

Press brakes HD series



Bending technology



AMADA press brakes belonging to the HD series set new standards of economic efficiency and precision.

New product based on our experience

Know-how in the field of bending technology gathered over more than 50 years forms an excellent base, particularly when this experience is combined with practice-oriented implementation of current and future market trends. The result is AMADA's development of the HD series. Seven models dimensioned in different ways leave nothing to be desired.

The standard models, press capacity range from 500 to 2,200 kN and up to 6,000 kN if requested. The standard versions allow bending lengths from 2,000 to 4,000 millimetres. Whereas the high-tonnage variant (upon request) is designed for bending length up to 7,000 millimetre.

Customized solutions can be obtained using the large number of options and an extensive range of accessories provided with the press brakes within the HD series. These include angle measuring systems, sheet followers, an extensive range of tools and much more.

The HD bending presses provide

- The highest precision
- Speed
- Comfort
- Energy saving
- Flexibility





Shhhhh! There's a hybrid drive working here

The new drive concept: noiseless, cost-effective and designed for the highest precision

The newly developed hybrid drive for the upper beam of the press of the HD series works only when required and not continuously. In contrast to the conventional hydraulic system, this clearly has a positive impact on the bending result: The same high degree of precision is always guaranteed, whether it be after an extended runtime or on restarting after a tool change. In terms of economic efficiency, the same holds true for bending of small batch sizes.

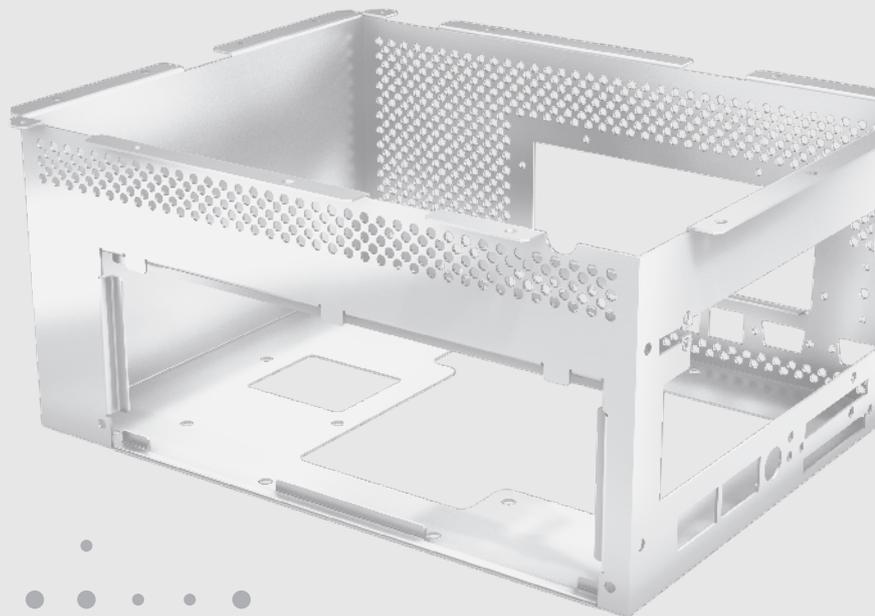
And there's more: the energy-saving drive is a noiseless "worker", machine operators will be pleased.

The environment benefits ...

- Reduced oil volume
- Longer maintenance intervals
- Lower power input
- Low noise levels

... and the process is even more accurate

- High precision is maintained
- Increased travelling speed of the upper beam
- Perfectly designed bending solution
- Optimum performance with angle measuring systems



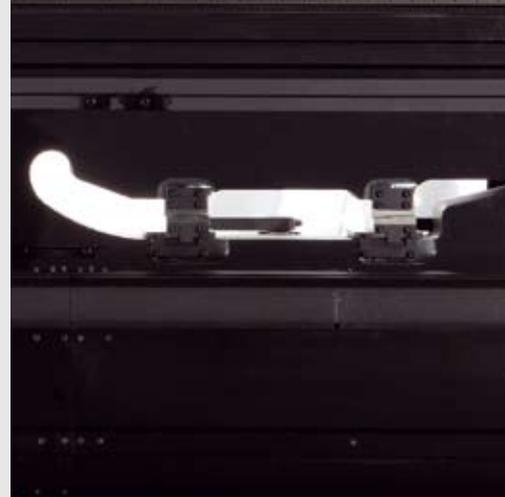
It's reassuring to know!

An integrated compensation system makes bending behaviour manageable

With further development of its integrated compensation system, AMADA offers an extraordinary feature of precision in its HD series. This new construction eliminates unequal bending angles between the centre of machine and the sides.

There's a system behind it: The wedge-type system in the lower beam of the press is now adjusted by means of servomotors. The setting values are saved in a database. The lower beam deflects according to the position of the wedge until the wedges come in contact. With these dynamics, the bending

result can be influenced very sensitively even in the range of 100th of a millimetre. It can then be adjusted considering the properties of the relevant material. This delivers perfect bending results with an accuracy of less than 30 angular minutes even when the entire bending length is used.



It's all a matter of time

BendCam: saving time by external programming

Several new jobs can be fed into the program in the comfort of your office while the bending process is continued. Yes, that is possible with BendCam, the external programming software.

The programmer can comfortably create the process flow starting with the choice of tools and positioning on the beam, to setting up the bend sequence of the job and the penetration values of the punch and collision checks. Even batch sizes of 1 are lucrative now.

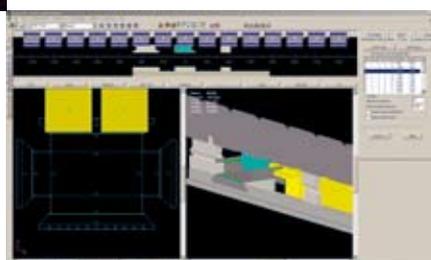
- Program comfortably in your office
- A 3D-simulation of the bend sequence, which is easy to understand
- Shortened downtimes due to external programming

AMNC Control

Functions of the PC-based controller AMNC (AMADA Multimedia Network Controller) have been extended on the HD series. Thus, the tool navigator is implemented in the standard machine or the automatic tool changing in the ATC-version with optimum use of control technology.

Tool Navigator: precise tool set up

- Setup aid integrated in the controller
- Back-gauge gives the exact position of the tool
- Quick display of the required position of the tool
- Time-saving set-up of the machine



BendCam



AMNC

Technically valuable

- Servomotor adjustment
- Parallel deformation of upper and lower beam
- Sensitive setting in the range of 100th of a millimetre
- Setting values are saved in a database

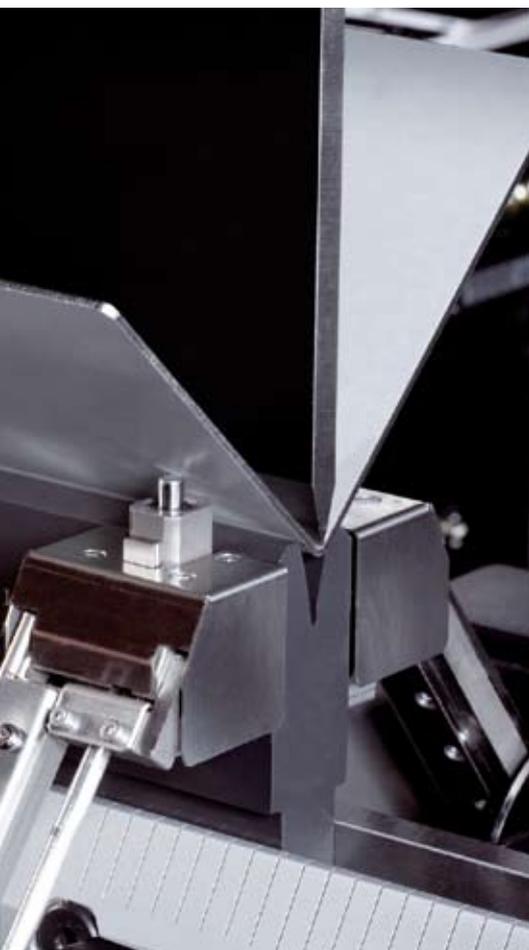
The result is what counts

- The bending angle is maintained constantly over the entire length
- Independent of the kind of material and the material thickness
- Very precise bending results
- Repetitive accuracy of the highest degree



DIGIPRO

The angular measurement device DIGIPRO is handy, wireless and easy to use. It measures the bending angle of the produced work piece. The result in angular minutes is transmitted to the controller. In the event of variations from the final value, the controller automatically generates the change in the program.



BI-S Angle measuring system

Decisive in all situations

Bending Indicator: active angular measurement for precise bending results

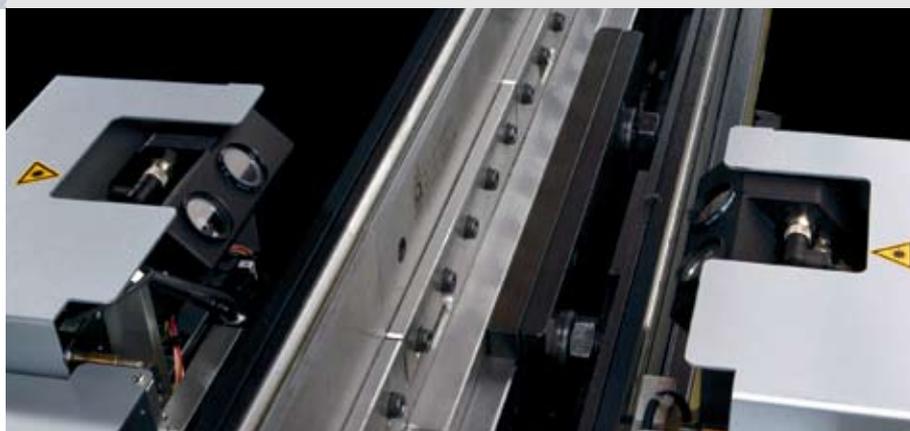
Two optional measuring systems ensure an optimum bending angle. Both systems detect the angle during the bending process and communicate with the controller. Along with the measured values of the springback, the cylinder stroke and the desired penetration depth are recalculated and implemented right away.

- The contact-free optical **BI-L angle measuring system** uses laser and camera to detect the angle.
- The contact **angle measuring system BI-S** senses and measures the bending angle with the help of 2 sensors located at the front and rear of the die.

2 Measuring systems – 1 level of precision

- Absolutely precise bending results
- Independent of the tools
- No manual intervention is necessary
- Active measurement
- Automatic compensation of springback

BI-L Angle measuring system





Change has never been so constant

ATC: automatic tool change used for the first time ever on a manual press brake

Set-up time is always a critical factor when dealing with reducing lot sizes. For this reason, the HD press brakes can now be combined with the upgraded automatic tool change system ATC.

Using four manipulators, the Auto Tool Changer independently transports the required tools for the current program. It positions them on the beams with the maximum precision possible. The ATC and the hydraulic tool clamping system ensure that the tool is held safely.

The technology in the background ...

- Automatic setting of tools
- Extensive range of tools that can easily be accessed
- 4 manipulators
- Hydraulic tool clamping

... increases profits

- Cost-efficiency because of speed results
- Economic efficiency even with small lot sizes
- Safety and accuracy are a result of correct positioning

Every part fits with everything else

Long Stroke design: open for a variety of possible applications

Processing deep housings such as electrical cabinets requires the machine to have a large open height. This is taken care of in the Long Stroke design with an extended stroke of 350 millimetres. Side frames, cylinders and the longer movement of the upper beam of the press are specially tailored to match these high components.



Accessories

Back gauges

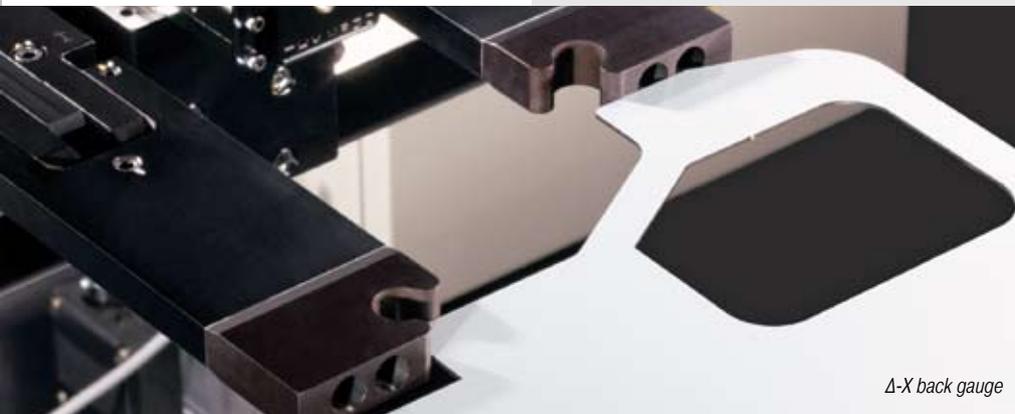
- Precision work made easy
- Precise gauging of the sheets
- Repetitive accuracy of the X-Axis +/-0.01 mm
- Optional Δ -X Function and heavy duty back gauge
- Various replaceable finger designs are available

Sheet followers

- Support the sheets during the bending movement
- Relief for the joints and back of the machine operator
- Resources for quality assurance
- 2 designs or 2 arm system
- For components that are heavy and/or large
- Can easily be moved when not in use



Sheet followers



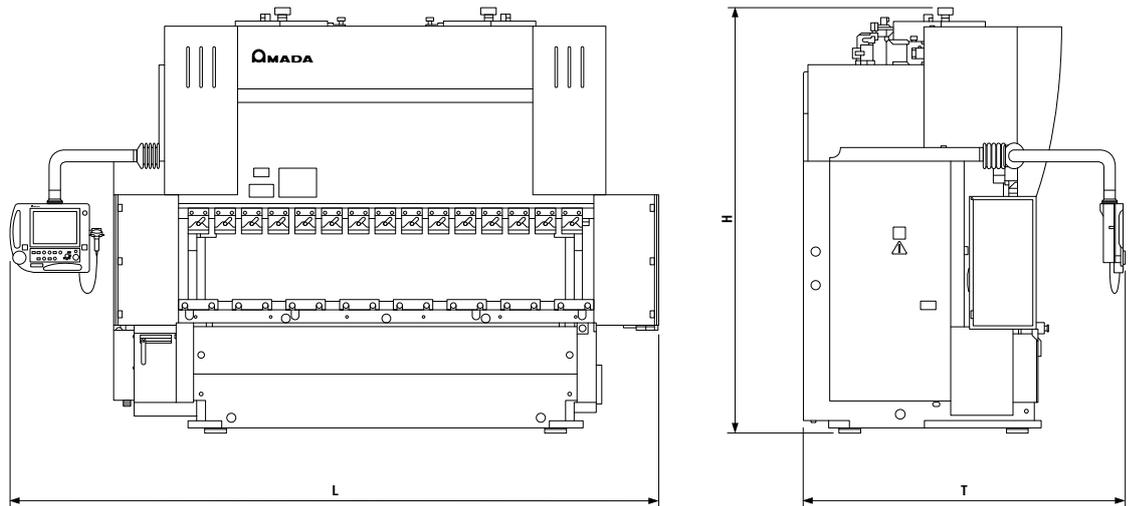
Δ -X back gauge



Tools and Tool clamping

- Extensive range of standard tools for practically 90% of all bending jobs
- Special tools at the request of the customer
- Mechanical clamping system with quick clamping lever
- Optional hydraulic clamping system
- AFH-tooling system with uniform height





Note: The drawing shows the HD-1703 L

Technical specifications of HD series	5020	8025	1003	1303	1303 L	1703	1703 L	1704	1704 L	2204	2204 L
Presscapacity (kN)	500	800	1000	1300	1300	1700	1700	1700	1700	2200	2200
Beam length (mm)	2090	2570	3110	3110	3110	3110	3110	4300	4300	4300	4300
Distance between the frames (mm)	1660	2120	2700	2700	2700	2700	2700	3760	3760	3760	3760
Throat depth (mm)	420	420	435	435	435	435	435	435	435	435	435
Stroke (mm)	200	200	200	200	350	200	350	200	350	200	350
Open height (mm)	470	470	470	470	620	470	620	470	620	470	620
Table width (mm)	60	60	60	60	60	90	90	90	90	90	90
Table height (mm)	980	980	980	980	980	995	995	995	995	995	995
Approach speed* Y (mm/s)	120	120	120	120	120	120	120	120	120	120	120
Bending speed Y (mm/s)	10	10	10	10	10	10	10	10	10	10	10
Return speed Y (mm)	120	120	120	120	120	120	120	120	120	120	120
Connection load (kW)	6,2	8,3	9,4	11,4	11,4	15,6	15,6	15,6	15,6	19,1	19,1
Oil capacity (l)	34	34	48	48	84	68	120	68	120	84	140
Number of controlled axes	7	7	7	7	7	7	7	7	7	7	7
Back gauge data											
Adjusting range along X-axis (mm)	700	700	700	700	700	700	700	700	700	700	700
Adjusting range along R-axis (mm)	250	250	250	250	250	250	250	250	250	250	250
Adjusting speed along X axis (mm/s)	500	500	500	500	500	500	500	500	500	500	500
Adjusting speed along R axis (mm/s)	160	160	160	160	160	160	160	160	160	160	160
Adjusting speed along Z axis (mm/s)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Repetitive accuracy X1 + X2 (+/-mm)	0,002	0,002	0,002	0,002	0,002	0,002	0,002	0,002	0,002	0,002	0,002
Repetitive accuracy R (+/-mm)	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05
Repetitive accuracy Z1 + Z2 (+/-mm)	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02
Weights and dimensions (Max. values with CNC control)											
Total standard length (L) (mm)	3870	4330	4910	4965	4965	4965	4975	6105	6105	6105	6105
Total standard depth (T) (mm)	2880	2880	2880	2880	2980	3130	3130	3130	3130	3130	3130
Total standard height (H) (mm)	2685	2685	2755	2895	3160	2975	3205	3135	3370	3135	3370
Standard weight (kg)	4600	5600	7800	7800	9000	9900	11000	14000	16000	15000	17000

* Only when using suitable safety equipment

Dimensions, design, equipment as well as drawings are subject to change following technological advancements. Specifications of accuracy are in conformance with the VDI/DGQ 3441. The accuracy of the work piece and the thickness of the material that can be cut, is dependent on the cutting conditions, the material, the type of work piece, its pretreatment, the size of the panel as well as the position in the working area.



Amada GmbH
Amada Allee 1
D-42781 Haan
Germany

Phone +49 2104 2126-0
Fax +49 2104 2126-999

info@amada.de
www.amada.de