TOOL HOLDERS

An inserted tool bit usually sets in the holder at an angle of from 15° to 20°. In order to grind a front clearance of 5°, one actually grinds an angle of 25° on the part of the tool bit.

Tool bit holders usually hold square, high speed steel bits of various sizes. \(\frac{1}{4}'' \times \frac{1}{4}''\), \(5/16'' \times 5/16''\) and \(3/8'' \times 3/8''\) sizes are most common in our shops. The following sketches show some of the standard types of tool holders used in machine shops:

- Lathe Tool Holders
  - Straight Tool Holder
  - Right Hand Tool Holder
  - Left Hand Tool Holder

- Unground Cutter Bits
  - Knurling Tool Holder
  - Drop Forged Steel

- Cutting-Off Tool Holders
  - Straight
  - Right-Hand
  - Left-Hand

- Boring Tool Holder
  - Threading Tool Holder
  - Drop Forged Steel

- Boring Tool Holder
### LATHE CUTTING TOOLS

<table>
<thead>
<tr>
<th>Cuttingedge</th>
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**Clearance: Front - 10°; Side - 10°**

"Diamond Point" Utility Tool

**Clearance: Front - 5°; Side 5°**

Right-hand Facing Tool

**Clearance: Front - 5°; Side 5°**

Left-hand Facing Tool

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<tbody>
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**Clearance: Front 1°; Side - 5°**

Brass & Copper Tool

**Clearance: Front 5°; Side 5°**

Bull Nose Tool for Cast Iron

**Clearance: Front 10°; Side - 5°**

Aluminum Tool

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**Using the Tool Bit Gage**

![Testing](image)

**Testing for Front Clearance,**

![Image](image)

**Side Clearance,**

![Image](image)

**Side Rake**

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**Setting Tool Holder in the Lathe**

![Image](image)

For straight turning on steel and cast iron, set the cutting edge of the cutter bit 5° above center of work. Remove burr from cutting edge with a slip stone.

When taper turning, threading or machining brass, set the cutting edge on center.