

## Tube bending machine

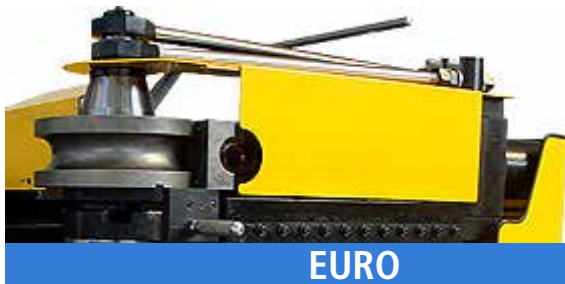
### Euro SERIES 90

The EURO Series 90 is a 1 axis (Y) tube for bending stainless steel, iron, copper or brass tubes or tubes in other special alloys up to 90 mm in diameter. The Euro Series 90 model features automatic bending and manual advancement and rotation.

The following are fitted as standard:

- heat exchanger;
- early mandrel extraction;
- automatic mandrel lubrication.

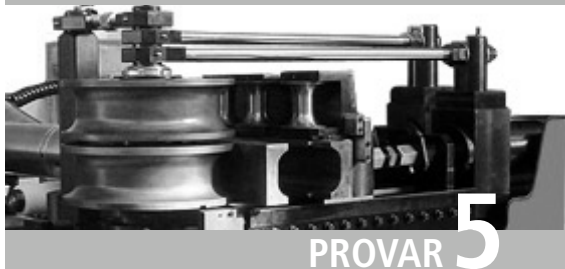
## SERIE 90



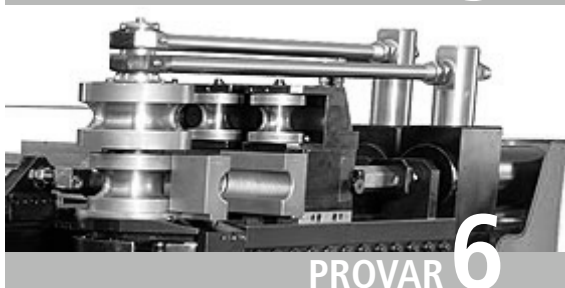
**EURO**



**PROFAST**

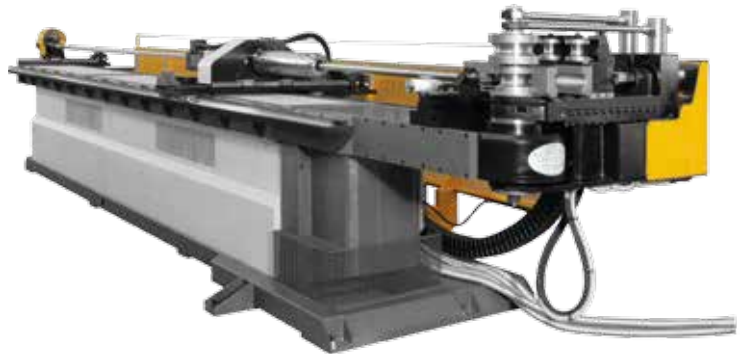


**PROVAR 5**



**PROVAR 6**

## DATA SHEET - EURO



FEATURES	U.M.	EURO
Y Max. bending speed	°/1"	45
Y Tolerance	+/- °	0.1
Weight	+/- Kg	5000

BENDING CAPACITIES	U.M.	EURO
Round tube R=42 Kg/mm <sup>2</sup>	mm	90x7
Round stainless steel tube	mm	90x5
Round tube Alum. Brass Copper Alloys	mm	90x10
Square tube R=42 Kg/mm <sup>2</sup>	mm	60x60x2
Rect. tube bent easy way	mm	40x80x2
Rect. tube bent hard way	mm	80x50x2
Round bar R=42 Kg/mm <sup>2</sup>	mm	50
Square solid R=42 Kg/mm <sup>2</sup>	mm	40x40
Min. R.I. with normal axle	mm	≥50
Min R.I. special	mm	≤50
Max. R.M. with rolls	mm	380
Mandrel extraction stroke	mm	100
Max bending angle	°	195
Working length	mm	3600
Machine extensions	mm	1560

Machine features are indicative and not binding. Macri Italia s.r.l. reserves the right to make changes for the purposes of technical improvement.

## Tube bending machine

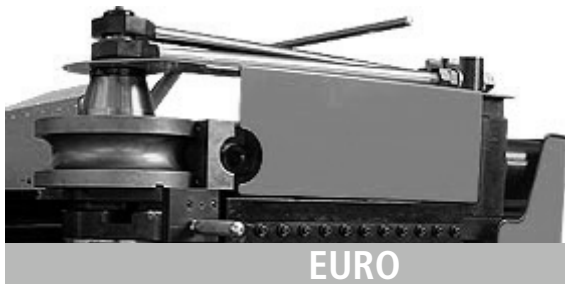
### Profast SERIES 90

The PROFAST Series 90 is a fully automatic, 3 axis tube bending machine: bending (Y axis), advancement (X axis) and rotation (Z axis). The PROFAST Series 90 can bend tubes up to 90 mm in diameter.

The following are fitted as standard:

- heat exchanger;
- early mandrel extraction;
- automatic mandrel lubrication.

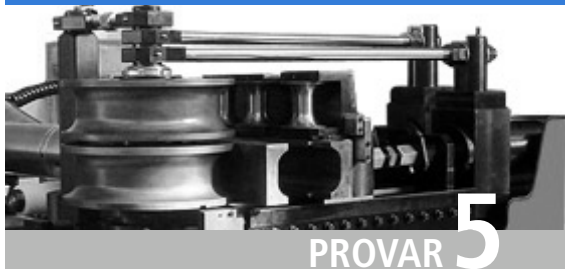
## SERIE 90



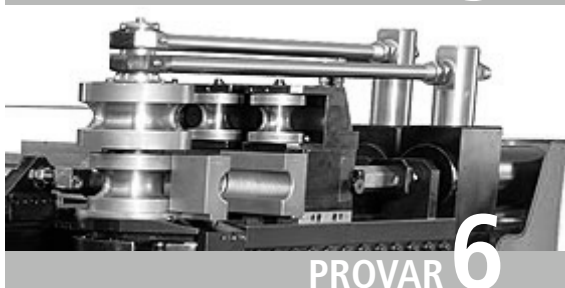
EURO



PROFAST

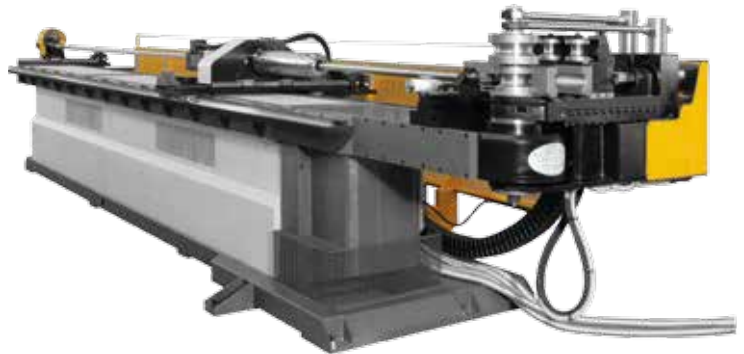


PROVAR 5



PROVAR 6

## DATA SHEET - PROFAST



FEATURES	U.M.	PROFAST
Y Max. bending speed	°/1"	45
Y Tolerance	+/- °	0.1
X Max. Velocità	mm 1"	650
X Tolerance	+/- mm	0.1
Z Max. gripper rotation speed	°/1"	180
Z Tolerance	+/- °	0.1
Weight	+/- Kg	5500

BENDING CAPACITIES	U.M.	PROFAST
Round tube R=42 Kg/mm <sup>2</sup>	mm	90x7
Round stainless steel tube	mm	90x5
Round tube Alum. Brass Copper Alloys	mm	90x10
Square tube R=42 Kg/mm <sup>2</sup>	mm	60x60x2
Rect. tube bent easy way	mm	40x80x2
Rect. tube bent hard way	mm	80x50x2
Round bar R=42 Kg/mm <sup>2</sup>	mm	50
Square solid R=42 Kg/mm <sup>2</sup>	mm	40x40
Min. R.I. with normal axle	mm	≥50
Min R.I. special	mm	≤50
Max. R.M. with rolls	mm	380
Mandrel extraction stroke	mm	100
Max bending angle	°	195
Working length	mm	3600
Machine extensions	mm	1560

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## Tube bending machine

### Provar 5 Axis

#### SERIES 90

The PROVAR 5 Axis Series 90 is a fully automatic, 3 axis tube bending machine: bending (Y axis), advancement (X axis) and rotation (Z axis). The PROFAST Series 90 can bend tubes up to 90 mm in diameter and lateral movement of the positioner and the mandrel (axes B1 and B2).

The PROVAR 5 Series 90 can bend tubes up to 90 mm in diameter and has two levels of equipment per fixed and variable radius or two different fixed radii.

The following are fitted as standard:

- heat exchanger;
- early mandrel extraction;
- automatic mandrel lubrication.

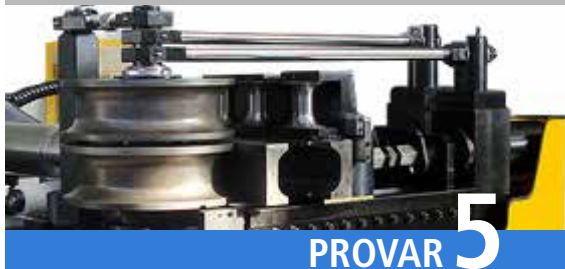
## SERIE 90



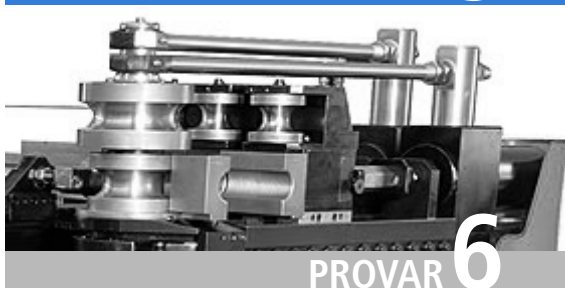
EURO



PROFAST

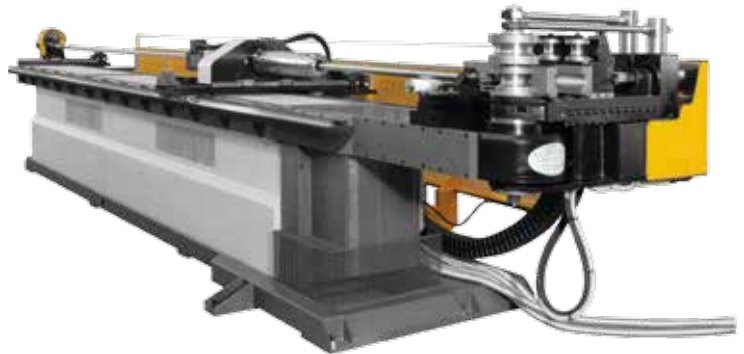


PROVAR 5



PROVAR 6

## DATA SHEET - PROVAR 5



FEATURES	U.M.	PROFAST
Y Max. bending speed	°/1"	45
Y Tolerance	+/- °	0.1
X Max. traverse speed	mm 1"	650
X Tolerance	+/- mm	0.1
Z Max. gripper rotation speed	°/1"	180
Z Tolerance	+/- °	0.1
B1 Max. speed	mt/1"	6
B1 Tolerance	+/- mm	0.1
B2 Max. speed	mt/1"	6
B2 Tolerance	+/- mm	0.1
Weight	+/- Kg	6000

BENDING CAPACITIES	U.M.	PROFAST
Round tube R=42 Kg/mm <sup>2</sup>	mm	90x7
Variable curve R=42 Kg/mm <sup>2</sup> RM min 10 D	mm	80x2
Round stainless steel tube	mm	90x5
Round tube Alum. Brass Copper Alloys	mm	90x10
Square tube R=42 Kg/mm <sup>2</sup>	mm	60x60x3
Rect. tube bent easy way	mm	40x80x2
Rect. tube bent hard way	mm	80x50x2
Round bar R=42 Kg/mm <sup>2</sup>	mm	50
Square solid R=42 Kg/mm <sup>2</sup>	mm	40x40
Min. R.I. with normal axle	mm	≥50
Min R.I. special	mm	≤50
Max. R.M. with rolls	mm	380
Mandrel extraction stroke	mm	100
Max bending angle	°	195
Working length	mm	3600
Machine extensions	mm	1560

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## Tube bending machine

### Provar 6 Axis

#### SERIES 90

The PROVAR 6 Axis Series 90 is a fully automatic, 3 axis tube bending machine: bending (Y axis), advancement (X axis) and rotation (Z axis). The PROFAST Series 90 can bend tubes up to 90 mm in diameter and lateral movement of the positioner and of the mandrel (axes B1 and B2) and up-down movement of the head (axis A).

The PROVAR 6 Series 90 can bend tubes up to 90 mm in diameter and has two levels of equipment per fixed and variable radius or two different fixed radii.

The following are fitted as standard:

- heat exchanger;
- early mandrel extraction;
- automatic mandrel lubrication.

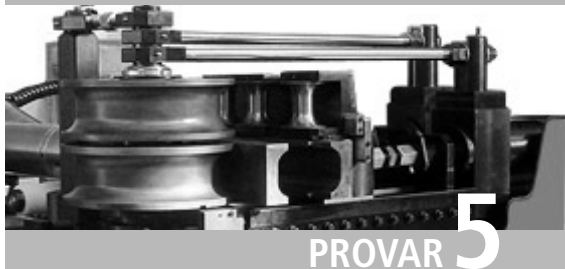
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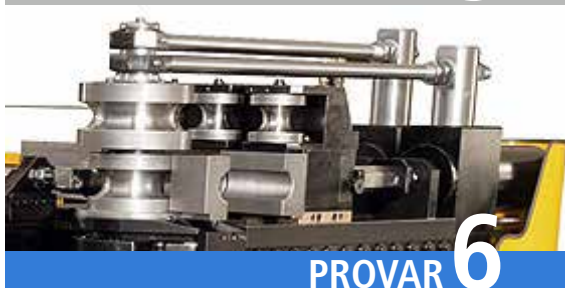
EURO



PROFAST



PROVAR 5



PROVAR 6

## DATA SHEET - PROVAR 6

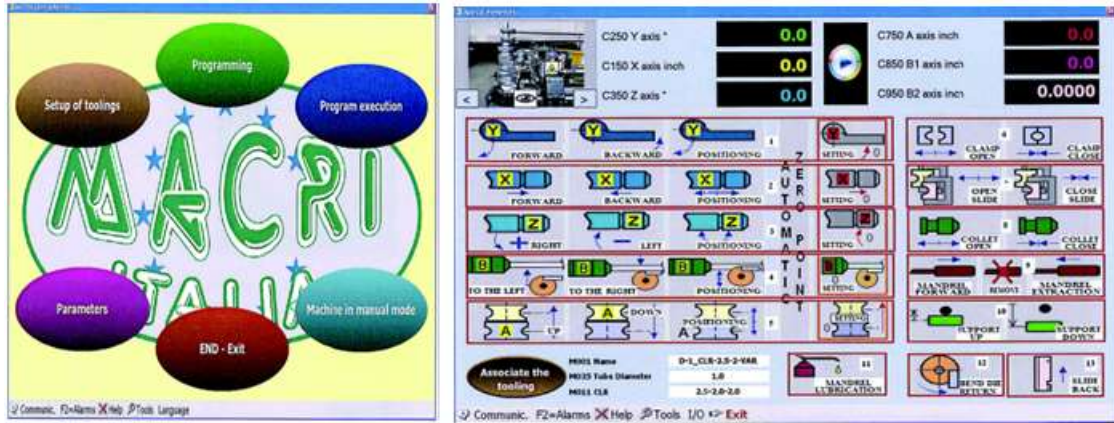


FEATURES	U.M.	PROFAST
Y Max. bending speed	°/1"	45
Y Tolerance	+/- °	0.1
X Max. traverse speed	mm 1"	650
X Tolerance	+/- mm	0.1
Z Max. gripper rotation speed	°/1"	180
Z Tolerance	+/- °	0.1
B1 Max. speed	mt/1"	6
B1 Tolerance	+/- mm	0.1
B2 Max. speed	mt/1"	6
B2 Tolerance	+/- mm	0.1
A Max. speed	mt/1"	1.5
A Tolerance	+/- mm	0.1
Weight	+/- Kg	6500

BENDING CAPACITIES	U.M.	PROFAST
Round tube R=42 Kg/mm <sup>2</sup>	mm	90x7
Variable curve R=42 Kg/mm <sup>2</sup> RM min 10 D	mm	80x2
Round stainless steel tube	mm	90x5
Round tube Alum. Brass Copper Alloys	mm	90x10
Square tube R=42 Kg/mm <sup>2</sup>	mm	60x60x2
Rect. tube bent easy way	mm	40x80x2
Rect. tube bent hard way	mm	80x50x2
Round bar R=42 Kg/mm <sup>2</sup>	mm	50
Square solid R=42 Kg/mm <sup>2</sup>	mm	40x40
Min. R.I. with normal axle	mm	≥50
Min R.I. special	mm	≤50
Max. R.M. with rolls	mm	380
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# TUBE BENDING MACHINES SOFTWARE

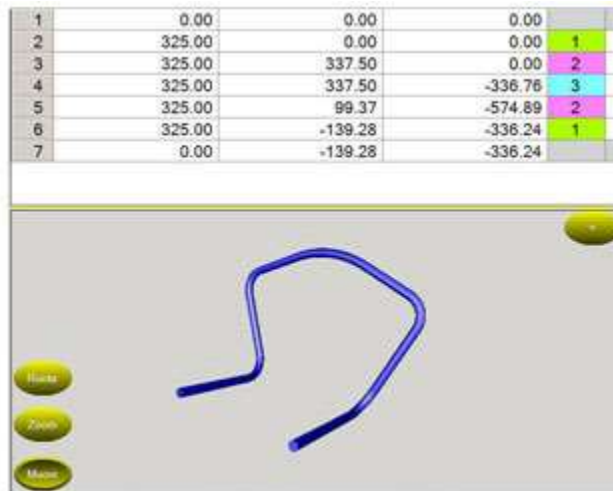


Exclusive software for the management of tube bender machines with an extremely easy and user-friendly graphic, three-dimensional interface.

A state-of-art solution for **great precision and maximum response speed** so as to reduce tolerances to a minimum

Through the **three-dimensional graphic interface and language assistance**, each operator can in fact:

- design and develop the tube design in machine, Cartesian and CAD coordinates;
- program the speed of each axis for each bend and the thrust;
- view the tube processing cycle in real time;
- calculate processing feasibility and, in the event of collision, make the necessary corrections automatically without deforming the item;
- quickly change and set up equipment and bend die;
- archive all programs created by code, name and graphic image.



# TUBE BENDER CONTROL CABINET

All Macri Italia tube benders are operated by an **electric information system** that can be managed by means of a control cabinet located next to each machine.

The *touch-screen monitor* and exclusive software make this technologically avant-garde and easy to manage solution the unique selling point of the Macri Italia offering.

## 3/5/6 Axis Control Cabinet Features

- Ergonomic control cabinet with front panel and 19" touch-screen monitor
- Compact industrial computer
- 80 Gb hard disk
- Integrated Ethernet network
- 3 serial ports
- 3 USB ports - 1 at the front
- Multilingual last-generation operating system
- Keyboard and mouse.



## 1 Axis Control Cabinet Features

- Air-conditioned control cabinet
- Small back-lit display
- 200-program memory capacity

