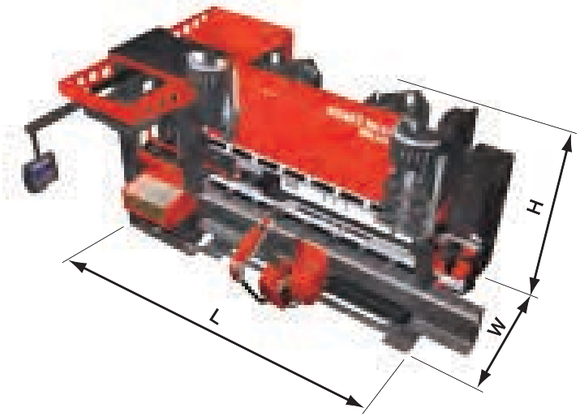
■Machine installation range

Unit: mm

▌ASTRO II -100NT (standard)
(L : 10451 x W : 5307 x H : 3404)



■Press brake specifications

Model		HDS-1030NTR
Capacity	kN	980
Bending length	mm	3110
D-axis stroke	mm	200
Number of D-axis cylinders		2
D-axis approach and return speed	mm/s	200 (50Hz/60Hz)
Maximum D-axis bending speed	mm/s	20 (50Hz/60Hz)
L-axis travel range	mm	2～602
L-axis speed	m/min	30
Y-axis travel range	mm	Y1: -1201～1187 Y2: -1187～1201
Y-axis speed	m/min	60
Z-axis travel range	mm	37～289
Z-axis speed	m/min	10
Motor capacity	kW	4.4×2 (D-axis) 3.0 (CC-axis)
Tank capacity	L	57.5

■Bending robot specifications

Applicable system	ASTROⅡ-100NT CELL	ASTROⅡ-100NT CELL TERURU	ASTROⅡ-100NT (standard)	ASTROⅡ-100NT TERURU (standard)
Construction	Compound type with five degrees of freedom			
Payload, kg	20 (including gripper)			
Maximum workpiece size (width x length x thickness) mm	760×1000×2.3 300×1800×2.3			

Note: Maximum workpiece size may change with die height and bend shape.

■Tool changer specifications

Applicable system	ASTROⅡ-100NT CELL	ASTROⅡ-100NT CELL TERURU	ASTROⅡ-100NT (standard)	ASTROⅡ-100NT TERURU (standard)
Tooling	Amada modular tooling system (type Ⅱ)			
Number of stockers	Punches: 14, Dies: 17			
Tool layout length mm	15～2195			
Tool length setting pitch	5 mm pitch (1 mm pitch for greater clearance)			
Maximum number of stations	25			

■LUL robot specifications

Applicable system	ASTROⅡ-100NT CELL	ASTROⅡ-100NT (standard)
Construction	6-axis vertical articulated type + travel axis	
Payload, kg	20 (including hand mass)	
Maximum workpiece size (width x length x thickness) mm	800×1000×2.3 300×1800×2.3	

For Your Safe Use
Be sure to read the manual carefully before use.

●Use of this product requires safeguard measures to suit your work.
For details, see the safety guide on the home page of Amada (www.amada.co.jp).

*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 ASTRO II -100NT, HDS-1030NTR and ASTRO-MP20.
Use these registered model names when you contact the authorities for applying for installation, exporting, or financing.
The hyphened spellings ASTRO II -100NT, HDS-1030NTR and ASTRO-MP20 are used in some portions of this catalog for sake of readability.

*The specifications described in this catalog are for the Japanese domestic market.

*Safeguard devices recommended by Amada are available as options for your use in taking appropriate safeguard measures to suit the parts you produce.

AMADA CO., LTD.
www.amada.com

Inquiry

E019-HQ01en
Mar.2013

SOLUTION

VPSS
Virtual Prototype Simulation System

Network-ready high speed and high precision bending robot system

ASTRO Ⅱ 100 NT SERIES

Bending

The Engineering AMADA

AMADA

From Mass Production ROBOT to High-Mix Low-Volume Production robot

Increase in number of parts that take time to set up has an immeasurable impact on productivity.
Especially, how to enhance the efficiency of bending, a bottleneck in the sheet metal fabrication process, is the largest key to productivity improvement.
The ASTRO II -100NT series has various new functions, and automates and intelligentizes the processes involved to reduce setups on the shop floor, and achieves still higher productivity.

Network-ready high-speed and high-precision bending robot system

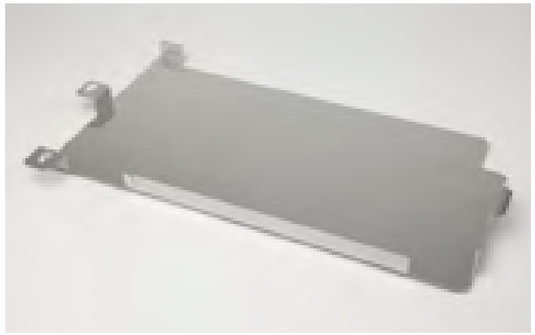
ASTRO II 100 NT SERIES

VPSS
Virtual Prototype Simulation System

Typical sample workpieces

Material : SUS430, 1.0 mm
Size : 462.1 x 262.6 x 16.5 mm
Number of bends : 13

Processing time : **2 min 36 sec**



Material : SECC, 1.0 mm
Size : 276.4 x 147 x 30 mm
Number of bends : 10

Processing time: **2 min 5 sec**

Material : SECC, 0.6 mm
Size : 150 x 250 mm
Number of bends : 11

Processing time: **4 min 13 sec for first part (ATC: 1 min 45 sec) / 2 min 30 sec** for subsequent parts

ASTROII -100NT series New technologies

1 Achievement of high precision and high stability processing

Integration of high reliability press brake, robot and peripheral units

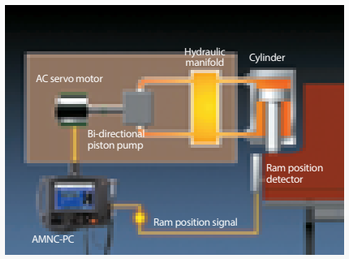
❶ Press brake is highly reliable, performance-proven HDS-NT
- ·Hybrid drive system
- ·Hybrid crowning mechanism
- ·High rigidity machine frame

❷ Robot has 20% higher speed than conventional modes

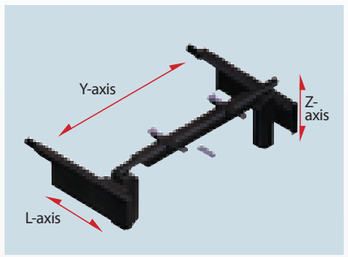
❸ High speed and high precision backgauge achieves high productivity
- ·Y-axis speed : 60 m/min
- ·L-axis processing repeatability : ±0.003 mm

❹ High precision potentiometers ensure accurate positioning
- ·Full-closed loop control is adopted in which the variations in workpiece position amounts are accurately detected and used to control robot motion.

❶ Hybrid drive system



❸ High speed and high precision backgauge



❹ Potentiometers (sensor-equipped backgauge)

2 Workability improvement by setup reduction

Automation of tool and gripper changes

❶ High functionality and large capacity ATC (automatic tool changer) mechanism
- ·Great efficiency improvement of tool setups
- ·Axis speed increased about 25% to sharply reduce job changeover time
- ·Automatic punch and die turnover and reverse mechanisms equipped to minimize setups and provide more flexible production (standard equipment on ASTRO II -100NT CELL)

❷ High speed loading and unloading devices
- ·Minimum cycle time of about 35 sec

❸ Automatic gripper changer (AGC)
- ·Up to six types of grippers can be mounted (3 types of grippers mounted standard on ASTRO II -100NT; 6 types optional)

❹ Electric buffer table
- ·Four stepping motors are installed for vacuum positioning. This allows free layout for complex bend shapes.

❶ Automatic tool changer (ATC)

❷ ASTRO-MP20 + AHC mechanism

❸ Automatic gripper changer (AGC)

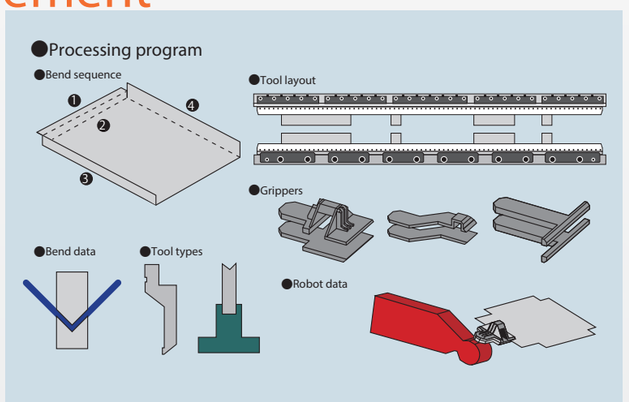
❹ Electric buffer table

※Covers removed for photographing in some pictures

3 Operability improvement

Dr.ABE_ASTRO (option)

·Automatic programming system
Dr.ABE_ASTRO can fully automatically create all necessary processing data for tool selection, bend sequences, tool layout, gripper selection, and robot movement.



Other functions (including options)

Option

AMNC/PC

AMNC/PC with new algorithm. Easy-to-use NC incorporating all of Amada's bending know-how. Customers can convert their bending know-how into data and achieve mistake-free bending.

Amada modular tooling system

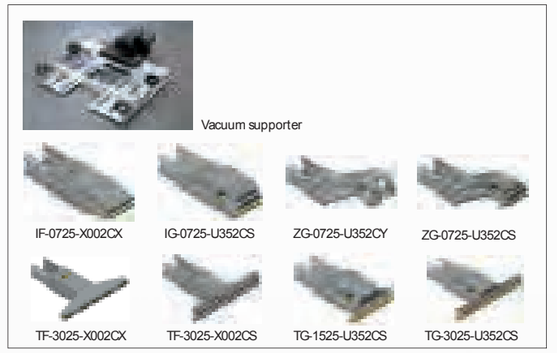
·Tools are mounted and clamped automatically.
·Automatic alignment of punch and die.
·Punches are prevented from dropping by safety clicks (drop prevention tongues).
·Punch and die can be mounted on reverse to eliminate turning over workpieces.
·Tools can be mounted in any desired positions and can also be combined tool type freely for step bend.

Tool cleaning device

At the preset number of workpieces, the rotating brush runs on the top surface of the die to clean the V-groove, thereby preventing bending scratches and angle variations due to zinc buildup.
(Option on ASTRO II -100NT CELL)

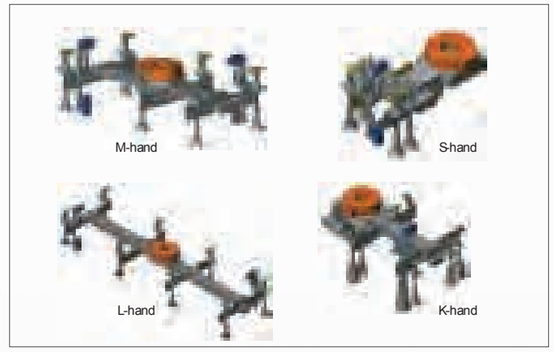
Grippers

Grippers are selected to suit specific workpiece sizes and shapes.



Hands

Hands are selected to suit specific workpiece sizes and shapes.



Automatic hand changer (AHC)

Hands are automatically changed according to specific parts.
(4 types)

Bend angle sensor Bi-J

High speed and high accuracy angle sensor for AMNC/PC-equipped press brakes.
The bend angle sensor Bi-J allows parts to be bent to desired angles without difficult initial bend adjustment.
(Only on ASTRO II -100NT)

New thickness detection system (TDS)

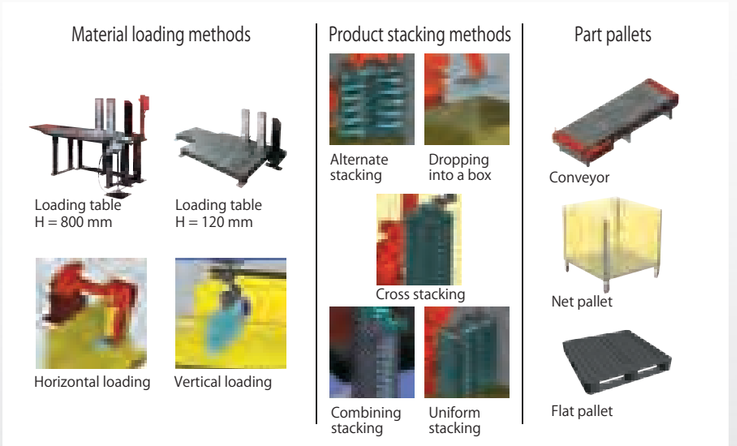
The thickness detection system (TDS) is used to reduce the effect of material thickness variations on the bend angle of parts and ensures high accuracy bending. Invisible thickness differences are measured by the force variation on pinching point and D-axis is controlled accordingly. The D-axis value is always compensated to its optimum.

X gauging device

During automatic operation, the workpiece is pushed against the X-gauging stopper to detect its X-axis position. The measured data is compensated to the X-axis position of the workpiece.

ASTRO-MP20

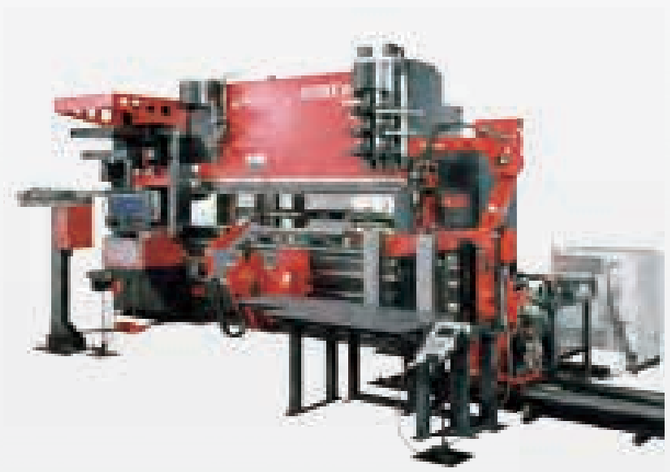
Flexibly loads/unloads workpieces and products in many various ways. It also has a 2.5 m travel axis as standard for long time operation.
(5 m travel axis available as option)



CELL

Flexible operation regardless of batch size

ASTRO II -100NT CELL engineered for fully automated bending system. The system is equipped with the automatic tool changer (ATC), automatic gripper changer (AGC) and automatic hand changer (AHC) that enable schedule operation for small batches and automatic long-time operation. Productivity can be significantly improved for high-mix low-volume production, delivery lead time can be shortened, and bending jobs can be smoothed in loading and improved in quality.



CELL TERURU

The CELL is used as general-purpose machine for small-lot parts and as robot for repeat parts.

Workpieces can be uniformly bent regardless of the operator's experience simply by setting them in the specified position.
Material loading and product stacking areas are eliminated to make more effective use of the limited shop floor space. Material loading and product unloading setups can be simplified, and flexibility is provided for small-lot production. The system has only a few restrictions so it can support a wide range of product shapes.