



MANUAL BENDING MACHINE PROGRAMMABLE NUMERICALLY CONTROLLED FOR TUBULAR AND FINNED 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

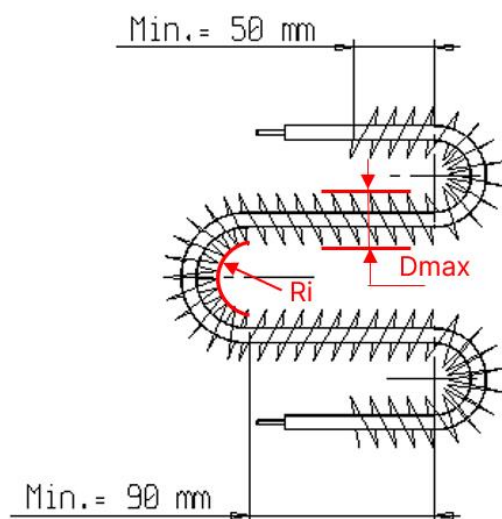
**BENDING CYCLE**

- 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

Ø ELEMENT	6 – 12,5 mm	6 – 16 mm
Ø FINNED ELEMENT	Max 40 mm	Max 45 mm
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

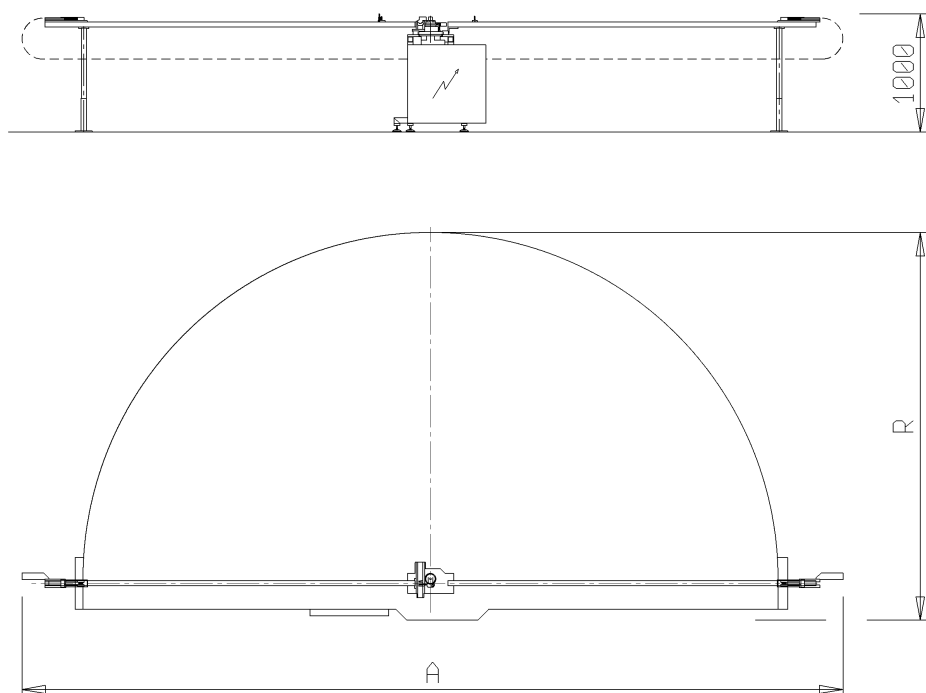
OPTIONS

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