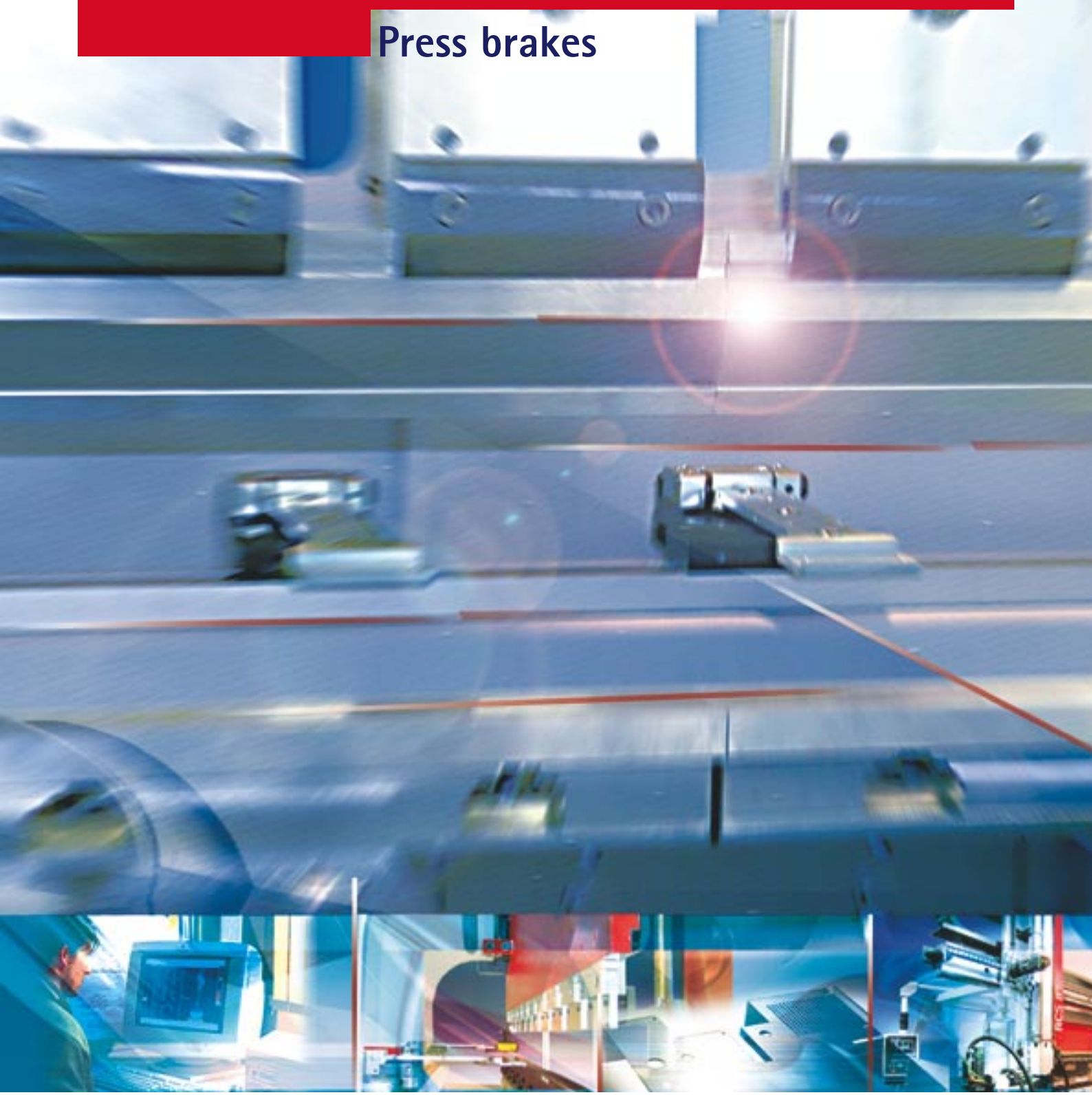
Schiavi Macchine Industriali spa
Via Copernico, 2/4 - Casoni di Gariga - 29027 Podenzano Piacenza (Italy)
Tel. + 39 0523 550 711 - fax + 39 0523 524 381 - E-mail: info@schiavimacchine.it - www.schiavimacchine.it

Press brakes



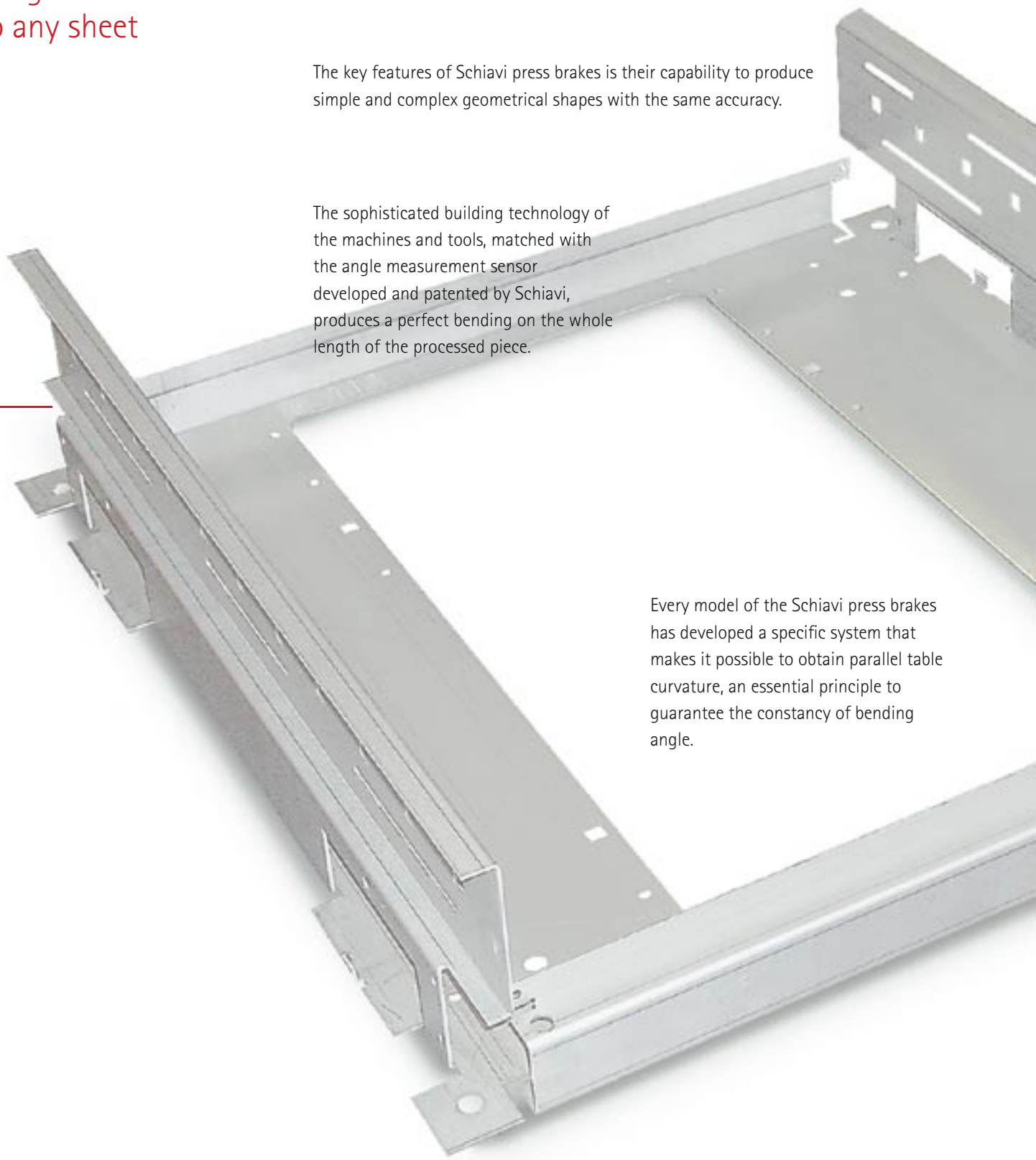
Schiavi

Your success guaranteed

We give SHAPE to any sheet

The key features of Schiavi press brakes is their capability to produce simple and complex geometrical shapes with the same accuracy.

The sophisticated building technology of the machines and tools, matched with the angle measurement sensor developed and patented by Schiavi, produces a perfect bending on the whole length of the processed piece.



Every model of the Schiavi press brakes has developed a specific system that makes it possible to obtain parallel table curvature, an essential principle to guarantee the constancy of bending angle.

A wide choice and many models renewed in their structural, technical and design contents

Flexa

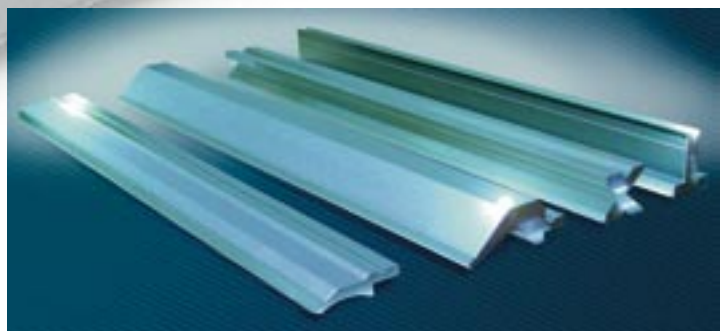
Hfb

Stp.c

Press brakes

To guarantee perfect integration between hydraulic, electronic and mechanical parts, Schiavi has developed these machines' design, making use of an integrated technical team exclusively dedicated to machines' manufacturing.

All the line of Schiavi press brakes makes use of high-quality components.
A significant example of this is represented by the upper table, whose descent is lead by an ensemble of bearings that slide on steel guides integral with the machine sides; this solutions makes it possible to keep the tables constantly centred and aligned and to ensure the necessary accuracy required for a good bending result.
Moreover, all the machines' structures are normalised after welding to remove internal stresses.



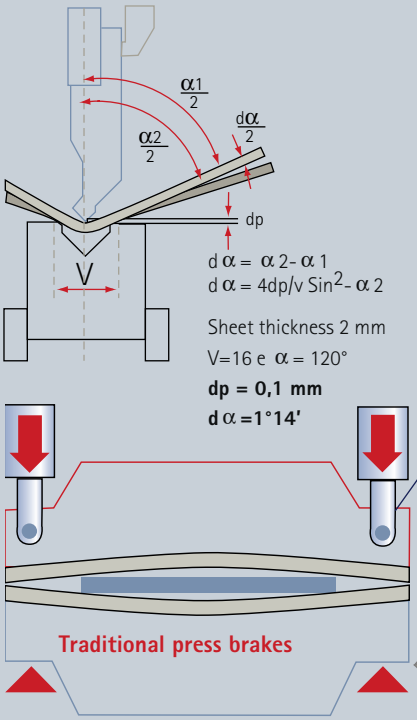
The same design technology has been maintained in the base models, making it possible to achieve optimal results in terms of quality and productiveness.
Combination of these factors produces of course countless advantages for the client that decides to turn to Schiavi's construction experience.

Control of tables' parallelism in the standard press brakes

Bending accuracy is chiefly related to the bending angle, whose value shall remain constant on the whole length.
Even a small change in the amount of punch's penetration in the die can produce a significant change in the angle.

Control of tables' parallelism is the key factor to achieve a good bending result.

Traditional press brakes feature a monoblock lower table while the upper table is moved by two side cylinders.



Upon bending the reactions to the movements bend the tables (lower and upper) in the opposite direction (fig.1).

In traditional press brakes, deformations add up and therefore the bending angle changes all along the sheet, **and the final result is rather inaccurate.**

Bending accuracy according to Schiavi

Schiavi ensures a sharp bending angle thanks to an innovative solution whose efficacy and simplicity beat any other system in use so far as regards table deformation correction.

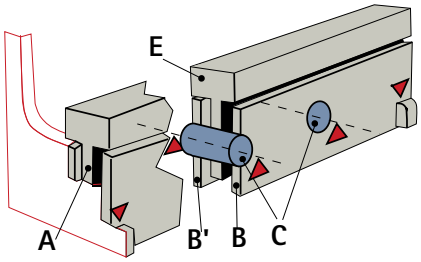


fig. 1

The modular lower table

Following the traditional principle of using side cylinders to move the upper table **the Schiavi press brakes** feature a lower table with a peculiar **"modular" structure** (fig. 2) that, responding to reaction forces, makes it possible to automatically correct and compensate the deformations of the table ensuring its parallelism.

Penetration of the punch in the die remains thus constant alongside all the piece **guaranteeing the maximum quality in the final result.**

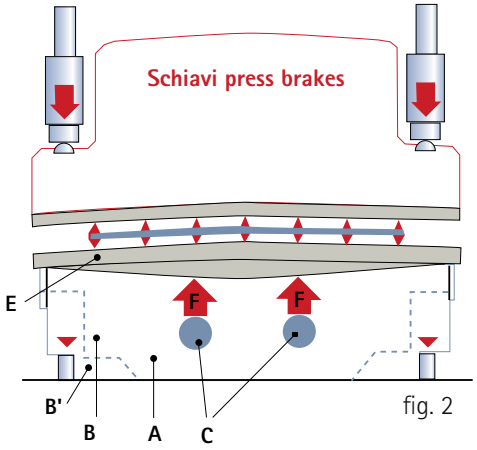


fig. 2

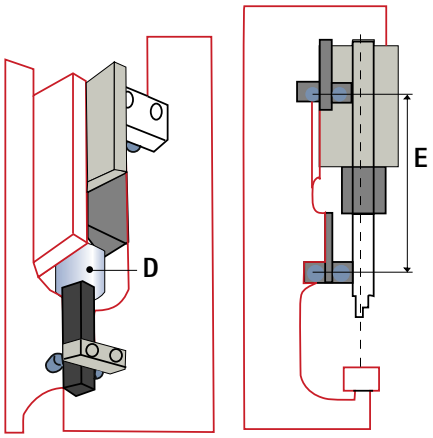
Upon bending, the reaction forces deform and buckle the upper table on a course that remains parallel to the central core and the die-holder table.

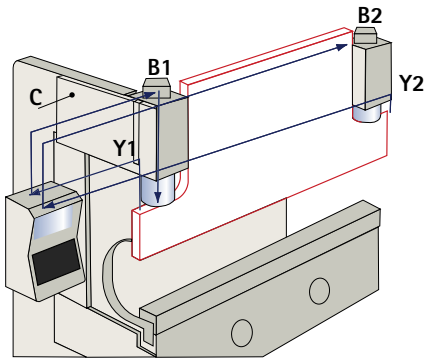
A	*Central core*
B *and* **B'**	*Lateral plates, welded on the sides*
C	*Two reaction pins, integral with the plates (the central core rests on them) In the STP-C models there are four such pin*
E	*Die-holder table welded on the central core*
F	*Reaction forces*

Guaranteed bending quality

The building concept shared by all Schiavi press brakes makes it possible to ignore, during processing, all factors that may negatively affect bending quality.

The difference in columns bending is corrected by electronic adjustment of tables' parallelism.





Power-assisted electronics

The electronic control panel makes it possible to set, store and check the following parameters, required to perform bending:

- working force
- bending depth
- table parallelism (possibility of carrying out conical bending)
- switching from fast approaching speed to working speed
- working speed, from 0.1 mm/sec. to maximum speed allowed to the machine
- clearance between the tools (reduction of the return stroke)

Well designed structure to achieve a strictly accurate centring

The upper table is carried by 4 or 5 bearing pairs that slide on steel guides integral with the machine sides.
Centring and alignment of the tables is guaranteed by the high distance between upper and lower bearings (**E**).

Two incremental rulers (**Y1** and **Y2**) are mounted on two plates, (**C**) modelled on the side throats and fixed on the lower table.
The two rulers are connected to the press management electronics that makes it possible to check the oil flow by means of the servo-valves (**B1** and **B2**).

During upper table lowering the rulers will monitor the deviations;
the difference between the data provided by the rulers **defines and sets the automatic compensation and the corresponding table parallelism.**

The new generation of press brakes

Flexa

The FLEXA numerical control press brakes series is the result of the continual technological research lead by Schiavi.

The Flexa press brake features a peculiar structure with closed gate (Patented) that, regardless of weight and tonnage, guarantees the best inertial conditions with a thrust reaction force that remains always perfectly aligned.

The action of the aligned hydraulic actuators avoids the typical bending that takes place in press brakes with throat.

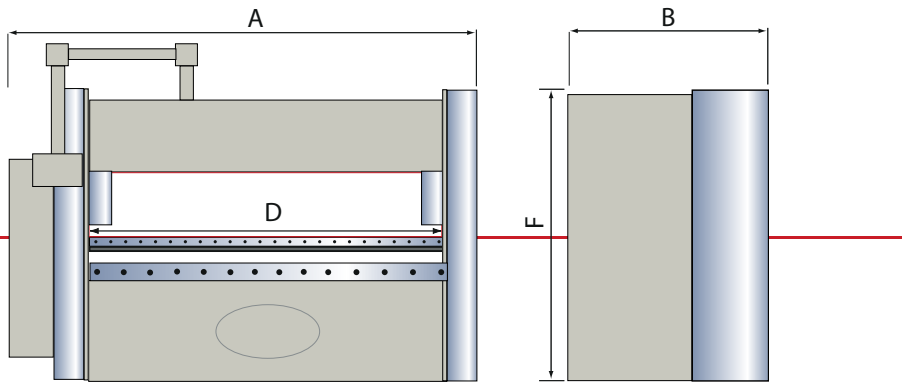
Thanks to the opening in the two side racks, movement in the columns is unhindered.
This allows quick and easy photocell adjustment and simplifies tools assembling.
The triple-board lower table (patented) allows perfect board deformation ensuring a constant value of angle bending.

The Flexa series press brakes are extremely versatile machines that allow optimisation and management of several working procedures.

The structure, thanks to its building features, guarantees that passage through the columns corresponds to the maximum bending length.
This allows working on details that might otherwise be very difficult to obtain with traditional press brakes.

The increase of upper board return and approaching speed, together with a fast tool change - over makes these press brakes extremely reliable as far as productivity is concerned.

It bears also pointing out that the numerical control's height adjustment makes the workstation more functional and ergonomic in nature.



- Closed gate structure (Patented)
- Triple board lower table (Patented) designed to obtain perfect parallel deformation of the boards
- The increase of upper table and ram return and approaching speed
- Quick tool change - over times
- Equipment placement sections are easy to remove to allow any possible operation or adjustment
- Aligned hydraulic actuators operation

FLEXA • Technical features		2512	5020	10030
Tonnage	ton	25	50	100
Length of the table	mm	1250	2000	3050
Open Height	mm	450	450	450
Max. stroke	mm	200	200	200
Distance between columns	mm	1300	2050	3100
Length	mm	2300	3100	4100
Width	mm	1200	1800	1800
Height	mm	2100	2500	2650
Weight	kg	2000	4000	6200
Motor power	kW	3,5	4	7,5
Approach speed	mm/s	180	180	160
Working speed min – max	mm/s	1-10	1-10	1-10
Return speed	mm/s	100	100	100

FLEXA • Configurations	2512	5020	10030
Back gauge **MPS-C**	□○Δ	□○Δ	□○Δ
Back gauge **MPS-CZ**	○Δ	○Δ	○Δ
Back gauge **MPS-F**		○Δ	○Δ

The Flexa bending press configurations, are achieved by matching the different back gauges with the available CNC models.

CNC **T1000**	□
CNC **T 2000**	○
CNC **2K**	Δ

Hfb

To bend with absolute accuracy

HFB press brakes represent our most advanced technological model as far as automation of the bending process is concerned.

Schiavi, with this new product range, provides all companies operating in sheet metal operation with the means to increase their competitive edge on a continually evolving market.

The exceptional HFB range consists of three separate lines that perfectly conform to the most diversified production needs.

The standard Line, HFBs, ensures high versatility and flexibility with excellent results in the production of thick sheet metal parts with different thickness, for various applications.

The HFBsL line includes the models with increased open height.
Thanks to these press brakes, it is possible to carry out standard works which occur frequently in large-sized box-type structures, thus removing the need for welding and grinding operations.
This advantage is particularly evident, for example in the production of industrial electric racks.

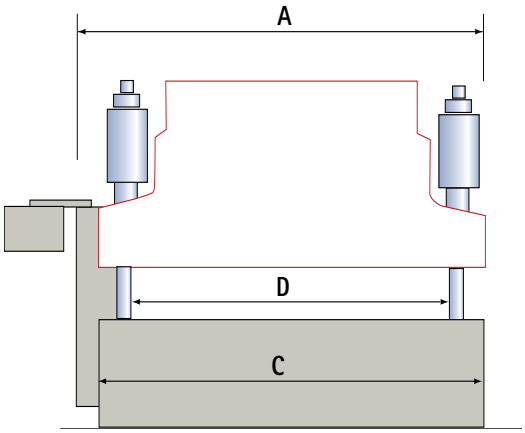
Schiavi has recently introduced a new line, HFBx, with extremely high performance, increased open height and clearance between tables.
The large sizes for stroke (500 mm) and open height (up to 1000 mm), simplify extraction and unfastening of pieces with complex profile.

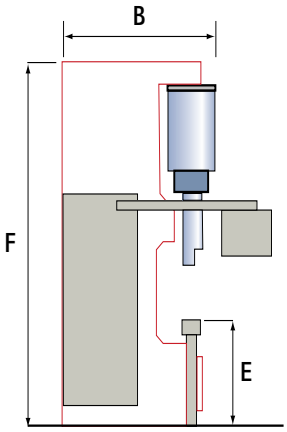
Intermediates for the HFBs L model, with increased open height.

HFB is the new series dedicated to the customer that needs **excellent bending accuracy**.
Matched with dedicated hydraulics and last generation software, this press brakes line increases your competitive edge in a continually evolving market.

- Absolute bending Accuracy
- Ease of use
- Continuity in production and flexibility
- Strictly accurate centring and guaranteed table alignment
- Quick tool change – over times
- Extremely large bending space
- Increase of upper table and ram return and approaching speed
- It can be equipped with different types of back gauges and control units

The press brakes in this line are particularly recommended for integration with a **robot-operated bending cell.** Schiavi is in fact equipped with a wide range of multi-axis robots with load capacity from 8 to 150 kg that, perfectly integrating with company-made press brakes with high cinematic performance can minimise the work process cycle times.



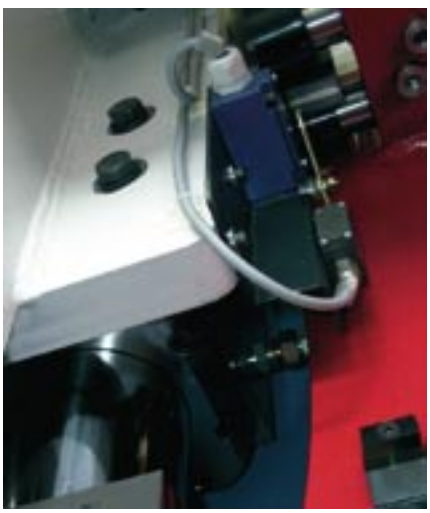


Hfb

HFBx, the top performance line

Schiavi proposes the HFBx, a line with a large number of models ranging from 50 to 220 tons, with lengths ranging from 2000 to 4000 mm.

The approaching speed (250 mm/sec.) and return speed (250 mm/sec.) of the upper table make it possible to keep high production standards.



HFBs • Technical features		5020	5025	8020	8025	10030	12530	12540	17030	17040	22030	22040
Pressure	kN	50	50	80	80	100	125	125	170	170	220	220
Length of the tables C	mm	2090	2550	2090	2550	3100	3220	4200	3270	4250	3340	4320
Table width	mm	60	60	60	60	90	90	180	180	180	180	180
Working level E	mm	910	910	910	910	910	960	960	960	960	960	960
Open Height	mm	450	450	450	450	450	500	500	500	500	500	500
Max. stroke	mm	250	250	250	250	250	250	250	250	250	250	250
Throat depth	mm	405	405	405	405	405	410	410	410	410	410	410
Distance between columns D	mm	1660	2120	1660	2120	2700	2700	3760	2700	3760	2700	3760
Max. length A	mm	2900	3350	2900	3350	4000	4000	5000	4000	5000	4000	5000
Width B	mm	1800	1800	1800	1800	1900	2000	2000	2000	2000	2000	2000
Height F	mm	2800	2800	2800	2800	2850	3100	3100	3150	3150	3200	3200
Weight	kg	5800	6200	5800	6200	8400	8600	12500	12600	14600	17000	17800
No. of intermediates	n.	10	12	10	12	15	15	21	16	21	16	21
Motor power	kW	5,5	5,5	5,5	5,5	7,5	9	9	11	11	15	15
Approach speed	mm/sec.	160	160	160	160	160	150	150	140	140	140	140
Working speed	mm/sec.	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9
Return speed	mm/sec.	86	86	86	86	86	81	81	84	84	81	81

HFBsL • Technical features		5020	5025	8020	8025	10030	13030	13040	17030	17040	22030	22040
Pressure	kN	50	50	80	80	100	130	130	170	170	220	220
Length of the tables C	mm	2090	2550	2090	2550	3100	3220	4200	3270	4250	3340	4320
Table width	mm	60	60	60	60	90	90	180	180	180	180	180
Working level E	mm	910	910	910	910	910	960	960	960	960	960	960
Open Height	mm	850	850	850	850	850	950	950	950	950	950	950
Max. stroke	mm	250	250	250	250	250	250	250	250	250	250	250
Throat depth	mm	405	405	405	405	405	410	410	410	410	410	410
Distance between columns D	mm	1660	2120	1660	2120	2700	2700	3760	2700	3760	2700	3760
Max. length A	mm	2900	3350	2900	3350	4000	4000	5000	4000	5000	4000	5000
Width B	mm	1800	1800	1800	1800	1900	2000	2000	2000	2000	2000	2000
Height F	mm	3215	3215	3215	3215	3220	3480	3480	3570	3570	3710	3710
Weight	Kg	8100	8900	8100	8900	10700	11200	15500	16000	17600	20100	22500
No. of intermediates	n.	10	12	10	12	15	15	21	16	21	16	21
Motor power	kW	5,5	5,5	5,5	5,5	7,5	15	15	18,5	18,5	22	22
Approach speed	mm/sec.	160	160	160	160	160	160	160	160	160	160	160
Working speed	mm/sec.	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9	1-9,9
Return speed	mm/sec.	86	86	86	86	86	86	86	86	86	86	86

HFBx • Technical features		5020	5025	8020	8025	10030	13030	13040	17030	17040	22030	22040
Pressure	kN	50	50	80	80	100	130	130	170	170	220	220
Length of the tables C	mm	2090	2550	2090	2550	3100	3220	4200	3270	4250	3340	4320
Table width	mm	60	60	60	60	90	90	180	180	180	180	180
Working level E	mm	910	910	910	910	910	960	960	960	960	960	960
Open Height	mm	800	800	800	800	800	800	800	800	800	800	800
Max. stroke	mm	500	500	500	500	500	500	500	500	500	500	500
Throat depth	mm	405	405	405	405	405	410	410	410	410	410	410
Distance between columns D	mm	1660	2120	1660	2120	2700	2700	3760	2700	3760	2700	3760
Max. length A	mm	2900	3350	2900	3350	4000	4000	5000	4000	5000	4000	5000
Width B	mm	1800	1800	1800	1800	1900	2000	2000	2000	2000	2000	2000
Height F	mm	3215	3215	3215	3215	3220	3480	3480	3570	3570	3710	3710
Weight	kg	8600	9400	8600	9400	11200	11700	16000	16500	18100	20600	23000
No. of intermediates	n.	10	12	10	12	15	15	21	16	21	16	21
Motor power	kW	9	9	9	9	11	15	15	18,5	18,5	22	22
Approach speed	mm/sec.	250	250	250	250	250	250	250	250	250	250	250
Working speed	mm/sec.	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
Return speed	mm/sec.	250	250	250	250	250	250	250	250	250	250	250

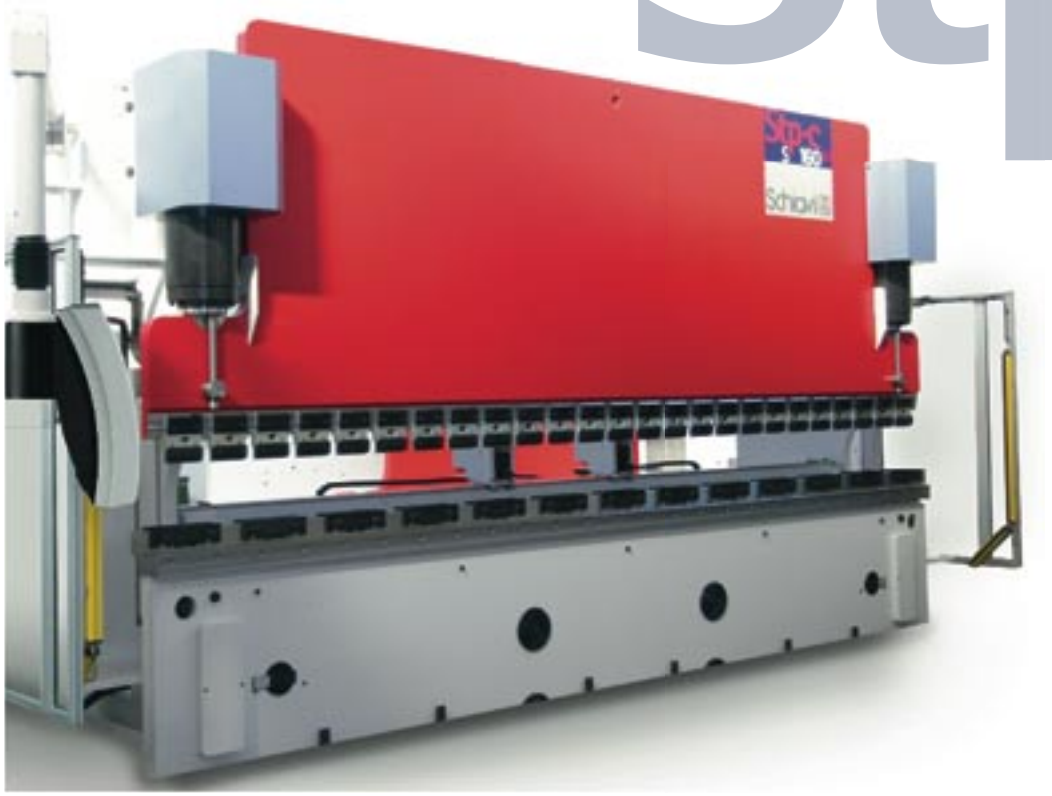
HFB • Configurazioni	5020	5025	8020	8025	10030	13030	13040	17030	17040	22030	22040
Back gauge **MPS-C**	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ	□ ○ Δ
Back gauge **MPS-CZ**	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ
Back gauge **MPS-F**	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ
Back gauge **APS 1**	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ
Back gauge **APS 2**								○ Δ	○ Δ	○ Δ	○ Δ

Possibility of matching with
ROBOT RCS 8 - 45 -100 - 150

The HFB bending press configurations, can easily be achieved by matching the many back gauges with the available CNC models.

CNC **T1000**	□
CNC **T 2000**	○
CNC **2K**	Δ

Stp.c



Great bending force

The CNC press bracker STP.c, belong to the series of the large machines designed to work on high thickness and large sized plates.
The machine frame is bolted to allow normalisation treatment also on large-sized structures.

The STP-C line, that includes press brakes models with different sizes and high loads, has been designed by Schiavi for companies which have a strong need to operate in the heavy mechanics field but cannot do without bending quality.

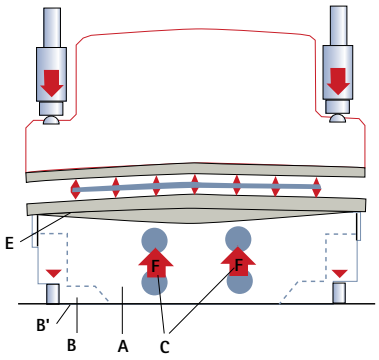
Upon bending, the reaction forces deform and buckle the upper table on a course that remains parallel to the central core and the die - holder table.

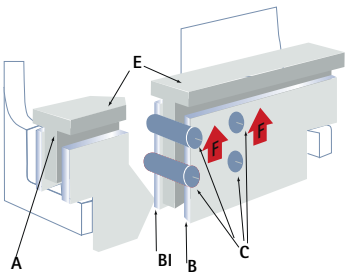
Depending on the user's needs these machines offer a wide operating range, from 3000 to 12000 mm, and a pressure force ranging from 1600 to 12000 kN.

Absolute bending accuracy is guaranteed by the parallel curvature of the tables that automatically corrects the opposite deformations.

The use of adjustable intermediates, applied on the upper table, makes it possible to correct any bending of the tables during working.

The strictly accurate centring and alignment is granted by 4 pairs of bearings (upper and lower) that, placed at adequately high distance, slide on rectified and treated steel guides.





A	*Central core*
B *and* **B'**	*Lateral plates, welded on the sides*
C	*Two reaction pins, integral with the plates (the central core rests on them). In the STP-C models there are four such pins.*
E	*Welded die - holder table on the central core*
F	*Reaction forces*

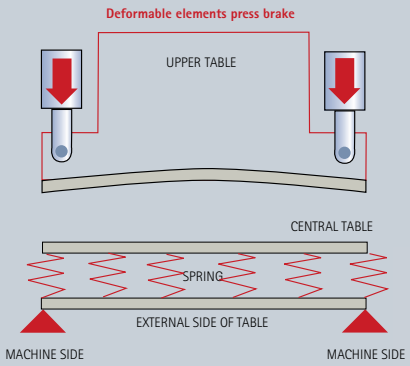
No pit even for the large-sized press brakes of the new STP-c A series

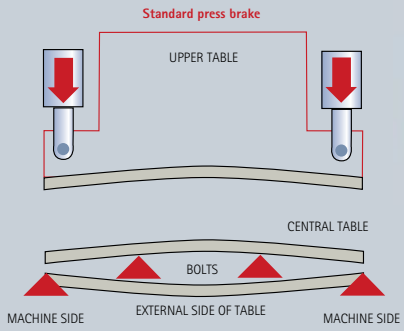
In its continuous research that leads to technological evolution, Schiavi has developed the project of the new and revolutionary STP- c A series that, despite being part of the large-sized machines series can be installed WITH NO NEED to prepare a foundation pit.

This system is protected by an international patent: the tables made up of deformable elements

The innovative building system that characterises the Schiavi STP- c A press brakes greatly simplifies installation of the machine at the client's, since it can be done without preparing costly foundations, usually required for traditional and large-sized press brakes, and therefore it grants a large degree of freedom for the machine's installation within the production area.

The STP-c A press brakes are the result both of an accurate dimensional study and of an innovative principle based on using three "sandwich" tables kept together by "springs" as opposed to the traditional stiff joints (International Patent).
Deep in the heart of these boards we "buried" a complex system of elastic elements that support the tool bearing tables.





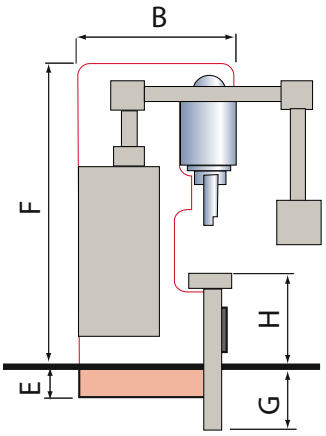
Using this system the tables change shape in a controlled way and guarantee a perfectly constant and straight bending along the whole length.

The boards are more compact than those used in traditional press brakes and therefore they make it possible to avoid having to build a foundation for the machine, even the largest and heaviest ones (400 kN and 8 metres long, 630 kN and 6 metres long).

STP-c press brakes automation and control

The electronic control panel offers the opportunity to fix, store and control all parameters required to carry out the bending.

This guarantees fully automated control and subjection of all functions as well as their complete reliability.



- Quick tool change - over times
- Extremely wide bending space
- Increase of upper table and ram return and approaching speed
- It can be equipped with different types of back gauges and control units
- It can also be used with reduced weights

STP-cs Technical features			16050	20050	20060	25040	25050	25060
Pressure		kN	160	200	200	250	250	250
Length of the tables	C	mm	5100	5100	6200	4100	5100	6200
Open Height		mm	450	450	450	500	500	500
Max. stroke		mm	200	200	200	250	250	250
Throat depth		mm	320	320	320	320	320	320
Distance between columns	D	mm	4520	4520	5520	3520	4520	5520
Max. length	A	mm	5900	5900	7000	4900	5900	7000
Width	B	mm	1360	1415	1415	1510	1510	1510
Height (pit excluded)	F	mm	3000	3100	3400	3150	3150	3150
Foundation pit for table	G	mm	670	665	900	515	735	955
Foundation pit for column	E	mm	-	-	-	-	-	-
Weight		kg	18000	19500	27000	16500	21500	29500
No. of intermediates		n.	25	25	31	20	25	31
Approach speed		mm/s	120	120	120	120	120	120
Working speed		mm/s	9,8	9	9	8	8	8
Return speed		mm/s	80	90	90	55	55	55

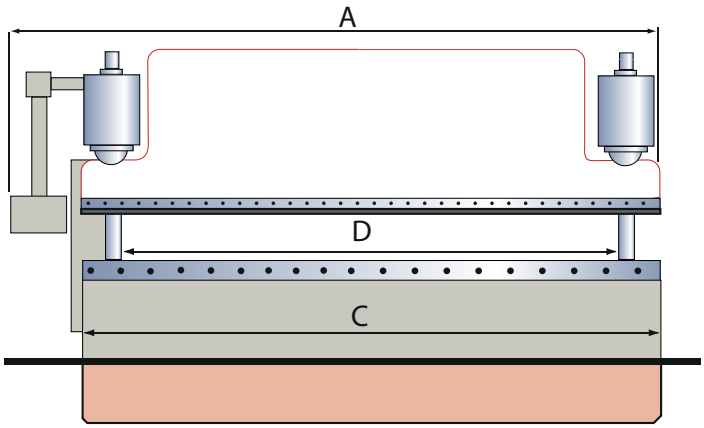
The different STP C press brakes configurations can be obtained by matching the different back gauges with the available CNC models.

CNC **T 1000** □
CNC **T 2000** ○
CNC **2 K** Δ

STP-cs • Configurations	16050	20050	20060	25040	25050	25060
Back gauge **600/800**	○	○	○	○	○	○
Back gauge **MPS-C**				□ ○ Δ		
Back gauge **MPS-CZ**				○ Δ		
Back gauge **MPS-F**				○ Δ		
Back gauge **APS 1**	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ
Back gauge **APS 2**	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ	○ Δ

Possibility of matching with ROBOT RCS 8 - 45 -100 - 150

Stp.c



25080	32030 no pit	32040	32040 no pit	32050	32060	40040	40050	40060	63040	63050	63060	63070	63080
250	320	320	320	320	320	400	400	400	630	630	630	630	630
8200	3100	4100	4100	5100	6200	4100	5100	6200	4100	5100	6200	7200	8100
500	500	500	600	500	500	600	600	600	750	750	750	750	750
250	300	300	300	300	300	300	300	300	400	400	400	400	400
320	320	320	320	320	320	320	320	320	500	500	500	500	500
7520	2700	3520	3760	4520	5520	3520	4520	5520	3520	4520	5520	6520	7520
9000	3900	4100	4100	5900	7000	4900	5900	7000	5000	6000	7000	8000	9000
1930	2565	1570	2580	1575	1575	1745	1745	1745	2315	2315	2315	2315	2650
3380	3500	3300	3500	3450	3700	3450	3650	3900	4300	4300	4550	4550	4350
1030	-	560	-	780	1060	710	915	1200	900	1210	1420	1740	1580
190	-	60	-	60	60	140	140	140	425	425	425	425	425
53000	21000	23000	26000	28500	37000	27500	33500	42000	41000	47000	57500	67000	76500
41	17	20	20	25	31	20	25	31	20	25	31	36	41
120	120	120	120	120	120	100	100	100	80	80	80	80	80
8	8	8	8	8	8	8	8	8	7	7	7	7	7
55	52	52	52	52	52	52	52	52	48	48	48	48	48

25080	32030 no pit	32040	32040 no pit	32050	32060	40040	40050	40060	63040	63050	63060	63070	63080
○	○	○	○	○	○	○	○	○	○	○	○	○	○
	□○Δ	□○Δ	□○Δ						□○Δ				
	○Δ	○Δ	○Δ						○Δ				
	○Δ	○Δ	○Δ						○Δ				
○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ
○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ	○Δ

Flexibility and automation

Maximum productivity, extremely low labour costs, safer working environment and extreme ease of use. All of this is possible by making use of the integrated automation that Schiavi offers with its robot-operated bending cells.

RCS

The interaction between design and manufacturing has made it possible to devise the robot operated bending cells that now Schiavi can offer, **a full package** that includes press brakes, handling robot and CNC, as well as a software application capable of simulating the whole bending process on PC.

The Schiavi bending cells are therefore the result of an **integrated automation** that, in addition to granting total safety for the operator ensures great flexibility in production and maximum profitability levels.

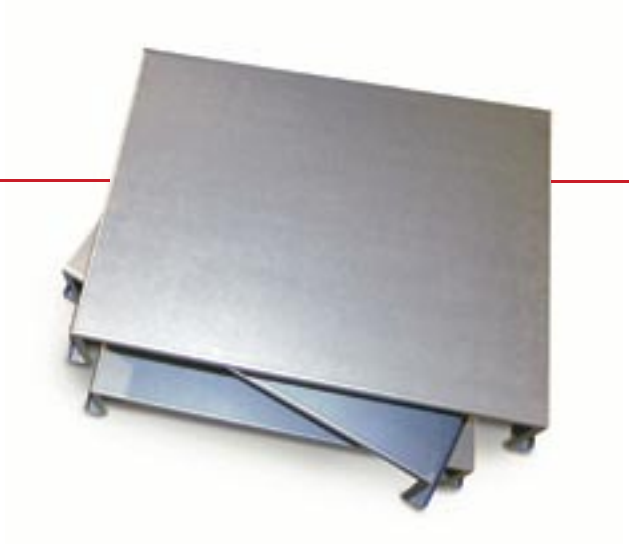
Schiavi's **multi-axes RCS robots** offer the possibility of having a wide loading, unloading and stocking area for the processed parts, especially useful in unmanned work shifts.

This line features a wide choice between the RCS 8, 45, 100 and 150 models, all designed according to the weight they need to move.

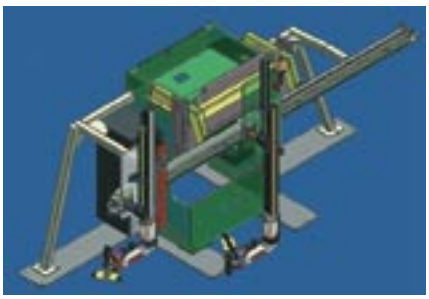
The perfect cooperation between the robot and the press brake grants continuity in working, especially during design of a new piece.

Moreover, the press brake does not need risers and can therefore be used in manual mode.
In this case the RCS robot will be put aside simply by having it slide along the transverse beam.

- Five axes solution: two linear axes and three revolving ones
- Free to define and lay out the loading/unloading areas in the working area
- It is possible to install them on machines already in operation at the end user's
- Possibility of placing the robot in the sideways parking area in order to be able to return the machine to the original manual working condition
- The robot, designed and built by Schiavi, achieves a perfect integration, both mechanical and electronic, between the robot and the press brake
- SimRobot programming and simulation software



A **second 3 axes robot** can be integrated to support the bending cell. This allows piece preparation in offline time, which greatly speeds up the bending process.



RCS • Specifications		RCS 8	RCS 45	RCS 100	RCS 150
Robot load capacity	kg	8	45	100	150
Maximum plate size	mm	1000x2000	1500x3000	2000x4000	2000x4000
Digital numeric control, independent from the bending press CNC					
Different moving modalities, including robot axes, cartesian axes and polar axes					
Programme including precompiled macros with loading, sensor search, bending following and unloading functions integrated with the normal movement self-learning functions					
The O and P cartesian axes translation guides are ball recirculation operated, while the movement is controlled by brushless motors with precision racks and pinions					
Using the two linear axes (O and P) and the three rotating axes (U - V - W) the approach to robot operated bending is similar to movements carried out in manual mode by the operator, to guarantee maximum flexibility and minimum encumbrance in the bending phase					
Extendable O axis to meet the needs of the end user					

CNC

Schiavi offers custom-tailored solutions for your needs

More than 12,000 press brakes installed by Schiavi testify to the well known quality of these machines, on the Italian market from almost 50 years.

As regards sheet metal bending, Schiavi Macchine Industriali has definitely aimed to tradition with a large amount of new contributions: from process automation to bending angle measurements, without forgetting the new numerical controls. We have also produced the new HFBx series press brakes, with remarkable geometrical sizes and high-level dynamic performances, in addition to the new STP C/A line, with deformable elements table that includes machines up to 630 T with no need for foundation pits.
Our sales service will support you in **choosing the model and configuration** that best suites your specific needs.

In order to satisfy all the needs for automation of press brakes, Schiavi employs a wide range of CNC, equipped with the devices needed to move the back gauges.

T1

T1 is a compact and complete CNC that allows direct control over the hydraulic axes (either synchronised or not) and mechanical axes to move the back gauges.

T1 represents the ideal solution to reduce costs while maintaining a complete automation and **it is recommended also for old plants re-qualification.**
A micro PLC allows control of the 4 hydraulic and mechanic axes with a higher flexibility.
This CNC is also capable of driving and triggering brushless motors, direct current, stepping units and Canbus devices.

T1000

This CNC has been designed to get the best out of the new digital technologies and allow the operator to work safely and quickly.

The T 1000 CNC has the advantage of being compact, and to be able to operate up to four axes, 2 of them synchronised Y1-Y2, and 2 of the back gauges.

The 10.4" LCD TFT colour monitor has a VGA resolution that allows clear data display although it makes it possible to keep the control unit's encumbrance low.

One of the main advantages of this instrument is the **extremely easy to use programme software**, that makes it possible to prepare the bending programme by inputting only a handful of main data.

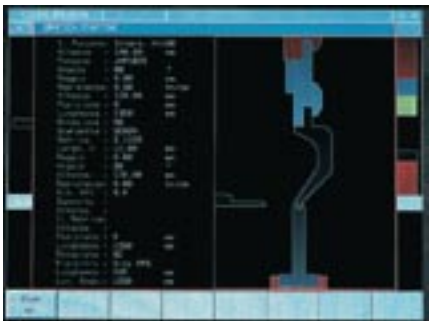
T2000

The T2000 management interface has been developed to make bending programmes operation more intuitive and faster.

This control can handle up to 12 Y1-Y2 synchronised axes and up to 10 back gauges axes.

The 12.1" LCD TFT colour monitor with SVGA resolution makes it possible to neatly display images and data, despite the control's small size.

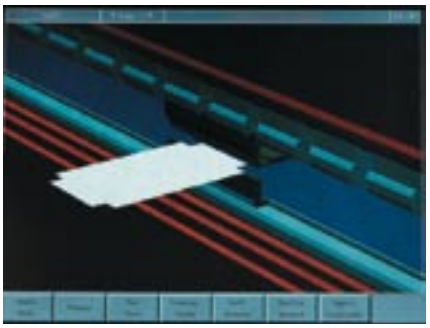
The multitasking software that controls the CNC employs the Pentium TM processor based Hardware's potential and makes it possible to keep all the phases of the bending process under control.

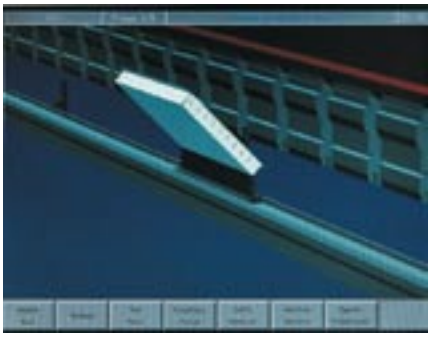


2K

2K can handle up to 12 axes and, thanks to the built-in CAD, also allows graphic 2D designing of tools and pieces and import of 3D pieces.
It also allows real-time display of the various phases of the bending process.

2K has all the features and potential required to be regarded as a beacon in this sector of CNC.



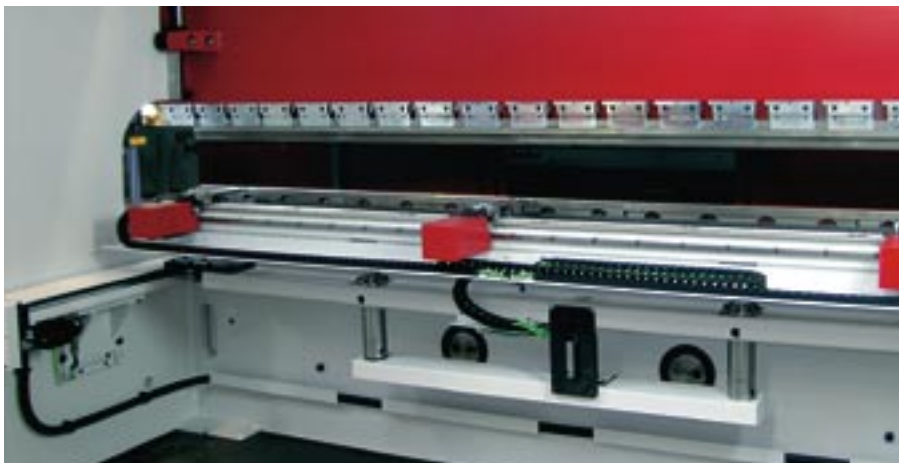


2K is Schiavi's multi-axis graphic control that combines high-technology devices that guarantee high-level performance in a futuristic shell.

Back gauges

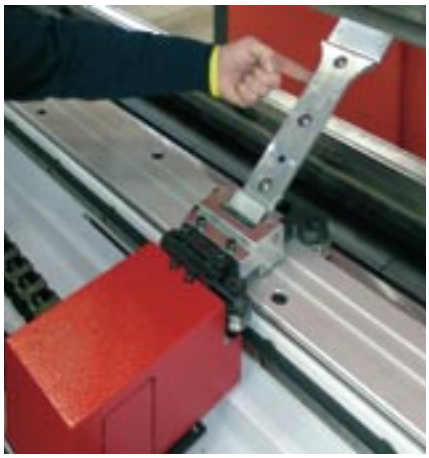
Schiavi has a wide range of back gauges capable of satisfying the needs of demanding customers both in terms of technical and economic requirements .

All models stand out for their extreme sturdiness and absolute accuracy. Installed on the Schiavi press brakes together with the various CNC, these back gauges conform to all existing types of processes.



MPS-CZ

The back gauge MPS-CZ can be used on all Schiavi press bakes.
The double engine in use on X axes allows shifting of the rear transverse beam to perform conical folds.
Max. stroke 600 mm, maximum reference distance 900 mm.



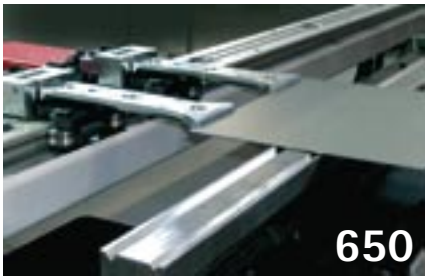
This tilting back gauge makes counter-bending operations easier and smoother.

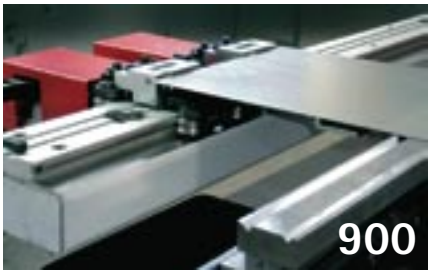
600/800

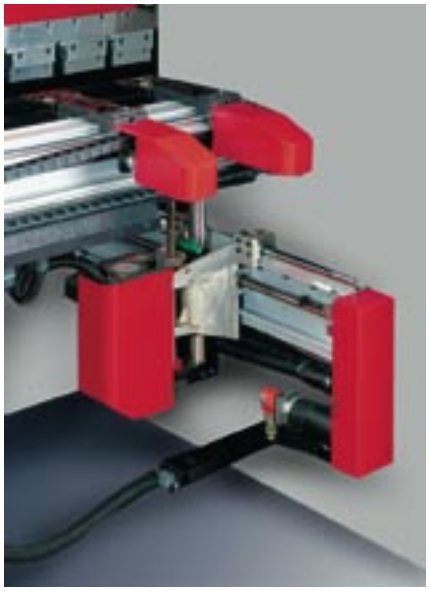
The 600/800 back gauge is suitable for use on press brakes whose length ranges from 2000 to 6000 mm.
It features two arms on the X axis.
Max. stroke 600/800 mm.

MPS-C

The back gauge MPS-C can be used on all Schiavi press brakes.
The full movement of the head bearing transverse beam reduces encumbrance in the rear working area.
Max. stroke 600 mm, maximum reference distance 900 mm.

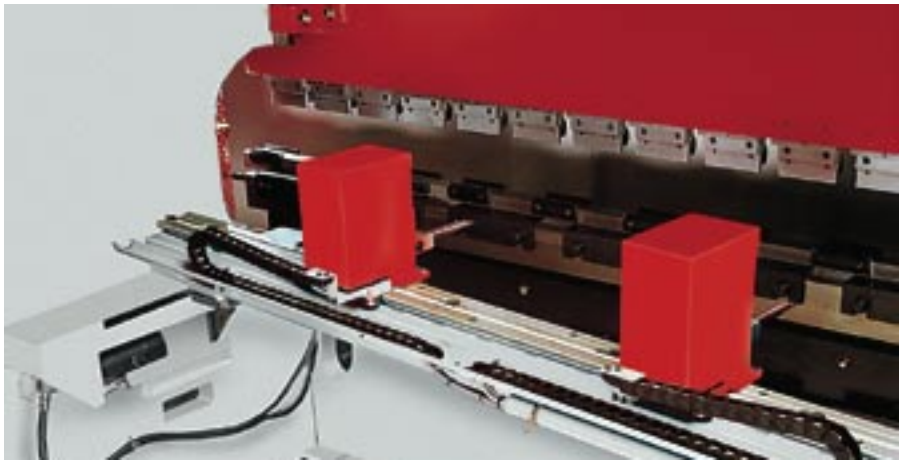






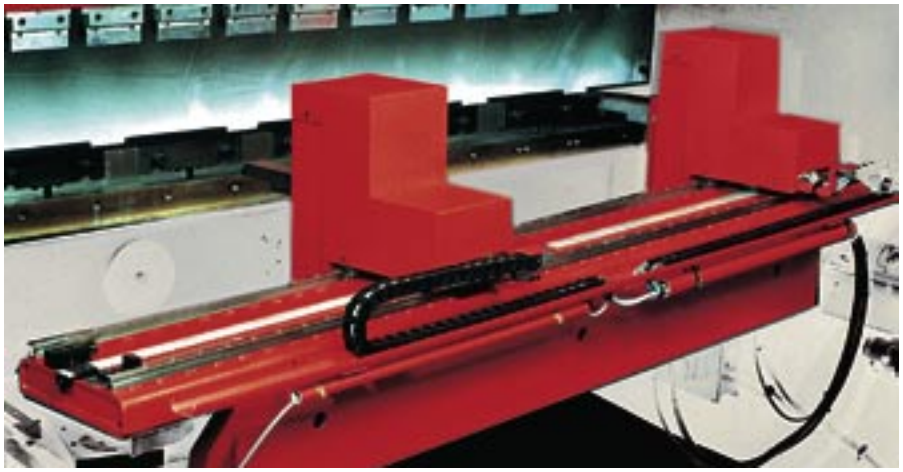
MPS-F

MPS-f is the back gauge that stands out for its high performances.
The axes, featuring ball screws with particularly sturdy guides, all feature a wide travel range and allow exceptionally high moving speeds.
Max. stroke 700 mm, maximum reference distance 1000 mm.



APS-1

APS 1 is an extremely flexible back gauge. This back gauge can be applied, with many different configurations, to all the Schiavi press brakes line.
APS 1 is made up of two arms in the X axis.
Max. stroke 600 mm, maximum reference distance 800 mm.



APS-2

The APS-2 back gauge has been devised for especially heavy workloads and it is the most likely to resist to massive shocks caused by the placement of particularly heavy plates on the crowning system.
APS-2 is made up of two arms in the X axis.
Max. stroke 800 mm, maximum reference distance 800 mm.

Plate supports

Schiavi has a wide range of plate supports that can be very useful additions to the press brakes.
In addition to simplifying materials movement, these devices allow organisation of shifts with only one operator.
The plate supports field of application entails large sized plates, heavy plates and thin, unstable plates.

- Plate support during bending of the thinner plates, cancelling the whole unforseen counter-bending possibilities
- Support of large sized or very heavy plates during bending to help carrying out a correct bending
- Bending of large sized plates carried out by only one operator
- Decrease of risks and dangers for the operator thanks to the possibility of programming the bending process from a safe distance, thus also avoiding any possible plate fall or slipping away, both during and after bending
- Possibility of using the plate supports also independently as they are capable of autonomous movement

Specifications

Available Torque: 105 kgm
CNC for bending follow-up featuring angular accuracy of +/- 30°
Suction-cup plate support to hold the plate in place during the phase of return to horizontal plane
Rotation centre regulation
Maximum number of arms per machine: 4
It can be used on pieces featuring a bending angle of up to 26°

Safety Systems

Laser Beam CE Safety Device

Schiavi pays the utmost attention to safety systems that, in addition to guaranteeing operator safety are capable of greatly simplifying machine effectiveness.

The Schiavi press brakes can be equipped with two types of CE class Safety Devices: fixed photoelectric barriers or laser beam system.
Choosing either device depends on the degree of operational freedom required by the client.

Fixed photoelectric barriers CE Safety Device

Angle measurement system

- Extremely low bending times
- Bending different materials
- Repeated bending
- Angle measurement and elastic return course measurement without releasing the sheet, carried out between the punch and the die
- More reliable over time
- Allows using of extremely small V-shaped matrixes
- No additional encumbrance outside the matrix
- Optimal production cost

Schiavi can equip all of its press brakes with a new electrical-pneumatic angle measurement system.

Its operating principle is based on control of air flows that, passing through the die, allow detection of the parameters needed to adjust the bending angle.

The accurate planning phase and the interaction between design and production has allowed Schiavi to patent and produce this revolutionary electrical/pneumatic angle measurement system, which the company thinks will surely represent a highly reliable product also capable of guaranteeing quick investment returns.

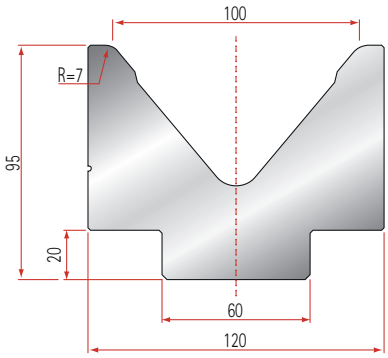
The new and exclusive solution stands out for the total absence of moving mechanical parts.

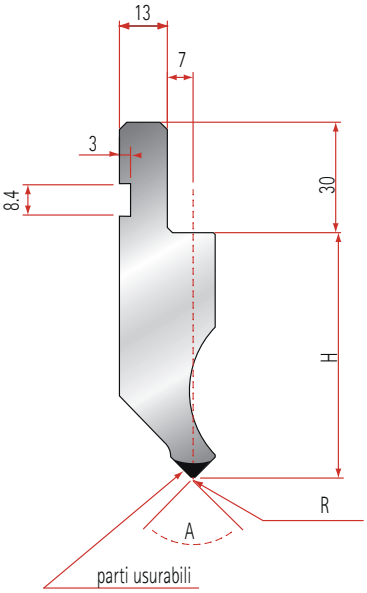
This feature makes it possible to move the sheet without risking impacts and to drastically reduce maintenance with respect to other systems that are more vulnerable and prone to environmental dusts.

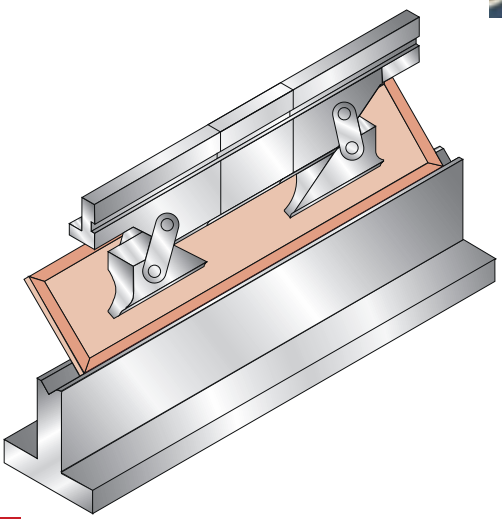
Tools - Equipment

Schiavi has a wide range of punches and dies, elements that constitute the key point of the press brakes and of the sheet bending process.

The large number of shapes and types of fashioning that can be achieved with the most advanced uses of press brakes requires a corresponding variety of shapes and sizes of dies and punches.







The Schiavi tools are all built using special steels and C50 Carbon steel, they are then induction tempered on the wear-prone parts using a 55~60 HRC resistance and then rectified.

Our well equipped warehouse grants quick supply of all tool models.

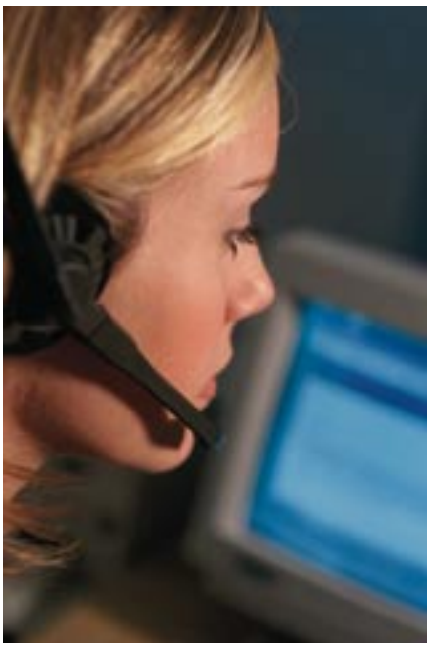
To satisfy specific requests for equipment or special processing, Schiavi can employ its technicians and offer a feasibility study starting from a design of the piece that needs to be built.

Applications for Schiavi bending systems

- Doors and windows
- Light-average framing
- Building of mechanical parts' guards and crankcases
- Building of guards and crankcases at industrial level
- Car bodies parts
- Booths for electrical and electronic panels
- Office supplies, containers, drawers and so on
- Stainless steel furnishing accessories for large kitchens
- Furnishing accessories and elements
- Metal framing for boiler shops

Customer Service

Product quality and attention to the client's needs have always been a mainstay in Schiavi's business policy.



Servicing

Our customers can benefit from an unparalleled mix of Installation Services, Commissioning and Maintenance services, all for their machines.

A team of specialists, gifted with well documented and long experience, follows the customer throughout all the product choice process.
This team, during the preparation and production phases is capable of providing technical assistance, which is priceless to achieve an optimal development in growing companies.

ON LINE service

The client, no matter the sector it works in, can always found knowledgeable partners and consultants it can turn to in any moment and with any request, as well as a valid point of reference for the post-installation relationship.

Demonstrations

At our Show Room we carry out working tests on the machine, both during the Open House days which take place periodically and upon specific customer request.

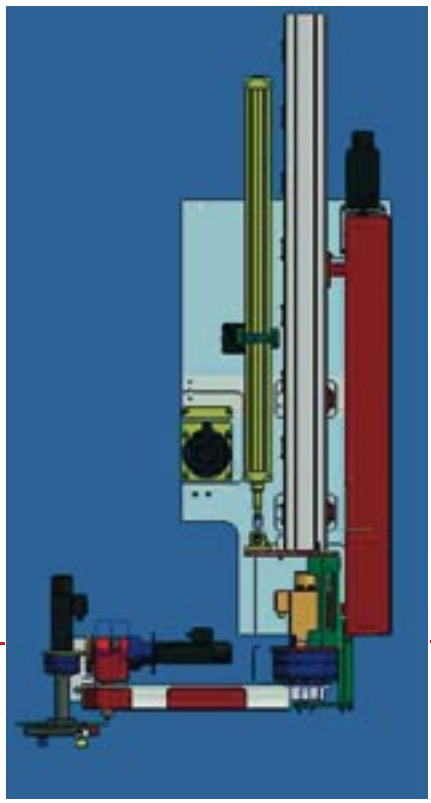
Through a series of dynamic demonstrations customers can understand the feasibility and processing times required for their projects.

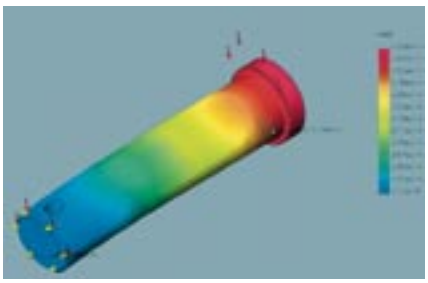
Design

Schiavi has an internal development area that takes care of study of custom product solutions, both for standard and special machines.

The technical office is equipped with 3d design workstations and sophisticated software applications that allow structural calculations (applying the Finite Elements Methodology, FEM) to achieve correct machine sizing.

Using software applications installed on the machine controls, Schiavi guarantees a great flexibility of operation and timely upgrades.





Turnkey solutions

The turnkey solutions dedicated service studies and develops ad hoc processing cycles and tools for complex pieces. Schiavi also provides to its clients optimal solutions to obtain the best system performances.

Training

Schiavi organises short training courses, basing on a well tested and effective practice that suits the industrial and working rhythms well.

Training, designed to perfect the learners' professional skills and improve production, is carried out at the Casoni di Gariga (Piacenza) site.

Spare parts

Schiavi spare parts guarantee machine reliability over time, as they are built according with strict quality standards. Our well equipped warehouse can quickly deliver also pieces for machines that have been used for several decades.

Schiavi is where you are

Success, according to Schiavi, depends not only from established and well known product reliability, but also from your employees' professional skills.

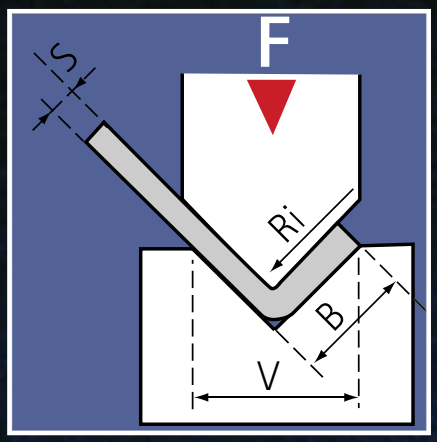
Schiavi can be found in Italy and abroad with its own widespread commercial network made of skilled agents that will be there to help you find the solutions that suit your production type best.

Custom payment modes

Safe and comfortable investments with custom tailored leasing and loans: the Schiavi group's finance company, in fact, produces custom-tailored solutions to meet the customer needs.

Used machines collection

Schiavi's services are completed by a collection, overhauling and resale of used machines, in order to offer products that have all that it takes to get back to production.



S	Sheet thickness - mm
V	"V" width
F	Force in tons/m
B	Minimum edge
Ri	Inside radius

Sheet thickness/V-shape width ratio

S	Sheet thicknes - mm	**0,5-2,5**	**3-8**	**9-10**	**12 o più**
V	"V" width	**6 S**	**8 S**	**10 S**	**12 S**

R	aluminium 20-25 kg/sq. mm
R	mild steel 40-45 kg/sq. mm
R	stainless steel 65-70 kg/sq. mm

$$F = \frac{S \times 2 \times R}{1.4 \times V} = \text{.....} \ \textbf{ton/m}$$

Air bending table - Mild Steel

S	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	160	200	250	V
	2,8	4	5	5,5	7	8,5	10	11	13,5	14	17,5	22	28	35	45	55	71	89	113	140	175	B
	0,7	1	1,1	1,3	1,6	2	2,3	2,6	3	3,3	4	5	6,5	8	10	13	16	20	26	33	41	Ri
mm																						
0,5	4	3																				
0,6	6	4	4	4																		
0,8		7	7	5	4																	
1		11	10	8	7	6																
1,2			14	12	10	8	7	6														
1,5				20	17	15	13	11	10	9												
2						22	19	17	15	13	11											
2,5								28	25	22	18	14										
3									34	30	24	19	15									
3,2										34	27	22	17	14								
3,5											33	26	20	16	13							
4											43	34	27	21	17							
4,5												44	34	27	21							
5												52	42	33	26	21						
6													60	48	38	30	24					
8													107	85	68	53	43					
10																85	67	53	42			
12																	96	78	60	55		
15																	150	120	95	75		
20																		215	170	135	108	
25																				210	170	F
30																					240	

t/m

Air bending table - Stainless Steel

S	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	160	200	250	V
	2,8	4	5	5,5	7	8,5	10	11	13,5	14	17,5	22	28	35	45	55	71	89	113	140	175	B
	0,7	1	1,1	1,3	1,6	2	2,3	2,6	3	3,3	4	5	6,5	8	10	13	16	20	26	33	41	Ri
mm																						
0,5	6	5																				
0,6	9	6	6	6																		
0,7	12	8	8	6	6																	
0,8		11	11	8	7																	
0,9		13	12	10	8	7																
1		17	15	12	11	8																
1,2			21	18	15	12	11	9														
1,5						20	17	15	13	12												
2						33	29	26	23	20	17											
2,5								39	35	30	25	19										
3									51	45	36	29	23									
4											65	51	41	32	26							
5												78	63	50	39	32						
6													90	72	57	45	36					
8															102	81	65	51				
10																129	101	80	63			
12																	144	117	90	83		
15																		180	141	114		
20																			250	208	167	
25																				315	255	F
30																					360	

t/m

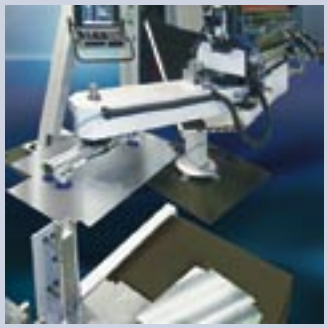
Schiavi Macchine Industriali

The global solution for
sheet metal processing

Laser cutting systems

Plasma and oxygas cutting systems

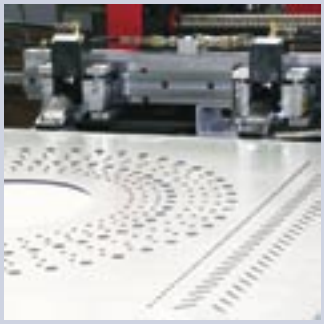
Robot-operated bending cells



Press brakes

Shearing machines

Punching machines



Notchers and bevellers

Graphic design:
Schiavi Grafica & Immagine

Printing:
Grafiche Cesina - Piacenza

july 2006
2000 - Version Eng.