TECHNOLOGY ITALIANA

The punching specialists

Servo Drive CNC Punch Press

TP Alpha

(data sheet)

TECHNOLOGY ITALIANA

The punching specialists

In 1973 TECHNOLOGY Italiana begins the production of punching machines: since then we have grown and with constant passion for innovation we have never stopped studying, designing and manufacturing machine tools for sheet metal working.

As a small company we have decided to specialize in the production of a single product category, so as to develop it to its full potential. The constant research and development of our technical office and the precious collaboration with the best national and international partners of the sector, allows us to maintain the quality of Made & Concept in Italy and, therefore, to offer great technology and innovation at affordable costs.

In over 45 years of experience we have developed our machines to meet the needs of our customers, becoming consultants and partners for them, rather than just suppliers.

We offer a horizontal range of punching machines able to satisfy every production requirement, starting from the smallest machine up to the automation, based on the growth of your company.

Relying on The punching specialists means choosing a partner able to follow you throughout the life of the machine, offering you all the post-sales services necessary so that you can get the maximum return from your investment.

OVER 45
YEARS OF EXPERIENCE

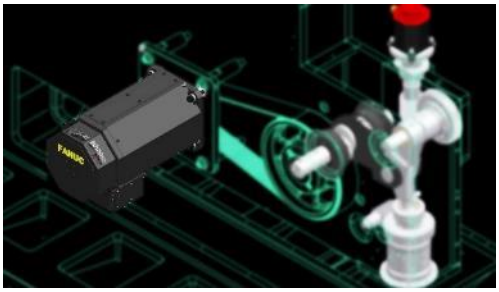
1300
MACHINES PRODUCED

16
MACHINE MODELS

Genova (1973)

Sestri Levante

Why to buy TP Alpha



Servo-Electric punching unit

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

- 30 Tons
- 800 colpi/min

This system allows **lower consumption**, high productivity, control of accelarations combined with **reduced maintenance**.
The **DualCam** system allows high frequency machining avoiding overheating problems .

Full Auto-Index

System totally 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°.
Benefits are indisputable:

- Simple programming even for complex nesting
- Lower machine setup costs
- Greater efficiency in the use of the material

Tool change system

The **Clever Tool Change System** is based on the use of containers with a self-centering system that allows quick engagement of the tool in the machine head.
The speed of **change** remains of fundamental importance especially for those processes that require tools for deformation or large dimensions: tools and / or multi-tools are housed in just **12 seconds**, a feature that makes the TECHNOLOGY machines unique in its field.

TRUMPF Style tools

The TRUMPF-style tool is today the best technology available for punching tools and offers significant advantages over the old AMADA-style tooling technology (turret).

Lenght: -63%
Weigth: -73%
Price: -69%

Some data

24 warranty months	**0.4 kW** consumption in stand-by	**12 seconds** station setup

Other features

“C” frame:

electro-welded monolithic frame subjected to standardization heat treatment. 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 axis movement system: the sheet metal handling system is realized with a pinion & rack system connected to an AC FANUC servomotor. The axes have the possibility to position themselves in negative up to -40mm. This allows to make notches that are smaller than the punch geometry, avoiding the replacement of the punch.

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

CNC Function: The **FANUC numerical control** allows, in addition to the standard punching functions, a series of special functions such as:

- Nibbling
- Embossing
- High speed deformations
- Marking
- Engraving
- Deburring
- Bending
- Tapping

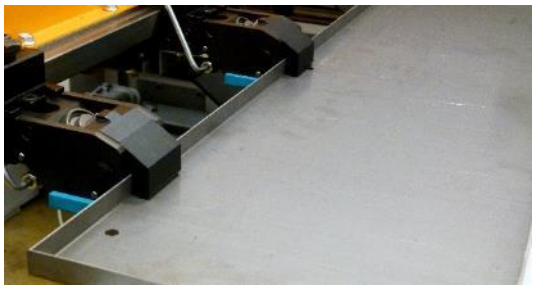
It also manages the **Multi-tools** and the **SoftPunch** function.

Automatic repositioning: possibility to work extra-large sheet formats using the sheet repositioning system along the X axis using pneumatic cylinders. The number of repositioning is potentially infinite.

Sheet metal support tables: made in stainless steel with metal balls, they are movable and run on the Y axis by dovetail guides mounted on special supports. This type of tops are recommended for the processing of thicknesses up to 6 mm, alternatively the balls can be replaced with brushes for thicknesses up to 3 mm.

Sensor of non-extraction: it intervenes by blocking the machine in case of non-extraction of the punch from the sheet and avoiding any damage.

Sheet locking clamps with pneumatic system:



the clamping force is adjustable (maximum force 15 KN each) depending on the material and thickness to be machined. They can block sheets with already bent edges up to a maximum height of 22 mm. The machine is equipped with n. 2 clamps.

Scrap suction system: the suction guarantees a correct cleaning of the die from the scraps produced during the processing. Important function especially for the creation of gratings and in any case to avoid injury on machined parts, allowing production continuity.

DUAL CAM: allows the servo-electric unit of the machine to work in two modes:

- **Pendulum,** suitable for single punching operations allowing to program the punch stroke.
- **Continuous rotation,** reduces the dynamic stress of the motor and is suitable for short steps, such as nibbling and grating.

Tool lubrication system: The lubrication of the tools is an extremely important function that allows a longer life and better performance. The punching machine is equipped with a CNC-controlled nebulizer which keeps the sheet and tools lubricated during processing.

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

Multi-tools: in the punching unit can be installed the Multi-tools, ie special holders that allow to put inside them 4, 5 or 10 tools of different shape and size in a single station, significantly reducing production times and tool purchase costs.

Silent 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: 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.

Monitor touch-screen da 15”:

the PC FANUC housed in the console is equipped with a large 15 "monitor with a touch-screen system to facilitate operator interaction with the machine.

HMI TECNOCONTROL: 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 does not require the use of codes.

Programming software TECNOCAM: Graphic CAM for creating programs on the machine without having to be aware of the ISO code.

Tele-assistance: Possibility of receiving assistance from a qualified technician directly from our office, connecting remotely to the machine or to the programming computer. This allows the reduction of the intervention diagnostic times and consequently the reduction of machine downtime.

Safety photocells: perimeter system complying with international safety standards (CE) in order to safeguard anyone working near the machine.

Tool holders

The tools required for processing, whether standard, special or Multi-Tool, must be housed in special tool holders that allow the tool change to be configured with maximum versatility.

The configurations proposed below are examples. All stations can be equipped with any type of tool, thus allowing you to create the configuration that best suits your needs.

Each station can therefore be equipped with:

TRUMPF standard tool holder for housing standard tools with Ø from 1.5 mm to Ø 76.2 mm	**TRUMPF special tool holder** Container for housing special tools (high-speed deformations, wheel tools, etc.)
	

TRUMPF tapping tool holder for housing the tapping tool from M2 to M10	**TRUMPF MultiTool complete holder** for housing the MultiTool tools 5 or 10 stations
	

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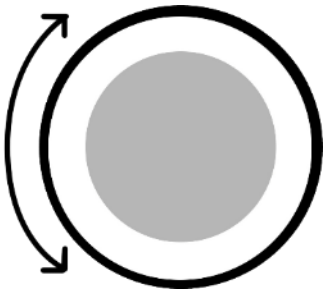
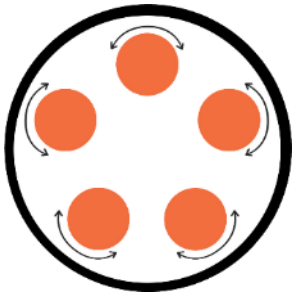
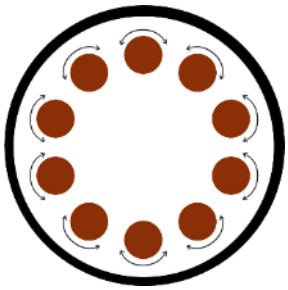
Examples of single station configuration

BASIC CONFIGURATION	MEDIUM CONFIGURATION	TOP CONFIGURATION
		
1 AUTO-INDEX TOOL	**5 AUTO-INDEX TOOLS**	**10 AUTO-INDEX TOOLS**
1 standard tools holder (from Ø 1 mm to Ø 76,2 mm)	**1 Multi-tools 5 tools** (from Ø 1 mm to Ø 16 mm)	**1 Multi-tools 10 tools** (from Ø 1 mm to Ø 10 mm)

Note

The station can be equipped with:

- standard tool
- multi-tools
- tapping
- wheel tool
- other special tools

Standard configuration

- “C” frame
- Power 30 ton
- Servo electric punching unit
- **FULL AUTO-INDEX**, integrated system for single tool, multi-tool and tools housed in the multi-tool orientation
- Automatic compensation system of tool sharpening
- Lubrication system with electric pump for rodent and threading tool
- N. 1 fixed sheet metal reference
- Automatic frontal table
- N. 2 sheet metal clamps also with edge up to 22 mm
- **Sheet metal clamps position detection system with automatic Safety Zone**
- Sheet moving system X-Y
- Automatic repositioning system with pneumatic cylinders
- Sheet metal support plates in brushes
- **CNC FANUC**
- Separate machine console with **PC FANUC 15" TOUCH SCREEN monitor**
- Software installed in the machine console:
  - **HMI TECNOCONTROL**
  - PROGRAMMER
  - TECNOCAM
- Electrical panel placed on the ground
- Perimeter safety photocells – CE standards
- Tele Assistance
- Instruction manuals

Programming software (Optional)

CAD CAM JETCAM

Function
DXF Viewer
Automatic hazard avoidance (holes and forms)
Interactive CAD with export facility
CAD drawing import for popular CAD and machine tool vendor formats
Component revision control, providing safety when generating static or dynamic nests
Automatic tool selection
Automatic micro-joints, lead-ins/outs, loops etc. Intelligently applied to parts nested at specific angles
Interactive nesting (arrays, bump nesting (free hand) and mosaic nesting)
Automatic nesting of a single component at 0 and 90 degrees
User definable machine macro commands
Automatic tool path and tool rotation optimization with highly efficient sequencing of final cuts
Automatic parting and unloading of components at any angle
Automatic repositioning and continuation of a cut over a reposition where required
Automatic turret/magazine loading
Multiple tool libraries
Automatic placement of special tools
Full simulation capabilities with runtime estimation data available for costing
Automatic sheet processing, including skeleton destruction, common line punching/cutting
Bevelling support
Heat avoidance

Formats

Models	U.M.	TP 346	TP 356
Work field	mm	1000 x 1500	1250 x 1500
With repositioning	mm	1000 x 3000	1250 x 3000

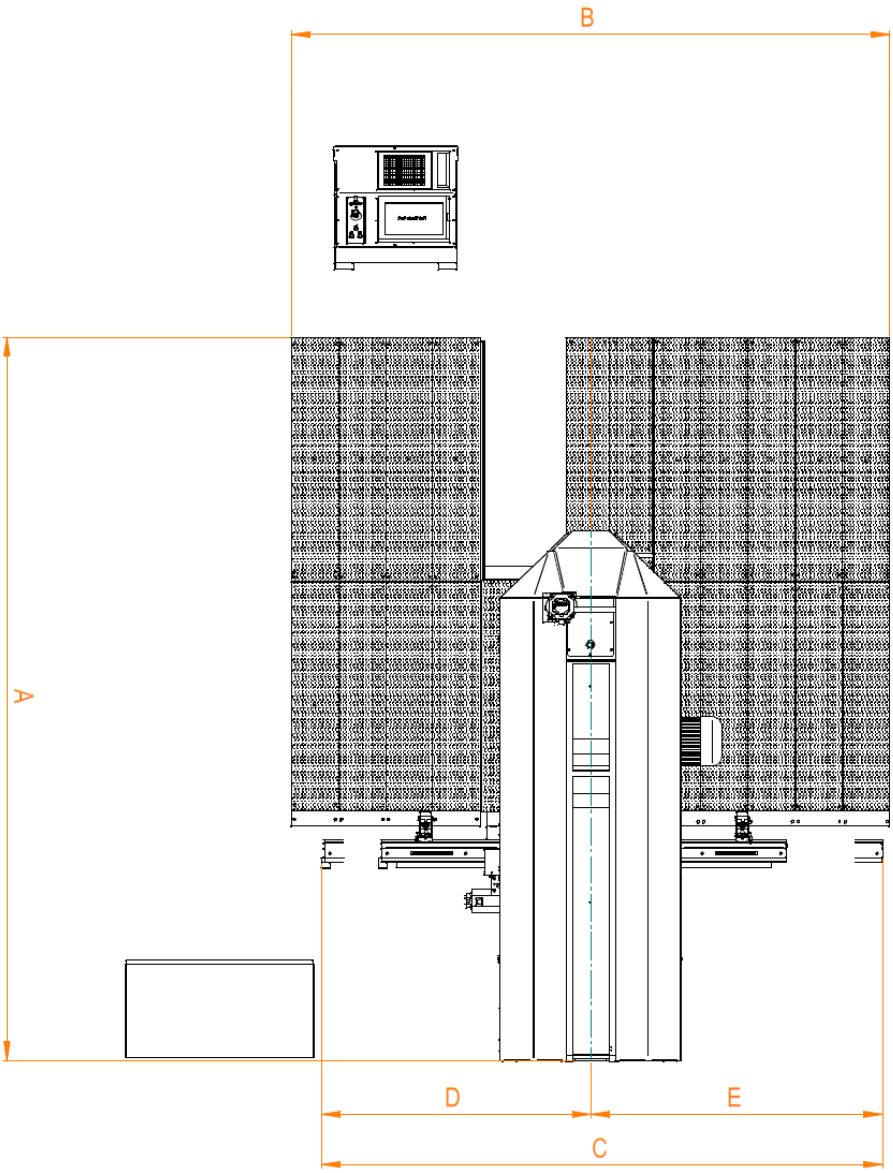
Technical features

Max cutting power	Ton	25	
Max workable thickness	mm	6	
Maximum sheet weight	Kg	150	
X axis stroke	mm	-40 / 1550	
Y axis stroke	mm	-40 / 1050	-40 / 1270
X axis movement speed	m/min	75	
Y axis movement speed	m/min	55	
Max punching frequency	strokes/min	600	
Tool change time	sec	3	
Tool change time in the Multitool	sec	0,5	
Station setting time	sec	12	
Positioning accuracy	mm	+/- 0,01	
Auto-index rotation speed	rpm	60	
Main engine	kVA	1,5	

Overall dimensions and weights

Width	mm	3200	3200
Depth	mm	4700	4700
Height	mm	2300	2300
Weight	Kg	6900	7900

Layout TP Alpha



Machine	Size	U.M	A	B	C	D	E
TP Alpha 346	1000x1500	m	3,7	3,2	3,9	2,3	1,6
TP Alpha 356	1250x1500	m	3,9	3,2	3,9	2,3	1,6
TP Alpha 366	1500x1500	m	4,2	3,2	3,9	2,3	1,6