What Is Press Brake Tooling: Intro, Components & More

Introduction to Press Brake Tooling

What is Press Brake Tooling?

- Specialized tools for press brakes.
- Transform metal blanks into specific shapes and sizes.

Importance in Metal Bending

- Determines bending form and size accuracy.
- Controls the bending process for consistency.
- Improves production efficiency.
- Prolongs tooling lifespan.
- Reduces production costs.

- Achieves specific product requirements.

Press Brake Tooling Components

Top Punch and Bottom Die
Key components for bending shape.

Die Shoes
Support and locate punch and die.

Bending Assistance Tools
Angle measuring tools and positioning blocks.

Quick Change System
Rapid tooling switching.

Locator Pins
Precise workpiece positioning.

Die Protectors
Protect acute angles and die.

Die Sockets
Easy die installation/removal.

Lubrication Systems
Reduce workpiece abrasion.

Die Pads/Blocks

Support dowels and build toolsets.

Spacers

Control bending depth.

Die Drifts

Remove bending components.

Common Dies Used

Rocker-Type Die

Bends metal via up and down slides.

Gooseneck Dies

Ideal for deep boxes or high flanges.

V Die

Creates V-shape bending.

Acute-Angle Die

Forms acute, obtuse, or right-angle bends.

Seaming Dies

Connects metal sheets and pipes.

Combination Die

Combines multiple die functions.

Hemming Dies

Shapes edges into circular and seaming shapes.

Bead Dies

Creates circular protruding edges.

Draw Dies

Shapes workpiece into a shell.

Punching Die

Punches holes during bending.

Stripping Dies

Releases bend allowance along curved edges.

Clinching Dies

Joins metal parts during bending.

U-Shaped Die

Bends angles from 90°-180°.

Tooling Strength & Material

01

Importance of High Strength

Withstands strict pressure.
Ensures tools don’t deform or break.

02

Abrasive-Proof

Maintains shape and function.
Reduces need for regular replacement.

03

Hardened Tooling

Improves rigidity and durability.
Examples: Chromium-molybdenum steel, Yasuki Steel.

04

Thermally Refined Tooling

Enhances tool properties.
Example: Heat-treated carbon steel.

Handling and Installation

Importance of Tooling Geometry

- Ensures bending accuracy.
- Regularly check for wear and deformation.
- Proper storage to preserve geometry.

Sectionalized Tooling

- Divided into segments for flexibility.
- Easy operation and wear reduction.
- Cost-effective and optimized workflow.

Importance of Tooling Tolerances

Enhancing Part Fit and Function

Ensures compatibility with other components.

01

Strengthening Product Outlook

Maintains aesthetic appeal.

02

Interchangeability of Parts

Allows for single component replacement.

03

Consistency, Accuracy, and Precision

Controls product quality.

04

Lowerinag Costs

Minimizes manufacturing errors.

05

FAQs

What Steel is Press Brake Tooling?

- T8 steel, T10 steel, 42CrMo, Cr12MoV.
- Depends on lifespan, material, precision.

How Long is Press Brake Tooling?

- Varies by machine size.
- Small: 0.5-1.5 meters
- Medium: 1-3 meters
- Large: 2-5 meters
- Customized: up to 10 meters.

What Are the Angles for Press Brake Tooling?

- Varies by type.
- V Die: 85-90°
- U Die: 30-85°
- Z Die: 30-85°

Conclusion

Press brake tooling is essential for metal fabrication.

Knowledge of tooling enhances accuracy, reduces waste, and increases benefits.

Contact us for press brake machines or visit our website for more details.

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