

Endgrain Bowls & Boxes

Eric Lofstrom – Eric@EricLofstrom.com



Foundational Information- (attached)

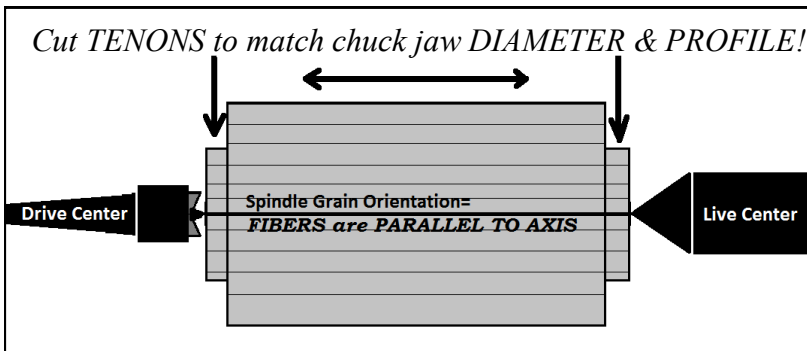
- Lathe Maintenance**– Smooth toolrest, clean ways of bed, ensure spindle alignment, adjust speed range to suite project (var. speed allows fine tuning of vibrations).
- Anchor, Bevel, Cut, Direct Attention Ahead of the Cut, 'Shavings Give Feedback** (see attached). “GLIDE the BEVEL” to direct the cut VS. “RUB” the bevel.

Conceptualize/ Plan the FORM- (design/ preparation, attached)

- Plan the profile & proportions**– Planning solidifies your intent.
- Fundamental Design Considerations** (Concept, Process, & Media)

ROUGHING A CYLINDER- (between centers allows for max. adjustment)

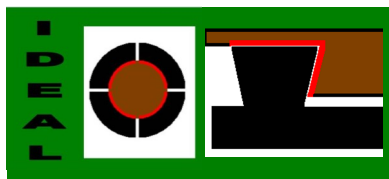
- Dimension the Blank using Bandsaw/Hand Saw**– Allows for greater safety at the lathe.



- Rough Shape to Cylinder**– Use SRG, Fingernail Bowl Gouge, or Skew (which is the most versatile cutting tool for this job), leave a bit oversized to truing-up during final shaping.
- Spigot & Base**- Profile/ dia. & shape to match chuck jaws &

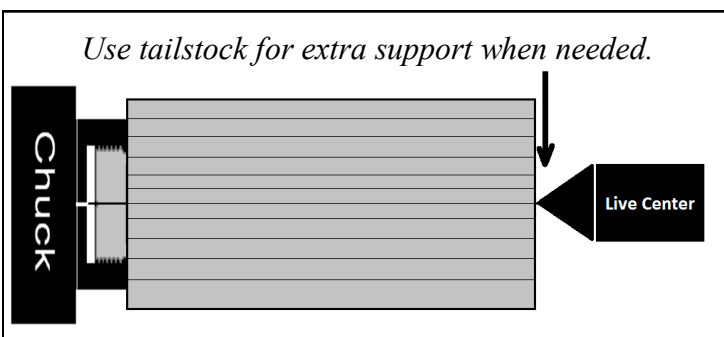
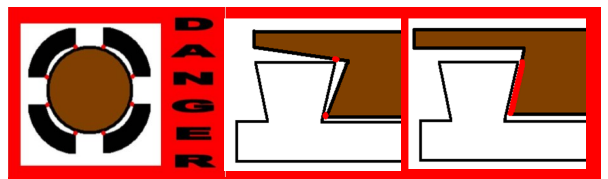
register shoulder on face of jaws. This step is a **VERY IMPORTANT!**

- Mount in Chuck**– Use the tailstock for extra support when needed; for longer blanks/ when making aggressive cuts! **True the cylinder w/ a finish cut**– planing/ shearing cut



(a light scrape with a negative rake scraper may also be used for dense hardwoods).

Pare the end of blank



w/ a shear cut using the tip of tool (skew or spindle gouge), present cutting edge more in-line w/ wood movement.

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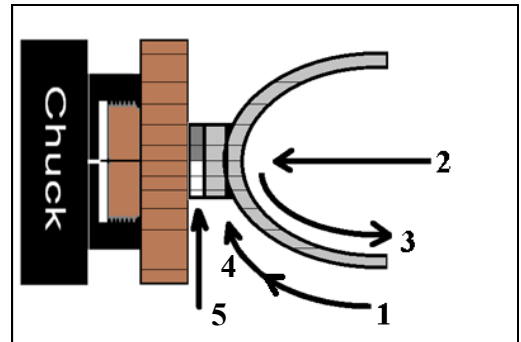


ENDGRAIN BOWLS- (chuck/ faceplate mounted)

The skills practiced in this project & the technique of turning endgrain bowls directly transfers to turning a goblet, a tall endgrain vase, & turning a box. The biggest difference between these projects is the finished form.

1. **Begin cutting the outside profile**, leaving the spigot at least

1/3 to 1/2 the overall diameter for stability. The spigot may be reduced as hollowing reaches the bottom of the interior.



2. **Drill or plunge cut the interior center to approximate depth.**

3. **Cut fibers from axis toward the rim; allowing for a clean cut.** I prefer to rough out using a bowl gouge w/ swept-back grind or Pro-Forme hook tool for efficient hollowing.

Use a sharp scraper & shearing technique to blend ridges.

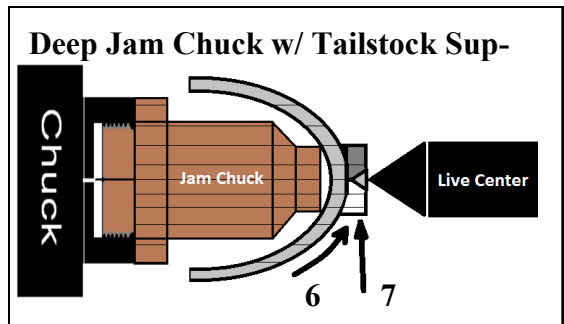
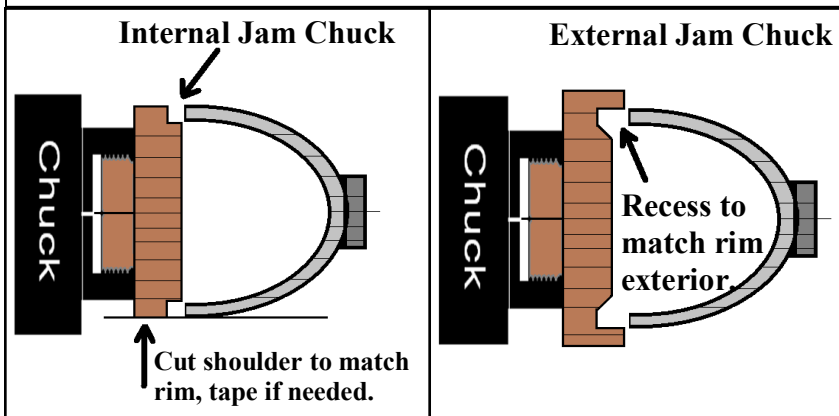
4. Measure & mark the finished interior depth of bowl on the exterior surface, then **continue exterior curve.**

5. **Part from remaining wood.** Leave waste block a large diameter, allowing for jam chuck possibilities. Or, use an additional piece for jam chuck.

6. **Using a jam chuck of your choice, continue cutting the exterior curve through the spigot.** Shape foot either completely round or with a slight undercut.

7. If using a deep jam chuck, **remove waste & leave a small cone to clean up once removed from the lathe.** Sand as necessary & finish/embellish as desired. Note: A vacuum chuck can be used, however beware of leaking vacuum due to short endgrain straws allowing air to pass through, resulting in weak or even catastrophic failure in vacuum pressure.

Internal/External Jam Chucks



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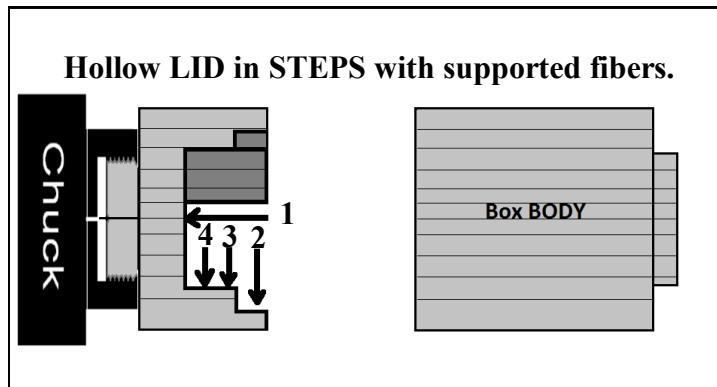
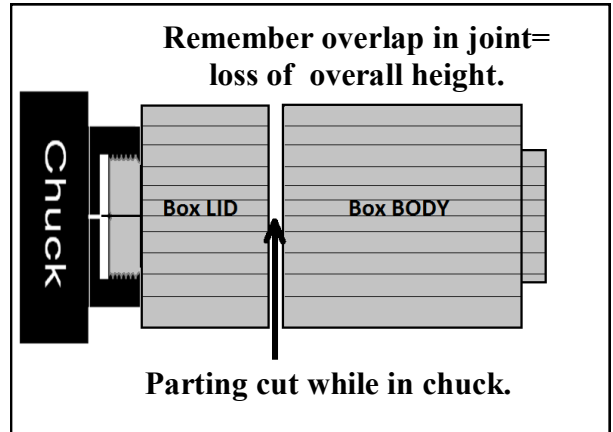


ENDGRAIN BOXES- (chuck/ faceplate mounted) *This project is a GREAT exercise in form, proportion, precision, & tool control. Boxes can be simple or extremely ornate, depending on your willingness to explore & express your artistic voice. The lid fit on endgrain boxes can be anywhere from a loose, “one-handed lid”, to a “suction fit”, or even a “snap fit” which requires two hands for opening.*

Measure & mark dimensions of Lid & Body. Remember to account for overlap of joint in overall height!

Remember to account for overlap of joint in overall height!

1. In this example, the lid contains the mortise portion of the joint, so it will be turned first. **Drill the interior to approx. depth.**
2. Use a step technique for turning the interior of the lid. Approach the final inner diameter of the joint recess, but save some material for fine tuning once the lid is completely hollowed.

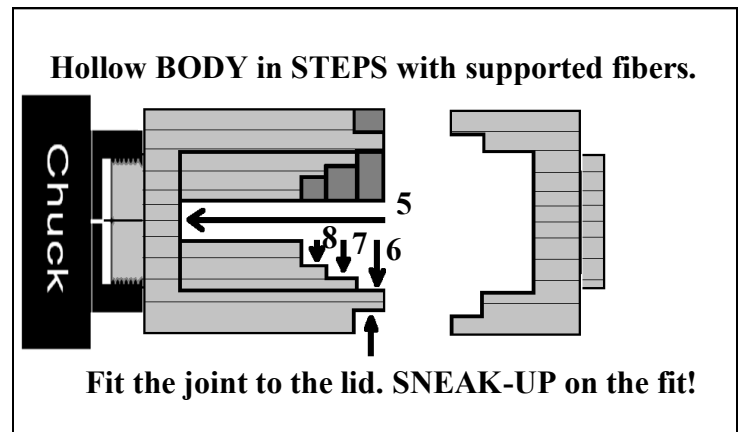


Approach the final inner diameter of the joint recess, but save some material for fine tuning once the lid is completely hollowed.

3. **Continue the step technique** to hollow the lid, blending any ridges to smooth the interior as you go.
4. **Finish the deepest portion of the interior with a sweeping cut outward from center.** I like to use a negative rake scraper for this finishing cut. *Mark a reference on the spigot*

registering with the chuck jaws so you can place the lid back in the same orientation if needed; I use the jaw gap of #1 & 4.

5. In this example, the body of the box has the tenon portion of the joint, so it will be turned second. As with the lid, **drill or plunge cut the interior center to approximate depth.**
6. Use a step technique for turning the interior of the body. Approach the final external diameter of the tenon, saving some material for fine

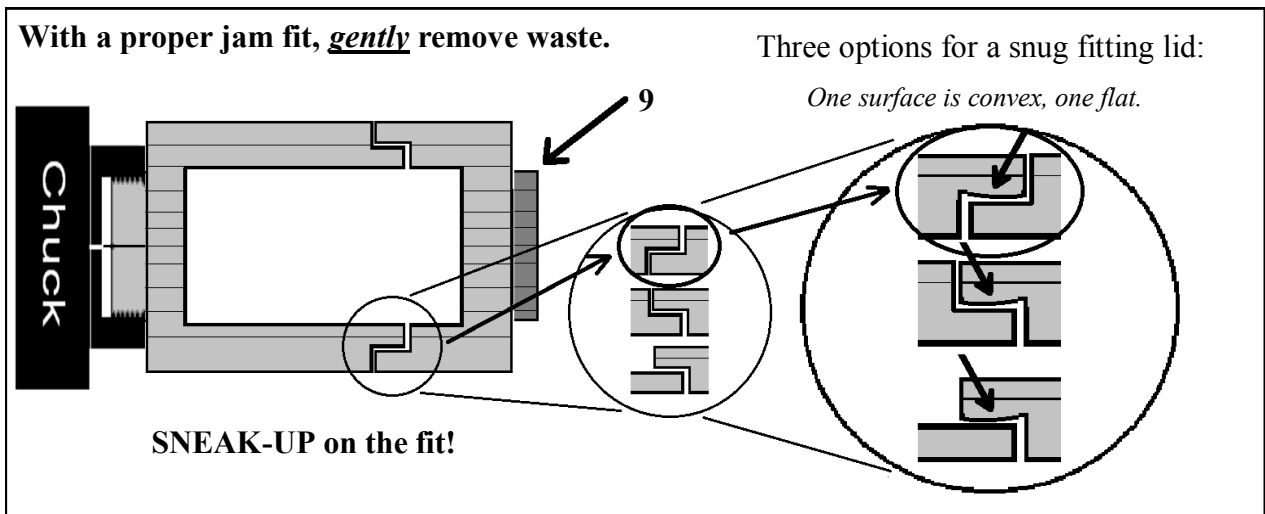


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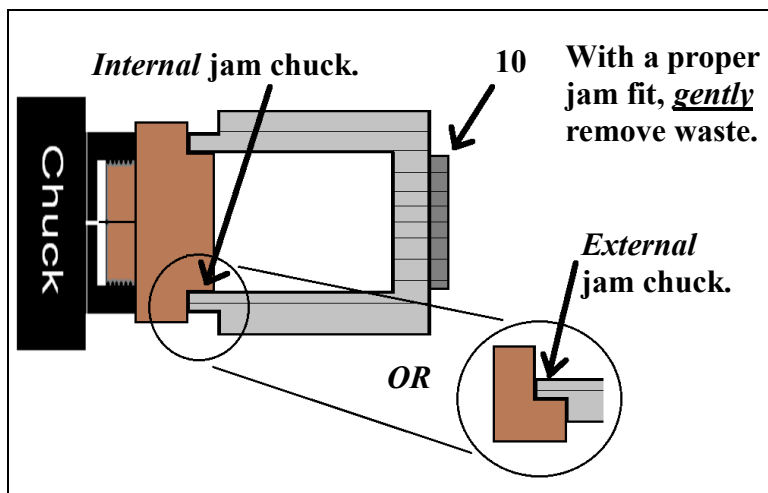
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tuning once the body is hollowed.

7. **Continue the step technique** to hollow the body, blending any ridges to smooth the interior as you go.
8. Continue until you reach final depth, then **finish the deepest portion of the interior with a sweeping cut outward from center & up the wall to create a flowing surface.** I like to use a negative rake scraper for this finishing cut.
9. With the lid properly jam fit onto the body, gently remove any waste where the spigot was. If needed, use the tailstock for extra support; especially if the joint is not very deep or when the fit is a bit loose. If the joint is loose enough to slip, use a bit of paper

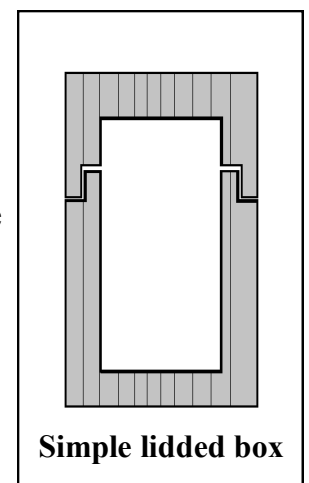


towel to snug the fit enough to provide a friction drive for finishing the top. Finish the outside of the box to your specifications. Remove the lid while the body is held in the chuck, then measure & lightly mark (or note) the final depth of the interior on the outside of the body & remove the body from the chuck. Again, *mark a reference on the spigot registering with the chuck jaws so you can place the body back in the same orientation if*



needed; I use the gap between jaw 1 & 4.

10. Turn a jam chuck to hold the body, then finish the base. Remove from jam chuck & assemble for use.



Foundational Info.– Spindle & Endgrain Turning

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ABC...D'S of Making the Cut:

A = *Anchor* tool w/ toolrest & body support.

B = *Bevel* awareness, directs tool movement.

C = *Cut* supported fibers when possible.

D = *Direct* attention ahead of the cut.

S = *Shavings* give feedback on quality of cut.

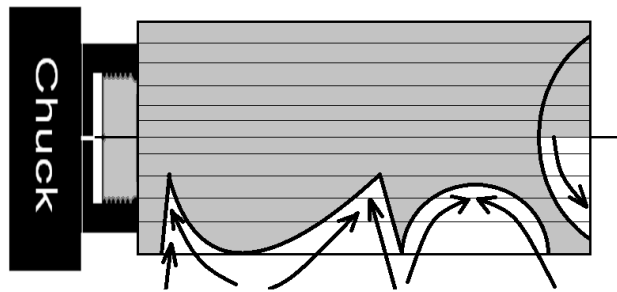
3 points of contact increases tool control & stability; toolrest, bevel, & hand/body.

Move as a UNIT to create flowing CURVES.

Cut vs. Scrape:

- **Cut** = Bevel glides across wood.
- **Shear Cut** = Cutting edge aligns with direction of wood surface movement.
- **Scrape** = NO bevel/ relief contact; drawing the burr/ edge across the wood.
- **Shear Scrape** = scraping at $\geq 45^\circ$.

Shearing fibers decreases stress introduced to the wood & results in the cleanest surface.



Grain Orientation Matters!

wood is a bundle of straws; which flex & tear if there is no support behind them, resulting in torn grain (a.k.a. “tear-out”). **Cutting** “supported fibers” gives a cleaner surface & requires less sanding.

SPINDLE & ENDGRAIN Turning = fibers lay PARALLEL TO AXIS of rotation

My Preferred Tools:(approx. profiles)

- **SKEW** (large rectangular shank)- used to rough & refine outer form. On LARGE pcs., fingernail bowl gouge is more forgiving.
- **SPINDLE GOUGE** (Detail Grind)- used for fine details; coves/beads/chuck spigot.
- **PRO-FORME** (Guarded Hook by Wood-cut)- used to rough endgrain, quick removal of material w/ “cutting” mechanics.
- **SCRAPER** (trad./ neg. rake)- used to refine endgrain curves, angle the cutting edge to shear scrape when possible.

*Large Skew-
w/ radius tip*



*Spindle Gouge-
w/ detail grind*



*Pro-Forme-
Hook tool*



*Scraper-
shown
w/ neg. rake*



Explore different tools, use what works for you, & keep the edges sharp!!!

Fundamental Design Considerations

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FORM:

- PRODUCT/ OUTCOME*
- MOST IMPORTANT ELEMENT!*
- Central to all other considerations.*
- Focus of INTENT = Target*
- Finished item*

CONCEPT:

- PLANNING/ DESIGN of FORM*
- scale, proportion, unity, rhythm, balance, emphasis, etc.*
- color, texture, choice of media, etc.*

MEDIA:

- MATERIALS INVOLVED*
- wood species, grain, orientation, natural elements/ features, etc.*
- mixed media– species, metal, glass, acrylic, stone, ink/ pigment/ color, etc.*
- choice of finish*

PROCESS:

- EXECUTION OF CONCEPT*
- tool mechanics (cut/ scrape, control, technique, etc.)*
- finishing techniques (embellishments, finish)*

