

Metal Wind Chime Project

Metalwork

Materials:

Half-Round pieces and connector rod:

1/8" steel rod

Main body:

1/8" flat bar 5 inches wide or thicker sheet metal depending on shop supply

String/Chain:

Thin 'non-welded' chain from Home Depot OR "hemp string"

Brass chain is \$2/foot from Mr. Holbrook or you can purchase from a store yourself.

Clapper:

1/4" thick steel. We can weld two thinner pieces together as well or use wood

Feather:

20-24g Sheet metal or wood

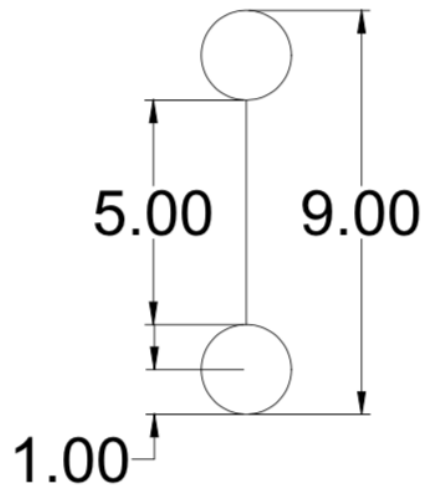


Procedure:

While you can make this project with mixed materials (wood, plastic, metal) this procedure will only cover steel and what can be welded together

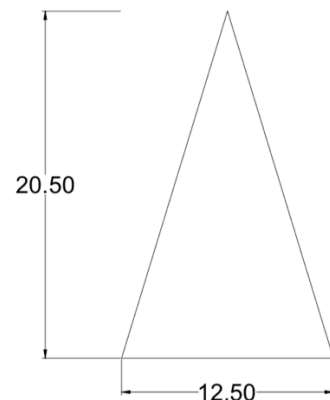
Round Pieces and connector rod:

- 1) Cut 12" (30cm) of 1/8" steel rod.
- 2) Cut a straight piece 5cm (2 inches) long and use the rest for your round pieces
- 3) Use a piece of 3/8" round steel as a jig (or use our premade jig) to bend metal around as many times as you can so it looks like a spring
- 4) Use bolt cutters or hacksaw to cut at 2 C shaped pieces and 2 full circles. Give the extras to someone else making the same project or to Holbrook's stash.
- 5) Weld your two full circles to both ends of your 5cm long 'connector rod' using the mig welder or oxy-acetylene torch



Main Body:

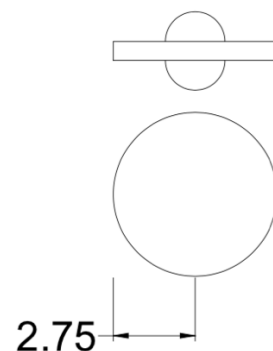
- 1) Layout your 3 isosceles triangle pieces (12.5cm wide, 20.5cm tall) onto your chosen material. Have Mr Holbrook check your layout so you aren't wasting material
- 2) Cut with plasma cutter, hacksaw, or foot shear depending on chosen material
- 3) File and sand edges until sized and smooth
- 4) DO NOT WELD YET!



Clapper:

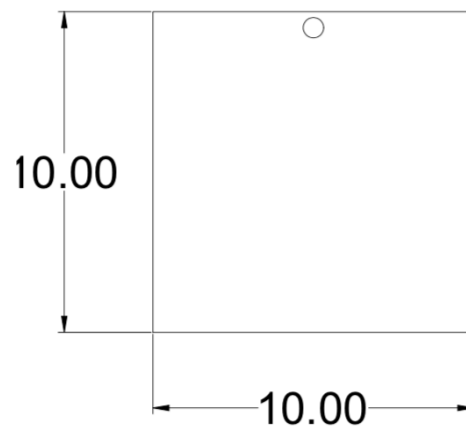
This piece will hit the inside of the main body

- 1) when wind moves the feather
- 2) Layout and cut round shape
 - a. If using thinner material, you can double it up and weld it together to make thicker
- 3) Weld on two half round pieces which we will use to attach the chain onto
- 4) File and smooth out piece



Feather:

- 1) Design your 'feather' on paper. You don't need a square as shown in the plans. You can choose a symbol or shape as long as it is big enough for wind to push it
- 2) Draw your design onto your sheet metal and cut out with snips
- 3) Drill and 1/8" hole near the top for attaching the chain or string
- 4) Smooth all edges/face and leave bare metal or paint

**Chain/String:**

- 1) Cut your chain into 3 pieces based on how long you need them to be. Make sure you are able to open a loop and close it after it is attached to the other parts of the wind chime!
 - a. Top chain to attach to house: 12cm
 - b. Middle chain between connecting rod and clapper: 12cm
 - c. Bottom chain between clapper and feather: 8-9cm
 - d. THESE MEASUREMENTS MAY NEED TO BE DIFFERENT BASED ON YOUR BUILD!
- 2) Attach the middle piece to the connector rod and clapper
 - a. The other chain pieces can be attached for finished assembly once the body has been welded

Welding the body:

- 1) *You may need to file down the top of the triangle if the pointy bit is interfering with the connector rod*
- 2) Weld the connecting rod piece to one of your triangle pieces on a slight angle (see sample)
 - a. Make sure you don't add too much weld. Just a tack.
- 3) Attach the middle chain to the Connector rod now as it will be difficult to do this after the body is welded
- 4) Lean your other triangles together into a 'TEE-PEE' shape and tack weld only the top area to hold the shapes together
 - a. Make sure you have a gap that gets gradually wider to the bottom
 - b. The space between the pieces at the bottom should be approximately 5-8mm
 - c. You may bend your pieces
- 5) Once spacing is correct finish with a weld bead no longer than 2.5cm (1 inch) on the three sides

Assembly:

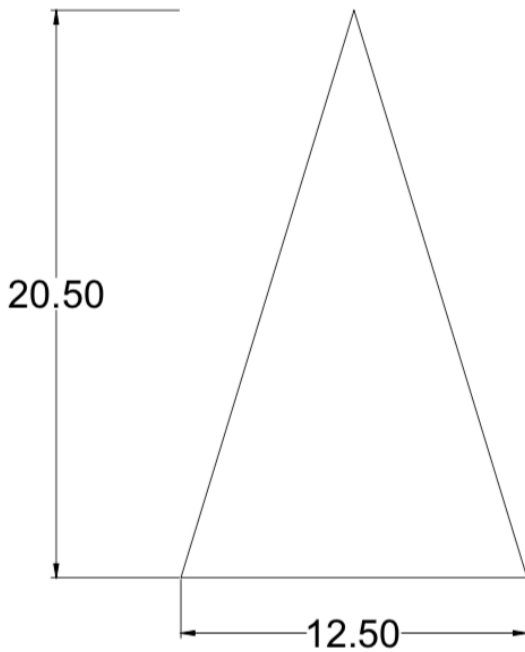
- 1) Attach clapper and close chain. The clapper should not hang out the bottom of the main body. Shorten your chain one link at a time if needed.
- 2) Attach the bottom chain and feather. Close links.
- 3) Attach top chain and test out!



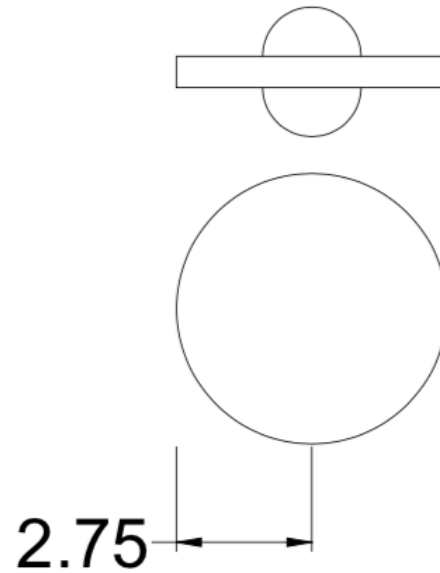
Blueprints

Dimensions below in cm unless otherwise specified

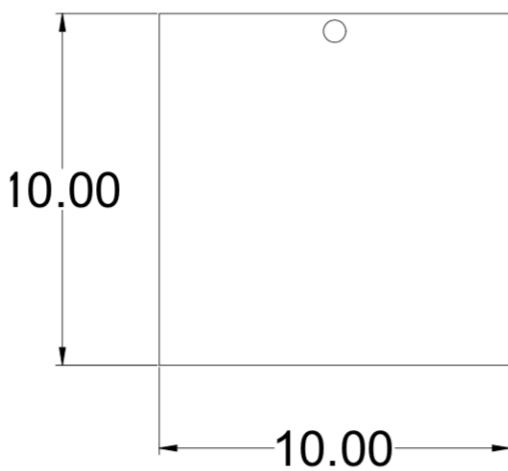
Main body



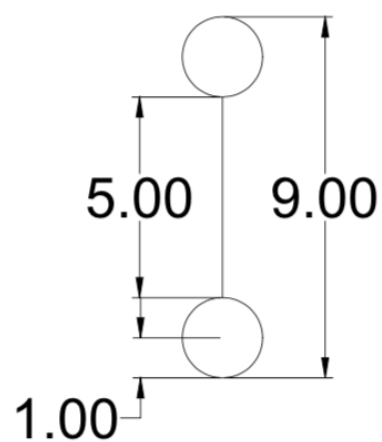
Clapper

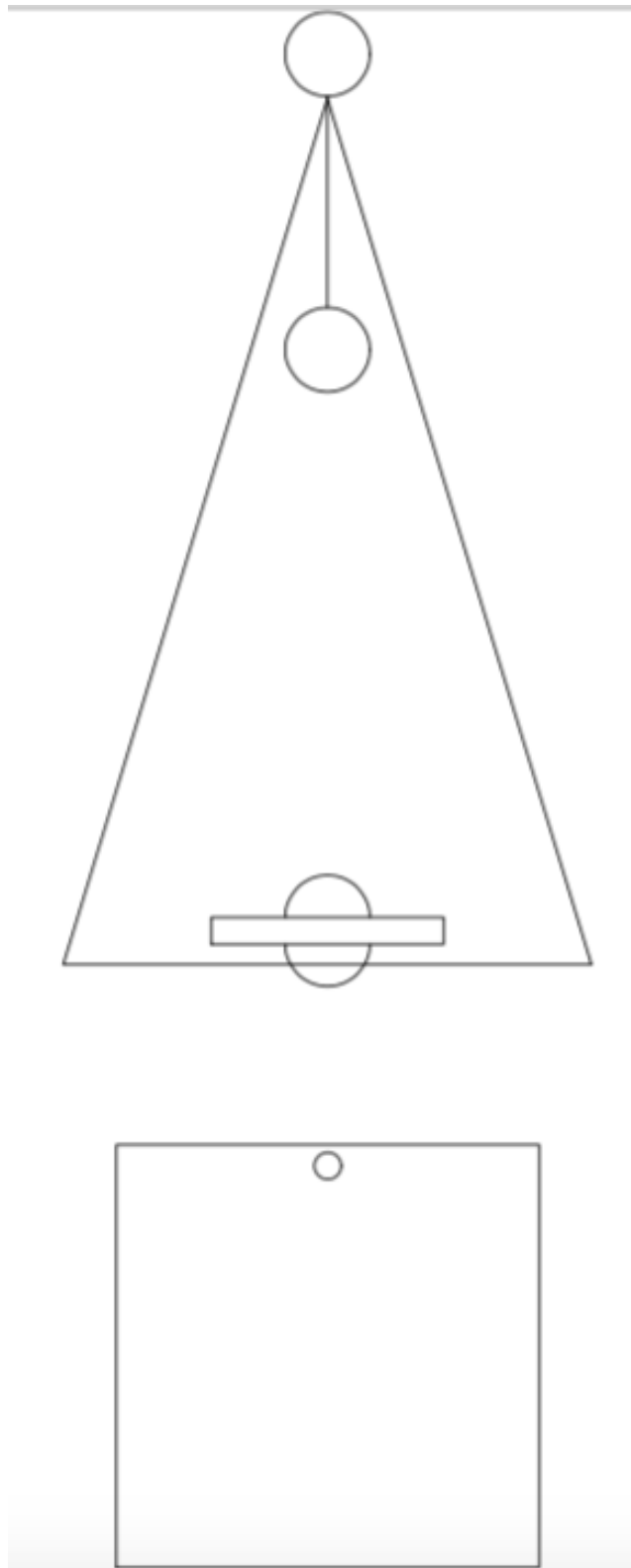


Feather



Connecting Rod





*Plans shown without chain in place