



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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## FLEX PRESSING MACHINES OPTIONS

- |                              |   |   |
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| <b>AUTOMATION<br/>SET UP</b> | 1 | Island automation set up                |
|                              | 2 | Integrated, with flying clay cutter     |
|                              | 3 | Integrated, with stationary clay cutter |

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Next to the options  
shown in this document  
there are many other  
client specific options

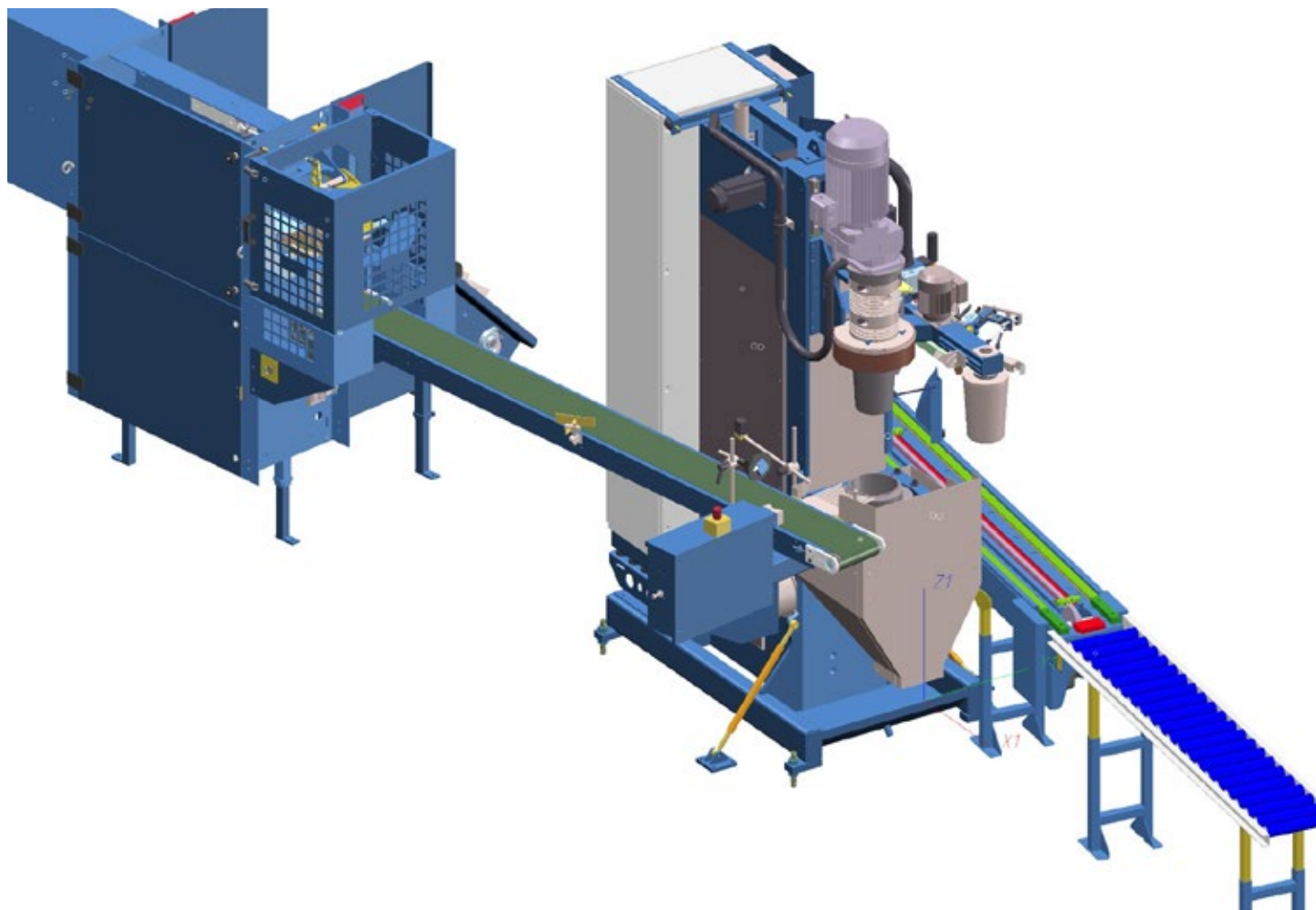
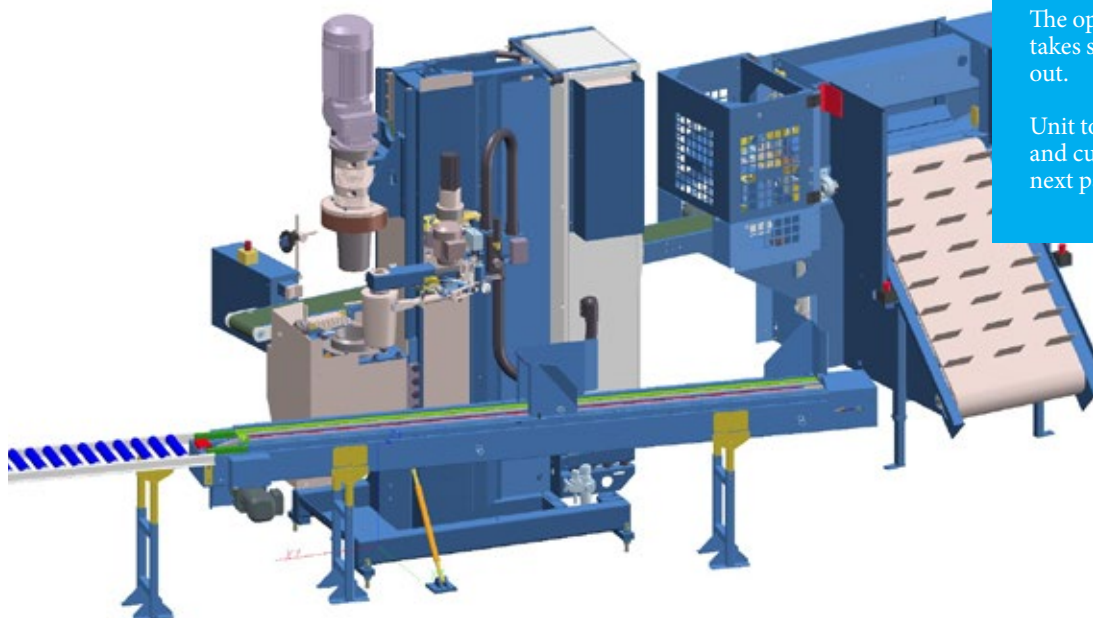
# 1 Island automation set up

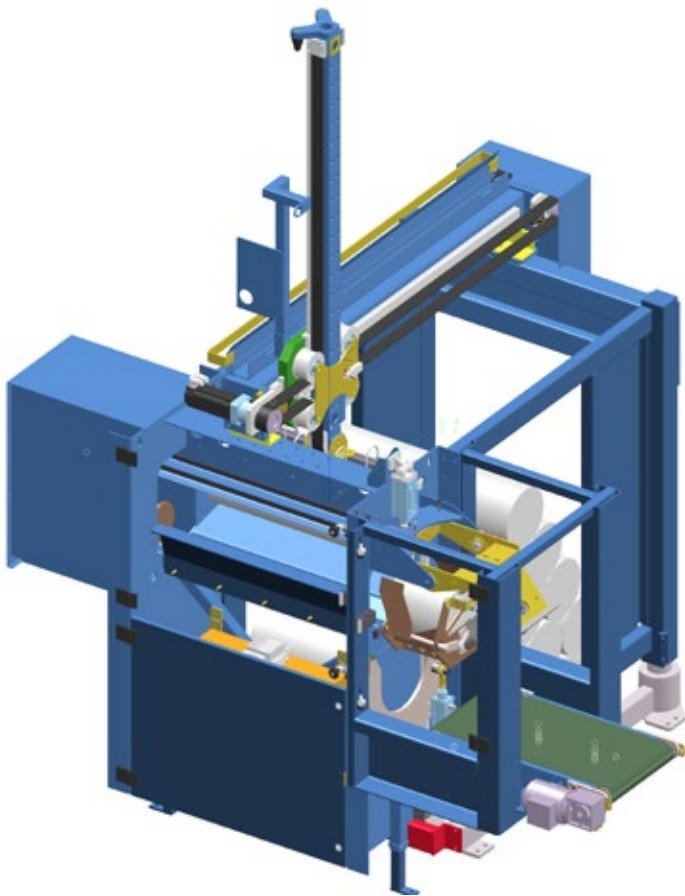
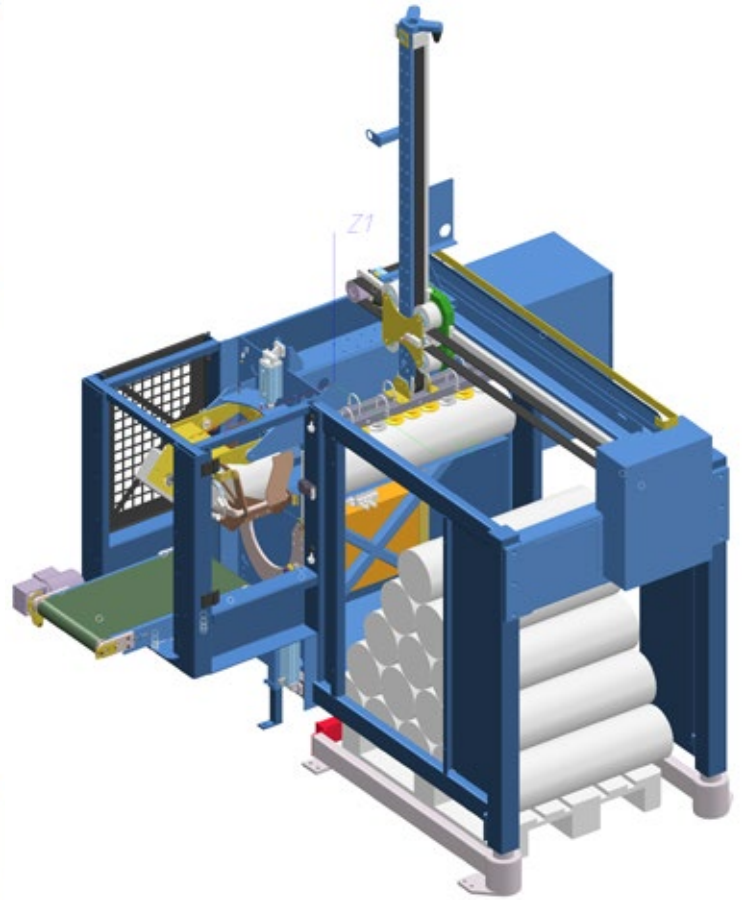
Flex in "Island" Automation set up:  
not connected to other machinery.

With: Clay feed, Cutter, and Product  
output on wooden shelves.

The operator put roles of clay in and  
takes shelves with finished products  
out.

Unit to unload a Pallet of clay bars  
and cut into lengths (images see  
next page).



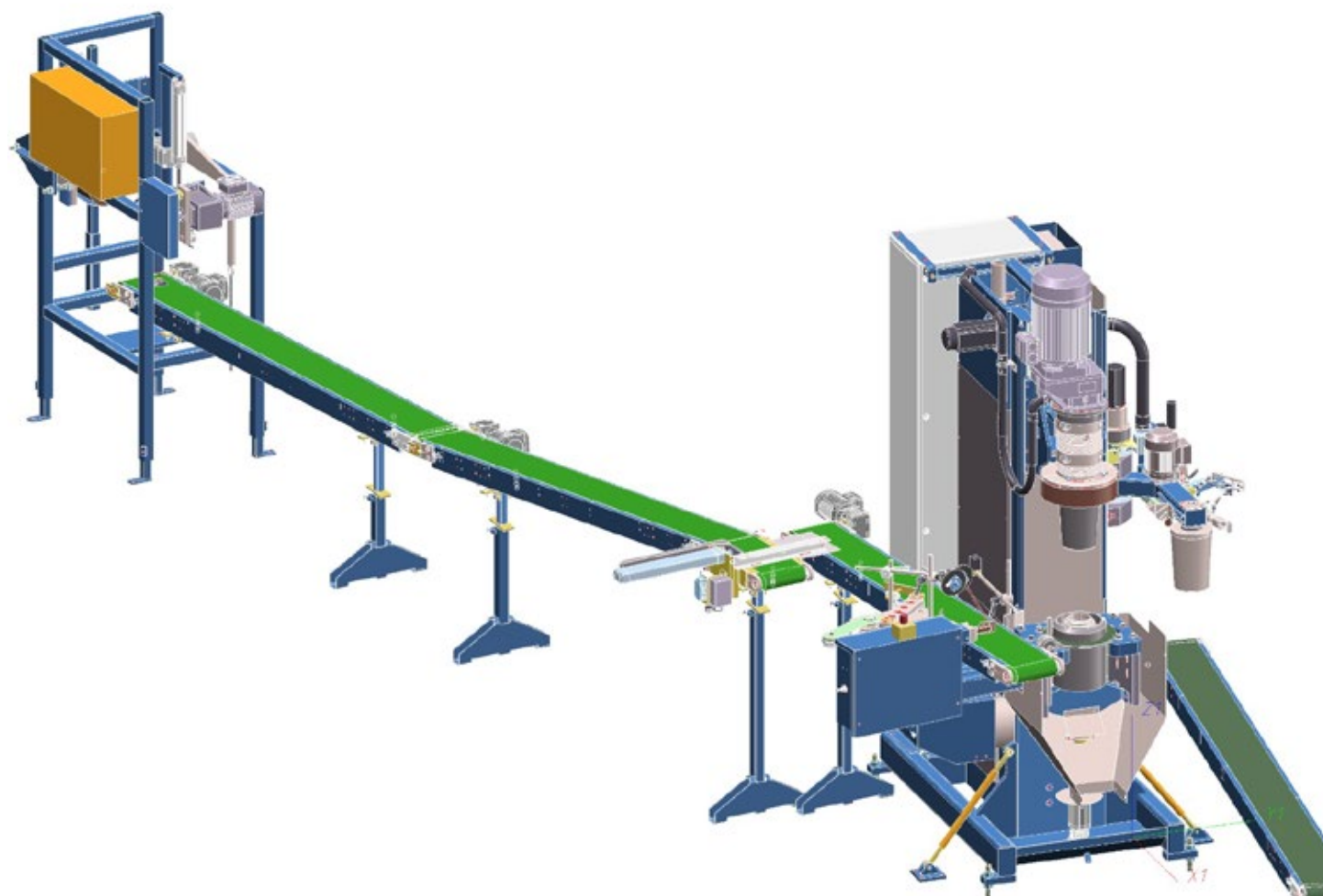
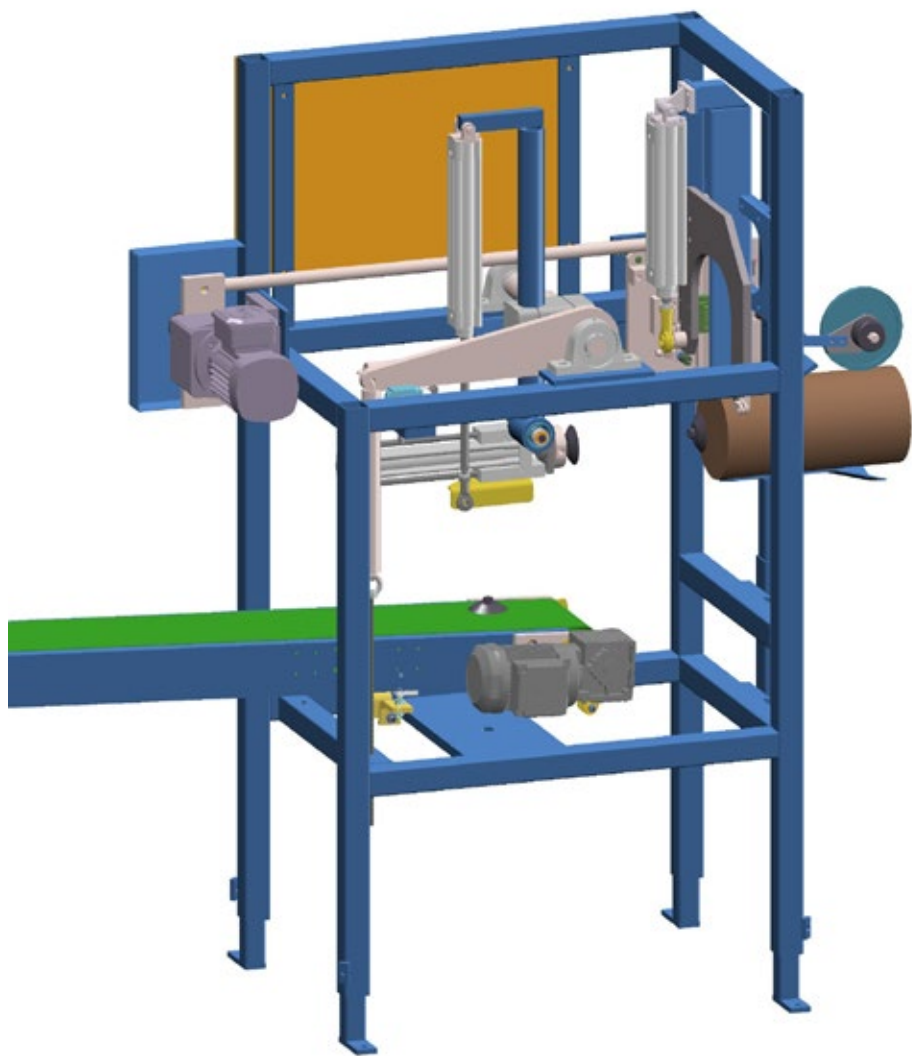


## 2 Integrated automation set up with flying clay cutter

Flex in Automation Set up: connected to your other machinery.

With “Flying” Clay Cutter feed and 3 belts connected to your Extruder. Product output on wooden shelves, or a conveyor to your dryer.

So your Extruder can run easy 15 pcs and then stops, and re-starts. Gentle to the Extruder!



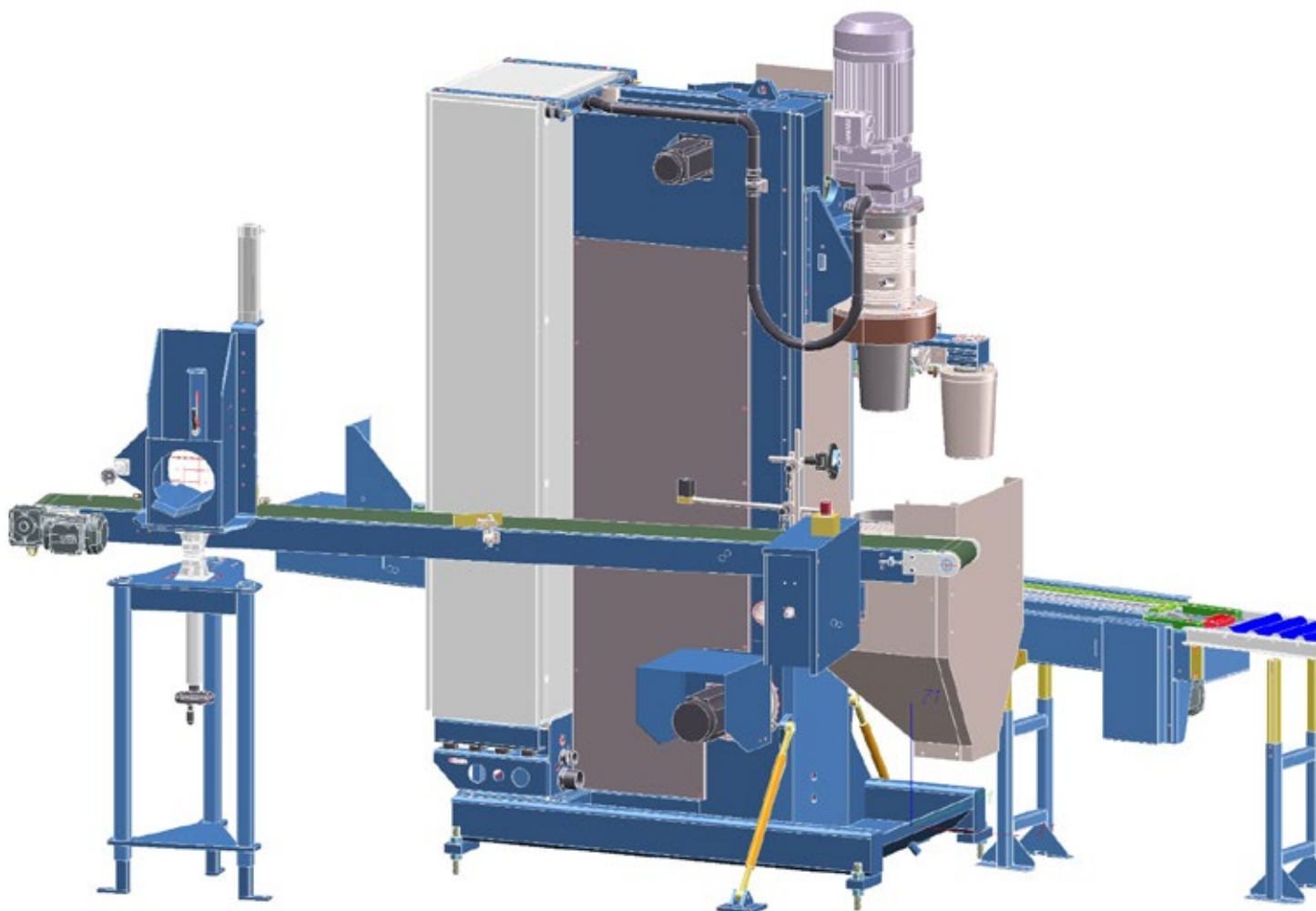
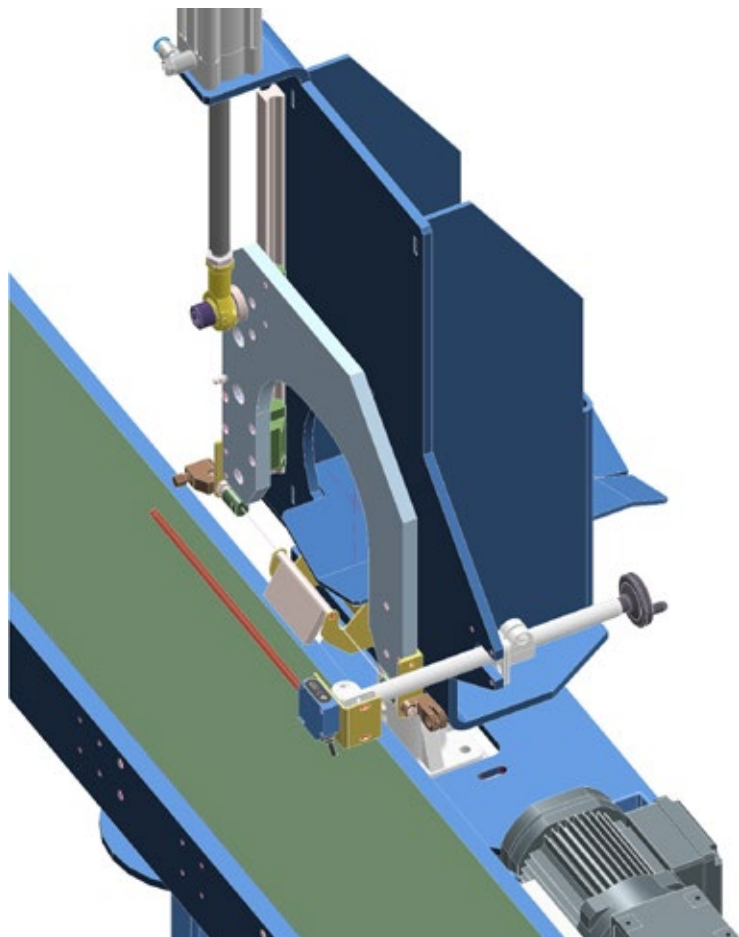


### 3 Integrated automation set up with stationary clay cutter

Flex in Automation Set up: connected to your other machinery.

With Stationary Cutter Clay feed to receive clay from your Extruder, and Product output on wooden shelves, or belt to your dryer.

Extruder stops and starts every piece of clay

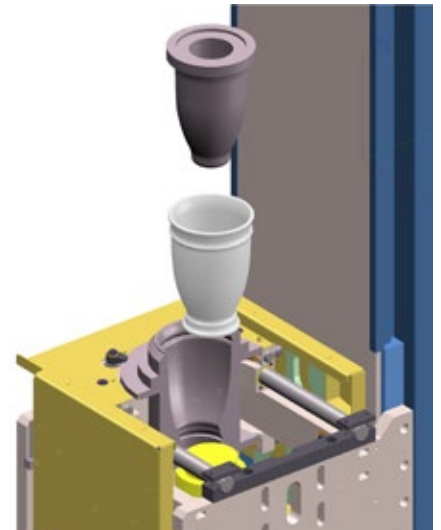
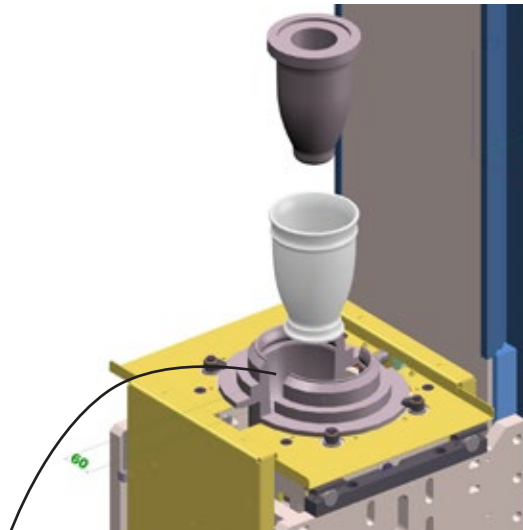
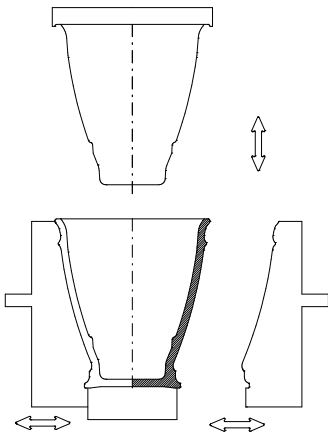


## 4 Shaping

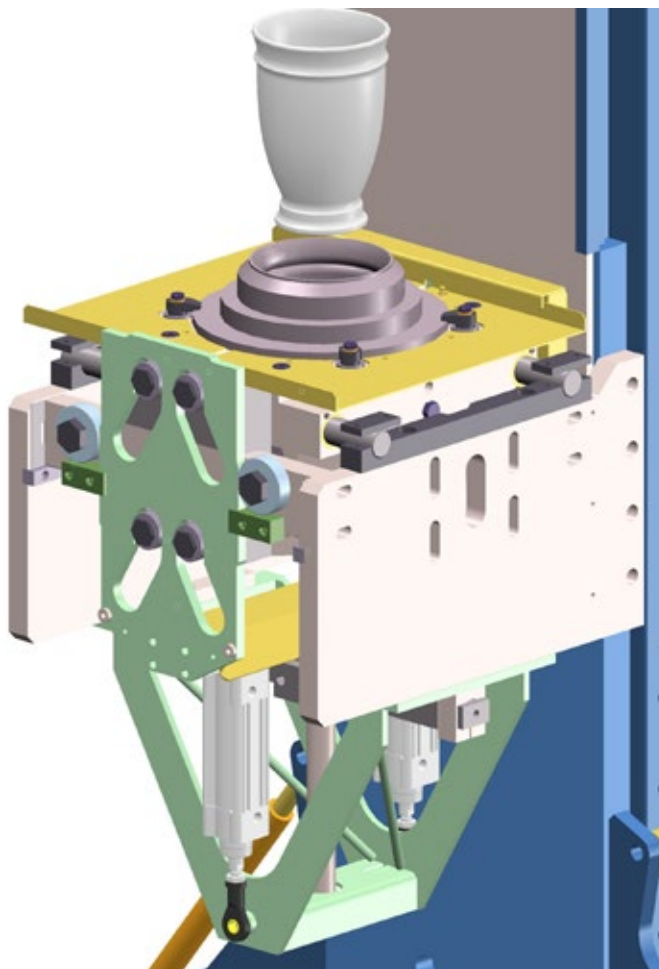
Shaping by horizontally opening mould in two parts, to make footed ware.

Inside the shape must be conical  
min 1°. Up to  $\varnothing$  230.

Moulds by VSM



under moulds in 2 parts



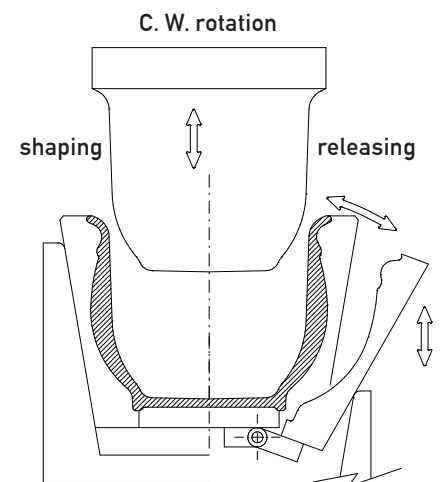
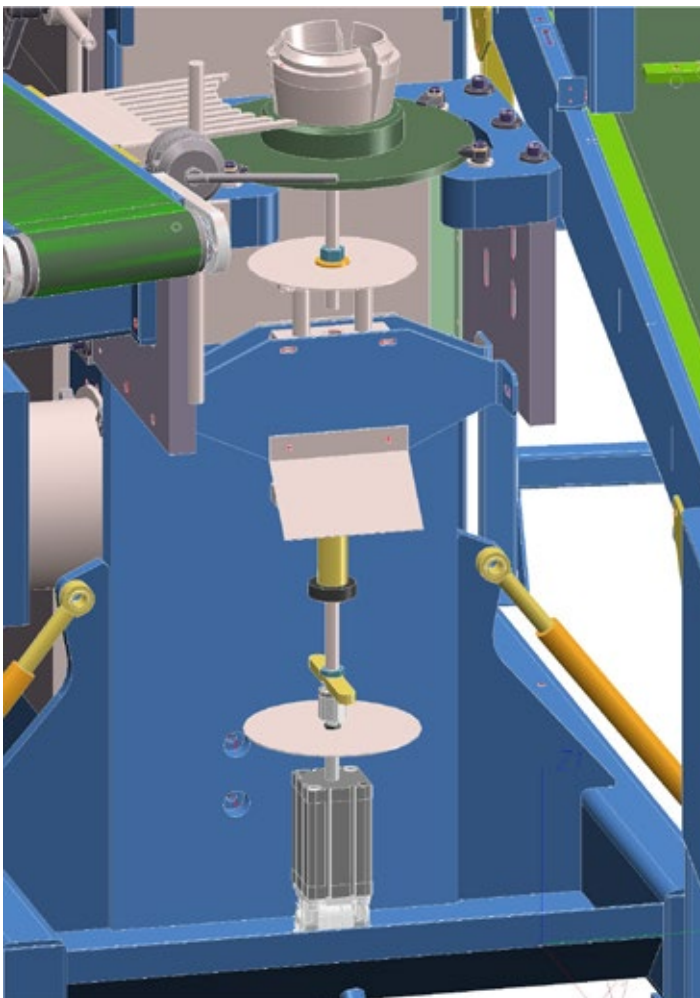
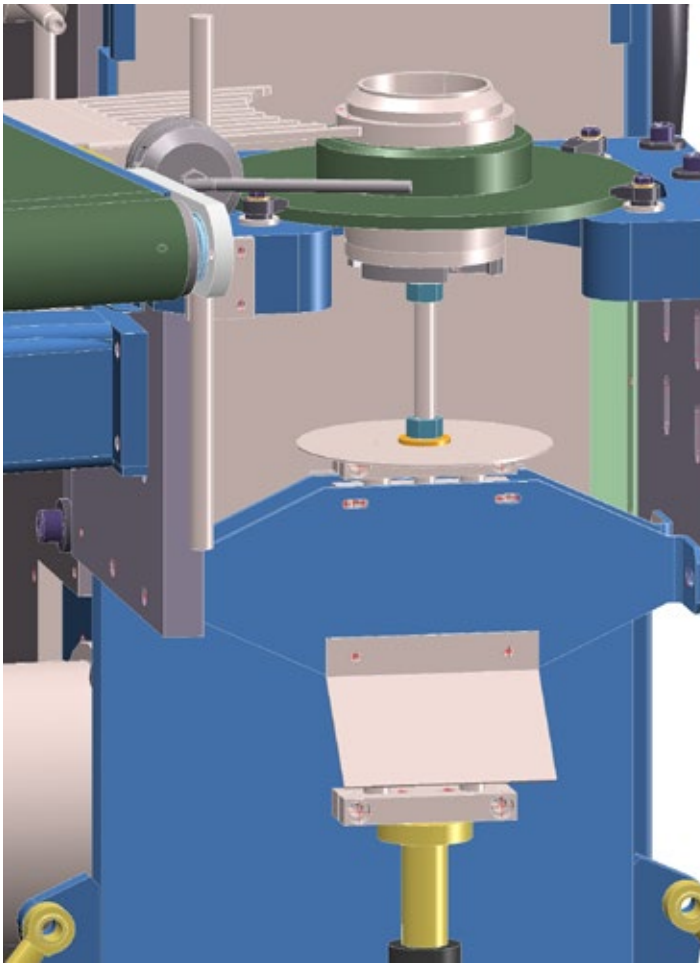
code: F-H-2-SplitM

## 5 Shaping

Shaping by horizontally opening moulds in 3 or 4 parts, to make footed ware.

Inside conical min.  $1^\circ$   
Outside horizontal releasing.  
“Tulip” type up to  $\phi 150$ .

Moulds by VSM

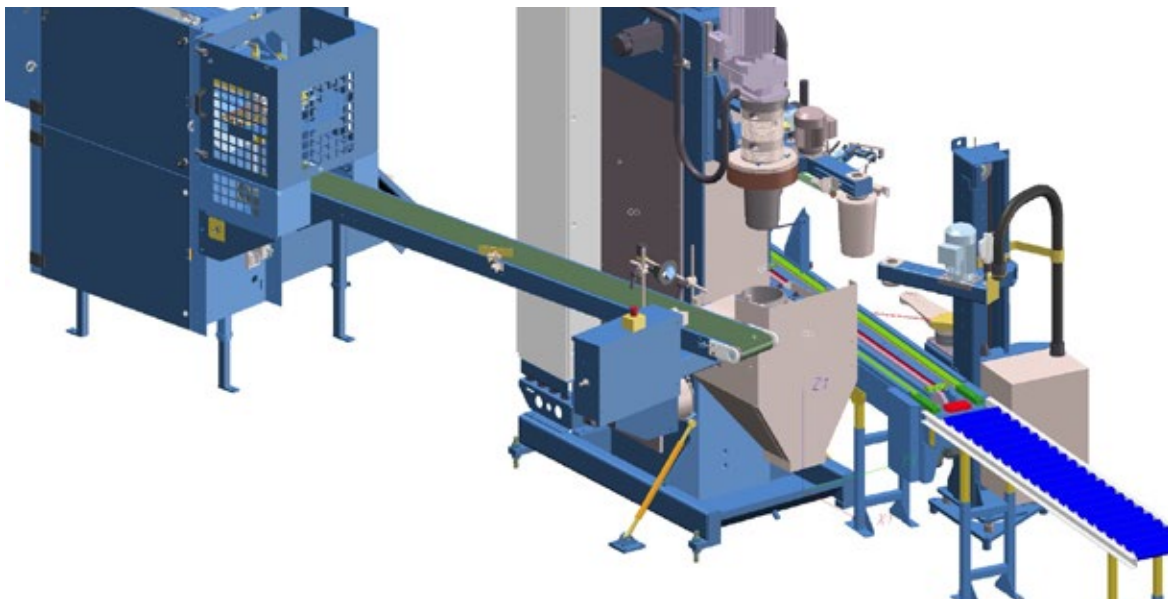
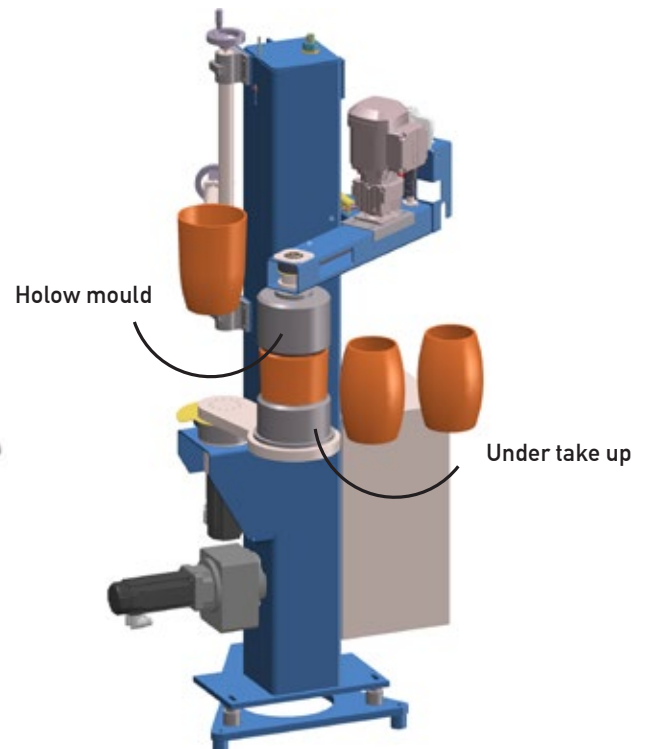
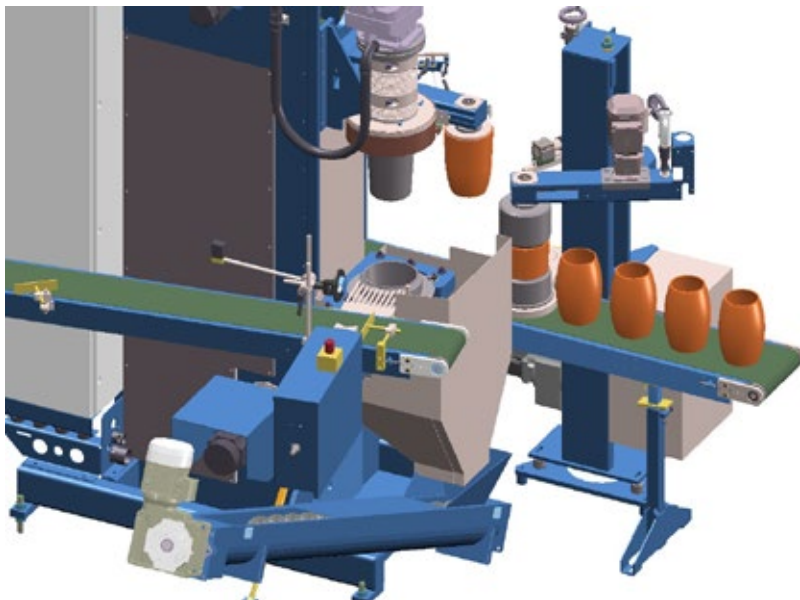
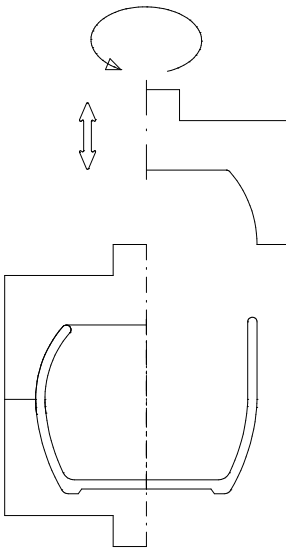


code: F-V-3-SplitM

## 6 Reshape after pressing

After the pressing it is possible to reshape the conical clay products into a hollow product.

Process: product is placed in under take-up, then a hollow mould comes over the top and presses the product inwards. (the example pictures are with other options as well)



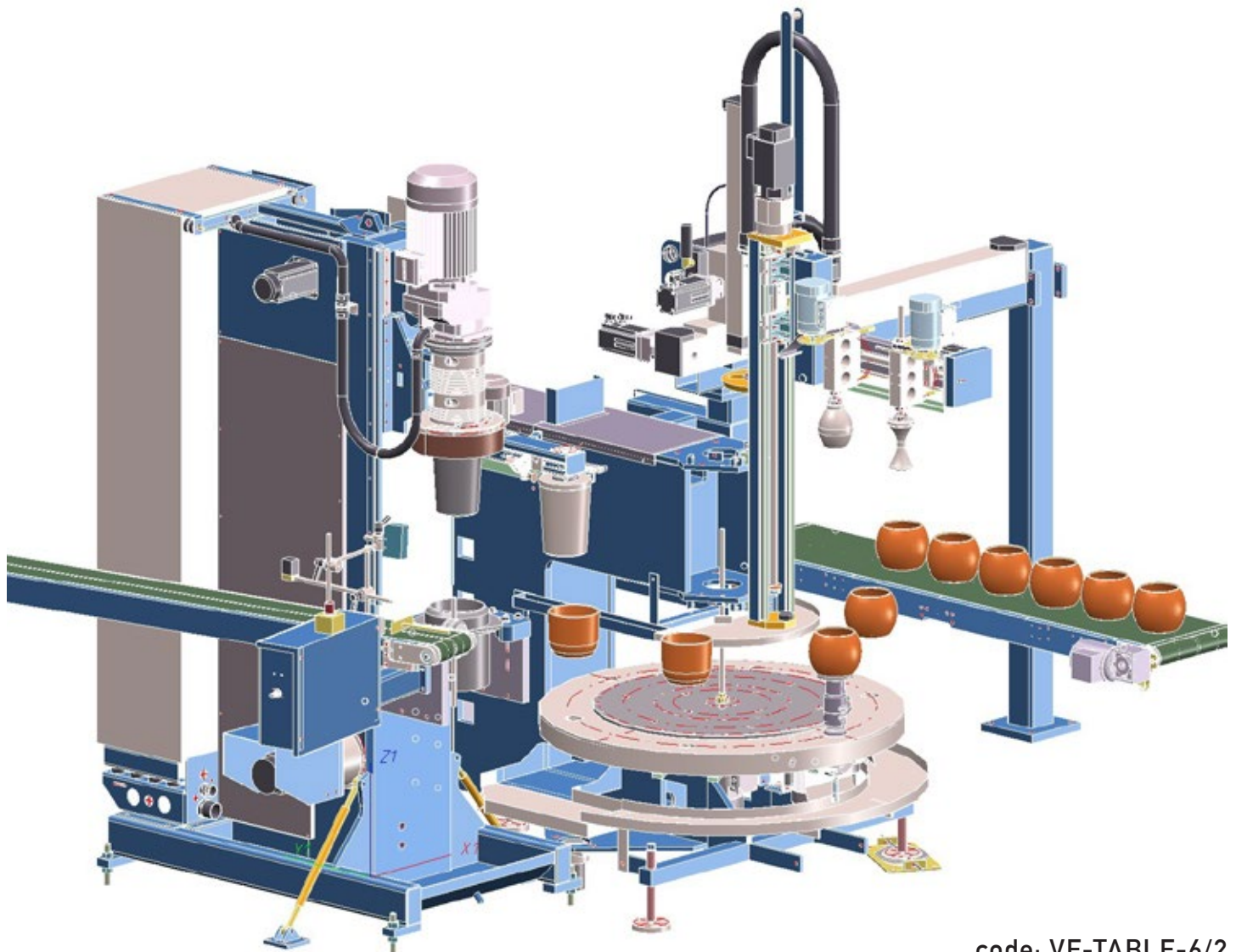
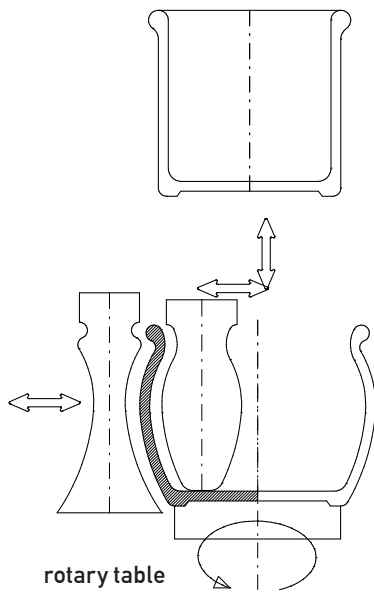
code: F-Dekor-ReShape unit



## 7 Reshape after pressing

After the pressing it is possible to reshape the conical clay products into a hollow product.

Process: product is placed on a round indexing table, than a series of reshape, or special units can rework the product. Ask us for the possibilities.



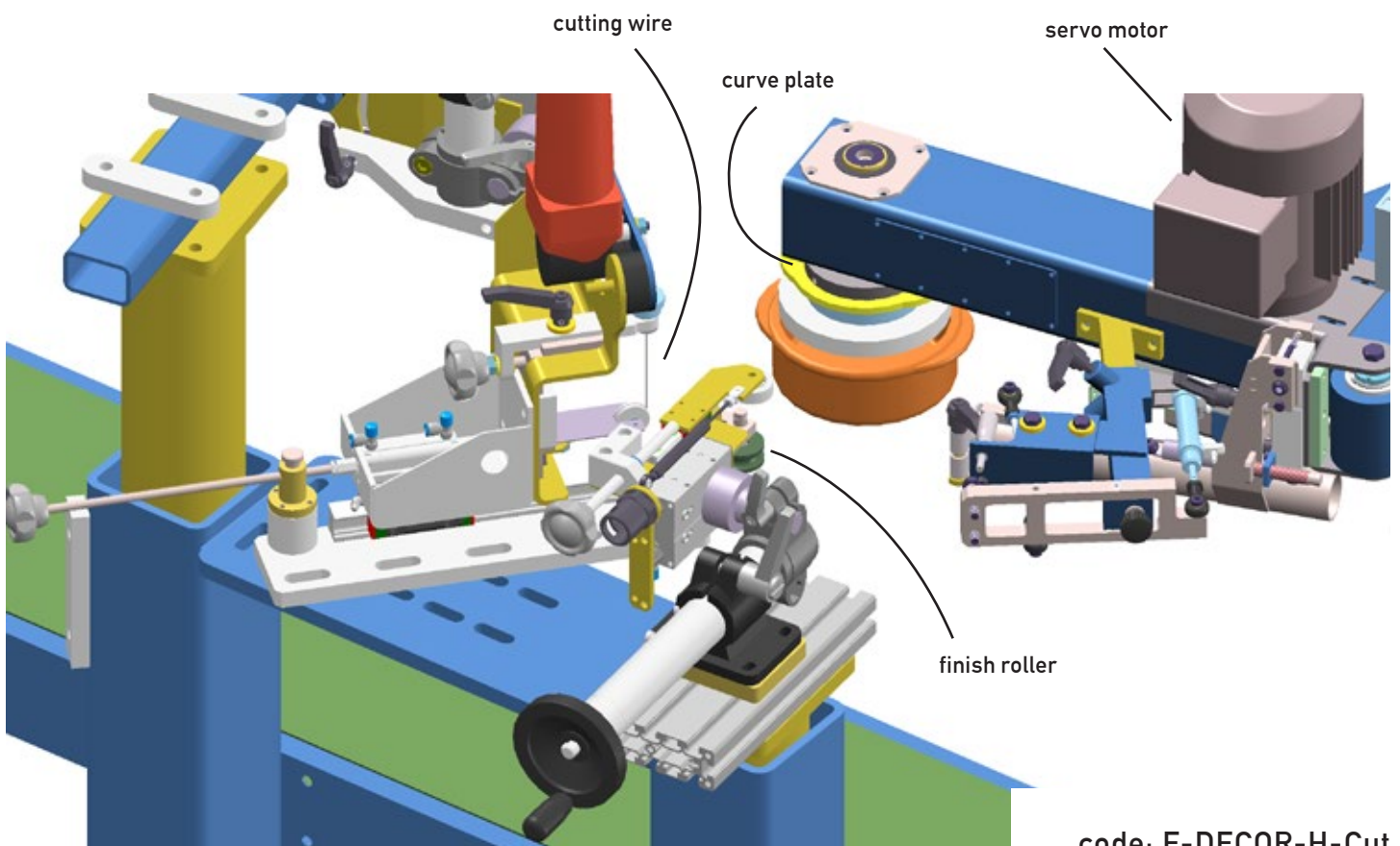
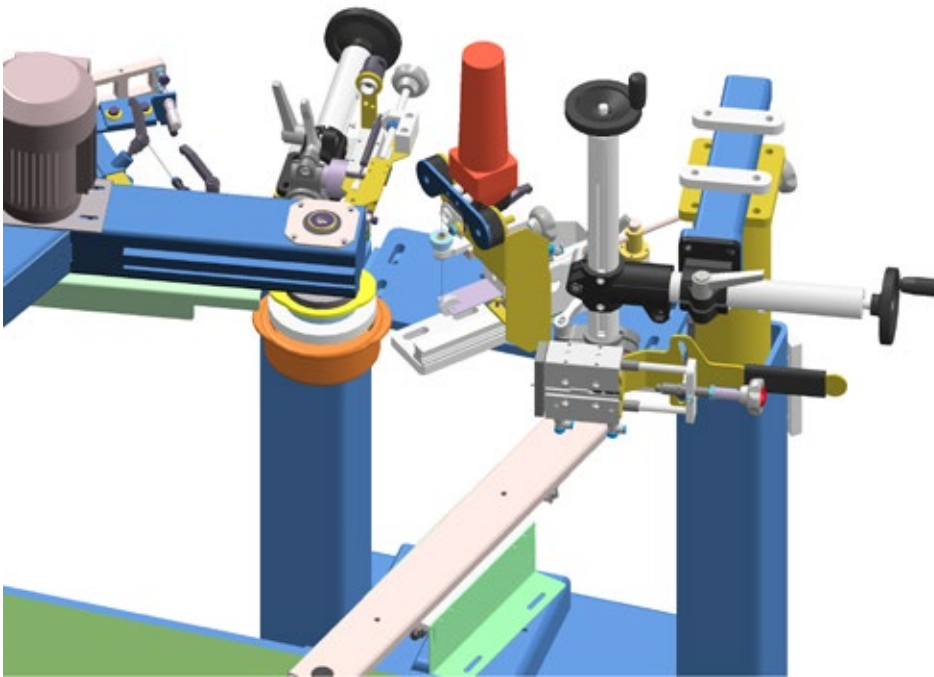
code: VF-TABLE-6/2

## 8 Handle cutting

Profile Handle cutting and finishing by plastic roller. For products with a big flange on the top, so one can cut out "handles"

With servo motor for controlled motion of handle positio.

Max Height: 200mm. Seperate "take out arm" position for cutting.

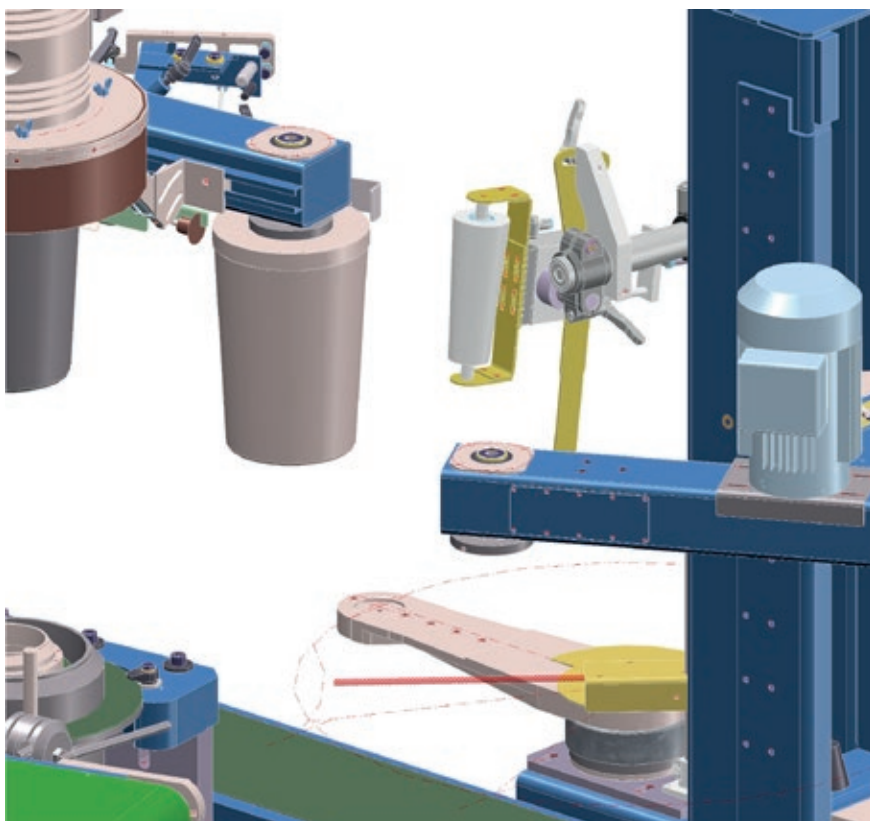
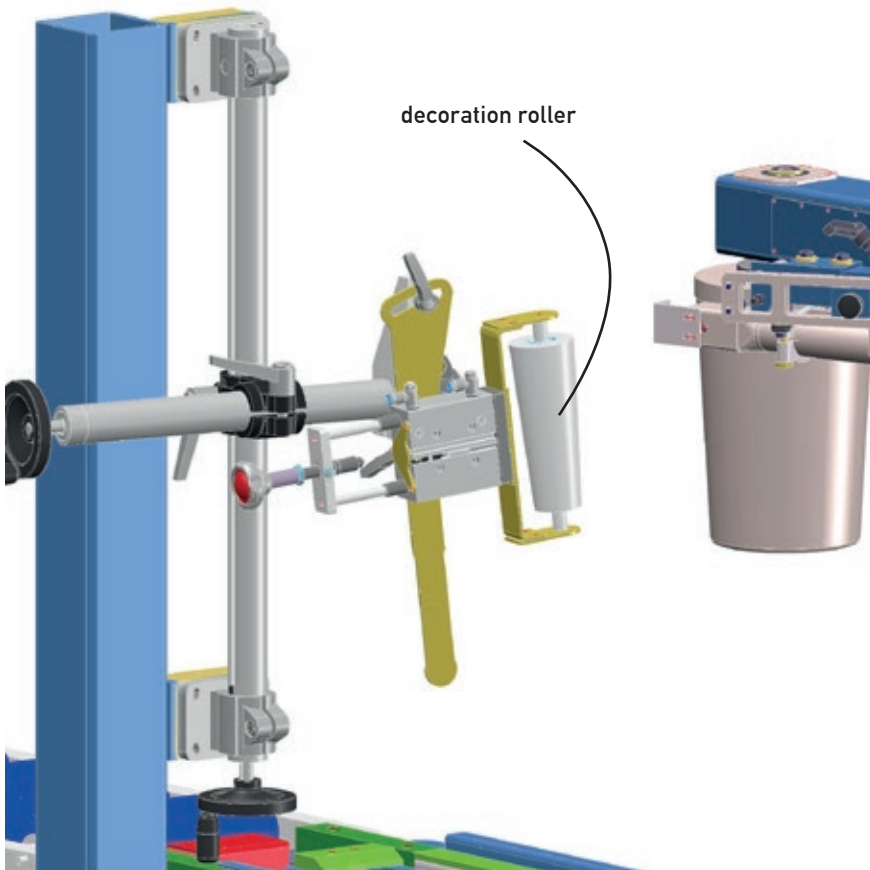


code: F-DECOR-H-Cut

## 9 Decoration afterwards

Decoration Options: rolling an embossment (relief) in the product, with 2 geared servos, for perfect round and seamless decorations. or with a free running roller (shown)

Possible to have on the F-Dekor-Re-Shape unit, or a separate column (F-P-Basic)



code: F-Dekor-RS  
F-Dekor-R-Follow



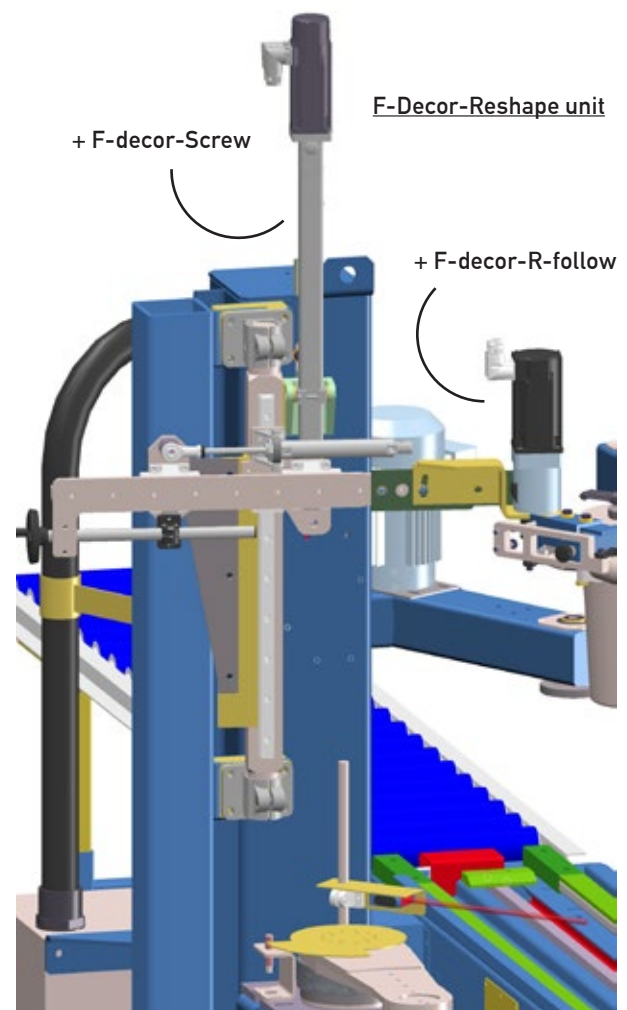
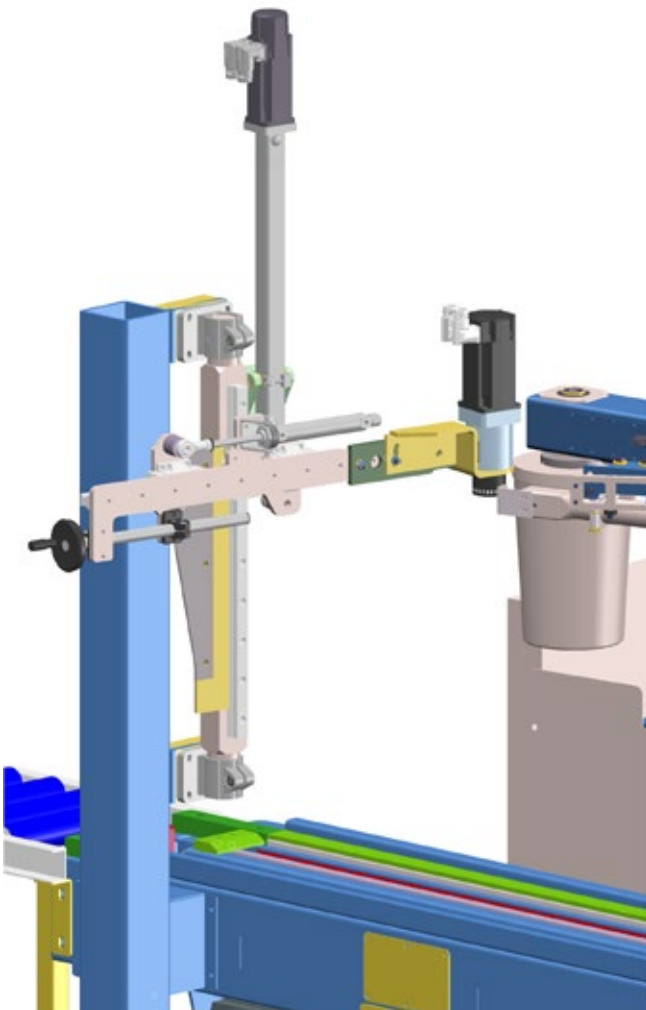
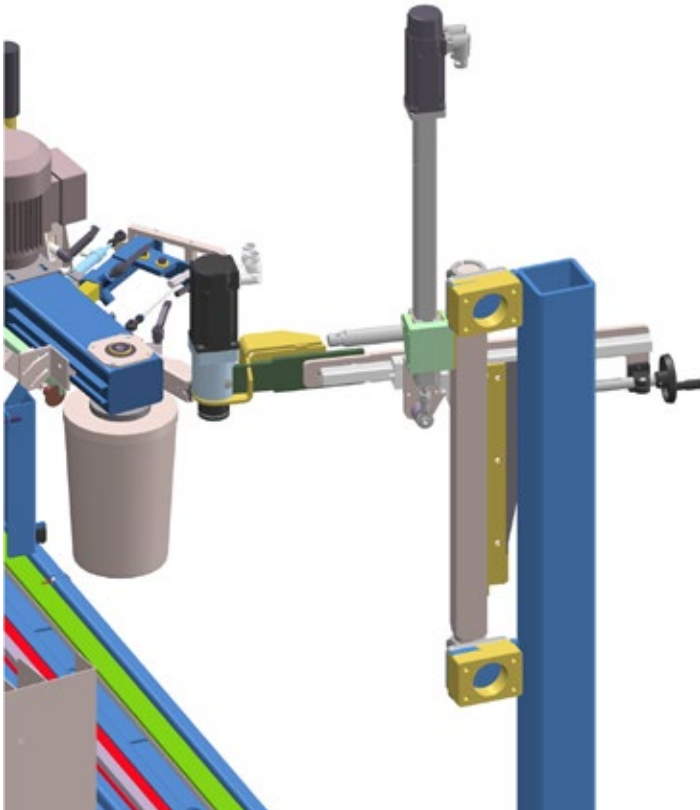
## 10 Decoration afterwards

### Decoration Options:

Rolling in the product a screw line, random software for endless various "pitch". Works with a Template of the product outer curve. (F-Decor-Screw)

Rolling an embossment (reliefs) in the product, with 2 geared servos, for perfect round and seamless decorations. (F-Decor-Follow)

Possible to have on the F-Decor-Re-Shape unit, or a separate colum (F-P-Basic)



code: F-Decor-R-Follow



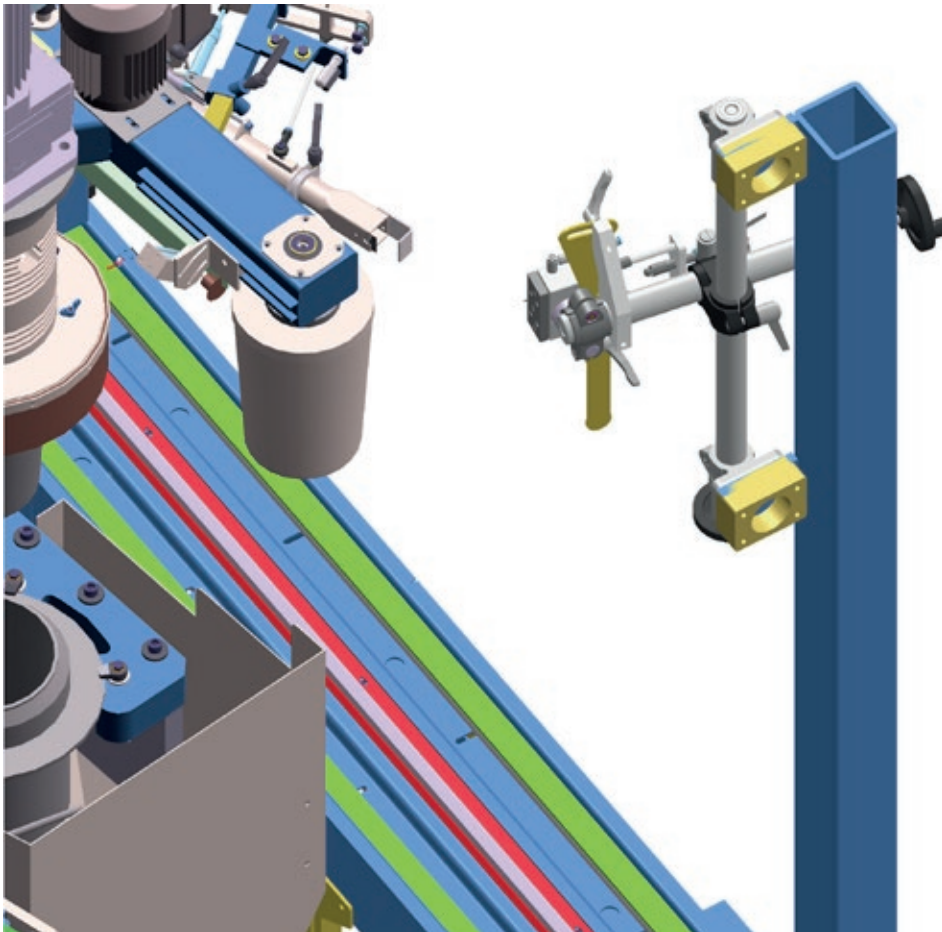
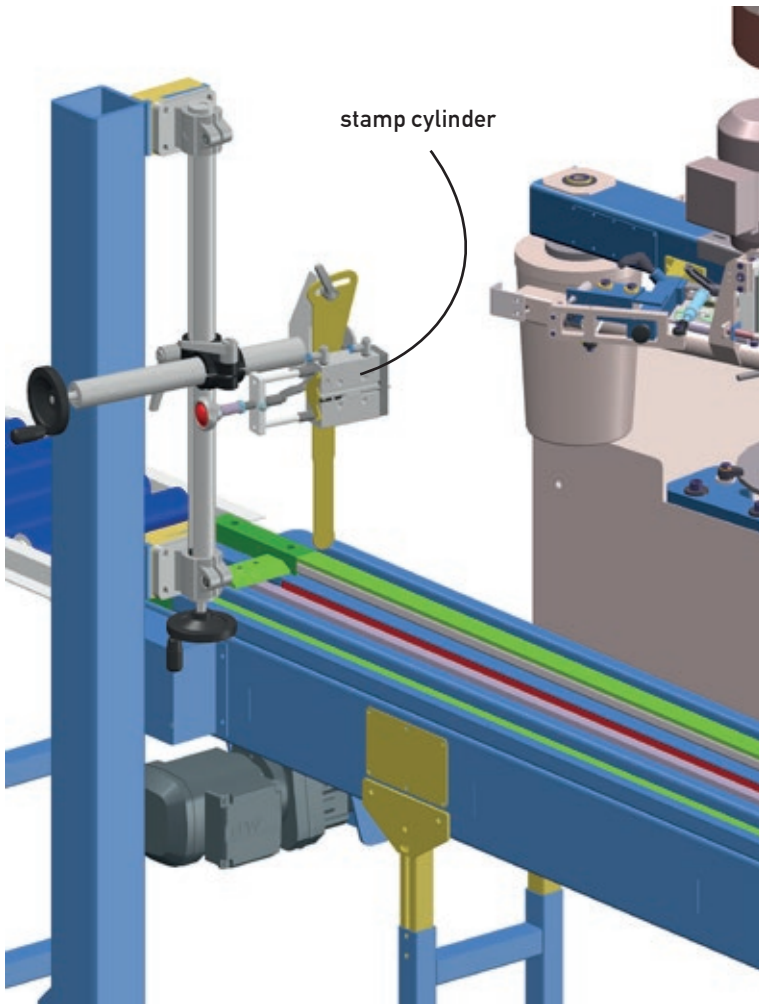
## 11 Stamp

Decoration Options: to press a stamp in the side of the product.

Possible to have on the F-Dekor-Re-Shape unit, or a separate column (F-P-Basic)

For Underside stamp option:  
F-Dekor-UnderStamp

Pictures with the: F-P-Basic



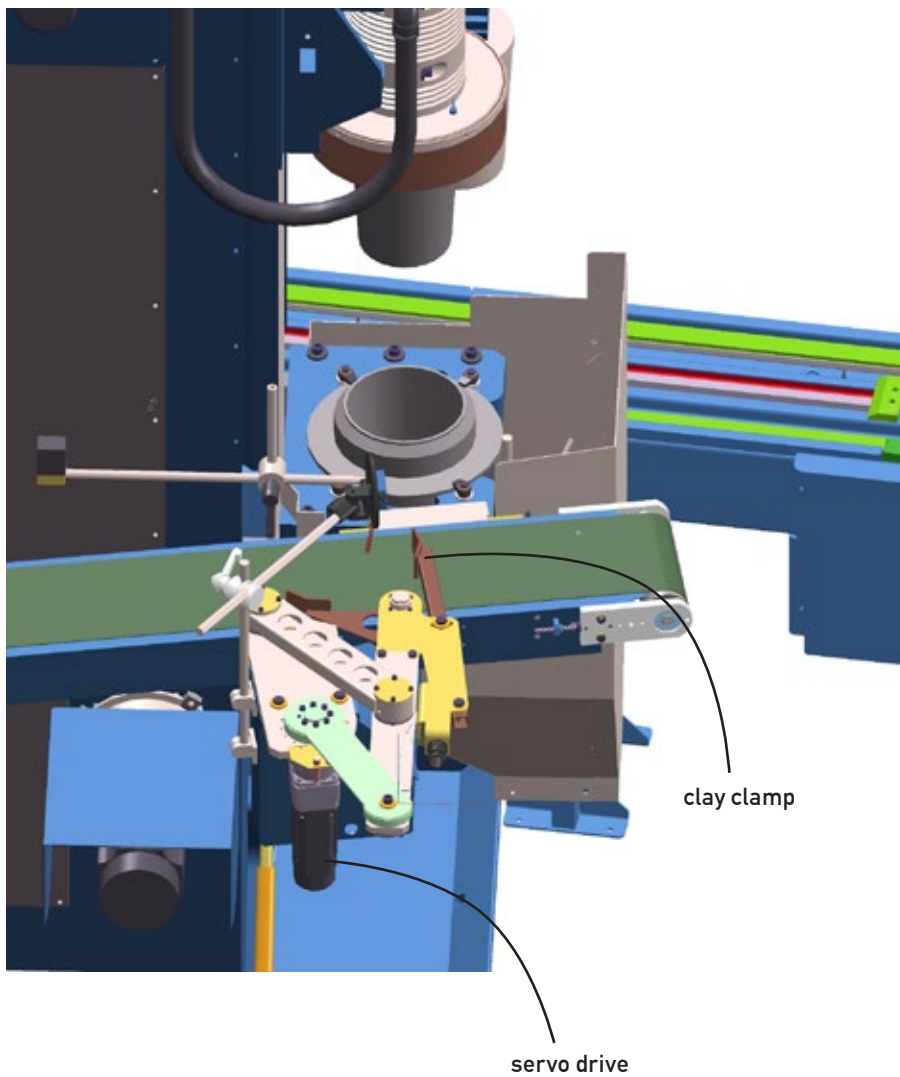
code: F-Dekor-RS

## 12 Servo Clay lay in arm

Servo Clay lay in arm: Clay slider with servo-motion and pneumatic clamp, to quickly and precisely drop the clay in the center of the mould, advantages: less stand stills due to less errors at clay put in.

Quicker production possible, and a must have for the 200 SF machine, for high production of small products

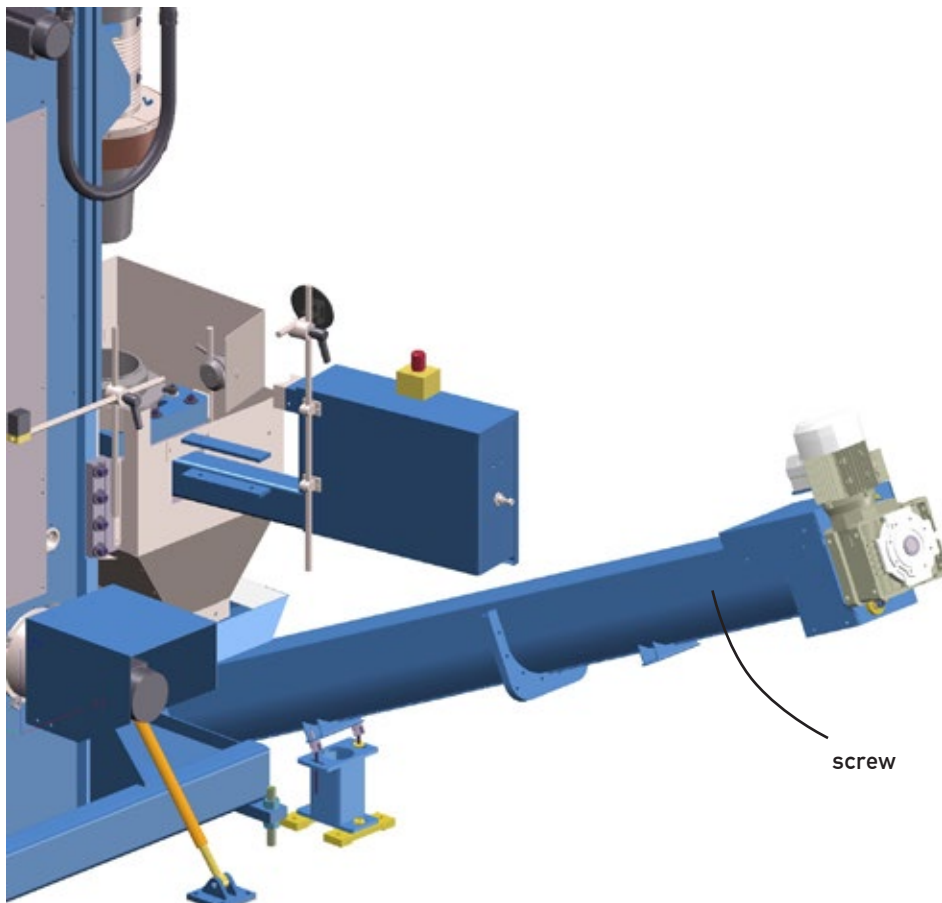
code: F-C-S



## 13 Reuse of the clay

Waste clay removal, it is a screw in a trough, of special design. It separates the used mould oil, so most of that will not enter your used clay mixer. Available in any length up to 6 m

code: F-W-Clay



FLEX 200	Automatic CNC Press 200
FLEX 250	Automatic CNC Press 250
FLEX 300	Automatic CNC Press 300
F-SF-150	<p>"Super Fast" type with lighter parts and quicker motors.</p> <p>Spindelmotor 5,5 KW- 4p - 2200 RPM</p> <p>Products max 150 mm and max 200 high (under mould outside 200mm)</p> <p>Max production 1600-1800 parts per Hour ( round 80mm)</p>
F-SF-220	<p>"Super Fast" type with lighter parts and quicker motors.</p> <p>Spindelmotor 7,5 KW- 6p - 1800 RPM</p> <p>Products max 220 mm and max 200 high (under mould outside 250mm)</p> <p>Max production 1500 parts per Hour (100mm)</p>
F-V-3-SplitM	for use with vertical 3 ways split moulds up to 150mm, the basic take up and vertical pneumatic Cylinder to make an outside undercut product
F-H-2-SplitM	Horizontal split mould, to make parts with an undercut on the outside, max diameter 230 mm
F-F	CE Fence around the machine with two interlock safety doors incl start/stop/emc switch (obligatory option)
F-AIRCO	Airco on the EL box (when warmer as 33 degree C)
	<b>AFTER PRESSING DECORATIONS</b>
F-D-Basic	Finishing: Separate pilar alongside to mount auxiliary options
F-DECOR-RS	<p>Finishing: decorating roller, free rotating</p> <p>Also for single stamping on vacuum head, with a cylinder and Hydraulic damper.</p> <p>All by time in software controlled</p>
F-DECOR-RS-INDEX	<p>Finishing: free rotating decorating roller. also for multiple indexed stamping on vacuum head by servo motor for quick motions</p> <p>With a pneumatic cylinder</p> <p>Only with option F-Dekor-ReShape or F-P-Basic</p>
F-DECOR-Under STAMP	<p>Finishing: Floor mounted pneumatic cylinder to press an stamp underside the product, in quick motion length 125mm</p> <p>Not in combination (N.I.C.) with options in same time: Shelf dispenser (F-PDP) and F-Dekor-ReShape</p> <p>Possible with option F-Dekor-ReShape and product conveyors (F-PDC)</p>
F-DECOR-R-Follow	<p>Finishing: High precision synchronized decorating rolling application. With 2 servo motors: one on vacuum head and one on the decorating roller</p> <p>Also for multiple indexed stamping on vacuum head with a pneumatic cylinder.</p> <p>Only In combination with: F-Dekor-ReShape or F-P-Basic</p>
F-DECOR-Screw	<p>To roll a (random) screw line on the product while on the vacuum head (before reshaping)</p> <p>Quick Change over unit with F-Dekor-R-Follow when both on machine.</p> <p>Only In combination with: F-Dekor-ReShape or F-P-Basic</p>
F-DECOR-H-Cut	<p>Profile Handle cutting and finishing by plastic roller. To use for products with a big flange on the top, so one can cut out "handles"</p> <p>Max Height: 200mm. Sperate "take out arm" position for cutting.</p> <p>Note: it might be that manual fininshing is necceary depending quality.</p>
F-DECOR-R-C	Random Servo action Screw rolling with Template curve only on F-Dekor-ReShape
	<b>RESHAPE UNITS (AFTER PRESSING)</b>
F-DECOR-ReSHAPE	<p>Reshaping unit, working with a servo motor driven top, to come over the product while rotating, can reshape to a bowl or press square on the top.</p> <p>All while unit is placed over a conveyor</p> <p>Not i.c.w. VF rotary tables</p>
VF-TABLE-6/2	<p>Rotary Table:</p> <p>Machine to re-shape Products after pressing. indexing table (Cyclo gear) with 6 vacuum spindles, with 2 Freq V/C "closed loop" driven</p> <p>complete with frame and EL box.</p> <p>Not i.c.w. F-Dekor ReShape</p> <p>Max 3 free Stations to put NF units</p> <p>1 Station to place Products</p> <p>1 Station to take off Products</p> <p>1 Station under the frame (unusable)</p> <p>Spindle pitch 550 mm</p> <p>Table on the outside equipped with oil catch rine</p>
NF-1	<p>Vertical unit to pick up parts by vacuum head and work them over with rollers or stamps to your choice.</p> <p>Incl. 2 horizontal Linear units on the outside of the table (pneumatic)to stamp. Manuel vertically and horizontally adjustable cylinders controlled by time)</p> <p>Only for VF-Table-6/2</p> <p>Indexing with servo motor also to run one to one with table spindle.</p> <p>Reshape products form top down. either round or square or?</p> <p>(the tools not included)</p>
NF-1+	<p>Extra to NF-1: to precisely roll an imprint one to one to the product.</p> <p>Servo motor on the outside with the software to control.</p>
NF-2	<p>Station: Vertical unit to roll over the products.</p> <p>reshape: with one vertical driven roller outside and one inside, both linear servo driven</p> <p>Only for VF-Table-6/2</p>

	<b>CLAY FEED AND CUTTERS</b>
F-NewCRCF-BIG	Separate clay cutting and dispensing unit, 6 Clay bars of max 900 mm long in slotted conveyor, strait cut, tilt over and put on conveyor (incl) max diameter 150 x long 190 mm
F-NewCRCF-Small	Separate clay cutting and dispensing unit, 8 Clay bars of max 900 mm long in slotted conveyor, strait cut, tilt over and put on conveyor (incl) max diameter 90 x long 90 mm, one single clamp.
F-C-Pick-Up	Separate clay cutting and dispensing unit, strait cut, tilt over and put on conveyor (incl) Pick-and place unit: with Sensors and Servo motors self "clay bar" finding . . Only bars from round 90-230 mm at length of 780-900 mm. Note only for pallets 800x 1200mm with pyramided wise neatly placed Clean ROUND bars, depending clay: with a sheet of fabric between layers.
F-C-Conv	1 long clay feed conveyor 4 m to put clay manually on.
F-C3CF	Clay feed with, 3 conveyors 2 m long, over slider, FI and sensors, to receive cut clay from an extruder
F-C	Clay cutter for cutting just after the extruder, clay falls on a conveyor (2 M included) with 2-3 PLC I/O one to switch extruder on, one to switch off. With encoder running on clay for length adjustments.
F-CC	Clay cutter with pivot to put the clay on a belt, Strait cut due to moving cutter ("flying saw") for cutting just after the extruder. Including fence with one door, interlock, start/stop/emc switch
F-C-S	Clay slider with servo-motion and pneumatic clamp, to quickly and precisely drop the clay in the centre of the mould, advantages: less stand stills due to less errors at clay put in. Quicker production possible, and a must have for the SF machine
F-C-STOP	Clay stop cylinder at the mould avoiding overrun (max round 70 mm)
F-W-CLY	Waste clay screw transporter Diameter 190 - d90 L max = 5,5 mtr
	<b>READY PRODUCT OUTPUT</b>
F-PCC	Product discharge on Chain shelf transport: variable board size: wide 180-260, length: 800, 1000, 1250, or 1500 Thickness 18-22 mm
F-P90degr	Product set off belt 150mm wide 1600mm long, crossed with cutout to chain F-PCC unit and with Pneumatic slider, to put rows of pots onto the F-PCC
F-PDP	Product discharge on shelf transport: possible to set off staggered and multiple rows by a placed shelf on a conveyor: board size: --- x ----mm
F-PDC-TR	Transfer unit: to pick and place products on a belt or on a board. Horizontal 800 mm, Vertical 400mm with Servomotors, with software to place into max 4 rows and xx positions, with graphics soft pick up and place arm, to not disturb the soft clay products
F-PDC	Product discharge on conveyor 3-4000mm? (FI +encoder)
F-P-SP	Control for your discharge conveyor F.I. 0,55kw 230V and encoder for you to fix to the motor
F-P-IO	PLC I O for connection to your Product conveyor and extruder
	<b>MISCELLANEOUS</b>
Rot-Table	Rotary table to manually stick handles on. 6 positions: 1 - place product manually from Pre-Drying belt 2 - prepare surface with 3M, 3 - stick handles on manually, 4 and 5 - vibrate application on handles, 6 - take off manually and place in Dryer, or on boards. With Product discharge on pre-drying conveyor. length 5m, dryer 3,5m 12KW Electric power and 3 blowers. To moist condition the cups before putting handles on
F-WZ-M	Bigger Mould drive motor 11 KW F.I. 22 KW
A-R-ZK	Production resetting: sensing products on the vacuum head which would be taken into the lower mould again or are not taken out of the mould, (only possible in slower machine)
SP-	Special: Pot catch and turn over head system. Pivot and 400mm vertical movement. with bottom cutting out system. 2 motions by servomotors, so quick action and smooth movements, software included in the programmer. With a vacuum ring with Hole 210mm take up to hold the products. (vacuum rings not included) (to make roof tiles)
SP-	To make multiple round holes in the lower product part: with vibrating case hardened cutter, The cut out part will be out of the product. with indexing drive on the vacuum head.
SP-	Special upper mould spindle: your design?, and case hardened
SP-	Clay feed Conveyor 2000 mm
MOULD	Mould from Cast Iron or Hardened and Nitrided Steel with porous resin vacuum take out head. (we have a big experience in these moulds)
KF-TC	TiN coated Tungsten carbide finishing Knife, 4 sides usable