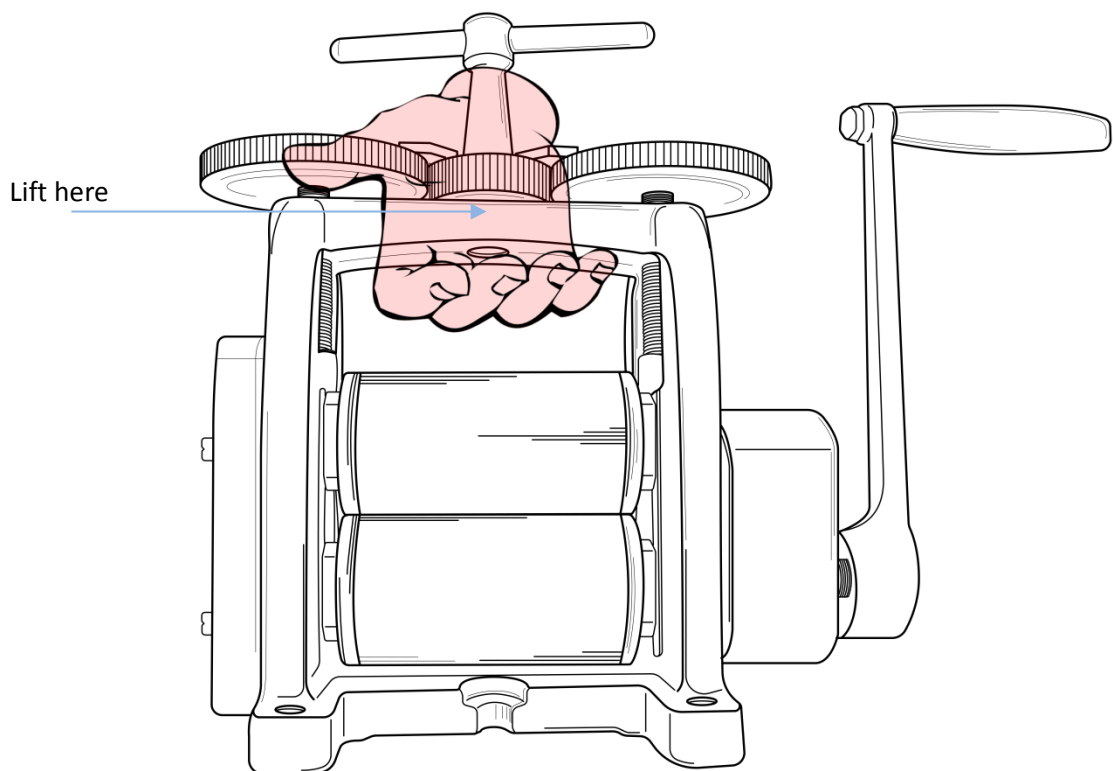
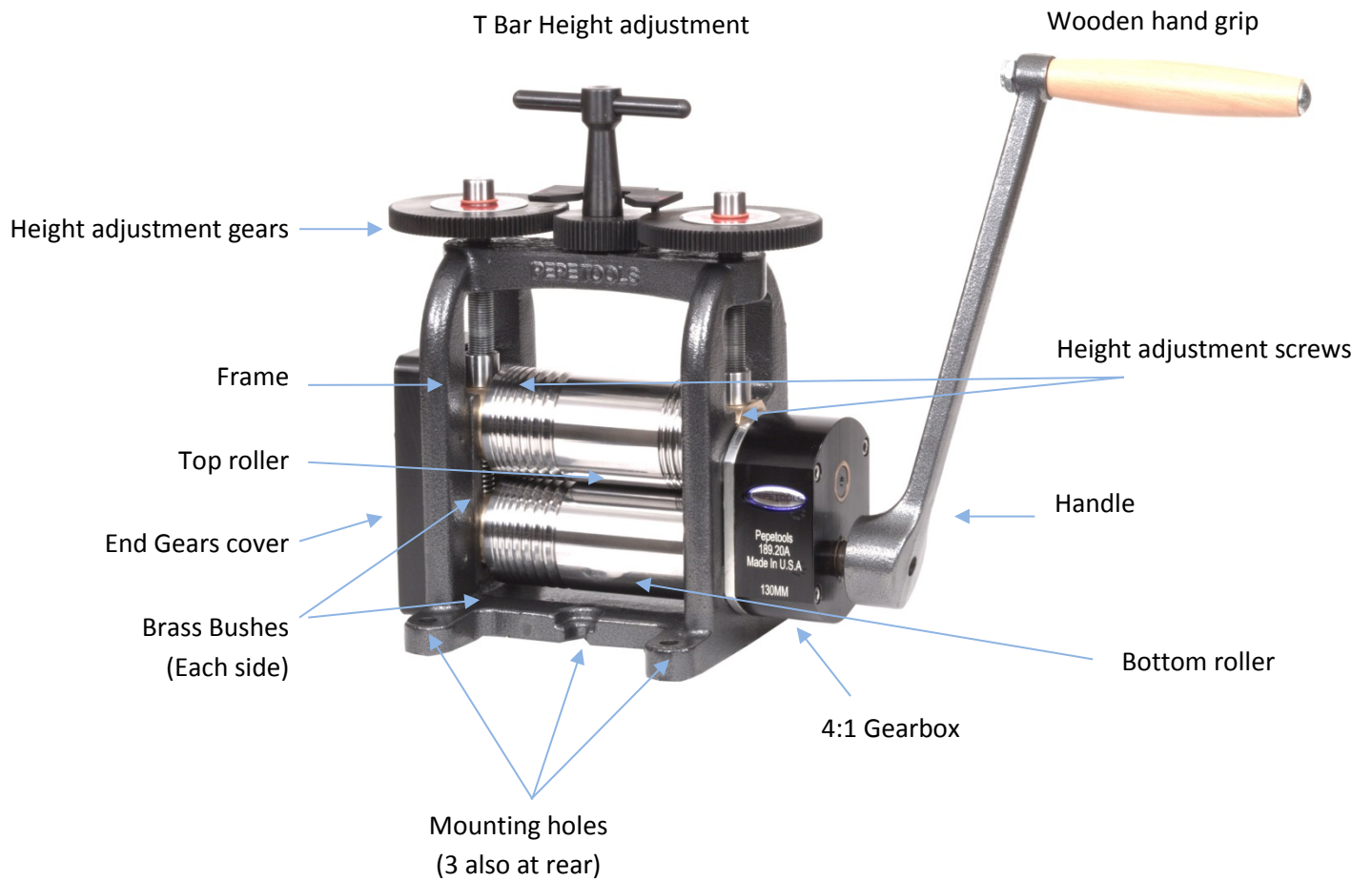


**PARTS DIAGRAM**



## UNPACK & ASSEMBLY

### CAUTION! THE MILL WILL BE VERY HEAVY - GET ASSISTANCE.

When unpacking the unit, be aware that the mills are very heavy. Follow good health and safety practice when lifting and handling heavy objects. It is strongly advised to get a friend to help. One person can lift the mill whilst the other removes the box. Decide how you will lift it and where you will place it down. Collect all packaging and recycle responsibly.

Note too that the mill may be coated in grease to protect it in transit, so rubber gloves are advised. A lint free cloth with white spirit can be used to clean the unit prior to first use.

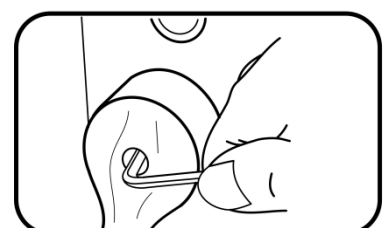
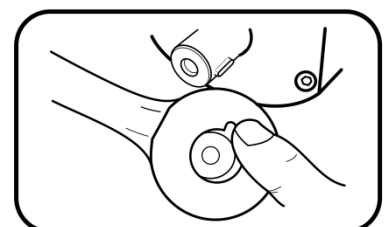
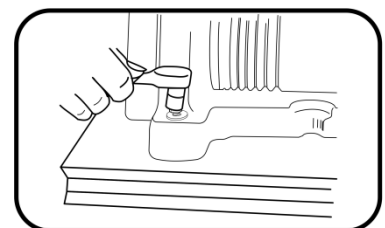
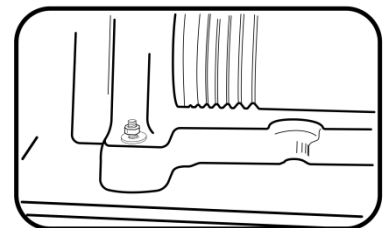
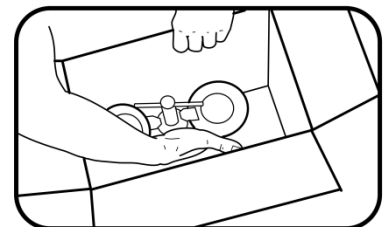
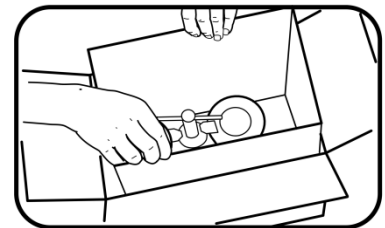
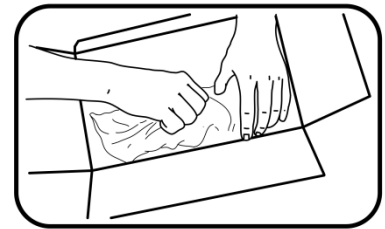
IMPORTANT when you get to the mill itself, **DO NOT LIFT IT BY THE T-BAR HANDLE**. That is designed for adjusting the gears - not for transportation. Remove all other items from the crate and ensure you can get access to the mill in order to lift it safely. Ensure that you know where you are going to put it down.

You must lift the mill by placing your hand **under the horizontal part of the frame**, where the Pepetools logo is. See the diagram for the correct hand position. Lift vertically (carefully!) and place down onto a solid and secure surface.

It is vital that the mill is firmly secured to a solid surface which can withstand its weight and will not move. Ensure that there is room to move the handle around fully and also to feed material into and out from the mill at both sides. Tip, it may be worth attaching the handle to check for clearance before marking your final holes.

The mill can be secured by using the four holes at the corners and long bolts going directly through drilled holes in the workbench. Alternatively the front and back centre mounting holes may be used in conjunction with a Pepe rolling mill stand. Once secured, attach the handle. Being careful to note the location of the key (small protrusion on the shaft) and aligning it with the notch in the handle. Secure with the hex bolt, which passes through the end of the handle and into the shaft. Ensure the handle rotates freely as does the wooden hand grip.

Done!





## BASIC OPERATION

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Using the mill is very simple. Firstly, ensure that no loose clothing is worn and hair is safely tied back. Check that there are no cables, ropes or anything that can get caught in the rollers or the handle.

The T-bar on top the mill is used to lower or raise the top roller. Increasing or reducing the distance between the two rollers. Note that only the top one moves up and down, the bottom roller remains fixed. Turning the T-bar clockwise (looking down from above) will lower the top roller and reduce the gap, resulting in thinner wire or sheet. Turning the T-bar anticlockwise, will lift the top roller increasing the gap for thicker material.

In normal operation you begin by opening up the rollers and inserting your metal to be reduced. Turn the T-bar to lower the top roller until it just touches your metal. Remove your metal and turn the T-bar a further  $\frac{1}{2}$  turn. Re insert your metal and crank the handle, so that the rollers turn inwards and grab your metal, rolling it through away from you. Continue turning the handle until your metal drops out of the other side. Continue to turn the T-bar  $\frac{1}{2}$  a turn before each pass and this will slowly reduce the thickness of your material. Depending on the effect you want you may wish to rotate your metal  $90^\circ$  in order to create square or rectangular bars.

Note that as you reduce the thickness of your metal it will typically increase in length, quite dramatically. You may also see a slight increase in width but this will be less noticeable. If you rotate it  $90^\circ$  after each pass it will go thinner and longer. Consider this when cutting or casting your initial starting piece.

To make square wire using the V groves. It is first important that your metal is uniform and parallel. If starting with a cast ingot, roll it through the flat mil, rotate it  $90$  degrees and roll through again. Reduce the with by  $\frac{1}{2}$  turn on the T-bar and roll it through again, rotate  $90^\circ$  and roll again. This double pass will create a uniform square bar.

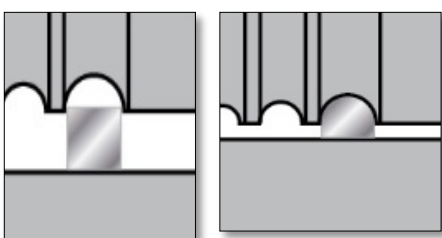
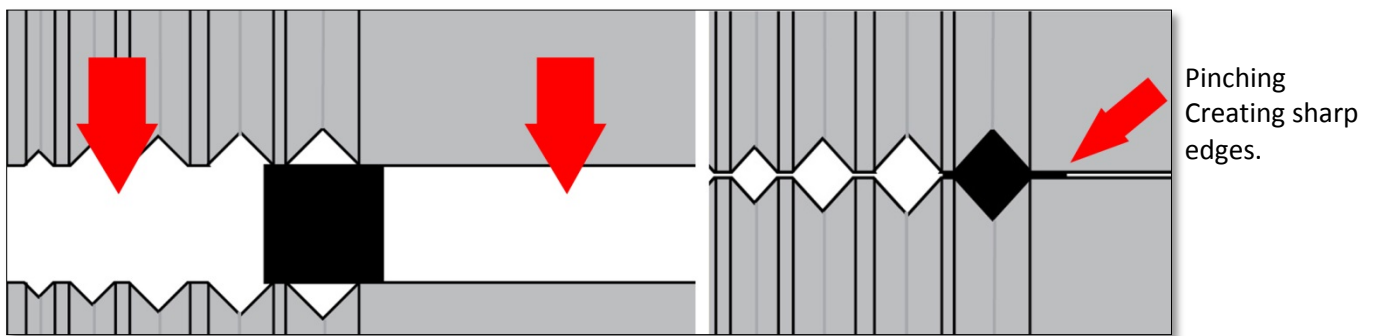
As soon as it will fit, move on to the V groove rollers, starting with the largest. Again follow the same method of rolling the wire though, rotate  $90^\circ$ , and then roll through again. You may find it helpful to use a permanent marker to mark one side of the metal so you can see which way you are rotating it. When the rollers are getting close together, only reduce the thickness by  $\frac{1}{4}$  turn and pass the wire though several times, rotating each time before reducing any further. This will avoid any pinching as the rollers touch. Continue down to the next roller until you have the desired dimensions. Note the length will increase greatly during this operation. A small ingot a couple of inches can be transformed into many feet of thin wire.

**Annealing.**

As the metal is forced through the rollers and transformed, this will work harden it. When your material becomes hard to roll or feels rigid. It should be annealed. Annealing is the process of softening metal and reducing the stress in it, to make it more pliable. If you are not already familiar with annealing, it's advisable to check the best method to anneal the metal you are working with. Usually this is done by heating it gently to a dull red heat, maintain that for a minute or so, and then quenching in water or leaving to air cool. This makes the metal more pliable, easier to work with and less likely to crack. If working an ingot down into wire, you may need to anneal several times during this process. Tip: - work several separate pieces at once. So whilst one is cooling you can be rolling another.

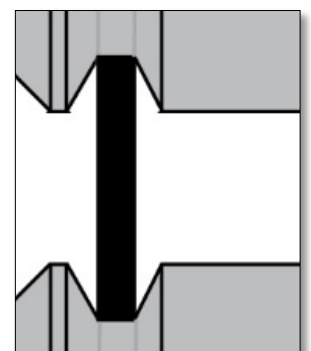
Note always ensure your metal is dry before taking it through the mill. Avoid any moisture on the rollers.

**Creating Perfect Edges.** Work your metal slowly and gradually, rotating it as you go. Forcing the metal through in one direction with too much pressure can cause it to “pinch” the sides, creating thin sharp edges. If this happens, rub the metal with emery paper to remove the edges (wear leather gloves). And pass it through the roller several times with the sharp edge pointing upwards in the V groove.



**D shaped Wire.** When using the flat /oval section of the combination roller. You can make D profile wire for ring shanks etc. Start with well annealed square wire a little narrower than the groove and gradually roll the wire through in *several passes* to dome the top surface.

**Parallel Edges.** When working with long thin strips, it is possible to turn the metal 90° and place it in the V shaped groves. You may notice that the bottom of the groves are actually flat. This allows thin strips to be rolled through edge on. Useful when making strips for ring bands or bangles.



## EMBOSSING

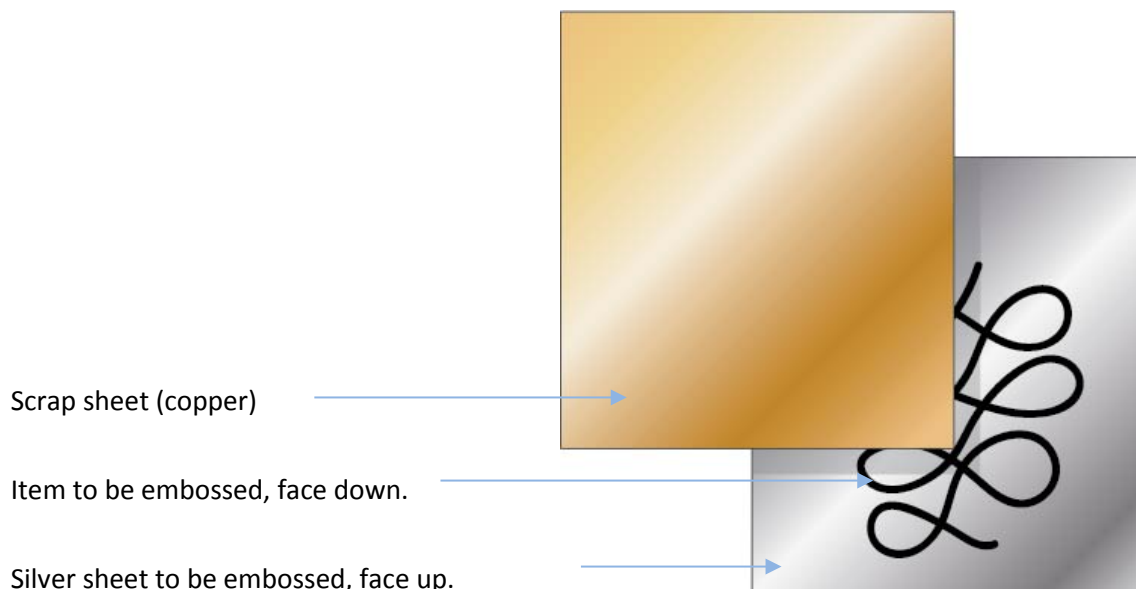
### Embossing Tips

Almost anything can be embossed into precious metal and non-ferrous metals. Such as lace, leaves, fabric, paper cut-out's, wire etc. And this technique can be used to add interesting textures to your jewellery. However you don't want to damage your rollers by embedding a pattern into the steel. So for this reason it is vitally important that you use a sacrificial piece of metal as a shield between your texturing item and your rollers.

Create a sandwich as shown. On the bottom is your metal. Flat, clean and well annealed, e.g. silver sheet. The uppermost face will be embossed. On top of it is the item to be embossed, e.g. a leaf or loops of wire (shown here). The side you want embossed should be face down onto the silver. Above it is a scrap sheet of copper or brass. This will protect your rollers. Use soft metals, do not use steel, as this may scratch your rollers. Whilst this is referred to as scrap, the pattern will be embossed onto this sheet also and so some interesting results can be obtained. But usually this is just a piece of flat scrap metal, which can be reused as a shield. Ensure the shield is larger than the silver, to avoid embossing the edges into your silver.

Ensure that the sandwich is only passed through the flat part of the rollers. If you want to do a lot of embossing then consider the full width flat rollers such as the 130 Flat. Passing it through the V rollers will leave flat parallel lines on the underside of your silver. Again, this can produce some nice effects...if desired.

Place the sandwich between the rollers and lower the top roller until the sandwich is snug between them. Remove the sandwich and turn the top handle  $\frac{1}{2}$  a turn (or a little less). Pass the material through and the half turn will provide enough pressure to emboss the item into the silver.



## How to care for your mill.

Your rolling mill is a very robust piece of equipment and should give you years of service. As with any mechanical item, a little maintenance will keep it in optimum condition for the best possible performance.

Oil all moving parts.

A light household oil such as 3 in 1 should be applied to all moving surfaces. Particularly around the brass bushings and the ends of the rollers. It is important that the rollers do not become rusted, so be aware of condensation in damp areas. Wipe the rollers with light coat of oil on a cotton cloth and store the mill with the rollers apart. If the unit is to be unused for a long period of time, oil all parts thoroughly and cover it ensuring it is kept dry and free from moisture.

The gearbox should not require any special maintenance. Inside of the frame where the brass bushes move up and down, will benefit from a little grease or oil, but there is no need to dismantle any part of the unit to do this. Simply close the rollers apply grease around the bushes, then open fully & close several times to move the grease.

If the rollers obtain any superficial marks or stains they can be polished by hand using a cloth and car metal polish such as Autosol. Very fine emery paper and oil can be used (if absolutely necessary) to remove superficial marks, but generally harsh abrasives should always be avoided.

The unit is designed for jewellery use with precious and nonferrous metals. Do not attempt to roll hardened steel as this may damage the rollers.

When annealing and pickling metal, always ensure that all items are dry thoroughly before passing through the rollers. After a busy day of extensive use, a quick clean and wipe of oil on the rollers will be highly beneficial. Develop good working habits, look after your mill and it will provide years of service.

If the surfaces of the rollers become damaged through improper use this may require replacement of the rollers, which may incur a cost. Please contact Pepe for help and advice and we will do our best to get you up and running again as quickly as possible.



**KEEP THE MILL DRY  
AT ALL TIMES**



**OIL ALL MOVING PARTS  
AND ROLLERS**



**USE METAL POLISH  
TO CLEAN ROLLERS**