PF

electronic synchronized hydraulic press brakes

adira

innovation works >>>

PF

the impossible depends on your imagination

INNOVATION_TECHNOLOGY_AUTOMATION

You may have often thought of the design for new parts. However, many times you felt it was impossible to make certain bends. There was always something missing: the back gauge did not have enough axes, the numerical control was not the easiest to program and it did not have simulation software for a PC. The gap, the opening between tools or the stroke of the cylinders were insufficient, the speeds of the moving beam and of the back gauge were low, it was difficult to change and to align the tools quickly, the bending angle was not the same throughout the whole part and it did not correspond to the programmed one...
That belongs to the past now. Adira has the answer. The PF press brakes stand out as being able to integrate everything required to make a versatile, flexible and highly productive press brake. Now, it is possible to make all parts you have ever imagined and even to have your own robotic bending cell.

PRECISION_RELIABILITY_QUALITY

With approximately 50 years of experience in the design and manufacture of conventional press brakes and 25 years in the design and manufacture of press brakes with electronic synchronism, Adira has taken the highly performing press brakes to the next level by gathering reliability, precision, repeatability, flexibility, and ease of use.
The machine performance, the comfort and the security of the operator are all maximized, leading to significant productivity gains, and to a faster return of the investment.

ERGONOMY_DESIGN_SAFETY

Adira innovates also, by introducing a concept of design, based in ergonomic lines that favour the operation and the security of the user, with a more user friendly and more intuitive centralised numerical control station.
The shape combines a remarkable rigidity with an appealing working environment. The colours - white and ocean blue - are a tribute to the Portuguese navigators, in harmony with the tradition of innovation and the entrepreneural spirit of Adira.
The PF is provided in PLS version which is equipped with laser protection beams allowing for an increased productivity and safety.

PF

the impossible depends on your imagination

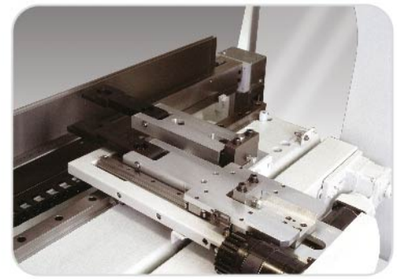
REGISTERED PRODUCT

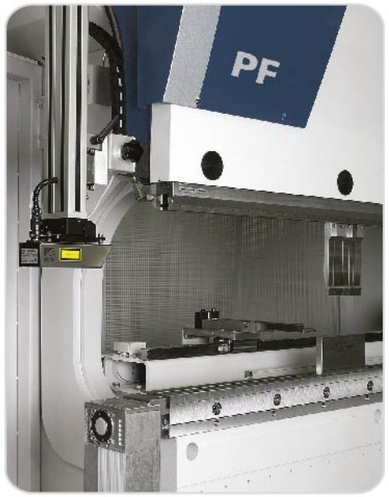
PF

If you require complex bends that challenge your imagination, with reduced operating and set-up times, using different tools and materials, several back gauge axes, and a numerical control with graphic display, then your option is the PF.

The standard configuration includes:
> Evolutive Architecture;
> Cybelec ModEva 10S, 2D colour graphic numerical control running under Windows ®;
> Off-line programming and simulation system PC 1200, 3D colour, for the bending simulation from a remote computer;
> Back gauge with ball screws and servo-motors for axes X and R;
> Manual Z axis quickly set from the front;
> Reversible punch-holders with manual quick clamping;
> DNC controlled narrow type crowning table with central slot for centring and with mechanical quick clamping of single-V dies;
> Two front support arms mounted on a rail for material support and flexibility.

Optionally, you can choose more back gauge axes, an even more sophisticated control, hydraulic clamping of the tooling, and an angle measuring system by laser: Angle Wizard®.





SAFETY

All PF machines in the PLS version are equipped with laser protection beams, fulfilling the obligation for more sophisticated operator's safety systems in the European Union.
For other safety solutions, please contact your Adira specialist.

PRECISION AND STURDINESS

Performance and precision in high demanding bends are possible when using the most advanced and innovative design and engineering solutions together with a rigid, carefully engineered construction.

Ram parallelism and stopping accuracy/ repeatability of the bending depth (better than 0,01 mm with possibility of measuring the plate thickness) are guaranteed by an effective interface among all electronic and hydraulic components.

The reading of the stopping point is practically independent of the hydraulic pressure, oil temperature, and of the location of the bending force along the beams of the press brake. Therefore, faster and smoother speed change and reduced cycle times are ensured, making the operation of the press brake more efficient and more pleasant to the operator.

When bending a wide variety of materials, thicknesses and lengths, a crowning table is recommended, as well as the Angle Wizard®, Adira's laser angle measuring system, providing a greater constancy and uniformity of the bending angle from the first part.

BACK GAUGES: STURDY, FAST AND PRECISE

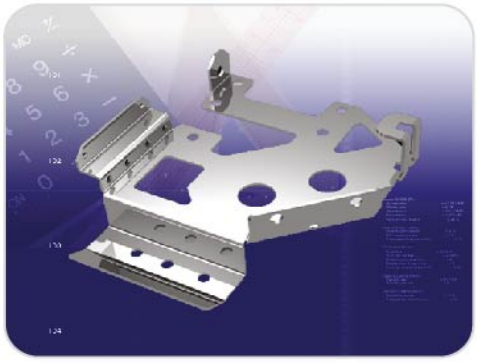
PF press brakes are supplied with two axes back gauge configuration. It is possible to reach a total of 6 axes driven by the latest generation of servo-motors. 225 and 320 tons models are supplied in a reinforced configuration.

An optional, even more sophisticated alternative for the back gauge offers two independent towers, each one with its own independent X, R and Z axes ... For those really complex parts! The rigid back gauge used on the 50 tons models is centrally fixed to the frame. Its optimised and compact design allows for the integration of a choice of additional axes, starting from the same basis.

NUMERICAL CONTROLS

If you are using a back gauge with 4 or more axes, and complex bends are performed, 3D controls are recommended: ModEva 12S or the ModEva 15S with a flat screen and "touch pad".
Both controls run under Windows® operating system, allowing for a better network integration and connection to the Internet.

SOFTWARE



All ModEva S controls are supplied with the PC 1200, a 3D off-line programming and simulation software.
For an even more complete integration in a FMS environment, the integrated Adira CID-BEND software allows for the reading and sharing of files between other press brakes and laser cutting machines.

ANGLE WIZARD

The Angle Wizard®, optional on PF versions, measures simply and quickly the bending angle with the part resting on the press brake. The double laser measuring system reads the bending angle on both sides of the part, and makes all the necessary corrections.
It can be displaced along the press brake, manually or by the DNC, allowing for the measurements to be made at any point of its action range.

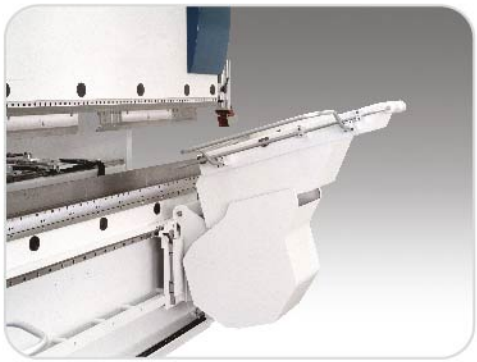
TOOLING

You may choose from a wide range of high quality ground tools, with different types of clamping, for the most appropriate selection according to each use.
Our Technical Department is ready to design and develop special tools to make even the most complex bends possible.

TOOL CLAMPING

All PF press brakes are supplied with reversible punch-holders with manual quick clamping, enabling the quick change and inversion of European type punches.
For an even faster changing of the tooling, a hydraulic clamping system is available for both punches and single-V type dies.
Alternatively to the European clamping system, an option for mechanical or hydraulic clamping for Wila type tooling is also available.

WORKING TABLES, ACCESSORIES



According to the type of dies used, you can choose the most suitable kit of working table:
> Bolt on wide plain table for multi-V dies; optionally with a central slot for single-V dies.
> Bolt on narrow table: for other types of dies, optionally with a central slot for single-V dies.
When a DNC controlled crowning table is chosen, any of the referred configurations also applies.

Integrating your PF press brake in an Adira robotic bending cell can significantly increase its productivity.

Thanks to a simple and intuitive programming, the time of set-ups is significantly reduced. Combining this with a remarkable operation speed of both the press brake and the robot, the advantages of robotic bending are easily noticeable after a small number of parts.

The repeatability and the precision in bending are excellent, since the robot always makes the same movements, not being subject to fatigue and eventual human errors. By using amply proportioned and/rigid grippers, it will be possible to allocate for other tasks the two operators required previously, when long and heavy parts had to be bent.

For an extended action range when using multiple bending stations and a still more widened area for palletizing, a robot equipped with an external axis is recommendable.

The table of indexation necessary for the correct attainment of the reference of each part is unnecessary provided it is guaranteed that the parts to be bent are always placed on programmed points. In addition to the indexation table, a "sheet feeder" will significantly reduce the times of manipulation of the robot.

Safety was not forgotten. During all programming phases of the bending cell, the press brake and the robot are moving at very reduced speeds. Only in "operation" mode are the normal speeds attained.

Eventually, you might wish to operate your PF manually. Just select this option and the press brake will start to work accordingly.

TECHNICAL SPECIFICATIONS

Model PF		6020	9025	13530	16030	16040	22030	22040
Bending capacity	kN	600	900	1350	1600	1600	2200	2200
Working length	mm	2000	2500	3000	3000	4000	3000	4000
Distance between housings	mm	1550	2050	2550	2550	3150	2550	3150
Max. stroke	mm	400	400	400	400	400	400	400
Max. open height (w/ tool holder)	mm	630	630	630	630	630	630	630
Throat depth	mm	320	320	320	320	320	320	320
Motor power	kW	7.5	11	22	22	22	22	22
Aproach speed	mm/s	220	220	200	180	200	170	170
Working speed (max.)	mm/s	10/20	10/20	10/20	10/20	10/20	8/18	8/18
Return speed	mm/s	240	240	200	200	200	170	170
X axis stroke	mm	625	625	625	625	625	625	625
X axis speed*	mm/s	800	800	800	800	800	800	800
R axis stroke	mm	200	200	200	200	200	200	200
R axis speed	mm/s	200	200	200	200	200	200	200
Z-Z1/Z2 axes stroke	mm	80 a 1170	80 a 1670	80 a 2170	80 a 2170	80 a 2770	80 a 2170	80 a 2770
Z-Z1/Z2 axes speed	mm/s	1200	1200	1200	1200	1200	1200	1200
X1 axis stroke	mm	+/- 100	+/- 100	+/- 100	+/- 100	+/- 100	+/- 100	+/- 100
X1 axis speed	mm/s	100	100	100	100	100	100	100
Length	mm	PLS NCE 3280 2200	PLS NCE 3780 2700	PLS NCE 4300 3200	PLS NCE 4300 3200	PLS NCE 4820 4200	PLS NCE 4300 3200	PLS NCE 4820 4200
Width	mm	2030 1600	2030 1610	2030 1620	2030 1620	2030 1620	2030 1620	2030 1620
Height	mm	3200	3360	3380	3380	3380	3380	3380
Height for transport (W/Tooling)	mm	2800	2950	2980	2980	2980	2980	2980
Approx. weight	Kg	6000	7000	9000	9200	13200	11900	17100

* Values refering to versions PF PLS

All data are approximate > Specifications and design subject to change without prior notice > Specifications of the models shown may vary from standard ones from country to country.

The equivalent sound level is lower than 85 dB(A) in any of the models.
The peak sound pressure is lower than 130 dB (A) in any of the models.

Other models on the ADIRA range

ADIRA S.A.
Rua António Bessa Leite, 976/1106
4150-072 Porto > PORTUGAL
Telf. + 351 22 619 27 00
Fax. + 351 22 619 27 01
E-mail: adira@adira.pt > www.adira.pt

DC/MAP-C-142-I-10/09