

ARIES

Mechanical Computer
Numerical Control
Turret Punch Press

SERIES

255 · 245II

 **AMADA**

The ARIES features greater cost efficiencies through a variety of types of balanced performance.

ARIES-255

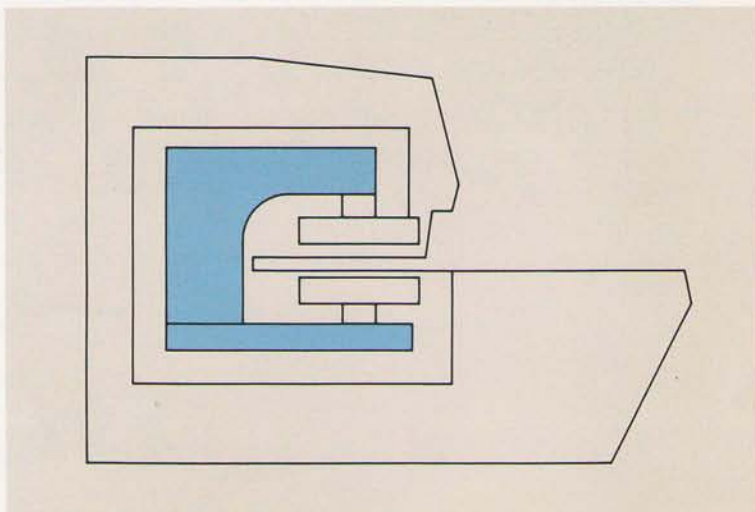


- Press capacity : 200kN {20tonf}
- Maximum sheet Size : 1250×2540mm(include 1 auto-reposition)
- Maximum sheet thickness : 6.35mm
- Turret : 30-station(H-type with two auto-index stations)

High — rigidity double construction frame (ARIES SERIES)

The ARIES series utilizes a double construction frame which combines a high-rigidity main frame with a high-rigidity turret tool holder. Since the striker which punches a tool is installed to the main frame and the tool is held at right angles to the workpiece at all times, the press load does not affect the tool.

The ARIES series can thus sustain high-precision working for a long period and ensures a long tool life .



ARIES-245II



- Press capacity : 200kN {20tonf}
- Maximum sheet size: 1000 x 2540 mm (include 1 auto-reposition)
- Maximum sheet thickness: 6.35mm
- Turret: 30-station (H-type with two auto-index stations)

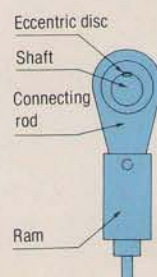
Low noise cam drive mechanism (ARIES 245II)

The ARIES-245 II adopts a newly developed low-noise type double cam mechanism for its driving system.

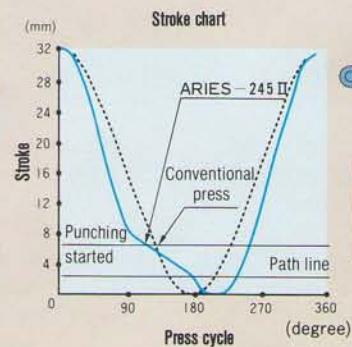
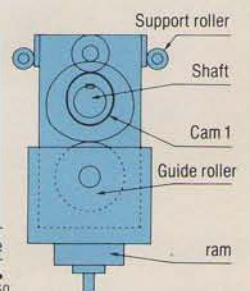
This mechanism is designed for a production cycle that provides a slow momentary speed when a workpiece is punched in order to reduce the cause of noise and then resumes the speed again after punching. This system in combination with the above frame construction design has successfully helped decrease the noise and vibration as much as 20 percent (comparison using our own machines) without any reduction in productivity.

This is the first machine of this type among mechanical systems. The low-noise machine has brought about a great improvement in the factory environment.

Conventional press
(connecting rod system)



ARIES-245 II
(cam system)





H type (30—station, Long tool)

Tool size	Max. punching size	Number of stations
½"	φ12.7	16
1¼"	φ31.7	8
2"	φ50.8	2
3½"	φ88.9	2
1¼" (Auto-index)	φ31.7	2

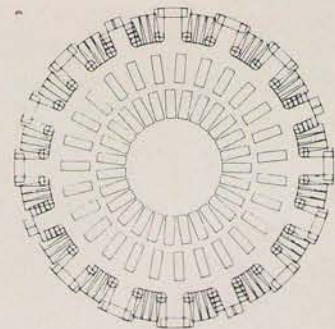
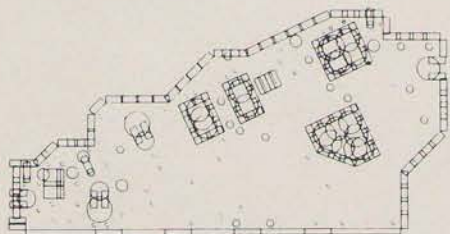
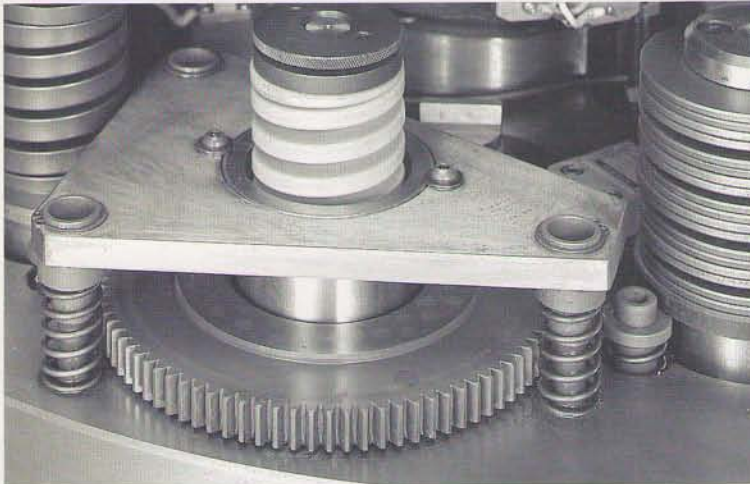
● Auto—index station

2 tracks, 30—station (H type)

The adoption of a 2-track mechanism where tools are arranged in inner and outer track and the striker moves back and forth at a speed of 0.5 second has realized the installation of 30 stations. This is the largest number of tools for this class of punching presses. The specifications allow the reduction in tool setup time and can satisfy future system upgrading.

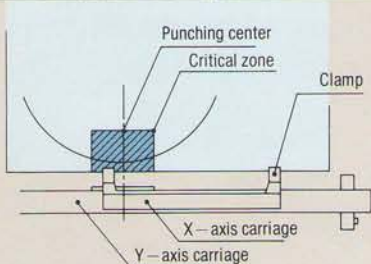
2 auto—index devices

The ARIES series includes 2 auto-index stations as standard equipment. The auto-indexing device is an automatic control device permitting tool (punch and die) angles to be freely set within 360 degrees at high speed revolutions. The device is as effective as the number of mounting tools is increased and can process a complicated profile such as an inclined one at high speed with high accuracy. The auto-index follow-up punching can process shapes relatively better than nibbling time.



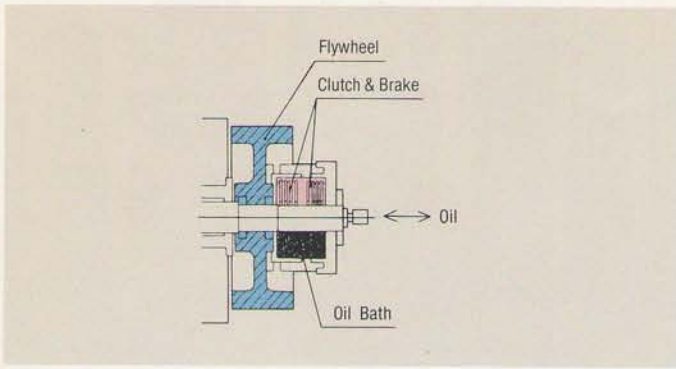
New dead zone detection mechanism

The ARIES series is designed to allow the clamps to pass through between the upper and lower turrets, in order to minimize the portion that cannot be punched (dead zone). The clamps, however, may be punched if punching is done when the clamps come under the punch. To ensure that the work clamps are not punched, the override detection device monitors the clamp positions, and if the clamps move into a critical zone, the machine will automatically stop. In addition, the ARIES series features a mechanism to detect the dead zone for each individual tool size. If the clamps are located under the punch, the sensor automatically detects it, thereby completely eliminating the possible damage to the tool and clamps as the tool will never punch the clamps even if the override button is pressed. Once the override is turned to the "OFF" position, it is not required to ascertain the override from the first work sheet.



Simple tooling replacement

The use of standard 'tool sets' minimises setting time and eliminates the need for tool alignment. Processing can be restarted immediately after tool replacement.

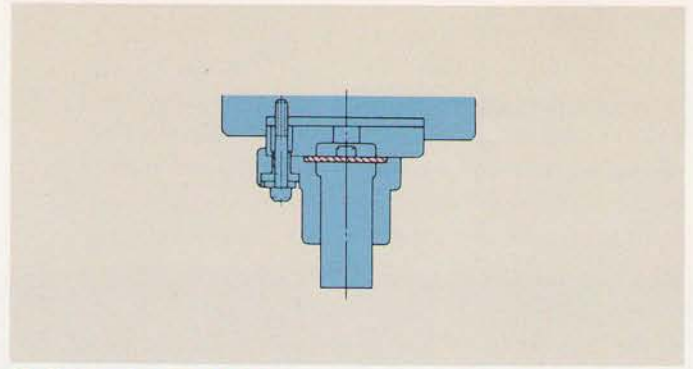


Hydraulic clutch & brake

The noise levels of the ARIES series have been minimized by utilizing a hydraulic clutch.

The hydraulic clutch.

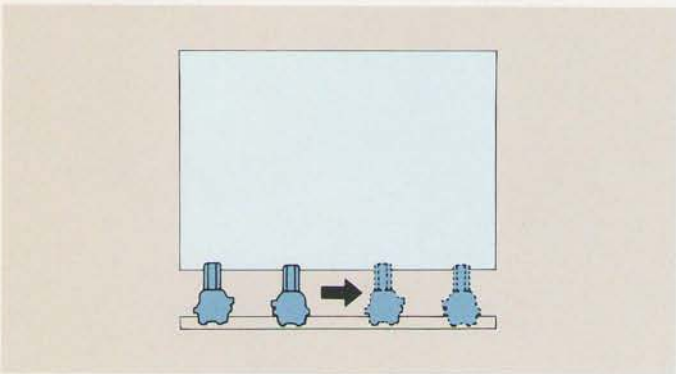
The hydraulic unit has a low power consumption and is virtually maintenance free.



Striker and shear plate

The punching operation is performed by a striker attached to the bottom of the ram.

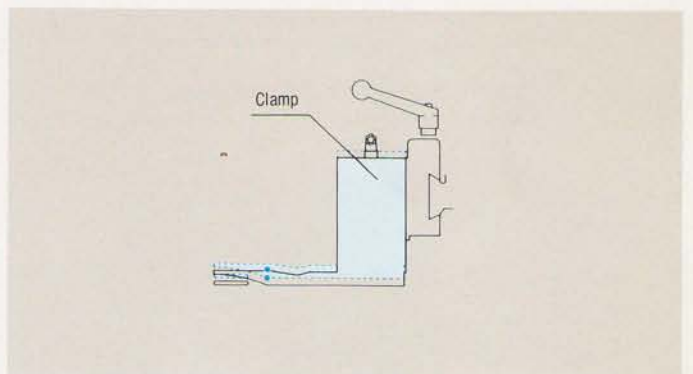
Should the 20 ton press capacity be exceeded, the press mechanism is protected by the failure of a shear plate.



Auto re-positioning

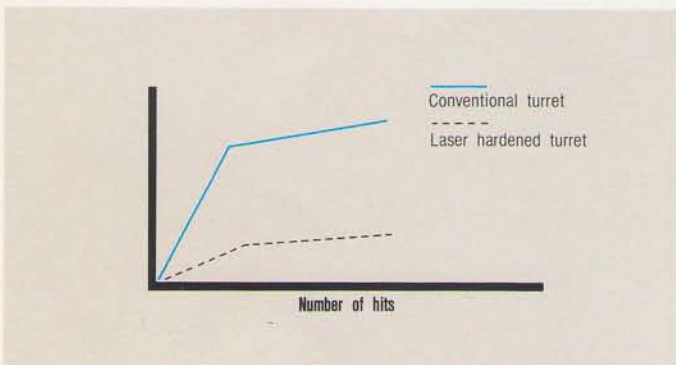
Extended processing range can be achieved with NC controlled work clamp repositing.

The work holders firmly secure the worksheet while clamps reposition ensuring processing accuracy.



Clamp movement

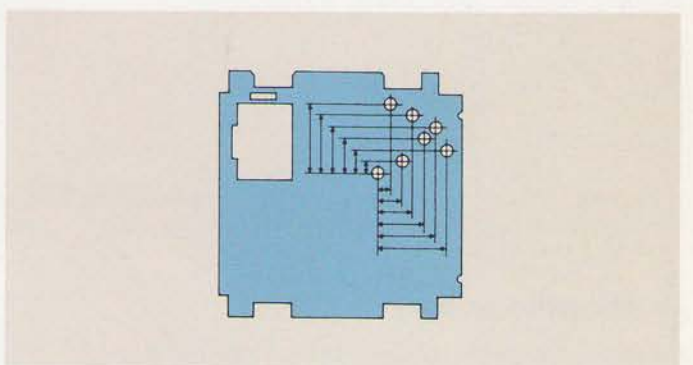
The clamps are able to move in a vertical direction reducing material distortion even when punching near the clamp.



Laser hardened turret

Amada has utilized the latest laser hardening techniques for its turret discs to give extended tool life and reduced tool guide wear.

Eight-Fold reduction in bore wear compared to conventional turrets.



High Precision Processing

The hole to hole accuracy described in this catalogue is guaranteed even after one repositioning. This enables precision processing of large worksheets.

Stripping miss detector

This innovative detector monitors the punching operation if an abnormality arises, the machine is immediately stopped.

This prevents damage to both machine and tool resulting in less down time.

Automatic lubrication

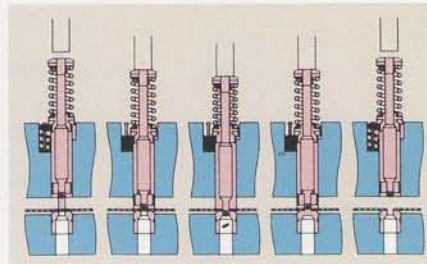
Press mechanism is automatically lubricated through the CNC system.

Tools (Punch & Die)

Manufacturing of Amada's tools starts from the thorough analysis of metal characteristics backed by long years' accumulation of its experience as an integrated metalwork engineering company. Its products are shipped to customers through the process of precise designing, manufacturing with the latest mother machines and strict qualitative inspection. All of the production processes are controlled by CIM so that customer needs for both standardized and customized tools can readily be satisfied.

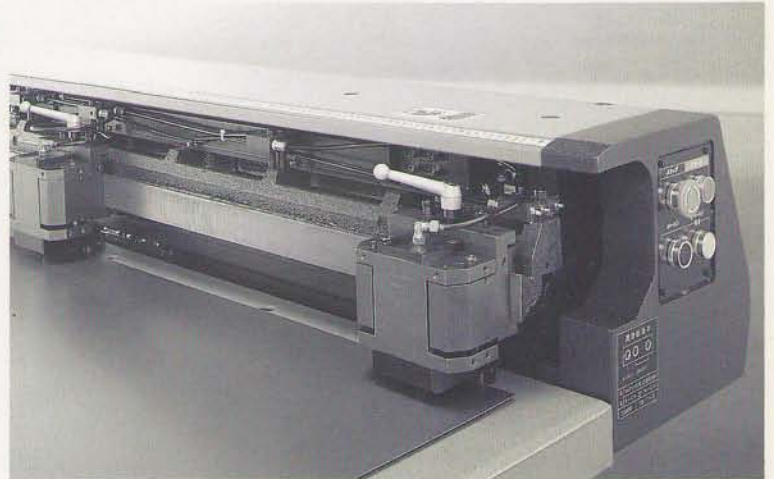
(Main features)

- Pursuit of high-quality processing, minimized stripping and burr problems.
- Research for cost-effective long-life tooling
- Minimized eccentric loads by the fit-end guide system
- Elimination of cambers and chattering of works by the powerful guide and stripper plate.
- Numerous variations from thin to thick plates; round, square variety of types of holes, forming, cluster and custom shape.
- Diversified materials available for various types of tooling



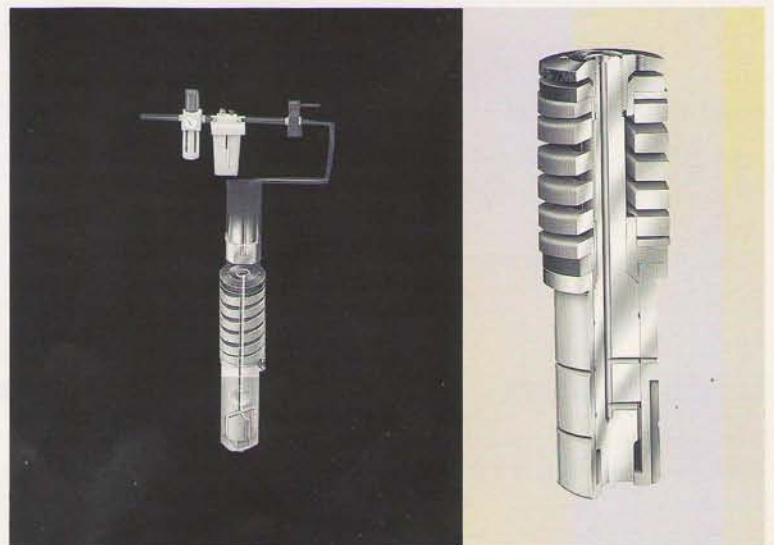
Offset clamp (optional) (ARIES-245 II only)

The offset clamp permits the machine to process even 4' x 8' size materials by reversal.



Air blow device (optional)

Oil mist is sprayed to the guide bottom and sliding parts from the air hole on the punch body of the tool through the striker to lubricate tools and turrets; and to lubricate and cool the cutting edges. While this system can serve for a longer tool service life, it can help prevent burrs in follow-up or nibbling processes, thereby realizing high-precision and high-quality punching.



NC equipment FANUC18Pi

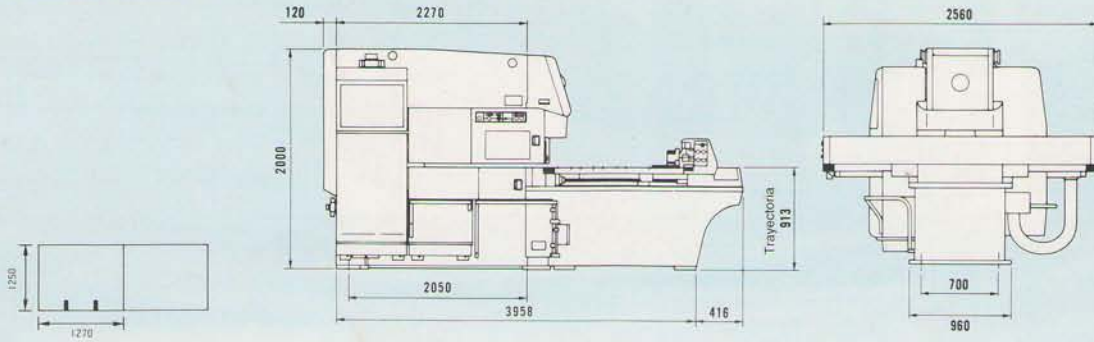


RS232C interface

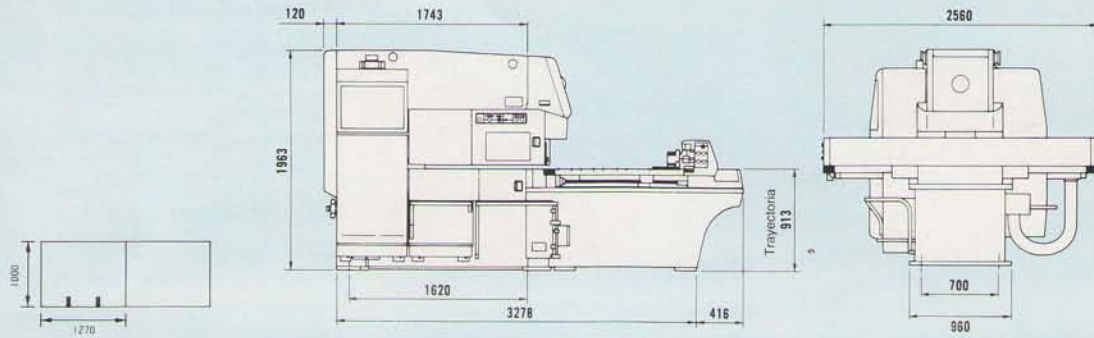
DIMENSIONS

unit : mm

ARIES-255



ARIES-245II



SPECIFICATIONS

Reference only

		255	245II
Press capacity	kN [tonf]	196 [20]	196 [20]
Maximum sheet size	mm	1250×2540 (include 1 auto reposition)	1000×2540 (include 1 auto reposition)
Maximum sheet thickness	mm	6.35	6.35
Maximum feed rate	m/min	42	42
Turret rotation	min ⁻¹ [rpm]	25	25
Press strokes	min ⁻¹ [spm]	350	300
Maximum hit rate	hit/min	180 (25mm Pitch)	180 (25mm Pitch)
Number of tool station	H type	2-track / 30station	2-track / 30station
Automatic repositioning		Standard	Standard
Clutch / Brake type		Hydraulic multi-disk friction	Hydraulic multi-disk friction
Punching accuracy		±0.10	±0.10
NC equipment		FANUC 18Pi	FANUC 18Pi
Display		10.4" TFT	10.4" TFT
Command system		ABS • INC	ABS • INC
Control axis		X, Y, T (C) 3-axis simultaneously	X, Y, T (C) 3-axis simultaneously
Least input increment	mm	0.01	0.01
Program memory capacity		160m in tape length	160m in tape length
Program external memory		3.5" Floppy disk	3.5" Floppy disk
Interface		RS-232C (standard)	RS-232C (standard)
Air pressure	MPa [kgf/cm ²]	0.5 [5.0] Air inlet 1/4" 80 liters/min	0.5 [5.0] Air inlet 1/4" 80 liters/min
Power consumption	kVA	14	14
Mass of machine	t	10.4	11.6
Machine dimensions	mm	2560×4494×2000	2560×3814×1963

Specifications are subject to change without prior notice.



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