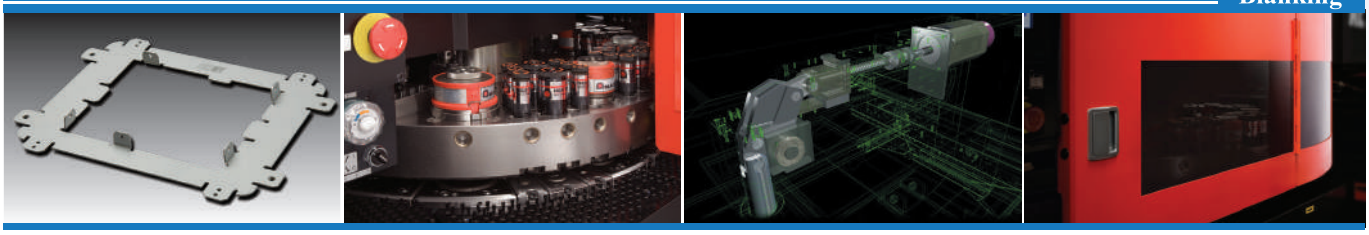
SOLUTION

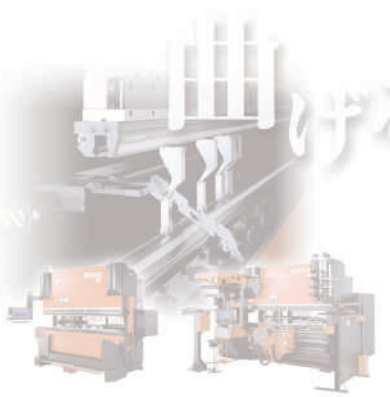
AMADA DIGITAL INNOVATION
V-factory

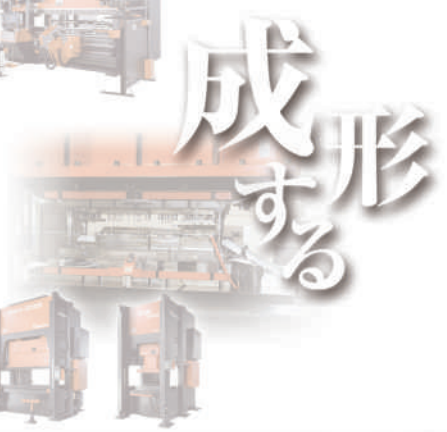
AE NT SERIES

Single AC servo-drive turret punch presses

Blanking







The Engineering AMADA

AMADA

Compact, eco-friendly and intelligent new turret punch press
Debut of AE-NT series

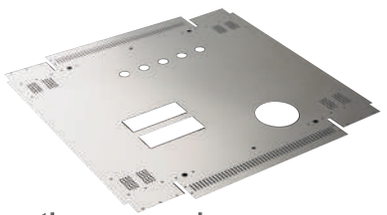
Amada's turret punch presses have been delivered more than 30,000 units worldwide. Developed on these results, the AE-NT series is a line of single AC servo drive turret punch presse with Amada's original "highly rigid bridge frame".
Designed with the smallest foot print of its class and yet capable of processing 4' x 8' sheets, the AE-NT series has a large capacity turret to ensure stable, high speed, high quality processing.
Various process integration functions as well as environmentally conscious design provide processing with high cost performance.

Single AC servo-drive turret punch presses

AE NT SERIES

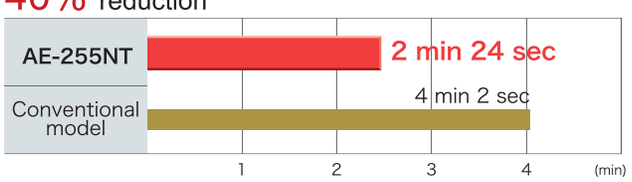
Typical processing samples
(productivity comparison with conventional model)

Material : SUS 1.2 mm
Size: 839 x 835 mm

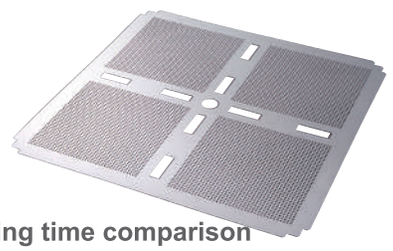


Processing time comparison

40% reduction

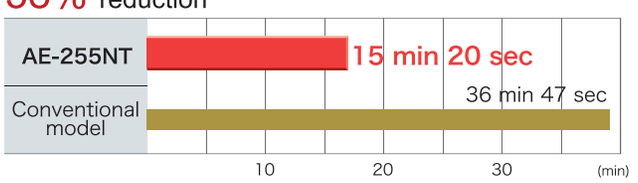


Material : SECC 1.0 mm
Size: 905 x 905 mm

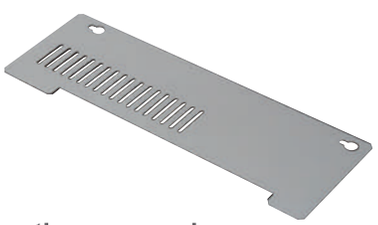


Processing time comparison

58% reduction

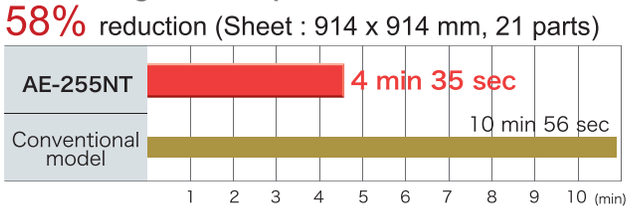


Material : SECC 1.6 mm
Size: 274 x 94.6 mm

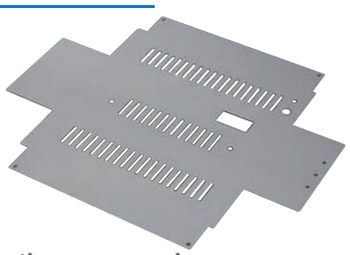


Processing time comparison

58% reduction (Sheet : 914 x 914 mm, 21 parts)

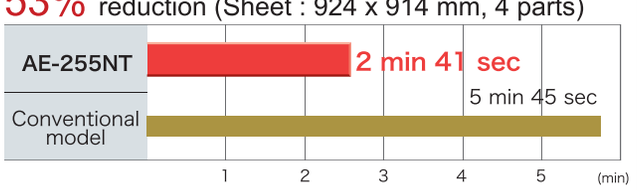


Material : SECC 1.0 mm
Size: 333.4 x 392.3 mm



Processing time comparison

53% reduction (Sheet : 924 x 914 mm, 4 parts)



Setup reduction

Defective part reduction

Material utilization improvement

Processing speed improvement

Customer requirements

Process integration

Energy saving

Space saving

Compact, eco-friendly, intelligent AE-NT series can meet customer requirements

Achievement of stable high speed processing

Achievement of high quality processing

Achievement of process integration

AE-NT series New technologies

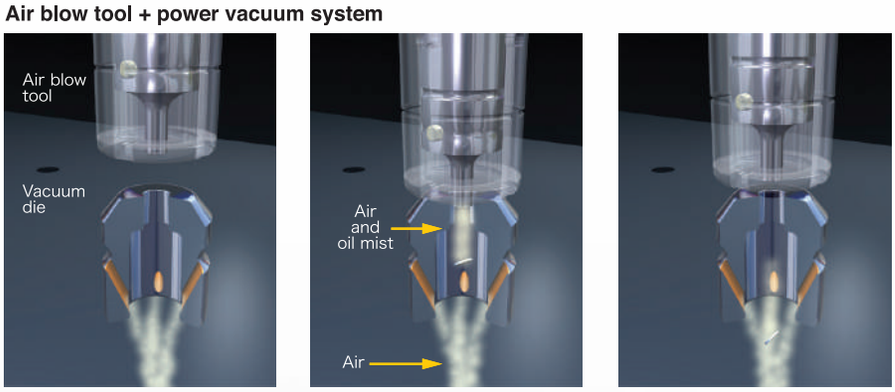
1 Achievement of stable high speed processing

Slug pulling-less punching

Less slug pulling achieved stable high speed punching

The power vacuum system injects a strong air stream into the die and sucks slugs down through the die. (Small size station slug pulling can be effectively prevented.) As a result, a small penetration of puch into die(1mm)can be achieved. The optional slug suction unit can be used in combination to prevent large size station slug pull.

Air blow tool + power vacuum system

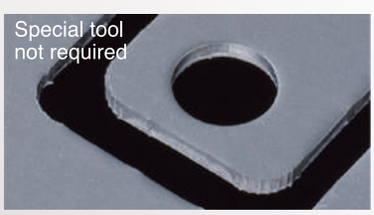


The air blow tool blows air and oil mist into the die during punching to prevent slug sticking and pulling.
The power vacuum system sucks the slug down through the die.

Fine contouring

No special tools are required. Special shapes and radii can be processed as successfully as by laser cutting.

Nibbling pitch is less than the material thickness. As a result, filing after processing nor special tools are no longer necessary. The process time is dramatically reduced due to high speed punching although the number of hits increases.

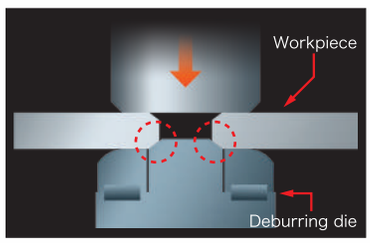


2 Achievement of high quality processing

High speed deburring
Labor and time consuming deburring is automated and speeded up.

The bottom surface of the workpiece is equally pressed against the chamfered part of die tip to remove the burrs. The deburring tool is to be used after slitting punching.
Reference: Deburring tool size: 6x 6 mm SQ, 6 x 20 mm RE, ϕ2.

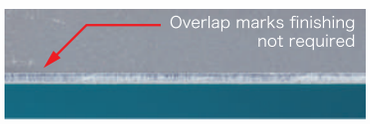

Deburring tool (10 x 10 mm SQ)



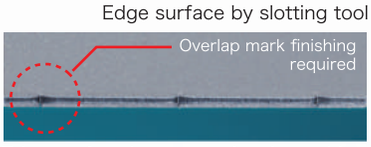
Slotting
Realized without tool overlap marks that eliminates manual filing work.

The slotting tool is installed in a 2" auto-index station. It can produce overlap mark-free edges at any desired angle. (using 2" auto index station)


2" slotting tools Ⅲ



Edge surface by slotting tool

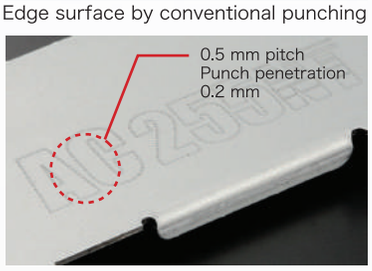


Edge surface by conventional punching

High speed marking
Secondary operations are remarkably being efficient.

A hit rate of 900 min^{-1} is achieved. Part names, lot numbers, bend lines, weld positions, and similar information are marked to greatly improve the efficiency of secondary operations.


Marking tool (downward type)



3 Achievement of process integration

High speed forming
Parts can be formed to desired shapes and dimensions without using special tools.

Conventionally, forming operations, such as step bending which was another process, are also processed at high speed with arbitrary form and sizes by practical use of an auto index.


Offset bending tools


Offset bending

Downward forming
Parts can be formed at high speed without damage and scratches

A floating brush table prevents scratches or crush of a forming part of downward burring, tapping at a time of work moving that achieved high speed processing. Process integration is realized.

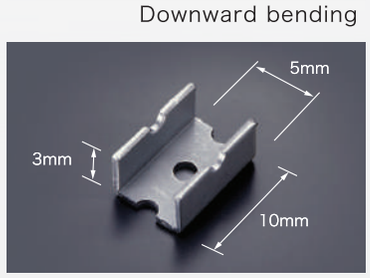

Tapping tool


Downward bending

Safety inch bending
Minimal flanges can be automatically bent.

Downward bends can be formed with burrs orienting inward. Minimal flanges and round flanges that the backgauge has not been capable of being applied can now be formed.

Material thickness of 0.5 to 1.6 mm

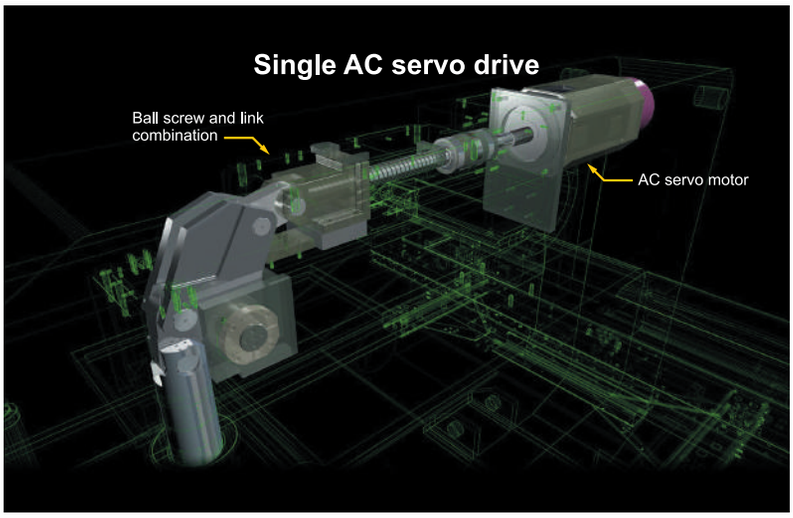


Other functions (including options)

AE EM

Drive mechanism

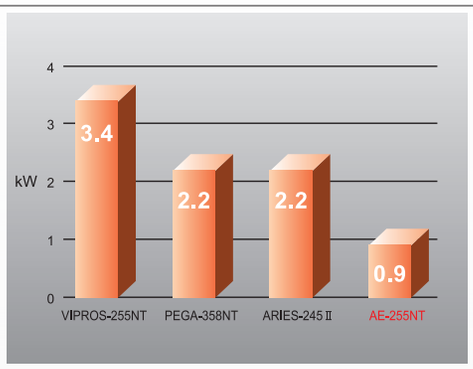
The AE-NT series uses a single AC servo drive system. Marking at a hit rate of 900 min^{-1} is realized. The drive mechanism is contained in the bridge frame. The press drive that uses a highly durable ball screw and link combination achieves stable high speed processing with high productivity.



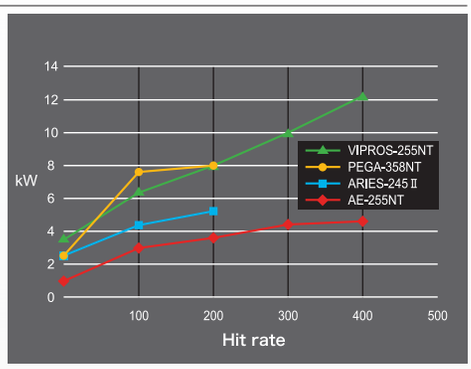
AE EM

Ecology

Despite its high hit rate, the AE-NT series consumes only 19 kVA power. Its standby power consumption is the smallest of Amada's turret punch presses. Lower power consumption is also achieved during processing at high hit rate. Other environmental considerations, as elimination of hydraulic oil change, are implemented.



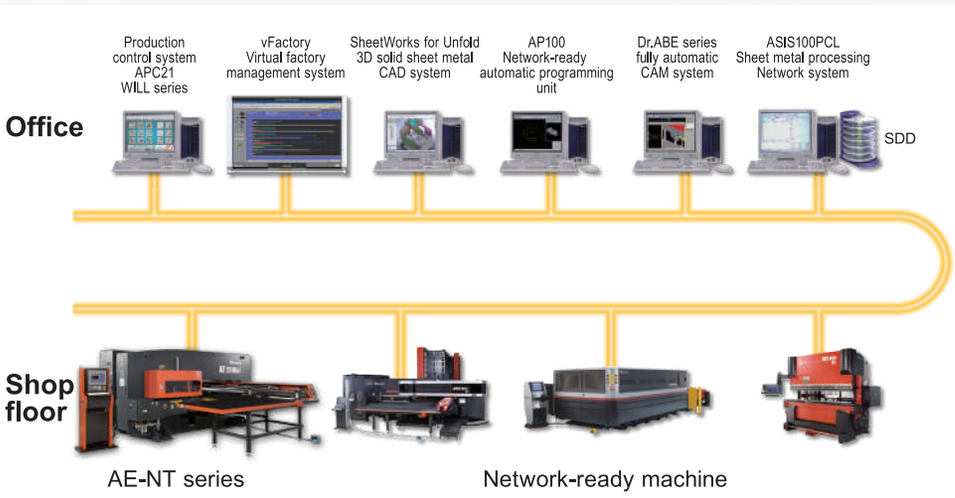
Standby Power consumption graph



During operation Average power consumption graph

Network

Amada proposes a digital production system centered on the virtual prototype simulation system (VPSS). The processing data created in the office can be managed in an integrated manner by the SDD and can be called up through the network and used on the shop floor.

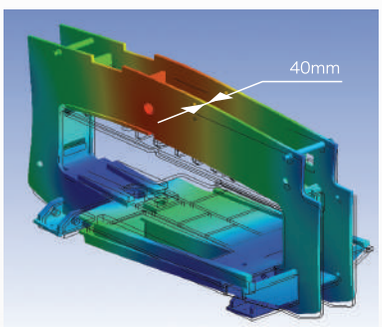


AE = AE-NT SERIES EM = EM-NT SERIES

AE

High rigidity

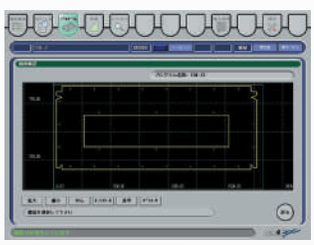
The bride frame of the AE-NT series is 40 mm in thickness, heavier gauge than that of the PEGA-357 and VIPROS-2510, and is designed with high rigidity. This high rigidity bridge frame structure provides stable, high speed, high accuracy processing over a long period of use.



AE EM

Intelligence

The AE-NT series is equipped with a network-ready AMNC/PC system. Tool setup, guide input program creation and editing, and press control pattern solutions enable the AE-NT series to improve functionality and perform a wide variety of processing operations. The overload detection function detects an overload and protects the AE-NT series from the overload. This function ensures the operation of the AE-NT series at an optimum load and prolong its service life.


Draw and check


Tool setup


Press pattern

AE EM

Large capacity turret

The turret can be loaded up to 58 tools. The tool setup time is reduced to improve productivity. The 120 mm thick turret securely holds the tools during high speed processing and supports the high accuracy processing of the AE-NT series.

AE EM

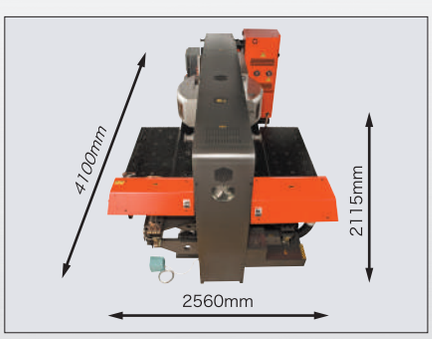
Tool balancer

The tool balancer is used to load/unload a large size tools in the turret. It facilitates and accelerates the setup of tools, alleviates the workload of the operator, and enhances the operating rate of the AE-NT series.

AE

Space-saving

The AE-NT series achieves a Y-axis stroke of 1270 mm. It has a large-capacity turret carrying up to 58 tools but is as compact as the ARIES-245Ⅱ.

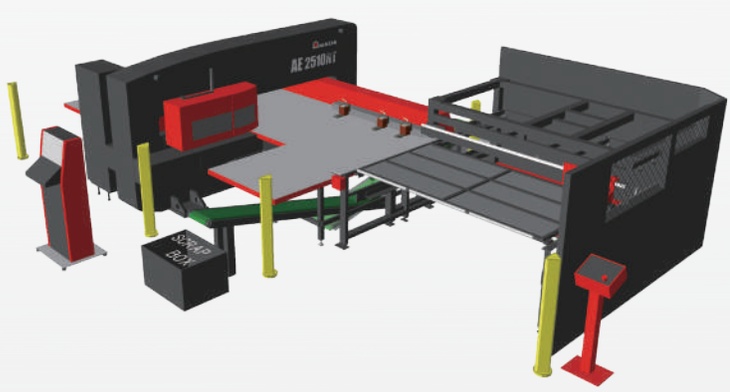


Lineup


AE-2510NT


AE-255NT

System up

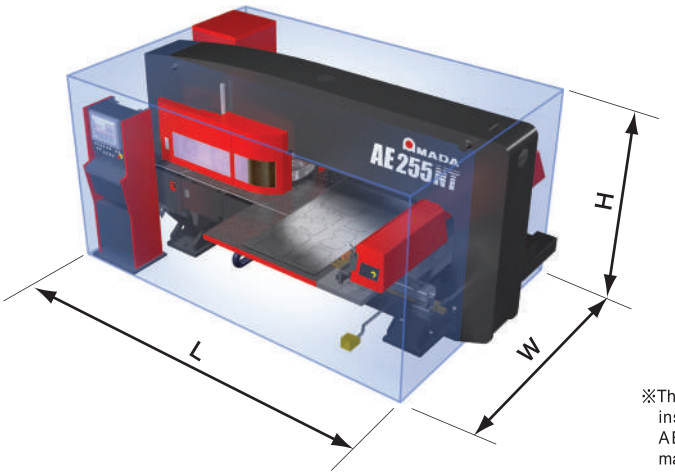

AE-2510NT+MP-2512C1

■Machine area comparison

Unit: mm

AE-255NT
(L : 4155 x W : 2560 x H : 2115)

ARIES-245 II NT installation range
(L : 3814 x W : 2560 x H : 1963)



※This imaginary illustration compares the installation area of the new machine AE-255NT with the conventional machine ARIES-245 II NT.

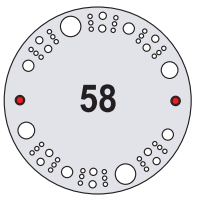
■Machine specifications

Model		AE-2510NT	AE-255NT
Press capacity	kN	200	
Drive system		Single AC servo drive	
Stroke length	mm	42	
Maximum material thickness	mm	3.2 (brush table)	
Axis travel distance, 1 clamp	mm	1270 × 2500	1270 × 1270
Maximum axis feed rate	m／min	X:80, Y:60	
Maximum workpiece mass	kg	50 (F1), 150 (F4)	
Hit rate	min^{-1}	X:350, Y:280 (Stroke = 5 mm, Pitch = 25.4 mm)	X:370, Y:270 (Stroke = 5 mm, Pitch = 25.4 mm)
Processing accuracy	mm	±0.1 (multi mode ±0.07)	
Turret rotation speed	min^{-1}	30	
AI rotation speed	min^{-1}	60	
NC unit		AMNC/PC	
Power requirement	kVA	19	
Maximum air consumption	Nl／min	750	
Mass of machine	kg	12500	12000

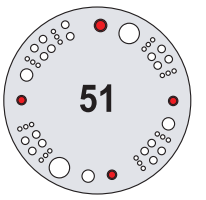
■Turret layout pattern

	Pattern 1	Pattern 2	Pattern 3
Layout pattern	58st.(2AI)	51st.(4AI)	45st.(4AI)
Maximum tool diameter	E(4-1/2")	D(3-1/2")	E(4-1/2")
Number of A (1/2") stations	36	24	24
Number of B (1-1/4") stations	12	18	12
Number of C (2") stations	4	3	2
Number of D (3-1/2") stations	2	2	1
Number of E (4-1/2") stations	2	—	2
Number of G (1-1/4") stations	2	3	2
Number of A (2") and AI stations	—	1	2

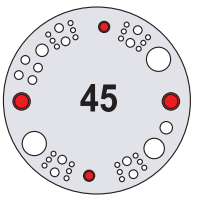
58 stations (2 AI stations)



51 stations (4 AI stations)



45 stations (4 AI stations)



For Your Safe Use
Be sure to read the operator's manual carefully before use.
●When using this product, appropriate personal protectionequipment must be used.

*Specifications, appearance and equipment are subject to change without notice by reason of improvement.
*The official model names of machines and units described in this catalog are non-hyphenated like AE2510NT.
Use these registered model names when you contact the authorities for applying for installation, exporting, or financing.
The hyphenated spellings like AE-2510NT are used in some portions of this catalog for sake of readability. This also applies to other machines.
*The specifications described in this catalog are for the Japanese domestic market.

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Inquiry

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