

# ABB Flex Bender System Compact Units

Proven, flexible, standardized solutions for tending press brake machine and punching machine with robots



ABB Automation



## **The Flex Bender system by ABB Flexible Automation offers standard turn-key solutions to meet individual needs.**

In today's increasingly competitive market, productive flexibility has become a key strategic objective for modern companies. This can only be achieved with new technologies supported by the latest and most advanced control systems.

Thanks to its experience in producing robotised systems and its position as market leader, ABB has developed a range of flexible systems for bending sheet metal, tailor-made to meet your company's needs.

### **Function Package**

The bending press robotisation function package consists of a system of standardized products, manufactured using proven components. These systems guarantee low investment costs, quick setup times and maximum reliability.

The function package systems are the product of over ten years' experience in the sector and a strong commitment to research and development. As a result, even the smallest company can reduce production costs and improve efficiency.

The function package series consists of:

- robot, equipped with a gripper and vacuum generating system;
- BENDWARE software program for bending sheet metal;
- sheet feeding system with separator and double sheet indicator;
- alignment system;
- overturning system;
- fences and safety system;
- palletization station.

### **High Productivity**

High productivity is guaranteed, thanks to the interface press and robot control system and smooth operating performance, resulting in increased production speed throughout the day.

### **Production Quality**

Consistent quality levels can only be obtained with automated production processes. ABB solutions for sheet metal bending applications guarantee high quality production standards.

### **Flexibility**

Flexibility is the main strength of ABB automated systems. In order to take full advantage of the potentiality of the system and meet every specific customer need, ABB has developed a range of peripheral devices for metal bending applications. A special software package "BENDWARE" has also been produced to operate all the peripheral devices and program the bending process, guaranteeing complete system monitoring.

### **Cost-effectiveness**

Cost-effectiveness can easily be calculated by considering the increased productivity, the reduction in waste and the saving in labour costs. The Flex Bender system also guarantees a quick return on investment (less than two years).

### **Safety**

Press brake machines are notorious for being dangerous machines, so much that they are included in annex IV of Machinery Directive 89/392 CE. The use of an ABB robot in the sheet bending process is an ingenious solution to what is today considered an important aspect in any modern company, whether big or small.



### MINI BENDER

Metal sheet data	
Max. weight (kg):	8
Max. length (mm):	1500 x 300
Max. width (mm):	850 x 850
Robot model: IRB 2400/16	
Capacity (kg):	16
Extension (mm):	1500
Axes (n°):	6
Repeatability (mm):	± 0,1



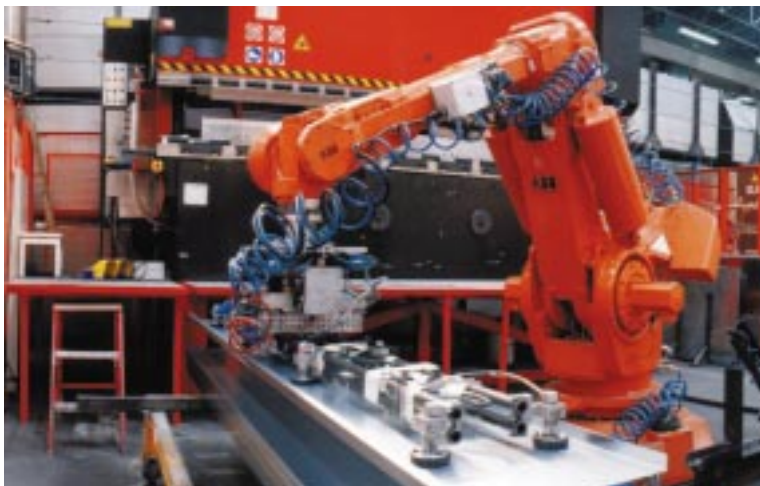
### MIDI BENDER

Metal sheet data	
Max. weight (kg):	15 ÷ 30
Max. length (mm):	2800 x 800
Max. width (mm):	2000 x 1200
IRB robot model: 4400L/30    4400/45    4400/60	
Capacity (kg):	30    45    60
Extension (mm):	2430    1960    1960
Axes (n°):	6    6    6
Positioning repeatability error (mm):	± 0,1



### SWING BENDER

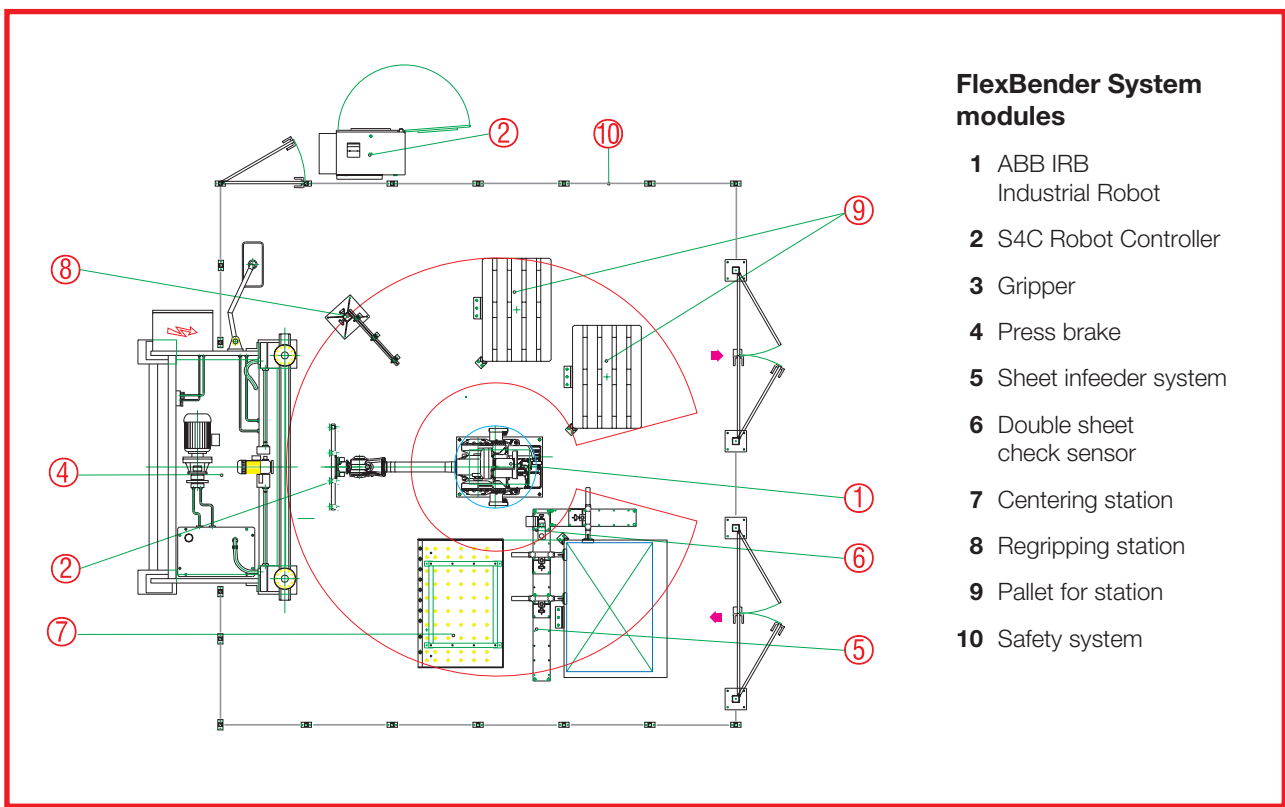
Metal sheet data	
Max. weight (kg):	25
Max. length (mm):	2100 x 1000
Max. width (mm):	1800 x 1200
Robot model: IRB 4400/45	
Capacity (kg):	45
Extension (mm):	1960
Axes (n°):	6 + 1
7 <sup>th</sup> axis stroke (mm):	1200



### MAXI BENDER

Metal sheet data	
Max. weight (kg):	30 ÷ 80
Max. length (mm):	3800 x 600
Max. width (mm):	2000 x 2000
IRB robot mod. 6400L/3,0-75    6400/2,8-120    6400/2,4-150	
Capacity (kg):	75    120    150
Extension (mm):	3000    2800    2400
Axes (n°):	6    6    6
Positioning repeatability error (mm):	± 0,1-0,15





### An Authority on Sheet Bending

In June 1997, the ABB Flexible Automation Group opened its Centre of Excellence in Italy, to act as an authority on all press brake tending robotisation applications. The Centre is an important recognition of the experience ABB Italia has acquired and the specific know-how it has developed in this application field.

### Specialisation in sheet metal bending

The ability to produce automated systems is by nature the result of skill and experience obtained through specialisation.

Today, competitive solutions can only be provided by companies that are specialists in their sectors. ABB has developed specific know-how in welding, sheet metal bending and painting sectors.





## **ABB personalized service guarantees the best solutions**

Our aim is not just to find a solution, but to find the best solution to meet our customer's needs. This is why at ABB, we use all the technical resources available such as 3D simulators and laboratory testing equipment. As well as this, we have over ten years experience of working on similar equipment made in Italy and abroad.

### **System Capacity**

Today the market increasingly demands productive systems, and ABB is structured to meet all the needs linked to sheet metal forming processes. ABB's offer stretches from standardized systems (Function Packages) to complex solutions, with the option of integrated control systems for press brake machines and punching machines. These solutions have been developed for all types of sheet metal materials of any dimension.

### **BendWare**

BendWare is the software that has been tailor-made for press brake tending applications with robot. BendWare allows new work cycles to be programmed quickly and easily, controls the monitoring of production data, diagnoses faults and allows the operator to program the bending process.

It also controls all the peripherals integrated to the robotised cell, as well as the press interface. Thanks to the user-friendly operator interface, the equipment can be easily programmed using the dialog boxes displayed. BendWare contains a series of procedures and macros that allow the user to create new programs quickly and easily. The sub-programs for loading and aligning the metal sheets, and for palletization operations, are created automatically inserting geometrical data for the new piece and configuring the cell evacuation pallet. Macros make programming any type of bend an easy operation that simply requires inserting characteristic parameters, such as the bending angle. These macros guarantee high production quality, always aligning the sheet correctly and synchronizing the movements of the robot and the punch.

ABB Flexible Automation can significantly improve your manufacturing process through a comprehensive range of products, systems, and service solutions.



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