

## Segmented Wood Turning 101

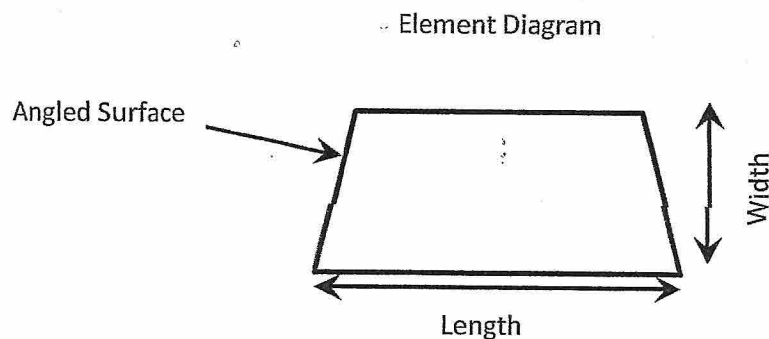
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### Outline:

- 1) Cutting "Elements"
- 2) Making "Paired Rings"
- 3) Stacking and Turning
- 4) Designing

### Cutting elements

"Elements" refer of the individual trapezoid shaped pieces used to make Rings.



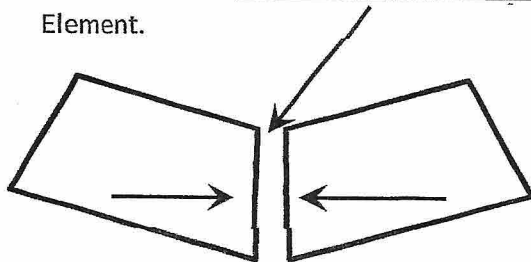
- A) Rip boards to Width.
- B) Cut to Length using a
  - Sled on a table saw or
  - Cross cut saw
- C) Sand the Angled Surface shiny smooth removing any burrs. I use a small sled with an angle matching the Element to hold the Element when sanding on a disc.

Hint: The Length needs to be accurate (+/- 0.02'). It helps to use a "stop" for speed and repeatability.

Safety: Cutting small pieces is dangerous. I use hold down clamps when cutting.

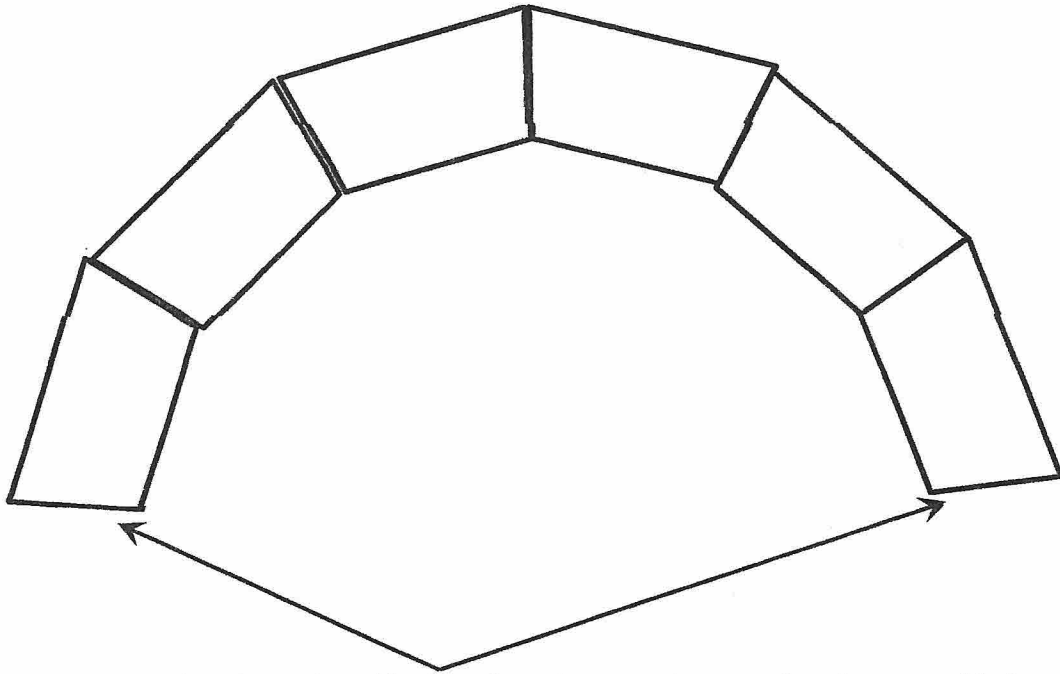
### Making Paired Rings

- A) Prepare a smooth flat work surface for gluing the Elements together. I use a 3' X 4' piece of MDF coated with melamine and apply a coat of car wax.
- B) Paint one of the Angled Surfaces with white glue, lay it on the work surface, and join to another Element.



Hint: Press the elements together until glue oozes from joint. The surface tension of the glue will hold the Elements together for a "zero glue joint". Clamping is not recommended.

- C) Build two semi-circles and let glue dry.



- D) Stack the two semi-circles and sand both ends at the same time on a bench mounted belt sander. This should result in a perfect 180 degree fit.
- E) Unfold the two semi circles (this ensures the ends are sanded at complementary angles) and glue them together to form a Ring.
- F) Make a second Ring.
- G) Stack the two Rings, center them and trace the outline of one ring on the other. This marks the contact area.
- H) Sand the top and bottom of each Ring smooth and flat.
- I) Paint the contact area with glue then clamp the two rings together with spring clamps

Hint: I use a bench mounted 16" drum sander.

#### Stacking and Turning

- A) Attach the base (layer one) to a turning plate.
- B) Rough turn the base round. It does not have to be turned to a finished surface as this will be done later.
- C) Mark a circle on the base while is still in the lathe slightly smaller than the first Paired Ring.
- D) Paint the contact area with glue and then clamp.
- E) Rough turn the outside.

Hint: I attach a 2" blank to a 6" lathe disk using screws. Paint the blank surface and the base with glue. Place one sheet of newspaper between the base and blank then clamp.

- F) Attach a second Paired Ring and rough turn outside.
- G) Now turn the inside to a finished surface. Sand if needed.

H) Continue to add Paired Rings, rough turning the outside and finishing the inside.

Hint: The first few Paired Rings can be attached with quick release clamps. Pipe clamps or a press may be needed thereafter.

I) When all Paired Rings have been added, turn the outside to a finished surface.

J) While still on the lathe, apply a finish (optional). I typically apply several coats of finishing oil topped off with coat of wax.

K) *Using a chisel, separate the base from the blank.*

L) Sand and finish base.

Hint: I use a hand held belt sander with 30 or 60 grit sand paper to remove the layer of glue from the base and blank.

M) Stand back and admire.

