



## SEMI-AUTOMATIC BENDING MACHINE PROGRAMMABLE NUMERICALLY CONTROLLED FOR FINNED AND UNFINNED ELEMENTS



### WATCH THE VIDEO

Bending machine with one programmable N.C. bending unit. The elements are displaced manually during the bending steps.

**The machine is suitable for small batches, with a wide range of diameters and shapes, it can be used with both standard and finned elements.**

The bending angle it is defined by the operator in the program directly on the machine.



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## MACHINE COMPOSITION

The machine will be provided with:

- Electro welded and painted steel basement.
- Horizontal working table for supporting the element during bending
- Programmable bending unit up to 200°
- Pneumatic fixed clamp for holding the element during the bending cycle
- Centralizer for the element to be bent, complete with metric rules
- 2 hand push button console.
- Electric cabinet complete of programming unit
- Complete tooling for one tubular heating element diameter and bending radius
- Complete tooling for one finned heating element diameter and bending radius

## PROGRAMMING

The machine is provided with user interface with the following functions:

- Recall a previously saved bending program
- Create a new bending program:
  - 1st bend ...° (degrees)      Bend speed ... °/sec spring back correction
  - 2° bend ...° (degrees)      Bend speed ... °/sec spring back correction
  - And so on for all the bends

## SET-UP

### Change shape

- Recall a new program or create a new one

### Change of the length of the element

- Adjustment of the centralizer

### Change of the bending radius

- Replace the bending roll on the bending head
- Adjust the position of the other two rolls on the bending head
- Adjust position of the bending head

### Change of heating element diameter

- Adjust opening of the mobile clamp
- Adjust position of the bending head
- Adjust position of external rolls on the bending head

### Change between standard and finned element

- Replace the bending head with the dedicated one
- Replace mobile and fixed clamps

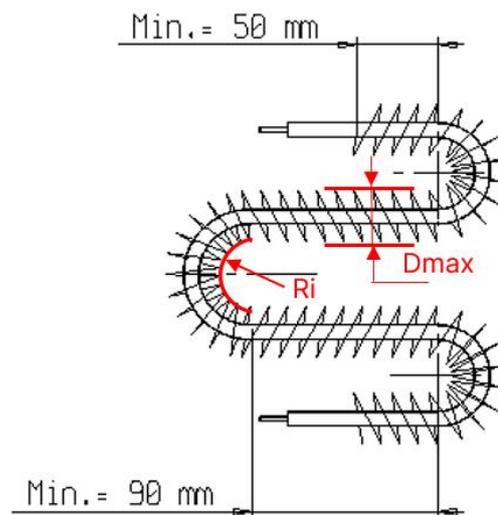
## BENDING CYCLE

- Manual loading and positioning of the element that must be bent
- Start bending cycle with two buttons command console
- Centering
- Bend with the first angle in the program
- Manual displacement till the mechanical reference
- And so on for all the other bends

**By rotating the elements along their axis it will be possible to obtain bends on different planes.**

## TECHNICAL CHARACTERISTIC

Element diameter		: mm	To be defined
Maximum diameter finned element (element with fin "Dmax")		: mm	Reference to versions table
Bending roll diameter (defined by the internal bend radius "Ri")		: mm	To be defined
Element per bending cycle		: pcs.	1
Set-Up Time	Change length (with centralizer)	: min.	2 - 4
	Change bending radius	: min.	2 - 4
	Change diameter over fins	: min.	4 - 5
	Change diameter of tube	: min.	3 - 4
Programming		: min.	2 - 3
Power supply		: V	To be defined
Pneumatic supply		: Ate	6
Installed power		: kW	2



**Notes:** for all variations, the sum of Ri and Dmax must not be greater than 63mm.

**AVAILABLE VERSIONS**

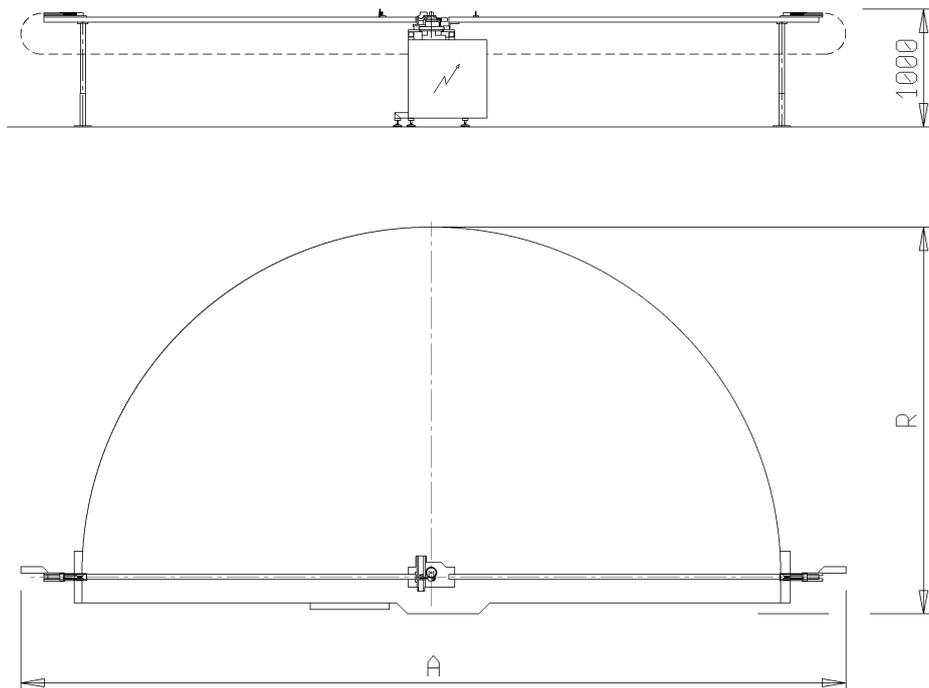
<b>Ø ELEMENT</b>	<b>6 – 12,5 mm</b>	<b>6 – 16 mm</b>
<b>Ø FINNED ELEMENT</b>	<b>Max 40 mm</b>	<b>Max 45 mm</b>
Maximum length up to mm 2.000	170/57.200000	171/57.200000
Maximum length up to mm 3.000	170/57.300000	171/57.300000
Maximum length up to mm 4.000	170/57.400000	171/57.400000
Maximum length up to mm 5.000	170/57.500000	171/57.500000
Maximum length up to mm 6.000	170/57.600000	171/57.600000

**OPTIONS**

**Mod. 170/56.T00000** Tooling for a different bending radius – Tubular elements

**Mod. 170/59.R00000** Tooling for a different bending radius – Finned elements

**Mod. 170/59.D00000** Spare parts for a different diameter over fins

**LAY-OUT**


Maximum tube length	2.000 mm	R = 1.500	A = 2.500
	3.000 mm	R = 2.000	A = 3.500
	4.000 mm	R = 2.500	A = 4.500
	5.000 mm	R = 3.000	A = 5.500
	6.000 mm	R = 3.500	A = 6.500