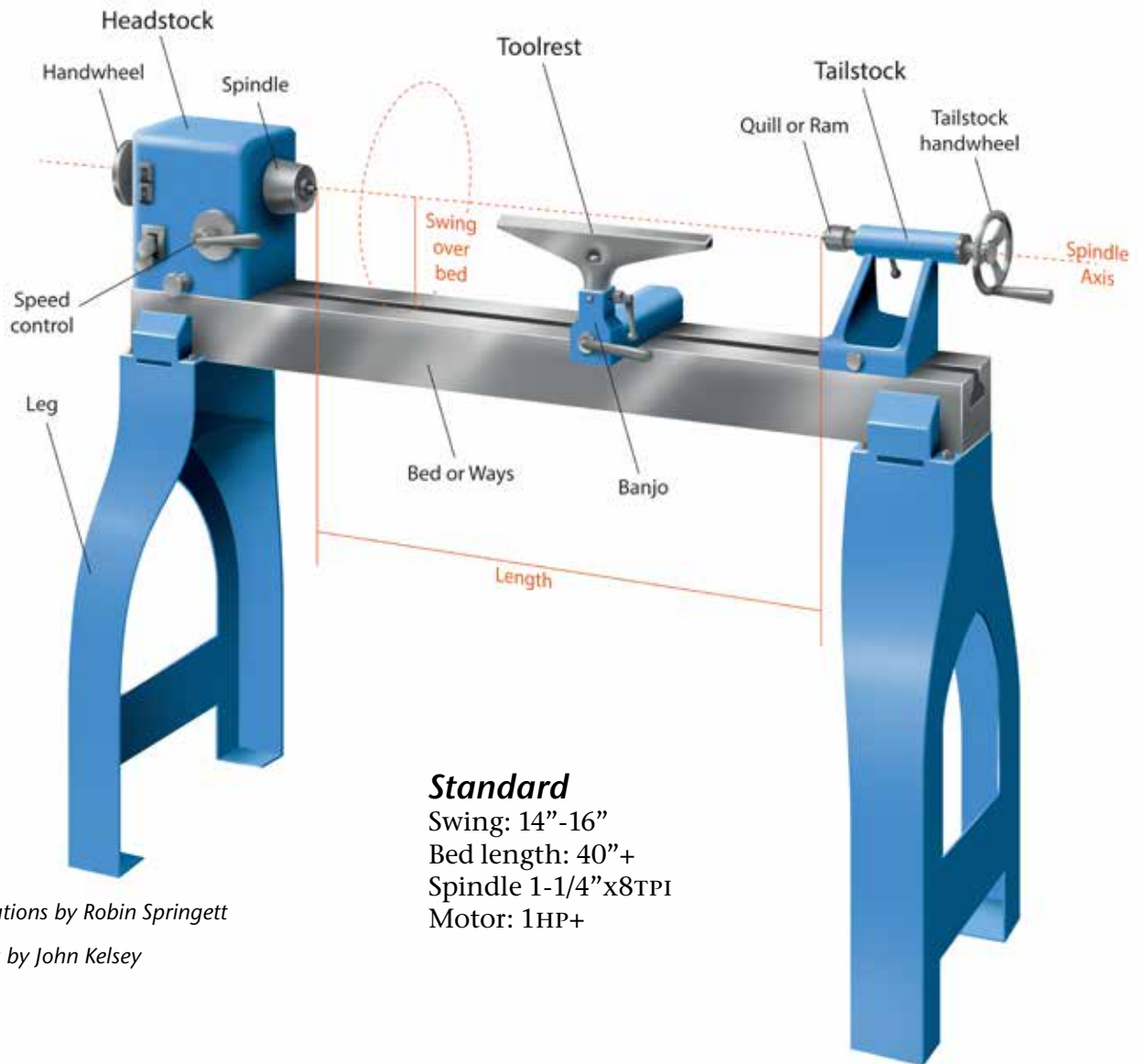


FUNdamental Overview The Woodturning Lathe



Illustrations by Robin Springett

Photos by John Kelsey

Standard

Swing: 14"-16"
Bed length: 40"+
Spindle 1-1/4"x8TPI
Motor: 1HP+

Mini

Swing: 10"-12"
Bed length: 16"
Spindle: 1"x8TPI
Motor: 1/2HP

Midi

Swing 12"
Bed length: 20"+
Spindle: 1"x8TPI
Motor: 3/4HP

Full-Size

Swing: 20"+
Bed length: 36"+
Spindle 1-1/4"x8TPI
Motor: 2HP+

Bowl

Swing: 20"+
Bed length: 16"+
Spindle 1-1/4"x8TPI
Motor: 2HP+

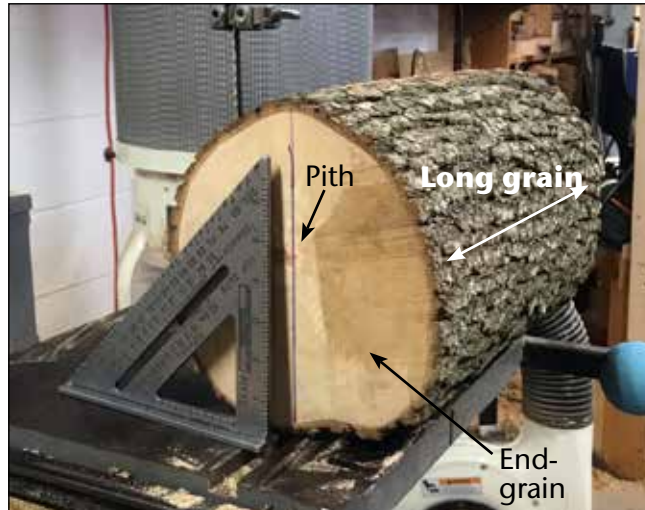
All specifications typical, your equipment may vary...



FUNdamental Overview

Grain Direction on the Lathe...

Firewood-sized hardwood log, 9" dia (24cm) by 16" long (40cm), sawn down the middle yields two long-grain blanks for spindles or endgrain turning, and two crossgrain blanks for bowls or platters.



EXPLORE!

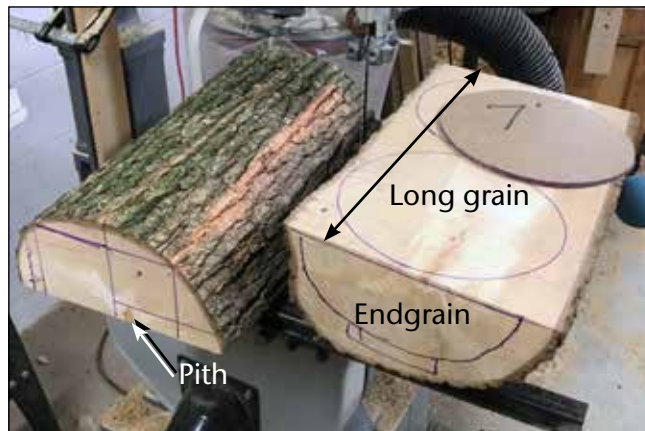
Click the blue box or scan the QR code to find out more...



tiny.cc/sawlog

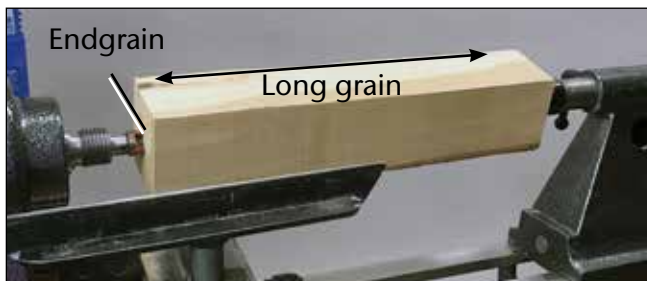


To bandsaw safely, stand the log on end or secure it on a sacrificial sled.

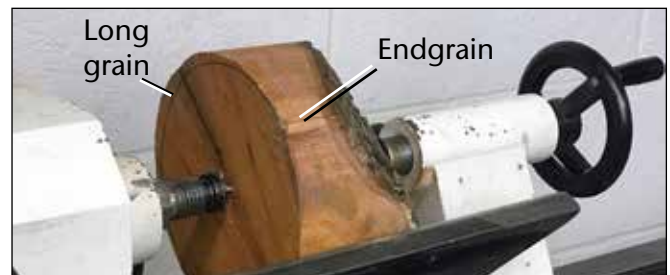


Long-grain blanks

Crossgrain blanks



Long grain parallel to lathe axis (spindle orientation)

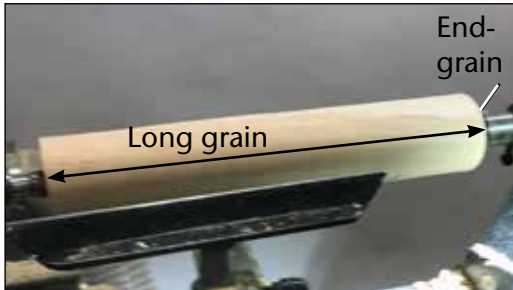


Long grain perpendicular to lathe axis (crossgrain, or faceplate, orientation)

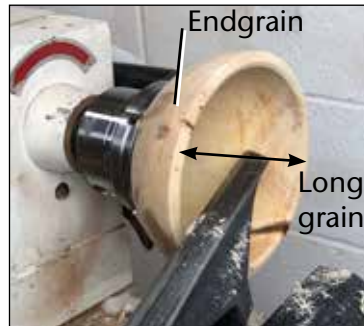


FUNdamental Overview

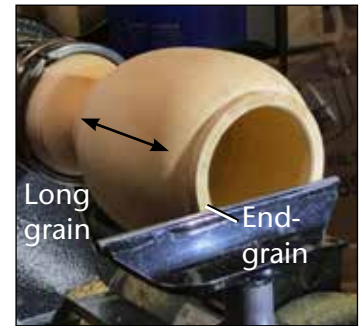
...Grain Direction and Turning Tools



Long grain (spindles)



Crossgrain (bowls)



Endgrain (hollowing)...



Spindle roughing gouge



Bowl gouge



Bowl and spindle gouges



Spindle gouge



Hollowing scraper



Parting tool



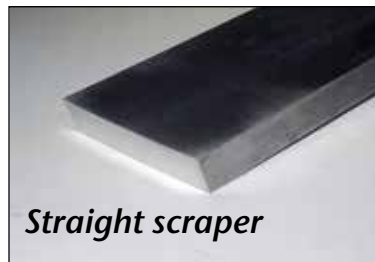
Radius scraper



Adjustable hollowing



Skew chisel



Straight scraper



Side-cut scraper

Any grain orientation



Carbide-insert

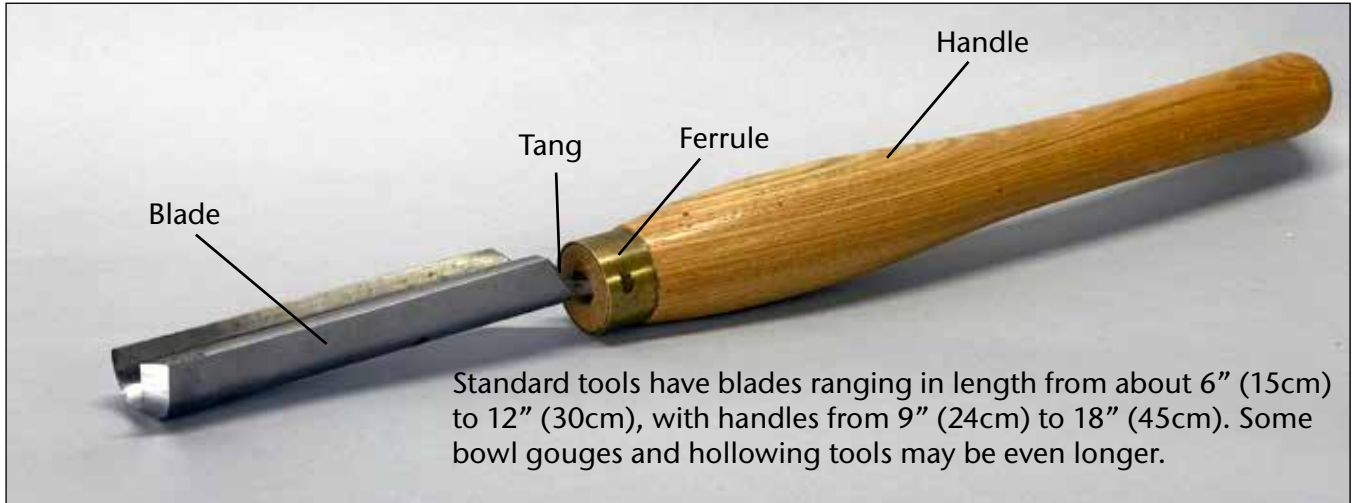


Cupped carbide

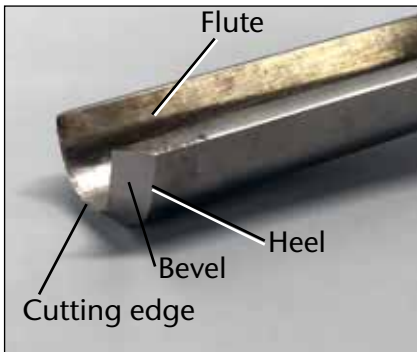


FUNdamental Definitions

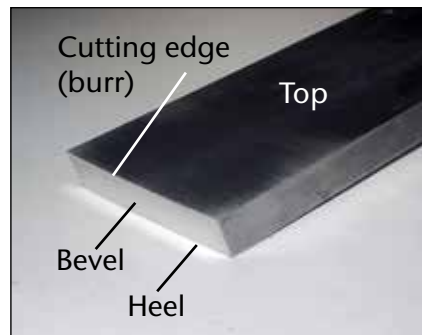
Parts of a Turning Tool...



Gouges



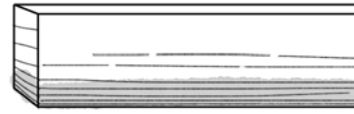
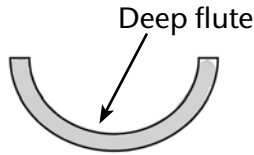
Scrapers



FUNdamental Overview

Spindle Gouge Shapes, Angles

Spindle roughing gouge



Bevel angle 40° to 45°

The spindle roughing gouge is only for cutting long grain in spindle orientation, anything else risks a dangerous catch. Size range: 3/4" (20mm) to 1-1/4" (32mm) in width.

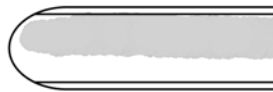
Spindle gouge



Flute



Bevel angle 35° to 50°



The versatile spindle gouge is useful in all types of turning and grain orientations. Gouges are measured by widest diameter from 1/4" (6mm) to 1/2" (12mm); 3/8" (9mm) is a good general-purpose tool.

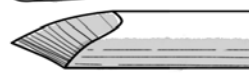
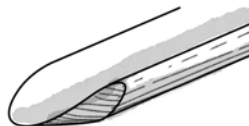


Detail gouge



Bevel angle 30° to 40°

Shallow flute



Detail gouges have a long nose, shallow flute, thick body, and long bevel.

Gouge orientation



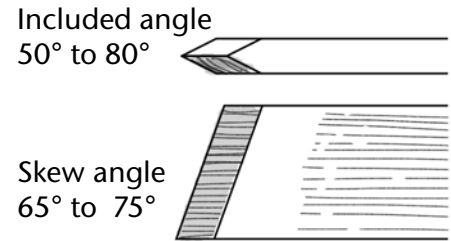
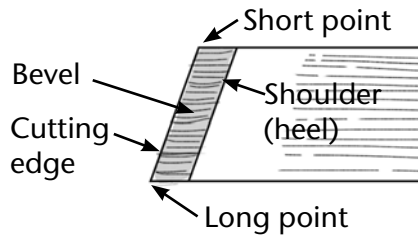
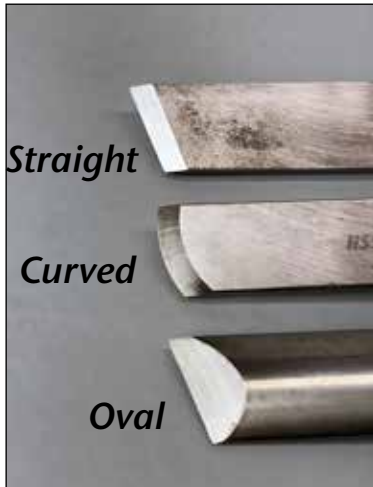
Open = flute faces up, 12 o'clock position



Closed = flute faces right (3 o'clock) or left (9 o'clock).

FUNDamental Overview Skew Chisels and Parting Tools

Skew chisel



Skew chisels range in width from 1/4" (6mm) to 1" (25mm), with 3/4" (20mm) a good starter size. Skews can make precise cuts and leave clean surfaces on spindles. Skews are various:

- The blade may be rectangular in section, or oval.
- Some turners prefer a curved cutting edge.
- The bevel may be ground flat, concave, or convex.

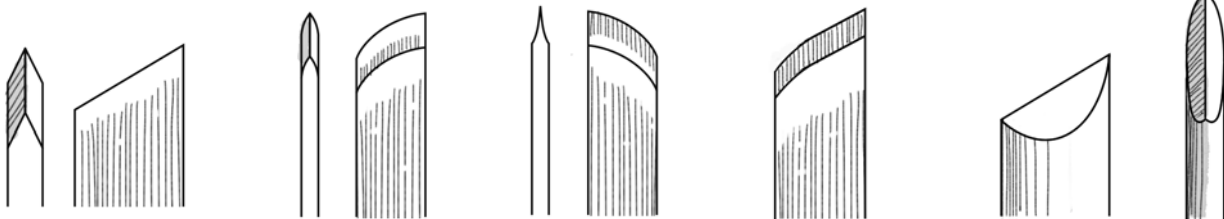
Flat bevel

Convex bevel

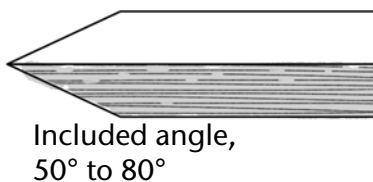
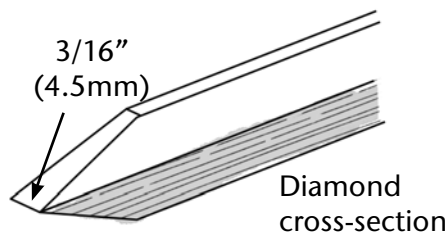
Concave bevel

Curved edge

Oval blade

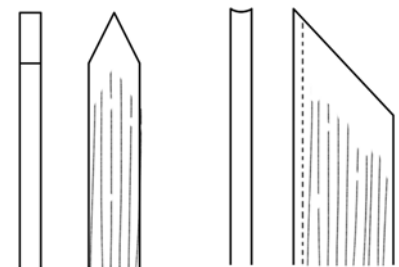


Parting tool



Flat

Fluted



The cutting edge of a standard parting tool is about 3/16" (4.5mm) wide with the blade about 3/4" (2cm) across. The included bevel angle ranges from 50° to 80°. Thin parting tools are about 3/32" (2mm) wide. Some parting tools have a sharp flute ground into the blade's bottom edge.

FUNdamental Overview

Bowl Gouge Shapes and Angles

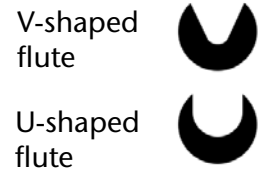
Bowl gouge



Photo by Glenn Lucas

Fingernail grinds

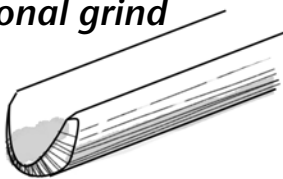
Traditional grind



Bowl gouges, ranging from 1/4" (6mm) to 1/2" (12mm) in width, have deeper flutes than spindle gouges. Flute profiles may be V- or U-shaped.

Bevel angles affect what shapes the gouge edge can reach. Long wings can remove a lot of wood quickly.

Traditional grind

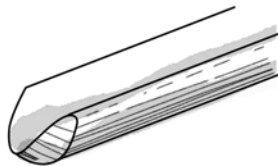


Bevel angle 50° to 60°

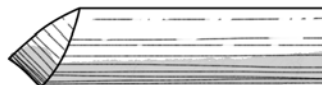


Rake angle 0° to 25°

Fingernail grind

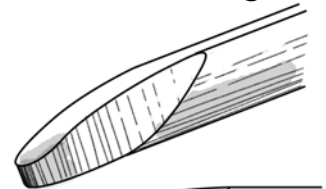


Bevel angle 35° to 45°

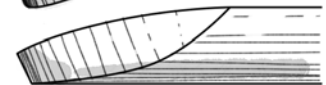


Rake angle 40° to 50°

Irish (Ellsworth) grind



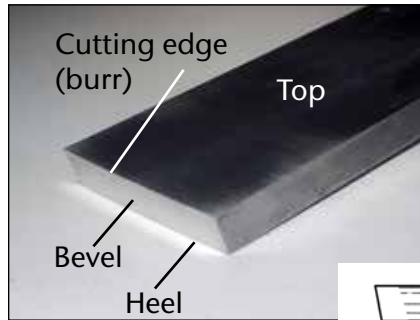
Bevel angle 55° to 65°



Long wings swept back

FUNdamental Overview Scrapers Scrapers Scrapers

Straight

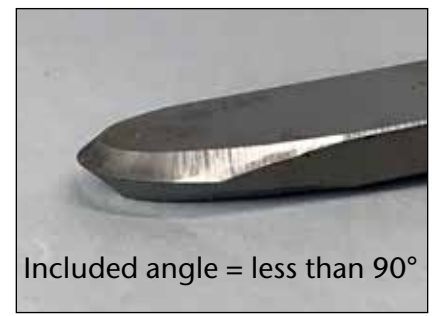


Bevel angle 65° to 80°

Curved



Negative rake



Radius



Hollowing



Adjustable hollowing



Side-cut box



Scrapers are made in myriad shapes and range from miniature size up to about 1-1/2" (38mm) wide and 1/2" (12mm) thick. The cutting edge is a raised burr at the top of the bevel. Scrapers can cut

in all wood grain orientations. They cut best held flat on the toolrest or angled slightly downward, with the cutting edge at center height. Negative rake scrapers make light finishing cuts.

Carbide-Insert Tools

Square



Round



Point



Cupped



Carbide tools have a steel shank carrying a carbide cutting bit held in place by a small Torx screw. Flat bits scrape while cup-shaped bits cut.

Carbide tools stay sharp a long time; dull bits can be honed on a diamond plate but ultimately must be replaced.

