



Identify all the parts supplied with your kit. Many pieces appear similar. Assembling the parts correctly is important for a well performing kit!

PARTS LIST

Loose Parts	Hardware Bag
Lower Breech	Pivot Blocks (2)
Upper Breech	Trigger Slips (2)
Lower Frame	Trigger
Upper Frame	Pivot Axle
Base	Trigger Pin
Stabilizer	Torsion Pins (4)
Uprights (2)	Stop Pins (2)
Arms (2)	Paper Clip
	Braided Cord (2)
	Nock Bead
	Wooden Ammo (3)

BALLISTA

ASSEMBLY INSTRUCTIONS

NOTES

Step-by-step videos describing how to assemble this kit are available at www.abong.com.

The dark edges on the wooden parts are a normal part of the laser cutting process we use.

If any pieces are missing or defective, contact us at service@abong.com. We will take care of you!

Use a quality carpenter's glue.

Have fun and use the finished model responsibly!

LEGEND

- Cut where indicated
- Apply glue to part
- Important note

LOADING and FIRING

Do not modify the ballista or fire projectiles it was not designed for.

Do not use the machine if it is damaged in any way.

Ensure no one is in the intended path of the projectile.

After confirming the flight path is all clear, perform a short "3-2-1-Fire!" countdown.

A Pull back the nock bead.

B Hook onto the trigger loop.

C Place ammo in the breech.

D Pull the trigger.

FORMING A LOOP

The ballista requires several "looped" cords of different lengths. This is how we suggest you make them:

1 Join the upper and lower breech with glue

2 Glue the upper and lower frames to the assembled breech.

! The lower frame is notched for the pivot blocks.

3 Glue the trigger slips to the end of the breech.

4 Turn over the breech and glue the pivot blocks into the notch

5 Slide the trigger axle through the slips and trigger.

! Apply glue only to tip of trigger axle as shown.

6 Glue the uprights and base to the stabilizer.

! Notches on uprights face away from the base.

7 Slide the pivot axle through the uprights and pivot blocks.

! Apply glue only to tip of pivot axle as shown.

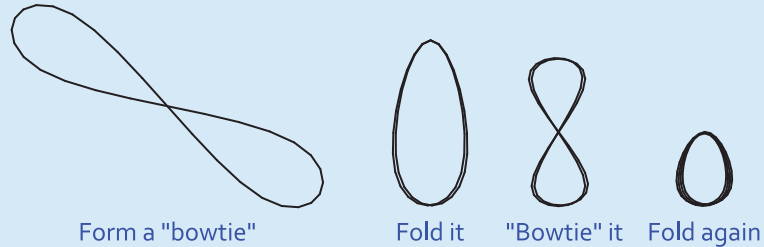
Ballista must pivot freely on axle.

8 Slip a stop pin through the upper and lower frame.

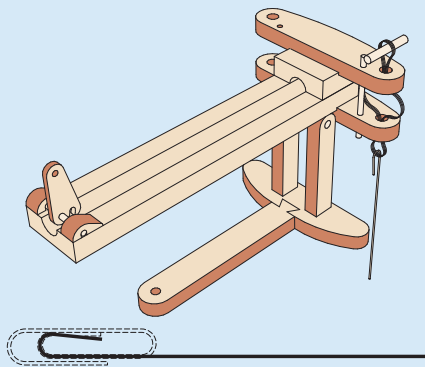
! Do not glue! Stop pin must slide freely.

9 Cut one of the braided cords in half, and form each piece into a 12" (300 mm) long loop using the "Skein Loop" template below as a guide.

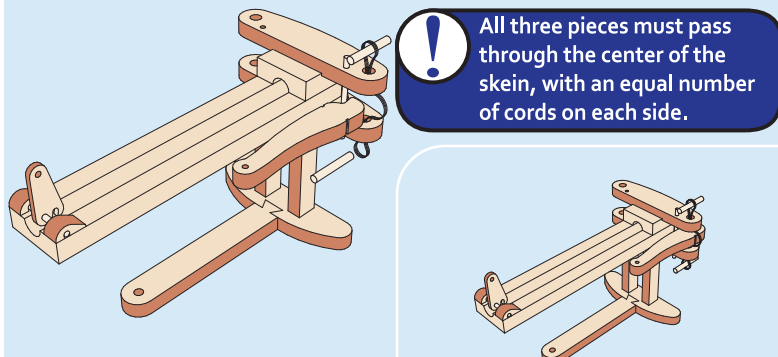
Form the skeins (rope bundles) by twisting and folding the tied loop as shown.



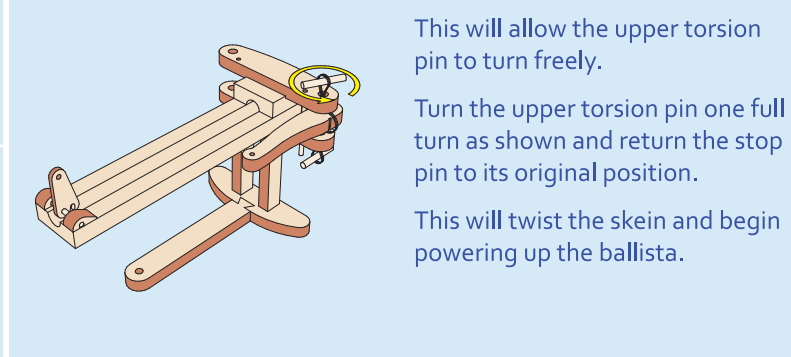
10 Slip a torsion pin through the skein. Using the paper clip provided, thread the other end of the skein loop through the outer holes in the upper and lower frame



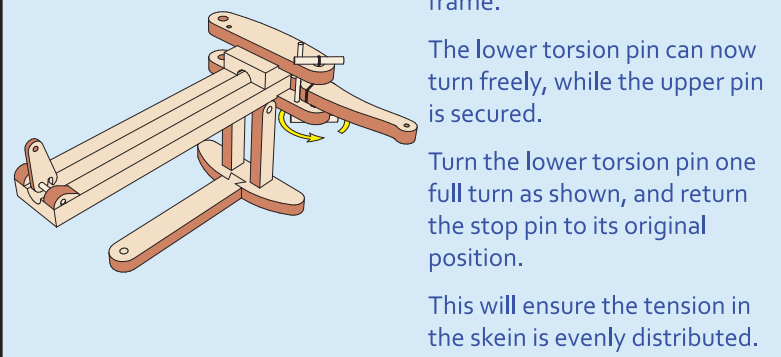
11 Work one of the arms and another torsion pin through the loop of the skein as shown.



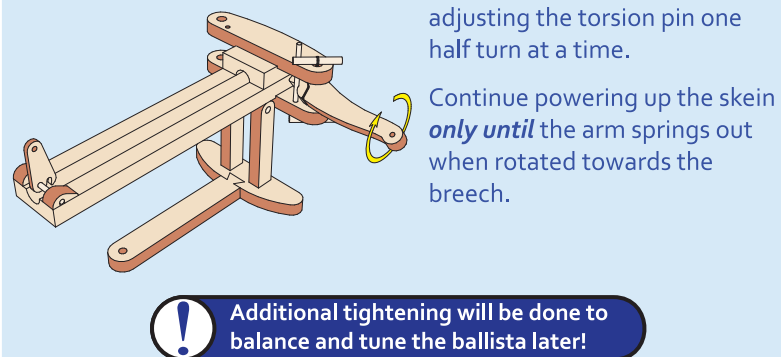
12 Slide the stop pin **down** until its top is even with the top surface of the upper frame. This will allow the upper torsion pin to turn freely. Turn the upper torsion pin one full turn as shown and return the stop pin to its original position. This will twist the skein and begin powering up the ballista.



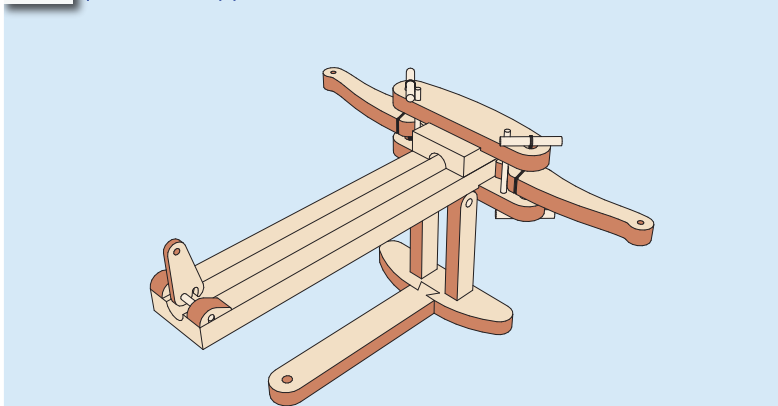
13 Now slide the stop pin **up** until its bottom is even with the lower surface of the bottom frame. The lower torsion pin can now turn freely, while the upper pin is secured. Turn the lower torsion pin one full turn as shown, and return the stop pin to its original position. This will ensure the tension in the skein is evenly distributed.



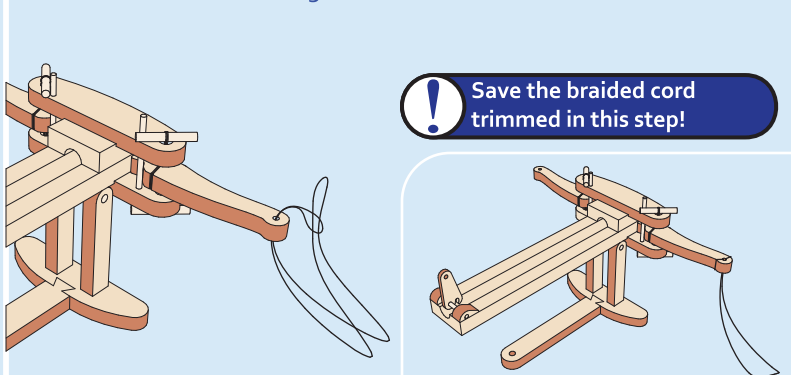
14 If the arm has become twisted, straighten it out as shown. Repeat steps 12 and 13, adjusting the torsion pin one half turn at a time. Continue powering up the skein **only until** the arm springs out when rotated towards the breach.



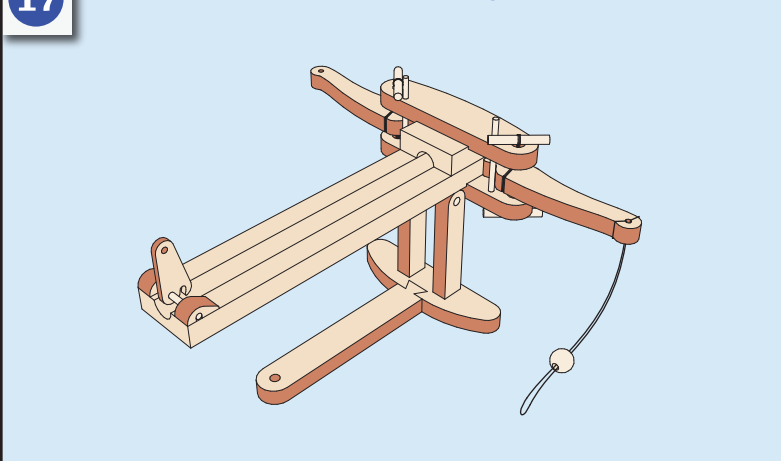
15 Repeat steps 9 through 13 for the other arm, turning the torsion pins in the opposite direction.



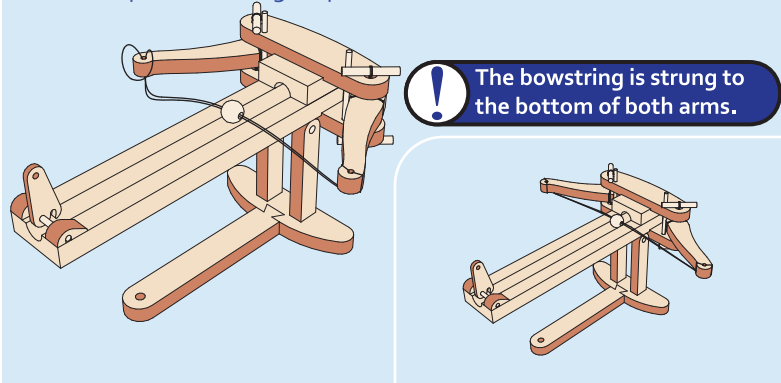
16 Create the bowstring by forming a 10.5" (270 mm) long loop in the remaining braided cord. Use the template below as a guide. Attach the bowstring to the arm as shown.



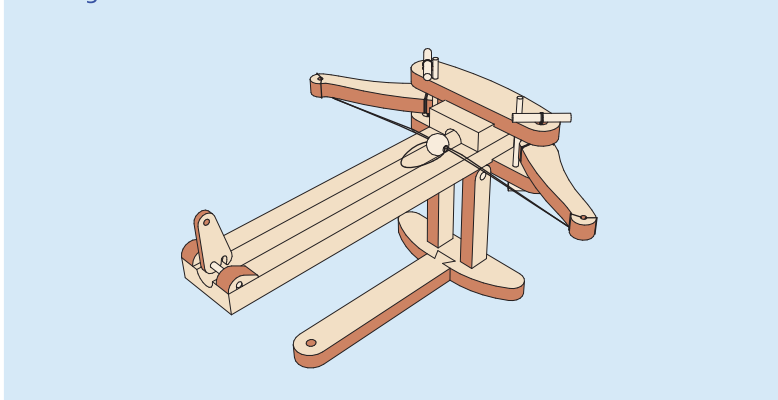
17 Slip the nock bead onto the bowstring.



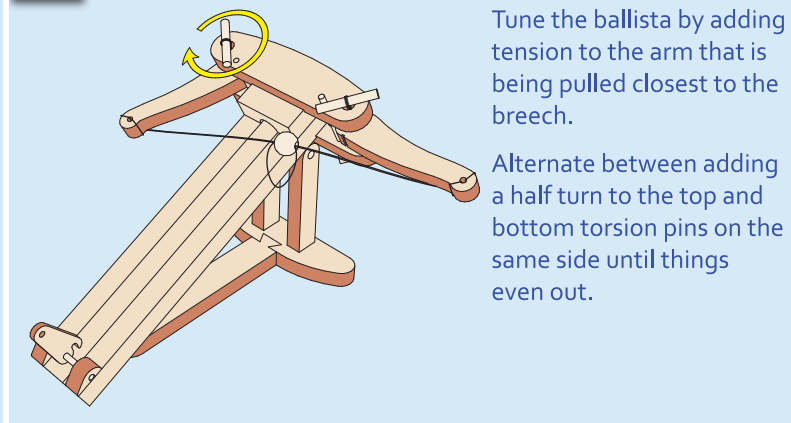
18 Squeeze the arms together and thread the bowstring through the hole in the other arm as shown. Wrap the resulting loop over the end of the arm.



19 Thread a piece of leftover braided cord through the nock bead, and form a loop 1.5" (40 mm) long. Use the template below as a guide.

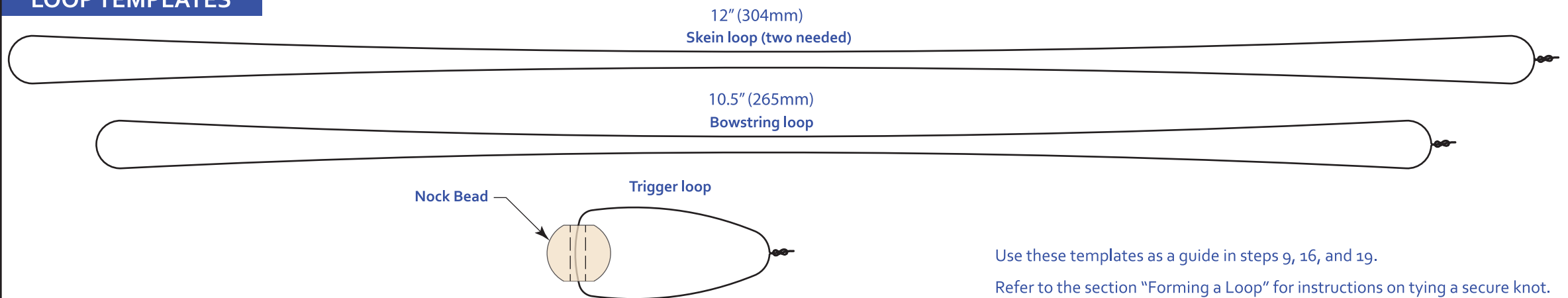


20 Don't panic if the arms are uneven at this point! Tune the ballista by adding tension to the arm that is being pulled closest to the breach. Alternate between adding a half turn to the top and bottom torsion pins on the same side until things even out.



21 If the ballista doesn't shoot at least 30' (10 m), add one half turn of tension to both top torsion pins and try again. Still need more power? Add one half turn to both bottom torsion pins, and so on... Overpowering the ballista **will** cause the braided cord to fail, or cause the nock bead to strike the breach and break. Replacement parts are available.

LOOP TEMPLATES



Use these templates as a guide in steps 9, 16, and 19. Refer to the section "Forming a Loop" for instructions on tying a secure knot.