



Ultra Series Rolling Mills. Setup - Usage - Tips - Advice




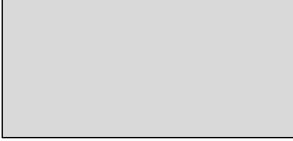



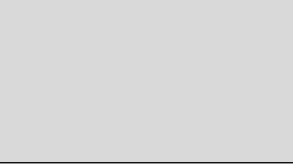



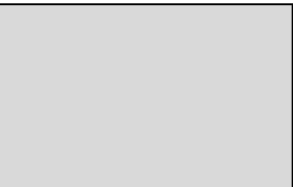


Ultra Mill



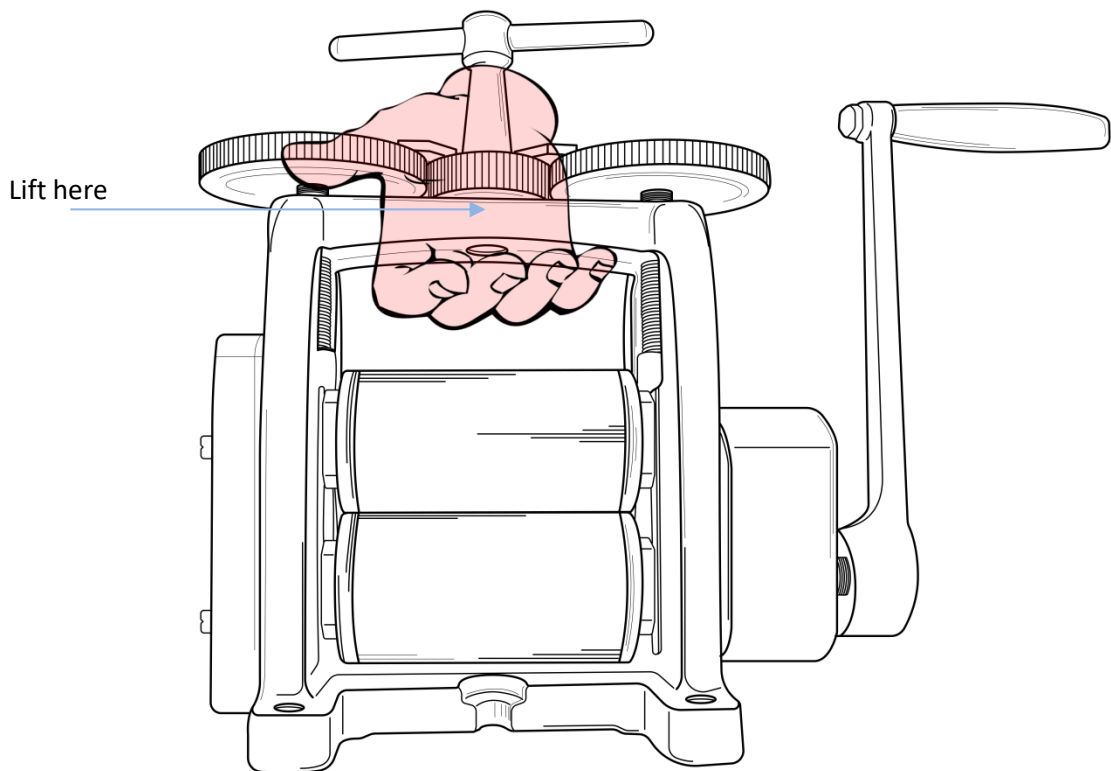
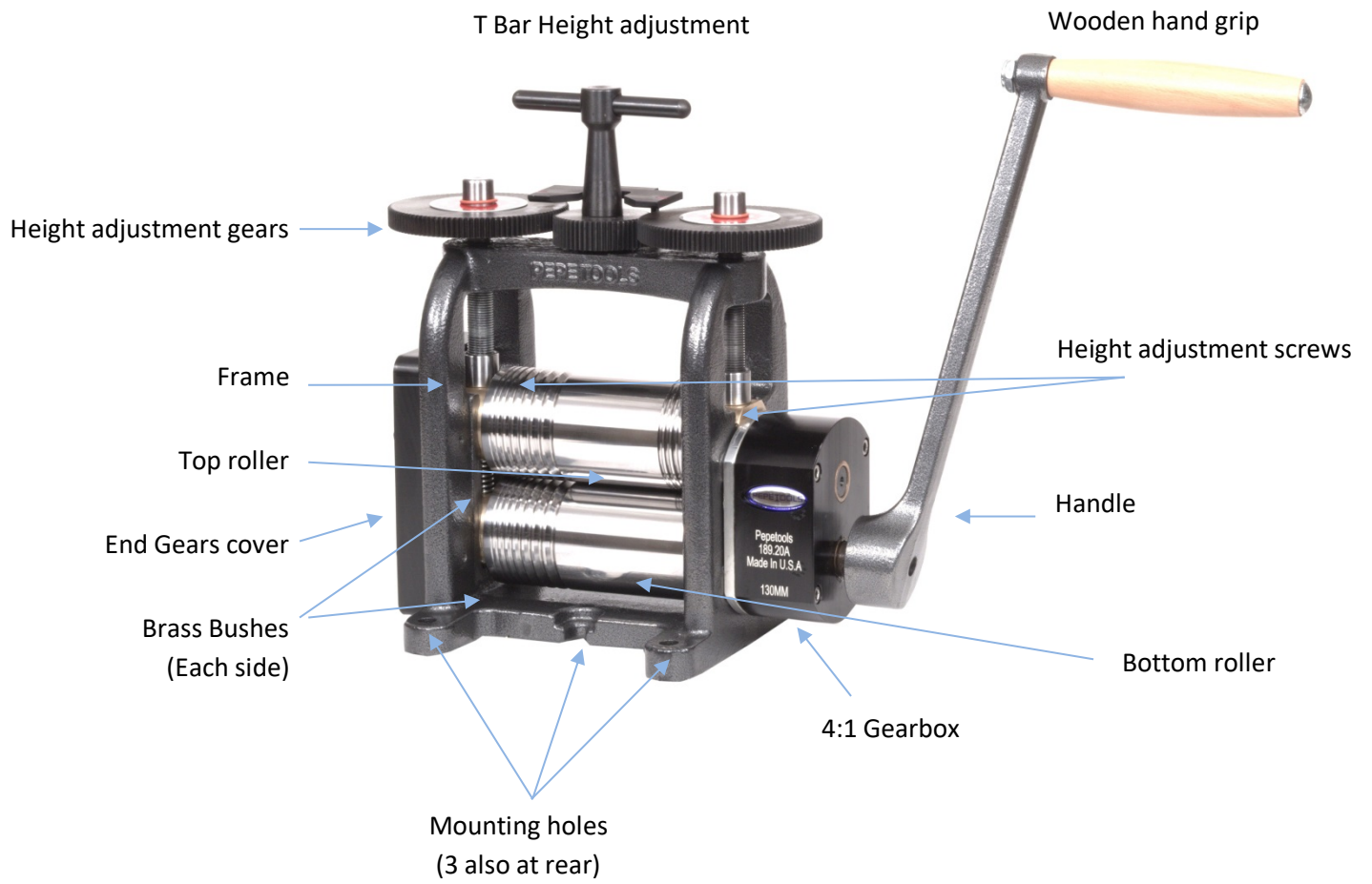
Ultra Power Mill

THE ULTRA RANGE

The Pepe Ultra range has a mill for every possible user. Starting with the 90mm for small jobs where space is at a premium. The 110mm combine bigger size and improved flexibility, within a compact unit and compact price. The 130mm models offer the greatest flexibility and maximum working space, either in flat rollers, combination rollers and the all-new 130 mm comfort fit rollers. All units feature a 4:1 gearbox. For the heavier user Pepe offer the power mills, for ease of use and speed. For the ultimate tool, Pepe offer the “twin” power mill featuring two 130mm powered mills, in any roller combination you require, for maximum productivity.

<p>90 mm Flat rollers</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width mm • Roller diameter 42.6 • Maximum opening 5 mm • Flat area (+/- 0.01mm) 90 mm 	
<p>90 mm Combination</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width 90 mm • Roller diameter 42.6 • Maximum opening 5 mm • Flat area (+/- 0.01mm) 90 mm • Square wire (+/- 0.01mm) : 1.0, 2.0, 3.0, 4.0 • Ring shank - half round ellipsis: 2.5 x 1:3 x 1.25 ; 4 x 1.5 	
<p>110 mm Flat rollers</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width - 110mm • Roller diameter - 55mm • Maximum opening - 5mm • Flat area (+/- 0.01mm) - 110mm 	
<p>110 mm Combination rollers</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width - 110mm • Roller diameter - 55mm • Maximum opening - 5mm • Flat area (+/- 0.01mm) - 57mm • Square wire (+/- 0.01mm) : 1.0, 2.0, 3.0, 4.0 • Ring shank - half round ellipsis: 2.5 x 1:3 x 1.25 ; 4 x 1.5 	
<p>130 mm Flat rollers</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width - 110mm • Roller diameter - 55mm • Maximum opening - 5mm • Flat area (+/- 0.01mm) - 130mm 	
<p>130 mm Combination rollers</p> 	<ul style="list-style-type: none"> • Gear ratio 4:1 • Roller width - 130mm • Roller diameter - 65mm • Maximum opening - 5mm • Flat area (+/- 0.01mm) - 60mm • Square wire (+/- 0.01mm) : 1.0, 2.0, 3.0, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5 • Ring shank - half round ellipsis: 2.5 x 1:3 x 1.25 ; 4 x 1.5 	

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.

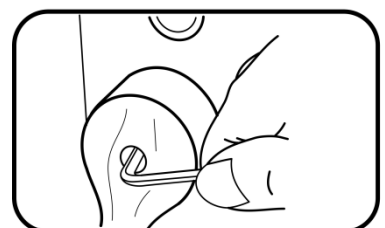
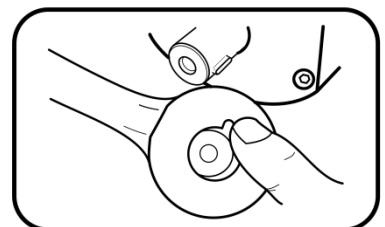
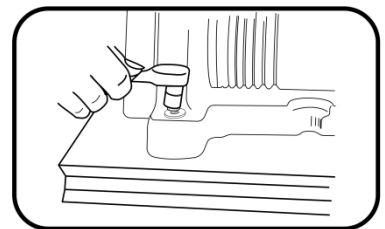
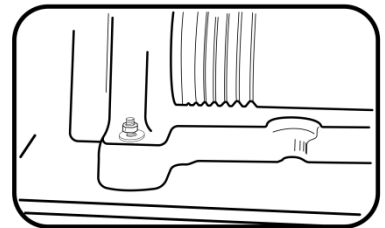
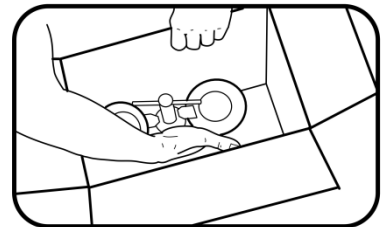
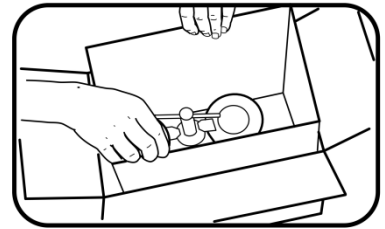
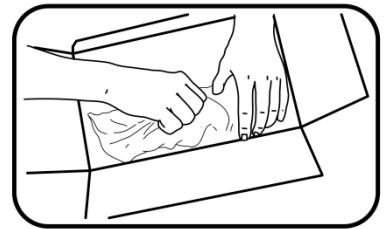
IMPORTANT when you get to the mill itself, **DO NOT LIFT IT BY THE T-BAR HANDLE**. That is designed for adjusting the gears - not for transportation. Remove all other items from the crate and ensure you can get access to the mill in order to lift it safely. Ensure that you know where you are going to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

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° 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° 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° and roll again. This double pass will create a uniform square bar.

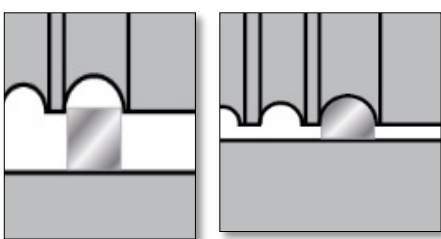
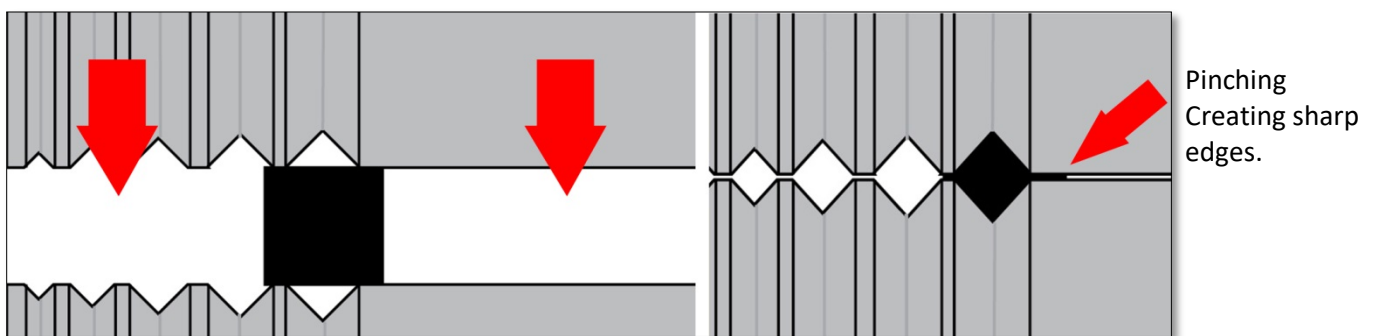
As soon as it will fit, move on to the V groove rollers, starting with the largest. Again follow the same method of rolling the wire though, rotate 90° , and then roll through again. You may find it helpful to use a permanent marker to mark one side of the metal so you can see which way you are rotating 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.

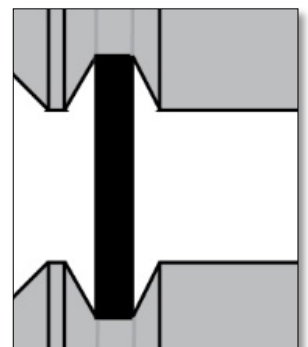
Note always ensure your metal is dry before taking it through the mill. Avoid any moisture on the rollers.

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 grooves. You may notice that the bottom of the grooves are actually flat. This allows thin strips to be rolled through edge on. Useful when making strips for ring bands or bangles.



EMBOSSING

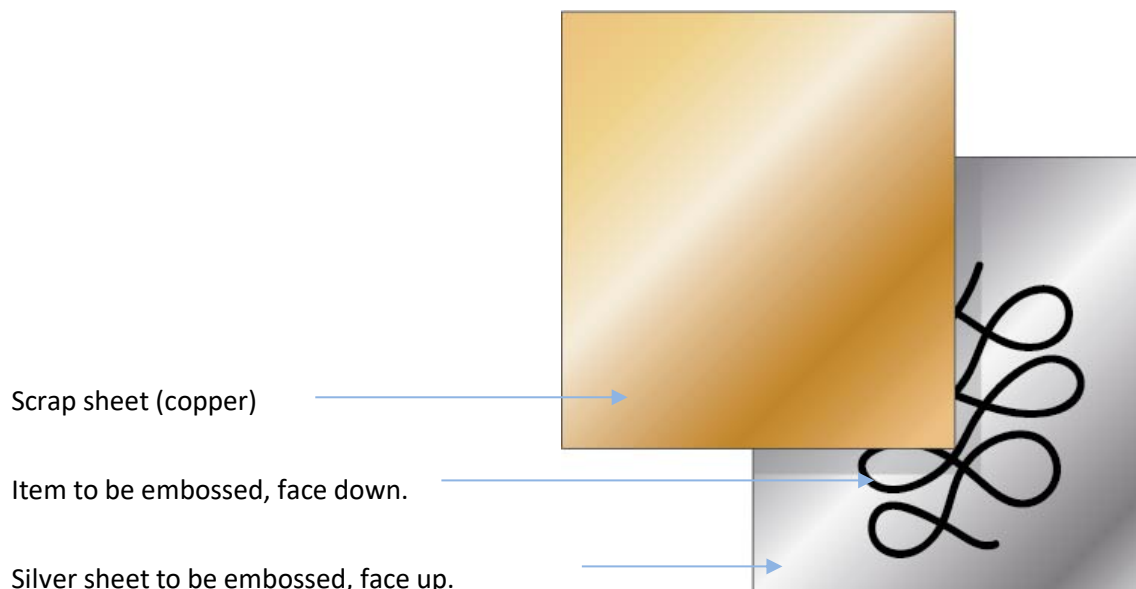
Embossing Tips

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**

POWER MILLS

Advantages of a Pepe Ultra Series Power Mill.

When you have a heavy workload, let Pepe take the strain with the Ultra Series Power mills, featuring a high torque, air cooled motor. Apart from the obvious advantage that you do not need to wind the handle (there is no handle!). The powered mills have many other advantages.

Space saving design. Because the motor is mounted vertically, the electric mills are very compact. As they do not have a handle, there no longer any need to have the mill positioned at the edge of a bench to allow handle clearance. So the electric mills offer more possibilities within a very compact desktop footprint.



The powerful motor combined with the Pepe 4:1 gearbox means incredible torque. Anything you can do, the power mill can do too. But now those tough jobs go through simply with the press of a button.

Hands free operation. No handle, means you have both hands free. One to feed and one to collect. Fast and efficient working with multiple passes. In - out, in -out. Faster, easier and safer.

Hi-tech speed control. The variable speed control unit does much more than simply adjust the speed. The unit features forward and reverse, at variable speeds. Slow and steady for fine tricky jobs, or fast and powerful when time is money. The complex electronics also create a slow start. This avoids snatching. The unit will start slowly, to feed the work in gently and then speed up to your chosen rate. Likewise switching the rollers off, will create a gradual halt. No sudden surprises, jolts or shudders. Safer for you, and safer for the gearbox ensuring optimum lifespan.



Emergency stop. Pressing the emergency stop will “instantly” stop the machine. The switch locks down when pressed. The unit cannot be powered back on until the emergency switch has been disarmed, by turning and popping it up. Avoid loose clothing, as with any machinery. Each Power mill also comes with front and rear feed guides fitted with safety guards, for your added safety.



Tips on working with the Power mills.

With great power, comes great responsibility. So do respect the high power and torque. The mill is capable of delivering far more power than you can by hand, so try not to get carried away. Work normally, turning the T-bar just $\frac{1}{2}$ a turn at most and work your metal down gradually. Do not try to force it through in one go, as this will not produce the best result and could cause damage to your mill. If a piece gets stuck, simply switch the rollers into reverse and the piece should back out. Should the situation arise where a piece has been forced through and jammed severely, stop the unit immediately by pressing the red emergency stop. Try to unscrew the T-bar to open the rollers and release the pressure. If you can't release the rollers, then use the supplied extension bar, which will slip over the T-bar allowing you extra leverage to open the rollers. This is for emergencies only. Check for any damage before commencing work again, and remember to work the piece "gradually" and anneal as you go.

The power mills are great for rolling very long lengths of wire, in a matter of seconds. But be cautious of sharp edges, especially when working at full speed with long items. But wearing gloves is not advisable, as they could get caught on the material and pulled into the rollers. Likewise when working with long wire, ensure you have clearance at the rear of the unit. Work exiting the mill could knock over items on you bench.

Follow all normal maintenance and oiling. But pay additional attention to the motor and the fan. Ensure it is clear of any dust and debris and that air flows freely through the top and side vents. Likewise the control box, ensure the vents are dust free by using a soft dry paintbrush. Use a can of computer air duster if necessary. Check the power cable for damage. In the event of a power loss, check the fuse in the unit and (depending on country), check the fuse situated in the plug (UK models). As always, just get in touch with us if you have any questions.



The double powered mills offer the ultimate in performance and flexibility. Giving the option of twin powered mills with flat, combination, or comfort rollers. The perfect solution for a busy studio. Both mills will operate at the same speed and direction, as set by the combined control unit. So when working alongside another operator, do observe extra caution, especially when activating the mill. Work from one side only and avoid leaning across one mill in order to use the other, as both will be running simultaneously.



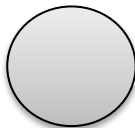
COMFORT FIT

Traditionally the Pepe mills have given you the opportunity to make flat sheet, square bar, square wire, and half round. The latest addition to the Pepe Ultra Mills line is the new "Comfort fit" Mill. This 130mm mill, is available in manual or powered, and offers a unique array of profiles due to its uniquely designed rollers. The rollers come as a match pair and incorporate four distinct profiles, Offering a vast array of possibilities for the jeweller.

Square: 8 square sections for reducing down cast ingots into bars and wire. Rotate the bar 90° after each pass for perfect uniformity on all sides.

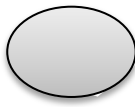


Round: 5 round sections for turning ingots or square bars into round wire. It is vital that you rotate your bar 90° after each pass, to create a uniform circular cross section. Work gradually to avoid pinching. Perfect for making wire.

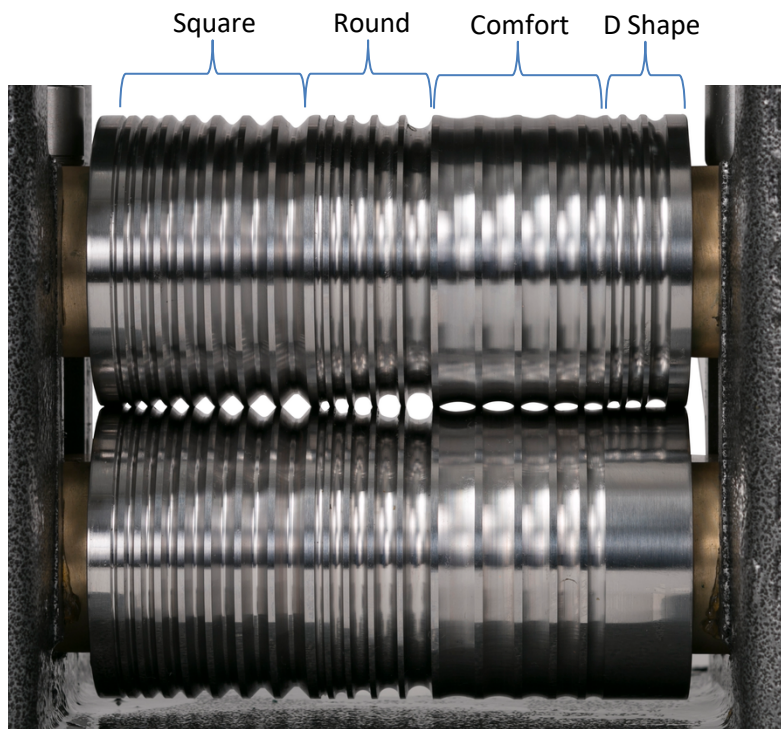


Especially with the electric mills.

Comfort fit: this special section has 5 oval profiles top and bottom designed to create the classic oval cushioned profile seen on the new "comfort fit" wedding rings. Begin with square bar for straight sides or round bar for a truly comfort fit. Start with bar slightly narrower than the groove, to avoid pinching at the edges. Work gradually to get the profile you desire.



D shape. The classic D shape with three half round grooves and a flat lower section. Use either round or square wire, slightly narrower than the groove. Work gradually to dome the top surface, great for bangles, bails and classic ring shanks.



"Comfort fit" wedding band with the smooth oval profile

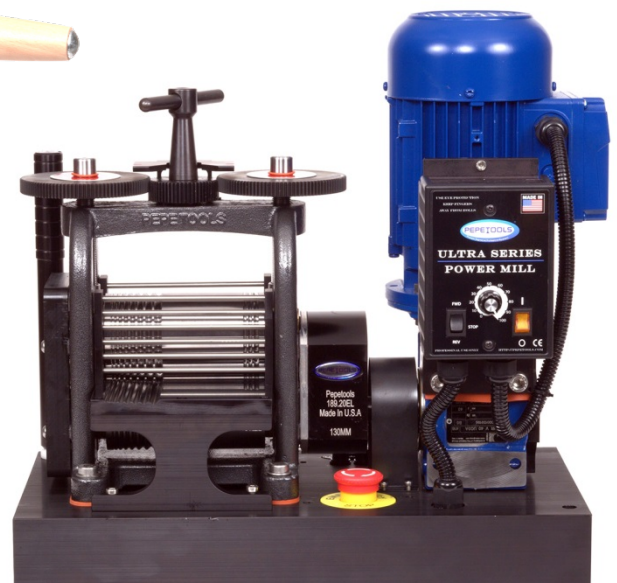


STRONG & PROUD

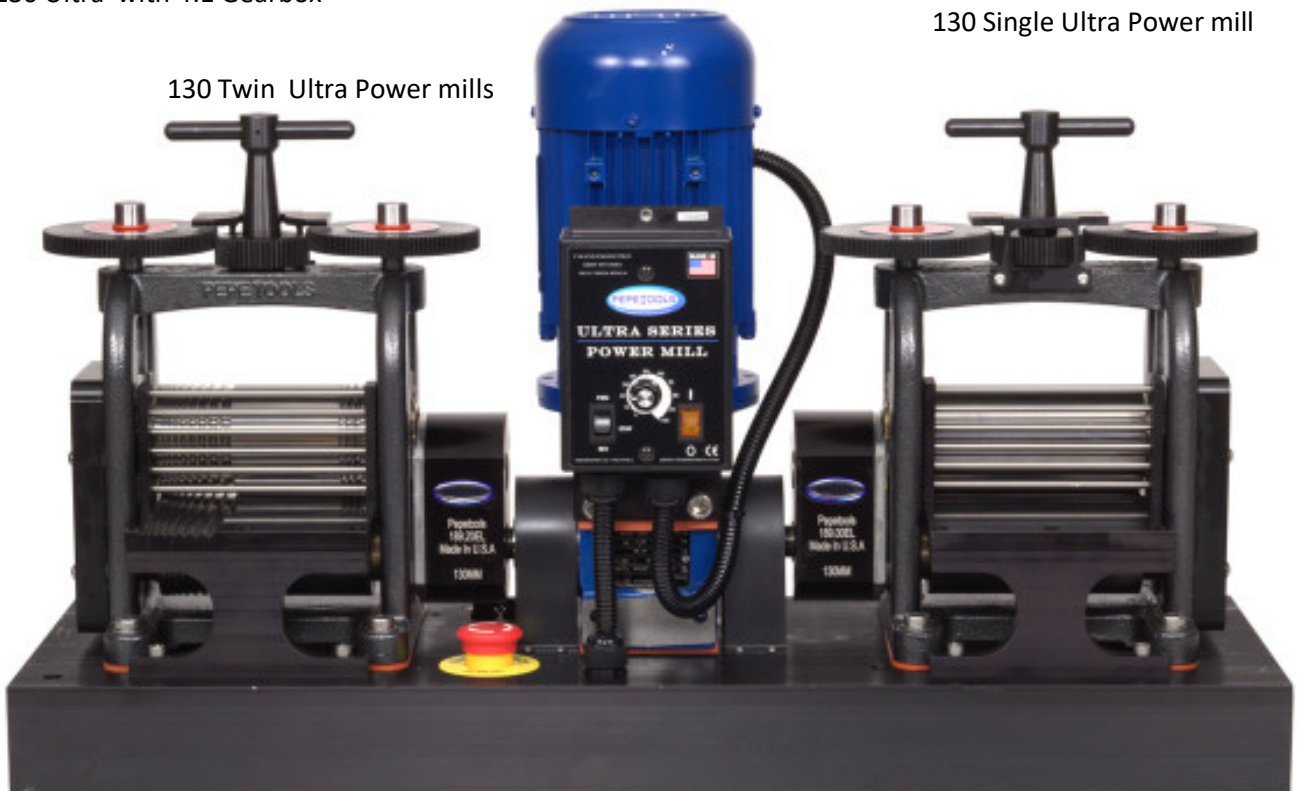
Pepetools engineered a unique housing that maximizes durability and increases strength, all while decreasing overall mass. Thanks to a new generation of precision machining, Pepetools "ULTRA" Series rolling mills are stronger than ever. Standard on each mill is a high performance 4:1 reduction gear box, turned with a high strength forged steel handle. Each roll is precision machined from select grades of high density steel. After the machining process is completed, each roll is hardened to 65 HRC in strategic locations utilizing the latest in induction heat treating methods. Pepetools is proud to be the only American manufacturer to produce, design, and build rolling mills in the USA.



130 Ultra with 4:1 Gearbox



130 Single Ultra Power mill



130 Twin Ultra Power mills

FURTHER INFO.

Whatever social media platform you use, Pepe Tools are there with the latest updates, news, and information on all your favourite Pepe products. So check us out and see what's new. Alternatively, you can call us, or simply write. However you get in touch, we look forward to hearing from you. Kind regards. Pepe tools USA.



Check out Pepe's YouTube channel for projects, demos, tips, and reviews. **Featuring the best jewellers from around the world, sharing their knowledge with you.**

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