



# THE FLATIRON SPINNING WHEEL

## ASSEMBLY INSTRUCTIONS



Find out more at [schachtspindle.com](http://schachtspindle.com)  
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09.16

# 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>

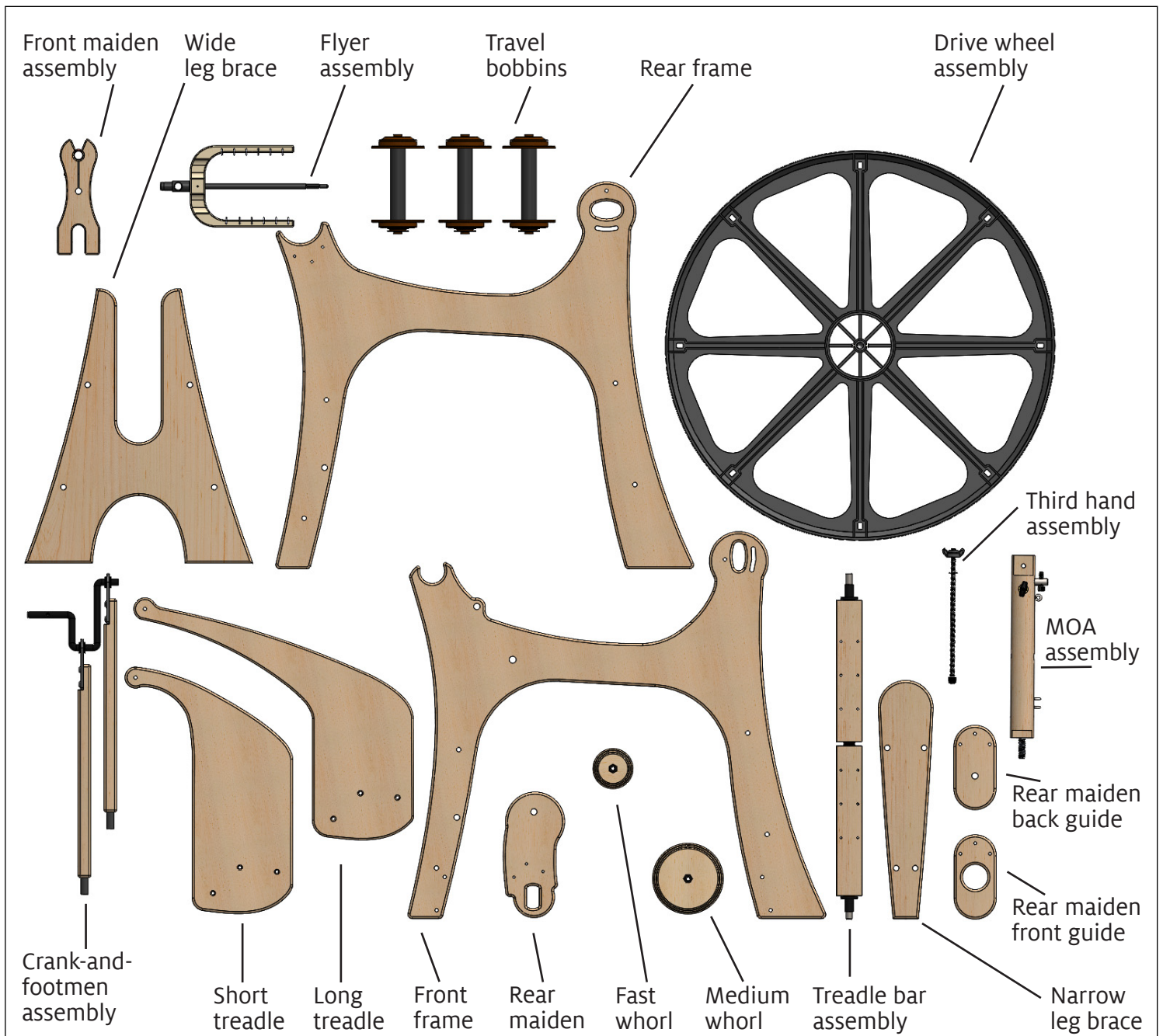
### PARTS

- 1 - Front frame
- 1 - Rear frame
- 1 - Crank-and-footmen assembly
- 1 - Rear maiden
- 1 - Rear maiden front guide
- 1 - Rear maiden back guide
- 1 - MOA assembly
- 1 - Front maiden assembly
- 1 - Drive wheel assembly
- 1 - Treadle bar assembly
- 1 - Short treadle
- 1 - Long treadle
- 1 - Wide leg brace
- 1 - Narrow leg brace
- 1 - Flyer assembly
- 3 - Travel bobbins
- 1 - Fast whorl
- 1 - Medium whorl
- 1 - Third hand assembly
- 8 - Parts bags

### TOOLS NEEDED

- Phillips screwdriver
- Flat screwdriver

This instruction booklet is for Flatiron spinning wheels with a serial number of **FI 093016** or lower. Wheels with higher serial numbers have different tools & some instructions have changed; please use instruction sets dated 10.16 or later on the front cover for those models.



### BAG #1 – PREPARING THE FRAME SIDES

- 1X 14-410045 REAR AXLE BEARING (LARGE)
- 1X 14-410040 FRONT AXLE BEARING (SMALL)
- 1X 12-200224 5MM LOCKNUT (ZINC)
- 1X 19-910025 30MM FRAME BOLT
- 3X 19-380015 10-24 x 1.25" MACHINE SCREW
- 2X 19-910005 10-24 BEVELED BARREL NUT (CHROME)
- 1X 19-380001 10-24 LOCKNUT (BLACK)
- 1X 20-33072 #8 FLAT WASHER (ZINC)
- 1X 12-200227 #8 FLAT WASHER (BLACK)

### BAG #2 – ASSEMBLING THE FRAME

- 4X 19-910025 30MM FRAME BOLT
- 4X 19-910020 40MM FRAME BOLT
- 8X 19-910030 BARREL NUT (BLACK)
- 2X 14-410065 SHORT AXLE SPACER
- 1X 14-410062 LONG AXLE SPACER
- 1X 14-410041 FRONT AXLE WASHER
- 1X 12-200223 3/8-16 THIN LOCKNUT
- 3X 23-400070 RUBBER FOOT
- 3X 20-31226 #6-18 x 1/2" SCREW

### BAG #3 – ASSEMBLING THE MAIDEN GUIDES

- 6X 12-200237 #8 x 7/8" REAR MAIDEN SCREW
- 1X 12-200223 3/8-16 THIN LOCKNUT
- 1X 12-200226 3/8" WASHER (BLACK)
- 1X 16-900125 FLYER BEARING ASSEMBLY

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

- 1X 12-250006 CUPPED WASHER
- 1X 12-200226 3/8" WASHER (BLACK)
- 1X 12-200223 3/8-16 THIN LOCKNUT
- 1X 16-900420 MOA TENSION CONTROL ASSEMBLY
- 1X 12-200239 MOA-TO-ROD-END SCREW
- 2X 14-400052 PLASTIC WASHER
- 1X 19-380010 3/8-16 LOCKNUT
- 1X 19-900048 SCOTCH/IRISH TENSION ADJUSTMENT KNOB

### #5 – INSTALLING THE TREADLES

- 4X 19-380015 10-24 x 1.25" MACHINE SCREW
- 4X 12-200227 #8 FLAT WASHER (BLACK)
- 4X 19-380001 10-24 LOCKNUT (BLACK)
- 2X 14-410043 TREADLE PILLOW BLOCK BEARING
- 6X 12-200235 #8 x 1" TREADLE SCREW

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

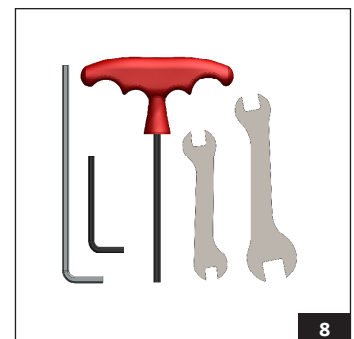
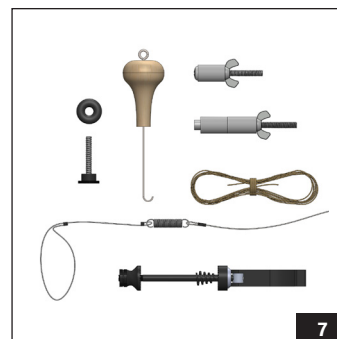
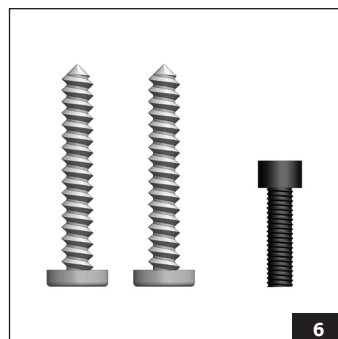
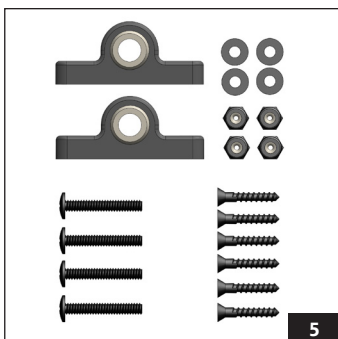
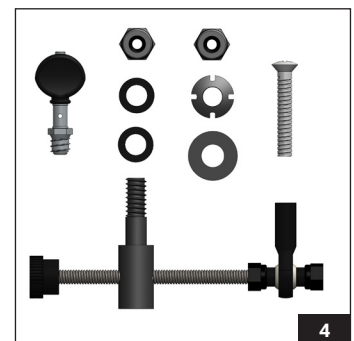
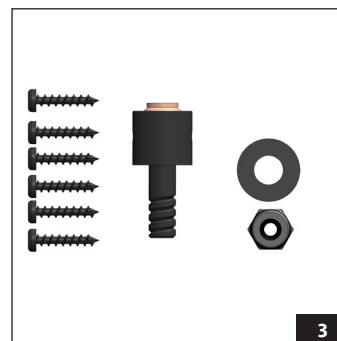
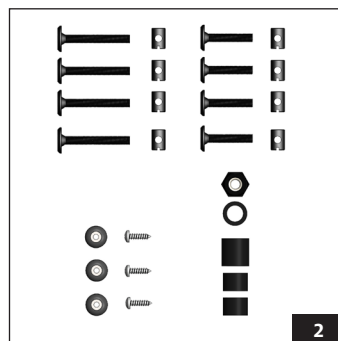
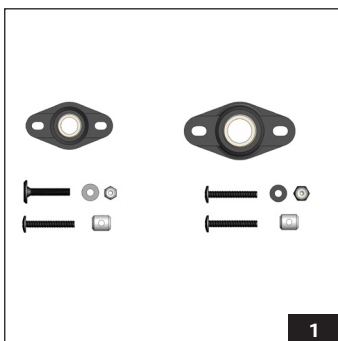
- 2X 12-200229 #10 x 1.25" TREADLE-TO-FOOTMAN SCREW
- 1X 20-200238 8-32 x 5/8" CRANK-TO-AXLE BOLT

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

- 1X 19-900046 QUICK RELEASE
- 1X 16-900256 SPRING-AND-STRING ASSEMBLY
- 1X 14-400091 WHORL KNOB
- 1X 14-410070 WHORL KNOB O-RING
- 1X 22-400061 STRING DRIVE BAND
- 1X 16-900023 THREADING HOOK
- 1X 16-900417 VERTICAL ALIGNMENT TOOL
- 1X 16-900418 HORIZONTAL ALIGNMENT TOOL

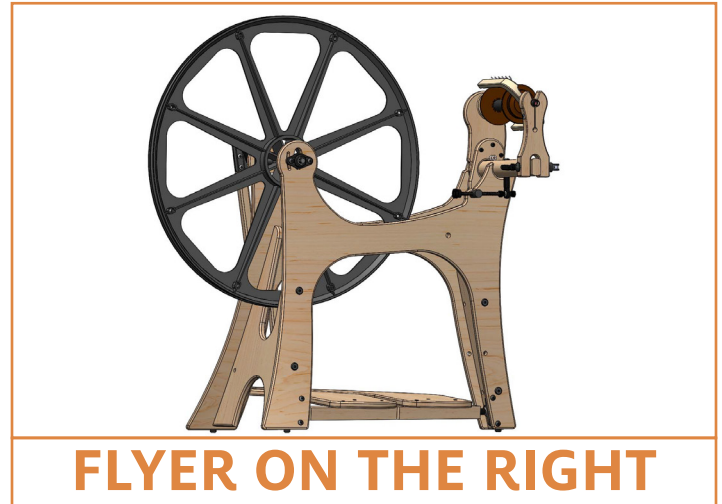
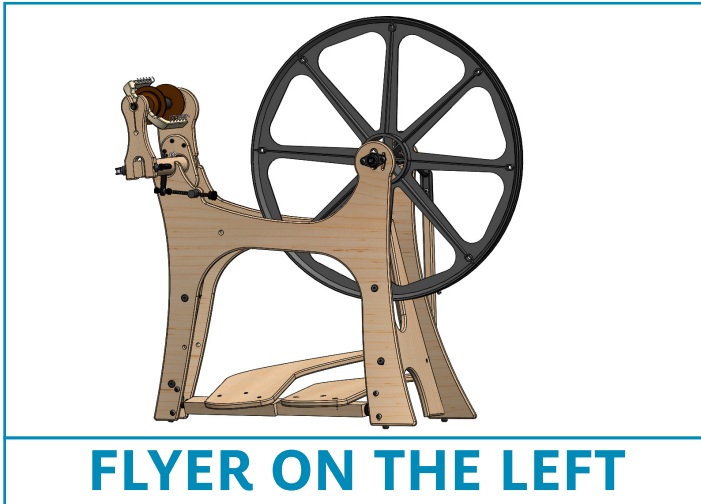
### BAG #8 – TOOLS

- 1X 12-200145 WRENCH #1 (7/16" x 9/16")
- 1X 12-200148 WRENCH #2 (3/8" x 8MM)
- 1X 12-200143 4MM T-HANDLE WRENCH
- 1X 19-200142 4MM LONG HEX WRENCH
- 1X 12-200142 9/64" HEX WRENCH



## PREPARING TO ASSEMBLE YOUR FLATIRON

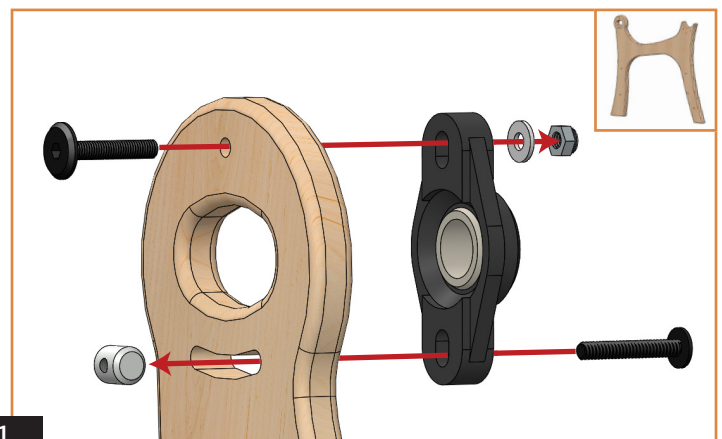
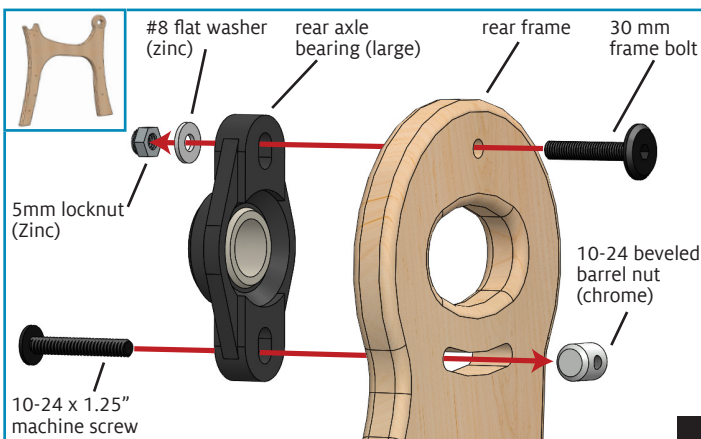
1. Carefully open all packaging and wrapping. Lay all parts out and verify that you have them all. Open parts bag #8 [in the box marked "hardware"] to access the tools you will need to assemble the wheel, leave the rest of the bagged parts in their bags until the instructions call for them.
2. Determine if you want to build your wheel with the flyer on the left or the flyer on the right. The Flatiron is designed to be easily built either direction. [Flyer on the left assembly illustrations are outlined in blue, flyer on the right in orange.]



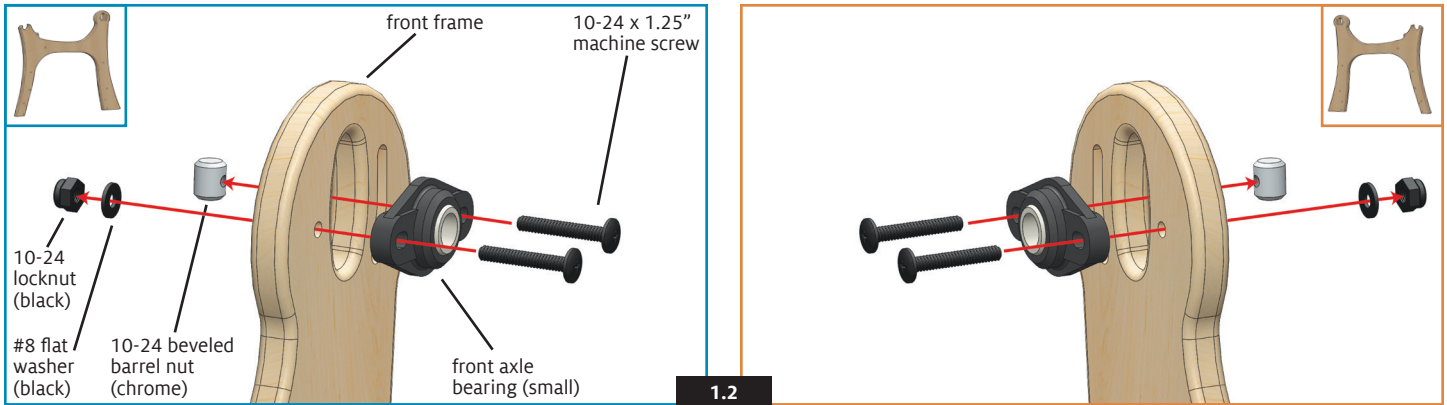
3. In order to assure easy assembly, do not fully tighten any frame bolts, or locknuts until the instructions call for tightening them.
4. A black oxide finish coats many of the Flatiron's parts. While this is generally a stout finish, it is susceptible to scratching when using metal screwdrivers and wrenches (like the wrenches provided). 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. The black boxes, centered on the bottom of the illustrations, indicate the instruction numbers to which the drawings correspond.

### 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 30mm frame bolt from the inside of the rear frame or the wheel will not turn when assembled. Leave nuts attached, but loose until after wheel alignment [Step 10].

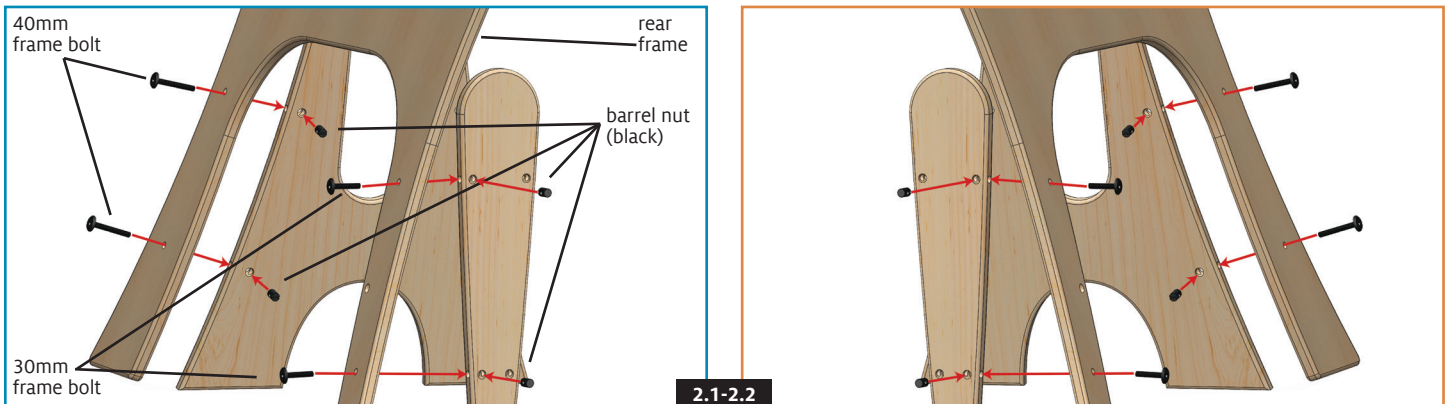


2. Attach the front axle bearing (small) to the outside of the front frame using the remaining parts from bag #1, but do not fully tighten until after wheel alignment in Step 10.

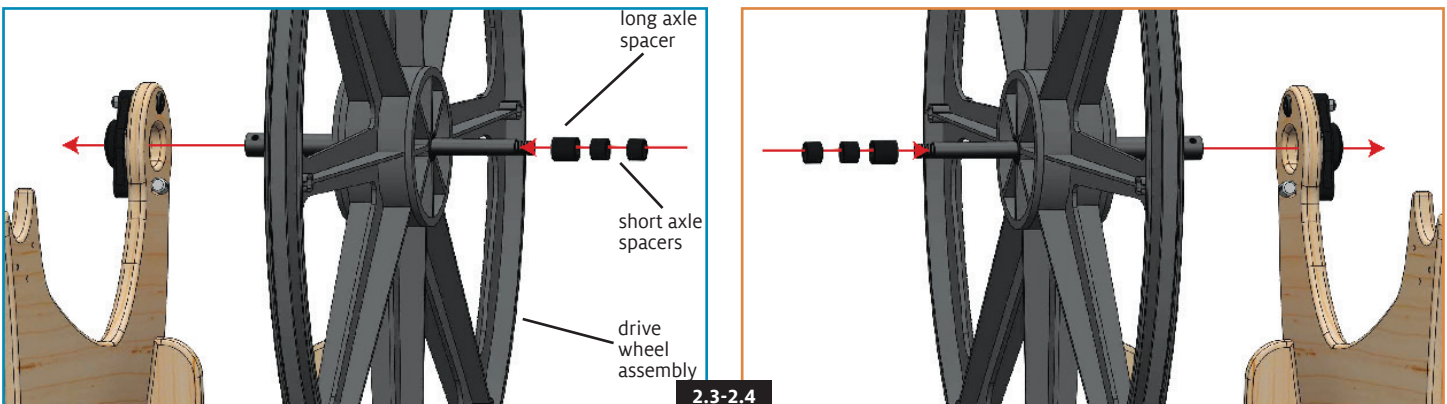


## 2. ASSEMBLING THE FRAME [Parts bag #2]

1. Attach the wide leg brace to the inside of the rear frame using the 40mm 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 instruction 3.3.
2. Attach the narrow leg brace to the inside of the rear frame using the 30mm frame bolts and black barrel nuts. Tighten until snug.



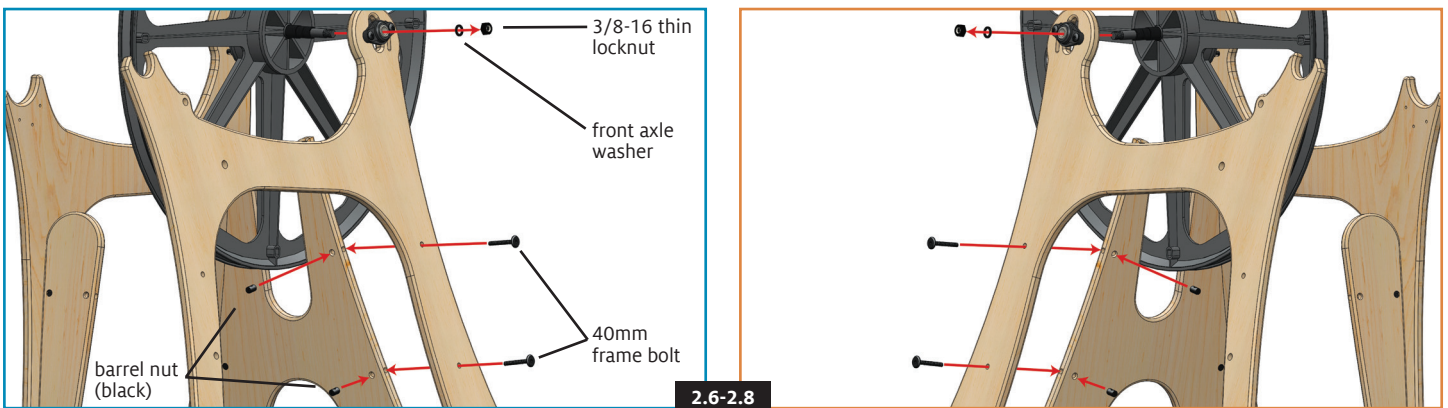
3. Slide the long axle spacer, then 2 short axle spacers, over the threaded end of the drive wheel axle.
4. Slide the open end of the axle through the rear axle bearing (attached in instruction 1.1).
5. **Option:** If you plan on assembling your wheel with the cotton double drive band, remove the installed poly drive band from the wheel now.



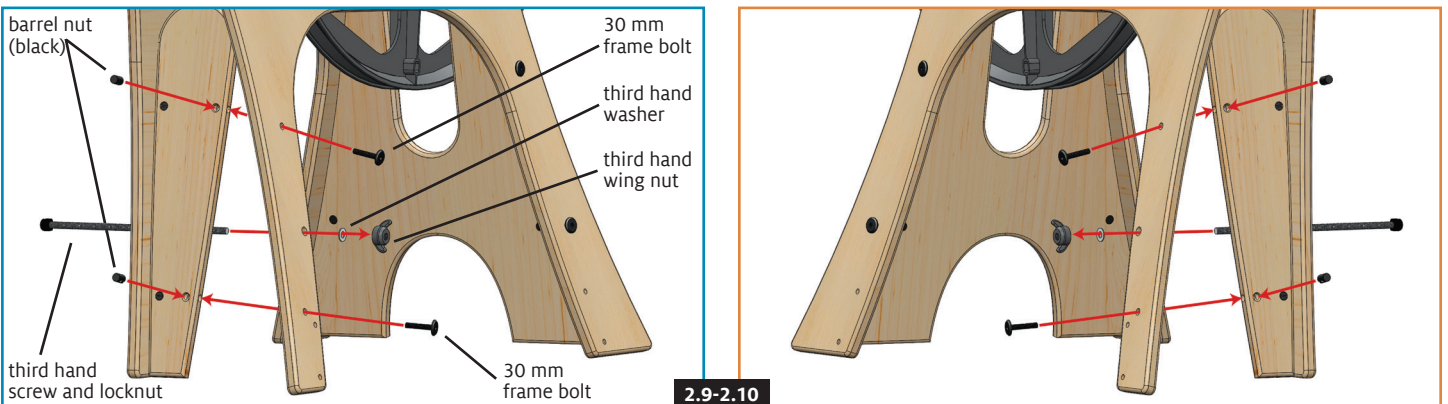
FLYER ON THE LEFT

FLYER ON THE RIGHT

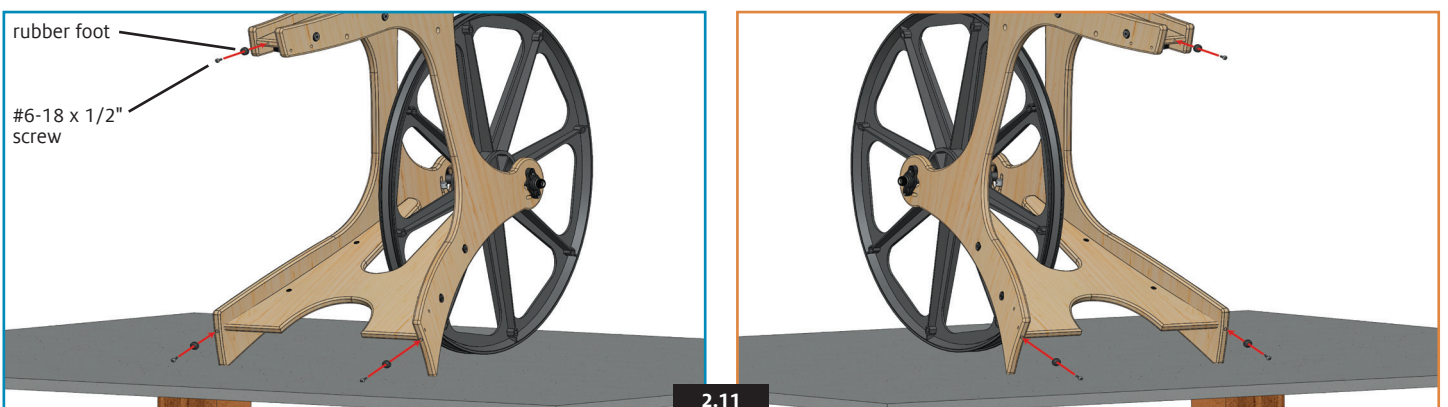
6. Install the front frame by sliding the threaded end of the axle through the front axle bearing (attached in step 1.2).
7. Attach the wide leg of the front frame to the wide leg brace using the 40mm frame bolts and black barrel nuts.
8. Attach the front axle washer and a 3/8-16 thin locknut to the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



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

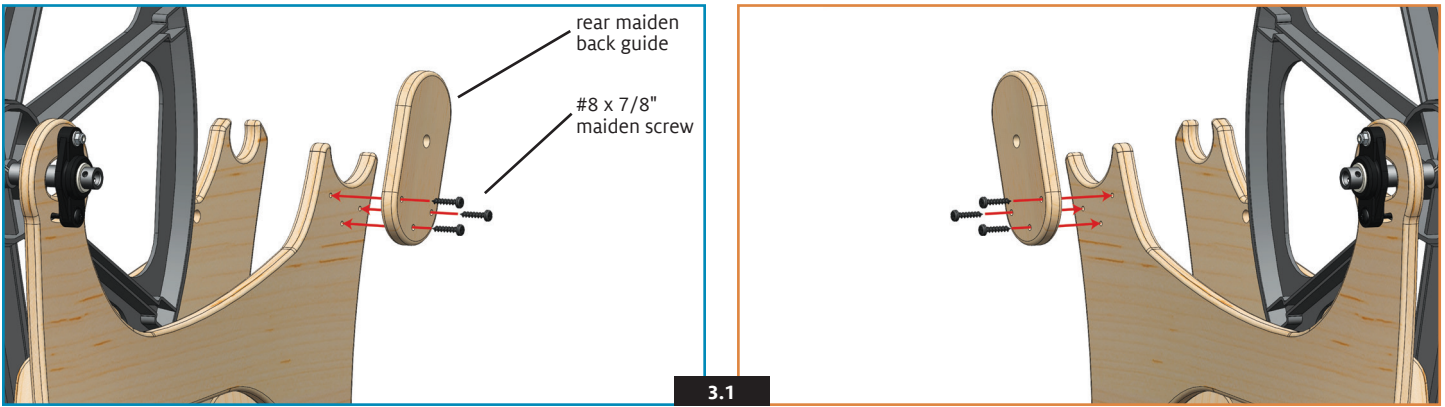


11. Tilt the wheel up on your work surface so that it is resting on the rim of the wheel and the wide legs of the frame. Using #6-18 x 1/2" screws, attach the rubber feet into the holes drilled in the bottom of the frame sides and narrow leg brace. Do not over-tighten or the screws will strip the holes.



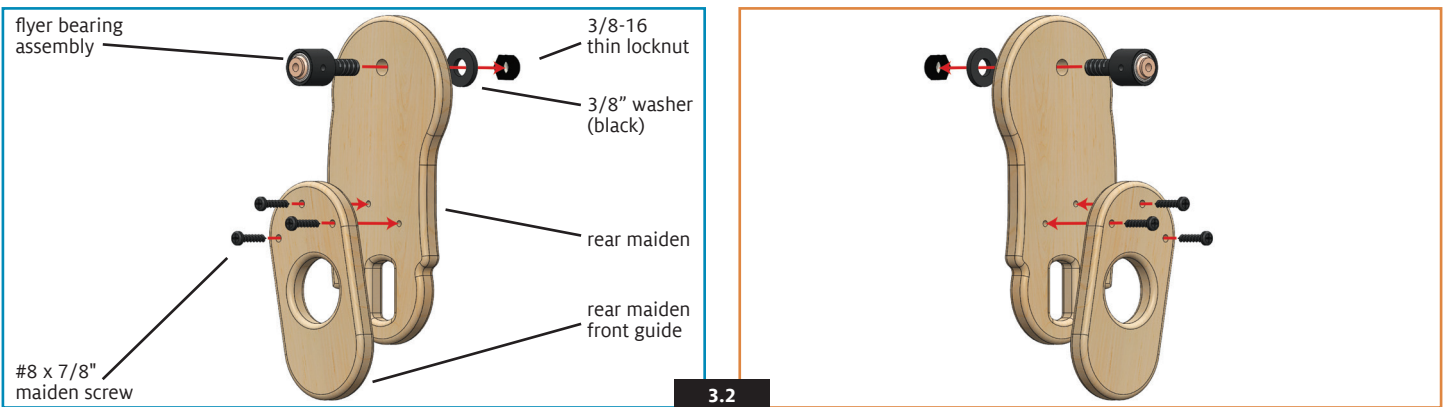
### 3. ASSEMBLING THE MAIDEN GUIDES [Parts bag #3]

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 flyer on the right.

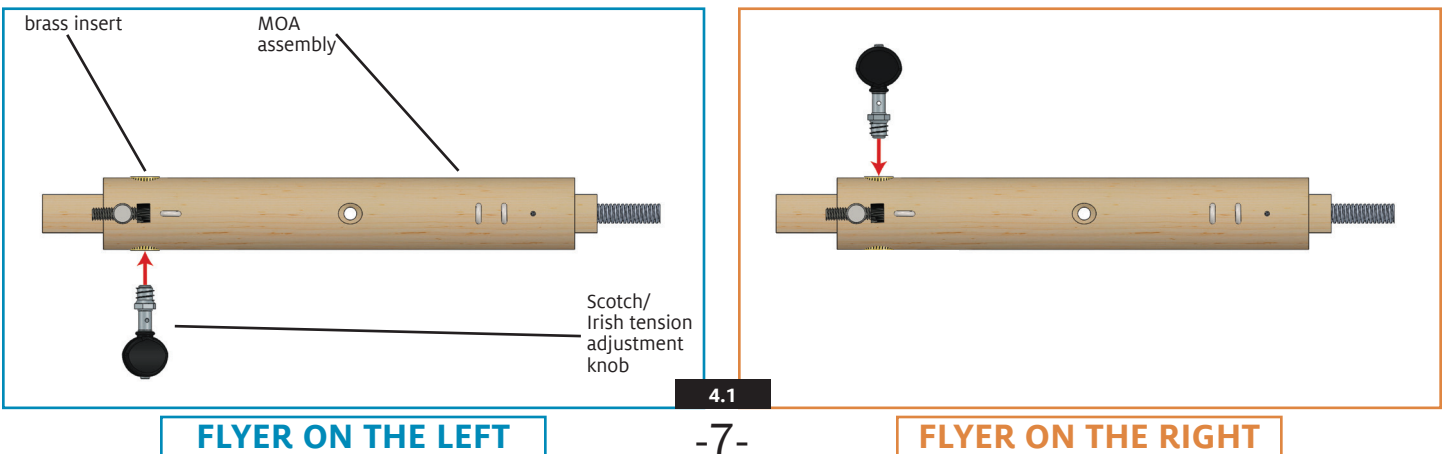
**Tip:** Insert the T-handle wrench through the hole in the side of the flyer bearing assembly and use it to hold the bearing in place while fully tightening the 3/8-16 thin locknut until the bearing assembly is flush against the wood of the rear maiden.



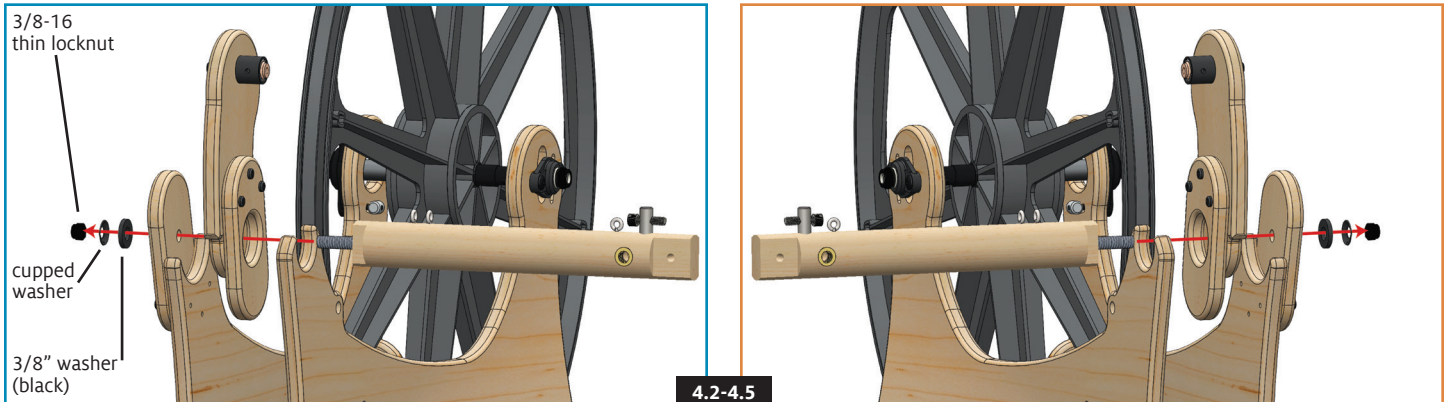
3. Tighten, but do not over-tighten, all of the frame bolts so that the frame sides take on the curves of the leg braces. Tighten the 3/8-16 thin locknut installed on the drive wheel axle in instruction 2.8.

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

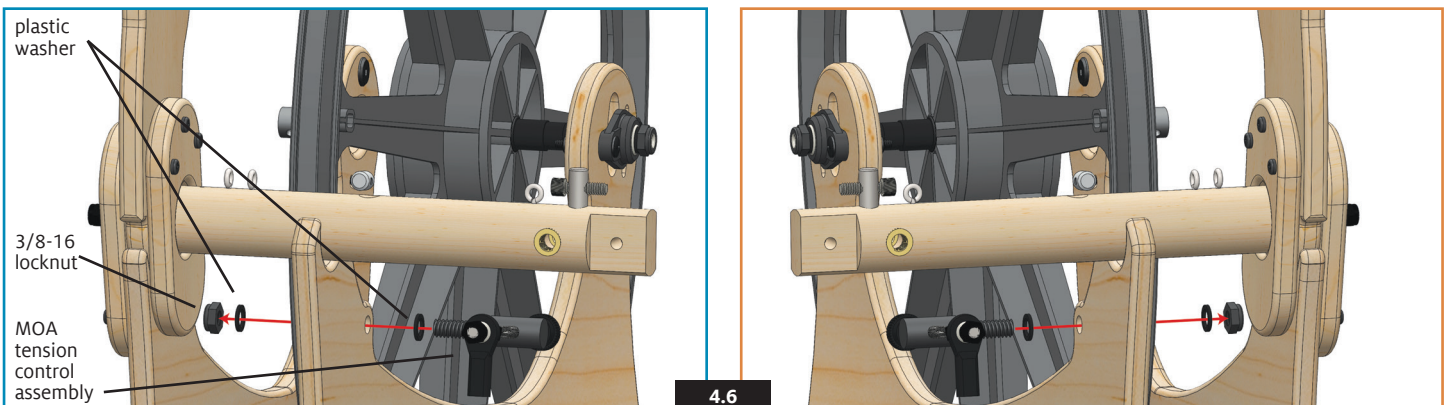
1. Thread the Scotch/Irish tension adjustment knob into the brass insert of the MOA assembly based on the flyer direction you have chosen for your Flatiron. Tighten using the 3/8" wrench.



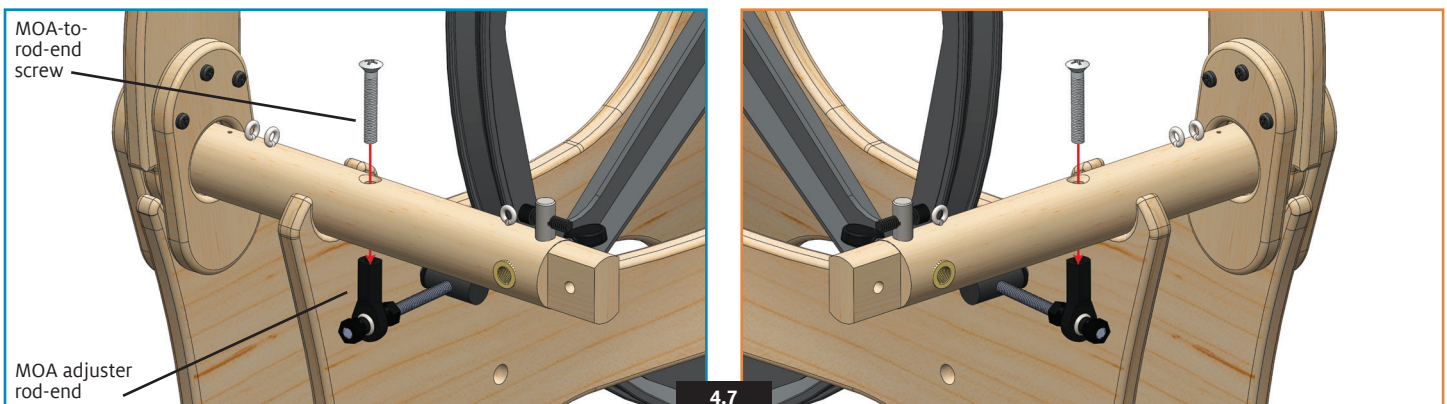
2. Slide the end of the MOA assembly with the threaded rod through the crescent-shaped hole on the front frame.
3. Press fit the rear maiden assembly from instruction 3.2 over the tenon on the end of the MOA assembly with the threaded rod.
4. Carefully slide the threaded rod through the hole in the rear maiden back guide (installed in instruction 3.1). Gently rotate the MOA during this step of the assembly to avoid damage to the plywood.
5. Slide a 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 locknut onto the threaded rod. Do not over-tighten or you will flatten the spring 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 it through the hole in the front frame. Install another plastic washer on the post and secure with a 3/8-16 locknut. Do not over-tighten; the MOA tension control should turn and wiggle without binding.



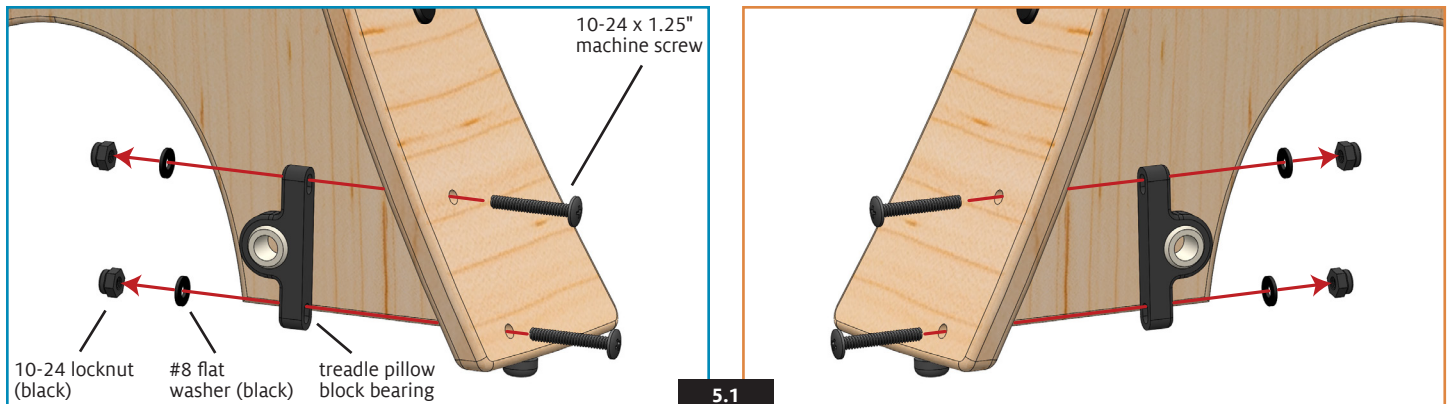
7. Using the 3/8" wrench, hold the rod end of the MOA tension control in place while threading the MOA-to-rod-end screw through the countersunk hole in the MOA and into the MOA adjuster rod-end.





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

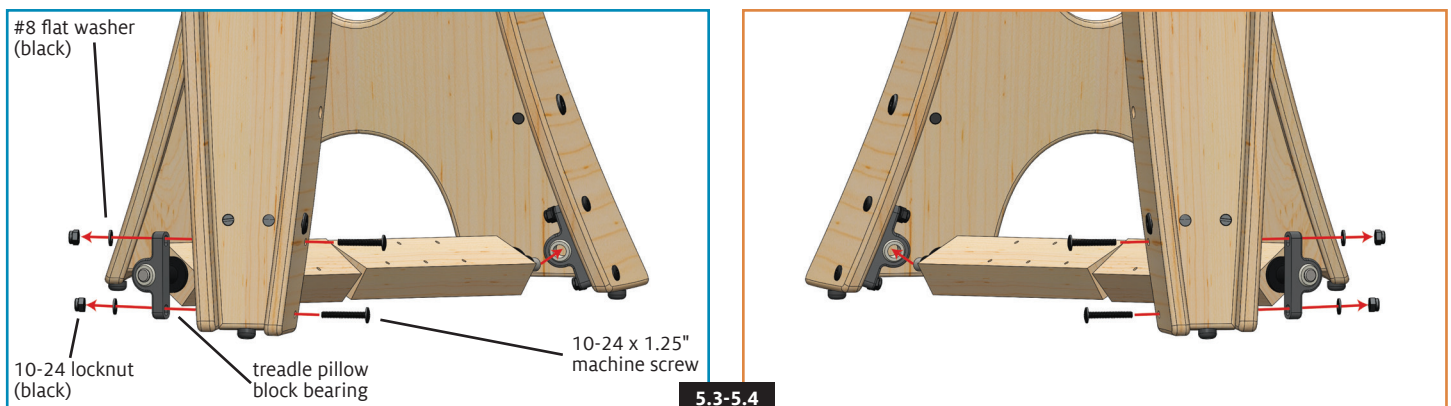
1. Attach a treadle pillow block bearing inside of the wide leg of the front frame. This is easier if you tilt the assembly back on the drive wheel as suggested in instruction 2.11



2. Slide the other treadle pillow block bearing onto the 2" end of the treadle bar. The treadle bar assembly is designed to work no matter which side the flyer is on. The key to this installation is that the "longer" (3.5") treadle block is positioned towards the wide leg brace of the spinning wheel.



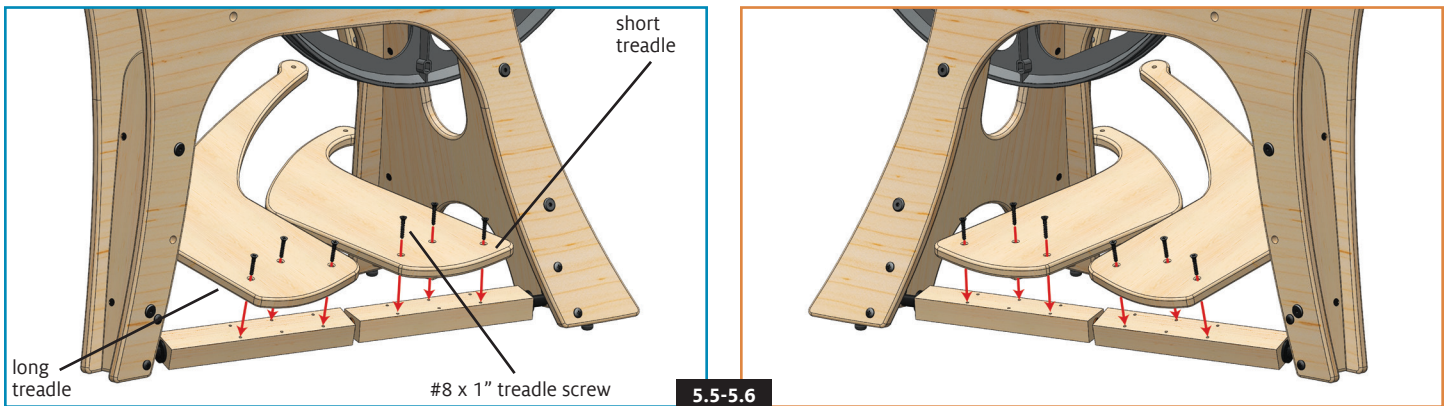
3. Fit the long end (3.5") of the treadle bar end into the pillow block (attached in instruction 5.1). Secure the loose treadle pillow block bearing (from instruction 5.2) to the inside of the narrow leg of the front frame.



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

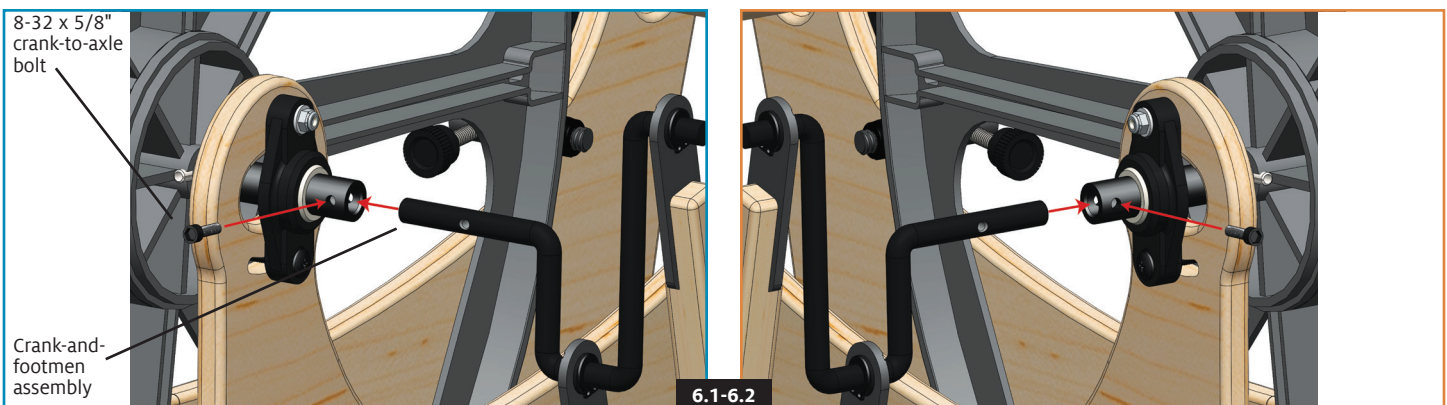
5. Lay out the treadles so that the short treadle is nesting inside of the long treadle with both of the treadle arms pointed towards the back (wide legs) of the Flatiron.

6. Attach the treadles to the treadle blocks using the #8 x 1" treadle screws. [See illustrations 5.5-5.6 on the next page.]

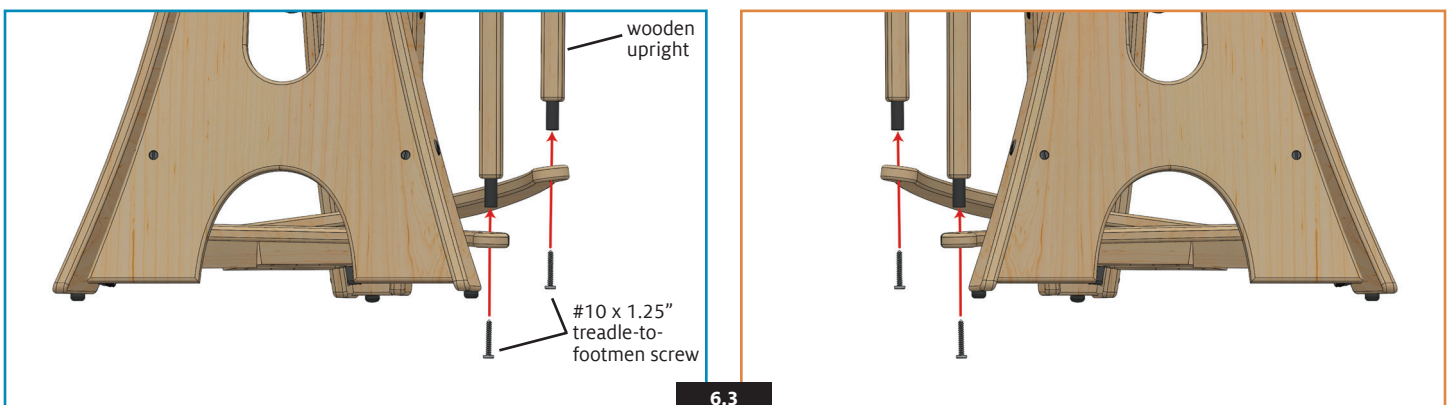


## 6. INSTALLING THE CRANK-AND-FOOTMEN [Parts bag #6]

1. Slide the long end of the crank from the crank-and-footmen assembly into the open end of the drive wheel axle, line 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.

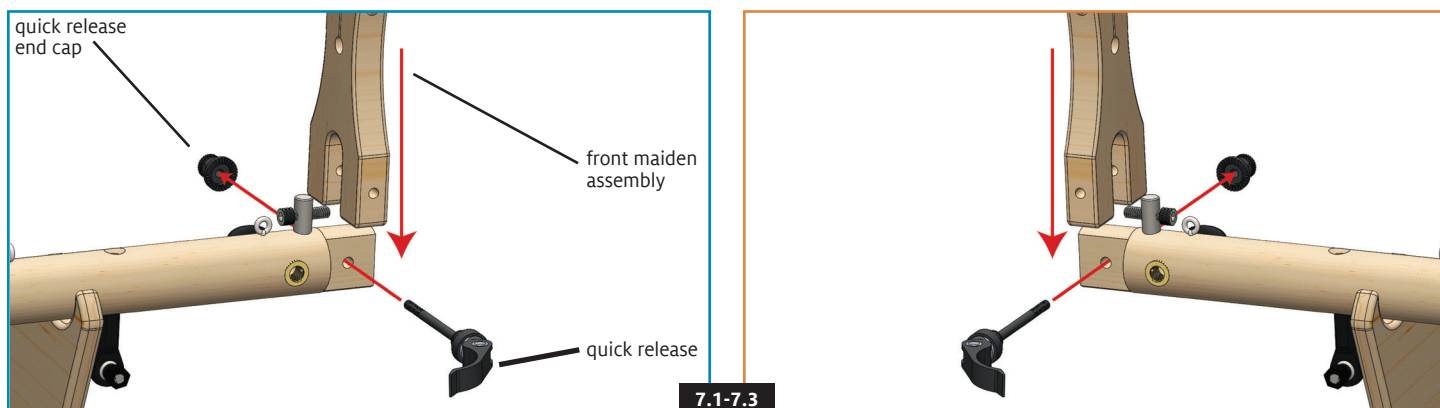


3. Secure the treadles to the footmen. Slide the #10 x 1.25 treadle-to-footmen screws up through the holes in the treadle arms and into the rubber connectors at the bottom of the footmen. The outer footman connects to the longer treadle, the inner footman to the shorter treadle. Tighten until snug, but do not over-tighten. This step is made easier if you tilt the assembly back on the drive wheel as suggested in instruction 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.



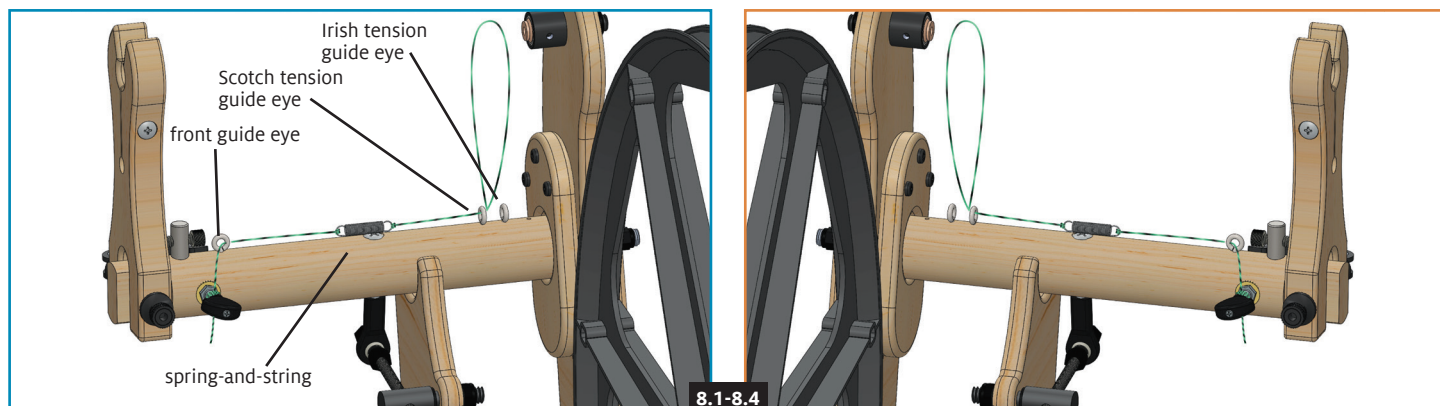
## 7. INSTALLING THE FRONT MAIDEN [Parts bag #7]

1. With the Schacht logo facing out, fit the slot of the front maiden over the mortised 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 on 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 back the end cap off 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 instruction 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 instruction 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 take up the rest 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.

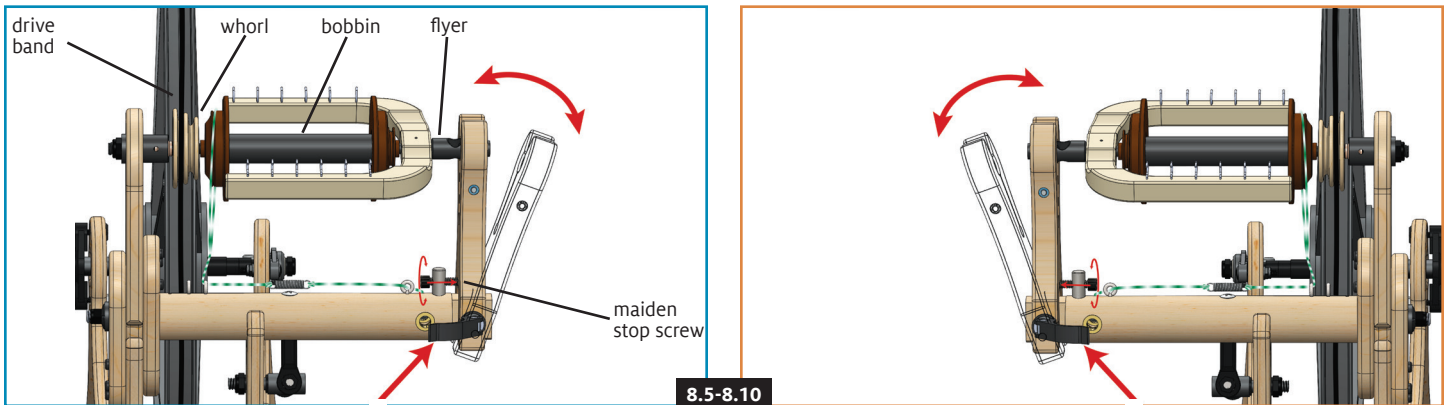


5. Open the quick release and let the front maiden fall open.
6. Slide the bobbin and then a whorl on to the flyer shaft.
7. Fit the looped end of the tension spring-and-string around the bobbin groove for Scotch tension or the open groove in the whorl for Irish tension (For Irish tension, save this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

**FLYER ON THE LEFT**

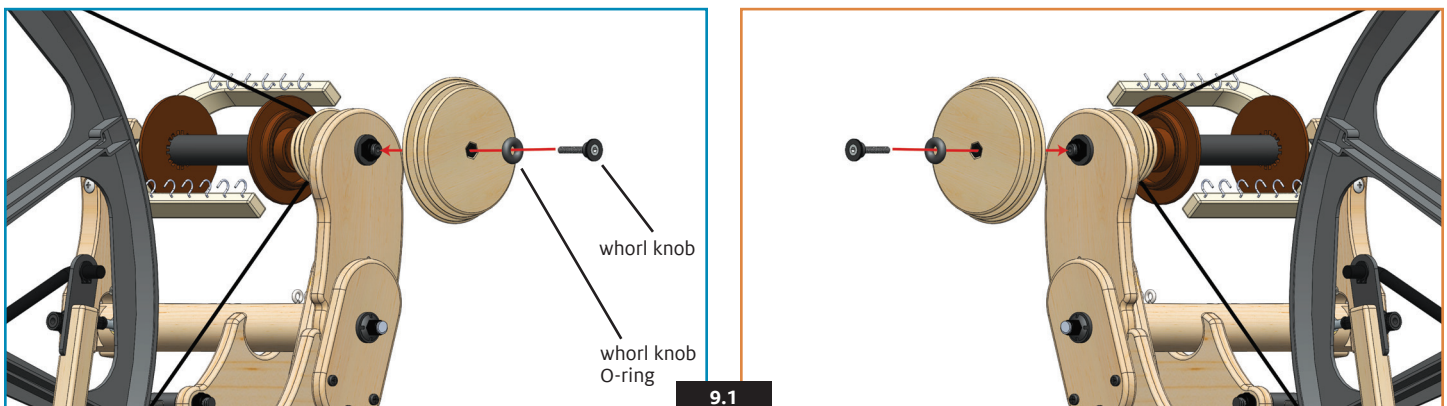
**FLYER ON THE RIGHT**

8. If you are using the poly drive band, free it from where it is taped to the wheel and extend the band until it is looped 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 prevents the front maiden from folding back and binding the flyer, slowing your spinning.

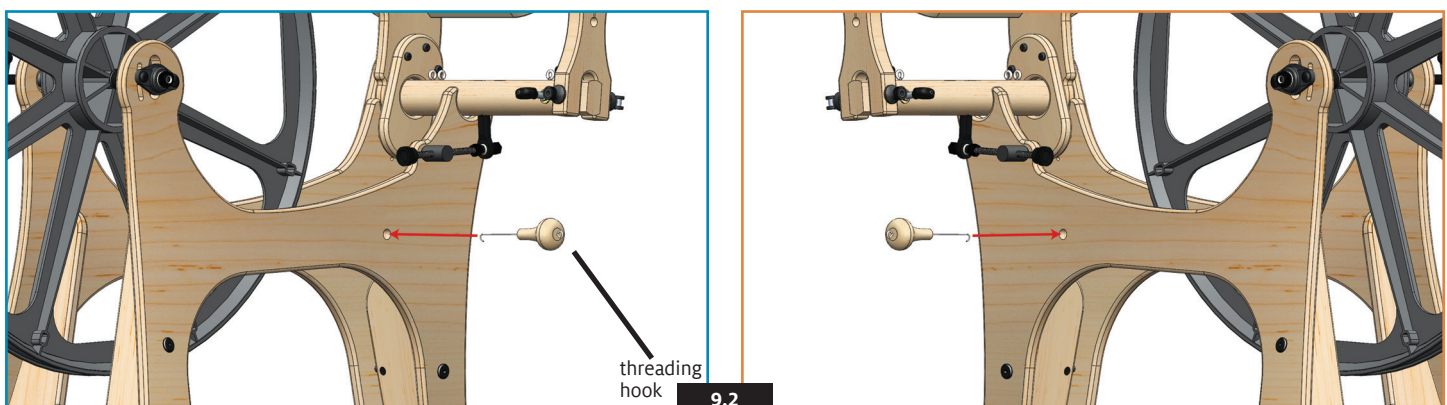


## 9. FINISH ASSEMBLY OF THE FLATIRON SPINNING WHEEL [Parts bag #7]

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

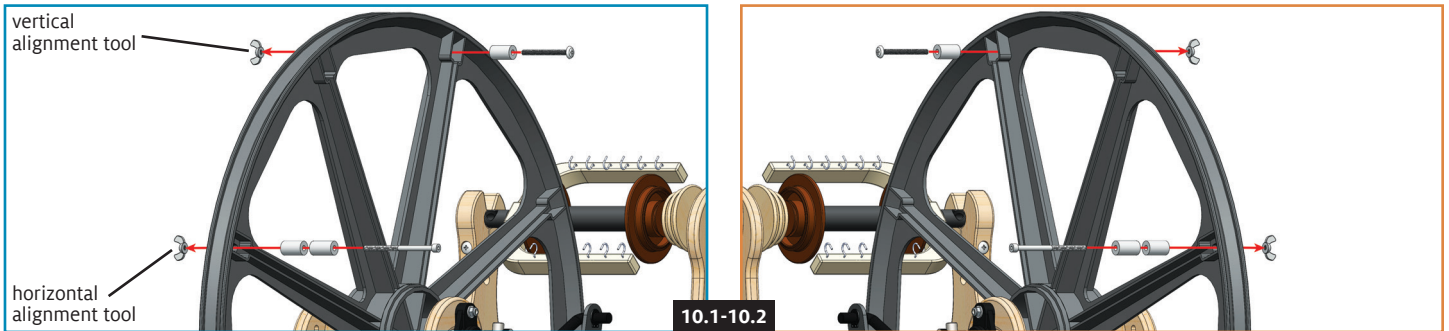


2. Store the threading hook in the hole drilled in the front frame

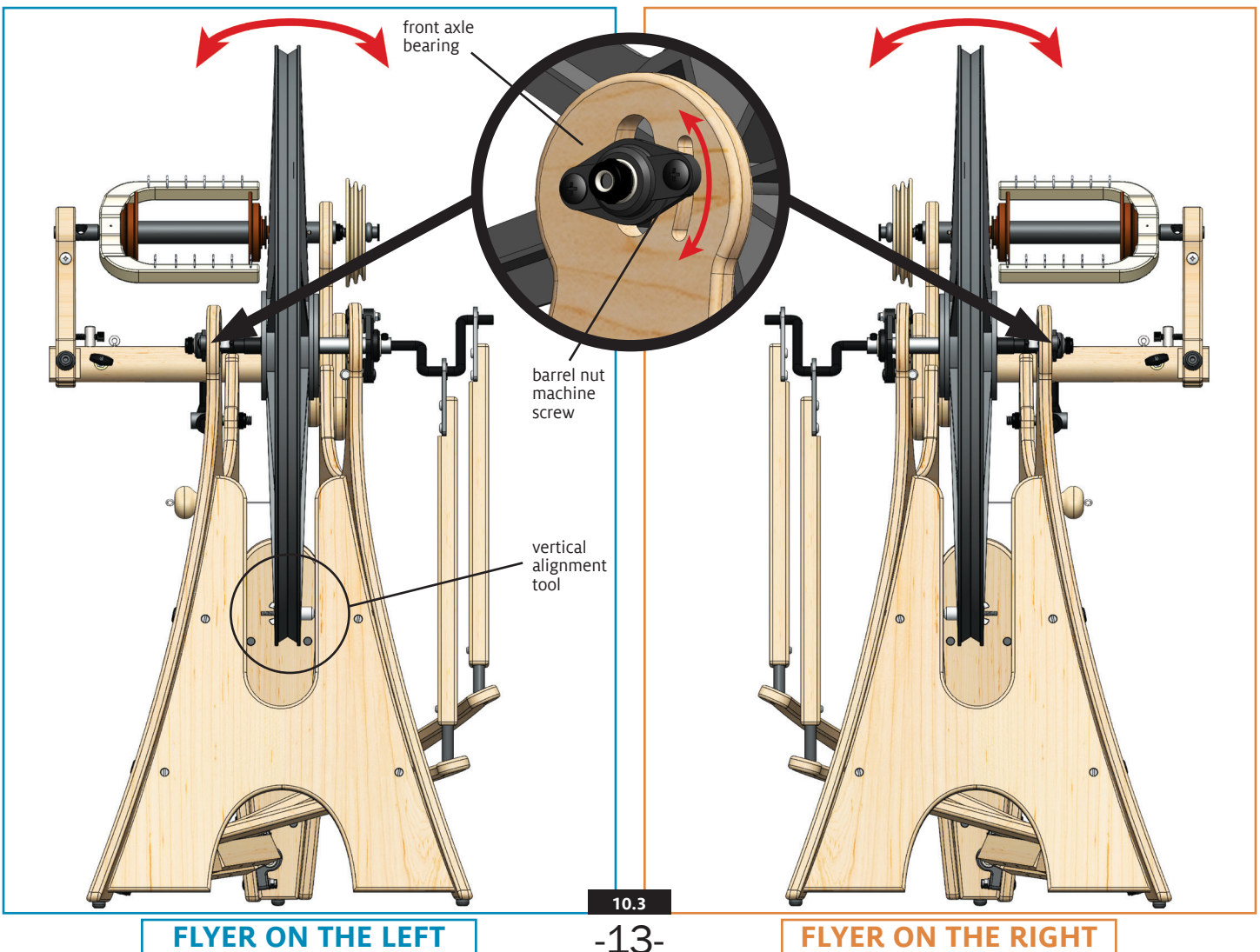


## 10. ALIGNING THE DRIVE WHEEL

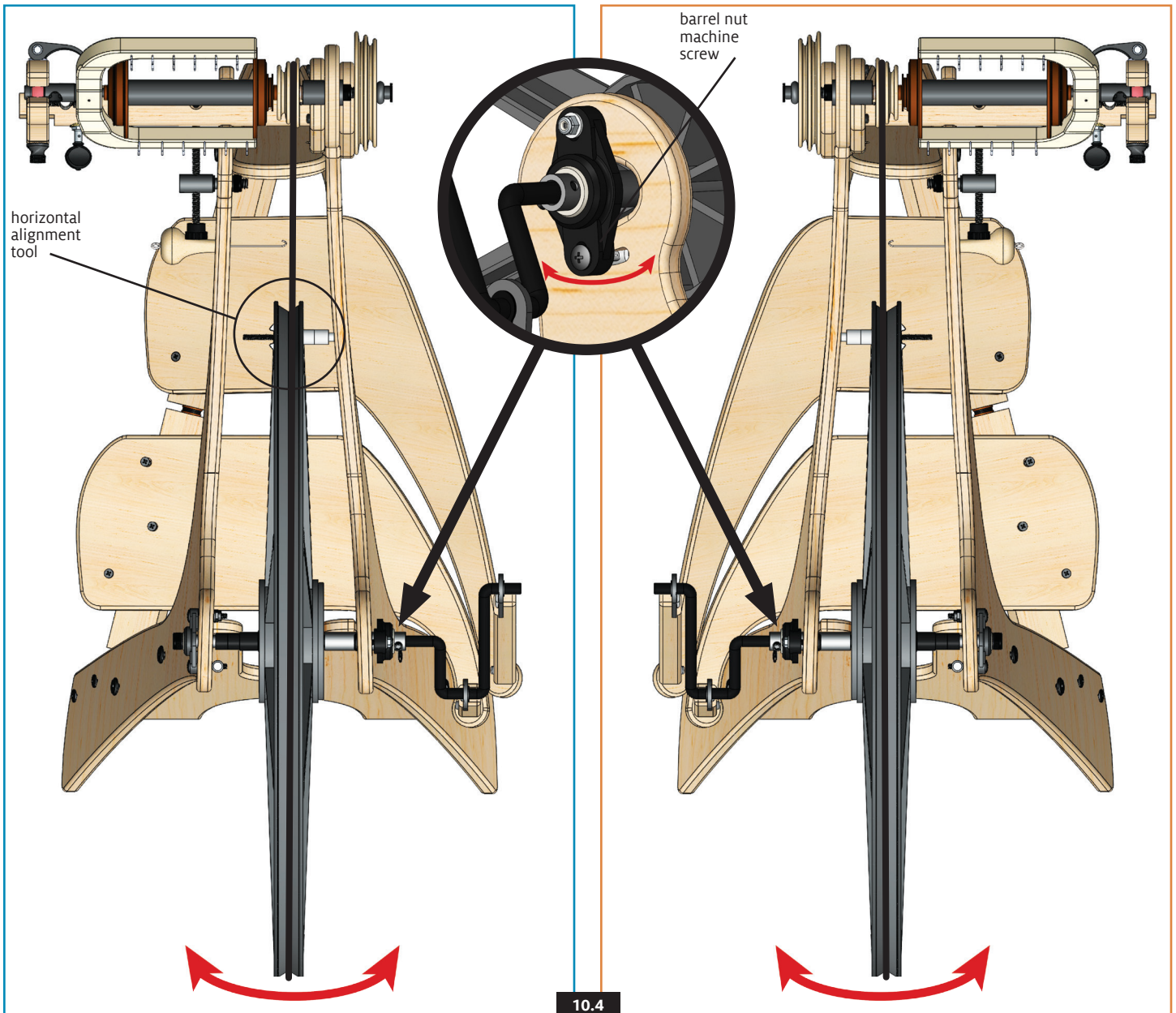
1. Unscrew the wing nut from the horizontal alignment tool (the one with 2 nylon spacers). Keep the spacers on the bolt. Slide the bolt through any of the recessed holes in the wheel rim from the rear frame side through to the front frame side and re-attach the wing nut, securing the tool in place.
2.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



3. **Vertical adjustment:** Rotate the wheel forward until the vertical adjustment 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 adjustment 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.

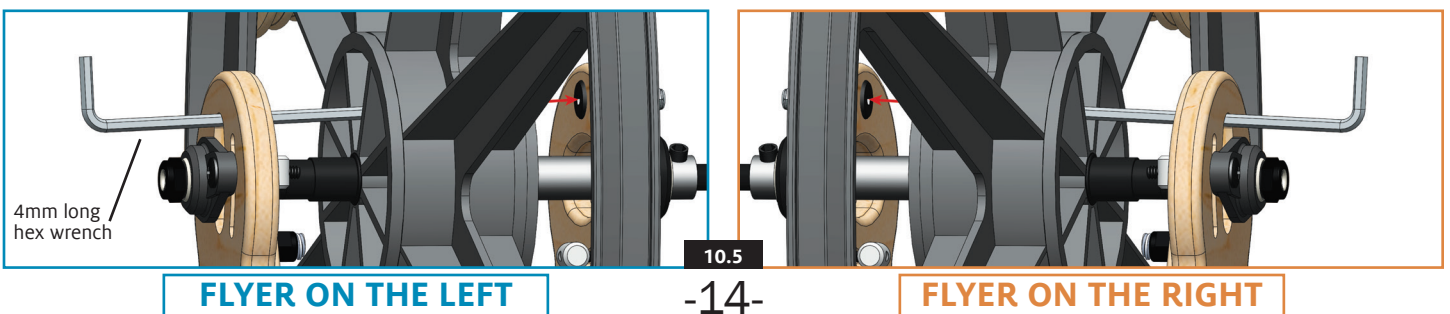


**4. Horizontal alignment:** Rotate the drive wheel until the horizontal adjustment tool is in line with the top edge of the rear frame. Stand above the Flatiron and look down. Holding the drive wheel in the front or rear, pivot it to the left or right until the adjustment just kisses the rear frame when the wheel is rotated. Tighten the barrel nut machine screw to secure the spacing.



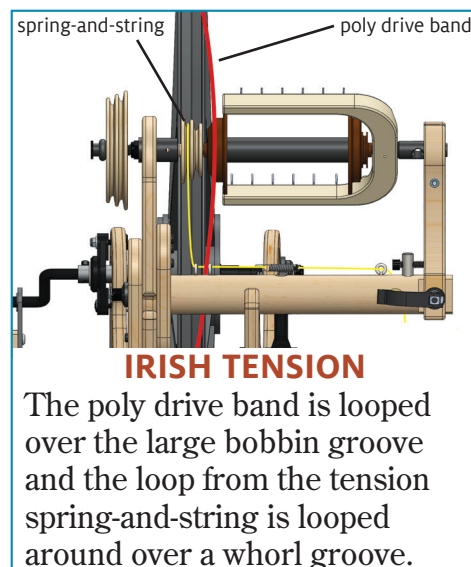
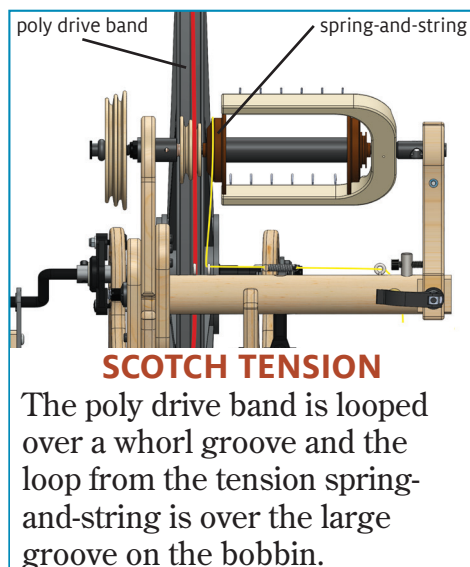
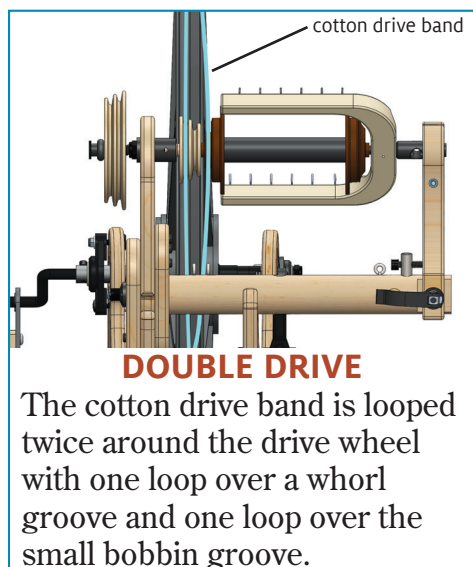
**5.** Re-check all alignments and adjust again if necessary. Tighten all screws to secure the spacing. [The 4mm long hex wrench, when inserted through the front frame and wheel hub, will reach the 30mm frame bolt that holds the top of the rear axle bearing, the T-handle wrench will not.]

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

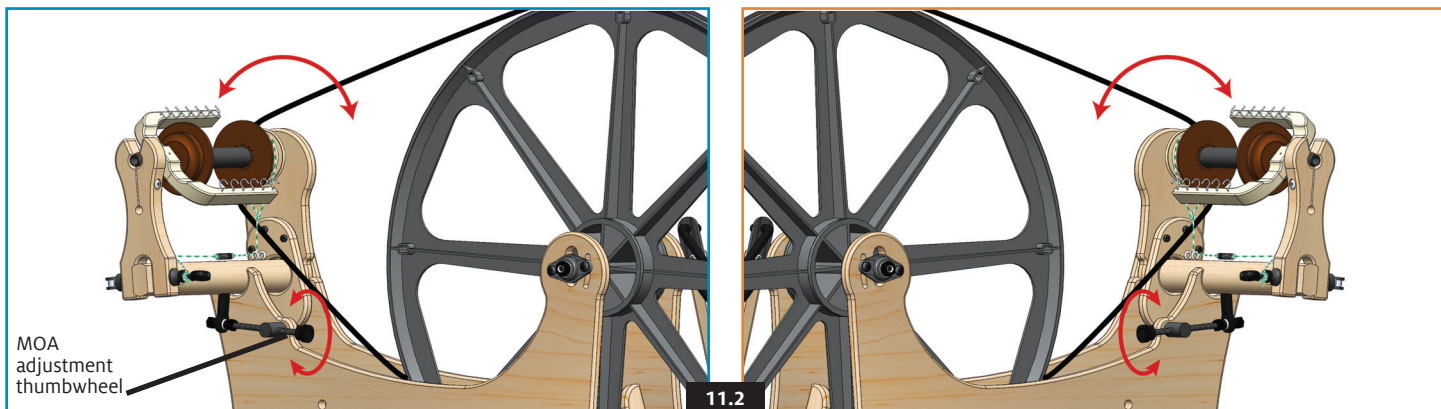


## 11. CHOOSE A TENSION STYLE

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



2. To fine tune the drive band tension, spin the thumbwheel on the MOA tension control (installed in instruction 4.6) to move the flyer assembly out relative to the drive wheel, which increases the strength of the take up, or moving 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 [See illustration on page 16.]

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 locknut, and front axle bearing (installed in instruction 1.2).
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 the band.
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.

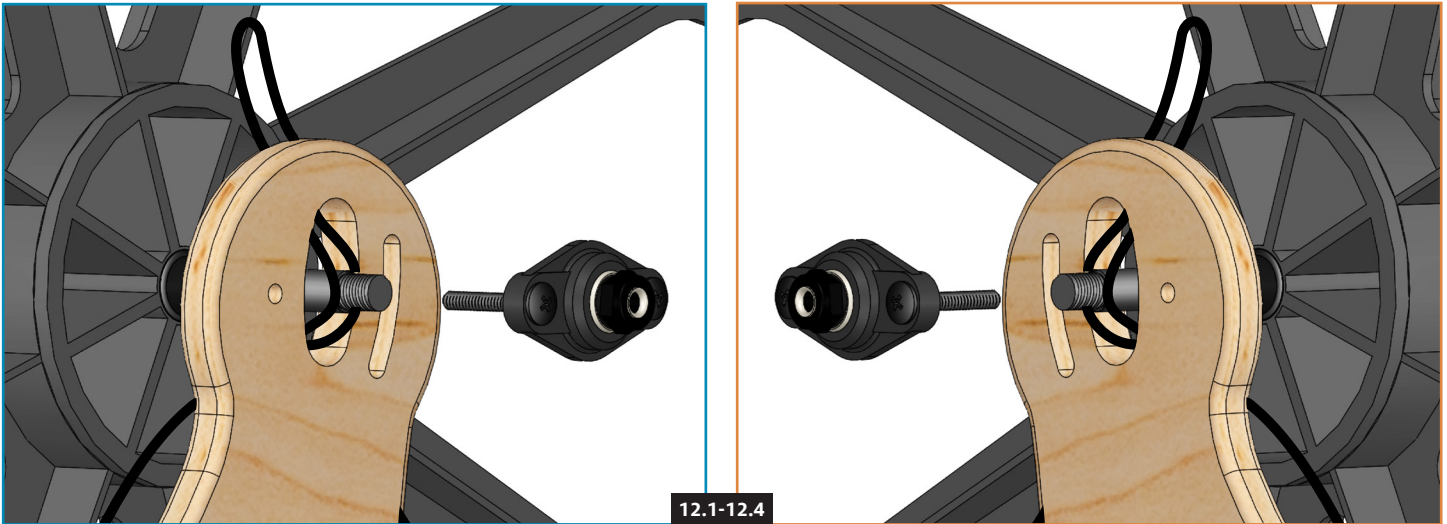
FLYER ON THE LEFT

-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 locknut, and front axle bearing that were removed in instruction 11.2.



#### 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 you and your Flatiron spinning wheel 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.

#### OIL YOUR FLATIRON FOR SMOOTH SPINNING.

Before spinning, be sure to oil your wheel. We recommend our Schacht oil, which is either 20 or 30 weight motor oil. Our Schacht oil bottle has a fine tip which is great for getting into tight spots.

- The top of the footmen need to be oiled where they ride on the crank. Insert the nozzle of the oil bottle in between the washer and the footman and squeeze a bit of oil there.
- Oil the flyer in four places; Around the outside of the flyer that goes into the front bearing, the tip of the flyer where it goes into the rear bearing, the two points of the shaft where the bobbin flanges sit on the flyer. Oil again after every bobbin change.

#### 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

Your new Flatiron Spinning Wheel is warranted, to the original consumer purchaser, by Schacht Spindle Company, Inc. 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, then 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 which results from alteration, accident, misuse, abuse, or neglect.

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

This Warranty is not valid for wheels that have served as dealer floor models that have outlived the term of the warranty.