







**Ball Winder O-ring Adjustment** – for resolving wonky ball problems or when the Power Base motor operation seems to slow down (the O-ring needs to be adjusted & made less tight).

**Please do not call us** for service unless you have read these 2 pages and performed the **3 tests** on Page 2

1. The Ball Winder has 2 separate motions when you turn the handle:
  - a. The Spindle (and the curved wooden Arm that it rests on) rotates in a large circular manner called an “**orbit.**” It makes 5 complete orbits per single crank of the handle.
  - b. The Spindle (but not the Arm) also turns on its axis called a “**spin.**” It takes about 12 to 20 Orbits for the Spindle to make one complete “Spin” on its axis.
2. These 2 motions together (Orbit and Spin) are what construct a yarn ball.
3. **If the Spindle cannot Spin on its axis, the user will get a Wonky Ball.**
4. A Wonky Ball is one which has all of the yarn sitting on top of itself and is not spaced out like it should be. It sometimes looks like a flying saucer. In a normal ball, each strand of yarn will be spaced from 1/8 to 1/4” apart as the ball is being formed. The **Spin** motion is what does this.
5. What causes the Spindle not to turn on its axis? If the black rubber O-ring that surrounds the Gray flange at the base of the spindle presses too tightly against the conical shaped shaft coming up from the center of the ball winder, then it will not spin. The O-ring position needs to be adjusted.
6. **Here is how to adjust it:**

<p>1. Remove Collar from Spindle Shaft using the 1/8” Allen wrench (otherwise it can restrict the adjustments you need to make).</p>		<p>2. Unloosen Clamp Ring on Spindle Arm (only turn the 2 screws 1/4 to 1/2 turn counterclockwise. Use a #2 flat screw-driver or a 5/16” Nut driver. <b>ONLY TURN screws 1/4 to 1/2 turn each!!!</b>)</p>	
<p>3. Lift <u>entire</u> Spindle Arm Assy off of the unit (including the spindle). This is the only way to properly adjust the unit’s O-ring. Note: you may have to repeat this process to get the best fit.</p>		<p>4. While the Spindle Arm Assy is off, spin the spindle in the arm and make sure it is turning freely (it will not spin fast but it should turn easily). Also, inspect the underside of the Gray Clamp Ring for any cracking (there should be a seam on this part, however)</p>	
<p>5. Now set the Spindle Arm Assy. and the spindle back down onto the ball winder. <b>DO NOT</b> remove your hand! It is important to support it until it has been adjusted <b>AND</b> re-tightened.</p>	 <p>Do not touch the spindle at this point. Only support the Arm.</p>	<p>6. <u>As soon</u> as the black o-ring on the Spindle flange <u>makes contact with the shaft</u>, <b>STOP</b> and do not allow it to slip down any further (keep your hand in place). Then <u>partially tighten</u> the two screws in the Clamp Ring underneath the Spindle Arm. Screws should hold the assy in place now.</p>	

**Item 6** is KEY to the entire process. You are trying to only have the O-ring LIGHTLY touch the steel shaft and then tighten the screws in succession. If the O-ring is too tight, then you will get WONKY balls. If so, you will have to repeat the process (3 thru 6) to get it to fit properly. The lighter the contact the better. The O-ring should only **kiss** the surface of the steel shaft. An O-ring that fits to tightly is the cause of 99% of problems with the unit.

The O-ring should make contact with the conical shaft about 1/2 to 3/4 up the slope of the shaft. The O-ring MUST not ride on the tip of the conical shaft.

**7.** The following 3 quick tests will provide feedback to you that you have set the tension on the O-ring properly. If the tension (fit) is correct, then the unit will make good yarn balls. If it is not, then you may get wonky balls or slow the operation of the motor drive. You need to adjust the O-ring fit so that it only lightly touches the shaft

**Test 1 – Twist Test** - grab the spindle and try to twist it on its axis while holding the Spindle Arm. It should not be too tight and should only require the same energy needed to turn a door knob of a heavy door. If it is too tight and hard to turn, then repeat processes 3-6 to loosen it up.

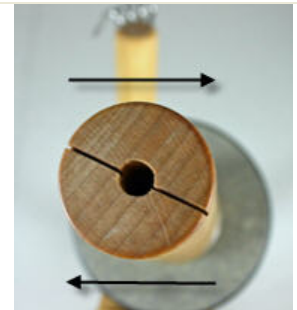


While doing the Twist test, be sure not to pull the Spindle up (or you will lose the fit you have worked to create). In fact, press down on it while testing.

**Test 2 – Spin** the handle as fast as possible and then let it go. It should continue to turn 3-5 times on its own. If not, the O-ring is too tight. Re-repeat steps 3 – 6



**Test 3 – Slot Test** - The last test proves that the O-ring is working properly. Turn the handle and see if the slot in the top of the Spindle is slowly turning to either the left or right after each turn or two of the crank handle. If not, the O-ring is too tight. Repeat steps 3 – 6.

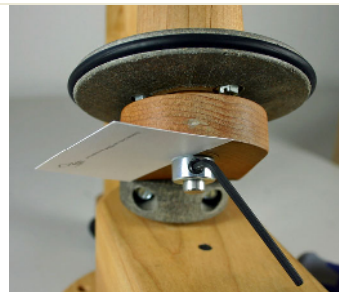


**8.** If everything checks out OK, then tighten the screws in the Spindle Arm Assy.



The last step (9) - Re-install the steel Collar on the end of the Spindle Shaft. This is very important because it prevents your spindle's O-ring from losing the proper fit that you just worked on. To do this, we use a business card as a SPACER to make sure the Collar is not too tight or too loose. So, the only gap that the collar should have is the thickness of a business card.

**9.** Place a business card underneath the Spindle Flange next to the shaft. Then push the collar up on the shaft until it presses against the business card and holds it in place. Then while holding it in position, tighten the collar with the Allen wrench. Pull the business card out and you're done. Run a test ball and see if it is winding properly. If still wonky, repeat the process.



Be sure to adjust the tensioning post. The Curl Q should NOT aim directly at the Spindle. A 45° - 90° angle (off-center) is best. This is an add-on for early units.



Key adjustment

Make your adjustments easier. Get a 5/16" Nut Driver. Much easier than a screwdriver. About \$5 at Home Depot/Lowe's. It works like a screwdriver. Never over tighten the screws on the HDBW.

