

Turret punch press EM series



Punching technology



The EM series – worldwide leading energy efficiency

AMADA punching technology – more than 40 years experience

For more than four decades, the name AMADA has stood for the highest productivity, quality and cost-effectiveness in the field of punching machines. The basis of all AMADA constructions is the successful combination of our knowledge and practical user experience.

This has resulted in innovations and solutions that are ideally suited to the requirements of our customers. AMADA products set new worldwide standards not only in CNC punching technology.



The EM series represents a new dimension in energy-efficient production. The heart of the new EM models is the innovative, patented servo-electric twin drive. This completely new and almost maintenance-free drive combines the advantages of a mechanical punching machine with the positive characteristics of high-speed hydraulic punching machines. Thanks to its convenient AMNC controller,

the EM is extremely user-friendly. Combined with the AMADA tool concept and its versatile options, the EM series opens up new trend-setting possibilities for your production.



Economic and productive

The EM series – discover and make use of potential

The innovative CNC punching machine of the EM series provide you with a variety of new possibilities in forming and processing sheet metal as well as freehand outlines. Depending on the equipment type, you are always provided with the right solution for a variety of different requirements.

Two drive performance, various turrets, a variety of additional features and an exceptionally good price-performance ratio make the machines from the EM series unique. Their efficiency of the EM series is also impressive and combines increased processing speed, precision and functionality with considerably reduced setup times and operating costs.



Well thought-out progress –

ensures high functionality and productivity that also decisively secures your competitive advantage.

Versatile flexibility –

is provided by the excellently equipped EM punching machines. The practical concepts of the basic equipment can be extended with optional functions that correspond to your specific requirements.

Unprecedented user-friendliness –

is ensured by extremely easy operation of the menu-driven AMNC controller. This not only considerably increases the overall productivity, but also allows maximum compatibility to other AMADA machines.

Economical production –

thanks to increased savings potential. Along with the low acquisition costs, factors such as maintenance and the resulting costs caused by downtime now become a thing of the past. The considerably increased field of application with respect to forming and complete processing saves time and additional machines, and the resource-friendly efficiency of the drive reduces your energy costs.



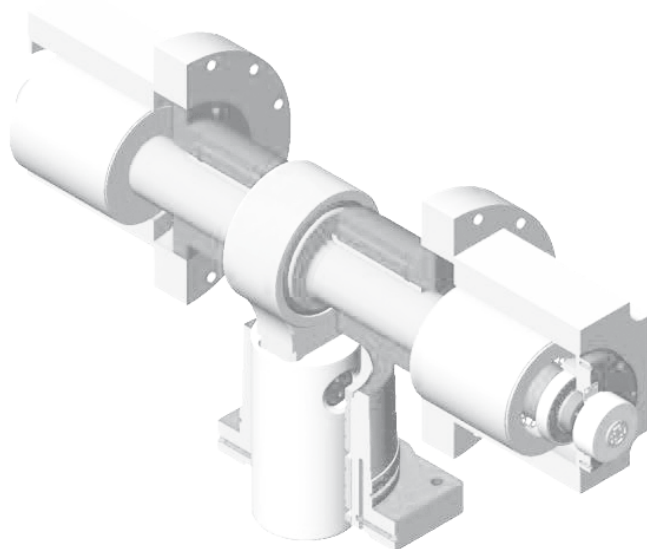
Well thought-through concept & revolutionary construction

Progress, that guarantees your competitive edge

Together with high machine availability and user-friendly operation, there are additional advantages to the EM series in the large variety of features that enables disproportionately high implementation and power spectrum as well as an enormous potential for savings.

The highly efficient servo-electric twin drive with its sophisticated energy recovery principle achieves a reduction of energy requirements by more than 60 percent, when measured against comparable hydraulic punching machines. The lack of the oil system also saves costs on the usual maintenance that would occur by changing oil and filters or cleaning the tanks. The resulting downtimes are now also a thing of the past.

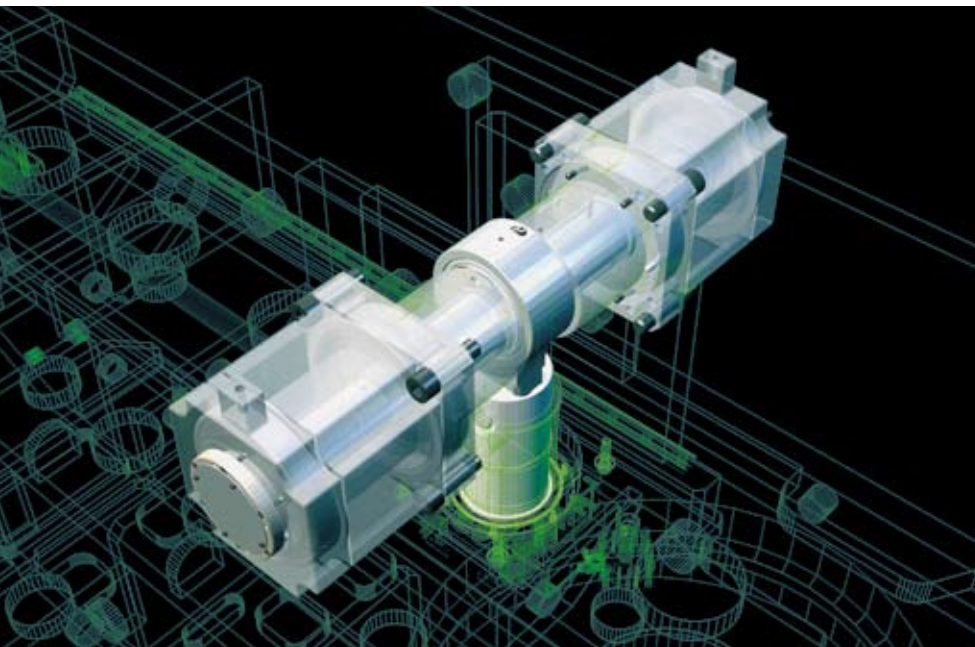
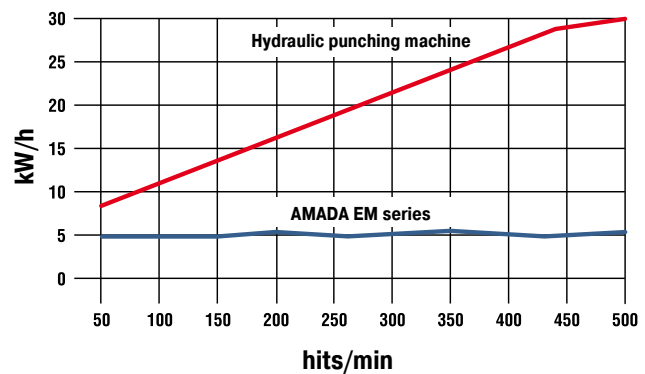
The large 45 or 58-station tool turret enables a reduction of setup times to a minimum and considerably increased productivity coupled with higher flexibility.



Higher performance – lower consumption

Double the power in one drive

The basis of the EM series is the patented servo-electric twin drive. Its two motors simultaneously provide more power and smoother running. The positive characteristics of a mechanical punching machine with the flexibility and speed of a hydraulic high-speed punching machine have been combined into one machine.



The servo-electric twin drive

The innovative drive concept buffers the energy that occurs during braking and uses it when reaccelerating. This saves more than 60 percent of the usual energy consumption – with considerably increased performance. Compared to conventional servomotors, the AMADA twin drive generates a considerably higher driving force – with much less noise emission.

The AMADA therefore sets new standards – in efficiency and performance and environment friendliness. At the same time, you profit from higher precision and processing speed with maximum flexibility.

	Eccentric drive	Hydraulic drive	AMADA servo drive
Advantages	<ul style="list-style-type: none"> ■ Maximum robustness ■ Easy handling ■ High operation reliability ■ High availability 	<ul style="list-style-type: none"> ■ High speed ■ Freely programmable ram stroke ■ Low noise emission 	<ul style="list-style-type: none"> ■ Easy handling ■ High operation reliability ■ High availability ■ Low noise emission ■ Extremely low power requirements ■ Lowest operating costs
Disadvantages	<ul style="list-style-type: none"> ■ Volume (sometimes more than 92 dBA) ■ Low speed ■ Inflexible forming processes 	<ul style="list-style-type: none"> ■ High maintenance intensity ■ Temperature-dependent ■ High operating costs 	

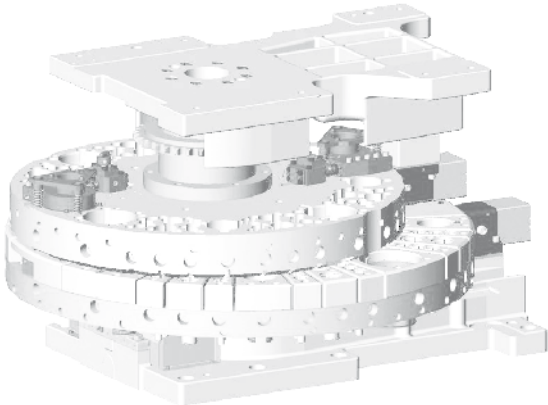
Custom-made variety

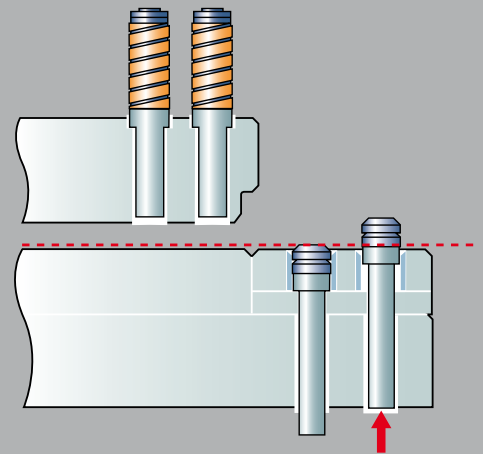
Flexible solutions for your success

The tool turret with its patented 3-track construction and interaction with the servo-electric twin drive, opens up a completely new range of possibilities. Whether punching, forming or marking – the EM series open up completely new potential. Thanks to the optional external multiple tapping unit, there is more room for tools in the turret. The optionally available automatic tool changer increases productivity in automated operation. Controlling of the individual tools is simply taken care of by the AMNC-controller.



45-station Z turret





Integrated ejector sleeves for exchanging dies

Five possible versions

Depending on the model, the EM series is equipped with different turret versions for various requirements:

EM-2510 NT

is equipped with a conventional 45-station turret, consisting of two identically-sized turret plates.

EM Z-3510 NT and EM Z-3610 NT

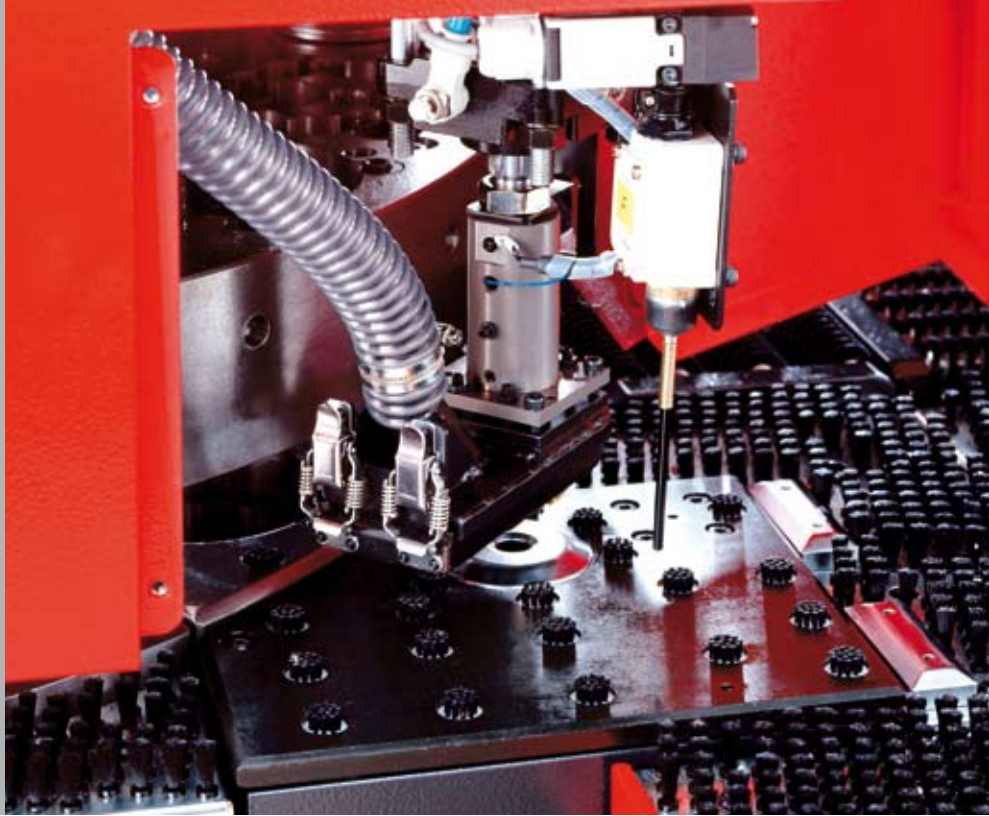
are equipped with a 45-station Z turret. Better access to the lower tools is achieved by a larger lower turret plate. Dies can be exchanged within seconds with the help of ejector sleeves. The Z turret therefore ensures savings in setup times of 50 percent or more.

EM K-3510 NT and EM K-3610 NT

with the 58-station King turret offer the largest tool equipping possibility and rotatable stations up to an envelope diameter of 114.3 mm.



Faster, easier tool changing in the Z turret with the help of ejector pipes

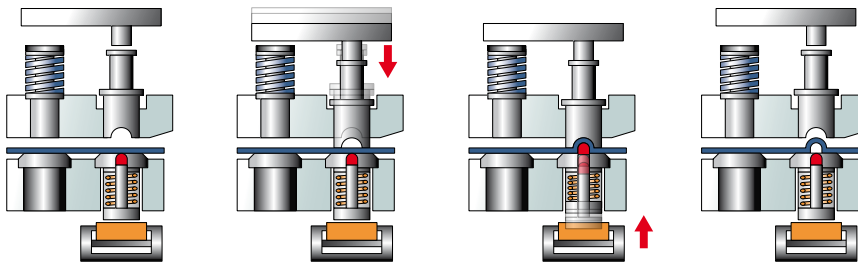


External multi tapping unit M 2.5 to M 8

Flexible forming

The Punch & Forming unit

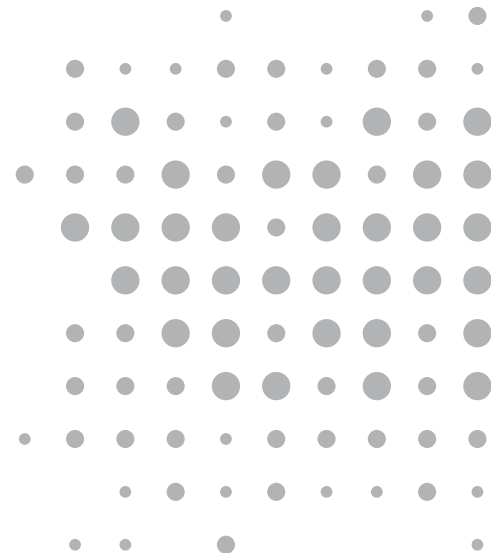
The Punch & Forming unit provides the best solution for all types of forming. It enables high-quality forming up to a height of 20 mm. The programme-controlled form cylinder, that is situated underneath the sheet metal to be processed, presses the chosen tool upwards. The counter pressure takes place above the upper tool. Whether simple or bent edges, whether burls or other elevations – the possibilities opened up to you by the optional Punch & Forming unit are practically unlimited.



"Punch & Forming" for forming up to a height of 20 mm

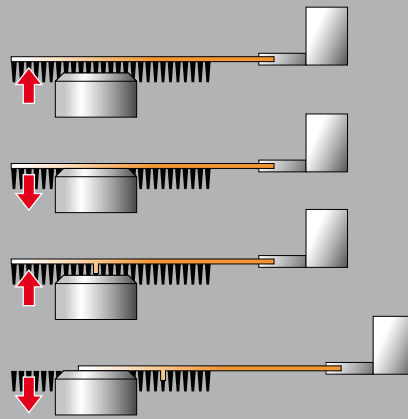
The multi tapping unit

The external multi tapping unit is equipped with up to eight drill taps that are directly accessible by programming command. This option makes sure that no tool positions are lost in the turret. The integrated suction immediately removes abrasion particles and shavings that occur. Optimal lubrication is also ensured. In addition, the tapping unit is equipped with a sensory tool damage control.



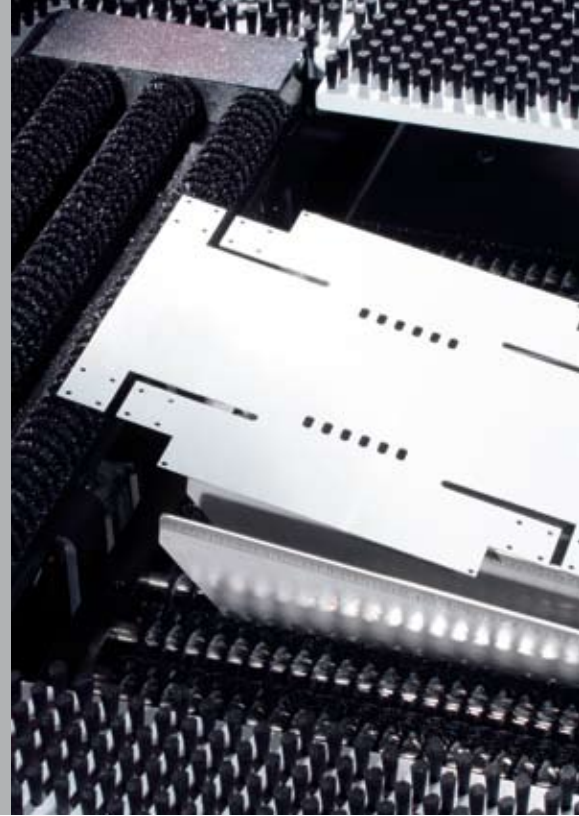
Reliable – scratch-free

The AMADA EM series is equipped with a brush table. As an option, this can also be delivered as a lifting brush table that can be elevated up to 5 mm by programme control to reliably avoid scratching the workpiece even under difficult conditions. This function even enables reliable processing of downward-directed forming such as threaded nozzles.



Above: Lifting brush table for low-scratch processing

Right: work chute



Work chute tool

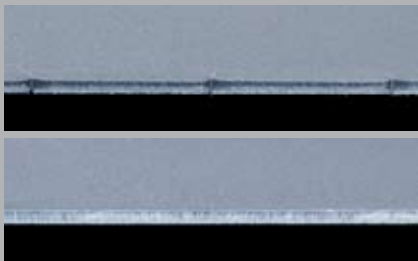


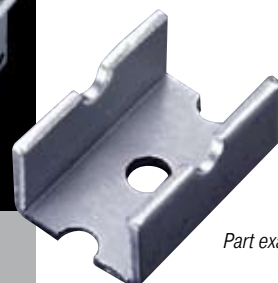
Illustration above shows without, below with slotting tool



Marking function



Inch Bend Tool



Part example of an inch bend tool

Extended functionality

- **Work Chute Tool** – for very effective small part processing with subsequent ejection via the die
- **Slotting Tool** – for smooth punching from any angle
- **Marking function** – for alphanumeric marking of parts at up to 1800 strokes/min
- **Inch Bend Tool** – for complete production of smaller formed parts without additional work cycles

Excellent equipment features

Possible features

- Servo-electric punching operation with up to 300 kN
- Work chute up to 500 x 500 mm
- Brush table up to 4.5 mm material thickness
- External eight-fold tapping unit
- Air blow tool lubrication
- Air jet vacuum or power vacuum punch slug removal
- Tool lift for larger tools
- Lifting brush table
- Punch & forming unit
- Marking function
- Automatic tool changer

Convenience & Compatibility

One controller for all machines

Almost all AMADA machines are equipped with a cross-technology, multimedia AMNC controller (AMADA Multimedia Network Controller) that is very easy to operate.

The AMNC controller guarantees the easiest handling and error-free processing even with multiple machine operation – independent of whether operation takes place directly at the desired machine or via Ethernet and PC.

Using the AP100 software, the AMNC PC controller saves all production-relevant data, which can be recalled at any time. As an option, this data can be into a barcode system and immediately transmitted to the machine.





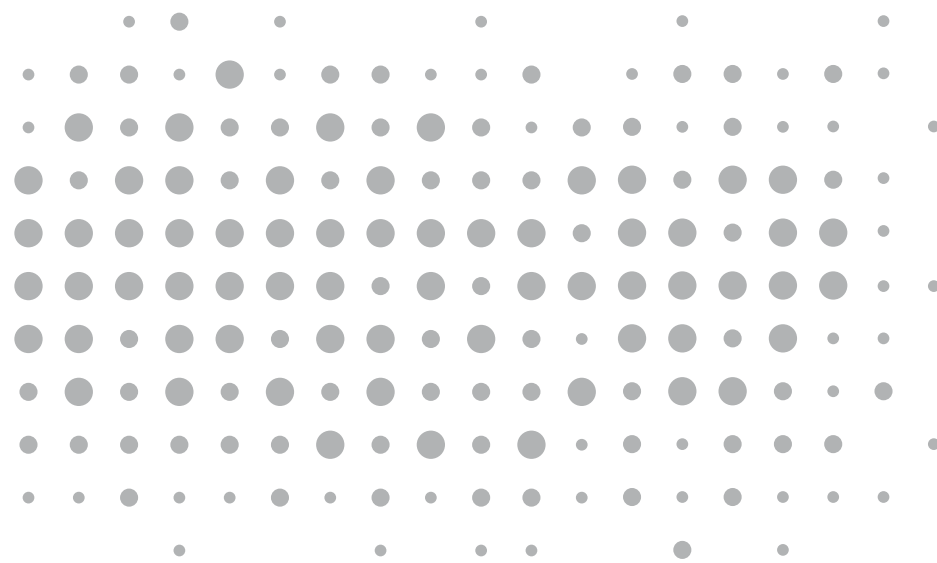
Success from one single source

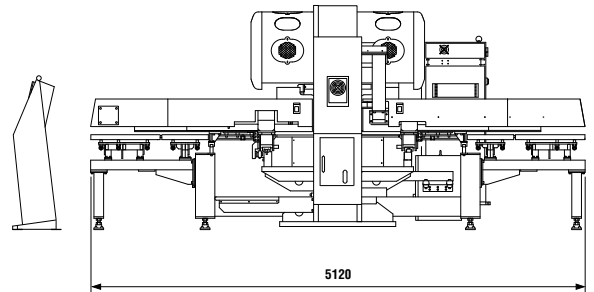
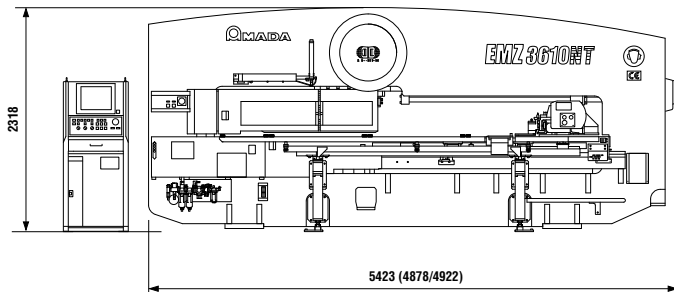
The advantage of the modular structure, which applies both to the software and the AMADA automation range enables stepwise implementation and extension of your production according to your needs.

Ask us for a tailor-made concept that totally considers your individual needs and possibilities.

Extendable by modular automation solutions

- Loading systems
- Unloading systems
- Parts sorting
- Storage systems





Dimensions in brackets (EM-3510 NT: 4878, EM-2510 NT: 4922)

Technical data	EM-2510 NT	EM-3510 NT	EM-3610 NT
Punching force	200 kN	300 kN	300 kN
Machine movement range			
Axis travel (Y/X)	2500 x 1270 mm	2500 x 1525 mm	
With automatic repositioning	5000 x 1270 mm	5000 x 1525 mm	
Max. material thickness* (normal steel)	3.2 mm	4.5 mm	4.5 mm
Table loading weight	150 kg	150 kg	160 kg
Positioning speed	X-, Y- axis 100/80 m/min		
Simultaneous axis speed	128 m/min		
Positions accuracy (without repositioning)*	± 0.1 mm (in "high accuracy mode" ± 0.07 mm)		
Turret	45 stations	45 stations or 58 stations	
Of which are rotatable		4 stations	
Turret version	normal	45-station -Z or 58-station King turret	
Max. tool diameter		Ø 114.3 mm	
Turret rotation speed		30/min ⁻¹	
Number of punching strokes			
Max. hit rate		1000/min	
With 25.4 mm pitch		500/min	
Marking mode		1800/min	
Machine frame		Bridge rack	
Punching drive		Servo-electric twin drive	
Turret/table drive		AC servomotors	
Clamping claws		Pneumatic	
Electrical connection		400 V/50 Hz (+ 6 %, - 10 %)	
Electrical consumption		1 kW in standby (5 kW average)	
Machine air requirement		250 l/min	
Air jet vacuum air requirement		250 l/min	
Machine weight	18,000 kg	22,000 kg	24,500 kg

Controller	
Model	AMNC-F
Memory capacity	10 MB HD hard disk
Number of controlled axes	5
Programming	Absolute/incremental
Input resolution	0.01 mm
During rotation	0.01°
Max. input value	± 99999.999
Approach zero point	Manual or by programming command

Possible features	
■	Parts flap up to 500 x 500 mm
■	Air Blow V-EX
■	Air Jet Vacuum or Power Vacuum
■	Punch & Forming
■	External tapping unit
■	Barcode reader
■	Wedge levelling elements
■	Sheet metal deformation sensors
■	Side tables
■	Adjusting tools
■	Punch slugs and workpiece conveyer belts
■	Tool grinding machine
■	Loading and unloading systems
■	Programming software



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In the interest of technological progress, we reserve the right to make any changes to technical dimensions, construction and equipment as well as illustrations. Specifications on accuracy in accordance with VDI/DGQ 3441. *Workpiece precision and material thickness to be processed are also dependent on production conditions, material, type of workpiece, its pretreatment, size of the table as well as the location in the work area.