## **WW7002**

# HORIZONTAL WARPING MILL

ASSEMBLY & USE





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# HORIZONTAL WARPING MILL

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#### **HARDWARE**

8X 1/4-20 x 1-3/4" Phillips flat head machine screws

2X 1/4-20 x 2-1/2" Phillips truss head machine screws

12X 1/4-20 barrel nuts

1X metal axle

2X 1/4-20 x 3-1/2" Phillips truss head machine screws

4X 1/2" SAE washer

1X spring

2X 1/2" shaft collar

1X nylon spacer

#### ASSEMBLE THE FRAMES

- 1. Completely assemble the first frame with two frame cross slats and two frame sides. Orient frame cross slats with the countersunk holes to the outside and notches in both frame sides pointing to the *left*. Insert 1/4-20 x 1-3/4" Phillips flat head machine screws into the countersunk holes and secure with 1/4-20 barrel nuts in the frame sides (Figure 1).
- 2. Partially assemble the second frame: attach two frame sides and one frame cross slat as in Step 1, this time with notches in the frame sides pointing to the *right*. Interlock the second frame with the first frame, fitting notches on the sides together (Figure 1). Attach the remaining frame cross slat to the frame sides.

#### **ASSEMBLE THE BASE**

- 3. Insert a 1/4-20 x 3-1/2" Phillips truss head machine screw through the bottom of a base and secure with a 1/4-20 barrel nut in the upright (Figure 1). Repeat with the remaining base and upright.
- **4.** Insert a 1/4-20 x 2-1/2" Phillips truss head machine screw into each base and secure with a 1/4-20 barrel nut in each end of the cross brace (Figure 2).

#### **PARTS**

4X frame cross slats

4X frame sides

2X warping peg holders

2X bases

1X cross brace

2X uprights

#### **TOOLS REQUIRED**

1/8" hex key (included) #2 Phillips screwdriver slotted (flat) screwdriver

- 5. Insert the axle through the holes in the frame sides. If the axle does not slide through the holes easily, slightly loosen all of the  $1/4-20 \times 1-3/4$ " Phillips flat head machine screws on the frames. When the axle is in place, retighten all the screws.
- **6.** Place the nylon spacer, one 1/2" SAE washer, and a 1/2" shaft collar on one side of the axle (Figure 2). Tighten the shaft collar using the 1/8" hex key.
- 7. On the other side of the axle, place a 1/2" SAE washer, the spring, two more 1/2" SAE washers, and a 1/2" shaft collar.
- **8.** Set the axle into the slots in the uprights with one washer and the 1/2" shaft collar on the outside of each upright. Tighten the remaining shaft collar with the 1/8" hex key.

#### ATTACH THE WARPING PEG HOLDERS

Loosen the wing nuts on the warping peg holders. Set each holder into place and tighten the wing nuts (Figure 2). The two warping peg holders may be positioned anywhere between frame cross slats.

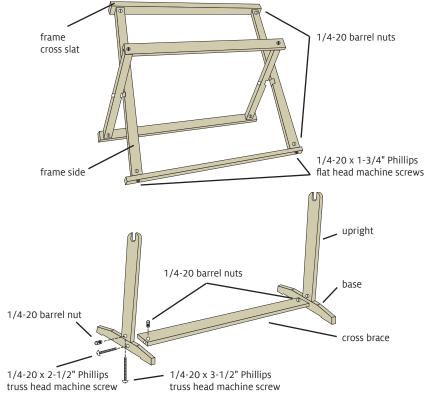
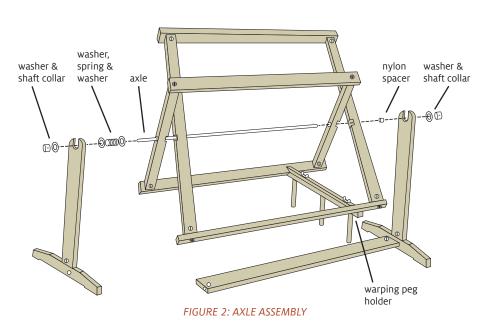


FIGURE 1: FRAME AND BASE ASSEMBLY



#### WINDING A WARP

Cut a guide string the length of your warp plus a few inches. Use a yarn or string that is visibly different from your warp yarn.

Attach the guide string at one warping peg holder. Make the first leg of the cross, then turn the warping mill to wind the guide string around it. Space the windings of the guide string to allow room for multiple warp ends. Adjust the second warping peg holder so that you can attach the guide string to a peg.

Begin winding your warp by attaching your yarn to the first warping peg holder. Make the cross, then turn the mill with one hand while following the guide string with the other hand holding the warp yarn, until you reach the second warping peg holder.

Loop your warp yarn around the peg you chose on the second warping peg holder. Reverse the direction you turn the warping mill, follow the guide string back to the first warping peg holder, and complete the cross.

#### **REMOVING THE WARP**

To remove the warp from the warping mill, loosen the wing nuts on one warping peg holder. Slide this warping peg holder toward the other warping peg holder. This will relieve tension so you can remove the warp easily.

#### **FOLDING THE WARPING MILL**

To fold the warping mill, remove the warping peg holders. Gently pull the frames apart enough to separate the notches and swivel the frames flat.

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