schiavi

bending the future

PRESS BRAKES MADE IN ITALY SINCE 1958

PRESS BRAKES

INDEX

VISION AND MISSION

Schiavi Macchine International: Made in Italy, history and technology since 1958.

Reliability and quality over time are the two core values on which Schiavi Macchine has built its history, ensuring its continued success. These values are rooted in excellent customer service, which includes continuous training, fast pre- and post-sales support, and mastery of technical and design expertise.

Additionally, the company's ever-expanding Research and Development program plays a key role in improving products and enhancing internal know-how. Schiavi Macchine's vision is to complete its internationalization program while maintaining strong technological assets, establishing itself as a benchmark in the industry, and offering cutting-edge machinery and solutions.

Schiavi Macchine's mission is to ensure ever-increasing customer satisfaction by guaranteeing excellent product quality and reliability. Furthermore, thanks to a dynamic Research and Development team, Schiavi Macchine aims to preserve the excellence of Made in Italy through continuous innovation and technological advancement.

Since its founding, Schiavi Macchine has installed over 14,000 machines. The company is making significant investments in automation systems for both bending and laser cutting processes.
Schiavi Macchine's true competitive advantage lies in its ability to provide customers with both standard and customized solutions, thanks to its complete mastery of its products, both in terms of mechanics and software.

A family-run business: the values we take pride in.

In 2014, the Zinetti family, which has been operating in the sheet metal industry for over thirty years, acquired Schiavi and founded Schiavi Macchine International with the primary goal of exporting this Made in Italy excellence worldwide.

Maurizio Zinetti began his career in the sheet metal industry in the early 1980s, guided and supported by his father, Virginio. Today, his sons, Elia, Nicolò and Aurora Zinetti, who are fully involved in managing Schiavi Macchine, represent the third generation of a company built on strong family values: respect, responsibility, dedication, and punctuality.

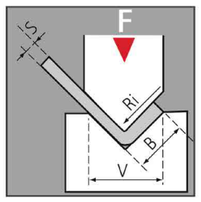
AIR BENDING CHART - MILD STEEL

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	

AIR BENDING CHART - 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	

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/mmq	**alluminium 20-25 Kg/mmq**
R	acciaio dolce 40-45 Kg/mmq	**mild steel 40-45 Kg/mmq**
R	inox 65-70 Kg/mmq	**stainless steel 65-70 Kg/mmq**



Relazione tra spessore lamiera e larghezza V

Sheet thickness/V-shape width ratio

S	Spessore lamiera - mm **Sheet thicknes - 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/mmq **aluminium 20-25 kg/sq. mm**
R	acciaio dolce 40-45 kg/mmq **mild steel 40-45 kg/sq. mm**
R	inox 65-70 kg/mmq **stainless steel 65-70 kg/sq. mm**

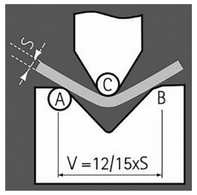
$$F = \frac{S^2 \times 2 \times R}{1.4 \times V} \text{ ..... ton/m}$$

BENDING

Air Bending

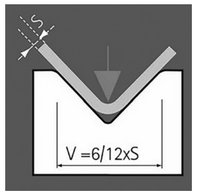
This is the most common type of bend, requiring relatively low force, but its angular precision is affected by the material's residual elasticity once the bending process is completed.

Air bending can be classified into:



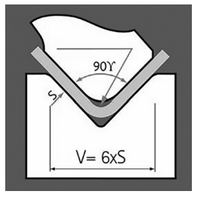
1) Partial Bending

In partial bending, the bend is stopped before the sheet metal reaches the bottom of the die. The contact between the sheet and the tools occurs at points A-B-C (as shown in the adjacent figure), and the bending angle is determined by the position of these points.
In partial bending, dies with a width equal to 12-15 times the sheet thickness are used. The force values indicated in the bending chart should be considered as guidelines only, as in this process, the required force depends on several factors such as material characteristics, tool type, and tool profile, among others.



2) Bottoming (or Bottom Die Bending)

In this type of bending, the internal radius obtained is called the "natural bending radius" and is approximately equal to 1/6 of the die opening width. With a die opening width equal to six times the sheet thickness, the internal radius will be equal to the sheet thickness itself. For 90° bends, 88° dies are used to compensate for the material's elasticity effects on the angle. The required force is indicated in the bending chart. This type of bending is generally used for sheet metal with a thickness of up to 2-3 mm.



3) Coining

Coining is a deep penetration bending process that requires 4 to 5 times more force than the previous method but ensures absolute angular precision, as the coining of the internal radius eliminates the material's springback.
With this process, internal bending radii smaller than the sheet thickness can be achieved, as well as the complete elimination of residual elasticity. This is due to the sharp tip of the punch penetrating deep into the natural bending radius of the sheet at the bottom of the die. The die will have an opening width equal to 6 times the sheet thickness and will be set at 90°, just like the punch. Coining is generally used for sheet metal up to 2 mm thick and, in specific cases, up to 3 mm. The punch angle plays a crucial role only in coining.

PRESS BRAKES

The Schiavi Macchine press brake range offers high-quality Made in Italy solutions capable of meeting the production needs of countless industries. Thanks to automatic compensation systems for both the tables and the structure, Schiavi Macchine press brakes ensure precise and repeatable bends.

Combined with a powerful proprietary software, Schiavi press brakes have been a market benchmark for over sixty years due to their ease of use, reliability, precision, and low maintenance costs.

ENERGY SAVINGS

up to **40%**

INCREASE IN SPEED

up to **30%**

DRASTIC REDUCTION IN NOISE POLLUTION

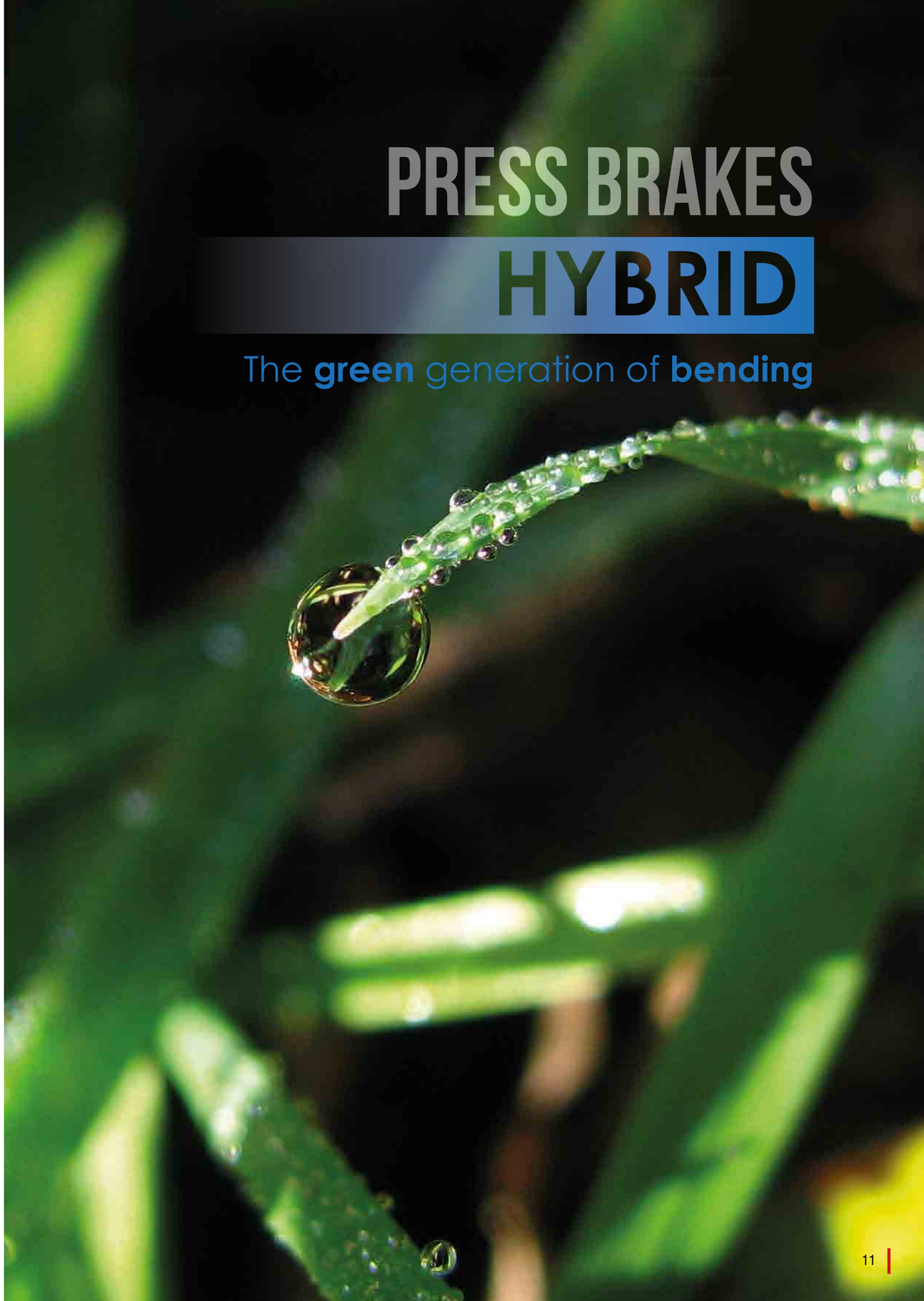
HYBRID PRESS BRAKES: MEASURABLE ADVANTAGES

With the introduction of the HYBRID version of its press brakes, Schiavi Macchine has significantly reduced energy consumption while simultaneously increasing working speeds and minimizing machine noise.

Thanks to HYBRID technology, Schiavi Macchine provides press brakes that enhance the operator's working conditions while simultaneously boosting productivity.

PRESS BRAKES HYBRID

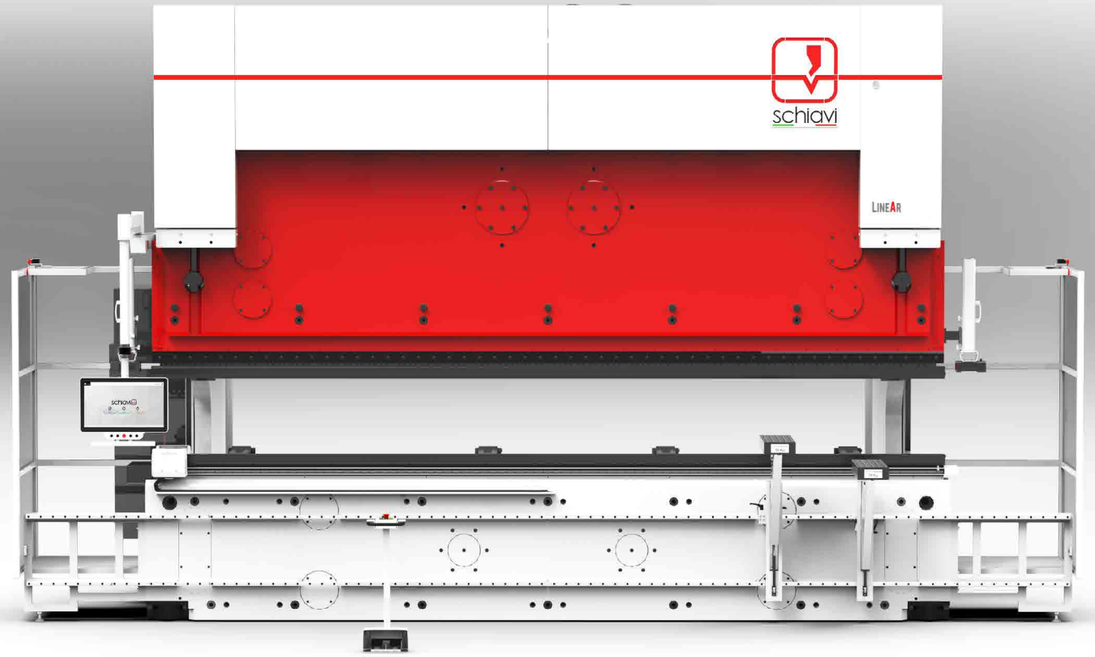
The **green** generation of **bending**



LINEAR

THE EVOLUTION OF BENDING

HYBRID



HYBRID

LINEAR MODEL		130.30	220.40	220.50	250.60	400.30	400.40	400.50	400.60	630.40	630.60	630.70	800.60	1000.60	1000.80	1000.10	12000.12	130.30
BENDING FORCE	kN	1300	2200	2200	2200	4000	4000	4000	4000	6300	6300	6300	8000	10000	10000	10000	12000	1300
LINEAR PLUS OPTIONAL*	*	*	*	*	*	*	*	*	*	*	-	-	-	-	-	-	-	*
TABLE LENGTH	mm	3200	4200	5200	6200	3520	4200	5200	6200	4300	6300	7300	6330	6400	8400	10400	12400	3200
CLEARANCE BETWEEN SIDE FRAMES	mm	2840	3700	4700	5520	2845	3520	4520	5520	3520	5520	6520	5490	5520	7520	9520	11520	2840
THROAT DEPTH	mm	450	450	420	520	520	520	520	520	510	520	510	520	510	500	510	500	450
MAXIMUM STROKE	mm	320	320	220	450	450	450	450	450	400	450	400	400	400	400	400	400	320
MAXIMUM DAYLIGHT BETWEEN TABLES	mm	600	600	400	750	750	750	750	750	750	750	750	750	900	900	900	900	600
WORKING TABLE HEIGHT	mm	935	980	1015	1020	1010	990	1020	1020	1010	973	905	850	910	910	910	820	935
WORKING TABLE WIDTH	mm	60	60	60	90	60	60	120	120	100	60	60	60	120	60	60	60	60
NUMBER OF INTERMEDIATES	n°	16	21	26	31	17	21	26	31	21	31	36	31	31	42	52	62	16
APPROACH SPEED	mm/s	200	150	110	110	60	95	95	100	80	80	80	70	85	60	60	60	150
ADJUSTABLE WORKING SPEED	mm/s	1-10	8	1-10	7	8,5	8,5	8,5	8,5	7	7	7	8	8	8	7	7	1-10
RETURN SPEED	mm/s	210	100	100	100	100	90	90	85	60	60	60	70	90	70	50	50	210
MOTOR POWER (THREE-PHASE 380V 50HZ)*	kW	21	24,5	24,5	24,5	39,5	39,5	39,5	39,5	39,5	39,5	39,5	57,5	90	90	90	90	17
APPROXIMATE PRESS WEIGHT	kg	14000	22000	26100	35600	26000	29000	34550	38520	41000	55000	70000	87000	100000	110000	145000	200000	14000
MAXIMUM LENGTH**	mm	4150	5100	6100	7100	4725	4950	5950	6950	5700	6980	8000	7250	7230	9170	11160	13700	4150
WIDTH	mm	2500	2350	2400	2500	2500	2450	2450	2450	3400	3400	3256	3556	3522	3560	3560	3560	2550
HEIGHT	mm	3200	3480	3200	3850	3880	3850	4070	4070	4420	4080	4005	4415	4870	4735	4935	5140	3200
UNDERGROUND TABLE SECTION	mm	-	-	-	-	-	-	-	-	-	560	850	1000	1120	1050	1525	2000	-
PARTE SOTTOSUOLO FIANCO	mm	-	-	-	-	-	-	-	-	-	-	-	335	560	490	375	985	-

Technical specifications are subject to change. If necessary, please contact the relevant personnel.

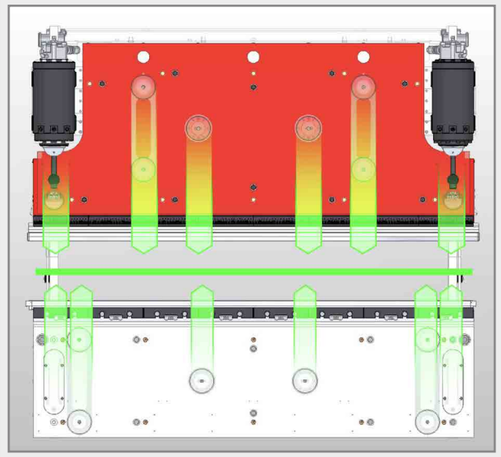
LINEAR RANGE

The LineAr range is particularly suitable for those who require maximum precision, interlocking profiles, and easier subsequent processes such as assembly or manual and robotic welding. LineAr is synonymous with speed, excellent quality, and high bending force. The LineAr range varies from 3m 130 tons to 12m 1200 tons.

LineAr is Schiavi's top-of-the-line press brake, revolutionizing the bending industry by eliminating the "crowning effect" with an internationally patented solution. **This innovation keeps the tool holder tables perfectly horizontal and parallel, ensuring absolute profile linearity.**

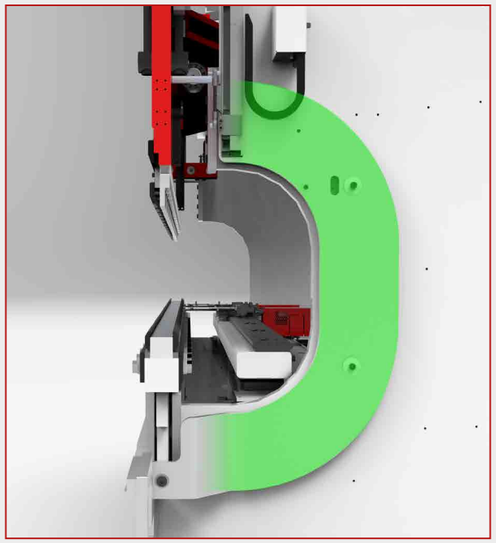
ELIMINATION OF CROWNING

With the LineAr patent, the tool holder tables do not deform during bending, ensuring the linearity of the workpiece. This is extremely beneficial for those producing interlocking profiles or facilitating subsequent processes such as assembly or welding (both robotic and manual).



ADDITIONAL C-FRAME STRUCTURE

Thanks to the innovative use of an additional "C-frame" structure, it is possible to accurately measure the distance between the tables, regardless of the structural deflections typically occurring during the bending process.

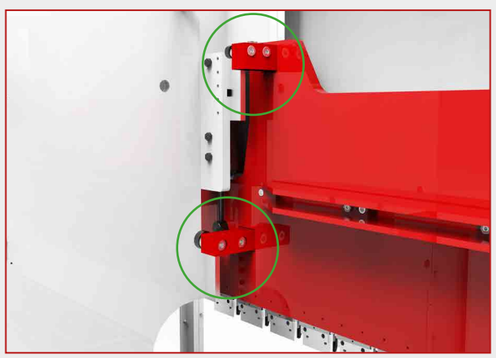


CUSTOMIZATION AND AUTOMATION

LineAr expands customization options, available software, and integrations with automated systems. It features safety systems that ensure speed, back gauges with up to 12 axes, operator assistance systems such as sheet follower supports, as well as anthropomorphic robots-all managed by the proprietary Task software.

PRECISE CENTERING

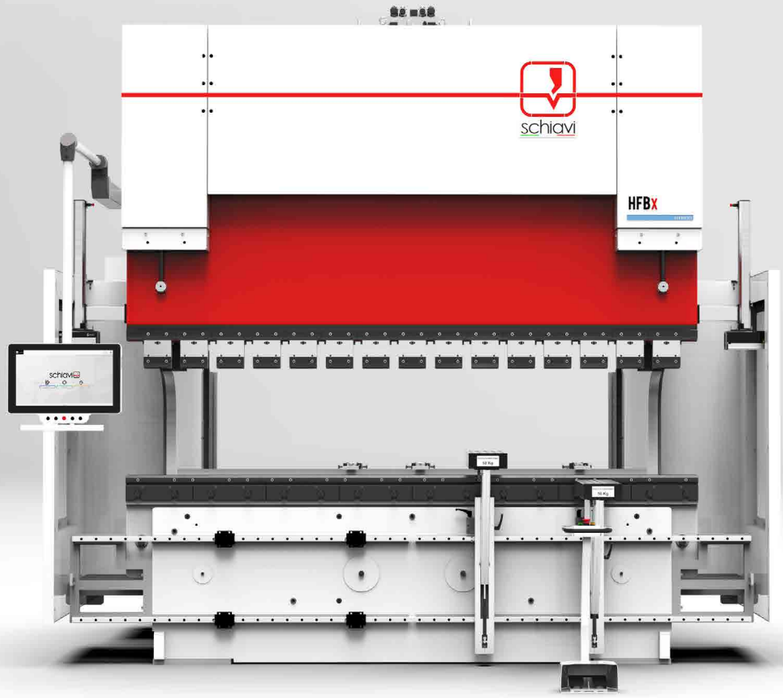
The upper table is guided by four pairs of bearings that slide on hardened and ground steel tracks, which are integral to the machine's side frames. The centering and alignment of the tables are ensured by the large distance between the upper and lower bearings.



HFBX

PERFORMANCE AND FLEXIBILITY

HYBRID



HYBRID

HFBX MODEL		50.20	80.20	130.30	130.40	170.30	170.40	220.30	220.40
BENDING FORCE	kN	500	800	1300	1300	1700	1700	2200	2200
TABLE LENGTH	mm	2090	2090	3140	4200	3170	4280	3220	4280
CLEARANCE BETWEEN SIDE FRAMES	mm	1660	1660	2700	3760	2700	3760	2700	3760
THROAT DEPTH	mm	405	405	420	420	420	520	520	520
MAXIMUM STROKE	mm	365	365	500	500	500	500	500	500
MAXIMUM DAYLIGHT BETWEEN TABLES	mm	600	600	800	800	800	800	800	800
WORKING TABLE HEIGHT	mm	910	910	960	960	960	960	960	960
WORKING TABLE WIDTH	mm	60	60	90	180	180	180	180	180
NUMBER OF INTERMEDIATES	n°	10	10	15	21	16	21	16	21
APPROACH SPEED	mm/s	220	220	230	230	200	200	240	240
ADJUSTABLE WORKING SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	200	200	280	280	160	160	230	230
MOTOR POWER (THREE-PHASE MOTOR 380V 50HZ)	kW	5	8	13,5	13,5	17	17	24	24
APPROXIMATE PRESS WEIGHT	kg	6550	7050	13400	16200	15000	16600	20000	22400
MAXIMUM LENGTH*	mm	2880	2880	3970	4970	3970	4970	4010	5010
WIDTH	mm	2250	2250	2550	2550	2550	2550	2690	2690
HEIGHT	mm	2990	2990	3800	3800	3810	3810	3810	3810

Technical specifications are subject to change. If necessary, please contact the relevant personnel.

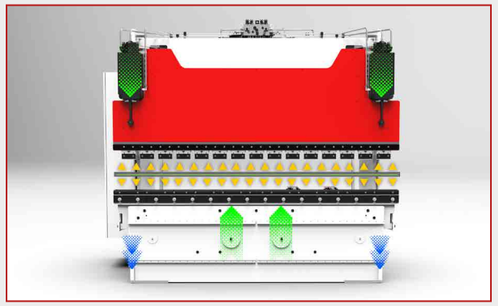
HFBX RANGE

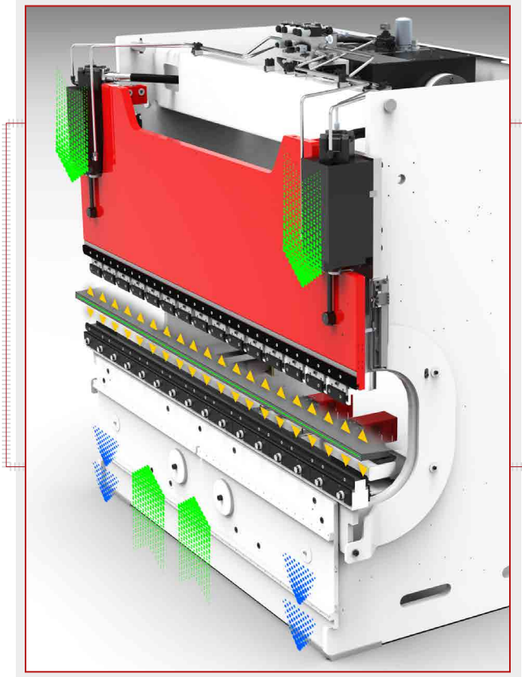
The HFBx range by Schiavi Macchine delivers high performance with an approach speed of up to 250 mm/s, ensuring efficiency and precision. Designed to facilitate the extraction of complex parts and integration into robotic systems, it is the ideal choice for advanced automation.

With a daylight opening of 800 mm (up to 1000 mm upon request) and a cylinder stroke of 500 mm, it enables the processing of deep box-shaped components while maintaining high operational speed.

SCHIAVI MACCHINE COMPENSATION

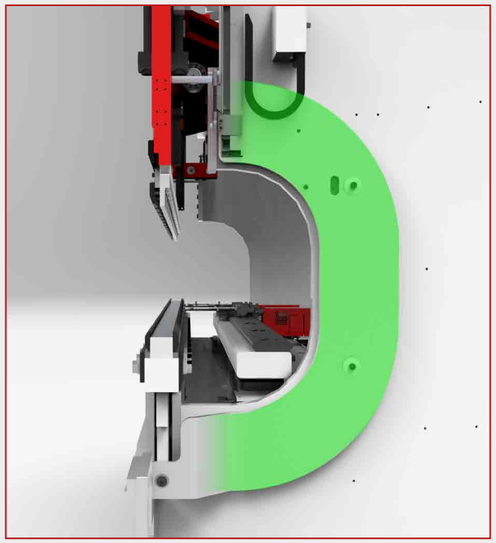
The composite lower table is the result of an international patent and, while maintaining the classic principle of side cylinders that move the upper table, it allows for automatic correction and elimination of table deformations, ensuring perfect parallelism.
The distance between the tools during bending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





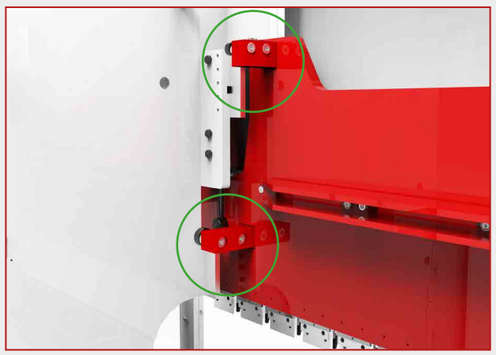
ADDITIONAL C-FRAME STRUCTURE

Thanks to the innovative use of an additional “C-frame” structure, it is possible to accurately measure the distance between the tables, regardless of the structural deflections typically occurring during the bending process.



PRECISE CENTERING

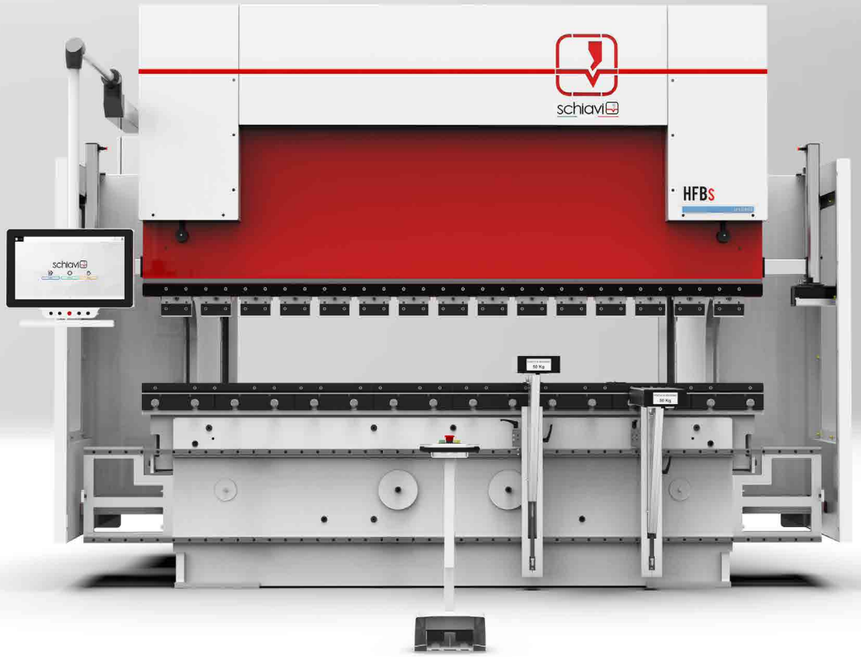
The upper table is guided by four pairs of bearings that slide on hardened and ground steel tracks, which are securely fixed to the machine’s side frames. The centering and alignment of the tables are ensured by the large distance between the upper and lower bearings.



HFBS

PERFORMANCE AND RELIABILITY

HYBRID



HYBRID

HFBS MODEL		80.25	125.30	125.40	170.30	170.40	220.30	220.40
BENDING FORCE	kN	800	1250	1250	1700	1700	2200	2200
TABLE LENGTH	mm	2550	3140	4200	3170	4230	3220	4280
CLEARANCE BETWEEN SIDE FRAMES	mm	2120	2700	3760	2700	3760	2700	3760
THROAT DEPTH	mm	405	420	420	420	420	420	420
MAXIMUM STROKE	mm	250	250	250	250	250	250	250
MAXIMUM DAYLIGHT BETWEEN TABLES	mm	450	500	500	500	500	500	500
WORKING TABLE HEIGHT	mm	910	960	960	960	960	960	960
WORKING TABLE WIDTH	mm	60	90	90	180	180	180	180
NUMBER OF INTERMEDIATES	n°	12	15	21	16	21	16	21
APPROACH SPEED	mm/s	250	230	230	200	200	200	200
ADJUSTABLE WORKING SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	290	230	230	200	200	230	230
MOTOR POWER (THREE-PHASE MOTOR 380V 50HZ)	kW	8	13,5	13,5	17	17	24	24
APPROXIMATE PRESS WEIGHT	kg	6300	10000	12800	12400	15700	15960	17600
MAXIMUM LENGTH*	mm	3360	3940	4940	4050	5050	4060	5060
WIDTH	mm	2040	2300	2300	2350	2350	2350	2350
HEIGHT	mm	2790	3040	3040	3200	3200	3200	3200

Technical specifications are subject to change. If necessary, please contact the relevant personnel.

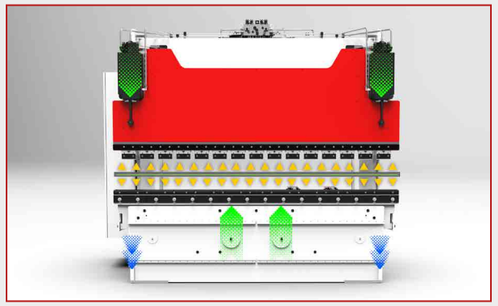
HFBS RANGE

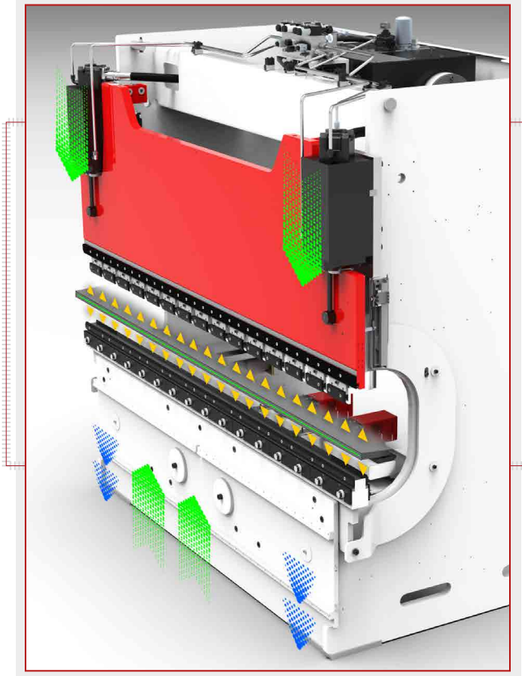
The HFBs press brake combines precision, reliability, and versatility, thanks to its 7 automatic axes as standard, ensuring outstanding performance across a wide range of profiles. Fully automated, it delivers perfect bends with high efficiency and speed.

With a daylight opening of 500 mm and a cylinder stroke of 250 mm, it allows for the processing of most profiles while maintaining high production speeds. The HFBs is the best-selling model in our range, chosen by professionals for its flexibility and reliable performance.

SCHIAVI MACCHINE COMPENSATION

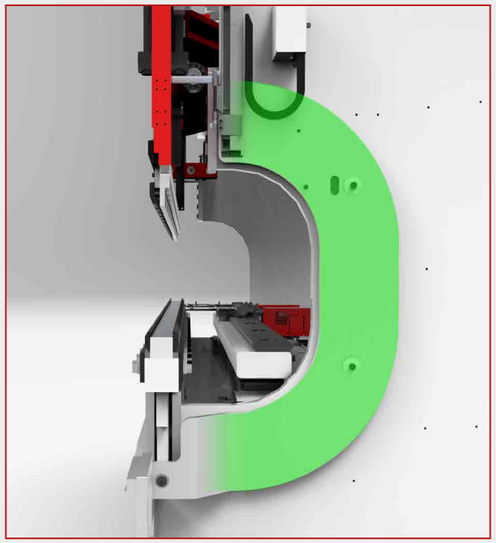
The composite lower table is the result of an international patent and, while maintaining the classic principle of side cylinders that move the upper table, it allows for automatic correction and elimination of table deformations, ensuring perfect parallelism.
The distance between the tools during bending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





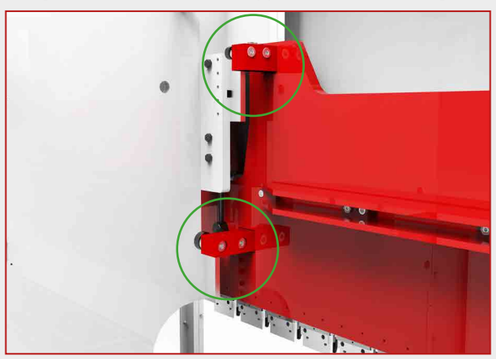
ADDITIONAL C-FRAME STRUCTURE

Thanks to the innovative use of an additional “C-frame” structure, it is possible to accurately measure the distance between the tables, regardless of the structural deflections typically occurring during the bending process.



PRECISE CENTERING

The upper table is guided by four pairs of bearings that slide on hardened and ground steel tracks, which are securely fixed to the machine’s side frames. The centering and alignment of the tables are ensured by the large distance between the upper and lower bearings.



BSTS

HIGH-PERFORMANCE SIMPLICITY

HYBRID

HYBRID

BSTS MODEL		50.12	50.20	125.30	125.40	50.12	50.20
BENDING FORCE	kN	500	500	1250	1250	500	500
TABLE LENGTH	mm	1250	2090	3140	4200	1250	2090
CLEARANCE BETWEEN SIDE FRAMES	mm	850	1660	2700	3760	850	1660
THROAT DEPTH	mm	405	405	420	420	405	405
MAXIMUM STROKE	mm	150	150	200	200	150	150
MAXIMUM DAYLIGHT BETWEEN TABLES	mm	355	355	400	400	355	355
WORKING TABLE HEIGHT	mm	900	910	960	960	900	910
WORKING TABLE WIDTH	mm	60	60	90	180	60	60
NUMBER OF INTERMEDIATES	n°	6	10	15	21	6	10
APPROACH SPEED	mm/s	200	200	200	200	200	200
ADJUSTABLE WORKING SPEED	mm/s	1-10	1-10	1-10	1-10	1-10	1-10
RETURN SPEED	mm/s	80	80	90	90	230	220
MOTOR POWER (THREE-PHASE MOTOR 380V 50HZ)	kW	5	5	11	11	5	5
APPROXIMATE PRESS WEIGHT	kg	3920	4750	7500	10600	3920	4750
MAXIMUM LENGTH*	mm	2075	2910	3950	4950	2060	2840
WIDTH	mm	1850	2060	2250	2250	2005	2005
HEIGHT	mm	2500	2570	2850	2850	2550	2590

Technical specifications are subject to change. If necessary, please contact the relevant personnel.

BSTS RANGE

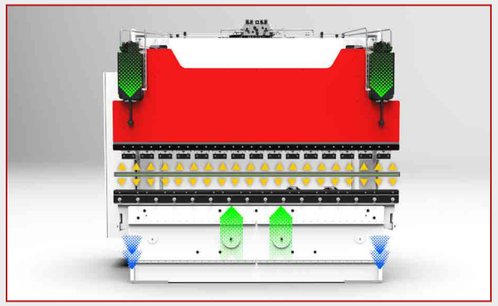
The BSTs range by Schiavi Macchine offers 4-axis press brakes designed to ensure reliability and performance. Built on Schiavi's solid traditional structure, these machines feature a back gauge system (with X-R axes) and are controlled by the dedicated Athena CNC for precise and intuitive operation.

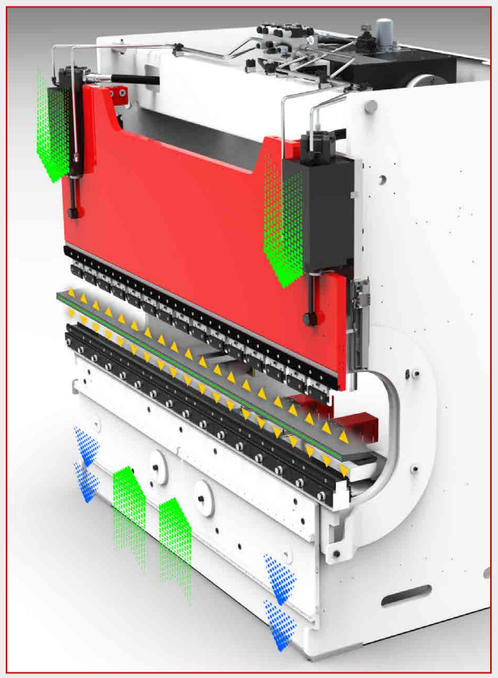
The BSTs models cover a wide range of needs, with forces ranging from 500 kN to 1250 kN and lengths from 1.2 meters to 4 meters, providing tailored solutions for every type of processing.

SCHIAVI MACCHINE COMPENSATION

The composite lower table is the result of an international patent and, while maintaining the classic principle of side cylinders that move the upper table, it allows for automatic correction and elimination of table deformations, ensuring perfect parallelism.

The distance between the tools during bending remains constant along the entire bending length, guaranteeing a high-quality result.



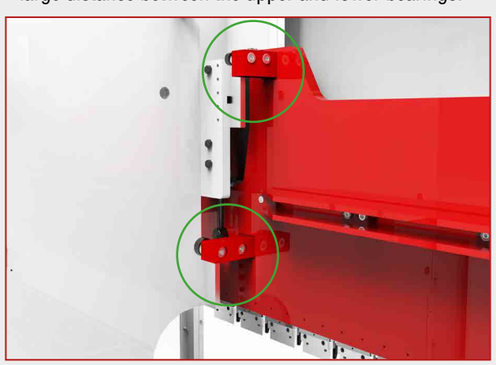


ATHENA NUMERICAL CONTROL

Athena represents a significant advancement in the management and optimization of industrial production. This innovative product functions both as a numerical control system and as offline software, providing a comprehensive solution to monitor, analyze, and optimize every stage of the production process in real time.

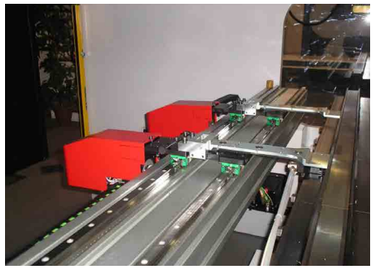
PRECISE CENTERING

The upper table is guided by four pairs of bearings that slide on hardened and ground steel tracks, which are securely fixed to the machine's side frames. The centering and alignment of the tables are ensured by the large distance between the upper and lower bearings.



BACK GAUGE SYSTEMS

MPS-CZ
Axis positioning accuracy X = 0,1 mm
Axis positioning accuracy R = 0,1 mm
Axis positioning accuracy Z = 0,2 mm
Maximum axis speed X = 500 mm/s
Maximum axis speed Z = 1250 mm/s
Maximum axis speed R = 120 mm/s
X-Axis Stroke = 600 mm
R-Axis Stroke = 150 mm



MPS-H
Axis positioning accuracy X = 0,05 mm
Axis positioning accuracy R = 0,05 mm
Axis positioning accuracy Z = 0,1 mm
Maximum axis speed X = 550 mm/s
Maximum axis speed Z = 1500 mm/s
Maximum axis speed R = 160 mm/s
X-Axis Stroke = 700 mm
R-Axis Stroke = 250 mm

MPS8
Axis positioning accuracy X1 - X2 = 0,1 mm
Axis positioning accuracy R1 - R2 = 0,1 mm
Axis positioning accuracy Z1 - Z2 = 1,0 mm
Maximum axis speed X1 - X2 = 500 mm/s
Maximum axis speed Z1 - Z2 = 500 mm/s
Maximum axis speed R1 - R2 = 4300 mm/s
X-Axis Stroke = 1000/800 mm
X-Axis Stroke = 250 mm

MPS3
Axis positioning accuracy Y = 0,01mm
Axis positioning accuracy X / R = ±0,05mm
Maximum axis speed X = 500 mm/s
Maximum axis speed R = 120 mm/s
Z = Manual
X-Axis Stroke = 600 mm
R-Axis Stroke= 150 mm

MPS1
X-Axis
Repeatability = ±0.02 mm
General Accuracy = ±0.05 mm
Maximum Speed = 500 mm/s
Stroke = 500 mm
R-Axis:
Repeatability = ±0.05 mm
General Accuracy = ±0.1 mm
Maximum Speed = 140 mm/s
Stroke = 140 mm
Z1-Z2 Axes:
Repeatability = ±0.15 mm
General Accuracy = ±0.2 mm
Maximum X-Axis Speed = 500 mm/s
Maximum Z-Axis Speed = 2200 mm/s

TOOLS

Schiavi Macchine offers a wide range of punches and dies, the focal point of press brakes and the sheet metal bending process. Schiavi Macchine tools are manufactured using high-quality steel, induction-hardened in wear zones, and finished to a high surface standard. They ensure perfect alignment and precision even 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: picking up flat parts, bending the component, and unloading the finished piece.
The main advantages of a robotic bending cell are:

- Enhanced operator safety by automating repetitive and hazardous tasks.
- Cost reduction by eliminating human errors and minimizing waste.
- Unattended operation, allowing for extended working hours or additional shifts.
- Improved forecasting and more accurate production time estimates.

TK **MINI BEND** CELL

The TK MINIBEND CELL by Schiavi Macchine is an innovative and compact solution for the automated bending of small-sized parts, ensuring maximum efficiency, precision, and flexibility.
This space-saving cell is equipped with standard components that guarantee high productivity and top-quality results.

Designed for Industry 4.0 and ready for Industry 5.0, the TK MINIBEND CELL supports intelligent and connected production environments.
Programming is performed entirely offline, directly from the office, drastically reducing setup times.

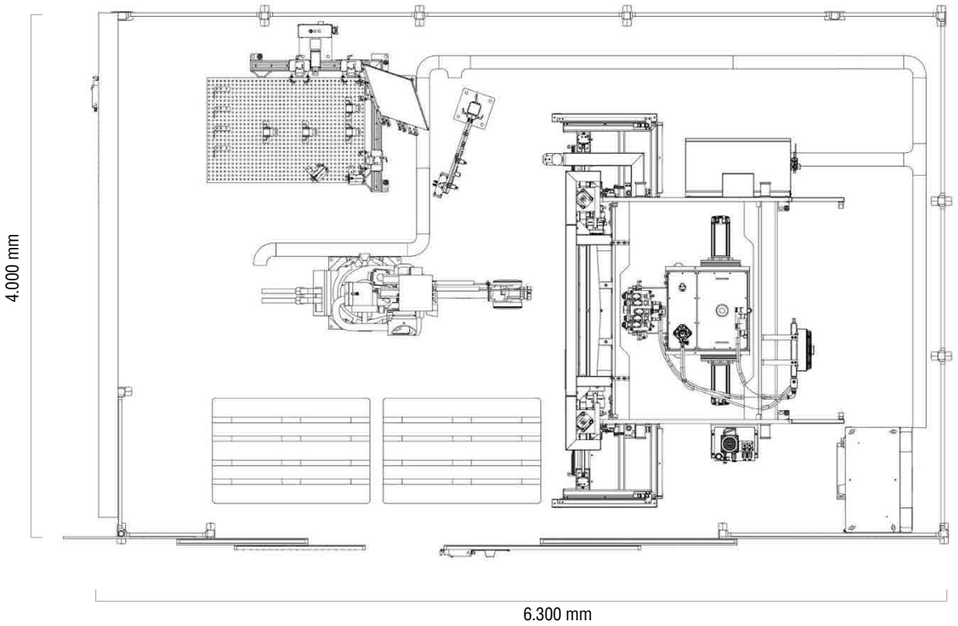
INCLUDED STANDARD COMPONENTS:

- 6-axis robot, 12 to 18 kg payload
- 1 loading area
- 1 thickness gauge
- 1 inclined centering table
- 1 external repositioning device
- 2 or 3 unloading areas
- 1 standard gripper
- Standard fencing with 1 door and 1 gate

OPTIONS FOR GREATER FLEXIBILITY:

- Complex grippers (combination of suction cups + clamps + magnets)
- Loading area with multi-stack system
- Automatic gripper change system
- Automatic tool change system

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



TK **FLEX BEND** CELL

The TK FLEXIBEND CELL by Schiavi Macchine represents a revolutionary concept in bending automation, combining a press brake with a robot into an integrated system.
The 7-axis robot moves horizontally along a floor-mounted rail, offering exceptional flexibility of movement and operation.
Designed to handle a wide variety of profiles, the TK FLEXIBEND CELL is the ideal solution for automated bending of large production batches.

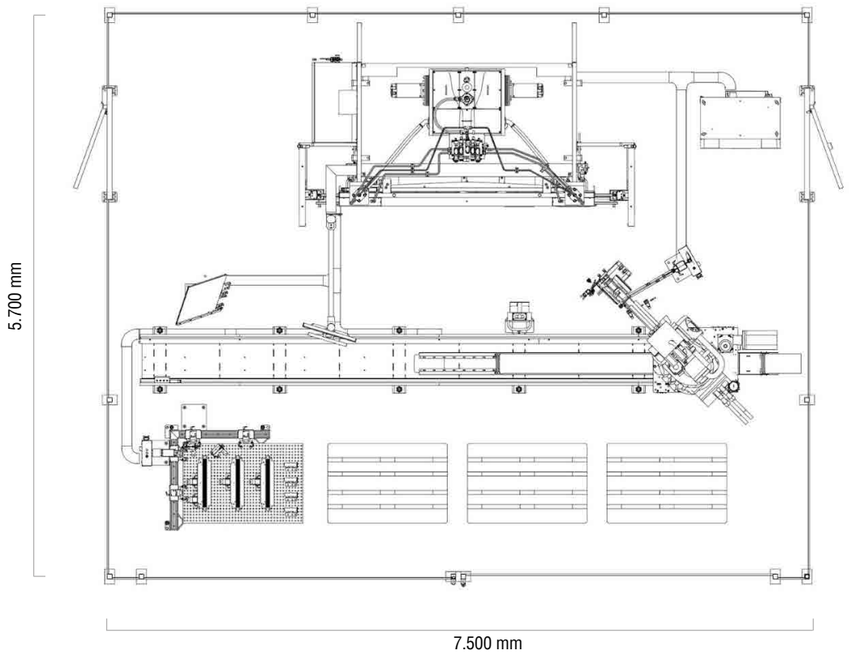
MAIN ADVANTAGES:
- Flexibility in handling different types of parts
- Reduced setup times
- Increased productivity
- High-capacity, unattended production

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

INCLUDED STANDARD COMPONENTS:
- 6-axis robot
- Additional floor-mounted rail axis (7th axis)
- Workpiece dimensions up to 1500 x 3000 mm, with a maximum weight of 220 kg
- Fast automatic programming for both the press brake and the robot
- Loading area
- Unloading area
- 1 thickness gauge
- 1 inclined centering table
- 1 external repositioning device
- Standard fencing with 2 doors and 1 gate

OPTIONS FOR GREATER FLEXIBILITY:
- Complex grippers (combination of suction cups + clamps + magnets)
- Loading area with multi-stack system
- Automatic gripper change system
- Automatic tool change system

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



TK **MEGA BEND** CELL

The TK MEGABEND CELL by Schiavi Macchine represents a revolutionary solution designed to take automated bending cells to the next level. In this configuration, the rail on which the robot moves is supported by a gantry structure (with a variable length from 5 to 11 meters), allowing users to benefit from several operational advantages, such as:

- Eliminating floor-mounted rail obstructions in front of the machine
- Avoiding the need for platforms to raise the press brake
- Eliminating the requirement for foundation work for the rail
- Switching from automated robotic bending to manual bending in just a few seconds

The TK MEGABEND CELL is designed to be paired with Schiavi press brakes, whether hydraulic or hybrid.
This configuration allows the use of larger and more powerful press brakes with the same flexibility as a standard bending cell, offering the possibility to switch to manual production whenever needed.

INCLUDED STANDARD COMPONENTS:

- 7-axis robot
- Gantry structure with rail, length between 6 and 11 meters
- Loading area
- Unloading area
- 1 thickness gauge
- 1 inclined centering table
- 1 external repositioning device
- Standard fencing with 2 doors and 1 gate

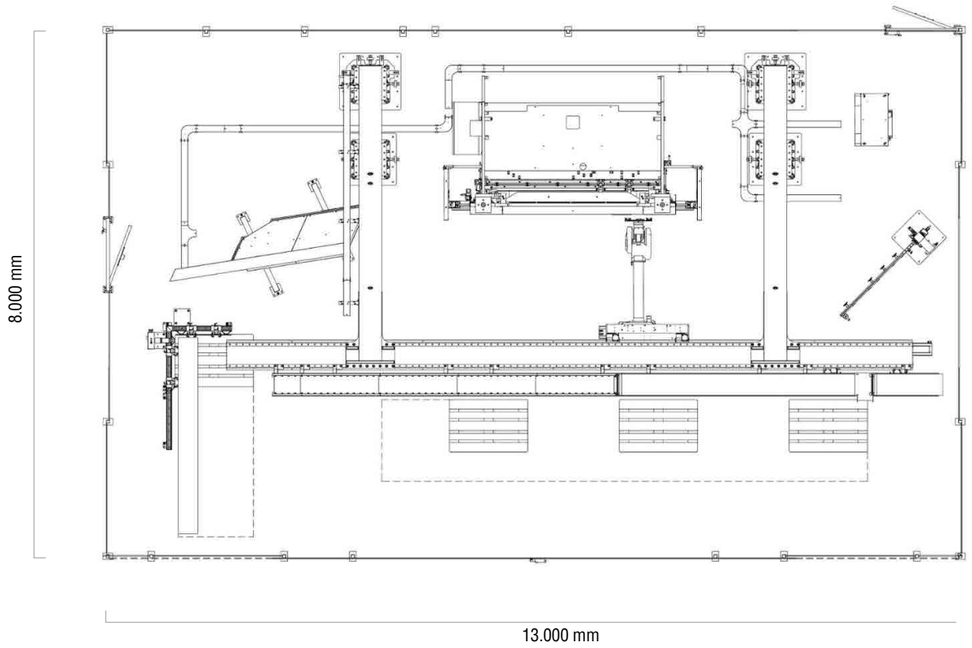
OPTIONS FOR GREATER FLEXIBILITY:

- Complex grippers (combination of suction cups + clamps + magnets)
- Loading area with multi-stack system
- Automatic gripper change system
- Automatic tool change system

MAIN ADVANTAGES

- Unmatched flexibility and efficiency, optimizing floor space in front of the press brake while ensuring a compact footprint
- Allows smooth transition from automated to manual production
- Customizable production settings to maximize efficiency and performance
- Upgrade of existing press brakes through complete overhaul services, including integration of robots and advanced software, thereby enhancing both performance and safety

The TK MEGABEND CELL offers an advanced and versatile solution for automated bending needs, combining operational flexibility and space optimization to maximize the productivity and quality of production processes.



SOFTWARE

Schiavi Macchine International's Task Dynamic department is the technological heart of the company, dedicated to developing advanced software solutions for industrial control and automation. With more than 50 years of experience, we design, develop and implement numerical controls, office software, drive systems and PLCs tailored to optimize performance and production efficiency.

With a highly specialized team and established know-how, Task Dynamic guarantees state-of-the-art solutions that integrate reliability, precision and ease of use. Our goal is to turn technology into a competitive advantage for our clients by offering intuitive, high-performance tools for total control of production processes.

OFFICE SOFTWARE

With our office software, **Bending System and A.R.S.** (Anthropomorph Robot Simulator), you bring efficiency and accuracy to production process management. Bending System integrates an advanced bending process simulator to optimize scheduling and production, while A.R.S. is the robotic cell simulation software that maximizes performance and reduces setup time. Intuitive and powerful tools to improve quality and optimize every step of the job. With Schiavi Macchine technology, your production reaches new levels of excellence.

BENDING SYSTEM

Bending System is Schiavi Macchine International's advanced software designed to manage and optimize the bending process. It enables rapid generation of the bending sequence, tool configuration and bending program, with an intuitive interface and high compatibility with various CAD/CAM formats.

GENERAL FEATURES
- CAD/CAM simulation of sheet metal bending on press brakes
- Automatic machine set-up based on part characteristics
- Tool fractionation management and the ability to work on multiple program, drawing and tool archives
- Saving and loading of predefined tooling
- Advanced editing functions for manual tooling
- Explained part visualization, with the possibility of measurements and constraints on aligned bends

3D EDITOR
- 3D visualization of the part with measurement tools
- Import from flat DXF, 3D DXF, IGES/STEP and CADMAC BND
- Advanced part editing directly in the editor

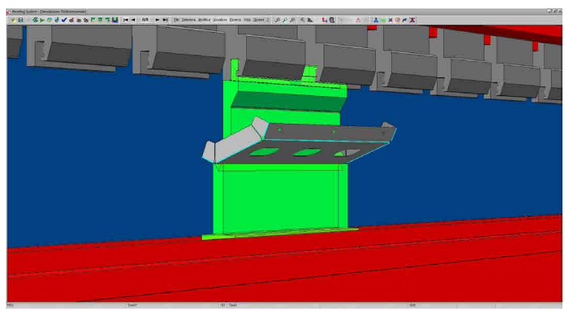
3D SIMULATION
- Automatic search for the best bending sequence
- Estimation of part making time
- Management of crushed folds and resumed folds
- Advanced collision detection between part, machine and tools
- Management of gripping organ for the robot and export to SIMROBOT
- Development of the same part on more than one program and/or machine
- Export of the flat DXF part ready for cutting and punching

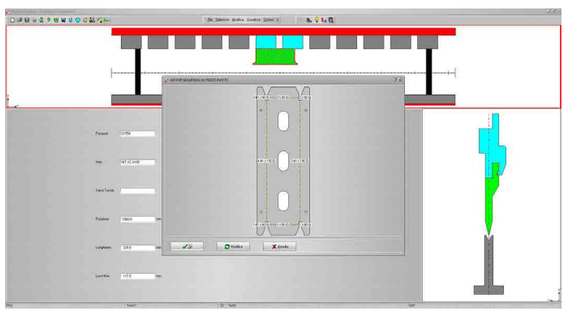
CNC COLLABORATION
- Detailed printing with images of all machining steps
- Data generation for Production Viewer
- Compatibility with a wide range of Task CNCs and others, including Delem, Cybelec, Operateur, Kvara, Komatsu

TOOL AND PLANT EDITORS
- Managing and editing the characteristic data of each tool
- Setting available fractionations for each tool
- Creating tools by importing from DXF files
- Support for bend-crush dies
- Managing machine profiles with DXF import

PRODUCTION VIEWER
- Monitoring of the jobs performed
- Advanced filtering of the jobs in the list
- Detailed reports and statistics on the workload of each machine

BS CONFIG
- Machine management and software updates
- Transferring and copying machines between archives
- Backing up and restoring machine configurations
- Remote management of activations and updates via the Internet





A.R.S.

A.R.S. is the proprietary robotic island simulation and programming software developed to calculate optimal trajectories for component loading, bending and unloading.

GENERAL FEATURES
- Automatic calculation of optimal trajectories
- Management of 6-axis, 7-axis gantry, and 7-axis tracked robots
- Customized work cell configuration
- Collision detection and management
- Automatic program generation for robot controller
- Multi-language support
- Manually configurable and editable unloading program
- Automatic gripper changeover and multiple load management
- Intuitive and easy-to-use interface
- Full integration with Bending System
- Built-in editor for multiple gripper configuration (suction cup, gripper, suction cup + gripper)

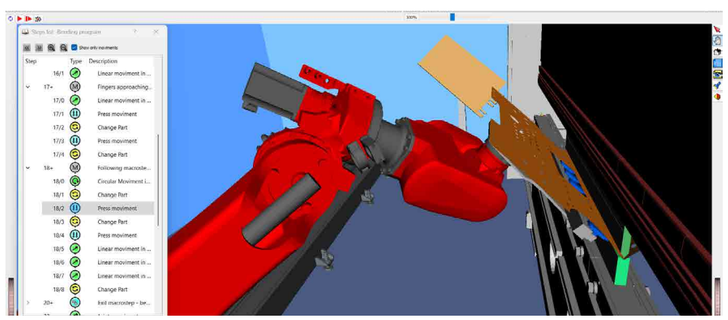
TYPES OF ROBOTS MANAGED
- 6-axis robot
- 7-axis robot on beam
- 7-axis robot on track

PERSONALIZATION OF WORK CELLSA.R.S.
allows you to configure the work cells for perfect consistency with the actual press-bending plant. You can define:
- Press
- Robot
- Single or multiple loading pallets
- Thickness gauge
- Zeroing table
- Pickup organs
- Gripper change rack

BENDING PROGRAMA
A.R.S. automatically generates the optimal bending program based on:
- Workpiece to be bent
- Type of robot
- Work cell configuration
- Machine dimensions

The program can be simulated and modified before sending to the machine, allowing:
- Inserting customized movements
- Deleting unnecessary movements
- Changing start and end positions
- Changing movement type

With its ability to adapt to different layouts and configurations, A.R.S. is the ideal solution for automating robotic operations and improving overall productivity.



SOFTWARE

NUMERICAL CONTROLS

Schiavi Macchine International's numerical controls are designed to ensure precision, efficiency and reliability in bending processes. Since 1984, with the Task division, we have been internally developing advanced solutions for the control of our machines, ensuring state-of-the-art technologies and optimal integration with each plant. Athena is our most advanced solution, designed to offer maximum performance, ease of use and optimal production control. To upgrade dated machines, Titan continues to be used in the retrofit of Schiavi Macchine International plants, ensuring operational continuity and process improvement.

ATHENA

ATHENA: The Advanced Numerical Control for Maximum Precision and Automation

ATHENA is an advanced numerical control designed for press brake management, the result of more than 30 years of experience in the Task Dynamic hardware and software division. Its simple and intuitive Graphical User Interface (GUI) is displayed on an outstanding 21.5-inch high-resolution LCD, with a sophisticated multitouch touch-screen.ATHENA's graphics are particularly advanced, especially in 3D functionality, where the operator is assisted in all phases of bending. The system offers graphical creation of tools and parts in 2D/3D, import of 3D parts from CADCAM, and real-time 2D/3D simulation and visualization of every step of the bending process.ATHENA guides and assists the operator throughout the entire bending sequence, offering a modular solution to meet every user need.

MAIN FEATURES OF ATHENA

- Standard Digital Interface-CAN

Athena uses a CAN interface for direct and fast communication with drives, ensuring precise and responsive control.

- Advanced Management of Interaction with Remote Systems

The system supports several types of remote interfaces, including:- Digital I/O

- Hydraulic axes- Brushless, DC and stepper motor drives- Advanced 3D Graphics

A detailed graphical interface enables 3D visualization of the workpiece, tooling and manipulation during bending operations, providing immediate and intuitive visual control.

- Import and Export of Programs from Remote Servers

Athena enables the transfer of programs to and from remote servers, facilitating centralized data management and increasing production flexibility.

- Intelligent Bending Sequence Management

The system allows manual and automatic definition of the folding sequence, adapting to operational needs and optimizing processes.

- Options for Increased Accuracy and Automation

Athena can be equipped with:Real-time bending angle measuring device, ensuring maximum accuracy and reduced scrap.Front sheet metal escorts, facilitating part handling and improving work ergonomics.

- Integrated Document Management

Ability to attach files directly to the work program, simplifying information sharing and improving traceability.

- Industry 4.0 Ready

Athena is fully integrable into modern production processes and compatible with the MQTT communication protocol, enabling connection with real-time production monitoring and management systems.

HARDWARE FEATURES

- Intel i5 multicore processor board
- 16 GB DDRAM memory
- Monitor: 21.5" TFT FULL
-HD color LCD, 16.2M colors, dual technology multitouch touch-screen
- Internal memory: 32 GB high-speed
- Serial: 2 RS232/RS422
- Fast Serial: 1 CANbus (1Mbit)
- USB: 2 front 3.0 ports
- Network card: Gigabit Ethernet
- Options: Wireless network
- Metal cabinet: Made of light alloy, complete with operating handle
- Prepared for installation of electromechanical pushbuttons and selectors (optional)
- Compatible with standard VESA mount
- Operator keyboard: Optionally available industrial alphanumeric keyboard
- Emergency pushbutton: Mushroom-mounted, conforming to EN60947-5-1, EN60947-1, with mechanical latch and two N. C. positive operation
- 4 customizable electromechanical pushbuttons

ELECTRICAL CHARACTERISTICS

- Power supply: 18÷36Vdc (rated voltage: 24Vdc)
- Power: 40W @ 24 Vdc

RETROFIT SOLUTIONS

TITANO

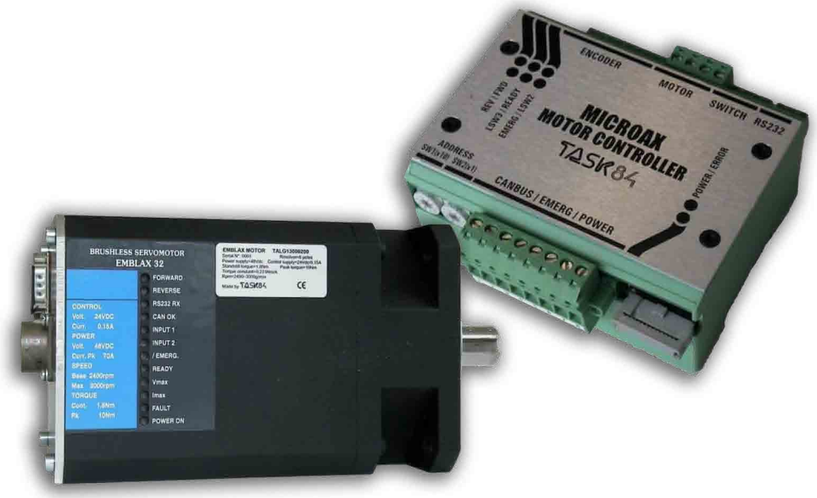
The reliable solution for **retrofitting** dated pressesTitano is Schiavi Macchine International's proven numerical control developed to upgrade dated presses and improve their performance. Reliable and robust, it enables optimization of production processes, ensuring greater efficiency and extending the operating life of machines. Its intuitive interface and advanced features make it the ideal choice for those who need a robust, high-performance system to retrofit existing plants.

SOFTWARE

DRIVES AND PLC

DRIVERS AND PLC: Technology and Reliability Made in Italy

Drives and PLCs from Schiavi Macchine International are at the heart of press brake control, ensuring precision, responsiveness and reliability. Designed, developed and manufactured in-house by the Task division, they ensure seamless integration with our numerical controls, optimizing every stage of the production process. The value of Made in Italy is reflected in construction quality, technological innovation and attention to detail, offering tailor-made solutions for maximum performance and long operating life.



CRC3 is a device designed to manage all axis control activities of the press brake in real time. It communicates directly with the numerical control, ensuring maximum precision and responsiveness in driving the machine.

EMBLAX is an innovative system that combines motor and drive in a single device, reducing space, cost and wiring complexity.

MICROAX is a compact vector drive for stepper motor control with encoder feedback, designed for maximum efficiency and reliability.

CRC3 - ADVANCED PRESS BRAKE AXIS CONTROL

Thanks to its advanced architecture, CRC3 ensures:
- Optimal synchronization of all press axes
- Efficient management of movement dynamics
- Immediate response to numerical control commands
- Complete integration with Schiavi Macchine bending systems
- High reliability even under severe working conditions
- The device is fully configurable and monitorable via PC interface, allowing intuitive and fast management of operational settings.

EMBLAX - COMPACT SOLUTION WITH INTEGRATED MOTOR AND DRIVE

Ideal for high-efficiency applications, EMBLAX offers:
- Compact design for simplified installation
- Reduced setup and commissioning time
- High performance with precise torque and speed control
- Advanced diagnostics via PC with real-time monitoring
- Oscilloscope function for operation analysis and optimization
- With its easy parameterization, EMBLAX ensures immediate integration into industrial automation systems.

MICROAX - VECTOR DRIVE FOR STEPPER MOTORS

The field-oriented closed-loop system combines the advantages of stepper motors with the performance of a brushless system, offering:
- Elimination of step loss and motion stability
- Independence from motor resonance frequencies
- Optimal torque reserve to handle overloads
- Torque limiting in case of collision for added safety
- Smooth motion even at low speeds and precise position control
- MICROAX is fully parameterizable and controllable via CANbus line and PC serial interface, making it perfect for distributed control systems, with direct installation close to the motor for significant reduction in wiring.

SOFTWARE

SPECIALIZED SERVICE

Service - Our Commitment to Customer Success

The Service department of Schiavi Macchine International is a key strength of our company, designed to ensure fast, effective and customer-oriented service. Our mission is simple: to maintain the operational continuity of your machines, ensuring that every request is handled promptly and efficiently.

Quick Answers and Immediate Solutions

We are distinguished by our ability to respond quickly to customer requests, thanks to a lean and flexible corporate structure. We are able to reduce waiting times and deal quickly with technical interventions, maintenance or spare parts supplies. Speed goes hand in hand with quality, offering dedicated and efficient support to keep machines running at peak performance. Thanks to our proprietary know-how, we know our machines inside out, designed and manufactured in-house. This allows us to expertly solve any problems, offering customized and highly specialized solutions.

Customers at the Center of Our Operation

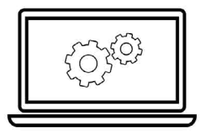
For Schiavi, the customer is at the center of every activity. We firmly believe that our customers' success is our priority, which is why our Service department works every day to ensure that our machines and systems are always operating at their maximum capacity. Our commitment extends beyond simple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

QUICK TECHNICAL ASSISTANCE

Our team of trained technicians is always on hand to provide technical support, both on-site and remotely, to minimize downtime

SUPPORTING TRAINING

We organize specific training courses for our customers' staff, ensuring that they can operate all our machines competently and safely.



RETROFITS AND UPGRADES

One of our department's distinctive services is retrofit. Thanks to our highly skilled team, we can upgrade existing machinery with the latest technology, improving efficiency, productivity and safety without having to completely replace equipment. By retrofitting, you not only extend the useful life of your machines, but also benefit from significant cost savings compared to purchasing new equipment.

SCHEDULED MAINTENANCE

We offer preventive maintenance packages that help ensure the longevity and efficiency of machines, avoiding costly unplanned downtime.

SUPPLY OF ORIGINAL SPARE PARTS

We have a wide range of genuine spare parts to ensure that your machines maintain optimal performance over time.

With our Service department, we are committed to providing timely, high-quality support that reflects Schiavi Macchine International's values: technical excellence, customer focus and reliability. We are proud to say that every customer can count on us for prompt response and customized solutions, ensuring continuous support throughout the life cycle of the machines.

NOTES

SCHIAVI MACCHINE INTERNATIONAL SRL

Ghisalba (BG), Via San Pietro 16, CAP 24050

email: sales@schiavimacchine.it
ph: +39 035 4242446

www.schiavimacchine.it

schiavimacchine