



Tolerances for Aluminium Bending

The PBA [aluminum profile bending machine](#) caters to a diverse range of industries, including those demanding exceptionally tight tolerances in all components. Sectors such as Aviation, Automotive, Rail, and Medical are particularly stringent regarding tolerances. Many clients specify their project tolerances. However, in cases where tolerances are not provided, BIT will adhere to our standard tolerances as follows:

Tolerances Chart

STANDARD ALUMINIUM BENDING TOLERANCES	
Diameter	Tolerences
Up to 500mm	Dia +/- 0.5mm
500mm to 1500mm	Dia +/- 0.5mm
1500mm to 2000mm	Dia +/- 1.0mm
2000mm to 6000mm	Dia +/- 1.0mm/1000mm Arc Length
Over 6000mm	+/- Dia / 1.0mm/1000mm Arc Length



PBA Aluminum Bending Machine

Once Designed In CAD, The Workpiece Can Be Reproduced At Any Time.

Efficient, Reliable, and Even More Versatility. Reproducible Manufacturing Process.

Suitable for Difficult Variable-Curvature Arc Aluminum Bending Processing.



PBA-100 Aluminum Profile Bending Machine



PBA-1500 Aluminum Profile Bending Machine

PBA-1500: The world's largest servo-electric driven roller bending machine, the world's largest section bender capable of torsional twisting of sections up to 500mm in diameter (20"), and the world's largest 3D programmable profile bending machine.

Based on our experience, the standard aluminum forming tolerances of the PBA [profile bending machine](#) typically suffice for most projects. Unless exceptionally tight tolerances are specified, our standard set effectively balances accuracy, quality, and lead times. However, our PBA aluminum profile bending machines have often achieved tighter tolerances. If you believe your project may necessitate tolerances beyond our standard, we encourage you to inform us.

Power and Flexibility for Your Aluminum Project.

Borisbang Industrial Technology (BIT)

<https://www.angleroller.com/>

THE BEAUTY OF MODERN INDUSTRY



Efficient, Reliable, and Even More Versatility; Once Designed In CAD, The Workpiece Can Be Reproduced At Any Time. Reproducible Manufacturing Process; Suitable for Difficult Variable-Curvature Arc Aluminum Bending Processing.

- ✓ Up to 9 Independent Controllable Servo Axes.
- ✓ Accuracy is As High As $\leq 0.01\text{mm}$.
- ✓ CNC Automatic Control, DXF, STEP Import;
- ✓ User-friendly and as Easy to Operate as an Apple Phone.
- ✓ 3-D, S-shaped, C-shaped, U-shaped, Full Circle, Ellipse, Multiple Radii, Etc.

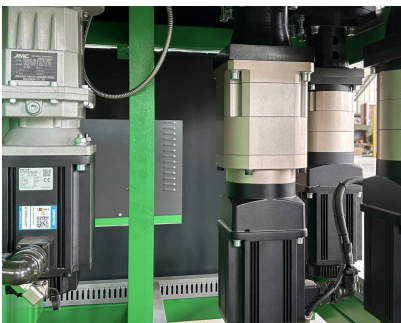
PBA Aluminum Bending Machine vs. Conventional Machines



Y-axis Positioning Methods

Fully servo-driven, with a repeat positioning accuracy of less than 0.01mm, unaffected by temperature;

Conventional machines: Driven by hydraulic cylinders, positioning speed and accuracy are easily affected by temperature.



Spindle (Y-axis) Rotation Drive

Servo motor + planetary gearbox, constant torque, no inertia, high positioning accuracy, high torque transmission efficiency;

Conventional machines: Variable frequency motor driving gear reducer, torque increases with speed, large motor inertia, poor system stability, and low positioning accuracy.



Horizontal Positioning is Preferred

PBA bending machines are horizontal installations and are best suited for handling long, narrow workpieces, and good for creating tight bends without deformities. Vertical machines are not suitable for bending bigger aluminum profiles, not as precise as horizontal machines.



X-axis Variable Center Distance

PBA is a variable geometry bending roll, that performs like a large and small machine and is suitable for bending aluminum profiles and for heavy metal fabrication work. The X-axis center distance of commonly used machines in the market is not adjustable.