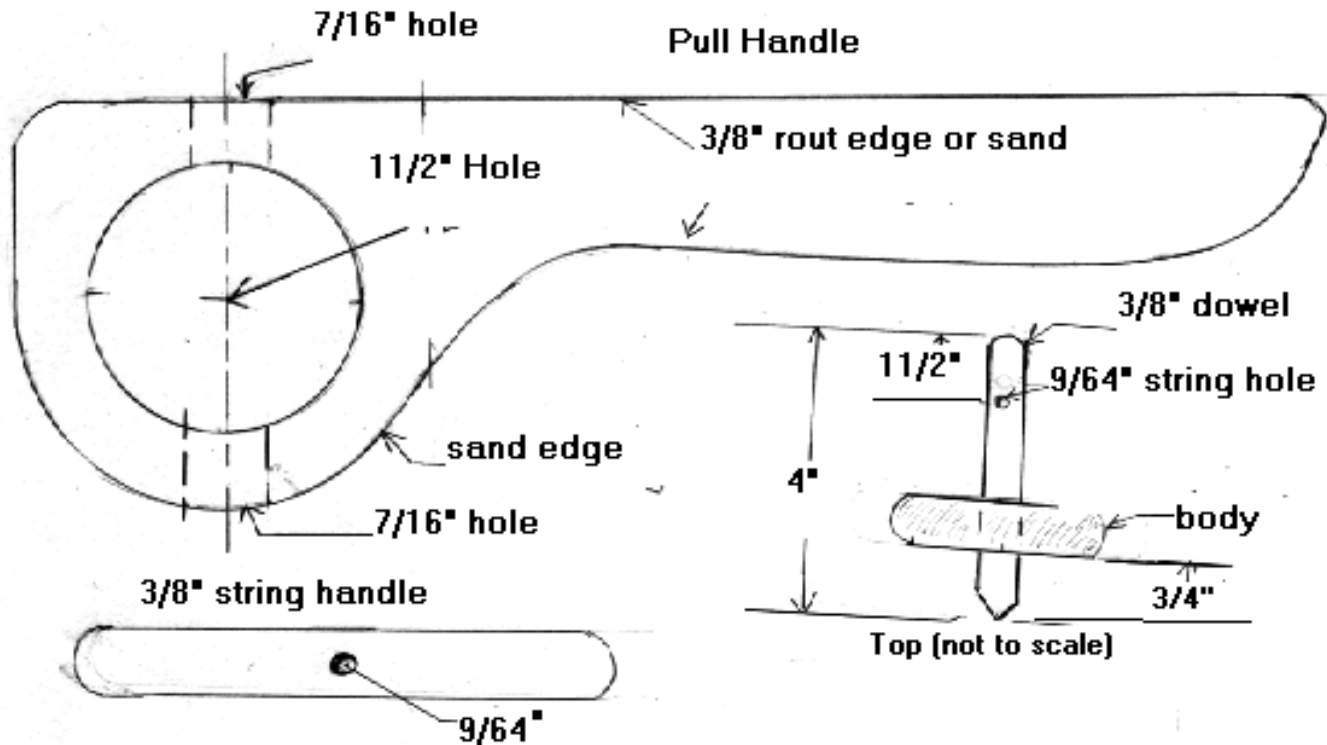


Pull Top



Pull-handle

1. Cut the pull-handle from $\frac{3}{4}$ " stock ~ 2 x 7" using a coping saw, scroll saw, or band saw.
2. Drill a 1 1/2" hole with a Forester bit.
3. Rout the handle with a 3/8" corner round bit or break sharp edge by sanding. Do not rout around hole (weakens around hole).
4. Drill a 7/16" hole all the way through the handle at the 1 1/2" hole (rounded portion to top in drill press). Drill slowly to avoid split out. Brad point drill avoids slippage.
5. Sand the outer edge along the hole section to remove sharp corners.

String Handle

1. 3/8 x 3" dowel (dowel pin). Drill 9/64" hole in the center of the dowel.
2. String will go through hole and may be knotted around the handle.

String

1. ~16" cording, string, or fishing line.
2. One end tied to string handle and second end for feeding in top (if using cording may want to glue the end to prevent raveling and assist on feeding into top).

Top

1. Different materials may be used for the top, wood, Corian, CD disk, etc.
2. Cut a circle 1 1/2-3" (experiment with diameters and thicknesses).
3. Drill a 3/8" diameter hole in the center of the circle.
4. Place glue at ~ 1" up on a 3/8" dowel and gently pound the dowel through the top with a mallet. (~3/4" through the bottom of the circle). Wipe off any excess glue with a damp rag.

Top Turning

1. Chuck the long end of the top into a collet or chuck (may be put into 3/8" split tubing to protect the dowel).
2. Turn the top.
3. Turn the dowel around and finish the upper part of the top (chucked short end- use light cuts).

Pull Top

4. Once again turn the top around and taper the bottom of the dowel to a point. Burnishing the bottom may harden it some.

Finishing Top

1. Tops can be finished with a chatter tool, colored pens, oil pencils or natural (kids may like to color their own top).
2. If dowel pins are use the groves can be left natural or colored for effect.
3. A good quick finish is 1 part boiled linseed oil, 1 part shellac, and 1 part alcohol.

Use

1. Place the top in the pull-handle (round side of handle down)
2. Insert the loose end into the hole in the top's dowel (inside pull-handle's hole).
3. Wind the string around the top's dowel.
4. Holding the top slightly with the same hand holding the pull-handle pull on the string pull (keeping the top near the ground when starting will stop it from bouncing as much when it hits the floor).

Here are some examples.

Have Fun!

