THROWING GUIDE
Part I: Preparing ➤ Coning ➤ Final Centering

1. PREPARING: Set Up Your Work Area
Place a square bat on the wheel and secure it by inserting the wheel pins into the holes under the bat. Grab a bucket of water, small sponge, smooth rib, wooden tool, needle tool, and well-wedged ball of clay. You can flatten the bottom of the clay, but make sure it is smooth, level, and without any cracks. Wet the bat, and while spinning the wheel, clean it of debris with the small sponge. You want the bat to be only minimally wet, so make sure to remove any extra water.

2. PREPARING: Set the Clay
Firmly place your clay in the center of the bat and pat the clay into place, pushing down and turning the wheel manually as you set the clay into place.

3. PREPARING: Seal the Clay
Dip your finger in the water and place it against the bottom edge of the clay where it meets the bat. Press your finger in towards the clay and slowly spin the wheel to seal the clay to the bat. Take your time to do this correctly. This prevents the clay from flying off the wheel.

4. CONING: Press Down and Push In
Coning can be considered part of the mixing process, but it will get you around 80% centered. If the clay is not perfectly homogenized it won’t respond evenly to your touch, so it’s important to both wedge well and cone well. Spin the wheel at a fairly fast speed, dip your hands in water, and place your hands equal distance apart on each side of the clay. Press your hands down against the bat to set your hands, and then push in, using your legs as a lever. Pressing down and pushing in will drive the clay up.

5. CONING: Follow the Clay Upward
As you push the clay up, move your hands upward, following the clay and forming a cone.

6. CONING: Remove the Flange
Whenever you notice a flange starting to flare out from the bottom of the clay, use your fingers to remove it. Keeping this area clear gives you access to the base of the clay and the ability to apply enough pressure to lift the clay up. If you don’t remove it, you won’t be able to apply the proper amount of pressure.

7. CONING: Push Forward and Down
Push the cone slightly forward and down at an angle (not perpendicular). This will make it go down more evenly. Generally coning three times should be enough. Each time you cone, the clay gets a little taller and easier to move around. At first, the clay will have rough spiral marks, but by the third cone, the spirals start to go away and the clay becomes a lot smoother and more plastic. If you still see spirals, you need to cone until they go away.

8. FINAL CENTERING: Karate Chop
Your left hand will be in the same position. Your right hand will be pressing slightly forward and down at an angle with either an open hand or closed fist. You will need to experiment with the amount of pressure for each hand. If you are pressing too hard with your Karate Chop (right hand), it will flatten the clay outward like a pancake. If you are pressing too hard with your left hand, the clay will go back into a cone, so you’ll need to increase your Karate Chop hand.
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9. FINAL CENTERING: 50/50
Karate Chop will often get you to your final center. If it's not going into final center; you need to change your hand position to 50/50 - hands equal distance apart, pressing in from both sides. This will start a minimal cone. Then go back to Karate Chop. This will get you 100% centered. Remember to keep cleaning up the flange as you work on your final center.

10. OPENING: Marking Center
Wet your hands and mark center by placing your thumbs on top and resting your hands on the sides of the clay.

11. OPENING: Hand and Helper Hand
To actually open up, use hand and helper hand - first two fingers of each hand, with one set of fingers crossed over the other. This gives more stability and strength than using thumbs. There will be a lot of resistance when you open the piece up, and if you are not stronger than the clay fighting against your hands, the clay wins and will throw your piece off-center. When you scale up to a larger piece, you can switch to hand over hand.

12. OPENING: Go in with Steady Pressure
Using the center you marked, go in, pressing down with solid, steady pressure. You want to leave a lot of room on the bottom (at least an inch) because you will be losing thickness throughout the throwing process. If you don't, you can eventually go through the bottom. Opening up will end up removing half an inch. Once you get to your depth, stay in the position for a couple of seconds and let the clay catch up to the new form.

13. OPENING: Pull Open Toward 6 O’Clock
With hand and helper hand, press down to set your hands and then pull towards 6 o’clock. Get to the diameter that you want. This will be determined by the current diameter of your base (you can’t go wider). Hold for a few rotations before slowly releasing your hands. You need a lot of speed because of how much you are changing the clay at this point - from solid ball to open form.

14. OPENING: Cone Back In | SLOWER SPEED
Once your piece is open, you will have a wall. You will be fighting centrifugal force because it will want to pull the wall open. To avoid this, slow the speed down and also cone the piece back in. The most speed and water will be used during centering and opening. Once you open, you should start to slow down the wheel a little bit.

15. OPENING: Compress Bottom
Solidify the bottom by compressing it. Thrown objects have a tendency to get an s-crack in the bottom from lack of compression. Using your fingertips, press down in one location. This creates concentric circles that allow you to flatten the bottom. Release, wet your hands, and shift your fingers over a bit. You also want the transition into the wall to be as close to 90° as possible. Spend a good amount of time compressing the bottom before moving on to the next step.

16. OPENING: Measure Thickness
The thickness of the image above is about 3/4” thickness. You can measure the thickness by plunging your needle tool down into the center of the piece until you hit the bat. Then take your finger and push it down until you feel the bottom of your piece. Hold it there to mark the spot. Pull the needle tool out and measure the amount.
17. PULLING: Re-center
Cone the piece in to fight the centrifugal force from having it open outward. Wet hands and place hands like you are centering with 50/50 and press the walls in. Hang your thumbs over the lip to keep it contained. You want it to go back into this cone position because it offers more stability and it is less likely to open up.

18. PULLING: Claw Hand and Index Knuckle
After opening, the wheel is now slowed down quite a bit. You’ll also start to taper off the amount of water you’ve been using. You are outside. If you apply pressure from both sides against the wall, the clay only has one place to go: up.

19. PULLING: Squeeze
Every pull starts with a squeeze. Apply even pressure from inside and outside, squeezing the wall. A roll of clay will develop from that squeeze, giving you something to hold onto as you pull up. Squeeze from both sides, waiting for the roll of clay to develop. It may look like most of pressure is coming from the knuckle, but in reality it is even pressure from both sides. You need a roll of clay to develop on the inside as well so you have something to grip onto to pull up.

20. PULLING: Pull Up
Now you can grab onto the roll and start to pull up. Pull up slowly, letting the clay make rotations as you go up. When you get to the lip, stay in position for a few rotations, then slowly release.

21. PULLING: Stabilize Your Hand
When you pull up, stem off of the right hand with the left thumb. This gives the left hand a little more stability and control throughout the pulling. The rings on the outside are tight and even - what you are looking for. If you see a spiral, then you are pulling too quickly. You want to be nice and controlled. Remember to continuously trim up the base where the flange forms.

22. PULLING: Control the Cone
You have to keep the clay in a controlled cone shape to keep adding height. The shape is like a pyramid - it’s a strong form that will accept more and more height. If you let your walls go 90° or go outward, it’s going to keep opening outward and you won’t be able to add height to it. Coning is height-building.

23. PULLING: Compress the Rim
After every pull, compress the rim. The rim will get tired after successive pulling. If you don’t compress it, it will wobble out of control and you will lose the ability to shape later. Place your right index finger across the rim to compress the top down. Pinch the sides of the rim with your left hand to compress the sides. Remove the excess clay. After compressing the rim begins to thicken and center back up. Remember to re-cone your cylinder again and clean up the flange at the base.

24. PULLING: Last Pull
Repeat Steps 19-23 until you have moved up all the weight from the bottom that you can. It depends on the type of form you are making. A cylinder should be a consistent thickness throughout the entire piece, but for other pieces you make, you may want something that is thicker in the center. Remember to compress the lip and clean up the flange at the base.
25. SHAPING: Remove Flange
Press the trim stick against the wall like you are ribbing or compressing it. Set the tool up above where you are trying to trim. Then slowly travel down as you press against the wall. Slice through the flange, and keep going until you hit the bat.

26. SHAPING: Cut Away Excess
Take your needle tool and cut through the flange, removing the excess clay.

27. SHAPING: Compress and Remove Moisture
The metal rib allows you to shape and compress. Hold it by placing your thumb on one side and your fingers on the other side. This allows you to articulate it in different ways - you can curve it, etc. Use the rib to remove the moisture from the outside, compress the wall so it has more strength, and smooth the whole thing out. You’re basically doing the same movement as a pull, but you’re replacing your knuckle with the rib.

28. SHAPING: Finalize the Form
Remove excess water from the inside with a small sponge or by using a tool like the Kemper Sponger Holder if the cylinder is too narrow to use your hand. You can also use the small sponge to round out the lip or you can use your index finger to make a square lip. Remember to clean up any remaining extra material at the base.