

Tips and Techniques for Using a Spindle Gouge



Introduction:

On occasion I have taught this session as a full day class to more experienced turners who want to improve their turning skills but feel too advanced to go back to the Bead & Cove Stick. The purpose of the following discussion is to describe in more detail some of the ways a spindle gouge is used to make a variety of cuts. In this handout I have tried to describe in words how the Spindle Gouge is moved through various cuts and how the turners body is positioned and moves with the tool to facilitate the different cuts such as the convex curve (bead) the concave curve (Cove) and the Flat/fillet (Straight) cuts. I have also added a section describing the use of the Spindle Gouge for hollowing end grain. This handout is designed to be a more thorough study of tool techniques and can be presented after the Bead & Cove Stick exercise and project. It may be a good idea to use it in conjunction with the Goblet or Box project exercise. It can be also be used as a stand alone exercise and waste blocks can be wasted away while practicing the various cuts described below. As always happy turning and I hope the information is helpful and more importantly helps to make your turning experience more enjoyable and less like work.

Spindle Roughing Gouge:

I prefer to rough out my spindles with a 1 1/4" Spindle Roughing Gouge or a 1" Spindle Roughing Gouge. Used properly and with a freshly sharpened edge, an 1 1/4" roughing gouge can leave nearly the same finish as a skew.

Roughing Cuts: The cut is started approximately 2" in from the tail stock end and proceeds in multiple 2" increments cutting toward the tail stock until approximately 3" from the head stock end of the blank, at which point the direction of cut is reversed and made toward the head stock so that the bevel can maintain contact with the blank. Be sure to remember your ABC's of woodturning; (A) Anchor (tool is in contact with the tool rest), (b) Bevel (Bevel is in contact with the spinning wood with out pressure on the blank) and finally (C) Cut the so that the bevel is gently gliding across the blank and supporting the cut and slicing the wood). These cuts are accomplished with the tool handle perpendicular to the blank and the end of the handle pointing up into the blank at approximately a 50 degree angle to insure the heel of the bevel makes contact with the wood first and the tool handle not cutting. As the



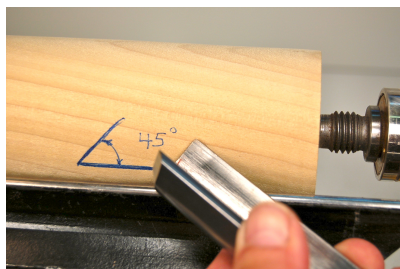
Position of Roughing Gouge Cut

handle is raised up to start the cut, it is drawn back ever so slightly in order to minimize any pressure on the bevel. What we are after is bevel contact with the material but with very little pressure on the bevel. Hold the tool firmly but not tight as in all turning the tool needs to be easily manipulated and this can not be done with a tight white knuckle death grip on the tool. The feet should be spread apart and the body should be free to move with the cut. To achieve the most control, the flute of the tool is sandwiched between the thumb and fingers of the left hand using an open style grip. The thumb is exerting pressure down toward the tool rest and is gripping the flute against the fingers. With this grip it is very easy to rotate the flute a small amount to improve the cut, by moving it between the fingers. The right hand is holding the end of the handle with the right thumb on top adding a bit of pressure down onto the tool rest and raises and lowers the handle to control the depth of the cut. The arms are resting against the body so that any movement of the body is reflected in the movement of the handle swinging through the cut.

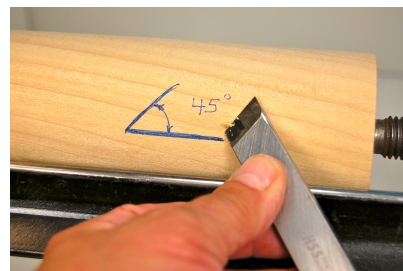
Thus the woodturners dance begins. The flute is in the fully opened position with the back of the tool making solid contact with the tool rest. The tool should always maintain contact with the tool rest. The heel of the bevel should make contact with the wood first then slowly lift the handle up as you draw the tool back slightly to begin the cut. As the cut proceeds, point the tool in the direction of the cut and roll the flute slightly in the direction of the cut. The reason the blank is roughed out in this manner is to minimize the length of any long splinters that may be chipped out as a result of checking or other defects in the wood. This is known as the under hand method and is my preferred method, as the overhand method is more aggressive and does not allow for the free flow of chips. Also with the overhand grip the pressure on the bevel may be increased but more importantly every chip coming off the blank hits your hand.

Plaining cut: Once the initial roughing out is completed, raise the handle to a more horizontal position, with the flat side of the gouge at approximately 45 degrees to the work piece so that the bevel is in contact with the cylinder with the flute open and the cutting edge at approximately 45 degrees to the cut. The cutting edge is in the same 45 degree position that a skewed cutting edge would be in to make this same plaining cut. Slowly shift your weight back and forth so that the tool's handle moves in and out from the lathe, while tweaking the angle of the flute and the bevel until it begins a nice slicing cut. Once a fine slicing cut is established, move the tool across the work gliding along the bevel (with minimal pressure on the bevel) and pointing the tool in the direction of the cut.

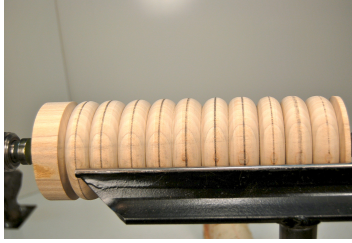
This cut produces a finish cut that is similar to that achieved when doing a plaining cut with a skew. This cut works well in both directions but you will find that for a right handed person it is easier to go from the tail stock toward the headstock as it is easier to get your body out of the way of the tool handle. Shift your weight from your right foot to your left foot as you move the tool across the work toward the headstock.



Plaining cut with Spindle Roughing Gouge

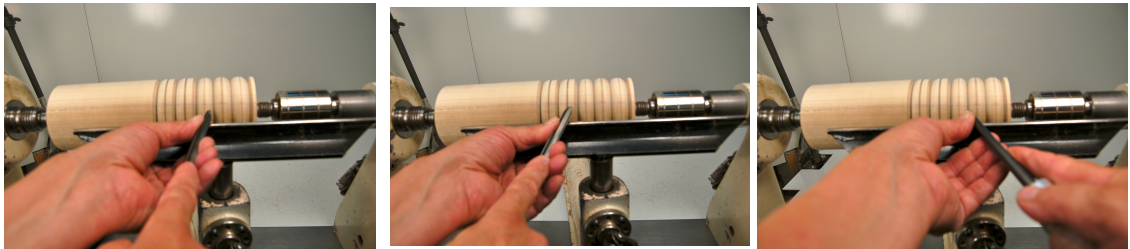
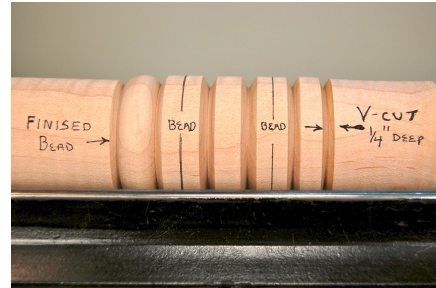


Plaining Cut with Skew



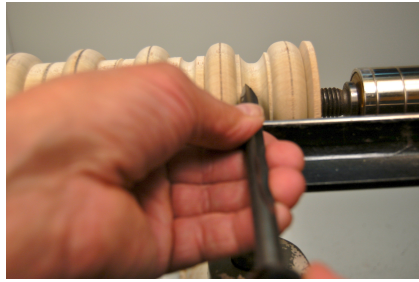
Turning Beads:

For me the best gouge for turning beads is a 3/8" Spindle Gouge. To begin turning a bead, mark the outer edges of the bead using a story stick and a pencil or a tape measure. The next step is to make V cuts on the pencil lines (or use a parting tool to cut spaces between the beads) and then mark the center line of the top or largest diameter of the bead. With the back of the flute resting on the tool rest and open at approximately a 45 degree angle (2 o'clock position) pointing in the direction of the cut and the handle pointing up in the direction of the cut at a roughly a 45 degree angle. Begin the cut by first making contact with the heel of the bevel and then raising the handle until it starts to cut. The flute is held between the thumb and forefinger with the thumb exerting force down onto the tool rest and against the fingers. This is a gentle relaxed grip to enable rotating the angle of the flute through the cut. Do not over grip the tool, as too tight a grip limits the freedom of tool movement and produces a rougher cut. The tool handle is raised and the angle of the flute is adjusted so that the cut is occurring at the very tip or just slightly on the lower side of the flute. The cut is started at the outer edge of the bead and is a small cut at first. Just cutting off the outer corner and to ease the edge and begin to round it over. Each successive cut is longer and requires more rotation of the flute, the handle and the body, in order to create a round bead as opposed to an angular or diamond shaped bead. With the last cut the flute will start in the open position (2 o'clock) and then proceed through an arc to the closed position (3 o'clock) with the handle ending up in the horizontal position and the bevel perpendicular to the blank. All of these movements can be visualized as parts of an arch or curve. The flute is rolling in an arch from 45 degrees to 90 degrees. The handle is rotating in an arc from 45 degrees to 90 degrees which in turn causes the bevel to point in the direction of the cut. The bevel always points in the direction of the cut.



*Notice how the handle moves
through the cut as the flute rolls from the open position (at 2 o'clock)
to the closed position (3 o'clock) at the bottom of the bead*

Your body is also rotating in a parallel arc in order to roll the tool handle through its' own arc.

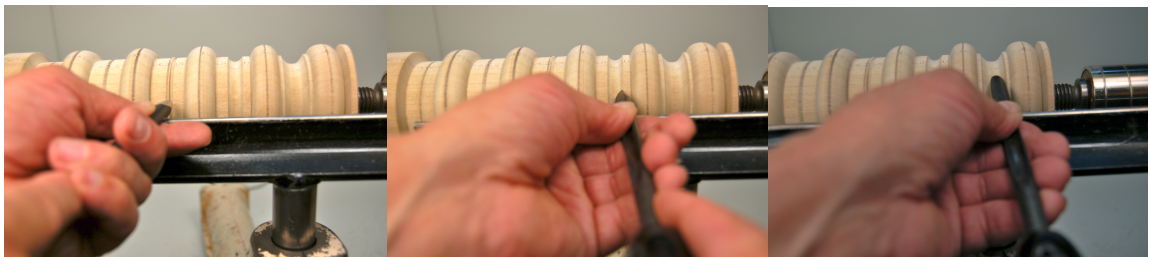


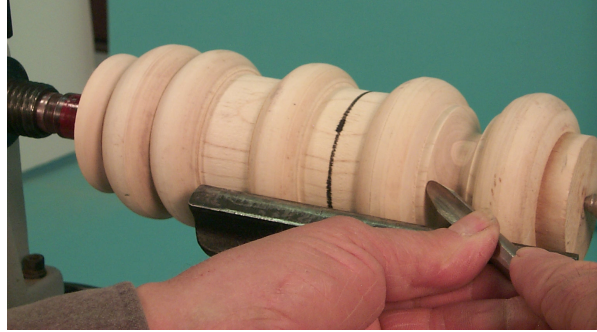
Turning Coves:

The turning of coves is pretty much the exact opposite of turning beads. For most coves the cuts are started at the center of the cove and move out toward the out side and down toward the bottom of the cove. Similar to making a v-cut or v-groove with a Skew. Cut one side of the cove then the other side while avoiding crossing the center at the bottom of the cove. The cut should stop at the bottom center of the cove with the heel of the bevel in contact with the blank and the edge no longer cutting. It is a good idea to work one side then the other to help maintain the symmetry of the cove. Repeat this process until the cove is complete. To turn a cove, start with a 3/8" detail gouge with the flute in the closed position (3 o'clock or 9 o'clock) facing the direction of the cut, the handle is pointing up into the cut and the bevel is at 90 degrees to the work. Your thumb is stationary and applying force down onto the tool rest to prevent the tool from skidding across the work before it has a chance to cut a place for the bevel to rub.

Using a slicing motion similar to that of starting a (V) cut with a skew, begin the cut by raising the handle in a slicing motion as arch the cutting edge into and through the cut in a slicing

motion. Once you have entered the work deep enough to provide a place for the bevel to rest begin to rotate the flute slightly at first to the open position as it slides down the cove. The movement of the handle through this cut will be to pull down and toward you or to be pushed down and away from you while feeding the cutting edge into the work extending it away from the tool rest while still maintaining contact with the tool rest at all times. This movement is similar to the movement used when scooping ice cream with the tool sliding through your left hand with the left hand guiding the tool much like the bridge is used in pool to guide the Q-Stick. Repeat this procedure on both sides of the cove. The final cut should be made with the bevel just off 90 degrees toward the inside of the cove and rolled through the cove as was done with all the other cuts.





Turning a Fillet

Turning Flats or Fillets:

Fillets help define the transition point between coves and beads. To cut a fillet with a 3/8" detail gouge, start with the bevel parallel with the ways of the lathe. With the flute closed and the tip of the cutting edge pointing in the direction of the cut touch the heel of the bevel on the edge of the top of the cove and slowly bring the handle toward you until it begins to cut. Once it has cut in the side of the cove enough to provide a place on which to ride the bevel, move the tool parallel to the work and cut to the bottom end of the bead. Clean up the cut by touching up the bottom of the bead and then toughing up the inner edge of the fillet.



The facing cut with flute fully closed at 3 O'clock

End Grain Turning:

The use of a Spindle Gouge for end grain turning is a skill that has many benefits and uses. Lidded boxes and goblets are among two of the things can be hollowed with a detail gouge very quickly and efficiently. One need only attend the egg cup races at the Utah Woodturning Symposium to see how quickly a detail gouge can turn out an egg cup.

The blank is mounted to a faceplate or in a chuck with the grain running parallel to the bed of the lathe, as in between centers turning. It is then rough turned to a cylinder and the tail stock is removed. Rough shape the outside of the cup section of the goblet, flower or egg cup

close to its final shape, leaving enough material behind the cup to support the work when end grain hollowing. Then face off the top of the cup before hollowing. To face off the top the tool rest is parallel to the lathe bed and the height is adjusted so that the tip of the spindle gouge with the tool handle in the horizontal position will be even with the center of the cup. With the flute in the closed position (3 o'clock position) touch the heel of the bevel to the surface, then sift your weight so that the bevel begins to make contact and the tool starts to cut at the very tip or just below the center of the tip. Adjust the flute to find the sweet part of the cut, then ease off the cut by resting gently on the heel of the bevel and slide or pull the cutting edge back beyond the shadow line. Now sift your body and the tool back into the cutting position that you just found then assume the cutting position. Next gradually feed the tool while it is in the cutting position to begin the cut once you have cut in enough so that there is a place to ride the bevel, lean forward while aiming the tip of the gouge to the center of the cup and proceed to glide along the bevel using your thumb to push the bevel away from the surface to offset the fact that your right hand is putting excessive pressure on the bevel so as to have neutral pressure on the bevel as the cutting edge glides along the surface of the wood. When using a freshly sharpened tool and with very little pressure on the bevel this cut will produce a very nice finished surface in end grain that will be at mirror smooth finish cut. The key here is to gently slide across the surface with bevel contact with out pressure on the bevel. If you are getting chatter or the cut is very noisy that is a sign that there is too much force on the bevel onto the surface.



The next step is to set up the tool rest so that it is perpendicular to the ways of the lathe and adjusted so that when the Spindle Gouge is in contact with the rest and the handle is in a horizontal position parallel to the beds of the lathe the center of the gouge lines up with the center of the blank. With the tool in the horizontal position and the flute in the fully open position, place your index finger along the top of the flute with the handle of the tool covered by your forearm. By having your forearm on top of the tool handle when hollowing with a gouge or a scraper it helps to protect your face in the event of a catch as your arm will prevent the tool handle from making contact with your face. Slowly push the tool straight into the work, approximately 1/4" keeping the handle level and horizontal. When doing this initial cut hold the tool gently so that it will be able to automatically self center itself. If you are getting a nubbin it is a sign that the tool rest is too high or too low and the center of the tip is cutting below or above center. It could also be a sign that you are holding the tool way to tight and forcing it off center.



Method 1: Next rotate the flute to about 45 degrees drop the handle a little bit and push it a slight bit down and away from you and pull the tool out. The motion is push it straight in with the flute open, drop the handle and rotate the handle away from you and roll the tool out of the cut. Repeat this cut until you have reached the finished depth of the goblet, box or long stemmed flower. Once again this is a rotating motion moving the tip upward through an arc on the inside of the piece.

Method 2: This method is similar to the one described above but rather than dropping the handle and cutting in the upper quadrant, the cutting edge is pulled straight across the surface and is pulled out of the cut as it approaches the outer edge of the hollowed out section of the cup. Once again the tool is in the horizontal position with the flute fully open (12 o'clock position) and is pushed into the work until it cuts in about ¼" and then the flute is rolled towards you until it is open at about a 45 degree angle (11 o'clock position) and then the cutting edge is drag across the surface. As the cup is hollowed out deeper and deeper the cutting edge will have to be pulled out slightly as it nears the outer edge so as not to engage the whole side of the Spindle Gouge causing a nasty catch.

Note: I sometimes grind my Spindle Gouge with a shallower bevel angle such as 50 or 60 degrees and grind the shape of the tip a bit differently to make it more compatible with this end grain hollowing cut. Ray Key has a signature gouge that he designed and that Craft Supplies Woodturners catalog sells for just this purpose.

A round nose scraper is used for the final shaping and finish cuts inside the cup of the goblet or the inside of the box. My round nose scraper has been ground partway along the left side to aid in cutting the inside, of end grain boxes or goblets (It is ground in a similar fashion to Bonnie Klein's Signature Box Scraper). The front bevel of the majority of my scrapers is ground at roughly 70 to 80 degrees. I have modified most of my scrapers by adding a slight 5 to 10 degree bevel on the top side of the scraper to create a negative rake.

To use a scraper properly, the handle is held in the horizontal position and the cutting edge can be tilted down into the material or the scraping edge can be titled down and into the cut in a shear scrape position. *As a general rule, you should avoid letting the bevel contact the wood when using a scraper.* Scrapers can be ground in any shape you desire and come in a wide variety of shapes and sizes designed to do a particular cut or shape. Scrapers are a bit easier to use than gouges and other cutting tools as body position is not as critical and you just remove the wood that needs to be removed to create your desired shape or form. Although in general work that has

been scraped requires a bit more sanding than work that has been cut with cutting tools such as gouges and skewes. Scrapers are used most often for hollowing vessels.

Photos of Tools Used in Bead & Cove Stick Class:



*1 1/4" Spindle Roughing Gouge
with 40 degree bevel*



*1 1/4" Continental Gouge ground straight
across with 40 degree bevel*



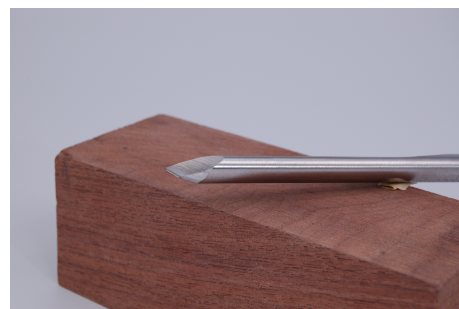
*Alan Lacer style 3/4" Skew
Traditional Ground 3/4" Skew*



1/4" x 1/2" Parting Tool



*3/8" Spindle Gouge with 35 degree bevel
with the wings ground back*



*Side view of 3/8" Spindle Gouge
showing the relief or secondary bevel
ground back in order to shorten the bevel so
that the gouge can cut smaller curves and get
into tighter spaces*