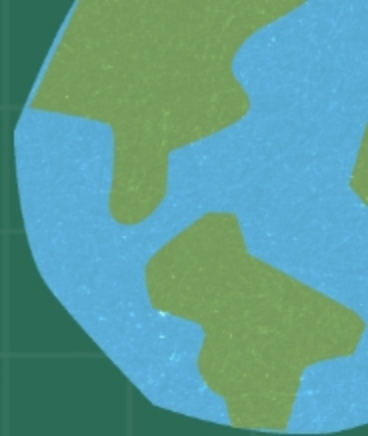


# SELECT TOOLING FOR PRESS BRAKE



## Introduction

- **Purpose:** Enhance metal bending accuracy and efficiency with optimal press brake tooling
- **Components:** Consists of the upper punch and bottom die

## Key Factors in Tooling Selection

### 1. Tooling Types:

- **Purpose:** Standard, Acute Angle, Gooseneck, Arc, Bending Knife, Forming
- **Dies:** V-shaped, U-shaped, Four-way, Box Forming, Corrugated Forming, Impression-free

### 2. Material Considerations:

- **Metal Type and Thickness:** Influences the choice of die opening and bending radius
- **Tensile Strength:** Different metals require different strength molds

### 3. V-Die Opening and Bending Radius:

- **Rule of 8:** V-opening should be eight times the thickness of the bending material for optimal results
- **Radius Impact:** Larger V-die openings lead to larger bending radii, affecting the material's tensile strength

### 4. Minimum Flange Length:

- Ensures accurate bending by maintaining contact with the die shoulder

## Case Studies

### 1. Stainless Steel Processing:

- **Tooling:** R4 V-shaped mouth die with SKD11 material for durability
- **Outcome:** Achieved size accuracy and surface quality

### 2. Aluminum Alloy Processing:

- **Tooling:** R8 U-shaped mouth die with nitriding treatment for surface hardness
- **Adjustments:** Reduced bending force and applied lubricating oil for a smooth finish

## Tooling Materials and Maintenance

- **Materials:** Hardened steel, high-speed steel (HSS), tungsten carbide
- **Maintenance:** Regular lubrication, grinding, and performance monitoring

## Conclusion

- **Impact of Tooling:** Affects bending angle, internal radius, and overall workpiece quality
- **Advice:** Correct tooling selection improves efficiency, reduces costs, and enhances safety

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