Created With Love

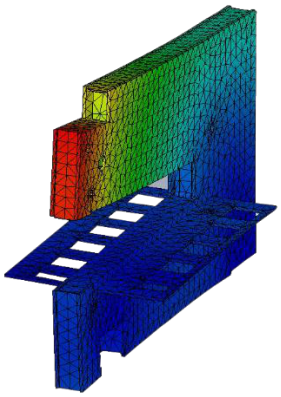
Servo-electricPunching Machine

TP ZETA XL

(Technical specifications)

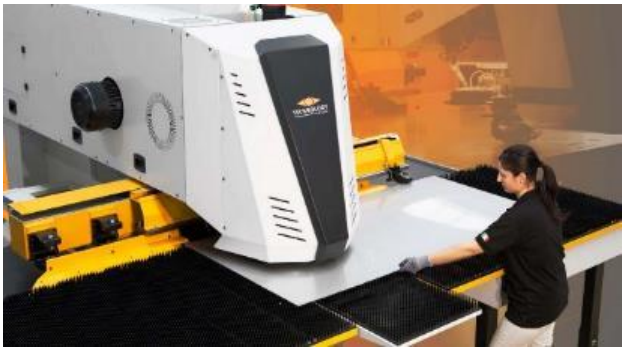
v. 1.0-12.21

“C” FRAME:



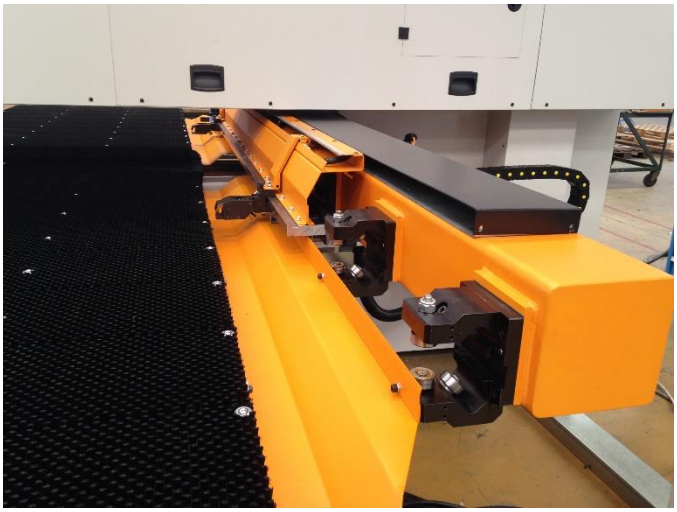
Electro-welded monolithic structure subjected to heat treatment for normalisation, which enables all the tensions generated by welding to be spread, thus obtaining homogeneous rigidity and guaranteeing maximum stability and precision in machining.
The TP Zeta has a reinforced structure, capable of working with punching systems of up to 30 ton.
The structure of TECHNOLOGY punching machines is supplied with 15 YEARS WARRANTY.

It allows front and / or side loading, as well as the processing of non-standard sizes thanks to the possibility to overturn and reposition the sheet.



X-Y AXES MOVING SYSTEM:

It’s realized with two different technologies: X axis with rack and pinion and Y axis with ball screw, to guarantee the maximum sheet stability and precision in processing. The axes have the possibility to position themselves in negative up to -40 mm.



Asse X

Asse Y

SERVO-ELECTRIC PUNCHING UNIT:

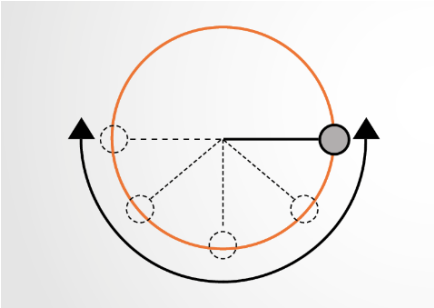
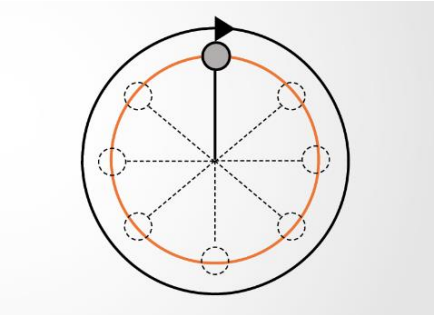
The movement of the punching unit is generated by a CNC-controlled FANUC brushless servo-electric motor.

- **22 or 30 Ton**
- **950 stroke/min**

This system allows lower consumption, high productivity, acceleration control combined with reduced maintenance.

The DualCam system allows high-frequency machining without overheating problems.

DualCam allows the machine's servo-electric unit to work in two modes:

Working cycle PENDULUM	Working cycle CONTINUOUS ROTATION
	
Ideal for single punch machining by allowing the punch stroke to be programmed.	**Reduces dynamic motor stress and is suitable for short pitch machining, such as nibbling and grid work.**

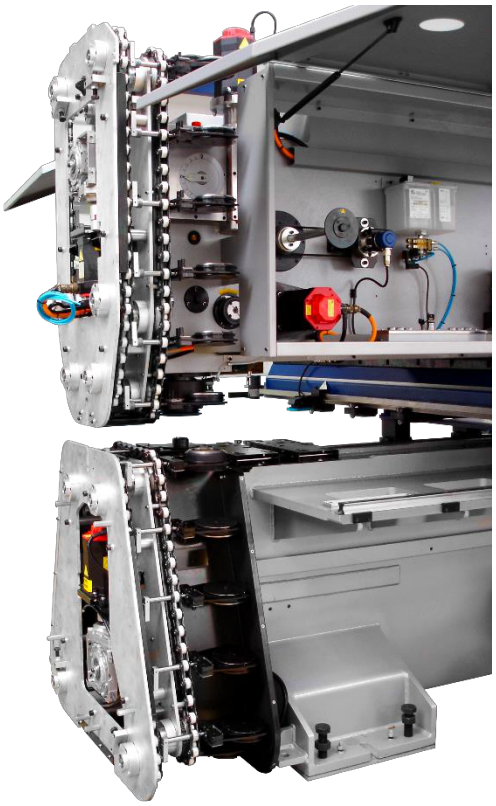
Automatic tool sharpening compensation: increases tool life by automatically managing the penetration depth for each individual station.

Noiseless punching: the SoftPunch function reduces the noise level of the machining up to 50% based on the type and thickness of the material.

Stand-by mode: in this phase the engines stop, reducing energy consumption to 0.4 Kw; moreover, a regenerative system recovers energy during the braking phase of the engine.

VERTICAL TOOL CHANGE SYSTEM:

Punch Holder →



Die Holder →

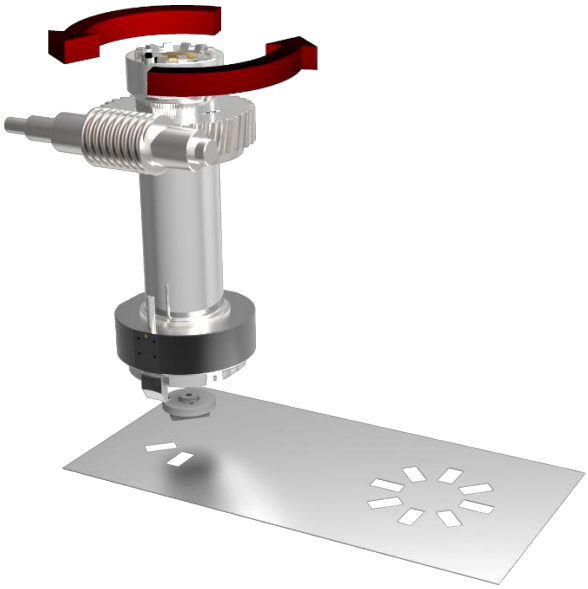
The vertical tool changer revolutionises tool changing systems and makes the work area more visible and accessible.
It is developed vertically with 15 stations all auto-index and customisable.
Each station can be equipped with single or multi-tools.

The single tool change takes place in 3 seconds, tool change within the Multi-tools in 0.5 seconds.

Setting up individual stations is done in just 12 seconds, simply and intuitively.

Tool holders are required to house the tools in the machine.

FULL AUTO-INDEX SISTEM:



System fully integrated inside the punching unit and managed by the CNC, allows to orient any type of tool, single or contained in the Multi-tools, from 0° to 360° with minimum programmable steps of 0.01°.

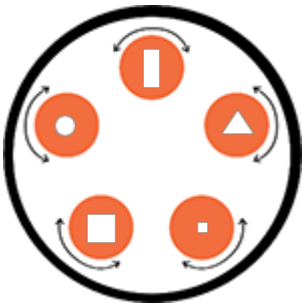
COMPATIBLE TOOLS:

The TP Zeta punching machine is compatible with TECHNOLOGY style tools and all TRUMPF style tools.

MULTI-TOOLS:

The punching unit can be fitted with Multi-tools, i.e. special containers that can house 4, 5 or 10 tools of different shapes and sizes in a single station, thus considerably reducing production times and tool purchasing costs. All the tools inside the Multi-tool benefit from auto-index technology, which allows each tool to be oriented from 0 to 360° with an accuracy of 0.01°.

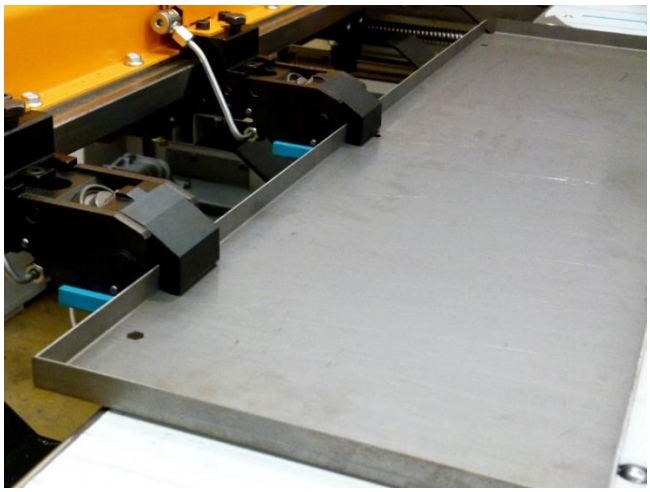
Multi-tool
with 4 auto-index tools



Multi-tool
with 5 auto-index tools

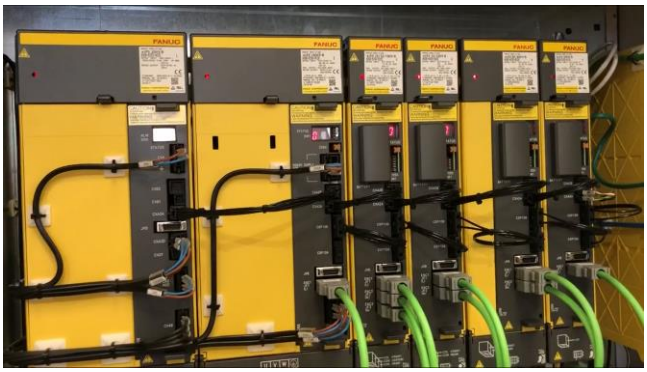
Multi-tool
with 10 auto-index tools

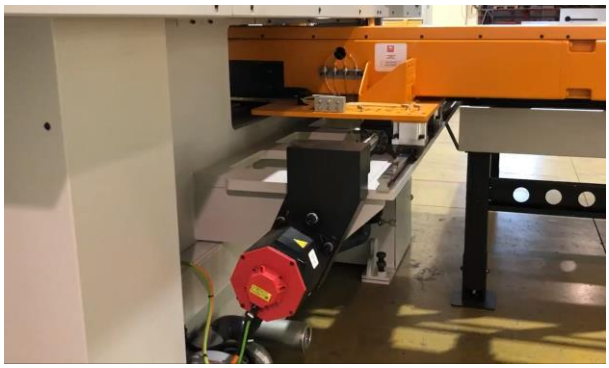
SHEET LOCKING CLAMPS:



The clamping force is adjustable (maximum force 15 KN each) depending on the material and thickness to be processed. They can block sheets with already bent edges up to a maximum height of 22 mm.

FANUC MOTORS, DRIVES AND CNC:





The electronic management of the machine is entrusted in addition to the numerical control also to the drives and motors FANUC, world leader in the sector, which guarantees the availability of spare parts for 25 years through the widespread assistance network.

CONSOLE WITH 18.5" TOUCH-SCREEN MONITOR:

The machine console is equipped with a large 18.5" monitor with touch-screen system to facilitate operator interaction with the machine.

The PC has the following specifications:

- Windows 10 operating system
- Processor: i5 5200U
- 4GB RAM
- 128GB SSD
- 2 USB 3.0 ports | 2 USB 2.0 ports
- 2 LAN ports

TECNOCONTROL HMI :

Interface created by TECHNOLOGY to be used with the touch-screen that leads to simplify the use of the machine with pages dedicated to the individual functions and a description of the commands that doesn't require the use of codes.

The TECNOCONTROL HMI allows the punching machine to be used in three modes:

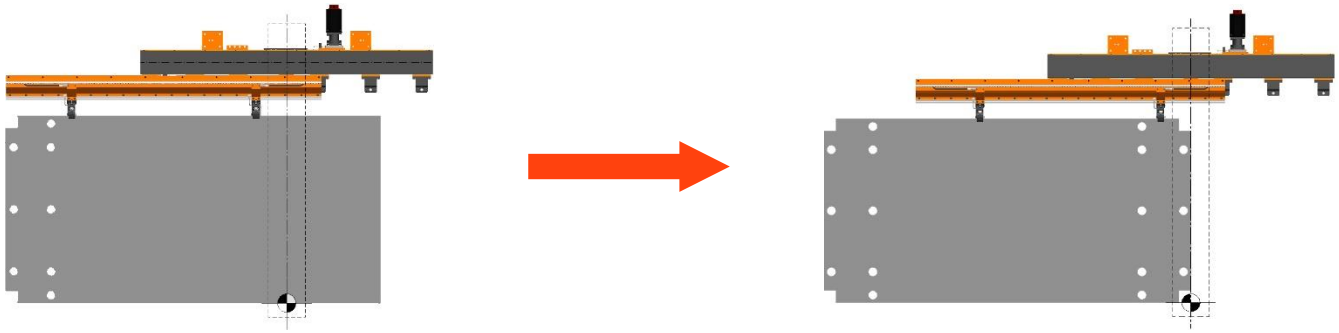
- **Manual: Punching and moving the axes is done manually, using the pedal and joystick on the console..**
- **Semi-automatic: automatic axis movement (based on programming) and manual punching using the foot pedal.**
- **Automatic: Once the program has been created with TECNOCAM graphic software, punching and movement of the axes takes place automatically..**

The interface also provides a user-friendly panel to keep various useful information available at all times with dedicated links:

- **Punching machine tool catalogue;**
- **Online shop for purchasing spare parts or tools;**
- **Automatic calculators: Punching force calculation, Die clearance calculation and Sheet metal weight calculation;**
- **Operator's manual for machine use;**
- **TECHNOLOGY website**
- **YouTube channel**

AUTOMATIC REPOSITIONING:

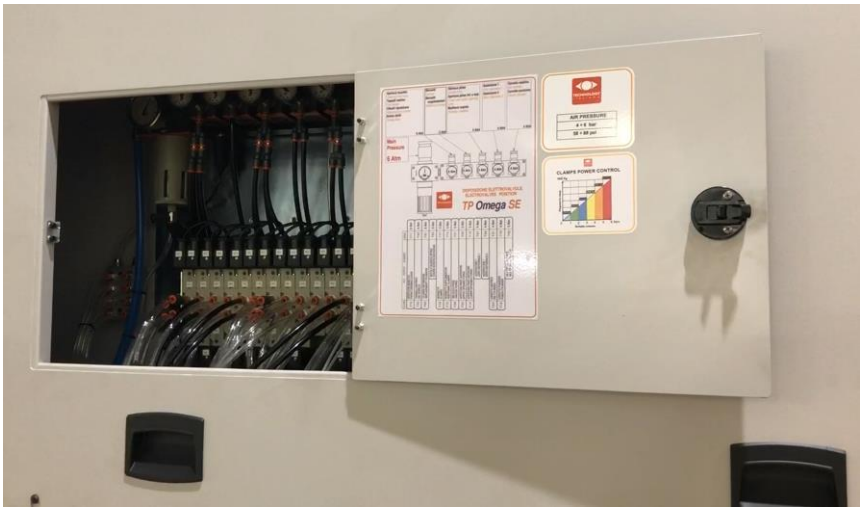
Possibility of processing extra-large sheet formats by repositioning the sheets along the X-axis with the machine head. The number of repositionings is potentially infinite in both positive and negative directions.



SHEET METAL SUPPORT TABLES:

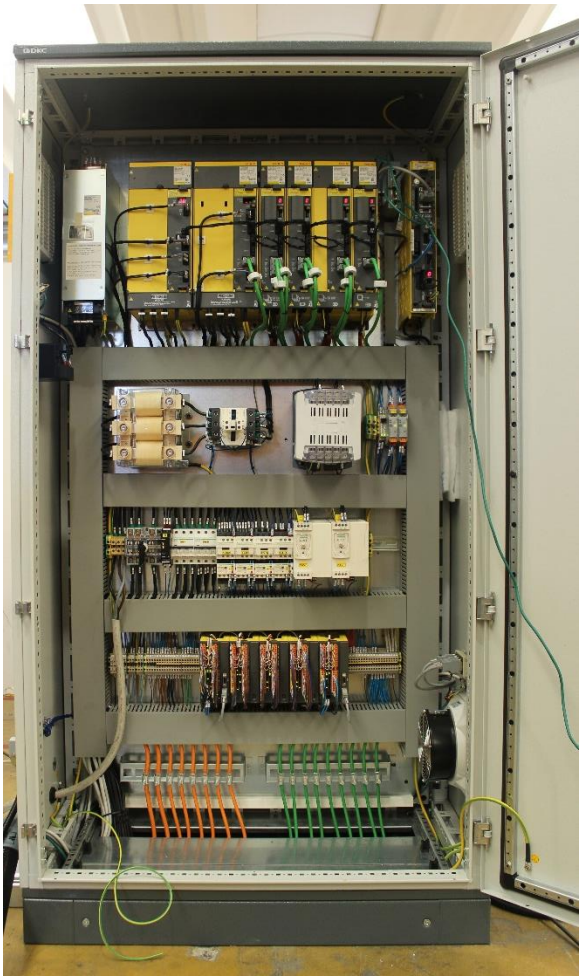
In brushes and balls, they are mobile and slide on the Y axis by means of dovetail guides mounted on special supports.

CENTRALISED PNEUMATIC SYSTEM:



The machine's pneumatic system, which is used to operate the various services of the punching machine, is centralised and easily accessible through a practical door on the left-hand side of the machine. This allows simple and immediate intervention in case of maintenance.

GROUNDED ELECTRICAL CABINET:



The electrical cabinet is positioned on the ground to prevent stress on the electronic components due to the vibrations generated by the punching machine during the machining phases.

It is equipped with a cooling system and composed only of high quality materials, produced by suppliers such as Schneider, Legrand and Baumer.

MANUALS:

The machine is supplied with operation and maintenance manuals.

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TECHNICAL SPECIFICATIONS:

TP ZETA XL		
Models:	U.M	3616
Working range	mm	1500 x 4000
With one repositioning	mm	1500 x 8000
Max. punching force	Ton	22 /30
Max. workable thickness	mm	6,5
Max. sheet weight	Kg	200
Y-axis stroke	mm	-40 / 1550
X axis stroke	mm	-40 / 4100
Simultaneous speed	m/min	120
Max. punching frequency	colpi/ min	950 colpi/min passo 1mm 480 colpi/min passo 20mm 380 colpi/min passo 25,4mm
Number of stations	N°	15 auto-index
Max. number of auto-index tools	N°	From 15 to 150* Auto-index
Tool change time	sec	3
Tool change time with Multitool	sec	0,5
Positioning accuracy	mm	+/- 0,05
Punching accuracy	mm	+/- 0,1
Minimum C-axis rotation increment (auto-index)	°	0,01
Absolute axes	n°	9
Motor absorption in stand-by	Kw	0,4
Electrical absorption during operation	Kw	8
Weight	Kg	15000

* using the Multi-tool

OVERALL DIMENSIONS:

Models:	U.M	3616
Width	mm	10950
Depth	mm	4950
Height	mm	2430

OPTIONALS:

Safety photocells according to CE standards (REQUIRED IN EU COUNTRIES) **Necessary to create a safety zone around the machine during work operations**
FANUC motor with 30 ton of force and reinforced "C" structure **Allows higher punching force**
Stainless steel and balls sheet support tables (Recommended for machining thicknesses of more than 3mm)
Automatically positioning and programmable sheet metal clamps **Automates machine setup, recommended if you frequently change sheet format**
Reclining front table (front hatch) (Ideal for unloading machined parts with min. format: 150mmx150mm| max: 500mmx500mm)
Scraps evacuation belt **Avoids the manual emptying of the scrap container**
21-inch touch monitor
Predisposition for automatic sheet metal loading and unloading system **Required if you want to install an automatic system (e.g. TA smart, TA Compact and TA Plus)**
Industry 4.0 Ready **Necessary to enable functionality suitable for Industry 4.0 systems**