Press Brake
Bending
Basics Explained

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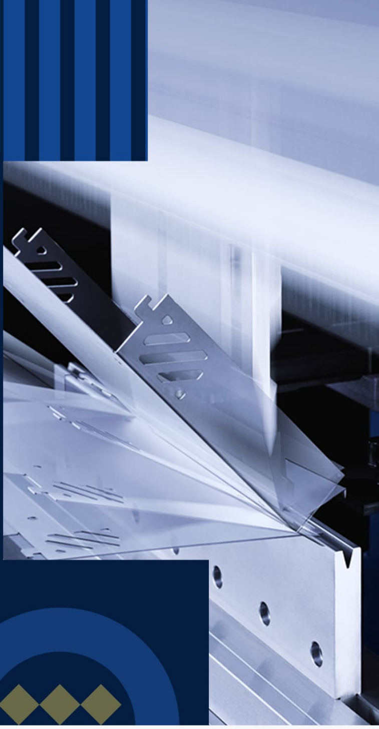

Introduction

Common metal fabrication technology.

Bends metal sheets into required shapes.

Widely used in auto parts, home appliances, and building materials.

Bends metal sheets into required shapes.

History & Evolution

01

Originated in Britain in the late 19th century.

02

Evolved from manual to hydraulic systems in the 1930s.

03

Introduced CNC systems in the 1980s for precise bending.

04

Current advancements include servo motors for higher efficiency.

Components & Working Principle

01

Main components: c-shaped frames, top punch, bottom die, hydraulic system.

Hydraulic system controls the movement of the top punch. 02

03 Bending process is smooth and programmed.

Types of Press Brake Machines

Hydraulic Press Brake	High precision, reliable power, potential for noise.
Servo Electric Press Brake	High efficiency, complex system, higher cost.
Mechanical Press Brake	Suitable for small-scale, lacks precision of hydraulic or electric.

Bending Techniques

Air Bending

Versatile, requires less force, ideal for multiple bending angles.

01

Bottom Bending

Emphasizes consistency and precision, used in electronics.

02

Coining

Requires strong power, captures intricate details, initially used for coin production.

03

Advanced Technologies

CNC technology enhances precision, repeatability, productivity, and flexibility.

Reduces waste and costs, making industries more efficient.

FAQ Highlight

Fundamentals of bending: Place metal sheet on press brake, exert pressure, and transform into required shapes.