TECHNOLOGY ITALIANA

The punching specialists

Servo Drive CNC Punch Press

TP Gamma

(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

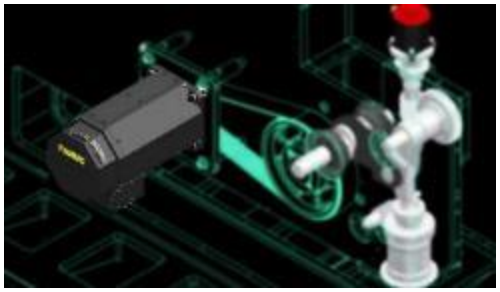
1300
MACHINES PRODUCED

16
MACHINE MODELS

Genova (1973)

Sestri Levante

Why to buy TP Gamma



Servo-Electric punching unit

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

- 20 Tons
- 750 strokes/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

"C" frame

Makes the machine accessible on three sides, allowing both front and side loading, as well as the use of non-standard sheet metal sizes thanks to the possibility of repositioning and overturning.

Consisting of a monolithic electro-welded structure and subjected to a normalization heat treatment that allows to spread all the tensions of the structure generated by the welding. **TECHNOLOGY frames are built in Italy with certified Italian materials and are GUARANTEED FOR 10 YEARS**

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 Months of warranty	**0.4 kW** Consumption in stand-by	**Full auto-index** Stations

Servo-electric and CNC function

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.

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.

DUAL CAM: allows to the servo electric unit of the machine to work in two modalities:
- **Pendulum,** suitable for single punching operations allowing to program the punch stroke.
- **Continue rotation,** reduces the dynamic stress of the engine and is suitable for short steps, such as nibbling and grilling.

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

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

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

- **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.
- **Tapping tool:** with the special sets, modules and inserts from M2 to M10 it is possible to make threaded holes without chip removal
- **Bending:** through the use of a special tool it is possible to perform bending up to 90 ° of sheet lengths 20 mm high
- **High-speed deformations:** it allows the use of roller or wheel tools to create ribs, smudges and steps
- **Marking, engraving, deep drawing, extrusions and other processing:** the wide range of proposed tools allows to realize multiple types of deformations

Other features

Vertical tool turret change system:

The **Clever Turret Tool Change System** revolutionizes the concept of the traditional turret system making it obsolete and makes the work area more visible and accessible.
It is developed **vertically with 15 stations all auto-index** and customizable. Each station can be equipped with single tools or Multi-tools.
The single **tool change** takes place **in 3 seconds**, tool change within the Multi-tools in 0.5 seconds. The stations are set up in just 12 seconds

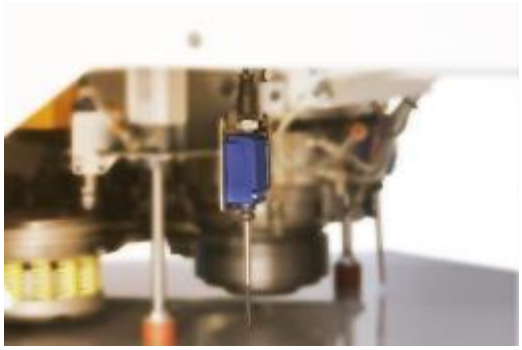
X-Y axes moving system: it's realized with two different technologies: X axis with rack and pinion and Y axis with ball screw, to guarantee the maximum sheet stability and precision in processing. The axes have the possibility to position themselves in negative up to -40 mm. This allows to make notches that are smaller than the punch geometry, avoiding the replacement of the punch.

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

Sheet metal support tables: made in brush, 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.

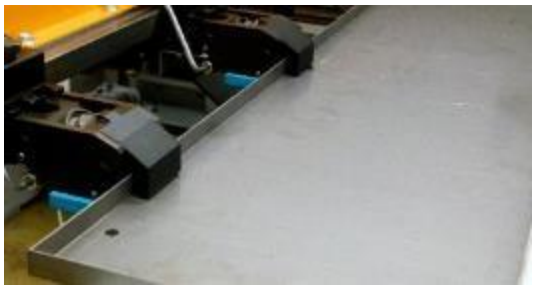
Alternatively can be replaced with stainless steel with metal balls support tables (OPTIONAL).

Sensor of failure extraction:



it intervenes by blocking the machine in case of non-extraction of the punch from the sheet and avoiding any damage. It is very important when working stainless steel.

Sheet locking clamps with pneumatic system:



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.

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

Tool lubrication system: The lubrication of 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.

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 doesn't 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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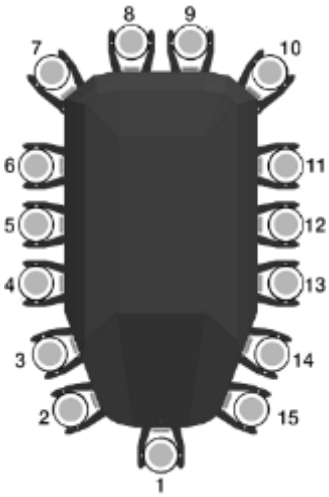
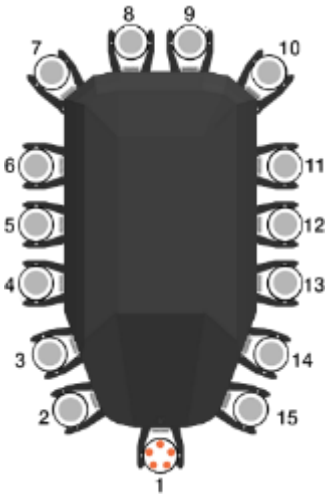
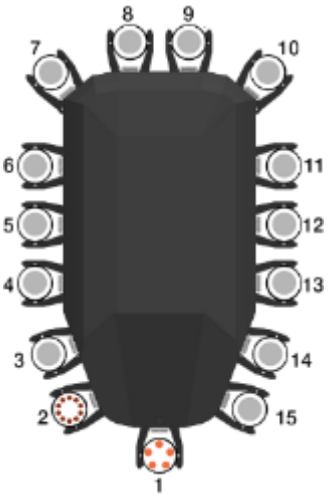
Examples of vertical tool change configuration

Below are examples of how the vertical turret can be configured. However, the punching machine can also be equipped with less than 15 holders.

BASIC CONFIGURATION	MEDIUM CONFIGURATION	TOP CONFIGURATION
		
15 AUTO-INDEX TOOLS	**19 AUTO-INDEX TOOLS**	**28 AUTO-INDEX TOOLS**
Stations from 1 to 15 **15 Holders for standard tools** (from Ø 1 mm to Ø 76,2 mm)	**Stations from 2 to 15** **14 Holders for standard tools** (da Ø 1 mm a Ø 76,2 mm)	**Stations from 3 to 15** **13 Holders for standard tools** (da Ø 1 mm a Ø 76,2 mm)
	Station 1 **1 – Multi-tools 5 tools** (from Ø 1 mm to Ø 16 mm)	**Station 1** **1 – Multi-tools 5 tools** (from Ø 1 mm to Ø 16 mm)
		Station 2 **1 – Multi-tools 10 tools** (from Ø 1 mm to Ø 10 mm)

Note

The above proposed configurations are examples. All stations can house any type of tool, allowing to create the configuration that best suits your needs.

Each station can be equipped with:

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

Standard configuration

- "C" structure
- Power 20 ton
- Servo-electric punching unit
- 15 station tool change
- **FULL AUTO-INDEX**, integrated system for single-tool orientation, multi-tool and tools housed in the multi-tool
- Automatic tool sharpening compensation system
- Lubrication system with electric pump for rodent and threading tool
- **Sensor missing punch extraction**
- N. 2 fixed sheet references
- N. 2 clamps for sheets also with edge up to 22 mm
- Oil nebulizer system for sheet metal lubrication
- **Sheet metal clamps position detection system with automatic Safety Zone**
- Sheet metal handling system X-Y
- Automatic repositioning system by machine head
- **Sheet support tables in brushes**
- FANUC numerical control
- CNC functions for high-speed deformations
- Separate machine console with PC FANUC monitor 15 "TOUCH SCREEN
- Software installed in the machine console:
    - **HMI TECNOCONTROL**
    - Tecnocam
- Electric panel on the ground
- Safety photocells according to CE standards
- Tele Assistance
- Instruction manuals

Programming software (Optional)

CAD CAM JETCAM

Jetcam Expert L
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

		TECNOPUNCH
Models	**U.M.**	**GAMMA 258**
Working size	mm	1250 x 2000
With repositioning	mm	1250 x 4000

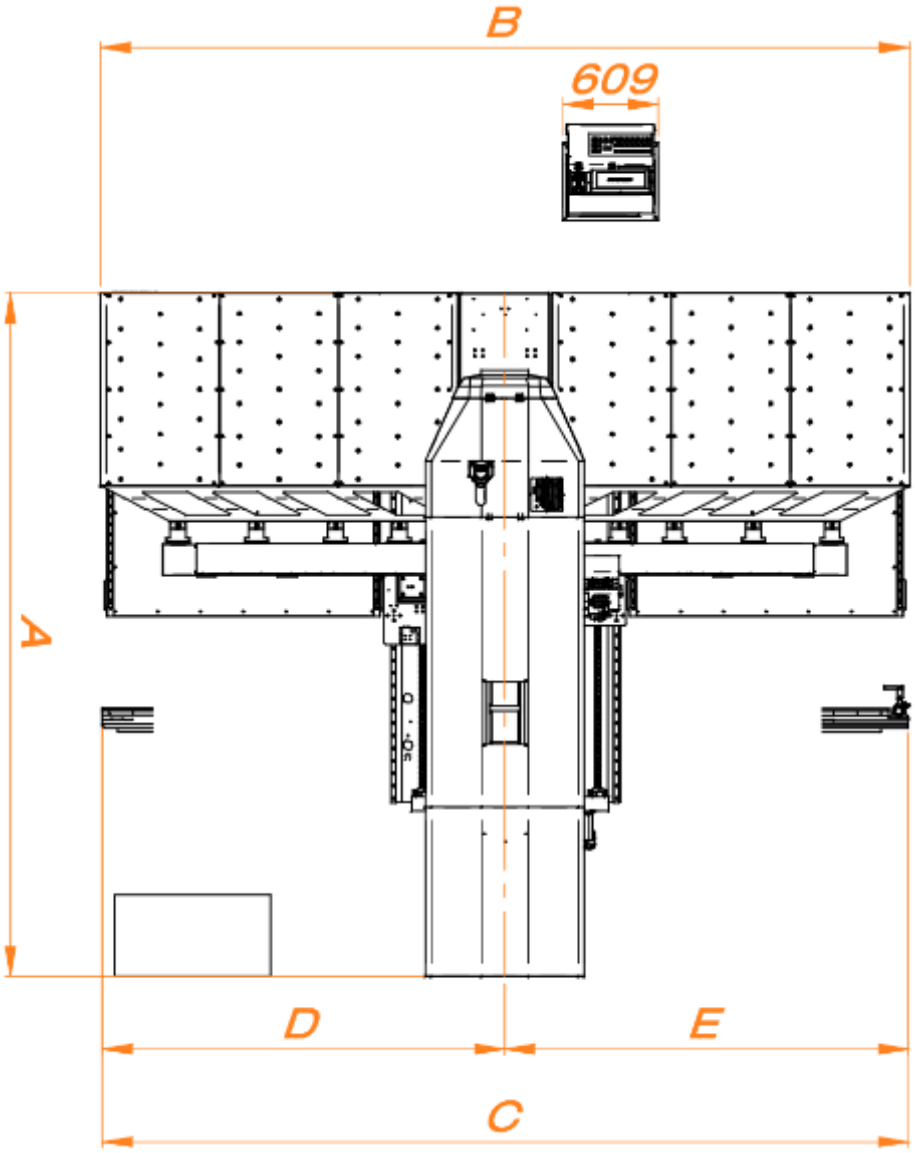
Technical features

Max punching force	Ton	20
Max thickness	mm	6
Max metal shett weight	Kg	150
Y-axis stroke	mm	-40 /+1340
X-axis stroke	mm	-40 /+2040
Simoultaneus speed	m/min	95
Max punching frequency	stroles/min	750 strokes/min step 1mm | 380 strokes/min step 25,4mm
Tool change time	sec	3
Tool change time with Mulltitool	sec	1,5
Station set-up time	sec	12
Positioning accuracy	mm	+/- 0,01
Min rotation increment of C axis (auto-index)	°	0,01
Absolute Axes	n°	9
Motor absorption in stand-by	Kw	0,4
Electric absorption during work	Kw	8

Dimensions and weight

Dimensions	**U.M**	**GAMMA 258**
Width	mm	5380
Depth	mm	4700
Height	mm	2360
Weight	Kg	10.000

Layout TP Gamma



Machine	Size	U.M	A	B	C	D	E
TP Gamma 258	1250x2000	m	4,7	4,2	4,5	2,3	2,3