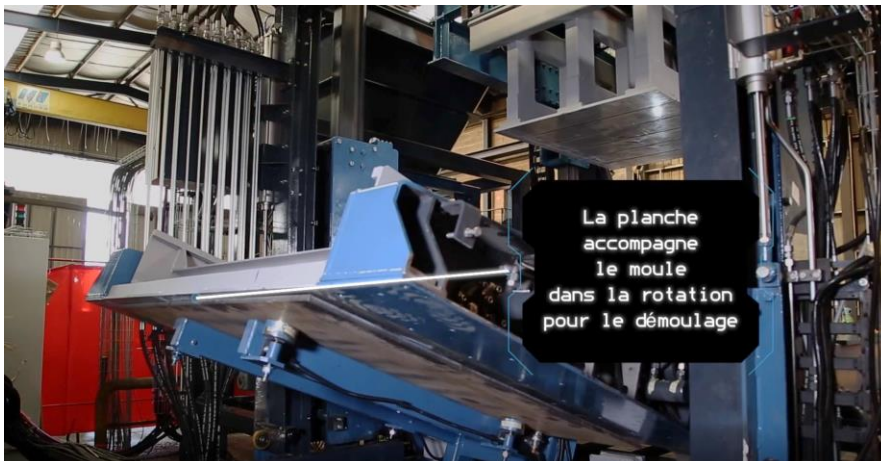
- Filling mold is realized by two different processes selected according to the best choice for the concrete elements to produce:
 - One belt conveyor (breadth: 500mm). It is a mobile conveyor, situated underneath the concrete hopper to receive the material continuously, and it move till over the mold for filling. When completed, the belt moves forward to keep the mold area free for demolding operation. Belt conveyors allow the concrete flow for a good mold filling.



- One filling box. This equipment guarantees a great speed and a high quality of production. It is equipped of two synchronized stirrers that spread the concrete and keep it fresh. Two scrapers (front and rear) sweep up the concrete and assure the cleaning of the top of mold. The filling box is mobile, placed in the beginning out of the mold area. It moves over the mold, and it is continuously refilled by the belt conveyor. When completed, the filling box moves forward to keep the mold area free for demolding operation. A system controlled by some lasers guarantee the good level of concrete inside of filling box for each different product. The OPTIMAL version is conceived both to produce thin element like a tile, or massive like a "legoblock", thanks to it skill adjustment.



- One vibrating table equipped with a powerful vibrating group is placed under the mold and it is independent from the rest of the machine. (The machine doesn't receive any vibration). During filling, four cylinders lock the mold on the table. At the same time the four cylinders that lock the mold at the machine are unblocked to insulate the mold. This allows a great vibration transmission without loosening around the machine. Mold is released when filling and compression are completed. We propose in our configuration our system OMOCRONOS too, that we will explain you ahead.
- Demolding is possible by two different processes:
 - Direct vertical demolding: Mold is in the axis of the press. One tamper head is fixed on the press of machine. It moves down till the concrete element. Mold raise, and tamper head keep the concrete element on the pallet. This process guarantees a good finish of the upper surface and a good compaction of product.
 - Tilting demolding: pallet is placed vertical in front of the mold by the pallet handler. The whole group mold + pallet make a rotation till to lean on the demolding trestle. Product stay on the pallet when mold raise. Also, for this process tamper head produce a good finish of the concrete but in the bottom surface of the product (product is rotate after compression for demolding)

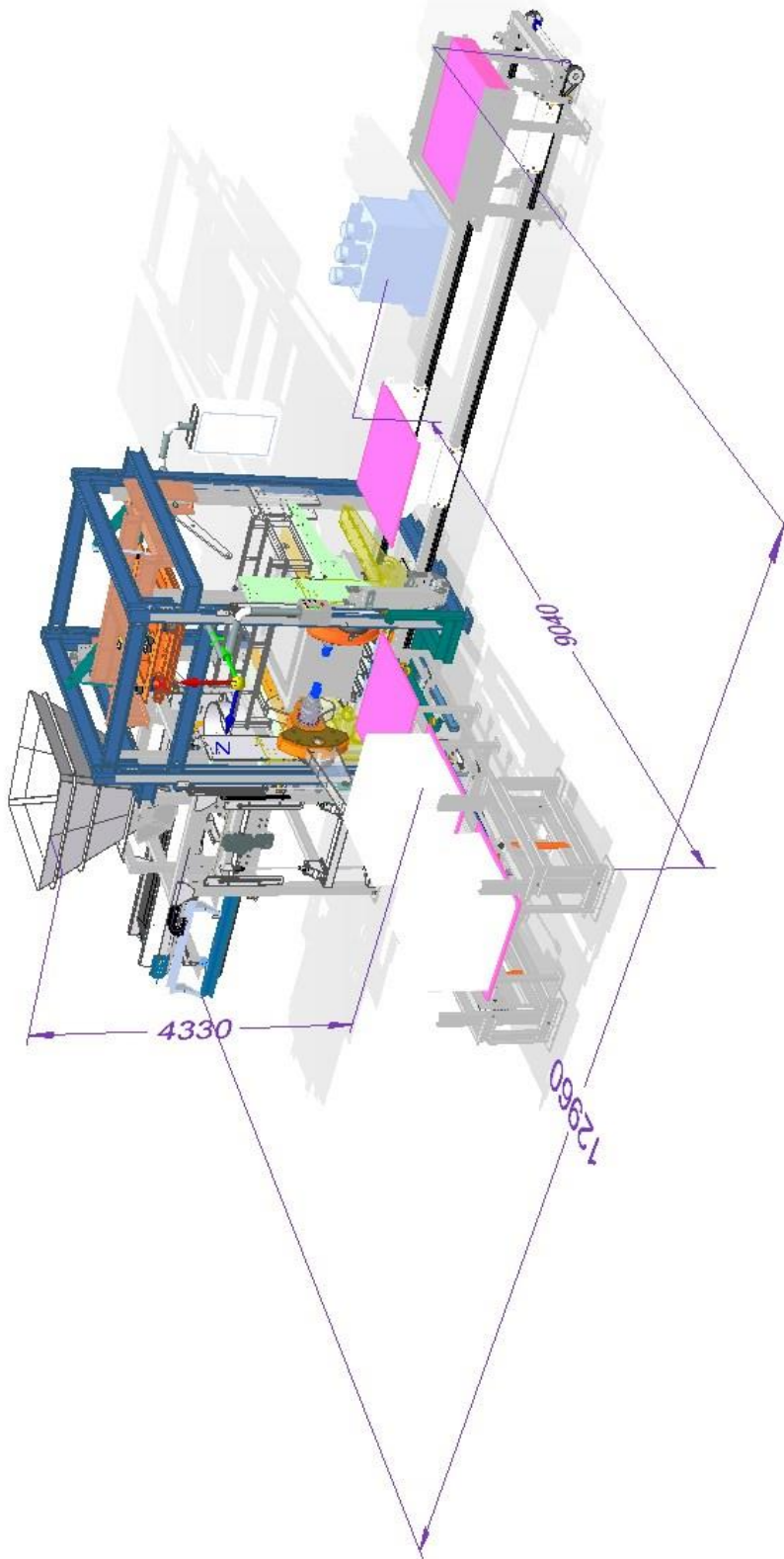


- A fixed working platform and the adjustment of the position of the mold (by two hydraulic cylinders) allow at operator one ergonomic access from two side of machine, to execute all different operation, (oiling, steel cage insertion, mold change) or to smooth the product.
- A button panel board is situated close to the filling area. One touch screen allows to control all parameters of filling and vibration. The position of all driver groups is controlled by linear transducers. This reduces at the minimum the quantity of limit switches installed and reduce the adjustment needed to move limit switches. All machine parameters are saved as mold recipe for each mold. The production change is then immediate and without any manual adjustment. One small button box is installed side "demolding" to control close to the area this operation.



- Hydraulic installation is conceived with two variable flow pumps that allows to move all drive groups following the need. The force to lock the mold at the table is adjustable too, in the way to control the reaction of the mold at the vibration.

DIMENSIONS OF MACHINE UNIVERSA



TECHNICAL DATA OF UNIVERSA

Description	Unit	Data
Product dimension – height	mm	40 : 750
Product dimension - plan size	mm	1600x1350
Max product weight	kg	800
Max mold weight	kg	1000
Estimated cycle time	s	300
Pallet size	mm	1700x1400x50
Hopper capacity	m ³	1,5
Hopper height	mm	4330
Max vibration force	kN	8,4
Frequency	rpm	0;4500
Vibration power	kW	8,4
Hydraulic power	kW	15+11
Installed power	kW	37

ACCESSORIES

The machine UNIVERSA OPTIMAL can work with accessories dedicated of production improvement:

- Automatic pallet feeder
- Green concrete exit line
- Robotized smoothing
- Automatic mold oiling
- Robotized steel cage insertion
- Anti-noise cabin
- Hydraulic with variable flow speed
- Over mold technology
- OMOCRONOS system

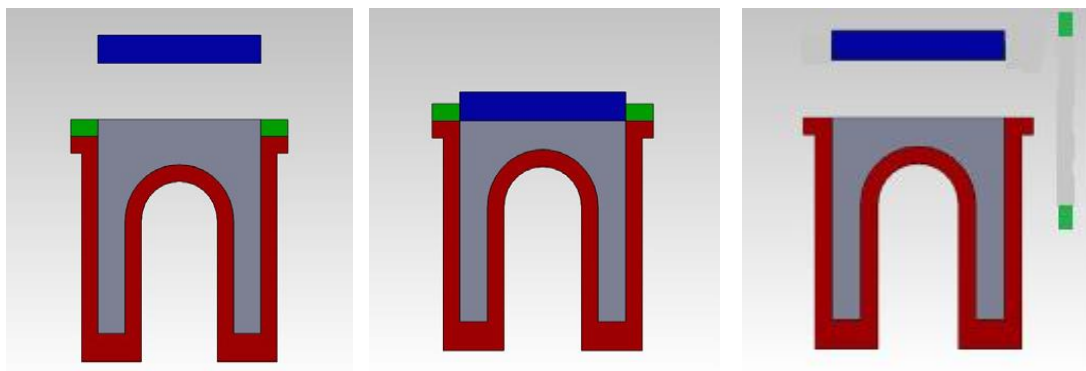
Thanks to this device, the vibro-press allows to realize some elements with a special technology, called “OVER MOLD TECHNOLOGY.”

It consists in the superpose one extra plate on the top of the mold (red), an over-mold of suitable thickness (green), that acts as reservoir of concrete.

Subsequently the press will perform a deep molding (blue), compacting the concrete up to the level of mold without his over mold.

The press raises, and the over mold goes out of the mold for the demolding operation.

This technique allows a great compaction and a faster filling of mold. It is usable only for some products.



VIBRATING TABLE OMOCRONOS

The standard vibrating table can be replaced by a vibration system at four axes composed by one cube with four electrical synchronized by the encoder and a technology automation. These vibrators produce synchronized linear vibration, (vertical or horizontal) or circular.

The system allows a continuous adjustment of amplitude and frequency during compaction operation. The system control is simple and intuitive.



Touch screen of OMOCRONOS

The starting up (and the halt) of system is done without centrifugal force and engaged in a fraction of second when the imposed frequency is reached. In this way resonance phenomenal are eradicate.

The vibrating table OMOCRONOS allow one control that resolve the problem connected with local resonance of mold and improve the transmission of energy at the concrete. The result is one extension of the mold life and one quality gain for every product.

