SUPPLIES & RESOURCES

MACHINERY

- Table saw with 60-tooth finish-cut 10-inch blade
- Lathe
- Bandsaw
- Disk sander

SLEDS

- Crosscut sled with adjustable angles ("Dubby-style sled")
- Crosscut sled with fixed 15-degree angle
- Wedgie sled

CUTTING ACCESSORIES

- Wedgie sled angle plates
- 30-60-90-degree drafting triangle
- Segment hold-down tool (custom)
- Table saw measuring stop

FIXTURES & ACCESSORIES

- Seg-Easy plates
- Aluminum indexing plates
- Yellow plastic indexing plate
- Four-jaw scroll chuck with "jumbo jaws" accessory
- On-lathe open segment glue-up jig: Smith Fixture
- Off-lathe open segment glue-up fixture: Driskell Fixture

SANDING ACCESSORIES

- 80 grit sanding disk
- 90-degree disc sander custom fence
- Adjustable stop for above 90-degree sander fence
- Custom angle stop for diamond bevel angle

TOOLS

- Skew chisel
- Bowl gouge
- Parting tools
- Craft knife
- Steel cutting plate
- Sandpaper
- Vernier calipers
- C-clamps
- F-clamps
- Push sticks
- Markers (Sharpie)
- Double-sided tape
- Johnson Paste Wax
- Titebond original glue
- Titebond Molding and Trim Glue
- Flat glue-up board
- Painter's tape

- Face plate or glue blocks for lathe
- Ruler
- Tweezers
- Pipe cleaners

RESOURCES

- *Segmented Wood Turning* by Bill Smith (Schiffer, 2007)
- segeasy.com: Seg-Easy plates, Wedgie sled instructions, Wedgie plates, custom TS cutting stops designs
- jlrodgers.com: Multiple segmented turning resources
- woodturnerpro.com: Instruction for building the Segment Stomper for Seg-Easy plates
- segmentedwoodturners.org: Source for information on the Bill Smith indexing fixture
- finewoodnthings.com: Source for the open segment fixture and off-lathe building fixture by Jim Driskell
- alisam.com: Aluminum indexing plates with alignment post
- ironfirellc.com: Yellow plastic indexing plate

STYLE 1

Making diamonds is a test in precision and accuracy. It requires careful sanding of the faces and square end accurately. It also requires a custom fence system for your sander that is precisely at 90 degrees and includes a stop to allow accurate control of the depth and squareness of the sanding.

Cut two species of wood to the same dimensions, one dark, and one light. The dark wood will be cut into the points for the diamonds (Two required for each diamond) and the lighter wood for the field pieces surrounding the diamond (four will be required for each diamond).

Set your miter fence to an angle of approximately 15-30 degrees and trim one end of the dark strip at that angle Without adjusting your fence angle, flip the dark species and recut it to form a triangle with a sharp point.

Repeat this cut to create two tri-angles for each diamond desired, plus a few for spares.

Cut the light species at the same angle; four pieces will be required for each diamond. Trim the opposite end to precisely ¾". Be sure all pieces are cut accurately.
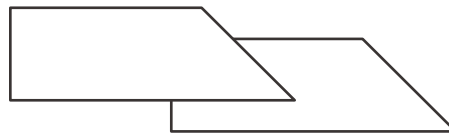
With each light-colored piece cut, sand ¼ of the point off; be sure that they are all sanded to exactly the same length and the ends remain square.
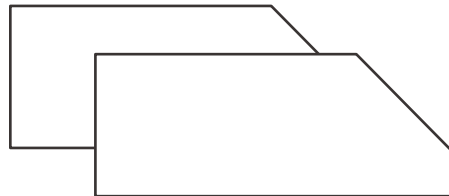
Touch the flattened points together add glue, insert one dark triangle and press the assembly together, aligning against a straight edge. Be sure to not allow the flattened points to separate while pushing down on the triangle.
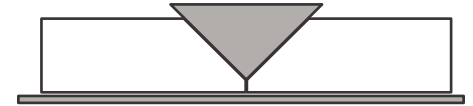
After the glue dries, clean up the faces of each piece. Flip one piece against the next and carefully glue up the pairs.

2
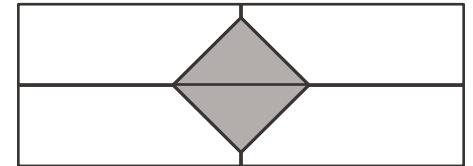
STYLE 2

This method also requires a custom fence system for your sander that is precisely at 90 degrees and includes a stop to allow accurate control of the depth and squareness of the sanding.

Cut two species of wood to the same dimensions, one dark, and one light. The dark wood will be cut into the diamond blanks and the lighter wood for the four field pieces surrounding each diamond
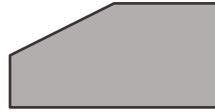
Four light-colored pieces are required for each diamond blank; be sure to always cut a lot of extras to use for setup and error elimination.
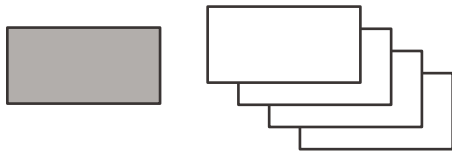
On one diamond blank, mark carefully the center of the top and one edge and connect with a sharp line. This will establish the shape of the diamond to be created.
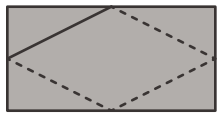
At your disk sander, carefully sand off the corner splitting the line.

Use the sanded diamond to make a fence for your disc sander with the exact same angle. This fence will be used to complete all future stages of the project.
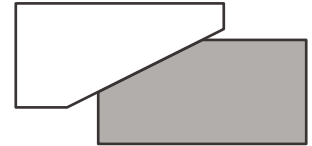
Sanding fence

Sand all diamond blanks to the same shape using the new fence for both the correct angle and length. A few test pieces may be required to create an accurate setup.
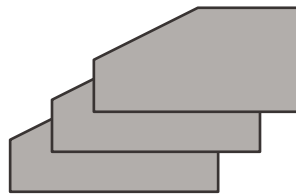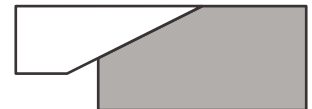
Sand all field pieces to the same angle; make the length of the sanded diagonal should be longer than that of the diamonds.
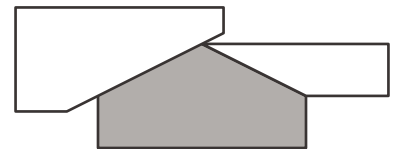
Glue one field piece to the sanded corner of each diamond.

Sand the top edge flat and square using a 90-degree push fence and a stop
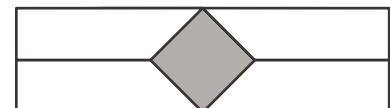
Flip the diamond blank, sand the second corner to the same lines. Add a second field piece to this corner.

Sand the top edge flat.

Flip the diamond blank over and repeat the same steps on the opposite side. Resand to assure the faces are parallel.

OPEN SEGMENT PROJECT

CUT LIST

ROW	TYPE	SEGS.	BOARD THICKNESS	BOARD WIDTH	ECONOMY BOARD LENGTH	OK?	SEGMENT EDGE LENGTH	MITER ANGLE	OK?	OD	RADIUS	DONE?
9	Flat Dark	12	$\frac{3}{16}$	$\frac{11}{16}$	13		$\frac{7}{8}$	15		$3\frac{1}{4}$	$1\frac{9}{16}$	
8	Open Segment	24	$\frac{1}{2}$	$\frac{11}{16}$	13		$\frac{5}{16}$	5.5		$3\frac{5}{16}$	$1\frac{3}{4}$	
7	Open Segment	24	$\frac{1}{2}$	$1\frac{1}{4}$	15		$\frac{1}{2}$	5.5		$4\frac{13}{16}$	$2\frac{3}{8}$	
6	Open Segment	24	$\frac{1}{2}$	$\frac{3}{4}$	16		$\frac{1}{2}$	5.5		5	$2\frac{1}{2}$	
5	Open Segment	24	$\frac{1}{2}$	$\frac{3}{4}$	16		$\frac{1}{2}$	5.5		5	$2\frac{1}{2}$	
4	Open Segment	24	$\frac{1}{2}$	$\frac{13}{16}$	15		$\frac{7}{16}$	5.5		$4\frac{11}{16}$	$2\frac{5}{16}$	
3	Open Segment	24	$\frac{1}{2}$	$\frac{7}{8}$	14		$\frac{3}{8}$	5.5		$4\frac{1}{8}$	$2\frac{1}{16}$	
2	Open Segment	24	$\frac{1}{2}$	1	12		$\frac{5}{16}$	5.5		$3\frac{7}{16}$	$1\frac{11}{16}$	
1	Disk – Dark		$\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$					$2\frac{3}{8}$		