



The Dutch company VSM Nieuwkoop is specialised in high-tech machines for pressing and spraying ceramic products. Thanks to more than 35 years of experience in developing innovative machines, based on modular designs, we are able to find a suitable solution of any specific production problem in the field of ceramic manufacturing. VSM is renowned for its outstanding after-sales practice.

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X-FLEX CNC PRESSING MACHINES FOR:

Square products



Irregular products



Products with handles



CERAMICS

X-Flex series for producing IRREGULAR, like OVAL or RECTANGULAR ceramic products with steel moulds. With this machine a very high product standard can be achieved: all products are identical, smooth and exactly the same and are perfectly finished by pre-cutting and sponge wheel. The X-FLEX machine includes: a clay pre-cut- and place robot, a pressing unit with upper mould fixing, a EL unit to release the product. A vacuum-head to pick up and finish the pressed pot.

A very well designed and reliable “clay on steel” electrical release system and combined pressing system is applied. (PATEND) While the CNC-X-Control allows for a quick change over and easy settings in production. The press is of robust build, well finished, and all linear ways are perfectly covered and sealed from clay. The machine has an outstanding well design and well-considered configuration of machine components so a very long life span is achieved. The modular X-Flex is easy to fit in all production lines. Furthermore all your wishes for fitting it into your production line taken in.

ADVANTAGES

- High quality products;
- Better and faster than RAM press technology;
- Steel moulds for a long life span;
- Cost effective machine with a very high quality-price ratio;
- High production capacity and completely finished products;
- With CNC-X-Control less mechanical adjustments so faster set ups and change over's;
- Fits in any production line due to modular construction;
- Long life span and little maintenance required;
- PLC internet connection to VSM for monitoring;
- Clear list of warnings plus feedback on machine status to operator in case of problems or machine failure;
- Turn key delivery;
- Excellent after-sales service and training;
- Many favourable references from customers;
- Safety according European standards CE;
- Short change-over times.

INFO

CLAY FEED

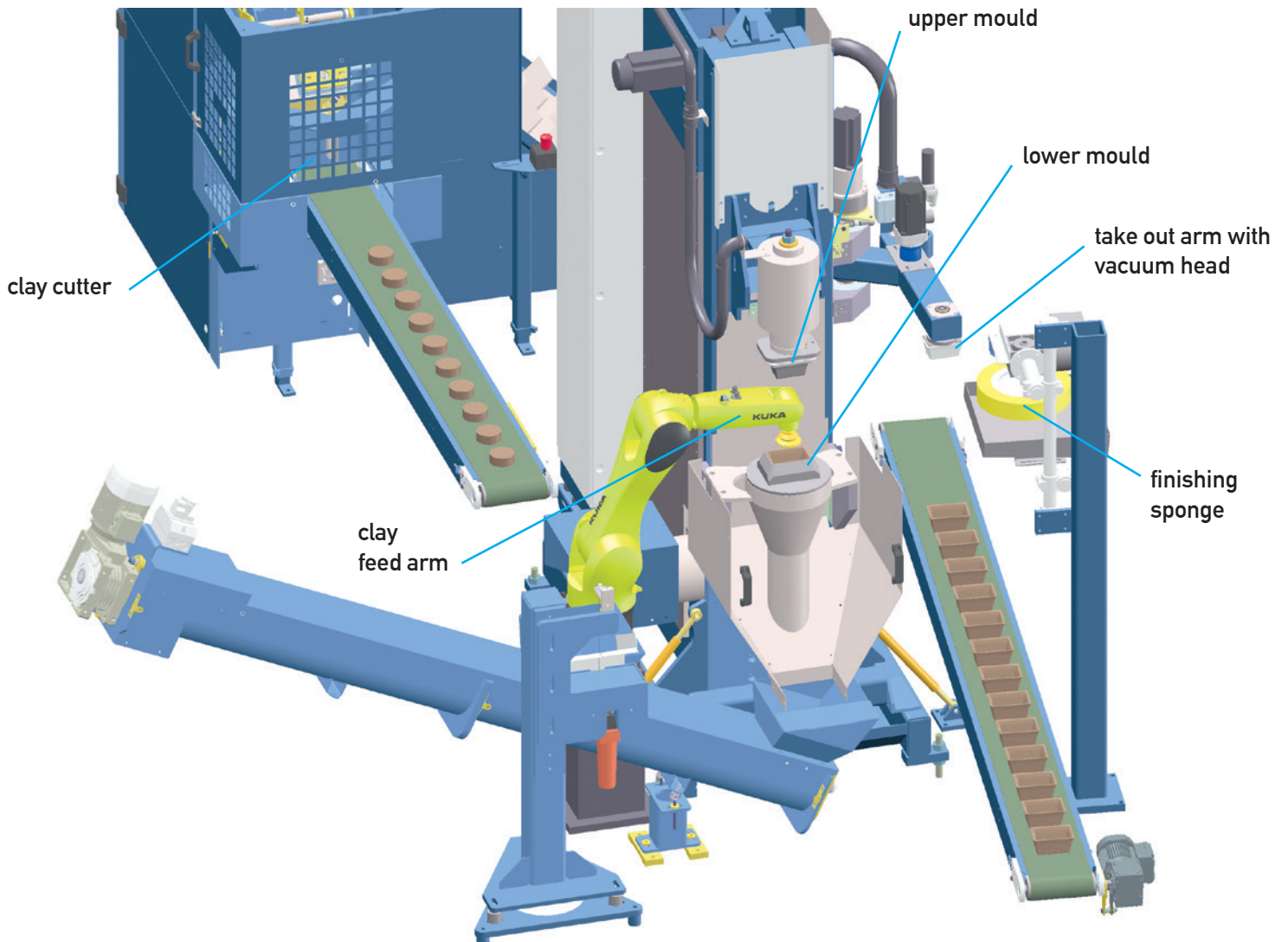
The clay is fed to the press by a cutting unit: A roll of from a clay conveyor belt is pushed into a cutting unit and cut into length. The pieces of clay are then transported on a conveyor belt to the press. The clay is precisely cut at a vibrating wire to the programmed contour with a robot. Making a very exact, clean cut. Then orientated and laid into the lower mould. Facilitating an improved quality.

PRESS UNIT

The press head has a servo-driven pre-tensioned Gearbox making a reciprocating motion by a Crank and Connecting rod. The stroke of the head with the upper mould is fast and can be adjusted to the exact height of the product. This results in quicker production. To release the clay product from the Steel mould a programmable DC Current/Voltage is applied, with in the screen a Graph for understanding and optimisation.

MOULDS

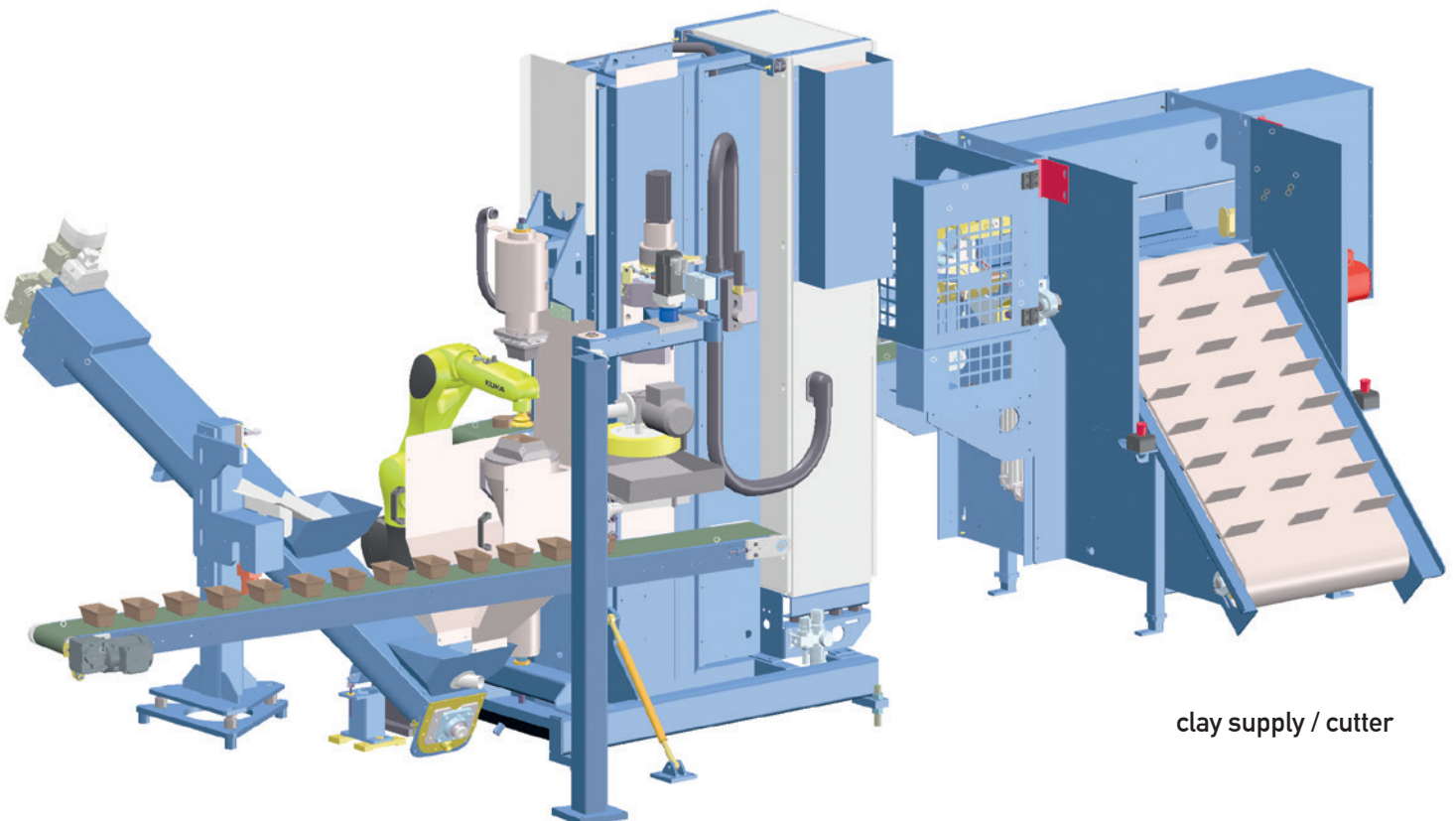
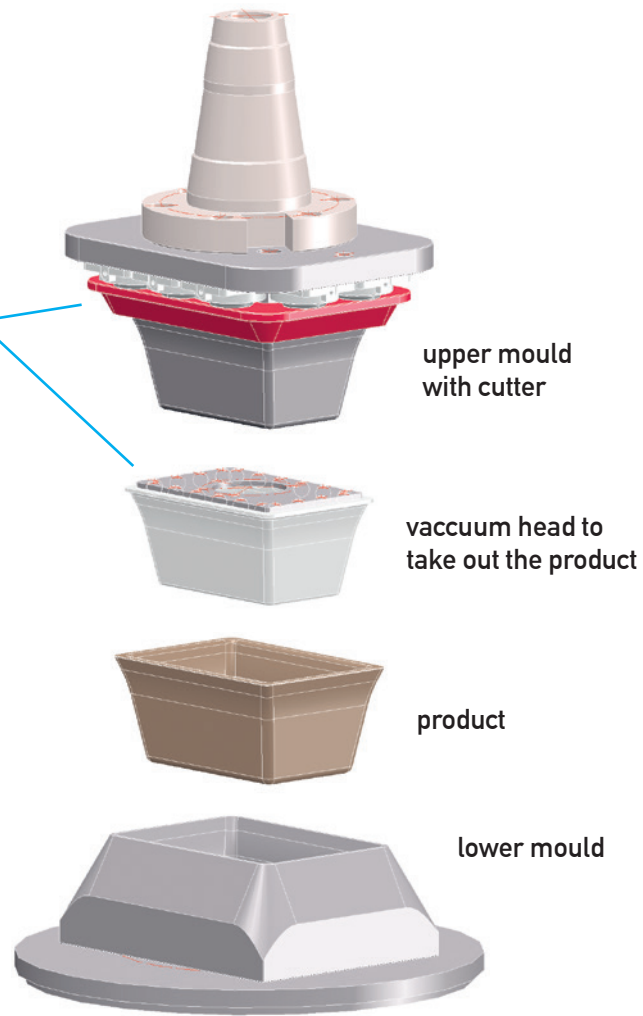
The Moulds are machined from stainless steel and then hardened. The design limitations are: A release slope on the product of minimal 2°, a minimum radius of 4 mm. The wall thickness needs to be bigger on the lower end than on the top of the product creating a side pressure during shaping. Shapes can be: Square, Rectangular, Oval, or Irregular, with or without handles. The height can be up to 0,8 x the diameter.



FINISHING

After the product has been pressed, and released, it is lifted out of the lower mould by a **vacuum-head** on the take-out arm. The finishing of the mould closing-seam is in two stages. The excess clay at pressing is pre-cut with an **integrated cutter** (red in picture) on the mould, exactly to suit the closing seam. This excess clay falls down.

The final finishing is with a damp sponge wheels. The take-out arm can be exactly programmed to follow the contour. Both systems are very accurately and easily programmed in the CNC-Control unit.



SPECIFICATIONS X-FLEX CNC PRESS



MACHINE		X-FLEX 250
Dimensions L x W x H	Automatic machine excl. clay feed and product removal: 1600 x 1400 x high 2600mm	
total weight	2000 kg	
Colour	Blue Ral 5012	
Power and rating	20 kW 25A Electro control box at back of machine	
Energy saving efficiency	All Servo Motors	
Safety	According to European standards (CE): Fence and doors with interlock	
CLAY-PRE-CUT ARM	Fine cut system*	Pre-cut pieces of clay are Robot cut with a vibrating wire, by program, orientated and placed into lower mould
	diameter clay rolls	Max Ø 150
PRESS UNIT	Mould wall thickness / material	Minimal 15 mm / hardened Stainless Steel
	Power pressing motor/ force *	Servomotor and Crank / Max 7KN
	Pressing Vibration *	X-Y simultaneous and Servo driven in Z direction, adjustable.
	Releasing Power *	20 Amp @ 150 V, fully adjustable up and down slope, with graphics screen: Pressing force-V-Amp, on a time scale programmable curve
	Max. stroke / speed *	500mm / 600 mm/sec.
	Max. weight of upper mould	30 kg
	Under Mould take-up	Under mould ø 250 h8 mm with orientating pin fixed by 4 x M8 bolts.
Upper Mould take up fixing	Flange with 3 xM8 and orientating pins, with isolated power connection	
TAKE-OUT-ARM	Rotation *	2x Servomotor driven for free programmable curves in X and Y direction
	Stroke / speed *	600mm / 1300 mm/sec.
	air pressure product drop off *	0 - 5 bar, 0 - 9 sec.
	Vacuum *	0 - 0,9 bar, 0 - 9 sec.
	Finishing *	With damp, self-cleaned sponge unit
PRODUCTS	Product (wet) max: - min	Square 160 x 160 mm, Rectangular 220 x 40
		Any Product has to fit within a surface of ø 220 mm min# 100 mm
	Max. product height	100 mm (@ 130x130mm)
	Max. capacity (depending on product)	240 pieces per hour # 150 mm
CNC - X - CONTROL	PLC with On board axis control, 100 programs, USB stick back-up, "feed override" 10-100%, LCD Glass Touch colour screen 12" Robot-PLC connection: by Ethercat bus PLC with internet connection to VSM, for monitoring and problem solving	
	* Fully programmable	

OPTIONS ON REQUEST