# Session 2 Facing Cut, Convex Curves & Concave Curves Exercise

#### Materials:

#### FACE SHIELD

3" x 3" x 4 <sup>1</sup>/<sub>2</sub>" block of wood green or dry (I like to use Poplar)
1 <sup>1</sup>/<sub>4</sub>" Spindle Roughing Gouge
3/8" Spindle Gouge
<sup>3</sup>/<sub>4</sub>" or <sup>1</sup>/<sub>2</sub>" Round Nose Scraper
<sup>3</sup>/<sub>4</sub>" Skew
<sup>1</sup>/<sub>4</sub>" Parting Tool
1/16" Chris Stott Style Parting Tool if turning a Box

**Project Wood** *Note: refer to appropriate handout materials list for a list of materials for the project you choose to turn.* 

#### Introduction:

This exercise helps to introduce the importance of body position and body movement in refining a pleasing shape with quality cuts. One other objective of this session is to introduces the use of the spindle gouge for end grain hollowing. The main emphasis of this exercise is to show how important body movement is in refining a shape or a pleasing curve. It also gives the students the opportunity to play with full convex or concave cuts and to combine them into ogees to form a pleasing shape or curve without the worry of destroying a project. This exercise is followed by one of several projects that will help to build on the skills already learned and add a new skill that; of hollowing end grain using a 3/8" spindle gouge. Good choices for projects include the Birdhouse Ornament, the Acorn Birdhouse, small Lidded Box, or Goblet. As all of these projects involve using a 3/8" spindle gouge to quickly hollow an end grain object. The round nose scraper and scraping techniques will also be introduced in this session as the insides of the projects are refined by using the round nose scraper to make the final cuts. The use of a chuck and the making of a proper foot to hold the work piece in the chuck are also covered in this session. Many turners use the spindle gouge to hollow out the recess for making jam chucks to hold spheres and other turned objects that benefit from being held in a jam chuck. When demonstrating the facing cut one could mention its usefulness for making glue blocks that can be used to glue valuable or rare woods to a scrap block of wood thus enabling one to maximize the useable portion of the rare wood for the project.

#### **Demonstration:**

#### **Exercise Block:**

1. Mount a 3" x 3" x 4 <sup>1</sup>/<sub>2</sub>" block between centers and turn it to a cylinder,

2. Discuss the use of a chuck to hold the work and how it works. Turn a foot to mount the blank into the chuck. Be sure to discuss the importance of turning a proper foot and the importance of having the shoulder of the foot resting flat on the top of the jaws of the chuck so as to resist the lateral force that turning puts on the blank.

3. Now mount the blank in the chuck and remove the tail stock.

4. True up the blank with the roughing gouge.

5. Using a 3/8" spindle gouge demonstrate the facing cut by using the gouge to face off the end of the blank.

*Note: To use the 3/8" spindle gouge to do a facing cut, the flute is facing* away from the blank in the 3 o'clock position (closed) and the tool handle is in the horizontal position with the bevel 90 degrees to the axis of the lathe. This cut is started by first resting the heel of the bevel on the surface of the end of the blank and then moving the handle by twisting your hips in toward the tailstock so that the bevel makes contact with the work, as the flute is just slightly adjusted to find the cut. Once the cut is established twist your hips slightly away from the tailstock and gently, ever so gently, drag the heel of the bevel across the work until it slides free of the work. Now move the tool's cutting edge over toward the headstock ever so slightly, try to take a small cut approximately 1/32" of an inch, now lock your thumb on the tool rest to prevent the cutting edge from trying to skate toward the headstock, twist your hips back into the cutting position and slowly feed the cutting edge into the work about 1/8th of an inch, until enough wood has been cut to allow the bevel to guide the cut. (I sometimes drop the handle slightly to start the cut by slicing into the the blank). Lean forward as you feed the tool through the cut, aiming the tip of the tool towards the center of the work. Be sure not to push on the bevel nor push the tool into the work. Make sure that the force is directed down and across the end of the blank. If the cut action is very noisy then it is a sign that you are putting too much pressure into the work piece instead of across the face of the blank. The sound made by this cut, when properly executed, is similar to that of a finely tuned hand plane swishing across a board as it finely planes the board.

6. The next cut is to turn a half bead or make a convex cut that goes from the outside of the blank all the way around and down to the center of the face of the blank

7. Now let's do a cove cut or make a concave cut which starts at the outside and works its way down to the end of the blank.

8. The next step is to take the concave cut and blend it in with the previous convex cut to form an ogee.

9. Now try doing a convex cut that flows into a concave cut to form an ogee.

Note: Pay attention to how the body moves through these cuts. When turning the facing cut the body tends to just fall straight forward. When doing the convex cut the body and hips tend to roll toward the tailstock or the bed of the lathe as your weight sifts from your left foot to your right foot. When performing the concave cuts the body and hips dip and roll away from the lathe. My favorite cut is when combining the convex and concave cuts to form ogees, the body and hips do what I like to call the hip shake wiggle, as the hips roll into the lathe to form the convex cut and then halfway through the cut they twist and roll away to form the concave cut or the other half of the ogee and vice versa for the other ogee.

10. Continue practicing these cuts and movements until the wood is all used up.

#### **Project:**

Note: For the related project choose one that requires end grain hollowing and that appeals to your students, listed in the contents section of the manual. Then just follow the instructions found in the hand out. You may do one of your own projects or any number of projects that reflect the skills that are being taught in this session. One of the skills taught in this section, is the use of the 3/8" spindle gouge for hollowing end grain, so be sure to pick a project that requires end grain hollowing. Check in with the students from time to time to be sure that everyone is having a good time. Goblets or boxes are perhaps the easiest to hollow end grain and require the least amount of time to demonstrate. The birdhouse or Acorn birdhouse require a bit more explanation but are definitely a good choice especially near Christmas time.

Look through the handouts for *Session 3* and choose one that will be of interest to the class or develop your own project for this session that emphasizes end grain hollowing.



The facing off cut with the flute in the 3 o' clock position and bevel pointing perpendicular to the blank & the bed of the lathe and gently sliding across the face of the blank slicing the end grain with a very light gentle cut with no pressure on the bevel as the tool moves through the cut



The Convex or half Bead Cut with flute starting in the 2 o'clock position rotating to end the cut in the 3 o'clock position, as it slides across the end of the blank and the tool rest.



The Concave or Cove cut with the flute starting in the 3 o'clock position and rotating to the 12 o'clock or fully open position with the flute opening up as it slides down the slope and ending with the flute flute fully open and no longer cutting.

# Inserting the Oneway Screw Into a Chuck



Dimples in the side of the screw line up with the tips of the jaws as the screw is inserted into the chuck



The screw properly inserted into the chuck nearly flush with the jaws inner surface



The view from the back of the chuck showing how the tips of the jaws lock into the dimples on the screw preventing the screw from slipping as the work is turned

## Suggested Reading and Videos:

#### Books:

Turned Boxes 50 Designs by Chris Stott, published by Guild of Master Craftsman Publications, ISBN 1-86108-203-7 Turning Boxes with Richard Raffan by Richard Raffan, published byTaunton Press, ISBN 1-56158-509-2 Woodturning Christmas Ornaments by Dale L. Nish, published by Fox Chapel Publishing, ISBN 978-1-56523-726-1 Woodturning Notes, by Allan Batty available from Craft Supplies Woodturners Catalog Turning Miniature Birdhouses By Dick Sing

### **DVDS**:

#6 Woodturning Projects with Rex and Kip

Turning Wood-DVD with Richard Raffan

Turning Boxes with Richard Raffan

Cindy Drozda's Fabulous Finial Box

Bonnie Klein #3 Turned Boxes & Projects

**Bonnie Klein #5 Boxes with Threaded Lids** 

Hollow Forms and Urns: A Workshop DVD with Mike Mahoney

Hand Thread Chasing with Allan Batty

The Basic Box with Ray Key The Finial Box with Ray Key The Capsule Box with Ray Key all 3 DVDS available from Craft Supplies Woodturners Catalog