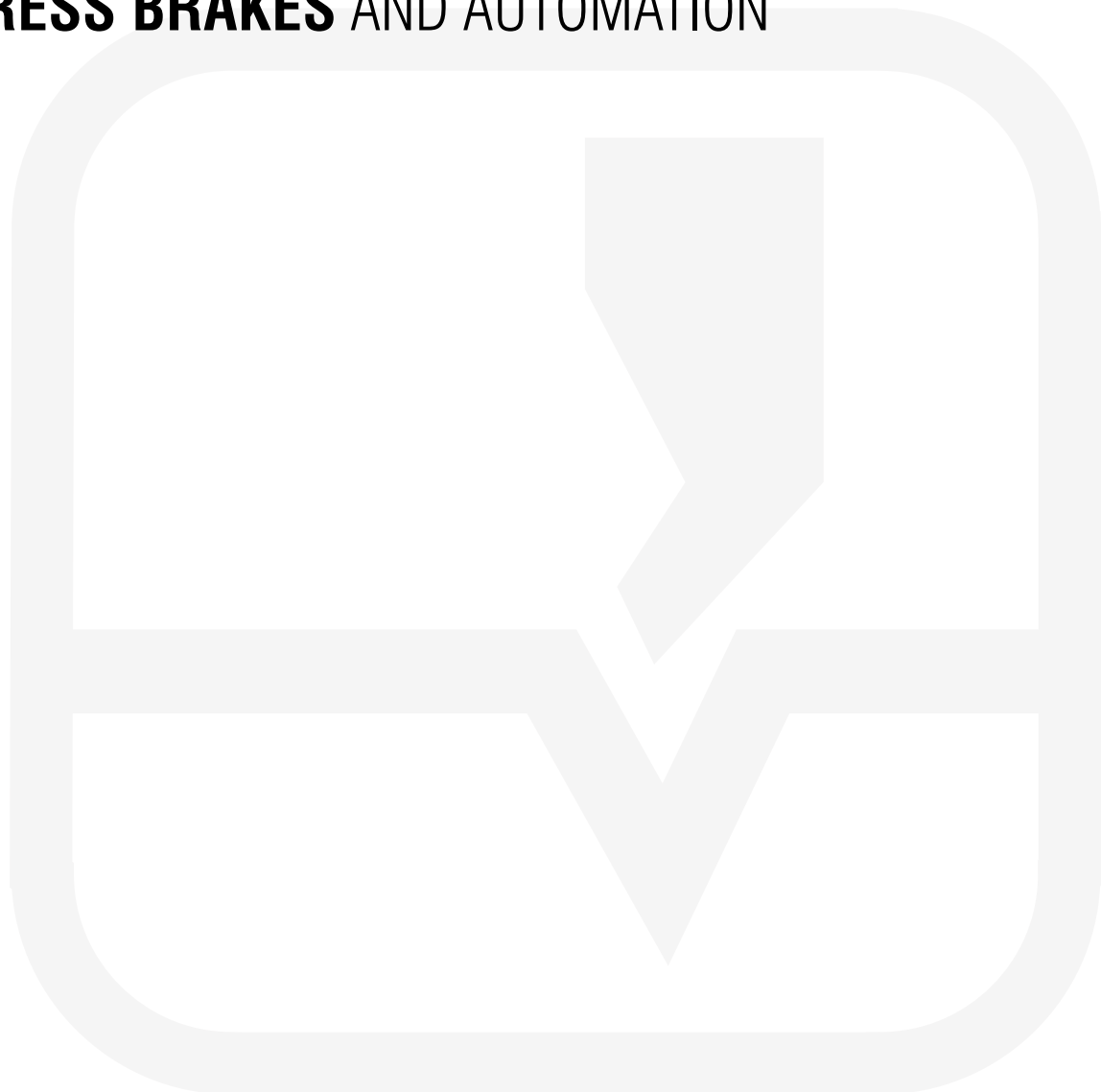




**schiaavi**   
bending the future

PRESS BRAKES MADE IN ITALY SINCE 1958

## **PRESS BRAKES AND AUTOMATION**



## VISION & MISSION

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**Schiavi Macchine International: tradition and technology, made in Italy since 1958.**

Quality and long-lasting reliability are two of the founding values of Schiavi Macchine's history and the reason for its confirmed success. These key values are based on excellent customer service, continual training, prompt interventions before and after sales, and advanced technical engineering knowledge. The intense R&D programme is targeted at improving products and incrementing internal know-how. Schiavi Macchine's vision is to complete its internationalisation plan based on maintaining its sound technological assets and reasserting its position as a reference benchmark in the industry with state-of-the-art machinery and solutions.

Schiavi Macchine's mission is to ensure a higher level of customer satisfaction, guaranteed by a first-class product resulting from R&D programmes. Italian manufacturing excellence and continual research in innovation and technology open to establishing strategic partnerships with leading international dealers, creating essential bonds for developing the brand.

Schiavi Macchine is proud to have installed over 14,000 machines since its foundation. The company is heavily investing in automation systems for bending and cutting processes.

The major competitive advantage of Schiavi Macchine is the ability to manage the entire manufacturing process from customisable, patented machinery, advanced controls and bending and cutting operation automation to offline programming with real-time synchronisation.

**A family-run company: we take pride in our values**

The Zinetti family, which has worked in the sheet metal sector for over thirty years, took over Schiavi in 2014 and founded Schiavi Macchine International with the main goal of exporting Italian manufacturing excellence worldwide.

Maurizio Zinetti started his career in the sheet metal industry in the early 1980s by the side of his father Virginio. His sons Elia and Nicolò Zinetti are now running Schiavi Macchine. They are the third generation of a business based on the sound family values of respect, responsibility, dedication and punctuality.

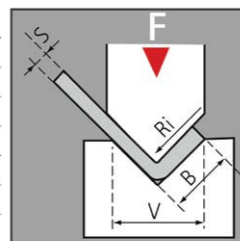
AIR BENDING TABLE - MILD STEEL

S	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	160	200	250	V	
mm	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	
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	
30																						240	

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	
mm	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	
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		
30																						360	

S	Spessore lamiera - mm Thickness of the sheet - mm
V	Larghezza del V V-opening
F	Forza in T/m Force in T/m
B	Bordo minimo Shortest edge
Ri	Raggio interno Inside radius
R	alluminio 20-25 kg/mm <sup>2</sup> aluminium 20-25 kg/mm <sup>2</sup>
R	acciaio dolce 40-45 kg/mm <sup>2</sup> mild steel 40-45 kg/mm <sup>2</sup>
R	inox 65-70 kg/mm <sup>2</sup> stainless steel 65-70 kg/mm <sup>2</sup>



Relazione tra spessore lamiera e larghezza V  
Sheet thickness/V-shape width ratio

S	Spessore lamiera - mm Sheet thickness - mm	0,5-2,5	3-8	9-10	12 o più
V	Larghezza del V "V" width	6 S	8 S	10 S	12 S
R	alluminio 20-25 kg/mm <sup>2</sup> aluminium 20-25 kg/mm <sup>2</sup>	$F = \frac{S^2 \times 2 \times R}{1,4 \times V} \text{ ton/m}$			
R	acciaio dolce 40-45 kg/mm <sup>2</sup> mild steel 40-45 kg/mm <sup>2</sup>				
R	inox 65-70 kg/mm <sup>2</sup> stainless steel 65-70 kg/mm <sup>2</sup>				
R	acciaio dolce 40-45 kg/mm <sup>2</sup> mild steel 40-45 kg/mm <sup>2</sup>				

## BENDING

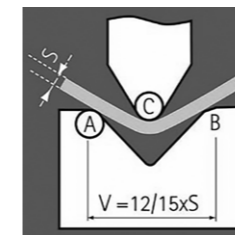
### Air bending

This is the most common bending method. It requires relatively low pressure, but the residual elasticity after bending must be taken into consideration for angle precision.

Air bending is divided into:

#### Partial bending

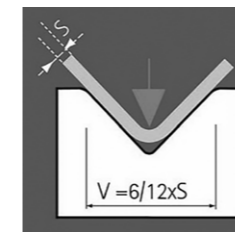
Bending stops before the sheet reaches the die bottom in this method. The sheet contacts the tool in A – B – C (as shown in the picture) and the bending angle is determined by the position of these points. This bending method preferably requires a V-width that is from 12 to 15 times thicker than the sheet. The pressure values indicated in the pressure table are indicative because in this method the pressure varies according to many factors, such as material features, tool type and profile, etc.



#### Bottoming

In this bending method, the inner radius is known as the "natural bend radius" and is equal to approximately 1/6 of the V-width. An inner radius equal to thickness can be obtained by using a die with a V-width that is 6 times the thickness of the sheet.

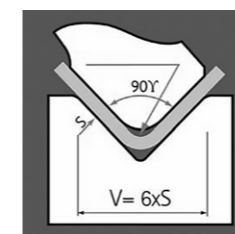
In the case of 90° bends, 88° dies can be used to compensate for material elasticity. The required pressure is indicated in the pressure table. This bending method is generally used for sheets up to 2-3 mm thick.



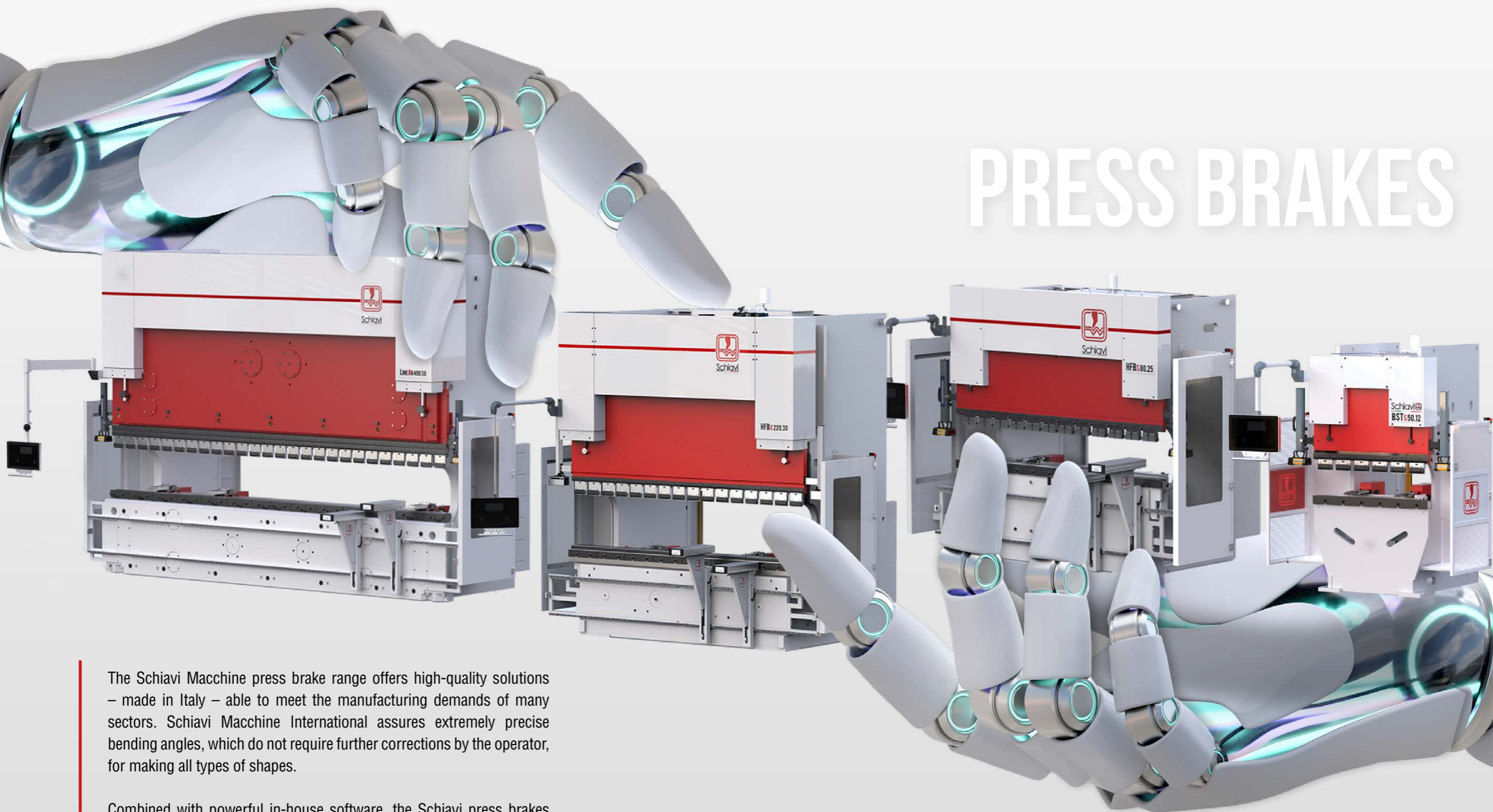
#### Coining

This bottom pressing bending method requires a pressure that is 4 to 5 times higher than for bottoming. The bending precision is excellent because inner radius coining cancels springback. Inner radius bends narrower than the sheet thickness can be obtained residual elasticity is eliminated with this bending method. This happens as a consequence of penetration of the punch tip into the die bottom in the natural bend radius of sheet metal.

The V-width of the die is 6 times the thickness of the sheet and placed at 90°, like the punch. Coining is generally used on sheets up to 2 mm thick and, in some cases, up to 3 mm thick. The punch angle is very important only in the case of coining.



# PRESS BRAKES



The Schiavi Machine press brake range offers high-quality solutions – made in Italy – able to meet the manufacturing demands of many sectors. Schiavi Machine International assures extremely precise bending angles, which do not require further corrections by the operator, for making all types of shapes.

Combined with powerful in-house software, the Schiavi press brakes have been the benchmark for over sixty years for their simple use, reliability, precision and low-cost maintenance.

ENERGY SAVING

up to

40%

SPEED INCREASE

up to

30%

DRASTIC REDUCTION OF  
**NOISE  
POLLUTION**

#### HYBRID PRESS BRAKES: MEASURABLE ADVANTAGES

With the introduction of the HYBRID version of its bending machines, Schiavi Macchine has significantly reduced energy consumption while simultaneously increasing work speeds and minimizing the noise produced by its machines.

Thanks to HYBRID technology, Schiavi Macchine provides bending machines that improve the operator's work quality while also increasing productivity.

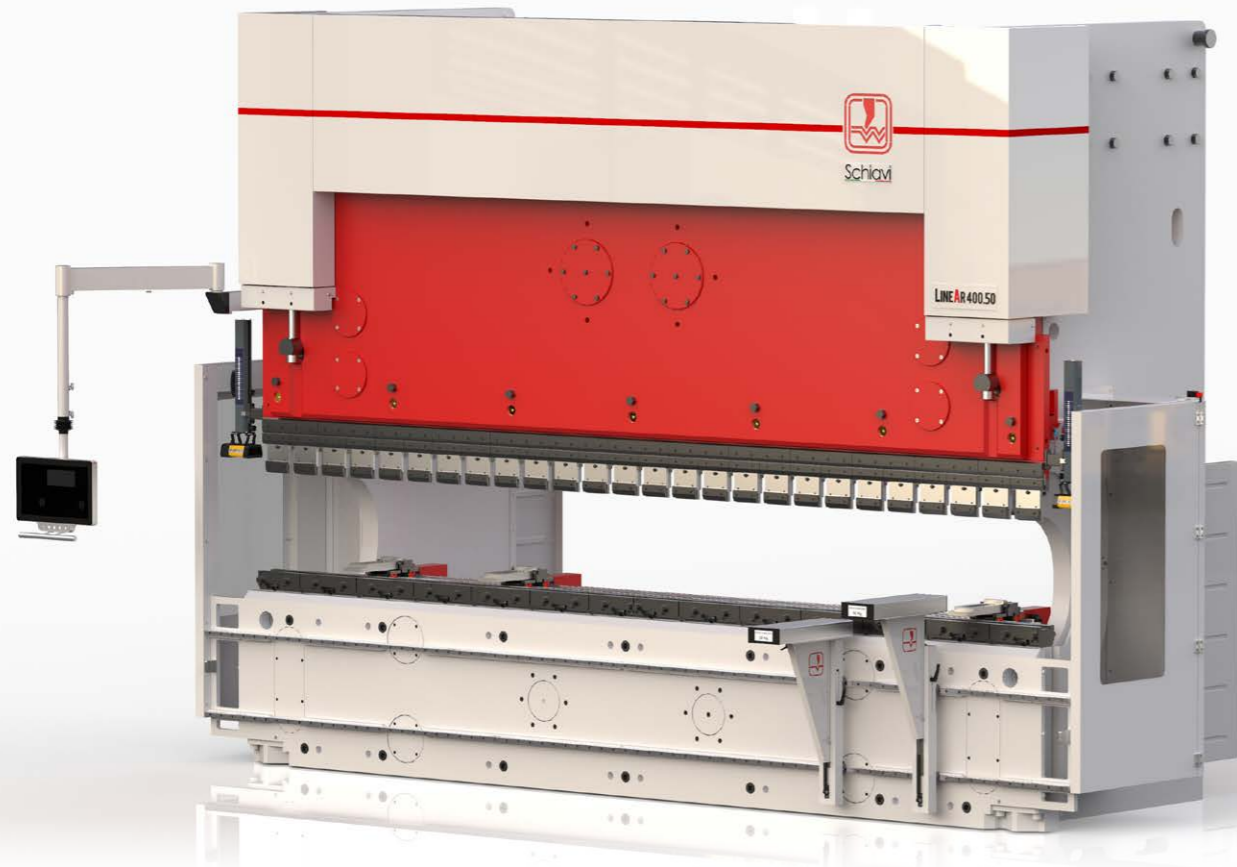
# PRESS BRAKES

# HYBRID

The **green** generation of bending

# LINEAR

THE BENDING EVOLUTION

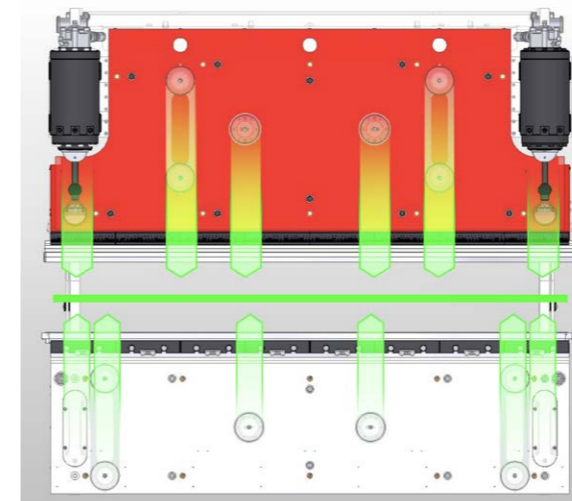


SCHIAVI MACCHINE INTERNATIONAL is specialised in press brakes made to measure according to your requirements. With the LineAr nothing is impossible

LINEAR MODEL		130.30	220.40	220.50	250.60	400.40	400.50	400.60	630.40	630.60	630.70	800.60	1000.60	1000.80	1000.10	12000.12
BENDING FORCE	kN	1,300	2,200	2,200	2,200	4,000	4,000	4,000	6,300	6,300	6,300	8,000	10,000	10,000	10,000	12,000
LINEAR PLUS OPTIONAL*		*	*	*	*	*	*	*	-	-	-	-	-	-	-	-
BENDING LENGTH	mm	3,200	4,200	5,200	6,200	4,200	5,280	6,280	4,200	6,200	7,200	6,200	6,300	8,300	10,300	12,300
DISTANCE BETWEEN SHOULDERS	mm	2,850	3,700	4,700	5,520	3,520	4,520	5,520	3,520	5,520	6,520	5,490	5,520	7,520	9,520	11,520
THROAT DEPTH	mm	450	450	450	520	520	520	520	520	520	520	520	510	520	520	520
MAX. STROKE	mm	320	320	450	450	450	450	450	400	450	400	400	400	400	400	400
MAX. OPENING	mm	600	600	750	750	750	750	750	750	750	750	750	900	900	900	900
WORKING LEVEL HEIGHT	mm	935	977	1,015	1,020	990	1,020	1,020	1,010	973	905	850	895 custom	910	910	820
TABLE WIDTH	mm	60	60	60	90	60	120	60	100	60	60	60	120 custom	60	100	100
NUMBER OF INTERMEDIATES	No.	15	21	26	31	21	26	31	21	31	36	31	31	42	52	62
APPROACH SPEED	mm/s	200	220	150	150	120	90	140	120	100	100	100	90	80	80	80
ADJUSTABLE WORK SPEED	mm/s	1-10	1-10	10	1-10	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/s	200	200	120	104	115	100	130	60	60	60	100	60	60	60	60
MOTOR POWER (3-PHASE 380V 50HZ MOTOR)	kW	18.5	22	22	22	37	37	37	37	37	37	75	90	90	90	90
INVERTER POWER	kW	18.5	22	22	22	37	37	37	37	37	37	75	110	110	110	110
APPROXIMATE WEIGHT OF THE PRESS	kg	12,300	22,000	26,100	28,000	23,500	34,550	40,000	41,000	55,000	70,000	87,000	100,000	110,000	145,000	200,000
OVERALL LENGTH	mm	4,120	5,060	6,100	7,850	4,900	5,906	6,900	5,700	6,980	8,700	7,320	8,300	9,700	11,700	13,700
WIDTH	mm	2,270	2,050	1,840	2,150	2,136	2,350	2,272	2,450	2,450	2,450	2,600	3,522	2,850	2,850	3,000
HEIGHT	mm	3,200	3,405	3,900	3,800	3,827	4,080	4,092	4,420	4,630	4,315	4,750	4,740	4,750	5,060	5,200
UNDERGROUND SECTION BEAM	mm	-	-	-	-	-	-	-	-	560	850	1,000	975	1,050	1,525	2,000
UNDERGROUND SECTION COLUMN	mm	-	-	-	-	-	-	-	-	-	-	390	560	490	375	985

Notes: Technical specifications are subject to variations. Please contact the reference office if needed.

The LineAr is the top of the Schiavi range. It is a press brake that revolutionizes the world of bending by **eliminating the canoe effect** with an internationally **patented solution** that **keeps the tool holder tables perfectly horizontal and parallel, ensuring an absolute linearity of the profile.**



The LineAr is especially recommended for customers who require maximum precision of interlocking profiles or want to facilitate subsequent procedures, such as welding or manual and robotic assembly. LineAr is the byword of **speed**, top **quality** and **strong bending force**. LineAr machines range from 3 m-130 ton to 12 m-1,200 ton models.

### CROWNING-FREE SYSTEM

With the patented LineAr system, the tables are not deformed during the bending process, guaranteeing product linearity. This is extremely advantageous for making interlocking profiles and facilitating downstream processes, such as assembly or welding (robotic and manual).

### PRECISE CENTRING AND GOOSENECK

The upper table is carried by four pairs of bearings running on hardened, rectified steel guides integrated into the machine sides. Table centring and alignment are guaranteed by the ample distance between the upper and lower bearings.

Through the innovative use of an additional gooseneck, the distance between the tables can be measured accurately, regardless of the structural deflection typical of the bending process.

### CUSTOMISATION AND AUTOMATION

LineAr expands the range of customization options, available software and integration with automatic systems. The safety systems that guarantee speed, the back gauge systems for up to 12 axes, and the operator assistance systems (including sheet supports and 6-axis robots) are all managed by the proprietary Task office software.

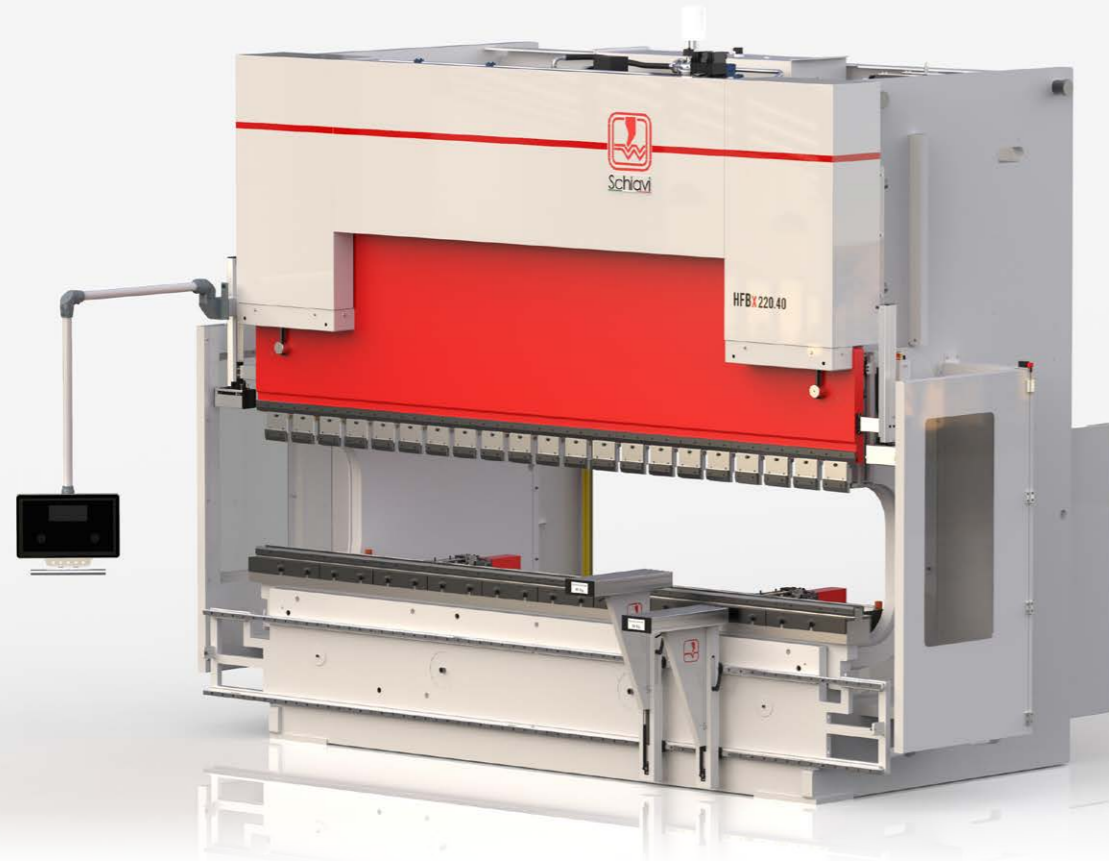


LINEAR

# HFBX

PERFORMANCE AND FLEXIBILITY

HYBRID

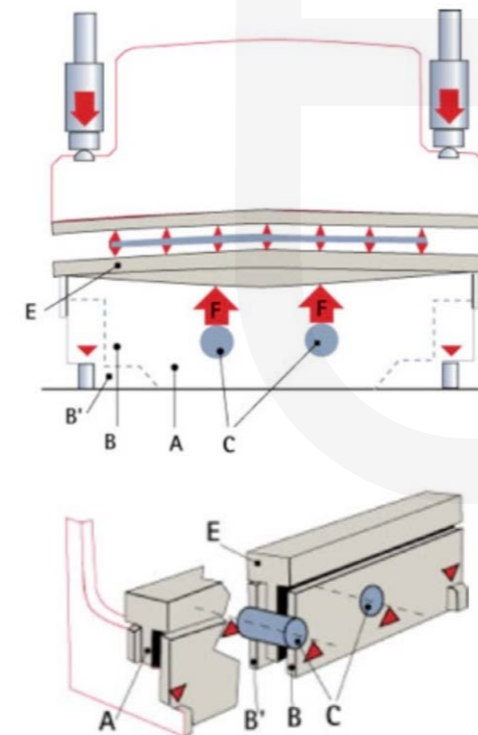


HFBX MODEL		130.30	130.40	170.30	170.40	220.30	220.40
BENDING FORCE	kN	1.300	1.300	1.700	1.700	2.200	2.200
BENDING LENGTH	mm	3.140	4.200	3.170	4.280	3.220	4.280
DISTANCE BETWEEN SHOULDERS	mm	2.700	3.760	2.700	3.760	2.700	3.760
THROAT DEPTH	mm	420	420	420	520	520	520
MAX. STROKE	mm	500	500	500	500	500	500
MAX. OPENING	mm	800	800	800	800	800	800
WORKING LEVEL HEIGHT	mm	960	960	960	960	960	960
TABLE WIDTH	mm	90	180	180	180	180	180
NUMBER OF INTERMEDIATES	n°	15	21	16	21	16	21
APPROACH SPEED	mm/s	240	240	200	200	200	240
ADJUSTABLE WORK SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	290	290	200	200	230	230
MOTOR POWER (3-PHASE 380V 50HZ MOTOR)	kW	13,5	13,5	17	17	24	24
APPROXIMATE WEIGHT OF THE PRESS	kg	14.200	15.800	14.408	22.800	20.500	22.600
OVERALL LENGTH	mm	4.200	5.040	4.000	5.070	4.200	5.070
WIDTH	mm	2.150	2.150	2.500	2.200	2.200	2.600
HEIGHT	mm	3.990	3.990	4.000	4.310	4.300	4.0000

Notes: Technical specifications are subject to variations. Please contact the reference office if needed.

## HFBX

The HFBx is Schiavi Machine's most versatile model, designed to offer exceptional performance. With an approach speed of up to 250 mm/s, it ensures maximum efficiency in every operation. Designed to simplify the release and extraction of parts with complex profiles, the HFBx is perfect for integration into robotic systems, providing an ideal solution for those seeking automation and precision without compromise.



## PRECISE CENTRING AND GOOSENECK

The upper table is carried by four pairs of bearings running on hardened, rectified steel guides integrated into the machine sides. Table centring and alignment are guaranteed by the ample distance between the upper and lower bearings.

Through the innovative use of an additional gooseneck, the distance between the tables can be measured accurately, regardless of the structural deflection typical of the bending process.

## ABSOLUTE FLEXIBILITY

With a standard table opening of 800mm (up to 1000mm upon request) and a standard cylinder stroke of 500mm, it makes the processing of deep box-like shapes possible while maintaining a high working speed.

## COMPOSITE LOWER TABLE

The composite lower table is the result of an international patent and, while maintaining the classic principle of lateral cylinders that move the upper table, it allows for automatic correction and elimination of table deformations, ensuring parallelism. The distance between the tools during bending remains constant along the entire bending length, thus guaranteeing a high-quality result.



HFBX

# HFBS

PERFORMANCE AND RELIABILITY

HYBRID

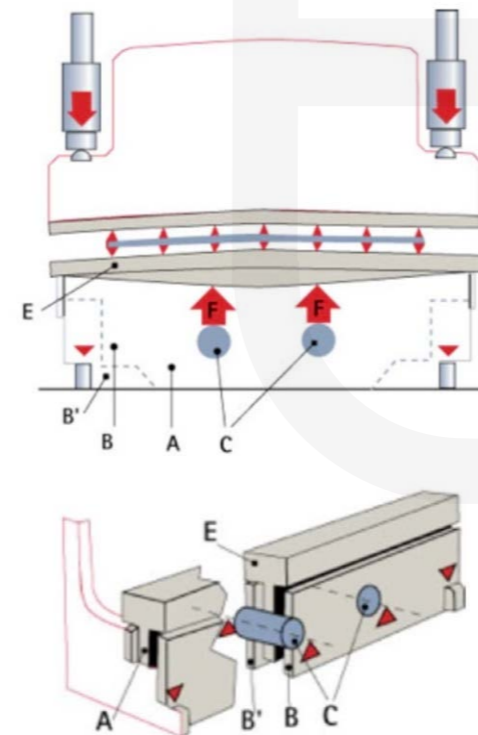


HFBS MODEL		80.25	125.30	125.40	170.30	170.40	220.30	220.40
BENDING FORCE	kN	800	1.250	1.250	1.700	1.700	2.200	2.200
BENDING LENGTH	mm	2.550	3.140	4.200	3.1700	4.280	3.220	4.280
DISTANCE BETWEEN SHOULDERS	mm	2.120	2.700	3.760	2.700	3.760	2.700	3.760
THROAT DEPTH	mm	405	420	420	420	420	420	420
MAX. STROKE	mm	250	250	250	250	250	250	250
MAX. OPENING	mm	455	500	500	500	500	500	500
WORKING LEVEL HEIGHT	mm	910	960	960	960	960	960	960
TABLE WIDTH	mm	60	90	180	180	180	180	180
NUMBER OF INTERMEDIATES	n°	12	15	21	16	21	16	21
APPROACH SPEED	mm/s	250	230	230	230	200	200	200
ADJUSTABLE WORK SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	250	230	230	230	200	200	200
MOTOR POWER (3-PHASE 380V 50HZ MOTOR)	kW	8	13,5	13,5	17	17	24	24
APPROXIMATE WEIGHT OF THE PRESS	kg	6.000	8.425	12.800	12.500	23.230	24.000	20.659
OVERALL LENGTH	mm	3.400	4.000	5.200	4.000	5.260	4.200	5.060
WIDTH	mm	2.040	2.201	1.800	2.241	1.800	1.840	2.181
HEIGHT	mm	2.800	3.000	3.080	3.200	3.210	3.240	3.240

Notes: Technical specifications are subject to variations. Please contact the reference office if needed.

## HFBS

The HFBS press brake is the ideal choice for those seeking precision and reliability. Thanks to its versatility and the 7 automatic axes as standard, this machine offers excellent performance across a wide range of profiles. Fully automated and designed to ensure perfect bends, the HFBS is the best-selling model in our range, appreciated by professionals who desire impeccable results in every operation. With the HFBS, you can truly do it all, with maximum efficiency and precision.



## PRECISE CENTRING AND GOOSENECK

The upper table is carried by four pairs of bearings running on hardened, rectified steel guides integrated into the machine sides. Table centring and alignment are guaranteed by the ample distance between the upper and lower bearings.

Through the innovative use of an additional gooseneck, the distance between the tables can be measured accurately, regardless of the structural deflection typical of the bending process.

## FLESSIBILITÀ ASSOLUTA

With a standard table opening of 500mm and a standard cylinder stroke of 250mm, it enables the processing of most profiles while maintaining a high working speed.

## COMPOSITE LOWER TABLE

The composite lower table is the result of an international patent and, while maintaining the classic principle of lateral cylinders that move the upper table, it allows for automatic correction and elimination of table deformations, ensuring parallelism. The distance between the tools during bending remains constant along the entire bending length, thus guaranteeing a high-quality result.



HFBS



# BSTS

POWERFUL SIMPLICITY

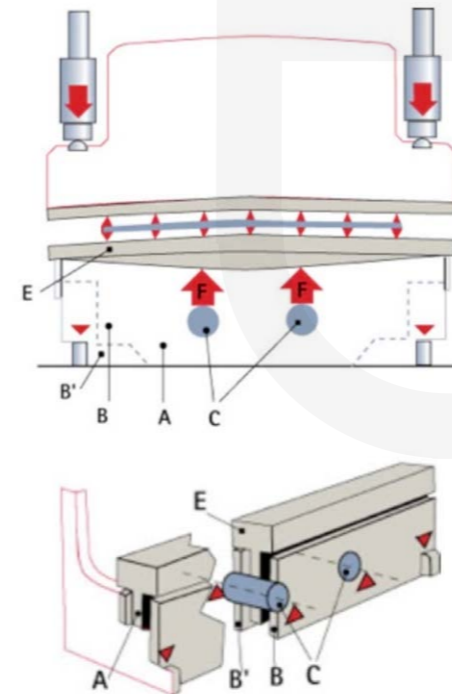


BSTS MODEL		50.12	50.12	50.20	50.20	125.30	125.40
BENDING FORCE	kN	500	500	500	500	1.250	1.250
BENDING LENGTH	mm	1.250	1.250	2.090	2.090	3.140	4.200
DISTANCE BETWEEN SHOULDERS	mm	850	850	1.560	1.560	2.700	3.760
THROAT DEPTH	mm	405	405	405	405	420	420
MAX. STROKE	mm	150	150	150	150	200	200
MAX. OPENING	mm	350	350	350	350	400	400
WORKING LEVEL HEIGHT	mm	900	900	910	910	960	960
TABLE WIDTH	mm	60	60	60	60	90	180
NUMBER OF INTERMEDIATES	n°	6	6	10	10	15	21
APPROACH SPEED	mm/s	170	180	200	200	230	230
ADJUSTABLE WORK SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	200	250	200	250	230	230
MOTOR POWER (3-PHASE 380V 50HZ MOTOR)	kW	5	5	5	5	13,5	13,5
APPROXIMATE WEIGHT OF THE PRESS	kg	3.700	3.700	5.500	5.500	7.500	10.600
OVERALL LENGTH	mm	2.100	2.100	2.870	2.870	3.880	5.000
WIDTH	mm	1.370	1.370	1.560	1.560	2.233	2.233
HEIGHT	mm	2.410	2.410	2.410	2.410	2.833	2.833

Notes: Technical specifications are subject to variations. Please contact the reference office if needed.

## BSTS

The BSTs range from Schiavi Machine offers 4-axis press brakes designed to ensure reliability and performance. Based on Schiavi's solid traditional structure, these machines are equipped with rear mechanics (with X-R axes) and are controlled by the dedicated Athena CNC, for precise and intuitive control. The BSTs models cover a wide range of needs, with forces ranging from 500 kN to 1250 kN and lengths from 1.2 meters to 4 meters, providing tailored solutions for every type of operation.



## COMPOUND LOWER TABLE

Maintaining the classical concept of an upper table actuated by side cylinders, it corrects and automatically cancels table deformations, ensuring parallelism. The tool distances during operations remain constant along the entire length of the bend for superior quality results.

## ATHENA CNC

Athena is a significant advancement in industrial production management and optimisation. This innovative product works both as a CNC and as off-line software, offering a complete solution to monitor, analyse and optimise every step of the production process in real-time.

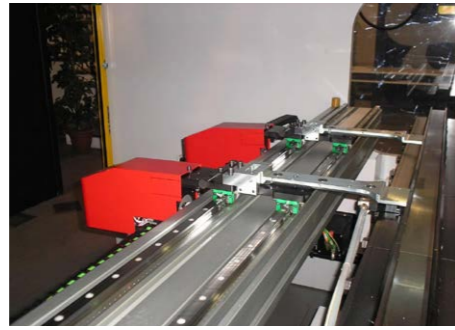


## PRECISE CENTRING

The upper table is carried by four pairs of bearings running on hardened, rectified steel guides integrated into the machine sides. Table centring and alignment are guaranteed by the ample distance between the upper and lower bearings.

BSTS

# BACK GAUGE



## MPS-CZ

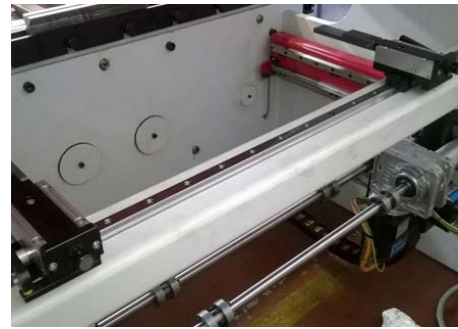
X axis positioning precision = 0.1 mm  
 R axis positioning precision = 0.1 mm  
 Z axis positioning accuracy = 0.2 mm  
 X axis maximum speed = 500 mm/s  
 Z axis maximum speed = 1,250 mm/s  
 R axis maximum speed = 120 mm/s  
 X stroke = 600 mm  
 R stroke = 150 mm

## MPS-H

X axis positioning precision = 0.05 mm  
 R axis positioning precision = 0.05 mm  
 Z axis positioning accuracy = 0.1 mm  
 X axis maximum speed = 550 mm/s  
 Z axis maximum speed = 1,500 mm/s  
 R axis maximum speed = 160 mm/s  
 X stroke = 700 mm  
 R stroke = 250 mm

## MPS8

X1 - X2 axes positioning precision = 0.1 mm  
 R1 - R2 axes positioning precision = 0.1 mm  
 Z1 - Z2 axes positioning precision = 1.0 mm  
 X1 - X2 axes maximum speed = 500 mm/s  
 Z1 - Z2 axes maximum speed = 500 mm/s  
 R1 - R2 axes maximum speed = 4,300 mm/s  
 X stroke = 1,000/800 mm  
 R stroke = 250 mm



## MPS3

Y axis positioning precision = 0.01mm  
 X / R axes positioning precision =  $\pm 0.05$ mm  
 X axis maximum speed = 500 mm/s  
 R axis maximum speed = 120 mm/s  
 Z = manuals  
 X stroke = 600 mm  
 R stroke = 150 mm

## MPS1

X AXIS  
 Repeatability =  $\pm 0.02$ mm  
 General accuracy =  $\pm 0.05$ mm  
 X axis maximum speed = 500 mm/s  
 Stroke = 500 mm  
 R AXIS  
 Repeatability =  $\pm 0.05$ mm

General accuracy =  $\pm 0.1$ mm  
 R axis maximum speed = 140 mm/s  
 Stroke = 140mm  
 Z1-Z2 AXES  
 Repeatability =  $\pm 0.15$ mm  
 General accuracy =  $\pm 0.2$ mm  
 X axis maximum speed = 500 mm/s  
 Z axis maximum speed = 2,200 mm/s

# TOOLS

Schiavi Macchine has a wide range of punches and dies that are the key components of press brakes and metal bending processes. Schiavi Macchine's tools are made of very high-quality steel. They are induction-hardened in the zones subject to wear and have a high standard of surface finish. They guarantee perfect alignment and precision also after regular use.



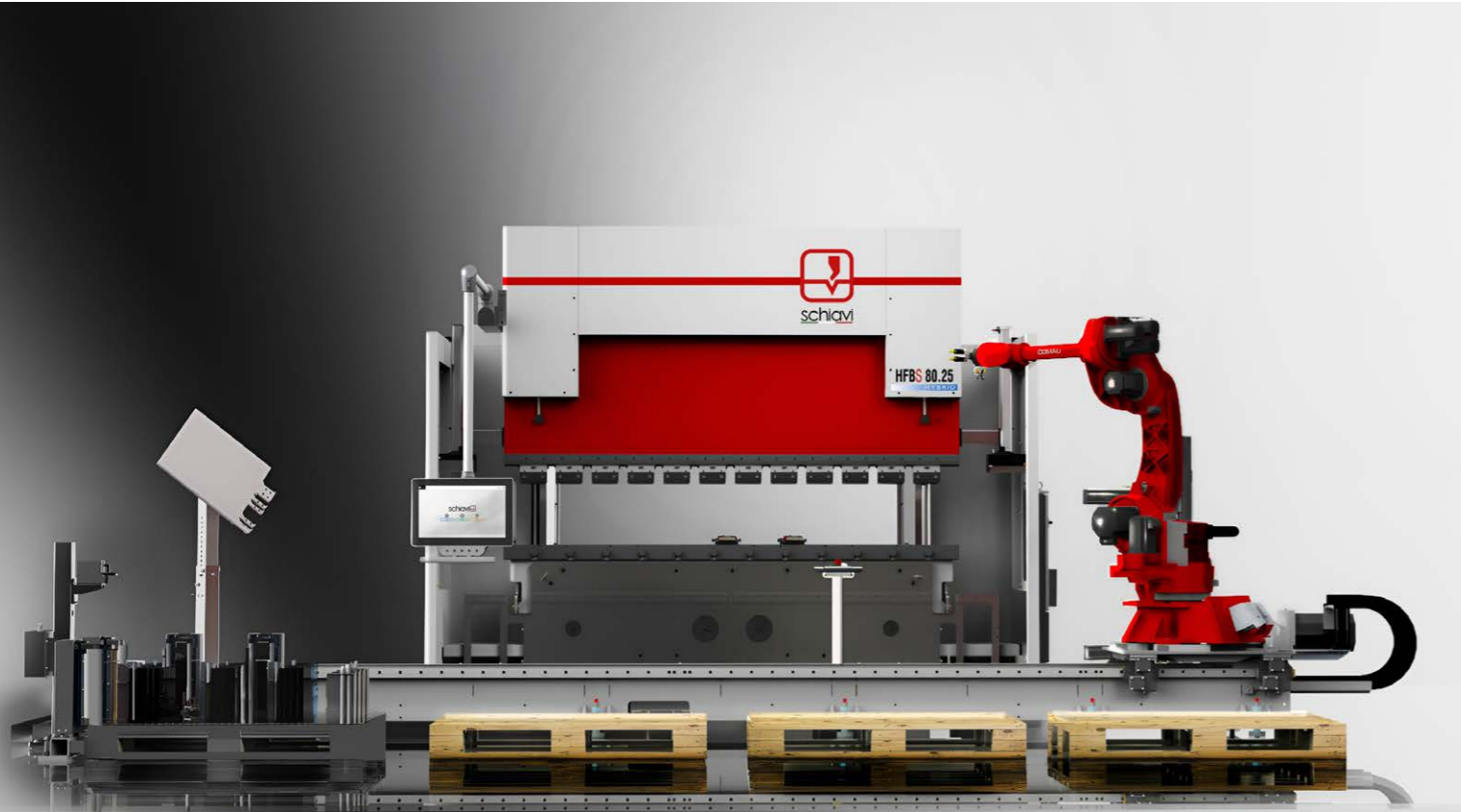
# BENDING CELLS

A robotic bending cell is an advanced automated system that integrates a press brake with a 6- or 7-axis robot, designed to perform all standard bending operations, from picking flat parts and bending the workpiece to unloading the finished part. The main advantages of a robotic bending cell are:

- It improves operator safety by automating repetitive and dangerous tasks.
- It reduces costs by eliminating human errors and reducing waste.
- It works without supervision and for longer hours or shifts.
- It improves the ability to predict and estimate processing times.



# TK FLEX BEND CELL



## STANDARD COMPONENTS INCLUDED:

- Complex grippers
- Additional loading areas
- Repositioning device mounted on the lower table
- Loading area with multi-stack loading system
- Automated unloading area
- Automatic gripper change
- Automatic tool change
- Integrated robot with rail movement on the ground: up to 19 meters
- Versatile press brake with multi-axis configuration
- Workable piece dimensions: up to 1500x3000 mm, with a maximum weight of 220 kg
- Fast automatic programming for the press brake and robot
- 1 loading area
- 1 thickness gauge
- 1 inclined centering plane
- 1 external repositioning device
- 2 or 3 unloading areas
- 1 standard gripper
- Standard fencing with 2 doors and 1 gate



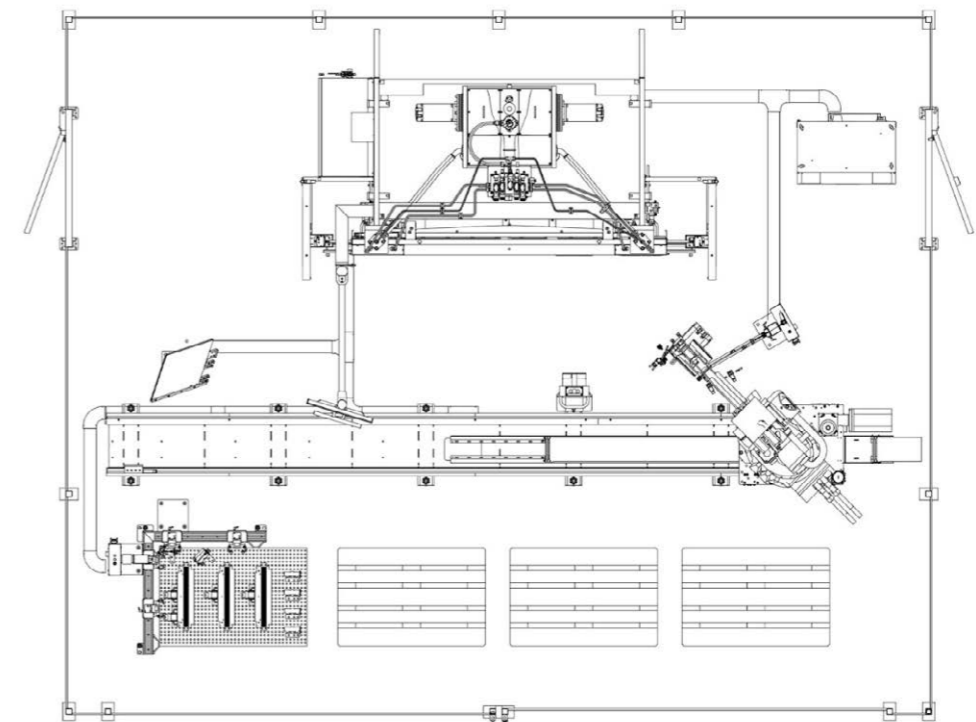
The TK FLEXIBEND CELL is designed for Industry 5.0, ensuring intelligent and connected production. The offline automatic programming eliminates the need to program the robot directly on the machine, optimizing production times and improving efficiency.

The TK FLEXIBEND CELL by Schiavi Machine represents a revolutionary concept in bending automation, combining a press brake with a robot in an integrated system. The 7-axis robot, available in different models, moves horizontally on a rail fixed to the ground, with a maximum length of 19 meters, offering exceptional flexibility in movement and operation. Designed to handle a wide range of parts, the TK FLEXIBEND CELL consistently maintains a high and constant level of quality.

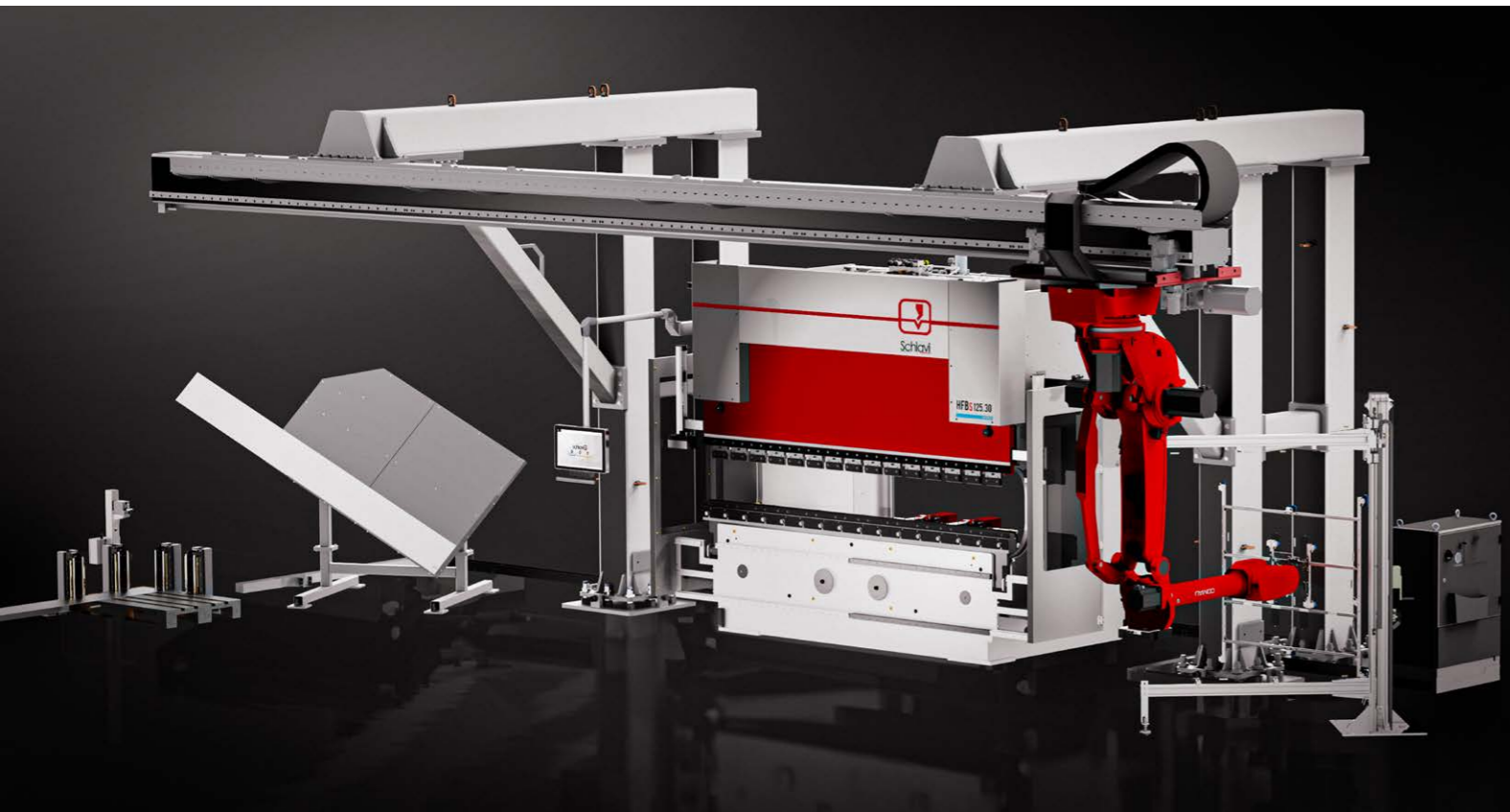
### Main advantages:

- Flexibility in handling different types of parts
- Reduction in setup times
- Increased productivity
- High production capacity without operator supervision

The TK FLEXIBEND CELL is the ideal solution for those seeking advanced, efficient, and high-quality bending automation, capable of meeting the demands of an ever-evolving market.



# TK MEGA BEND CELL



## MAIN ADVANTAGES

- Unparalleled flexibility and efficiency, optimising the use of floor space in front of the press brake and with a compact footprint
- Easy switching between automated and manual production
- Production setting customisation to maximise efficiency and performance
- Upgrading existing press brakes through complete overhaul services, including integration of robots and advanced software to improve performance and safety

## OPTIONS AVAILABLE FOR GREATER FLEXIBILITY:

- Additional or more complex grippers
- Repositioning device mounted on the lower table
- Loading area with multi-stack loading system
- Automated unloading area
- Automatic gripper change

The TK MEGABEND CELL offers an advanced and versatile solution for automated bending requirements, combining operational flexibility and space optimisation to maximise productivity and process quality.

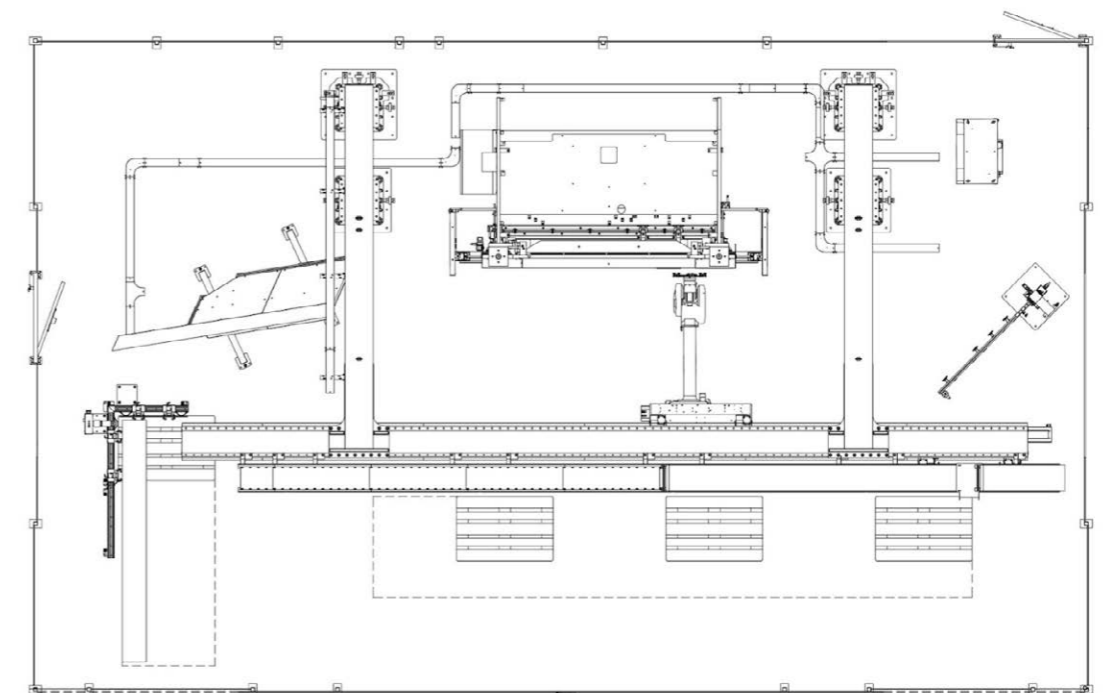
Schiavi Machine's TK MEGABEND CELL is a revolutionary solution designed to take the automatic bending cell to the next level. Equipped with COMAU 6-axis NJ 60-2.2 or NJ 110-3.0 robots and a supplementary overhead axis (7th axis) with a variable length from 6 to 11 metres, the MEGABEND CELL optimises the use of space, leaving the area in front of the press brake free for other cell components or for stacking products.

The TK MEGABEND CELL is designed to be combined with

hydraulic or hybrid Schiavi press brakes. This configuration allows the use of larger, more powerful press brakes with the same flexibility as a standard bending cell, offering the possibility to switch to manual production when required.

### STANDARD COMPONENTS INCLUDED:

- COMAU 6-axis robot NJ 60-2.2 or NJ 110-3.0
- 1 additional overhead axis (7th axle) with variable length between 6 and 11 metres
- 1 loading area
- 1 thickness gauge
- 1 inclined centring surface
- 1 external repositioning device
- 2 or 3 unloading areas
- 1 standard gripper
- Standard fencing with 2 doors and 1 gate



# TK MINI BEND CELL



## OPTIONS AVAILABLE FOR GREATER FLEXIBILITY:

- Additional or more complex grippers
- Loading area with multi-stack loading system
- Automatic gripper change

The TK MINIBEND CELL is the ideal choice for customers aiming to optimise production processes, reduce setup times and maintain high precision in the automated bending of small to medium-sized parts.



The Schiavi Macchine TK MINIBEND CELL is an innovative and compact solution for automating the bending of small and medium-sized parts, guaranteeing maximum efficiency, precision and flexibility. This space-saving design cell is equipped with standard components that ensure high productivity and quality:

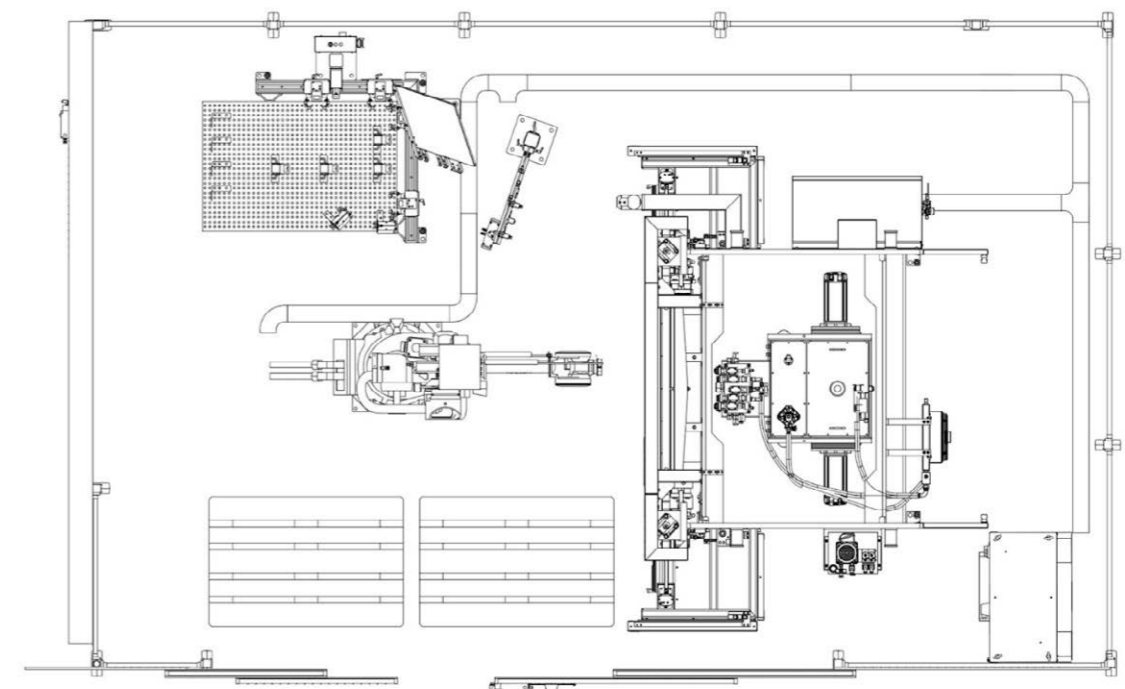
### STANDARD COMPONENTS INCLUDED:

- COMAU 6-axis robot NS 12-1.85
- 1 loading area
- 1 thickness gauge
- 1 inclined centring surface
- 1 external repositioning device
- 2 or 3 unloading areas
- 1 standard gripper
- Standard fencing with 1 door and 1 gate

The mini cell is equipped with the latest COMAU robot model. Designed for Industry 4.0 and Industry 5.0-ready, the TK MINIBEND CELL supports intelligent and connected production. Programming is completely offline, directly in the office. This drastically reduces the need for interventions on the machine and allows a fast and efficient transition between different products required by production.

### STANDARD COMPONENTS INCLUDED:

- Additional or more complex grippers
- Loading area with multi-stack loading system
- Automatic gripper change



Schiavi Macchine International's proprietary software is developed to improve the efficiency and precision of production operations. Schiavi has been developing its software solutions in-house for controlling every step of production and making state-of-the-art tools since 1958. Today, Schiavi Macchine offers Titano and Athena, two advanced software solutions, designed to meet specific needs and maximise plant efficiency for optimised production processes and top-notch performance.

## TITANO

### The Robust Solution for Upgrading Older Presses

Titan is our tried and tested CNC software, designed specifically for upgrading older presses. Ideal for customers looking for a sound, reliable platform, Titano gives new life to older machines, making them versatile and powerful in managing production operations. With its user-friendly interface and advanced functions, it is the preferred choice for optimising complex processes, improving efficiency and extending the life of existing presses.



## ATHENA

### Integrated Production Management and Innovation in Programming

Athena is a significant advancement in industrial production management and optimisation. This innovative product works both as a CNC and as off-line software, offering a complete solution to monitor, analyse and optimise every step of the production process in real-time. Being able to identify and solve bottlenecks and inefficiencies, Athena ensures a more streamline and effective workflow to the benefit of overall productivity.

Designed with a detailed 3D simulation and a very user-friendly interface, Athena makes machine programming easier and more accurate. It is ideal for customers who wish to maintain total control over their production processes. Athena guarantees the highest quality end products, allowing operations to be displayed and programmed directly on the machine in real time and off-line, without interrupting production.



## A.R.S.

It is the proprietary software for the simulation and programming of robotic cells, capable of calculating the correct trajectories to allow robots to complete the processes of loading, bending, and unloading the component.

### GENERAL FEATURES

- Automatic calculation of optimal trajectories
- Management of 6-axis robots, 7-axis robots on gantry, 7-axis robots on rail
- Configurable work cells
- Collision management
- Program generation for robot controller
- Multilingual support
- Configurable unloading program
- Manually modifiable program
- Automatic gripper change
- Multi-stack loading
- 'Easy to use' interface
- Full integration with bending software
- Integrated gripper editor with multiple configurations (suction cup, gripper, suction cup + gripper))

### TYPES OF ROBOTS

- Ars allows the management of various robot configurations:
- 6-axis robots
- 7-axis robots on beam
- 7-axis robots on rail

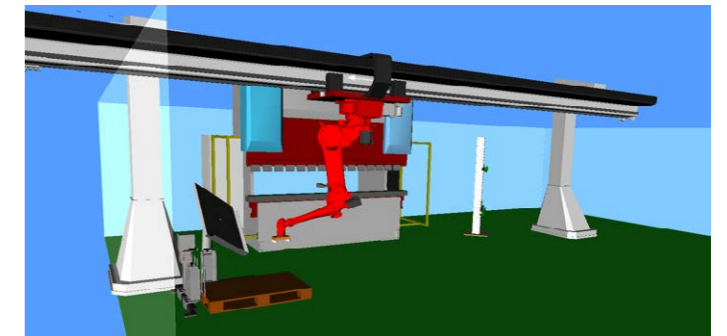
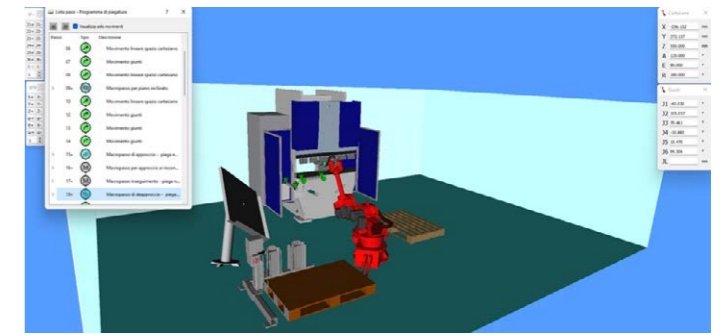
### CUSTOMIZATION OF WORK CELLS

- Ars allows configuring the work cells to match the actual bending system. You can define:
- Press brake
- Robot
- Possibly multiple loading pallets
- Thickness gauge
- Zeroing plane
- Support systems
- Gripper change rack

### BENDING PROGRAM

Ars automatically generates the optimal bending program based on the piece to be bent, the type of robot, the work cell configuration, and the space constraints. This program can be simulated and modified before sending it to the machine:

- Inserting movements
- Deleting movements
- Modifying initial and final positions
- Modifying the type of movement



## BENDING SYSTEM

It is the most advanced office software by Schiavi Macchine, powerful and easy to use. It generates the bending sequence, tool configuration, bending program, and the correct flat pattern development (useful for the cutting process) in a very short time. Everything can be sent to production via the company server. Bending System, with its A.R.S. application, is capable of simulating the gripper position for the robot.

# TITANO

TITANO is a multi-axis graphic CNC software program developed by TASK84 after forty years of hardware and software experience in the field of press brake machine controls.

Attractive graphics and advanced 3D functions make TITANO a genuine on-board CAM tool. Graphic 2D/3D tools and parts creation, importing 3D parts designed with CAD-CAM, real-time simulation and 2D and 3D reproduction of the various bending phases are just some of the basic services it provides. Furthermore, the presence of a Tool-Navigator assists the operator in machine set-up operations, while specific software functions guide the automatic search for the best bending sequence.

## TECHNICAL SPECIFICATIONS:

**Number of axes:** Max. 12

**Hydraulic axes:** Managed via PLC system CRC2\*\* Task84 (Rear Registers are not included: Managed via EMBLAX or MICROAX Task drives, connected in Can Bus Task. Managed by analogue-driven drives from the CRC2\*\* Task PLC.

\*\* the CRC2 PLC can run any type of driver (brushless, stepper, AC/DC, inverters, etc.) in addition to hydraulic axes. It manages 4 analogue axes with feedback, 28 inputs, 28 outputs and 2 current outputs for pressure and crowning valves.

## ELECTRICAL CHARACTERISTICS:

**Power supply:** 18-36 Vdc (rated voltage: 24 Vdc)

**Power:** Max. 48 W (2 A at 24 Vdc)

## FUNCTIONAL FEATURES:

The TITANO CNC software is available in a version for the real-time operating system (which optimises plant management and supports the oscilloscope function).

**Interactive "Guided Tooling" function:** Tool positioning guide using back gauges.

**"2D/3D Workpiece Simulation" function:** It graphically represents the course of the bending steps, allowing you to select the most suitable sequence for the desired workpiece manually or automatically\*.

2D and 3D visualisation: Bending operation progress is reproduced in real-time according to the type of part drawing (2D or 3D), during the automatic execution of the program.

**Part and Tool Creation:** Draw them with in-house CAD or by import from other Task Dynamic CNCs of the same family or CAM (Bending System) or DXF import\*.

**Management/Production\*:** This environment allows users to track the progress of various parts and generate detailed processing reports.

## HARDWARE SPECIFICATIONS:

**Processor board:** ETX standard module

**Monitor:** 17" SXGA TFT colour LCD, 1,280x1,024 pixels, resistive touchscreen.

Hard Disk SATA SSD

**Serial ports:** RS232, COM2: RS422

**Fast serials ports:** 1 CAN-bus

**USB:** 3 USB 2.0 ports

**Network board:** Ethernet 10-100

## DIMENSIONS:

Height Width Depth Weight  
620 mm 418 mm 210 mm 12 kg

# ATHENA

ATHENA is an advanced CNC designed for press brake management and the result of more than 30 years of experience in the Task Dynamic hardware and software division. Its simple and user-friendly Graphical User Interface is displayed on an outstanding 21.5-inch high-resolution LCD with a sophisticated multitouch touchscreen.

The graphics of ATHENA are particularly advanced, especially in its 3D functions, where the operator is assisted in all phases of bending. Functions include 2D/3D graphical creation of tools and parts, import of 3D parts from CAD-CAM, and real-time 2D/3D simulation and visualisation of every step of the bending process.

ATHENA guides and assists the operator throughout the entire bending sequence, offering a modular solution to meet all user requirements.

## TECHNICAL SPECIFICATIONS:

- Intel i5 multicore processor
- 16 GB DDRAM memory
- Dual technology multitouch touchscreen
- 21.5" TFT FULL HD LCD colour monitor, TOUCHSCREEN
- 32 GB solid-state hard disk
- Gigabit network card, 2 USB 3.0 ports, 2 RS232/RS422 serial ports, 1 CAN-bus fast serial
- Optional wireless card
- Digital fieldbus interface to PLC for Y-axis control
- Standard digital CAN interface to drives
- Management via external remote units: Digital I/Os, hydraulic axes, and drives for brushless, DC, stepper, AC motor drives
- CAN-bus management of the hydraulic axis control module and drives
- Detailed 3D graphics for workpiece display, tooling and handling during bending operations
- Program import/export from a remote server
- Manual and automatic definition and reloading of the bending sequence
- Optionally, it can handle the DATA-M device for real-time bending angle measurement.
- Optionally, it can handle 2 front sheet metal trackers
- Possibility of attaching files to the work program
- The CNC can be integrated into the industrial production process required by Industry 4.0 via the MQTT communication protocol.

**Metal cabinet:** Made of light alloy, complete with a manoeuvring handle. Prepared for the installation of electromechanical pushbuttons and selectors (optional). Compatible with standard VESA connector.

**Operator keyboard:** An industrial alphanumeric keyboard is optionally available.

**Emergency stop button:** Mushroom-shaped, conforming to EN60947-5-1, EN60947-1, with mechanical retainer and two N.C. contacts with positive action.

**4 electromechanical buttons** customisable

## CNC:

**Maximum number of controlled axes:** 25

**Axis type:** Brushless servomotors, stepper, AC/DC, Task EMBLAX, Task MICROAX. Proportioning hydraulic valves for Y1 and Y2 axes, pressure and hydraulic crowning.

**Auxiliary devices:** Electronic handwheel, barcode reader, electronic goniometer, thickness gauge, sheet metal companion and robot.

## DIMENSIONS:

Height: 350mm  
Width: 550mm  
Depth: 45mm  
Weight: 5 kg

## HARDWARE SPECIFICATIONS:

**Processor board** Intel i5 multicore

**Monitor:** 21.5" TFT FULL-HD, 16.2M colour LCD, dual technology multitouch touchscreen

**Internal memory:** 32 GB high-speed

**Serial ports:** 2 RS232/RS422

**Fast serials ports:** 1 CAN-bus (1Mbit)

**USB:** 2 front USB 3.0 ports

**Network board:** Gigabit Ethernet

**Options:** Wireless network

## ELECTRICAL CHARACTERISTICS:

**Power supply:** 18-36 Vdc (rated voltage: 24 Vdc)

**Power:** 40W @ 24 Vdc

# SPECIALISED SERVICE

## Customer Service - Our commitment to our customers' success

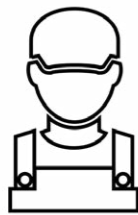
Schiavi Macchine International's Service Department is a key strength of our company and is organised to guarantee fast, effective and customer-oriented service. Our mission is simple: to maintain the operational continuity of your machines, making sure that every request is managed promptly and efficiently.

## Quick Answers and Immediate Solutions

We pride ourselves on our ability to respond quickly to our customers' requests, thanks to a lean and flexible corporate structure. We can reduce waiting times and deal quickly with technical interventions, maintenance and spare parts supplies. Speed goes hand in hand with quality, offering dedicated and efficient support to keep machines at peak performance. With our proprietary know-how, we know our machines – all designed and manufactured in-house – inside out. This means we can solve any problem expertly, offering customised and highly specialised solutions.

## Customer-Centred Operations

For Schiavi, the customer is at the centre of every activity. We firmly believe that our customers' success is our priority and this is why our Service department works every day to ensure that our machines and systems are always running at full capacity. Our commitment extends beyond simple problem-solving. We want to be a trusted partner you can count on at all times to improve your productivity.

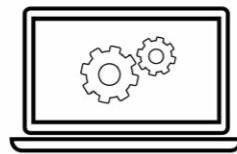


### QUICK TECHNICAL ASSISTANCE

Our team of skilled technicians is always available to provide technical support, both on-site and remotely, to minimise downtime.

### SUPPORTING TRAINING

We organise specific training courses for our customers' personnel so that they can operate all our machines competently and safely.



### RETROFITS AND UPGRADES

Retrofitting is a distinctive service of our department. Our highly skilled team can upgrade existing machinery with the latest technology so that you can improve efficiency, productivity and safety without having to replace equipment entirely. Retrofitting means extending the life of your machines and being able to benefit from significant cost savings compared to buying new equipment.



### SCHEDULED MAINTENANCE

We offer preventive maintenance packages that extend the service life and efficiency of machines, avoiding costly unexpected downtime.

### SUPPLY OF GENUINE SPARE PARTS

We have a wide range of original spare parts to ensure that your machines perform at the top over time.

Our Service Department is committed to providing timely, high-quality service that reflects the values of Schiavi Macchine International: technical excellence, customer focus and reliability. We are proud to say that every customer can count on us for a prompt response and customised solutions, guaranteeing continuous support throughout the life cycle of the machines.





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