



# THE FLATIRON SPINNING WHEEL

## ASSEMBLY INSTRUCTIONS



Find out more at [schachtspindle.com](http://schachtspindle.com)  
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04.19

# FLATIRON SPINNING WHEEL

## ASSEMBLY INSTRUCTIONS

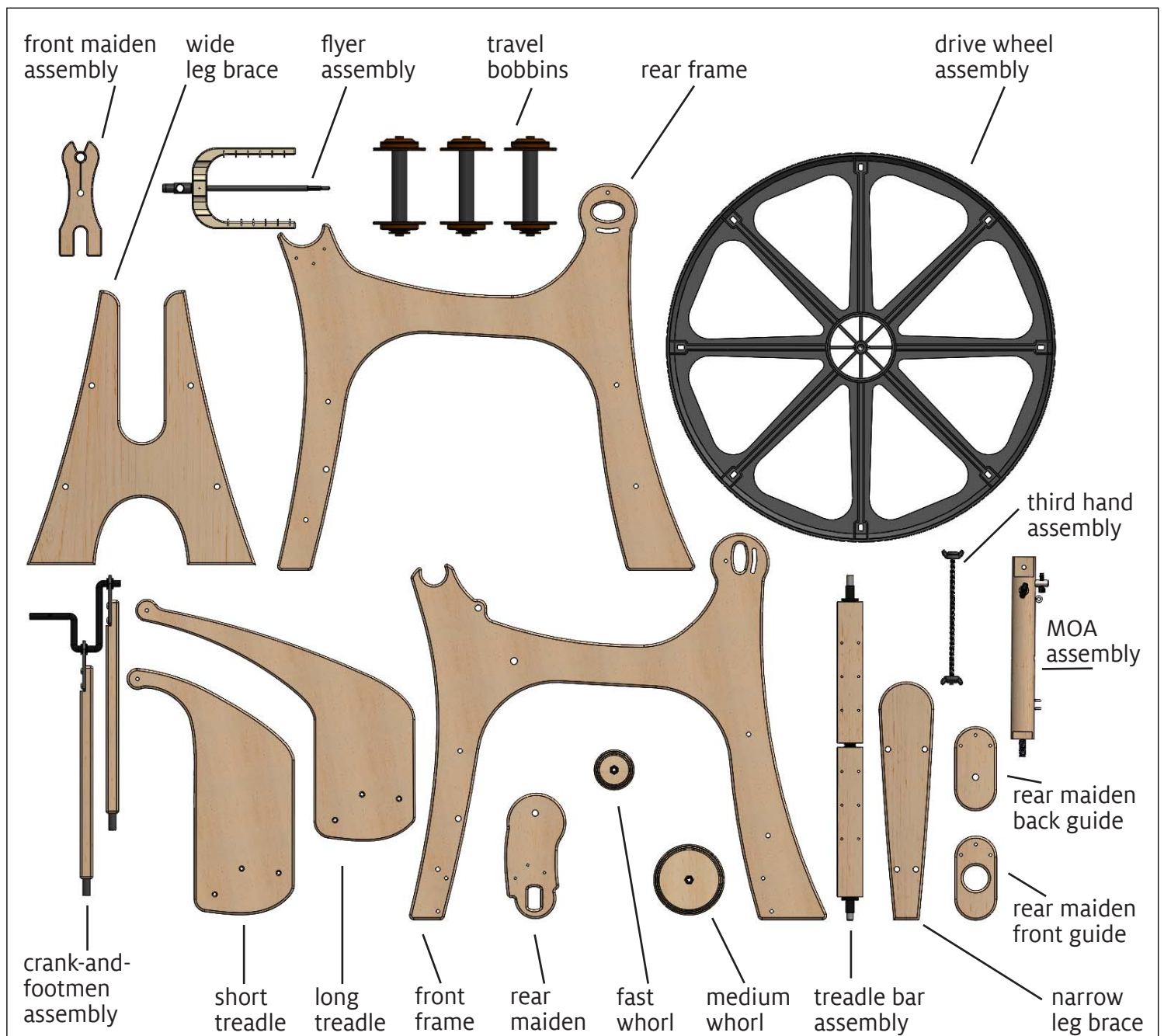
We have posted a video of The Flatiron being assembled according to these instructions on our YouTube channel <https://www.youtube.com/user/schachtspindle>

### PARTS

1X front frame	1X short treadle
1X rear frame	1X long treadle
1X crank-and-footmen assembly	1X wide leg brace
1X rear maiden	1X narrow leg brace
1X rear maiden front guide	1X flyer assembly
1X rear maiden back guide	3X travel bobbins
1X MOA assembly	1X fast whorl
1X front maiden assembly	1X medium whorl
1X drive wheel assembly	1X third hand assembly
1X bar assembly	8X parts bags

### TOOLS NEEDED

#2 Phillips screwdriver  
slotted (flat) screwdriver



### BAG #1 – PREPARING THE FRAME SIDES

- 1X rear axle bearing (large)
- 1X front axle bearing (small)
- 1X 5 mm lock nut (zinc)
- 1X 30 mm frame bolt
- 3X 10-24 x 1.25" machine screw
- 2X 10-24 beveled barrel nut (chrome)
- 1X 10-24 lock nut (black)
- 1X 5 mm flat washer (zinc)
- 1X #8 flat washer (black)

### BAG #2 – ASSEMBLING THE FRAME

- 4X 30 mm frame bolt
- 4X 40 mm frame bolt
- 8X barrel nut (black)
- 1X front axle washer
- 1X 3/8-16 thin lock nut
- 3X rubber foot
- 3X #6-18 x 1/2" screw

### BAG #3 – ASSEMBLING THE MAIDEN GUIDES

- 6X #8 x 7/8" rear maiden screw
- 1X 3/8-16 thin lock nut
- 1X 3/8" washer (black)
- 1X flyer bearing assembly

### BAG #4 – INSTALLING THE MOTHER OF ALL

- 1X cupped washer
- 1X 3/8" washer (black)
- 1X 3/8-16 thin lock nut
- 1X MOA tension control assembly
- 1X MOA-to-rod-end screw
- 2X plastic washer
- 1X 3/8-16 lock nut
- 1X Scotch/Irish tension adjustment knob

### #5 – INSTALLING THE TREADLES

- 4X 10-24 x 1.25" machine screw
- 4X #8 flat washer (black)
- 4X 10-24 lock nut (black)
- 2X treadle pillow block bearing
- 6X #8 x 1" treadle screw

### BAG #6 – INSTALLING THE CRANK-AND-FOOTMEN

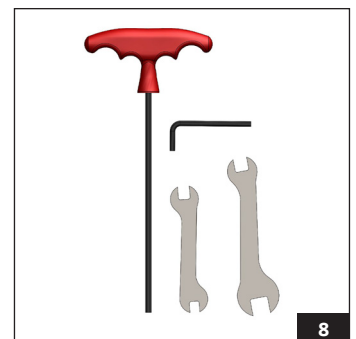
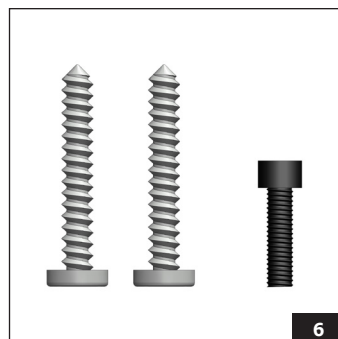
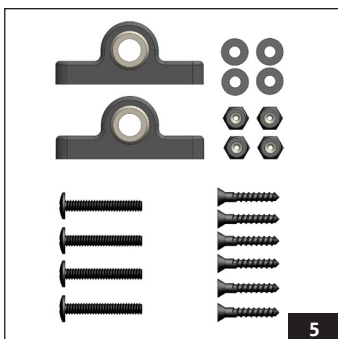
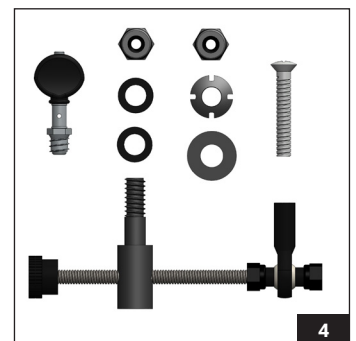
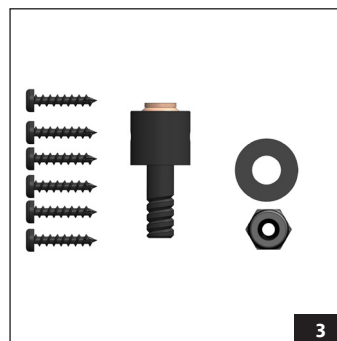
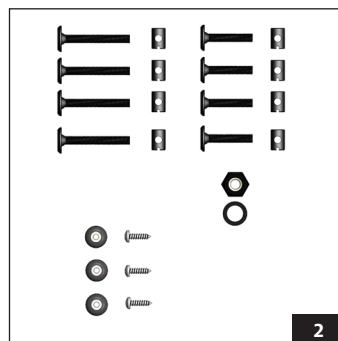
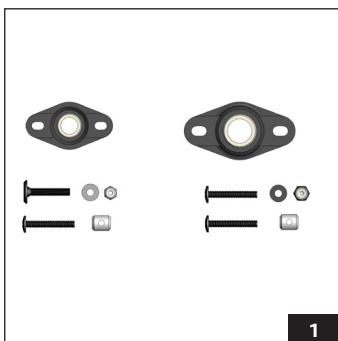
- 2X #10 x 1.25" treadle-to-footman screw
- 1X 8-32 x 5/8" crank-to-axle bolt

### BAG #7 – INSTALLING THE FRONT MAIDEN / INSTALLING THE TENSION SPRING-AND-STRING

- 1X quick release
- 1X spring-and-string assembly
- 1X whorl knob
- 1X whorl knob O-ring
- 1X cotton drive band
- 1X orifice hook
- 1X vertical alignment tool
- 1X horizontal alignment tool

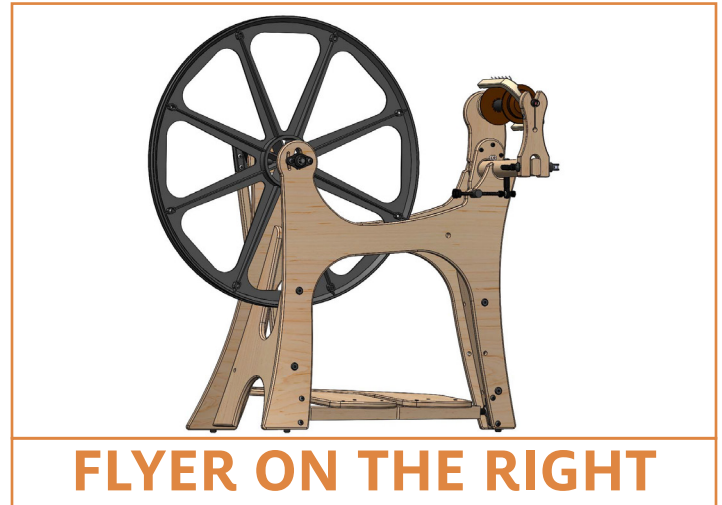
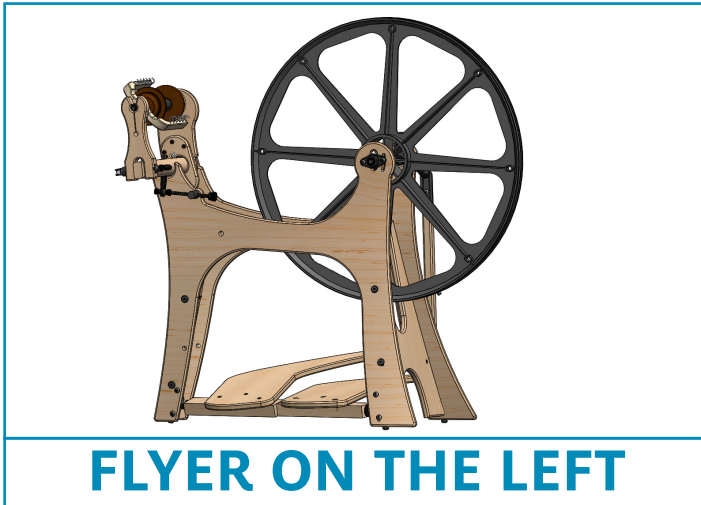
### BAG #8 – TOOLS

- 1X wrench #1 (7/16" x 9/16")
- 1X wrench #2 (3/8" x 8m m)
- 1X 4 mm T-handle wrench
- 1X 9/64" hex wrench



## PREPARING TO ASSEMBLE YOUR FLATIRON

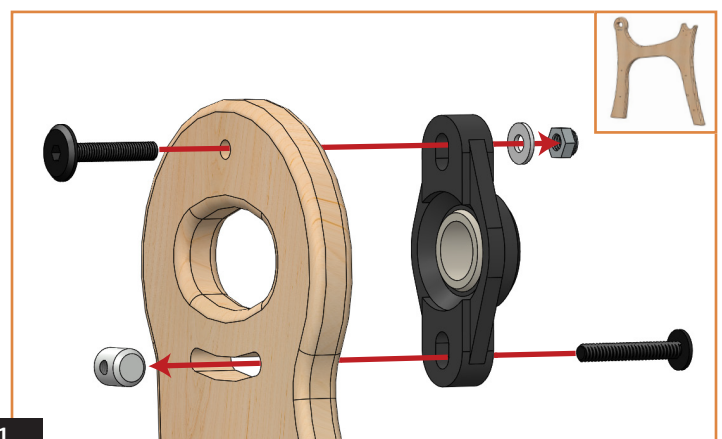
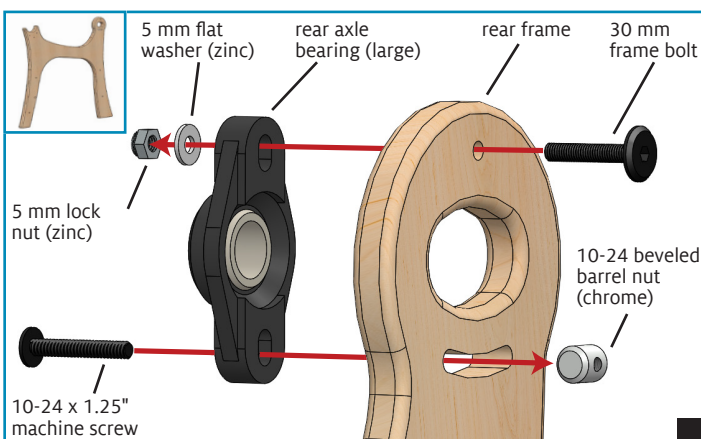
1. Carefully open all packaging and wrapping. Lay all parts out and verify that you have them. Open parts bag #8 immediately [packed in flat box labeled “TOOLS ENCLOSED”]. Leave the rest of the parts bags undisturbed until the instructions call for them to be opened.
2. Determine if you want to build your wheel with the flyer on the left or the flyer on the right. [Flyer on the left assembly illustrations are outlined in blue, flyer on the right in orange.]



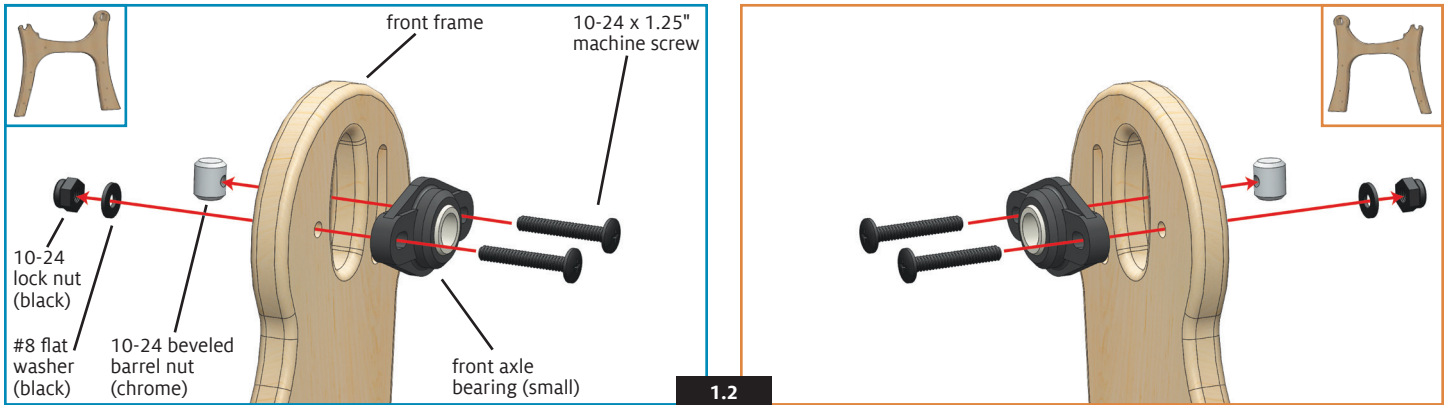
3. To assure easy assembly, do not fully tighten any frame bolts or lock nuts until the instructions call for tightening them.
4. A black oxide finish coats many of the Flatiron's parts. While it's a stout finish, it is susceptible to scratching from metal screwdrivers and wrenches. We suggest wrapping a piece of masking tape either around the nut or in the open mouth of the wrench to minimize the potential for scratching.
5. Numbers on the figures indicate the step to which the drawings correspond.
6. Figures are meant to show how parts interact with each other during assembly. At various steps during building, the spacing and positioning of some parts on the wheel you are building may not exactly match the drawings; just follow the written instructions and it is nearly impossible to assemble the Flatiron incorrectly.

### 1. PREPARING THE FRAME SIDES [Parts bag #1]

1. Attach the rear axle bearing to the outside of the rear frame using parts from bag #1. Be sure to install the 30 mm frame bolt from the inside of the rear frame (the side facing you) or the wheel will not turn when assembled. Attach nuts but leave them loose until after wheel alignment in Steps 10.1–10.3.



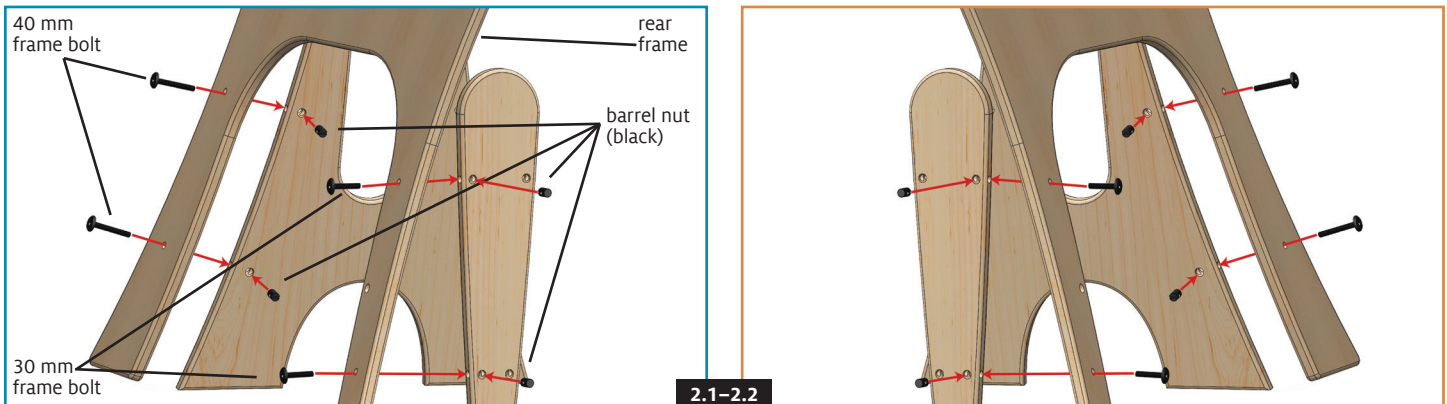
2. Attach the front axle bearing (small) to the outside of the front frame using the remaining parts from bag #1. Do not fully tighten until after wheel alignment in Steps 10.1–10.3.



## 2. ASSEMBLING THE FRAME [Parts bag #2]

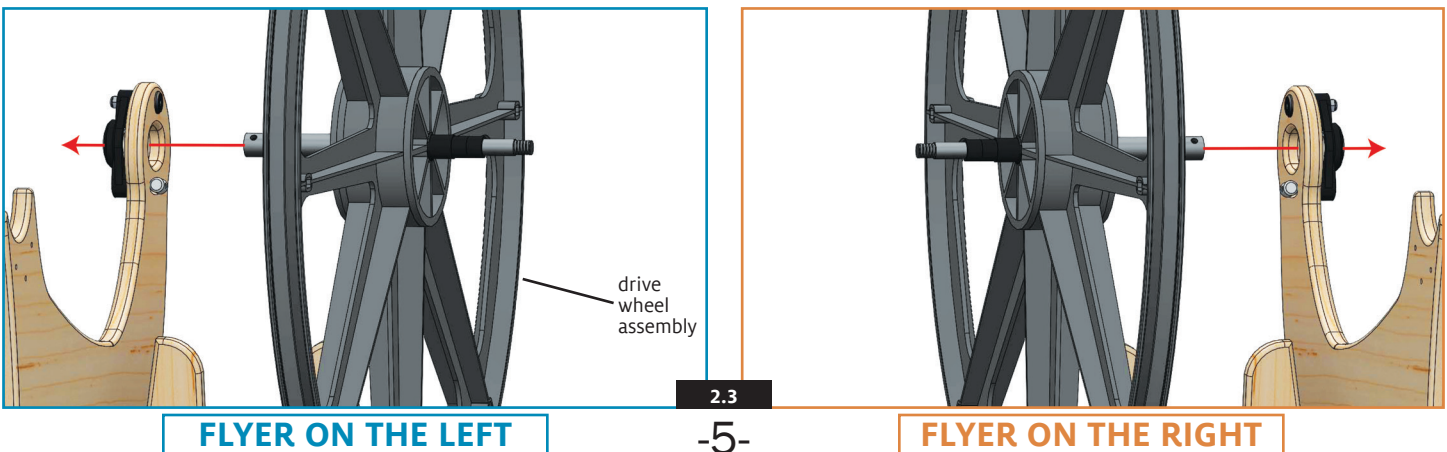
1. Attach the wide leg brace to the inside of the rear frame using the 40 mm frame bolts and black barrel nuts. Tighten until snug but do not create any bend in the frames until directed to tighten all bolts in Step 3.3.

2. Attach the narrow leg brace to the inside of the rear frame using the 30 mm frame bolts and black barrel nuts. Tighten until snug.

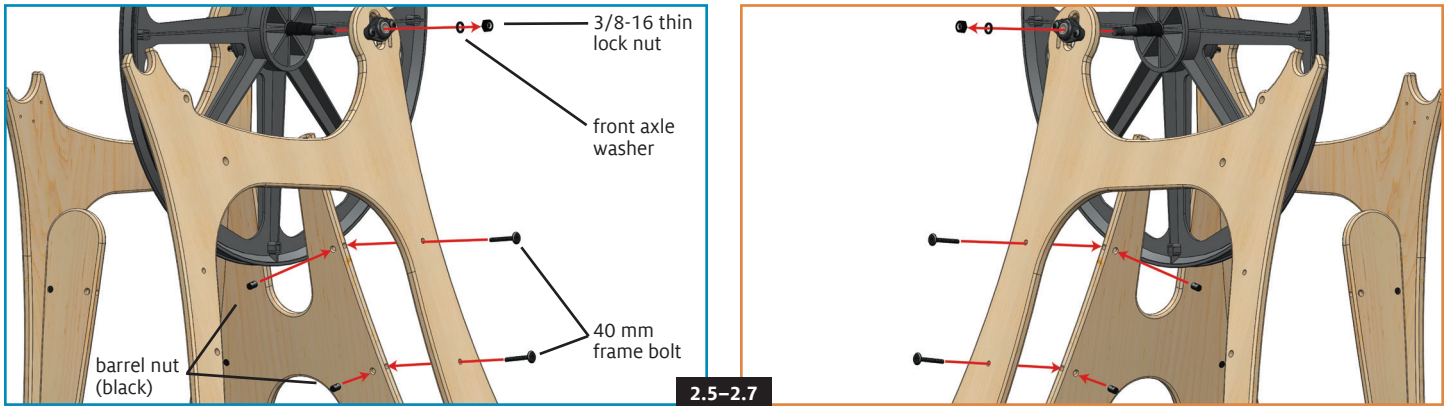


3. Slide the open end of the drive wheel axle through the rear axle bearing (attached in Step 1.1).

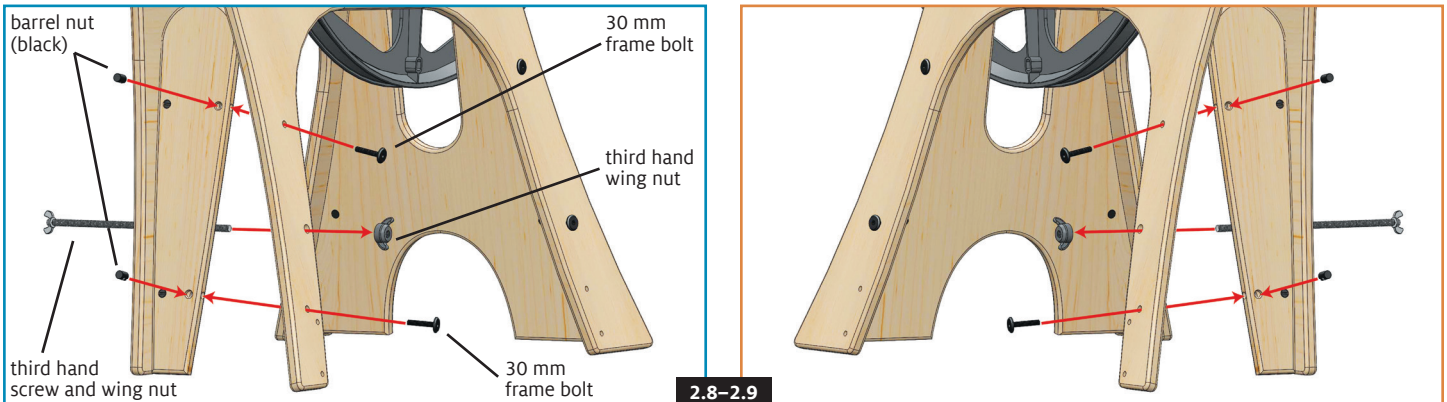
4. **Option:** If you plan on using the cotton double drive band, remove the installed poly drive band from the wheel now.



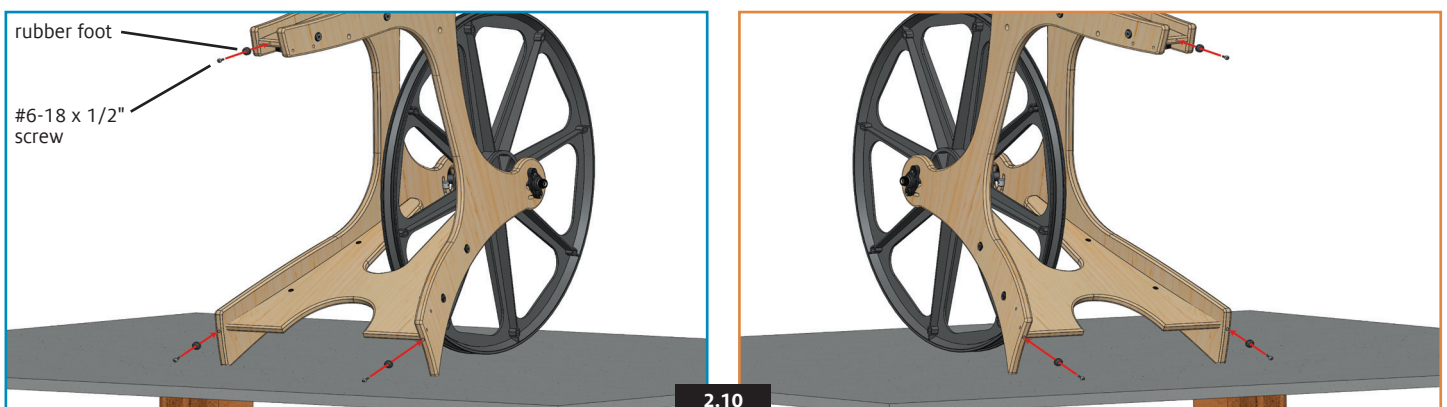
5. Install the front frame by sliding the threaded end of the axle through the front axle bearing (attached in Step 1.2).
6. Attach the wide leg of the front frame to the wide leg brace using the 40 mm frame bolts and black barrel nuts.
7. Attach the front axle washer and a 3/8-16 thin lock nut to the axle, tightening the lock nut only hand-tight at this time.



8. Remove a wing nut from the third hand assembly. Feed the plastic screw through the center hole on the narrow legs of the frames. Slide the wing nut back over the plastic screw and then tighten the wing nut until the narrow frame legs are in position against the narrow leg brace.
9. Attach the narrow leg of the front frame to the narrow leg brace using the 30 mm frame bolts and black barrel nuts. Remove the third hand assembly.

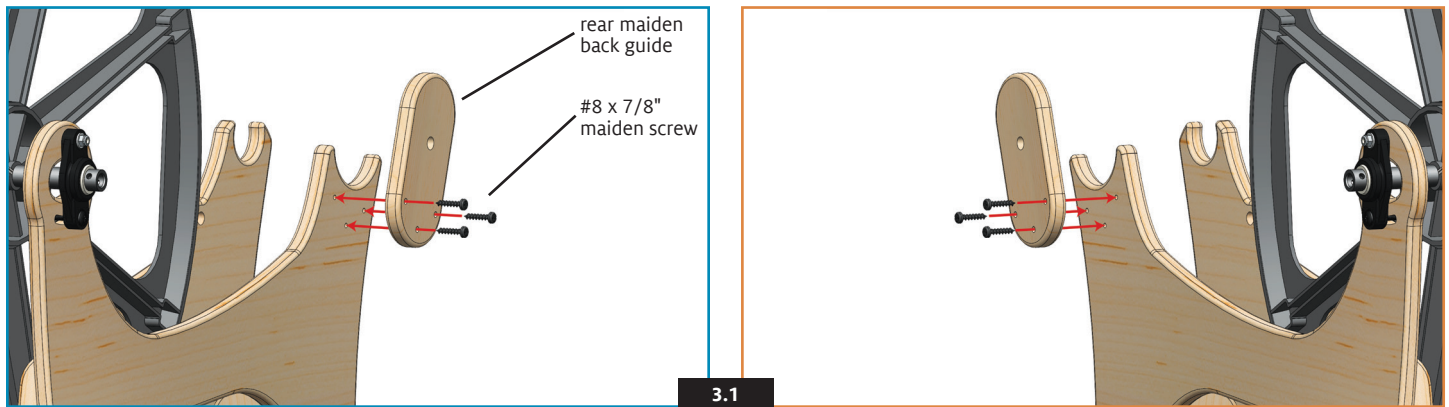


10. Tilt the wheel up on your work surface so that it is resting on the rim of the wheel and the wide legs of the frame. Using #6-18 x 1/2" screws, attach the rubber feet into the holes drilled in the bottom of the frame sides and narrow leg brace. Do not over-tighten or the screws will strip the holes.

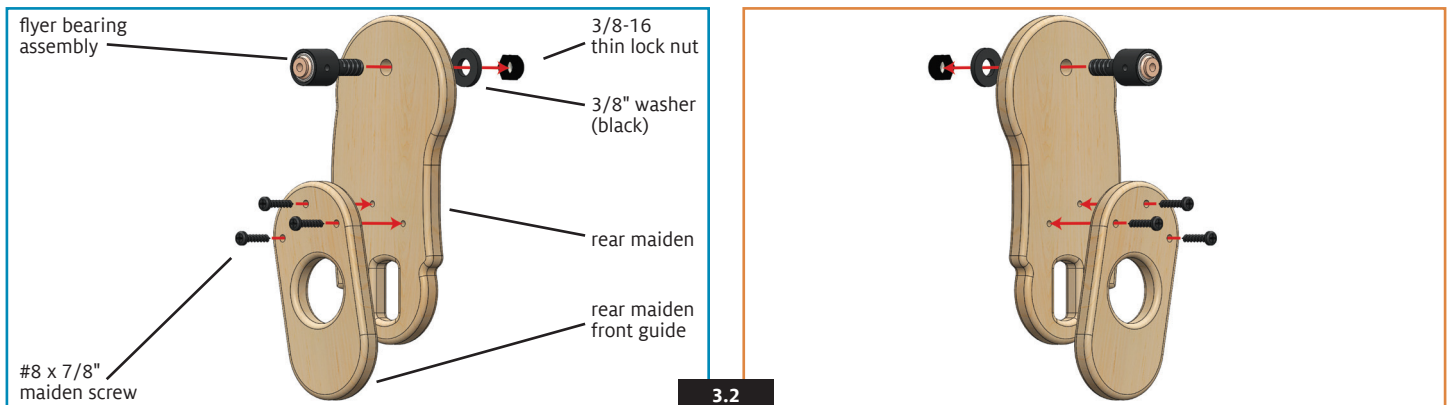


### 3. ASSEMBLING THE MAIDEN GUIDES [Parts bag #3]

1. Attach the rear maiden back guide to the outside of the rear frame using #8 x 7/8" maiden screws.



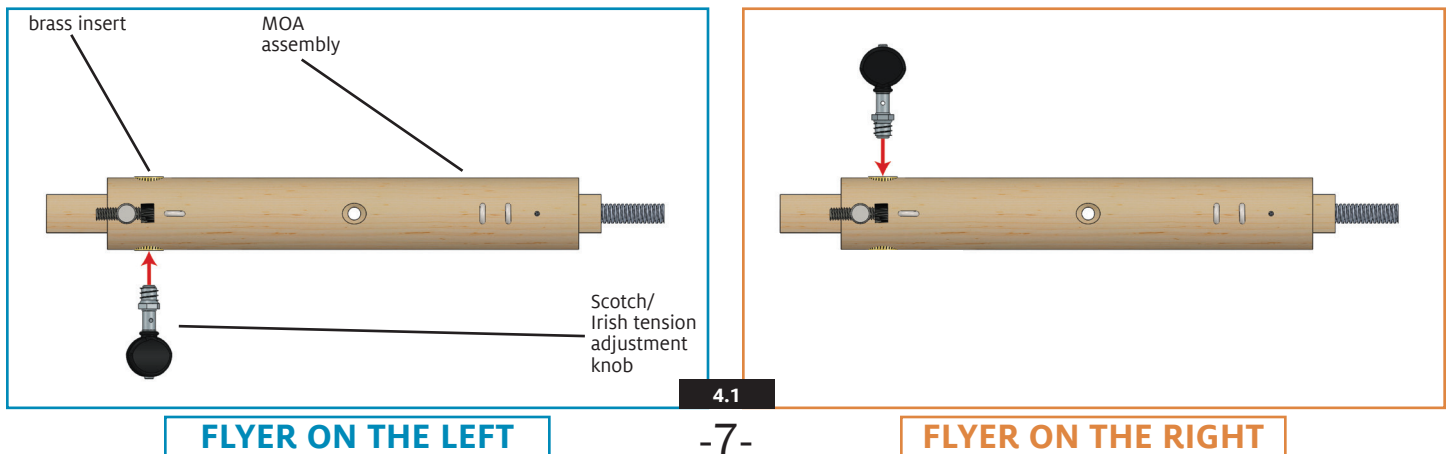
2. Assemble the rear maiden based on your decision to have the flyer on the left or the right. **Tip:** Insert the T-handle wrench through the hole in the side of the flyer bearing assembly and use it to hold the bearing in place while fully tightening the 3/8-16 thin lock nut until the bearing assembly is flush against the wood of the rear maiden.



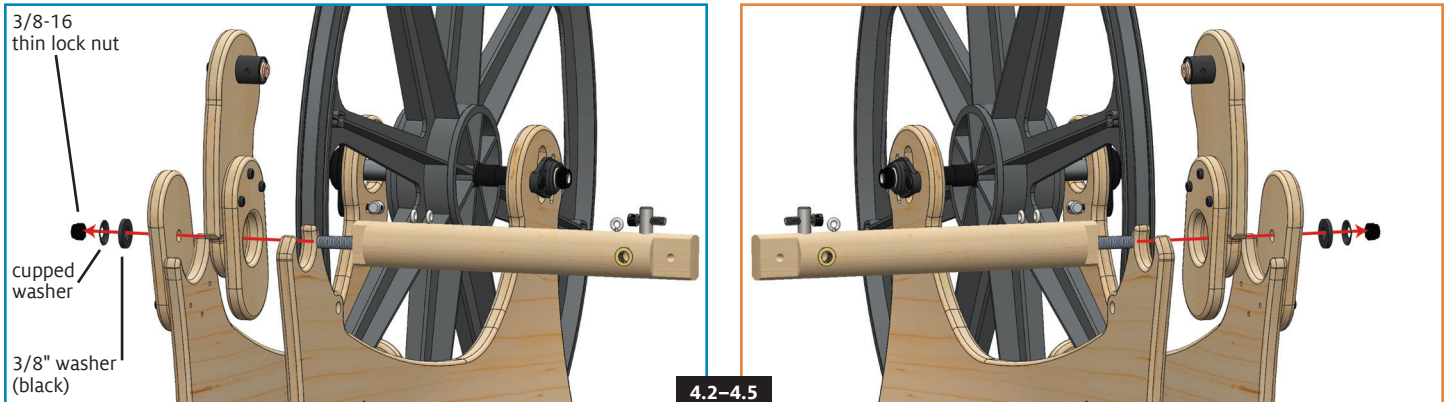
3. Tighten, but do not over-tighten, all of the frame bolts so that the frame sides take on the curves of the leg braces. Tighten the 3/8-16 thin lock nut installed on the drive wheel axle in Step 2.8.

### 4. INSTALLING THE MOTHER-OF-ALL (MOA) [Parts bag #4]

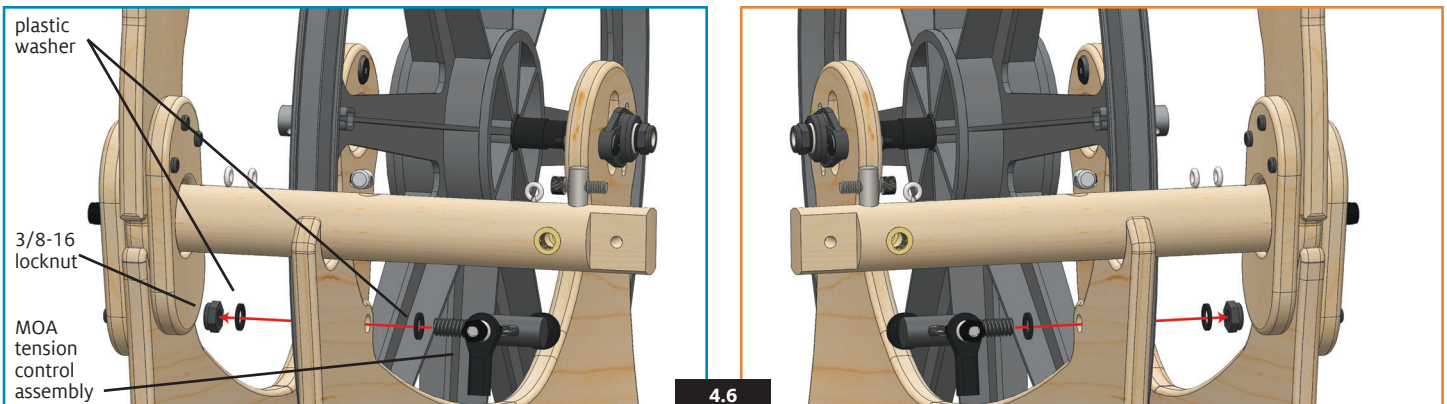
1. Thread the Scotch/Irish tension adjustment knob into the brass insert of the MOA assembly based on the flyer direction you have chosen for your Flatiron. Tighten using the 3/8" wrench.



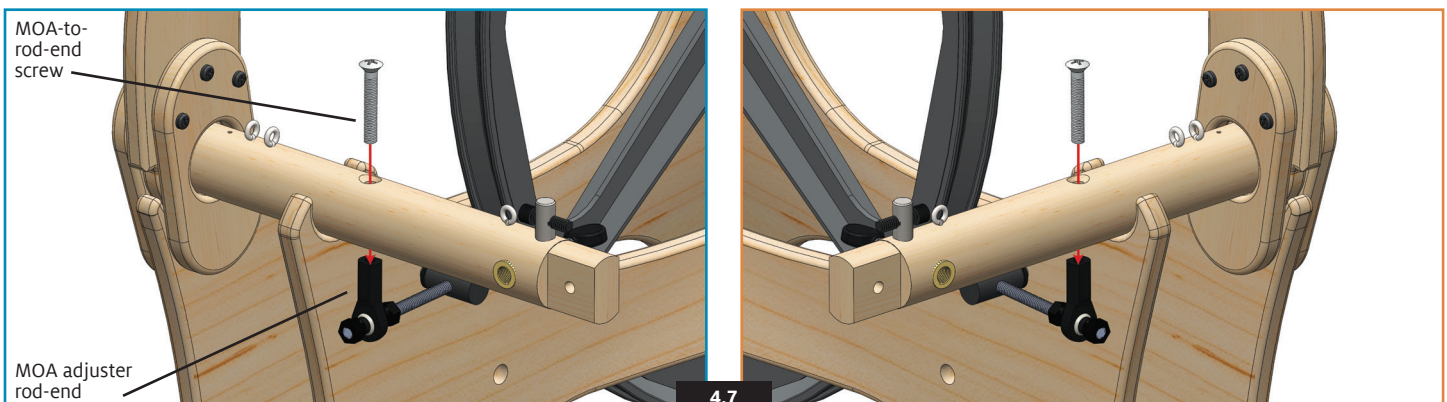
2. Slide the end of the MOA assembly with the threaded rod through the crescent-shaped hole on the front frame.
3. Fit the rear maiden assembly from Step 3.2 over the threaded rod and the wood tenon on the end of the MOA assembly.
4. Carefully slide the threaded rod through the hole in the rear maiden back guide (installed in Step 3.1). Gently rotate the MOA during this step to avoid damage to the plywood.
5. Slide the 3/8" washer (black) and then the cupped washer onto the threaded rod extending past the rear maiden back guide. Tighten a 3/8-16 thin lock nut onto the threaded rod. Do not over-tighten or you will flatten the cupped washer, preventing the MOA from rotating as it must to properly function.



6. Install a plastic washer over the threaded post of the MOA tension control assembly, then thread the tension control assembly through the hole in the front frame. Install another plastic washer on the post and secure with the 3/8-16 lock nut. **Do not over-tighten; the MOA tension control should turn and wiggle without binding.**



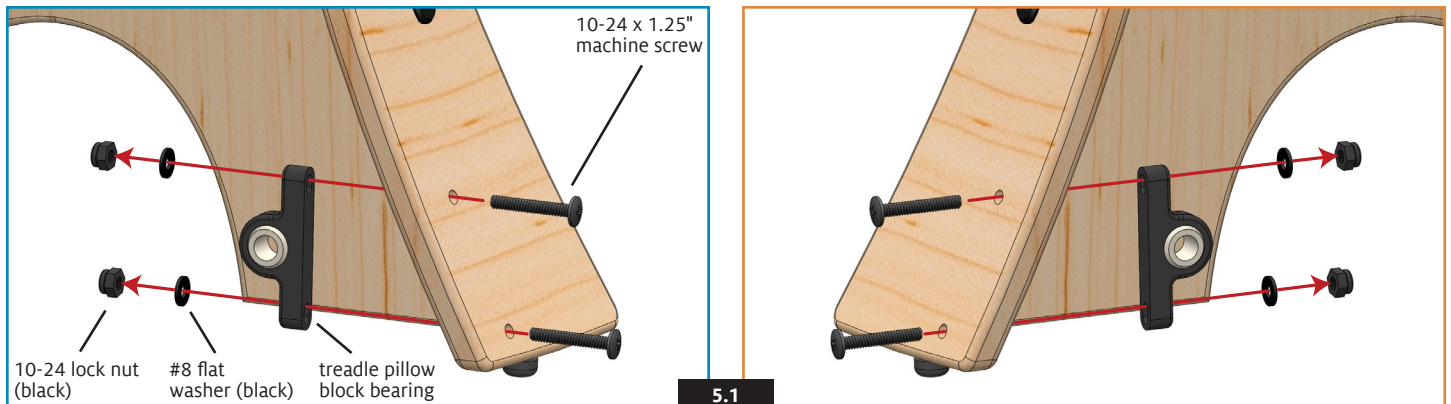
7. Using the 3/8" wrench, hold the rod end of the MOA tension control in place while threading the MOA-to-rod-end screw through the countersunk hole in the MOA and into the MOA adjuster rod-end.





## 5. INSTALLING THE TREADLES [Parts bag #5]

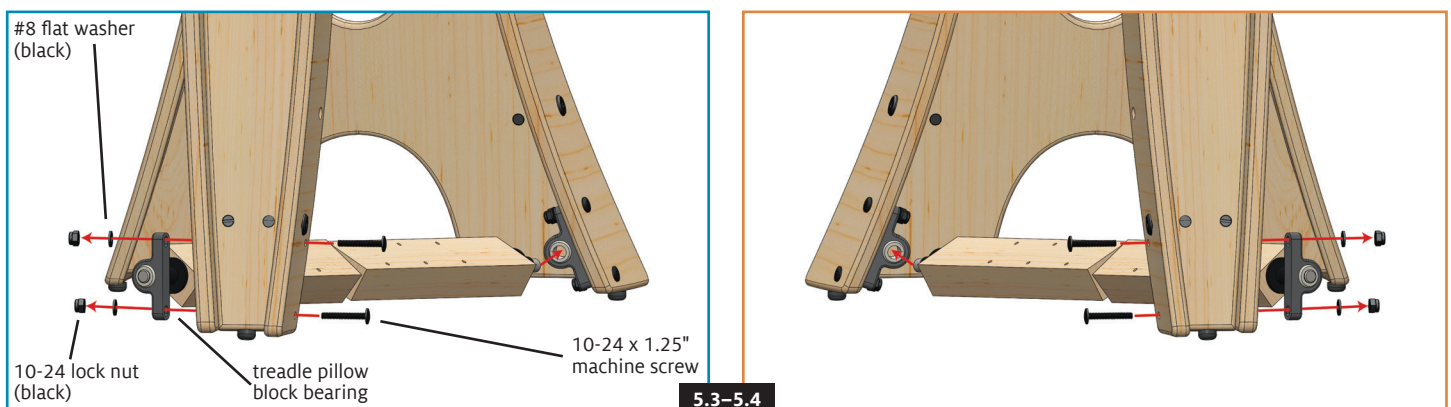
1. Attach a treadle pillow block bearing inside of the wide leg of the front frame. This is easier if you tilt the assembly back on the drive wheel as suggested in Step 2.11.



2. Slide the other treadle pillow block bearing onto the 2.5" end of the treadle bar. The treadle bar assembly will work as long as the longer (3.5") treadle block connects to the wide leg brace and the treadle axle spacers (which sometimes come loose during unpacking) are positioned with their wide "flanged" ends against the treadle block.



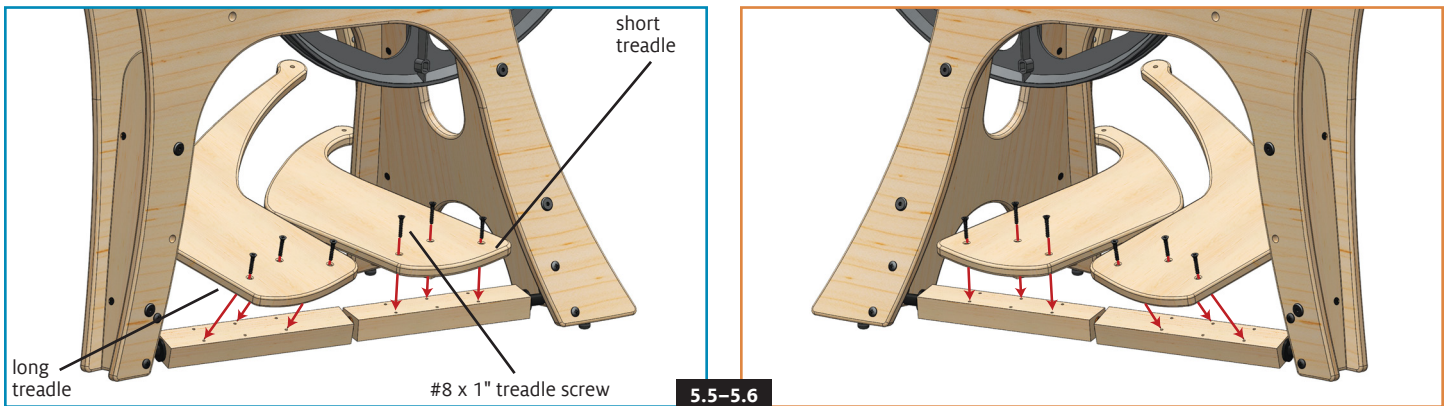
3. Fit the long end (3.5") of the treadle bar end into the pillow block on the wide leg of the front frame (attached in Step 5.1). Secure the loose treadle pillow block bearing (from Step 5.2) to the inside of the narrow leg of the front frame.



4. Rotate the treadle blocks so that the open channel is facing down.

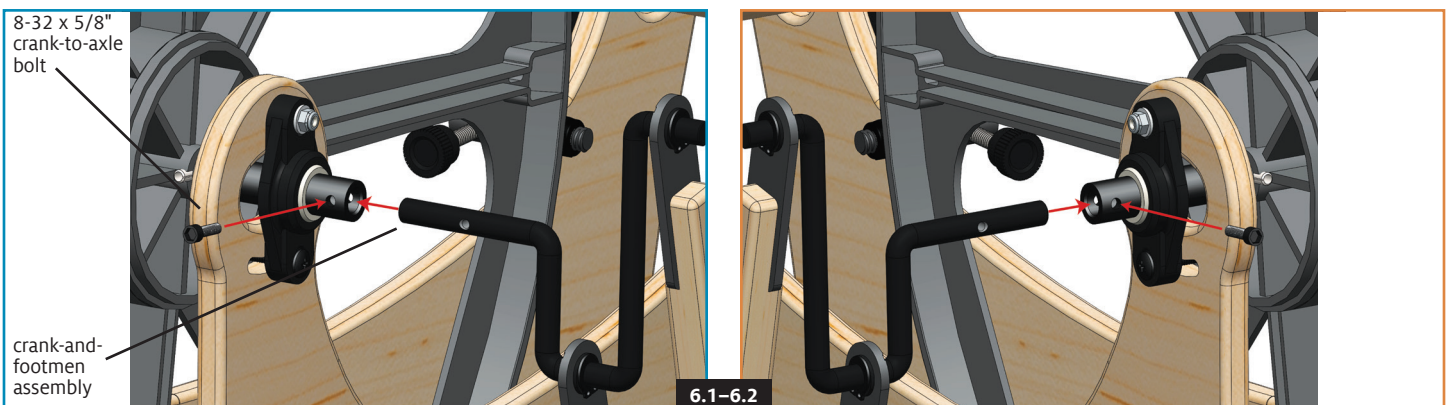
5. Lay out the treadles so that the short treadle is nesting inside of the long treadle with both of the treadle arms pointed towards the back (wide legs) of the Flatiron.

6. Attach the treadles to the treadle blocks using the #8 x 1" treadle screws (Figures 5.5–5.6, page 10).

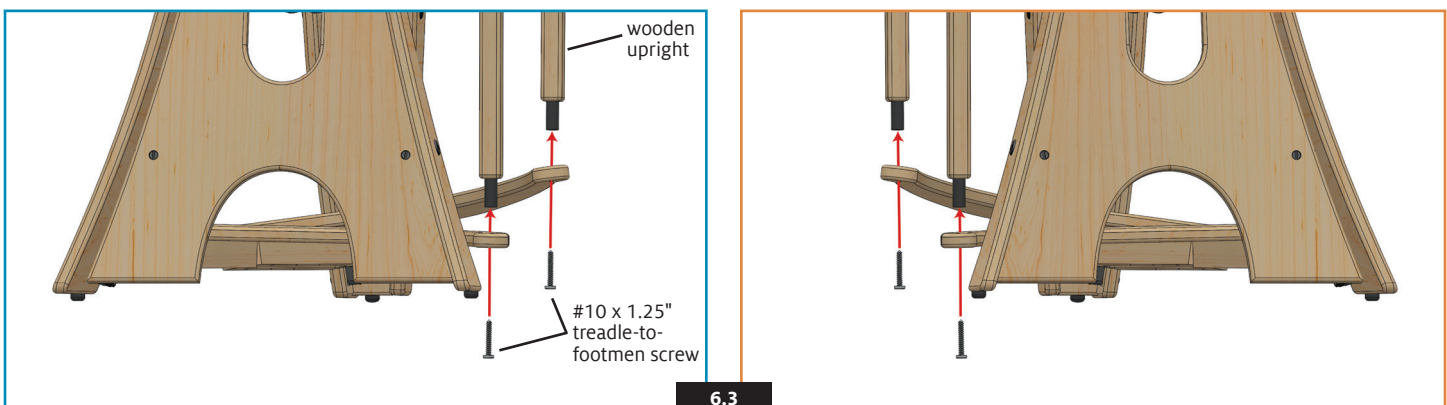


## 6. INSTALLING THE CRANK-AND-FOOTMEN [Parts bag #6]

1. Slide the long end of the crank from the crank-and-footmen assembly into the open end of the drive wheel axle, lining up the hole in the axle with the threaded hole in the crank arm.
2. Secure the crank to the axle using the 8-32 x 5/8" crank-to-axle bolt. Tighten the bolt using the 9/64" hex wrench until the crank does not wriggle in the axle.

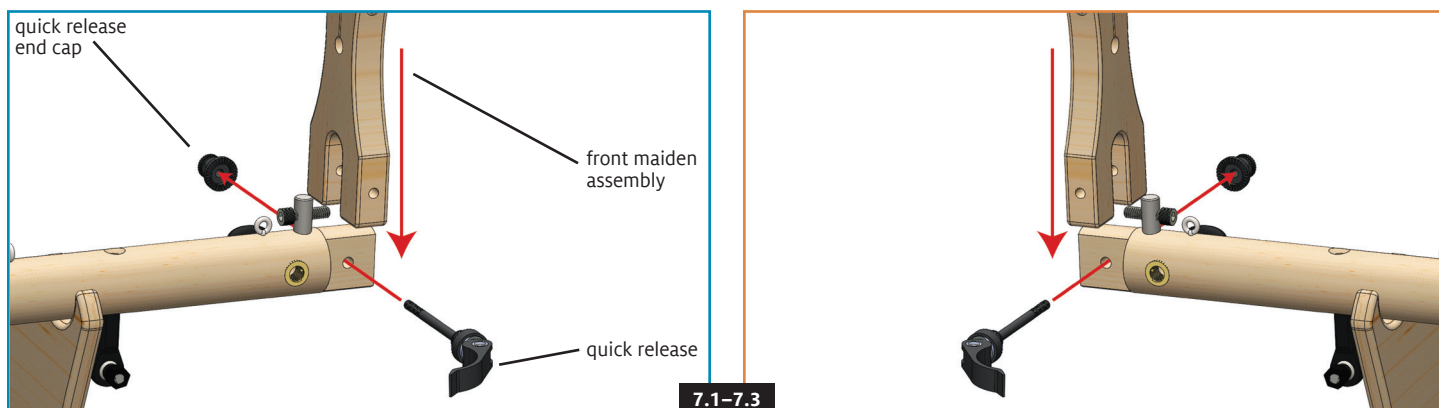


3. Secure the treads to the footmen. Slide the #10 x 1.25 treadle-to-footmen screws up through the holes in the treadle arms and into the rubber connectors at the bottom of the footmen. The outer footman connects to the longer treadle, the inner footman to the shorter treadle. Tighten until snug, but do not over-tighten. This step is made easier if you tilt the assembly back on the drive wheel as suggested in Step 2.11. After the screws are installed, twist the footmen so that the sides of the wooden uprights, and the straps holding them to the crank, are all parallel to each other and to the drive wheel as well. The treadle-to-footman screw may have to be loosened a bit to assist in twisting to parallel.



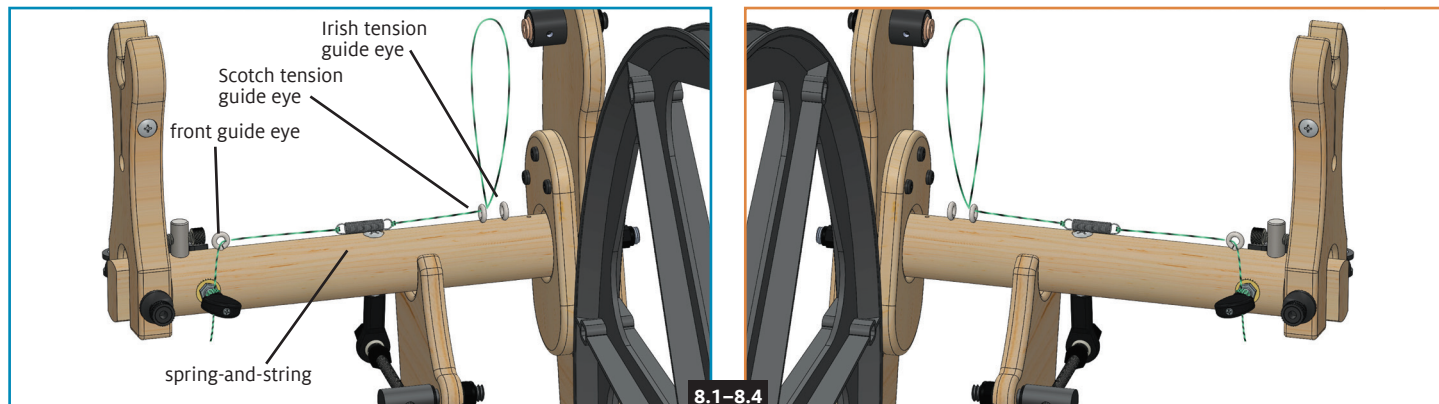
## 7. INSTALLING THE FRONT MAIDEN [Parts bag #7]

1. With the Schacht logo facing out, fit the slot of the front maiden over the tenon end of the MOA until the holes line up.
2. Unscrew the end cap from the quick release. Leaving the spring on the lever side of the assembly, fit the post of the quick release through the holes of the front maiden and MOA. Screw the end cap back onto the post.
3. Close the quick release lever to hold the maiden in place. If the lever doesn't fully close, open the lever and unscrew the end cap slightly until it does.



## 8. INSTALLING THE TENSION SPRING-AND-STRING, DRIVE BAND, AND FLYER ASSEMBLY [Parts bag #7]

1. Position the spring-and-string assembly so that the spring is positioned over the MOA-to-rod-end screw (installed in Step 4.7).
2. Guide the end of the string through the front guide eye and then through the hole on the tension control knob (installed in Step 4.1).
3. Tie a knot in the end of the string and turn the tension control knob a few revolutions in either direction to take up some of the slack; you will tighten the string after choosing a tension style in Step 11.
4. Guide the looped end of the string through either the Scotch tension or Irish tension guide eye, depending on your desired tension style.

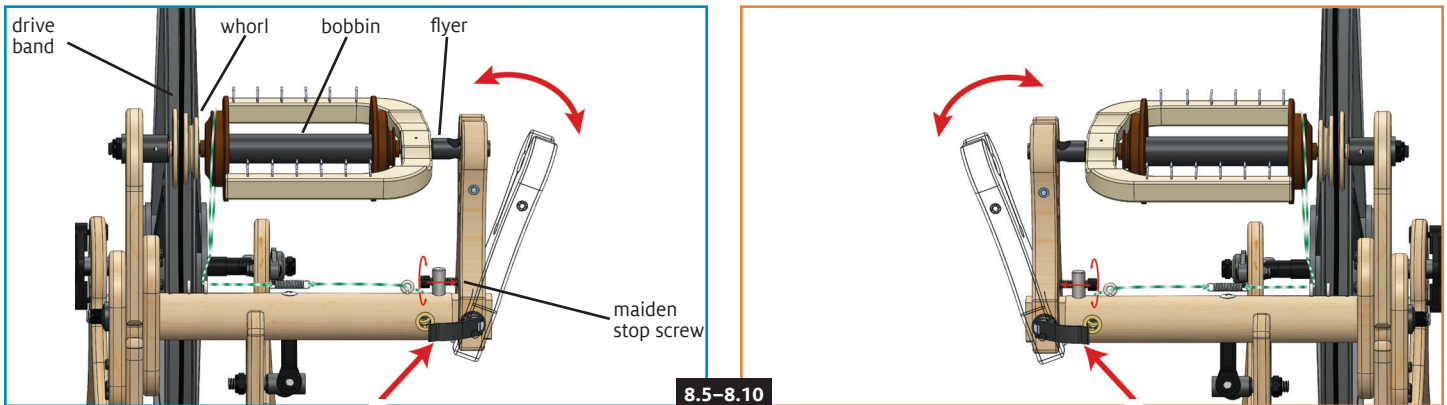


5. Open the quick release and let the front maiden fall open.
6. Slide the bobbin and then a whorl on to the flyer shaft.
7. Fit the looped end of the tension spring-and-string around the bobbin groove for Scotch tension or the open groove in the whorl for Irish tension. (For Irish tension, save this step until after Step 8.8).

**FLYER ON THE LEFT**

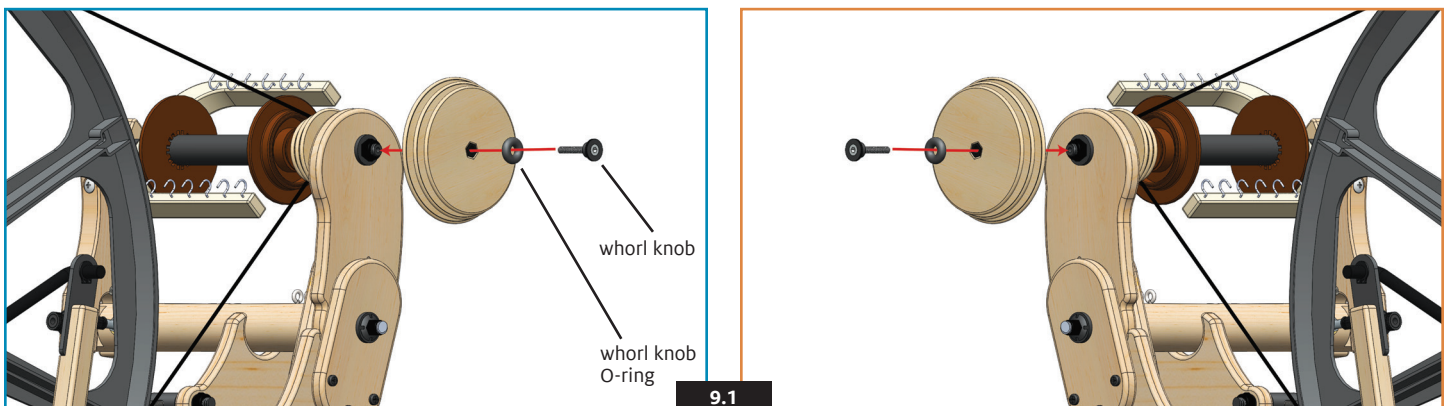
**FLYER ON THE RIGHT**

8. If you are using the poly drive band, untape it from the wheel and loop it over a groove in the whorl.
9. Close the front maiden into a position where the flyer assembly will not travel more the 1/16" back and forth between front and rear maidens as you operate the treadles.
10. Adjust the maiden stop screw so that it rests against the front maiden, maintaining this 1/16" spacing. This screw prevents the front maiden from folding back and binding the flyer, slowing your spinning.

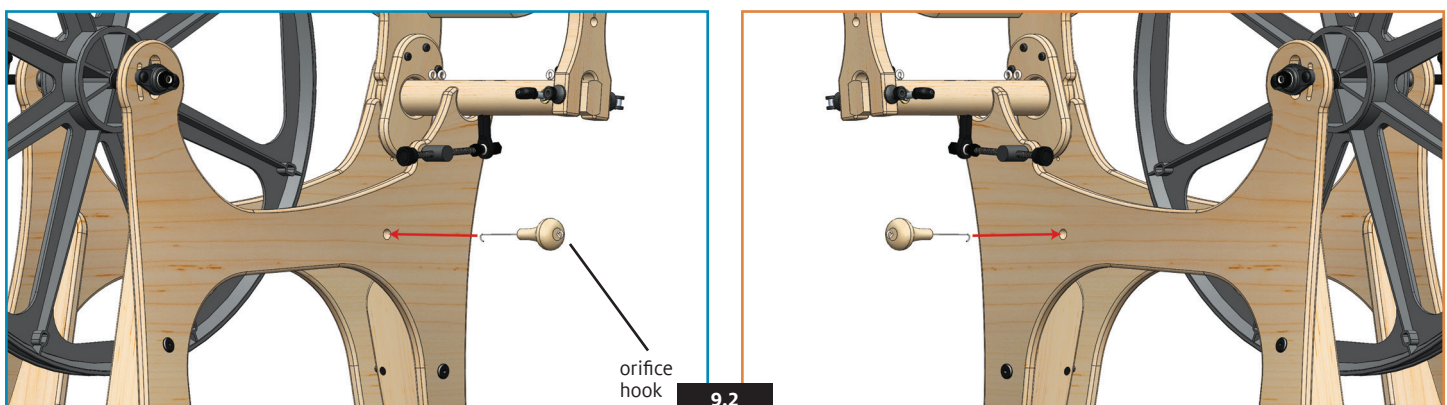


## 9. FINISH ASSEMBLY OF THE FLATIRON SPINNING WHEEL [Parts bag #7]

1. Slip the whorl knob O-ring over the whorl knob and use it to secure the unused whorl to the back side of the rear maiden by screwing the whorl knob into the threaded opening on the flyer bearing (installed in Step 3.2).

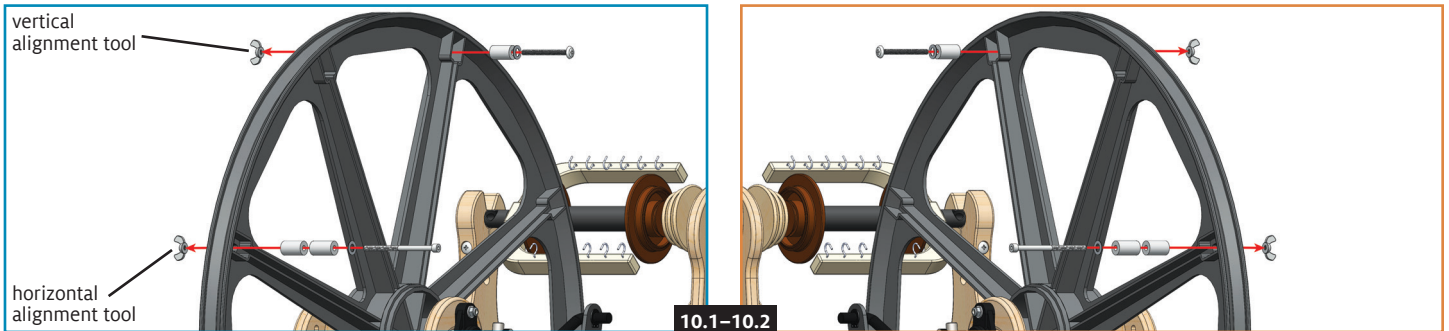


2. Store the orifice hook in the hole drilled in the front frame.

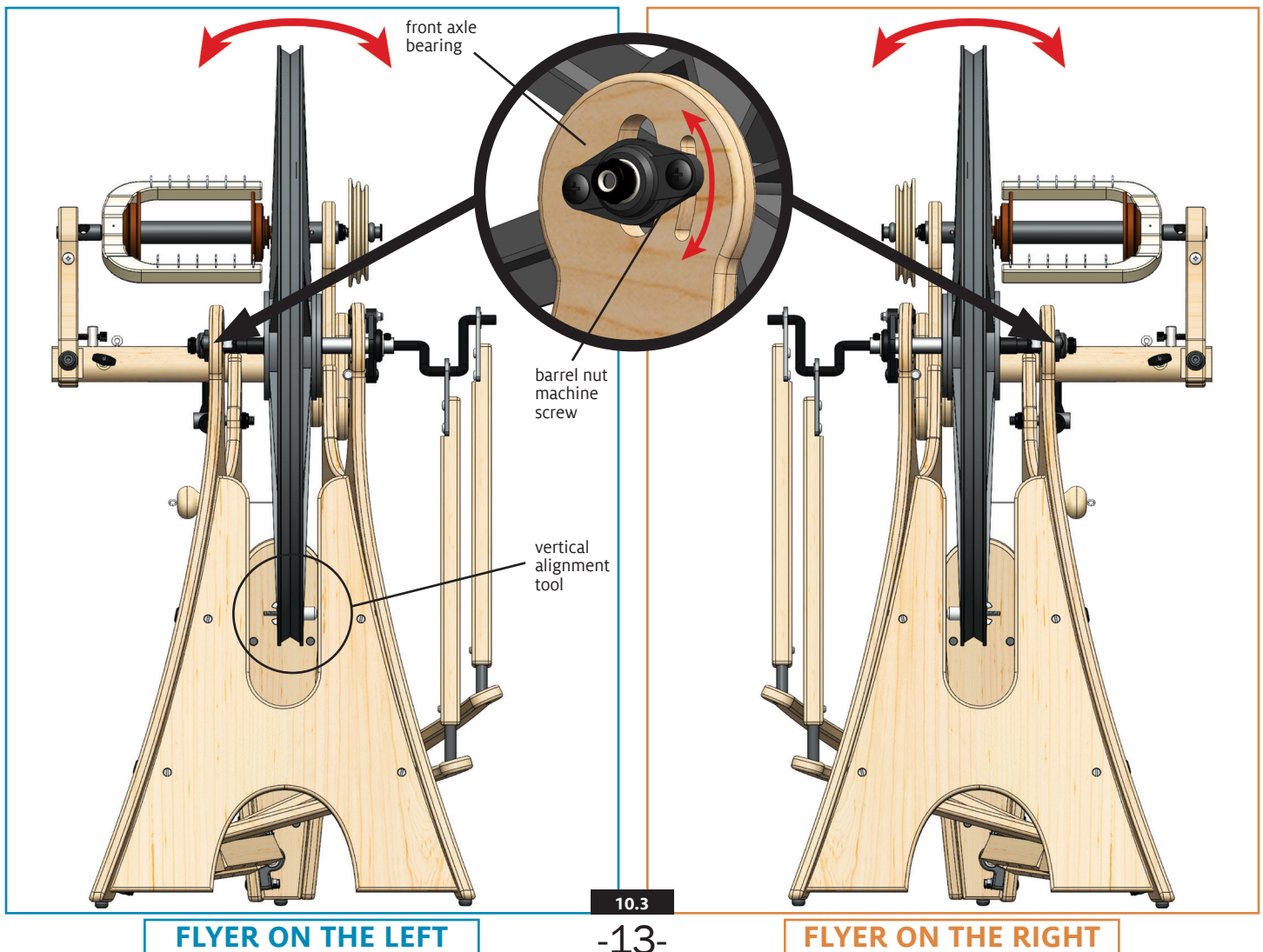


## 10. ALIGNING THE DRIVE WHEEL

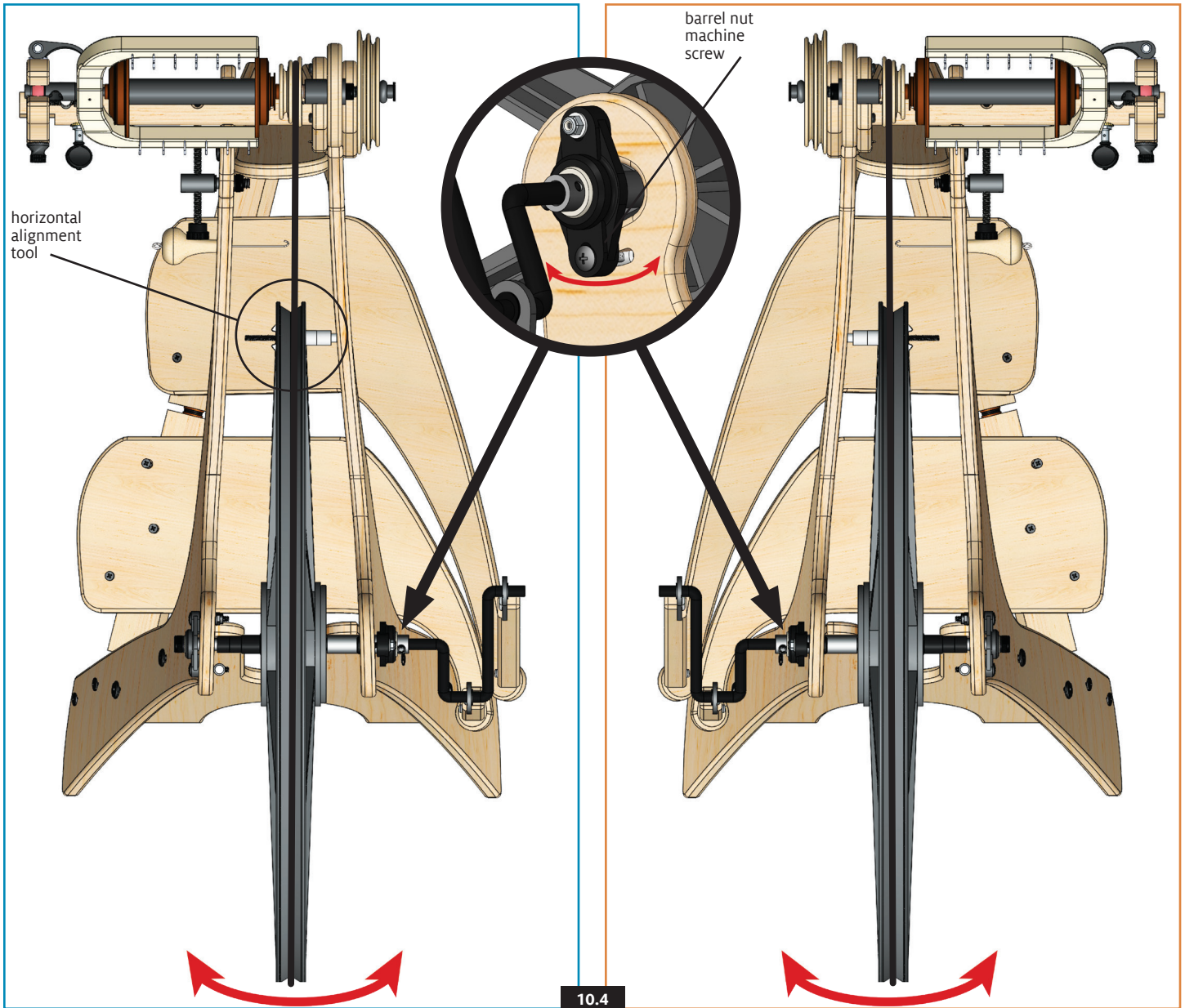
1. Unscrew the wing nut from the horizontal alignment tool, which has 2 nylon spacers. Keep the spacers and washer on the bolt. Slide the bolt through any of the recessed holes in the wheel rim from the rear frame side through to the front frame side and re-attach the wing nut, securing the tool in place.
2. Unscrew the wing nut from the vertical alignment tool, which has 1 nylon spacer. Keep the spacer and washer on the screw. Slide it through the recessed hole in the wheel rim that is 2 spokes (90°) ahead of the horizontal alignment tool. Re-attach the wing nut, securing the tool in place.



3. **Vertical adjustment:** Rotate the wheel forward until the vertical alignment tool is in line with the wide leg brace. Holding the top of the drive wheel, pivot the drive wheel left or right and also pivot the front axle bearing up and down until the alignment tool just passes by the upright of the wide leg brace as the wheel is rotated. Tighten the barrel nut machine screw to secure the spacing.

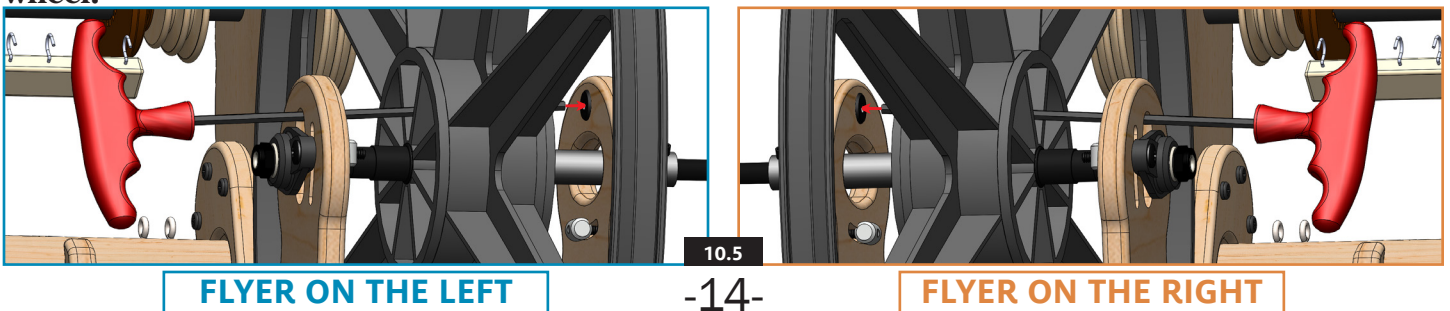


**4. Horizontal alignment:** Rotate the drive wheel until the horizontal alignment tool is in line with the top edge of the rear frame. Stand above the Flatiron and look down. Holding the drive wheel in the front or rear, pivot it to the left or right until the alignment tool just kisses the rear frame when the wheel is rotated. Tighten the barrel nut machine screw to secure the spacing. You may find it easiest to remove the crank from the axle (installed in Steps 6.1–6.2) to have better access to the rear axle bearing screws.



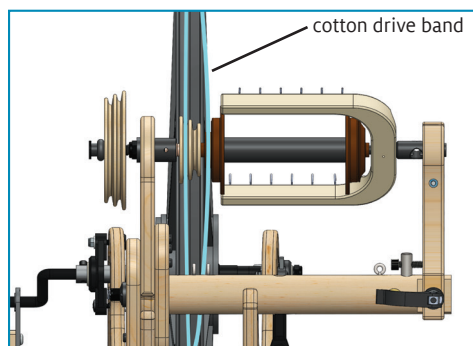
**5.** Re-check all alignments and adjust again if necessary. Tighten all screws to secure the spacing. Insert the T-handle wrench through the front frame and wheel hub to reach the 30 mm frame bolt that holds the top of the rear axle bearing.

**6.** You are now finished with the alignment tools—remove them to prevent damaging your wheel.

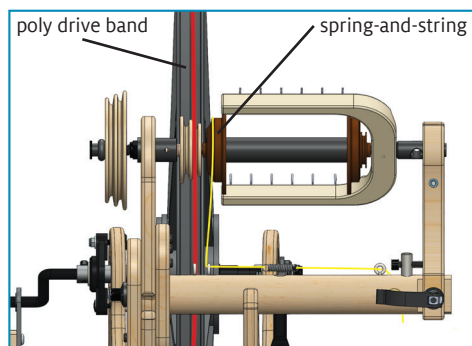


## 11. CHOOSE A TENSION STYLE

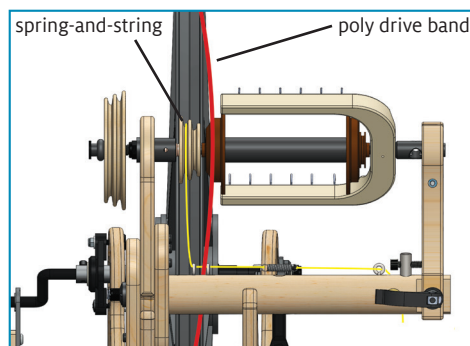
1. Choose one of the standard tension styles and then follow the illustrations and instructions shown below to set up your Flatiron wheel.



**DOUBLE DRIVE**  
The cotton drive band is looped twice around the drive wheel, with one loop over a whorl groove and one loop over the small bobbin groove.

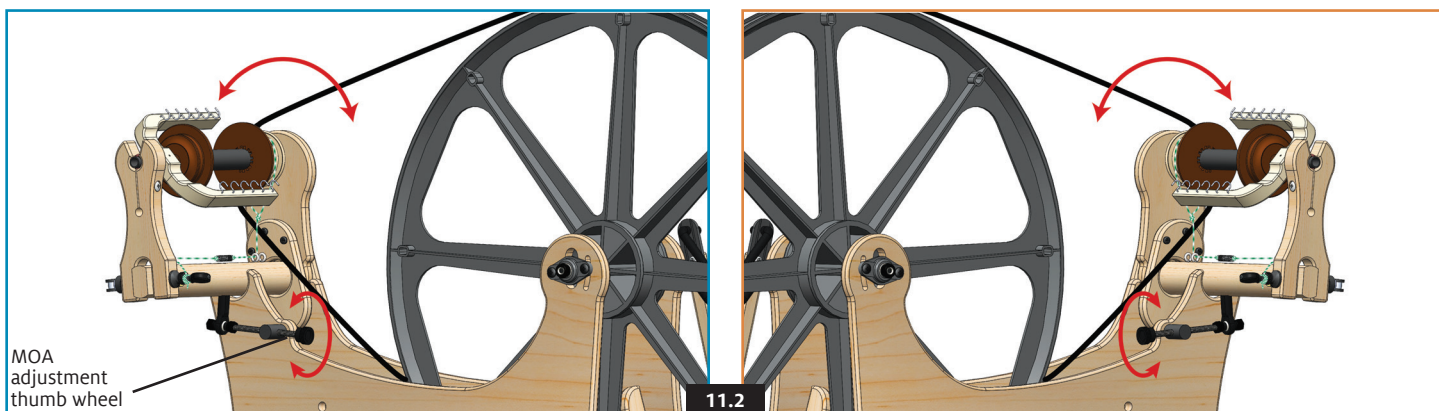


**SCOTCH TENSION**  
The poly drive band is looped over a whorl groove and the loop from the tension spring-and-string is over the large groove on the bobbin.



**IRISH TENSION**  
The poly drive band is looped over the large bobbin groove and the loop from the tension spring-and-string is looped around over a whorl groove.

2. To fine-tune drive band tension, spin the thumb wheel on the MOA tension control (installed in Step 4.6) to move the flyer assembly out relative to the drive wheel, which increases the strength of the take-up, or to move the flyer assembly in, which lessens the strength of the take-up.



3. Visit our website ([www.schachtspindle.com](http://www.schachtspindle.com)) or our Youtube channel ([www.youtube.com/user/schachtspindle](http://www.youtube.com/user/schachtspindle)) to learn how to tie a double drive band, discover some tips and tricks you may not know yet, or to watch a video of The Flatiron being assembled according to these instructions.

## 12. ADJUSTING / REPLACING THE DRIVE BAND

1. Removing or replacing the drive band on your Flatiron is easy. Remove the 10-24 x 1.25" machine screws, axle washer, 3/8-16 thin lock nut, and front axle bearing (see Figures 12.1–12.4 on page 16).

2. **To remove a band:** Pulling from inside of the front frame, take the drive band down from around the drive wheel and towards the treadles. When the drive band stops, roll it off the edge of the axle and remove it.

3. **To install a band:** Starting from the inside of the front frame, feed the new drive band into the oval-shaped hole where the axle rests, looping up and over the axle and back to the inside of the front frame.

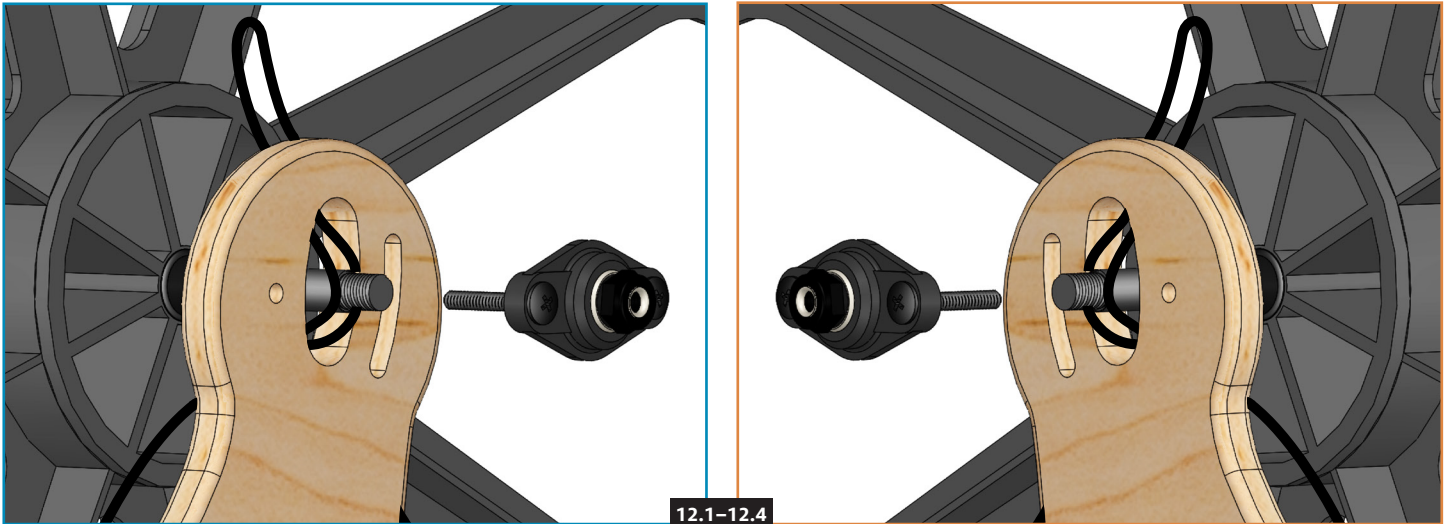
FLYER ON THE LEFT

-15-

FLYER ON THE RIGHT

Bring the loop up and over the drive wheel. Make sure that the entire drive band is between the two frame sides.

4. Reinstall the 10-24 x 1.25" machine screws, front axle washer, 3/8-16 thin lock nut, and front axle bearing that you removed in Step 12.1.



#### MAINTENANCE NOTES

Your wheel is both a carefully engineered piece of equipment and a fine piece of furniture. A regular schedule of care and maintenance will ensure that you and your Flatiron spinning wheel enjoy many productive years together.

- Periodically clean excess fibers from all parts of your wheel.
- Lubricate the non-wood moving parts as needed.
- Touch up worn or chipped wood areas with fine sandpaper and Danish oil.
- Check screws for tightness. (Changes in the environment and the action of spinning can cause screws and nuts to loosen over time.)

#### WHEEL SERIAL NUMBER

The serial number of your spinning wheel is stamped into the wood on the inside of the front maiden. The number is stamped upside down so that it can be read from above when the front maiden is open.

#### TWO YEAR LIMITED WARRANTY

Schacht products are warranted, to the original consumer purchaser, by Schacht Spindle Company to be free of defects in material and workmanship. Schacht Spindle Company's obligation under this Warranty shall be limited to the repair or replacement of any part or parts which may prove defective within two (2) years following the date of original purchase by the consumer, and which Schacht Spindle Company's examination shall disclose to our satisfaction to be thus defective.

If a problem with this Schacht Spindle Company product develops during the warranty period, first contact the Schacht Spindle Company dealer from whom you made the purchase. If the problem cannot be handled through your dealer, contact our customer service department. At our option, it may be required that the product be returned to our factory, freight prepaid, for inspection and repair and/or replacement.

This Warranty covers normal consumer use and does not cover damage which occurs in shipment or damage that results from alteration, accident, misuse, abuse, or neglect.

This Warranty gives you specific legal rights, and you may also have other rights that may vary from state to state.

This Warranty is not valid for equipment that has served as dealer floor models that have outlived the term of the warranty or products that have been purchased through a third party.