



Premium Disc Cutting Kit



The PepeTools Premium Disc Cutting Kit contains everything you need to cut precise circular discs from sheet material with speed and accuracy. Every component has been designed to give optimal results quickly and repeatedly. Perfect for pendants, earrings, tags and many other uses. The tool represents the utmost in quality design and manufacture. It is made from precision ground steel and beautifully finished with laser engraving. The cutting punches feature a 7° cutting face, producing a smooth shearing action for the optimum cutting performance. The specially hardened cutting punches are designed to give accurate repeatable results time after time. The toolless design gives quick and simple operation in seconds, giving perfectly formed discs on demand. This saves time and can also be a huge cost saving over purchasing pre-formed discs and tags.

The kit comprises of the large circular PepeTools Disc cutter along with 14 corresponding dies, ranging from 1/8" to 1" diameter. All sizes are laser engraved on the disc cutter in both MM & Inches.

Inches: 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 1"
Metric: 3mm, 4.75mm, 6.35mm, 8mm, 9.5mm, 11mm, 12.7mm, 14.3mm, 16mm, 17mm, 19mm, 20.6mm, 22mm & 25mm

Depending on the kit purchased, PepeTools also supply the following useful additions...

- PepeTools premium (95A Durometer) Red Urethane Pad 6"x6" square, 1/16" thick
- PepeLube
- PepeTools centre positioning dies set of 13

The 13 Centre positioning Dies (Explained later) are used to make washer components. Each punch is followed by a smaller one which is aligned with the dies to cut the central hole. Hence why there are only 13 dies as the 3mm punch does not have anything smaller.

IMPORTANT!

It is vital that you do not use a steel hammer, as this could cause damage to the hardened steel punches and reduce the lifespan of your tool. A 2lb brass mallet will provide the weight required for effortless use, but will not mark or damage the punches. Alternatively, the tool may be used with a hydraulic press.

Materials.

The tool is designed for jewellers and hobbyists to cut discs from non-ferrous thin sheet materials such as silver, gold, brass, copper, aluminium and similar alloys. It is not intended for heavy gauge steel. It may also work on non-metallic materials such as heavy card, or some flexible plastics. The capacity of the tool will depend on many factors including the hardness of the material, the size of the punch used and the pressure being applied. Whilst many people use the tool for punching holes in coins, if the material cannot easily be punched with 2-3 hammer blows then the material is too hard or too thick. The excessive pressure and repeated blows required may prematurely blunt the punches.



Brass Head 2LB Mallet

Set up and placement.

The tool comes pre-assembled and ready to go straight out of the box. However, you should read the instructions carefully first to ensure safe and correct operation. The tool is suitable for left or right-handed use and requires no fixing. When in use, the cutter needs to sit on a solid fixed flat surface, which can withstand the hammer blows. A heavy bench top or anvil is perfect. The design of the tool is such that the punches clear right through the tool. This gives an accurate finish to the discs. In order to prevent damage to your surface or to the punches, use the red urethane pad underneath the tool when cutting. When not in use, the tool may be stored on its base, in a dry place. It does not take up valuable space on your benchtop!

Basic Operation.

Begin by placing the disc cutter on a solid surface on top of the red urethane pad. Unscrew the knurled nut at the centre (anticlockwise) and note that the two plates will spring open. If they do not open, just tap them gently. Oil and lube may sometimes cause the plates to stick together, especially on first receipt. Slide your sheet in between the two plates ensuring that the sheet completely fills the desired hole. Ensure you are not clipping the edge of your sheet.

Optional Tip.

You may use a small offcut of the *exact same thickness* sheet and insert it between the plates at the opposite side, as a shim. This will ensure that the plates remain perfectly parallel when tightened. See the image. The Pepetools disc cutter has three alignment pins to ensure accuracy. So whilst this tip is not essential, it is a commonly used technique with other disc cutters. Especially with thicker materials.

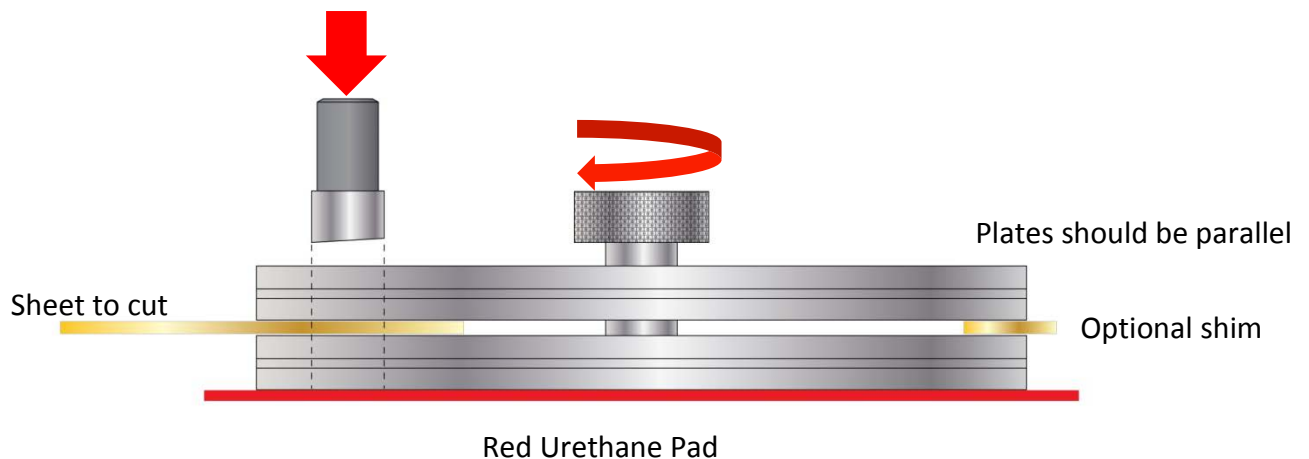
Tighten the centre screw clockwise to close the plates together and clamp your sheet. “Good” finger tight is sufficient, no tools are required. Ensure your sheet (and shim) is clamped firmly and does not move.

Select the corresponding die to the hole and apply PepeLube around the cutting face and edge. Note which end is the cutting face, especially with the smaller punches, as it may not at first be obvious. Insert the punch into the hole, with the cutting face downwards onto the sheet.

Strike the top of the punch firmly with a brass head mallet. With thin material, one blow may be sufficient. Thick material may require 2-3 blows, but do not adjust or remove the punch between blows.

Once successfully punched, you will note the punch drops through the hole and the sheet. Lift up the cutter and you will see the disc and the punch will fall right through, leaving a perfect hole. Unscrew the centre nut anti-clockwise to release the plates. Remove your sheet and shim.





Optional shim placement.

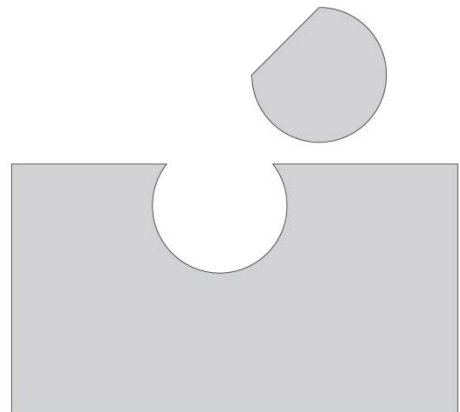
This can help to keep the plates parallel assisting in clearance of the punch. This should not usually be necessary with the PepeTools disc cutter, but it's always good to keep a couple of offcuts handy. Especially if punching thicker materials.

Tip – Avoid edges.

Avoid cutting within a few millimetres of the edge. Always ensure that the sheet is fully under the hole with a good few millimetres clearance all around it. This allows for a secure clamp all around the hole, for optimal results. It also avoids having flat spots on the edge of your disc.

Tip – Mark your spot beforehand.

Place the punch onto your sheet and using a permanent marker, draw around the punch, creating a circle on your sheet. You can then align this when you insert it between the plates.

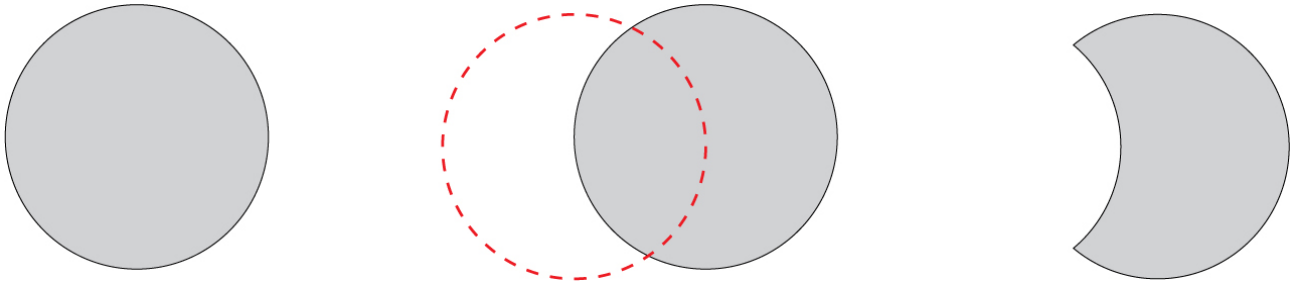


Tip - Texture first.

If you intend to apply a heavy texture to your disc such as a hammered finish, this can distort the edges of your sheet. Hence it is better to texture your sheet beforehand, and then punch the disc out. This will result in a perfect circular shape with a clean edge.

Creative Tip - half moon.

An interesting effect can be achieved by punching a large disc and then reinserting it part way through a hole and punching it again. This method can be used to create half-moon crescent shapes.



Creative Tip – Multiple holes.

You can see this in the example shown below by Silversmith Dave Wilson of Celtic Dreams. Here Dave has punched a large 1" disc from 0.5mm copper sheet. The disc was then punched with several smaller punches to create the holes. The disc was then domed using a doming block. An additional disc was punched from textured sheet and also domed before assembling the final pendant.



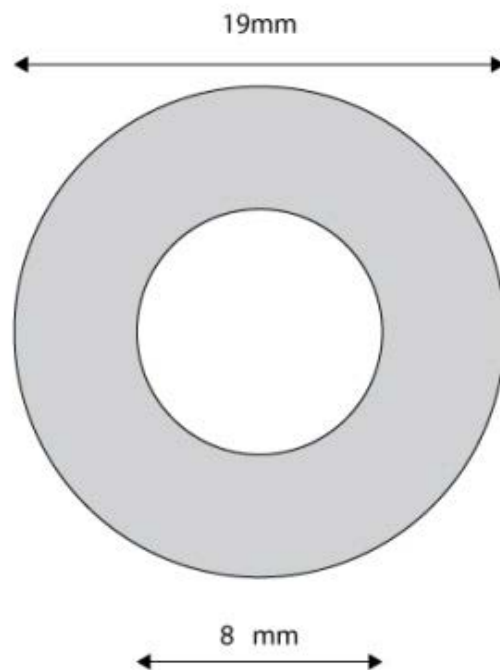
Copper punched and domed pendant by Dave Wilson. www.Celticdreams.co.uk

Cutting Washer components.

It is possible to make washer components by first punching a small hole and then punching a larger hole around it, creating a flat washer. However, the problem occurs when trying to precisely align the smaller hole in the centre of the larger one. This can result in offset washer shapes, which can be very interesting, but perhaps not what you want to achieve. The solution to making perfect washer components is to use the optional PepeTools Centre Positioning Dies.

The Positioning dies are a set of 14 tapered dies, each corresponding to a punch and hole. It is important to note that these dies are for alignment. They are not punches and should not be struck. By varying the outer and inner punches a combination of 196 different washer shapes are possible. Small, large, thick and thin.

In the example here, we will make a washer with an outside diameter of 19 mm and an inside diameter of 8 mm.



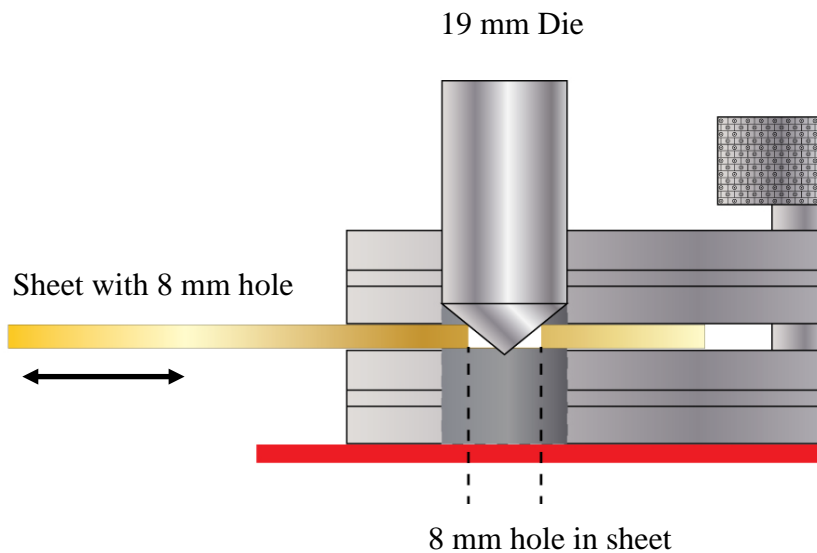
Begin by marking your sheet with the approximate centre of the washer, ensuring you will have enough room to cut the larger diameter later.

Always start with the *smaller* dimension. Begin by cutting the 8mm hole as normal (remember to use a shim). When you insert the sheet align the mark to the approximate centre of the 8mm hole.

Punch as normal and remove your sheet. You now have an 8mm hole (and a small disc).

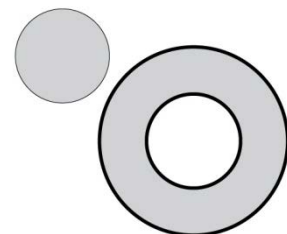
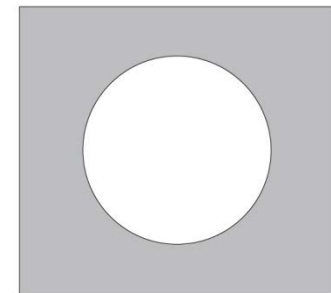
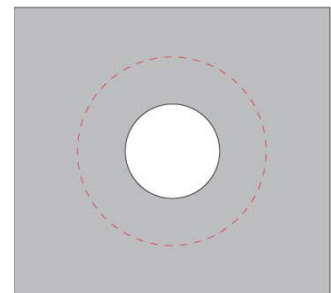
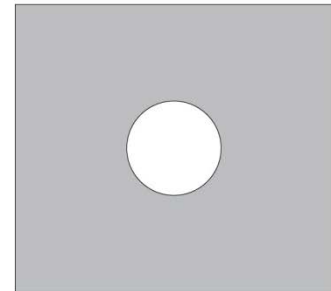
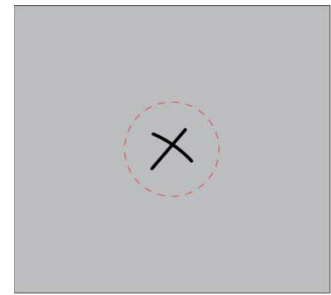
Reinsert your sheet between the plates and under the 19mm hole. Try to align the 8 mm hole in the sheet approximately in the centre of the 19 mm hole in the plate. Do not tighten yet.

Next, insert the 19 mm positioning die into the 19 mm hole, point downwards (always use the corresponding die). The die will poke through the hole in the sheet. Push down the die gently and jiggle the sheet until the die is firmly pushed down as far as it will go. The sheet should be able to rotate around the die but not be pulled in or out of the plates. Leaving the die in place, tighten the top screw (remembering to insert a shim offcut as before).



Remove the die and the 8mm hole should now be perfectly centred within the 19 mm hole in the plate. (Do not strike the die). Punch the 19 mm hole using the 19 mm punch (not the die) as normal.

You will now have a perfect washer component (and an 8mm disc).



Maintenance.

Under normal use, your disc cutter needs no maintenance other than an occasional light coat of oil. Just as with any other steel tool, keep it dry and free from moisture. Should the unit require cleaning, simply unscrew the top nut completely. This will allow you to separate the two plates. Clean with a cotton cloth and apply a light coat of general purpose household oil before screwing back together.

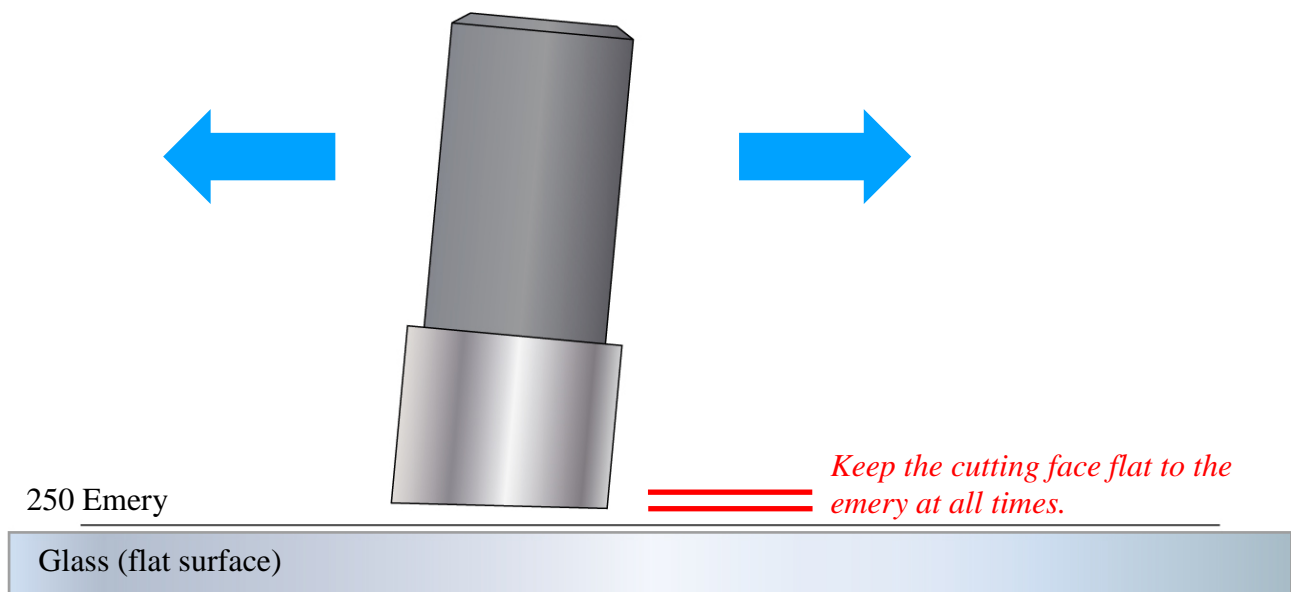
TIP.

When storing for extended periods, loosen the top nut so that the plates are not touching. This will avoid them sticking together with the oil.

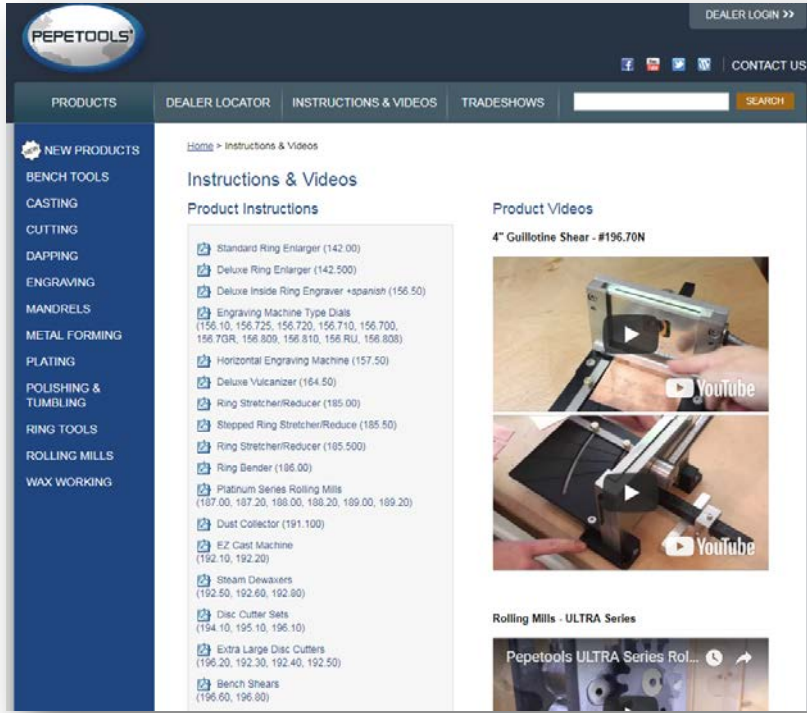
Sharpening.

Again, your punches should last for many years if used sensibly. However, should you find your punches need sharpening this can be done very easily. Please check out PepeTools website and YouTube channel for videos on how to do this, but the method is as follows.

Place a sheet of 250 grit emery paper onto a perfectly flat surface, e.g. a sheet of glass, and tape it down securely. With your chosen punch, remove any traces of PepeLube using a cloth and alcohol. Using a permanent marker, blacken the cutting face of the punch uniformly and right to the edges. Apply a few drops of oil to the emery paper and place the punch face down onto the emery. Ensure that the face is flat to the emery at all times. Note that the face is angled slightly. With a light pressure move the punch in a figure eight motion around the emery sheet, maintaining a flat cutting surface at all times. Check to see the marker pen being removed from the face. Once all the black has been uniformly removed, the punch should now be sharp. Do not allow the punch to tilt and do not sand the edges or sides. Clean the punch with alcohol and reapply oil. Test the punch on some thin material.



For the latest tips and advice, check out PepeTools website for instructions, projects and 'how to' videos. Follow us on Facebook, Twitter and YouTube. If you have any questions or concerns then just get in touch and we will be happy to help.



www.Pepetools.com

Written and illustrated by Dave Wilson
For PepeTools.



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