

# SOLUTION



Fully automatic punching solution machine

# EM ZR

## SERIES

EM-3510ZR T / EM-3612ZR T / EM-3510ZR B / EM-3612ZR B

Blanking



あける



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成形する

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The Engineering AMADA



磨





# AC servo direct twin drive and ZR turret

## **Fusion** original technologies to achieve processing with high speed, productivity and grade

The EM-ZR series comes with the world's unparalleled drive system, or AC servo direct twin drive, and the ZR turret, a major innovation since the development of Amada's first numerically controlled turret punch press (NCT).

Parts can be produced not only with high speed and productivity but also with less scratches. Further with ID tools and elimination of processing limits, the EM-ZR series can perform high-mix low-volume production continuously over 72 hours.



AC servo direct twin drive

DD mark is on each AC servo direct twin drive machine.

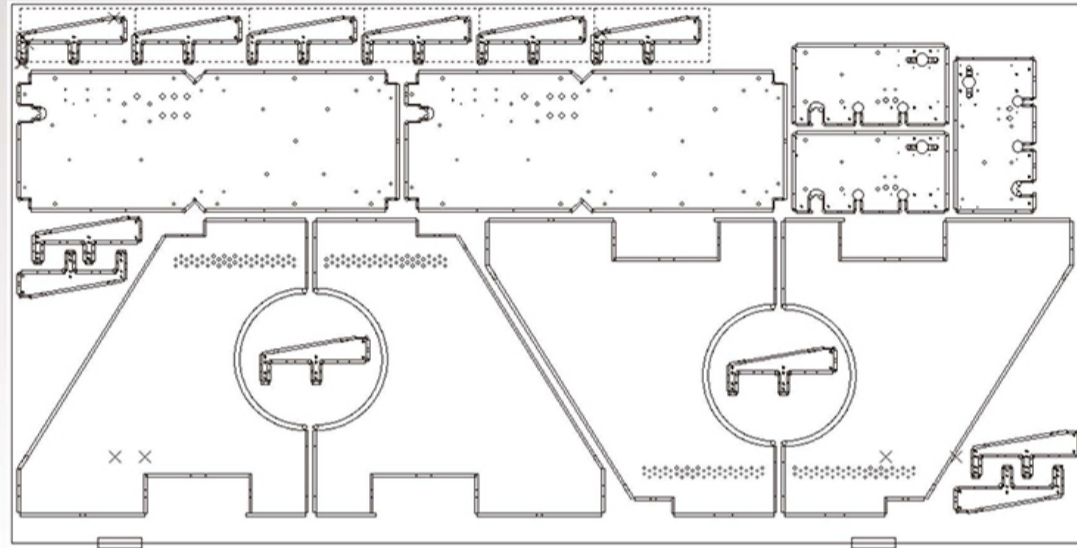
Fully automatic punching solution machine

# **EM ZR** SERIES



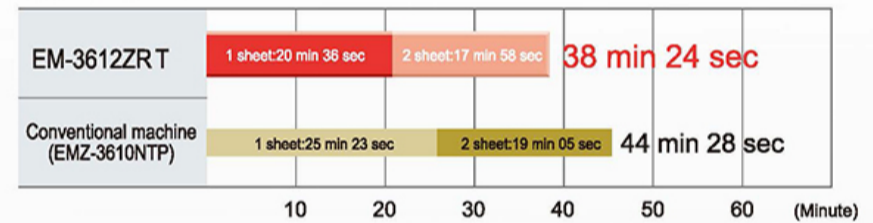
# Typical processing samples

## Processing time comparison per sheet

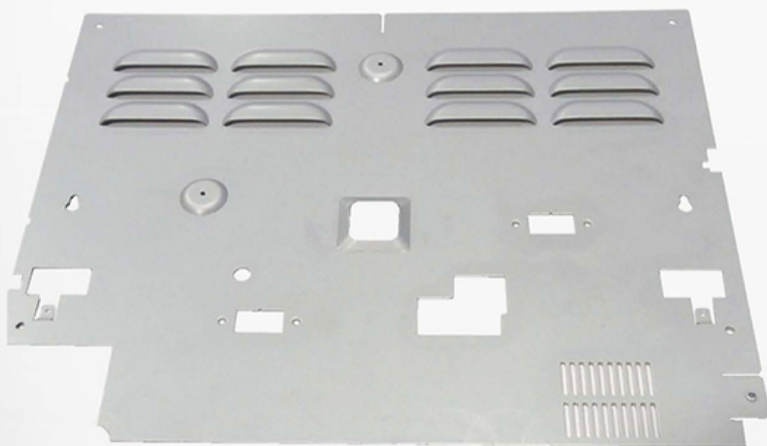


Material	Aluminum 3.0mm
Size	2000×1000mm
Number of sheets processed	2
Number of tools used	21
Processing features	114 tapping hits

### Processing time comparison 15% reduction

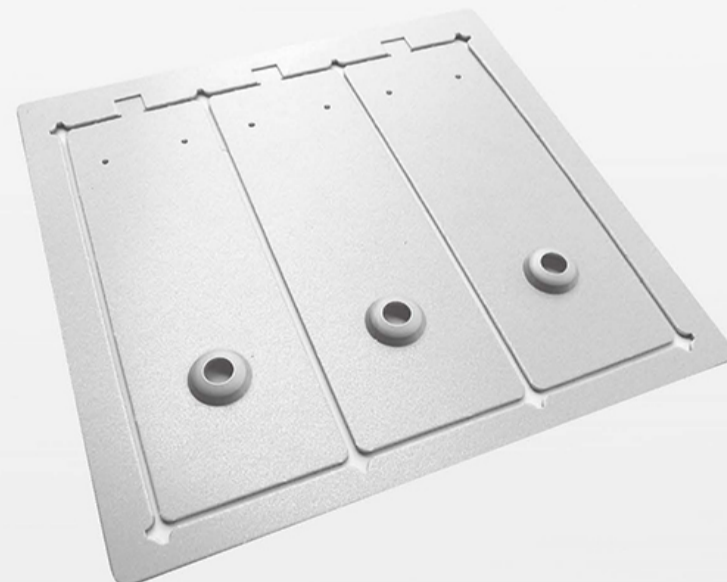


Material : SECC 1.6mm  
Size : 500×400mm



Processing time **6min40sec**

Material : SECC 1.6mm  
Size : 184×180mm



Processing time **1min20sec**



# EM-ZR series New technologies

## 1 High quality and high speed processing

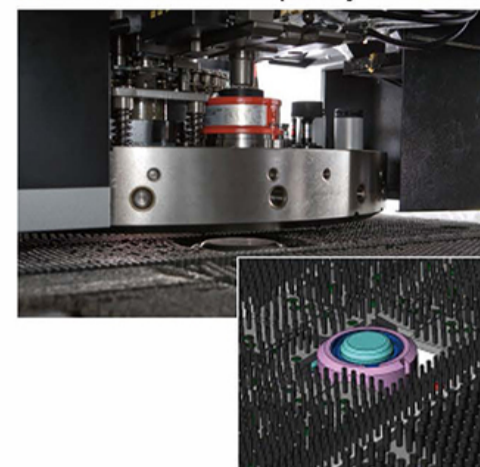
### High speed processing of formed parts without scratching bottom surfaces

#### 1 High speed processing with scratch-free bottom surfaces ZR turret and completely flat table

Free from scratching of the bottom surface by the tools and to devise forming process programs. The ZR turret and completely flat table have brought an evolution in the turret punch press.

The die rises only as much as required for processing. This feature allows for scratch-free production of upformed parts, downformed parts, and tall parts.

#### 1 ZR turret and completely flat table



Die rises only as much as required for processing

#### 2 Easy programming

##### No track dead zones, free tool location

A new track structure eliminates the restrictions on tool location. When tools are specified, the optimum tool arrangement is automatically created by reference to their ID. This facilitates programming and improves material utilization.



#### EM-ZR T type : Tool storage specification

A high capacity rack housing 300 tools and a new ATC provide a solution for reducing tool setup downtime.



## 2 Stable high quality processing

### Digital quality management with ID tools

#### 1 Prevention of tool setup mistakes ID tools

IDs are marked on tools so that the tools can be digitally managed on an individual basis. When a tool is installed, the machine automatically checks its ID to make sure that it is a correct tool.

#### 2 Stabilization of high quality processing Tool condition management

Tools that need maintenance are displayed beforehand. The tools can be always maintained in the best condition.

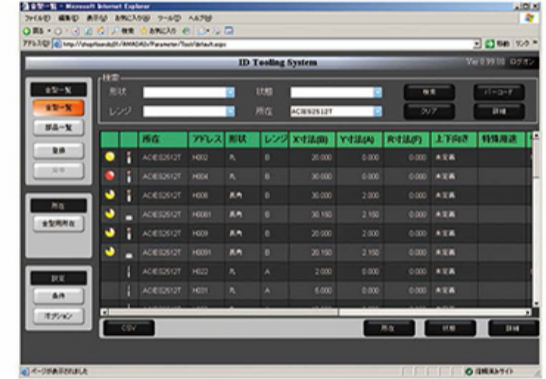
#### 3 Elimination of shimming time Automatic die height adjustment

The height of dies is automatically adjusted to suit their regrinding amount. This means that their height need not be adjusted by shimming.

#### 1 ID tools



#### 2 Tool condition management



## 3 Automation of tool setup

### Reduction of programming time and machine downtime

#### 1 Easy creation of nesting data High tool storage capacity

A maximum of 300 tools can be installed to provide the ease of creating nesting data according to production plans.

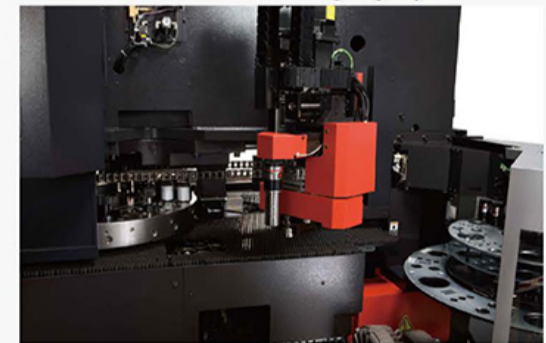
#### 2 Reduction of machine downtime Automatic tool changing system

Tool setup that occurs with every part is automated to sharply reduce the machine downtime. Also, two dies with difference clearances can be held for one punch to process materials of different thickness and type with proper clearance.

#### 1 High tool storage capacity



#### 2 Automatic tool changing system





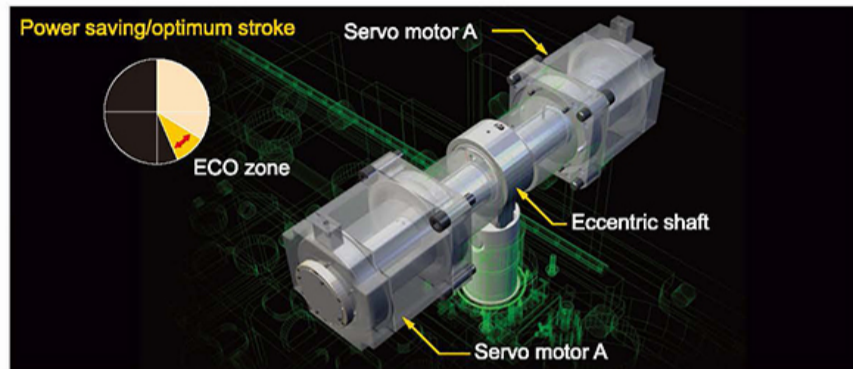
## Other functions (including options)

Option

EM-ZR EM-MII EM-NT

### AC servo direct twin drive

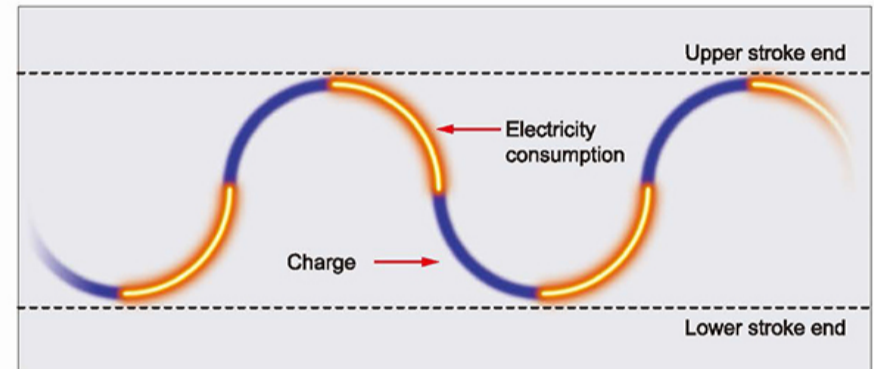
The AC Servo Direct Twin Drive has simple and well-balanced structure : special AC servo motors are directly connected to the right and the left ends of the eccentric shaft. With the streamlined operation, the mechanism has realized high hit rate and optimum stroke according to the sheet thickness.



EM-ZR EM-MII EM-NT AE LSE

### Load-leveling power circuit saves electricity

This is a new mechanism to collect and store in a capacitor the energy generated while brake is applied to the ram and enables reusing the stored energy for accelerating the ram.



EM-ZR EM-MII LSE

### Punching of 5' by 10' sheets without repositioning

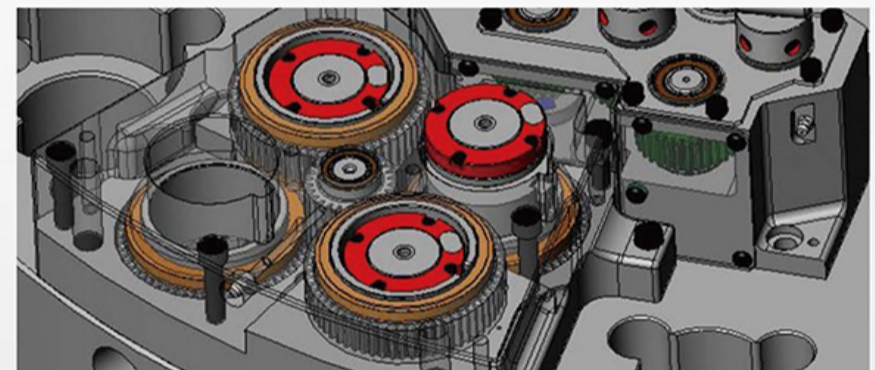
An X-axis travel distance of 3050 mm (EM-3612ZR T and EM-3612ZR B) allows 5' by 10' sheets to be punched without repositioning. This helps to achieve fast and stable processing and to reduce complicated programming tasks. Cumbersome programming tasks can also be reduced.



EM-ZR EM-MII LSE

### MPT tapping tools (tapping stations)

Dedicated MPT tapping stations are installed in the turret. Holes can be punched and tapped in the same area. This means that workpieces can be punched and tapped without repositioning. The processing time and program time can be reduced as a result.



## Lineup



EM-3612ZR T



EM-3510ZR B



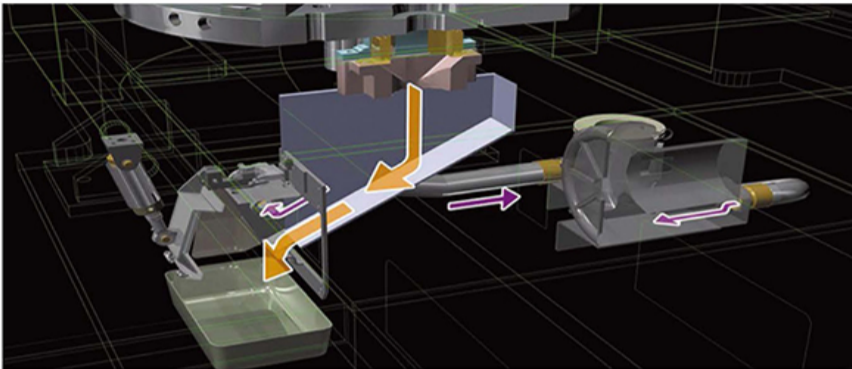
Fully automatic punching solution machine **EM ZR** SERIES

- EM-ZR** = EM-ZR SERIES
- EM-MII** = EM-MII SERIES
- EM-NT** = EM-NT SERIES
- AE** = AE-NT SERIES
- LSE** = LSE

**EM-ZR** **EM-MII** **LSE**

**New slug suction unit**

A new attachment has been developed for use in the popular slug suction unit. The attachment prevents slug pulling with three inverter-controlled suction force stages in each station.



**EM-ZR**

**TSU (Tool Storage Unit) controller**

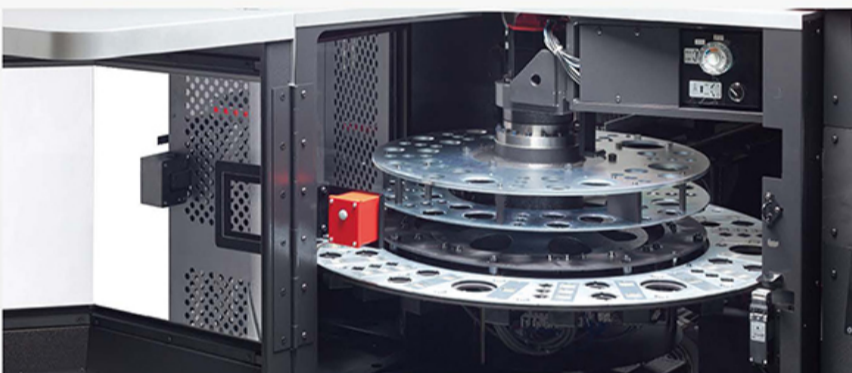
Sub monitor installed near the tool storage setup station. The TSU controller is required when the NC control panel is located apart from the setup station or is installed near the buffer turret when the machine is equipped with the buffer turret.



**EM-ZR**

**Buffer turret**

A total of 69 tools can be mounted in the machine turret and buffer turret. With the tool storage specification, tools to be installed on the machine turret are prepared in the buffer turret.

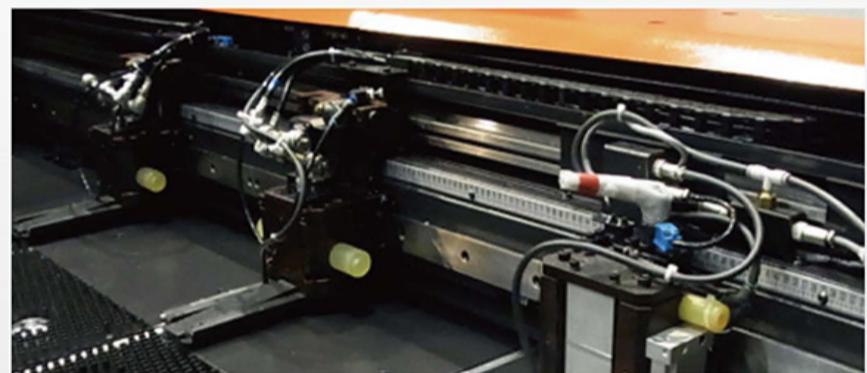


**EM-ZR** **EM-MII**

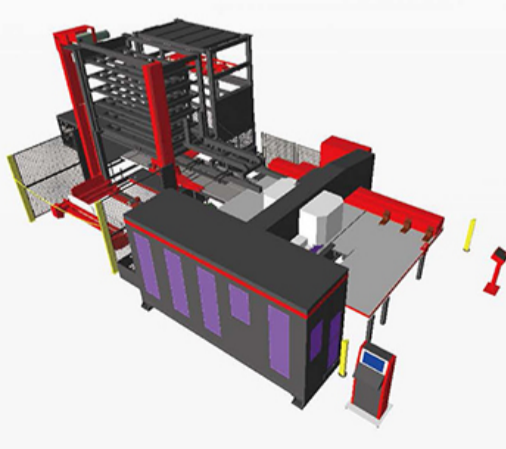
**Stationary clamps + clamp positiner (3-clamp specification)**

Clamps are automatically positioned as programmed to allow for long, continuous automatic operation.

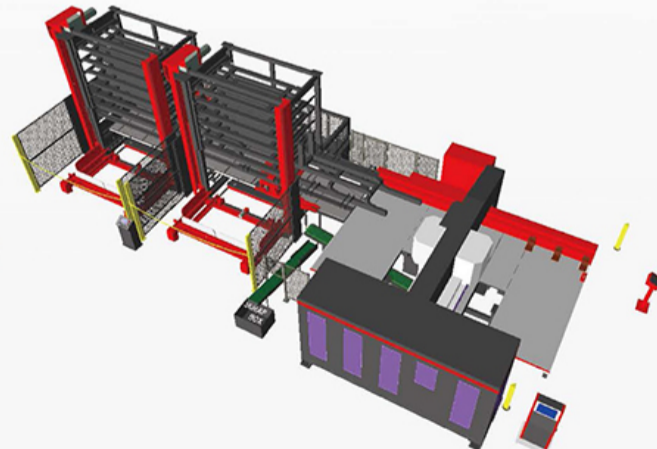
- Clamp 1: L clamp (manual)
- Clamps 2 and 3: Clamp positiner



**System up**



EM-ZR + takeout loader + material and part shelves (6 shelves)



EM-ZR + takeout loader + material shelves (6 shelves) and part shelves (6 shelves)



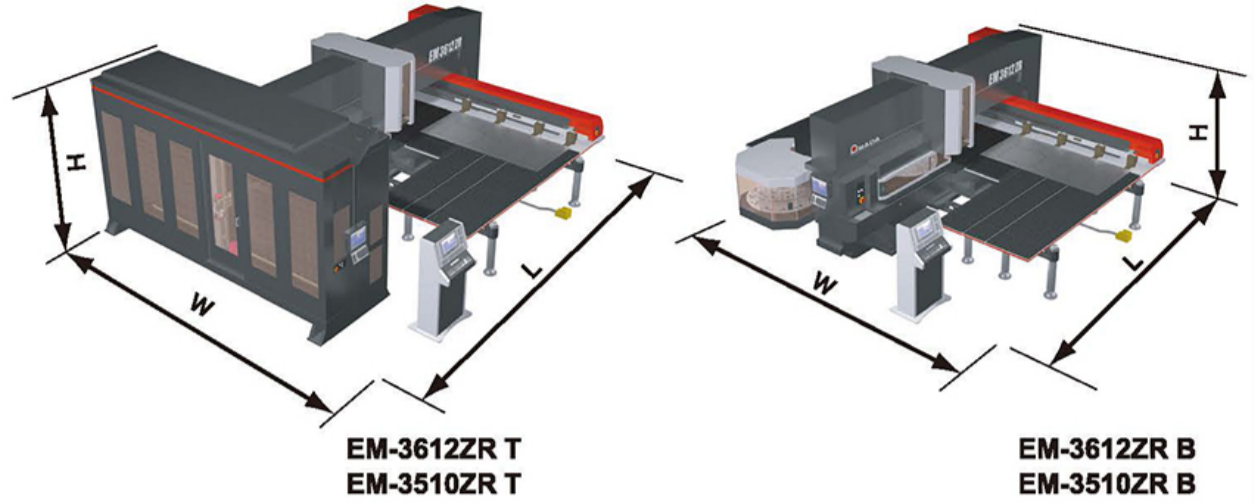
EM-ZR + takeout loader + material and part warehouse



■ Dimensions

Unit : mm

- EM-3612ZR T  
(L : 7415 x W : 6220 x H : 2666)
- EM-3510ZR T  
(L : 7005 x W : 5120 x H : 2666)
- EM-3612ZR B  
(L : 6582 x W : 6220 x H : 2367)
- EM-3510ZR B  
(L : 6157 x W : 5120 x H : 2367)



■ Machine specifications

Model	EM-3510ZR T	EM-3612ZR T	EM-3510ZR B	EM-3612ZR B
Press capacity	kN 300			
Drive system	ACservo direct twin drive			
Turret specifications	ZRTurret			
No. of stations (TSU)	179 or 300 stations		—	
No. of stations (Buffer)	—		69 or 65 or 75 stations	
Processing range	mm 2500 x 1275	3050 x 1525	2500 x 1275	3050 x 1525
Maximum workpiece thickness	mm 3.2			
Maximum workpiece mass	kg 50(F1)/150(F4)			
Table feed rate	m/min 120 x 80	100 x 80	120 x 80	100 x 80
Hit rate	min <sup>-1</sup> 500(stroke =5mm pitch =25.4mm)			
Hit rate	min <sup>-1</sup> 745(stroke =5mm pitch =2.0mm)			
Hit rate	min <sup>-1</sup> 1850(stroke =1.4mm pitch =0.5mm)			
Pass line	mm 1050(standalone configuration)			
Processing accuracy	mm ±0.1(according to Amada's inspection standard)			
Slug pulling prevention device	Slug suction			
Mass of machine	kg 23500	25000	20000	21500

■ 32ST-4AI

Maximum tool diameter: D range



Turret



Buffer

Tool size	Number of tools	
	Turret	Buffer
1/2"	14(14)	23
1 1/4"	8(8)	17
1·1/4"-A/1	2(2)	
1·1/4"-Tap	4(4)	
2"	-	2
2"-A/1	2(2)	1
3 1/2"	2(2)	
4 1/2"	-	

1. Numbers in parentheses indicate number of stations where shape tools can be installed.
2. Tapping stations can be used for punching and forming tools as well.

■ 32ST-4AI

Maximum tool diameter: E range



Turret



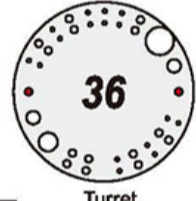
Buffer

Tool size	Number of tools	
	Turret	Buffer
1/2"	14(14)	20
1 1/4"	8(8)	9
1·1/4"-A/1	2(2)	
1·1/4"-Tap	4(4)	
2"	-	2
2"-A/1	2(2)	1
3 1/2"	1(1)	
4 1/2"	1(1)	

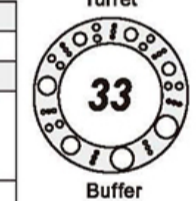
1. Numbers in parentheses indicate number of stations where shape tools can be installed.
2. Tapping stations can be used for punching and forming tools as well.

■ 36ST-2AI

Maximum tool diameter: E range



Turret



Buffer

Tool size	Number of tools	
	Turret	Buffer
1/2"	16(16)	20
1 1/4"	10(10)	9
1·1/4"-A/1	2(2)	
1·1/4"-Tap	4(4)	
2"	2(2)	2
2"-A/1	-	1
3 1/2"	1(1)	
4 1/2"	1(1)	

1. Numbers in parentheses indicate number of stations where shape tools can be installed.
2. Tapping stations can be used for punching and forming tools as well.



**For Your Safe Use**  
Be sure to read the operator's manual carefully before use.

●When using this product, appropriate personal protection equipment 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 EM3612ZR. Use these registered model names when you contact the authorities for applying for installation, exporting, or financing. The hyphenated spellings like EM-3612ZR 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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E046-HQ03en  
Nov.2019