

Press Brake VS Folding Machine: A Comprehensive Comparison for Metal Fabrication



Press Brake		Folding Machine
Uses punch and die for sheet bending, suitable for complex bends.	Definition & Functionality	Clamps workpiece between upper beam and bottom beam for folding, suitable for delicate surfaces.
Mechanical, hydraulic, pneumatic, servo-electric.	Types	Generally one type, focusing on clamping and folding.
Thick specification metal sheet, automotive manufacturing, aircraft production, heavy machinery.	Ideal Applications	Thinner and lighter materials, roofs, pans, trays, covers, small and medium manufacture.
Versatility, complex bending angles, various materials and thickness, CNC system for accuracy.	Advantages	Handles fine/coated materials, high precision, compact, less labor cost, ideal for small batch production.
Large size, needs skilled operator, slower for intricate bending, occupies abundant space.	Disadvantages	Not suitable for large size metal sheet, limited bending types, significant initial investment.
May result in apparent scratches on sensitive materials.	Handling of Sensitive Materials	Ideal for stainless steel or coated sheet, minimizes damage.
Long sliding distance on edge of "V" mold, may cause severe tool wear.	Tool Wear	Slight relative movement between blade and material, minimal tool wear.
Requires special tools for hemming, may be more difficult to create radii.	Bending Radii and Hems	Can create any radii without special tools, invisible bending process.
Requires assorted punches and dies, longer setting time.	Machine Setup	Uses one set of tooling for all angles, automatic adjustment, shorter setting time.
Thickness tolerance may result in angle changing.	Impact of Material Thickness	Thickness tolerance of the plate will not affect the bending angle.
May lead to blank tolerances in overall dimensions.	Comparison of Gauging Methods	Ensures overall dimension accuracy, blank tolerances only appear in the first flange.
Requires training in safety regulations, use of safety guards, advanced safety functions like laser safety devices.	Safety Considerations	Similar safety considerations, focus on proper handling and maintenance.
More cost-effective in intricate bending and small patch production.	Cost-Effectiveness	More cost-effective for larger parts and large patches.
Suitable for complex bending, smaller radii, depends on metal types, sheet thickness, tools, and operator's skills.	Quality of Bend	Fits for larger components and simpler bending, high quality in specific applications.