PROJECT 3: PLANT POT HOLDER

BEFORE STARTING this project read the instructions for the Practical Riveting, Bending and Rolling tool, the Practical Punch/ Shear tool and the MK 1/2 Scroll Former. Read these instructions together with the accompanying Design Template Sheet before commencing the project.

1 Take four 920mm (3ft) lengths of 12mm x 2mm (1/2" x 14 Gauge) steel strip and use a cloth to remove any excess oil or grease from the bar. From the first length cut a length of 180mm (7 1/16") using the Practical Punch/Shear tool. If you don't have a tape measure or ruler simply place your steel strip alongside Template No.1 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut using a fine tip marker pen or pencil. For a neater finish you can trim the corners off each end of the bar as shown here. This piece will be used for the hanging ring at the top of pot holder.

2 From the same strip, next cut two lengths each 300mm (11 13/16") long. If you don't have a tape measure or ruler simply place your steel strip alongside Template No.2 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut using a fine tip marker pen or pencil and then place the strips alongside the template and mark the scroll end point S1, and the two punch hole positions X. Again trim the corners for a neater finish. These two pieces will be used to form the bottom two scrolls.

3 From the next two full strips cut four lengths of 380mm (15"). If you don't have a tape measure or ruler simply place your steel strip alongside Template No.3 on the accompanying Design Template Sheet and mark on the steel strip where you need to cut using a fine tip marker pen or pencil and place each of the four strips next to the template and mark the scroll end point S2. Again trim the corners. These four pieces will be used to form the four "C" scrolls.

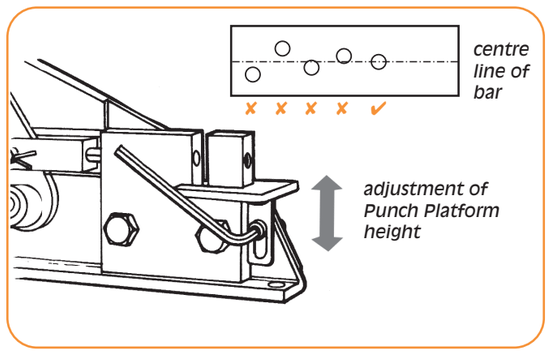
4 Take the last full strip and cut a length of 330mm (13"). If you don't have a tape measure or ruler simply place your steel strip alongside Template No. 4 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut using a fine tip marker pen or pencil and mark the bending position B1 and hole position X. Again trim the corners. This piece will be used to form the upper plant pot support ring.

5 From the remainder of the last strip cut a length of 285mm (11 1/4"). If you don't have a tape measure or ruler simply place your steel strip alongside Template No.5 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut and mark the bending position B2 and hole position X. Again trim the corners. This piece will be used to form the lower plant pot saucer support ring.

6 Next, from the remainder of the last strip cut a length of 20mm (3/4"). If you don't have a tape measure or ruler simply place your steel strip alongside Template No.6 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut and mark the hole position X. This piece will be used to form the small spacer.

7 Next, from the remainder of the last strip cut a length of 210mm (8 1/4"). If you don't have a tape measure or ruler simply place your steel strip alongside Template No.7 on the accompanying Design Template Sheet. Mark on the steel strip where you need to cut and mark the hole positions X. This piece is used purely to set the distance between the 4 top scrolls (however if preferred you can keep the cross bar in the pattern to fix a decorative accessory to such as one of our self fix accessories. (See Development Ideas)

8 Next adjust the platform on the Practical Punch/Shear so that it is ready to punch holes in 12mm x 2mm (1/2" x 14 Gauge) . Take a small piece of this size material and punch a sample hole. The hole should be on the centre line as shown in the picture below. If not adjust the punching platform height with the allen key provided on the adjustment bolt, either up or down (as necessary). Move the sample piece of bar and punch another hole to test if alignment is correct. When you have got the hole central tighten up the adjustment bolt.



9 With the platform adjusted, punch each hole marked from Steps 2, 4, 5, 6 and 7.

10 With the four strips marked up in step 3, place each one in turn into the MK 1/2 Scroll Former, and pull the metal around the scroll, putting the segment piece into place, and bring the metal around until the points marked S2 4 just touch the scroll segment. This should ensure that all the scroll are the same size and shape. Repeat this exercise at each end of the four separate strips until you have four C shaped scrolls.

11 With the two pieces marked up in step 2, place each one in turn into the MK 1/2 Scroll Former, and pull the metal around the scroll, putting the 2nd segment piece into place, and bring the metal around until the points marked S1 just touch the scroll segment. This should ensure that each scroll is the same size and shape. This should give two flat pieces with a scroll at one end.

12 Next with a spare piece of material set up the Practical Riveting/Bending/Rolling Tool to bend an angle until you reach the angle shown in Diagram 1 (135 degrees) on the accompanying Design Template Sheet. To check the angle lay the bent metal on this diagram. When achieved adjust the end stop screw with an allen key (supplied with the tool) to limit the bend so that this angle can be bent repeatedly.

13 With the bending tool set up to bend at 135 degrees, take the piece of steel marked out in step 4 and bend the metal at the point marked B1.

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14 Then take the piece of steel created in Step 5 and do the same with this and bend the same angle (135 degrees) at the point marked B2.

15 Before we start rolling the three rings within this project, we need to prepare the Practical Riveting/Bending/Rolling tools for rolling. To do this use the allen key to unscrew the securing bolts of the two rivet posts. Then fit the Winding Handle to the hole nearest the two side rollers using the allen key provided to screw the handle down tightly.

16 Firstly, take the strip of metal created in step 1 and place between the winding handle roller and the two side rollers in the Practical Riveting/Bending/Rolling Tool. Then steadily roll the piece of metal through the tool by rotating the winding handle. Roll the handle clockwise and then counterclockwise, extending the full length of the strip. Once the first pass has been completed, exert slightly more pressure using the other handle and roll in the opposite direction. This process should be repeated patiently increasing pressure with the long handle little by little after each pass until a consistent circle is created and the ends just touch each other, and then remove the metal from the tool.

17 Place the first of the two bent strips from steps 4 and 5 into the Practical Riveting/Bending/Rolling Tool as shown in Diagam 3. Then steadily roll the piece of metal through the tool by rotating the winding handle. Roll the handle clockwise and then counterclockwise, extending the full length of the strip upto the bend. Once the first pass has been completed, exert slightly more pressure using the other handle and roll in the opposite direction. Again this process should be repeated patiently increasing pressure with the long handle little by little after each pass until a consistent circle is created, and then remove the metal from the tool.

18 Now remove the Winding Handle from the Practical Riveting/Bending/Rolling tool. To complete the two rings created in the previous step, bend each the stem on each ring (previously set to 135 degrees as per Diagram 1) angles a little further so that each stem lines up with the centre of the ring as shown in Diagram 4. This can be done roughly by eye and without having to lay it on a template and when this is done the (larger) upper plant pot support ring and the (smaller) lower plant pot saucer support ring are complete.

19 With all the components now made, all that is left to do is to fit all of the pieces together. Lay all the pieces down on a flat surface in the arrangement shown in Diagram 2. Start with the four C scrolls that form the top section. Use the cross bar created in step 7 as a guide to get the spacing of the two c scrolls correct. Arrange the scrolls so that they touch this bar exactly where the holes have been punched in it and mark the scrolls accordingly.

20 Then line up the holes at the top of the flat section on each of the two bottom scrolls and drop the small spacer in between the two flat sections and line up the holes. Then place these in between the two bottom C Scrolls as shown and line up the tops of these c scrolls with the holes in the crossbar as in Step 19. Mark all the points where holes need to be punched with a pencil or fine tip marker pen mark on the points at which all of pieces touch one another.

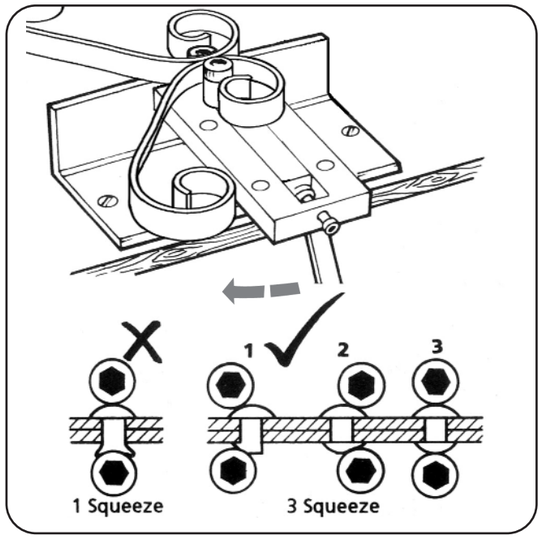
21 Then mark the two rivet points where the hanging ring ends touch the tops of the C Scrolls.

22 Finally, line up the hole in the stem of the lower plant pot saucer support ring with the holes in the flat sections of the 2 bottom scrolls. Then use a nut and bolt fixingto hold it in place. Then with Plant Pot Saucer sat in the bottom support ring, offer a 100mm (4") plant pot to identify the best position for the upper support ring. Mark this position on the two flat sections of the bottom scrolls.
With the Punch/Shear still set to punch holes in 12mm x 2mm (1/2" x 14 Gauge) punch holes at all the marked positions from Steps 19 to 22.

Special Note - if you decide to include the C Scroll cross bar in the design so that you can incorporate a self-fix accessory you may need to include further holes on the crossbar for fixing tags. These need to be thought out and punched before moving on to the next step.

24 Before we can rivet the frame together it is advisable to attach all the pieces together to ensure that everything fits together properly. By using nuts and bolt, we can ensure that when it comes to riveting, the frame won't be out of shape. If any of the holes don't match up, they can be extended/re-punched.

25 With the frame bolted together in Step 24 set up the Practical Riveting/Bending/Rolling Tool for riveting by ensuring the two rivet posts are fitted and the Winding Handle (for rolling) is removed. Then insert the appropriate sized rivet to join the joints together (refer to Diagram 2). Where two pieces of metal are to be joined a 6mm x 3mm (1/4" x 1/8") is best, where three pieces are to be joined an 8mm x 3mm rivet (5/16" x 1/8") is best and for 5 pieces a 12mm x 3mm (1/2" x 1/8") rivet. Remember to use the technique shown below to rivet each joint in order to achieve best results and avoid damaging the tool.



The finished plant pot holder can now be painted in a wide variety of finishes (smooth, satin, hammer and metallic) either by aerosol or by brush application. Powder coating and plastic dip finishes can also be applied but these type of finishes are more for commercial/industrial scale finishing.

However, even with aerosol or paint finish you can make your finished item look professional. In this case we used paints from the Plasti-kote and Hammerite ranges - available from most DIY and Painting/Decorating outlets. For best results, always follow instructions on the tin and make sure the metal is free of all scale, dirt, grease or rust.

The finished item can be used in doors or outdoors (with the right choice of paint). Simply hang it from a suitably strong screw, hook or nail and drop in a 100mm (4") pot complete with your plant.

Development Of Plant Pot Holder Idea

Making this project has introduced you to all the basic functions of Metalcraft. Cutting, punching, scrolling, riveting, bending and rolling. Hopefully, together with all of the other starter pack projects you have attempted, you will now have the confidence to go on to design and make many more ideas.

This basic plant pot holder can be adapted to take slightly larger plant pots by simply rolling larger rings and using our large candle trays as Pot Saucers. Equally, you can make the design more ornate or stylish by the introduction of even more scrolls or as in the picture below by forming the C scrolls and then rolling the flat material between them to add more curvature to your scrolls.

In addition, you can incorporate some of our self-fix accessories to add an extra dimension or feature to your finished pot holder

Of course, if you don't want to make a Plant Pot Holder, you can always adapt the idea as a wall sconce as shown here.

There are many other alternative designs for plant pot holders, here are just a couple of ideas. The first uses one of our new wall sconce/base plates, plus our chain and incorporates another of our self fix accessories as a feature.

This photo shows how you can use our Master range of tools to make larger scale plant pot holders also.

Starter Pack 1 PROJECT 3: PLANT POT HOLDER - DESIGN TEMPLATE SHEET

TEMPLATE No. 1

TEMPLATE No. 2

S1 X X

TEMPLATE No. 3

S2 S2

TEMPLATE No. 4

X B1

TEMPLATE No. 5

X B2

TEMPLATE No. 6

X

TEMPLATE No. 7

X X

List of Materials Required:

4 x 920mm (3ft) length of 12mm x 2mm (3ft x 1/2" x 14 Gauge) Steel Strip [Re-order Ref: MC034]

1x Bowl Candle Tray for Pot saucer (Unpunched) [MC1206]

5 x 6mm x 3mm (1/4" x 1/8") Rivets [MC050L]

5 x 6mm x 3mm (1/4" x 1/8") Nuts Bolts [MC058L]

4 x 8mm x 3mm (5/16" x 1/8") Rivets [MC051L]

4 x 8mm x 3mm (5/16" x 1/8") Nuts & Bolts [MC059L]

1 x 12mm x 3mm (1/2" x 1/8") Rivets [MC053L]

1 x 12mm x 3mm (1/2" x 1/8") Nuts & Bolts [MC061L]

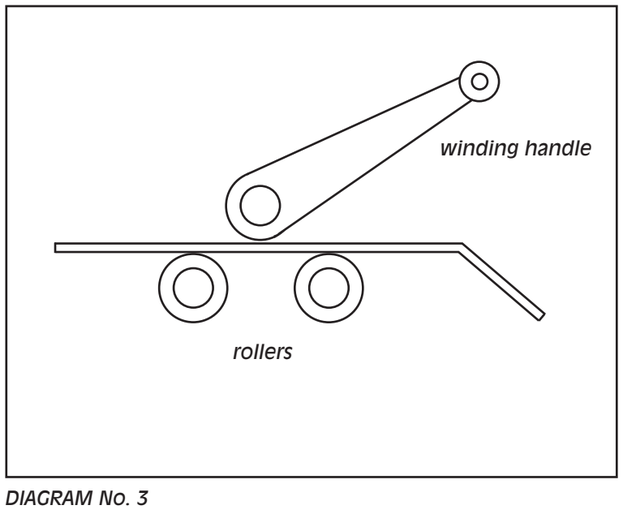


DIAGRAM No. 3

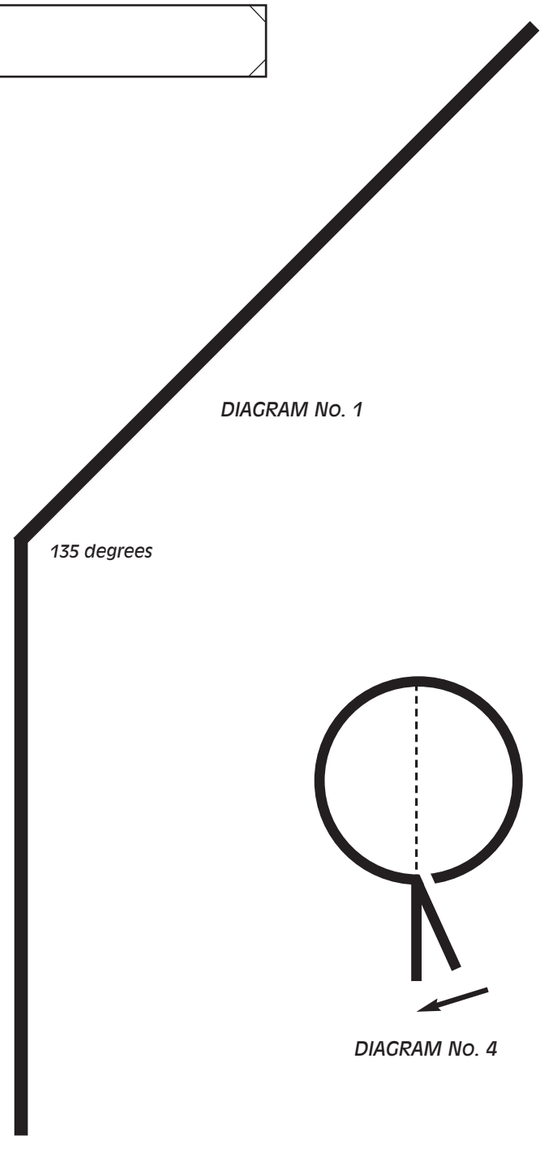


DIAGRAM No. 1

DIAGRAM No. 4

Starter Pack 1 PROJECT 3: PLANT POT HOLDER - DESIGN TEMPLATE SHEET

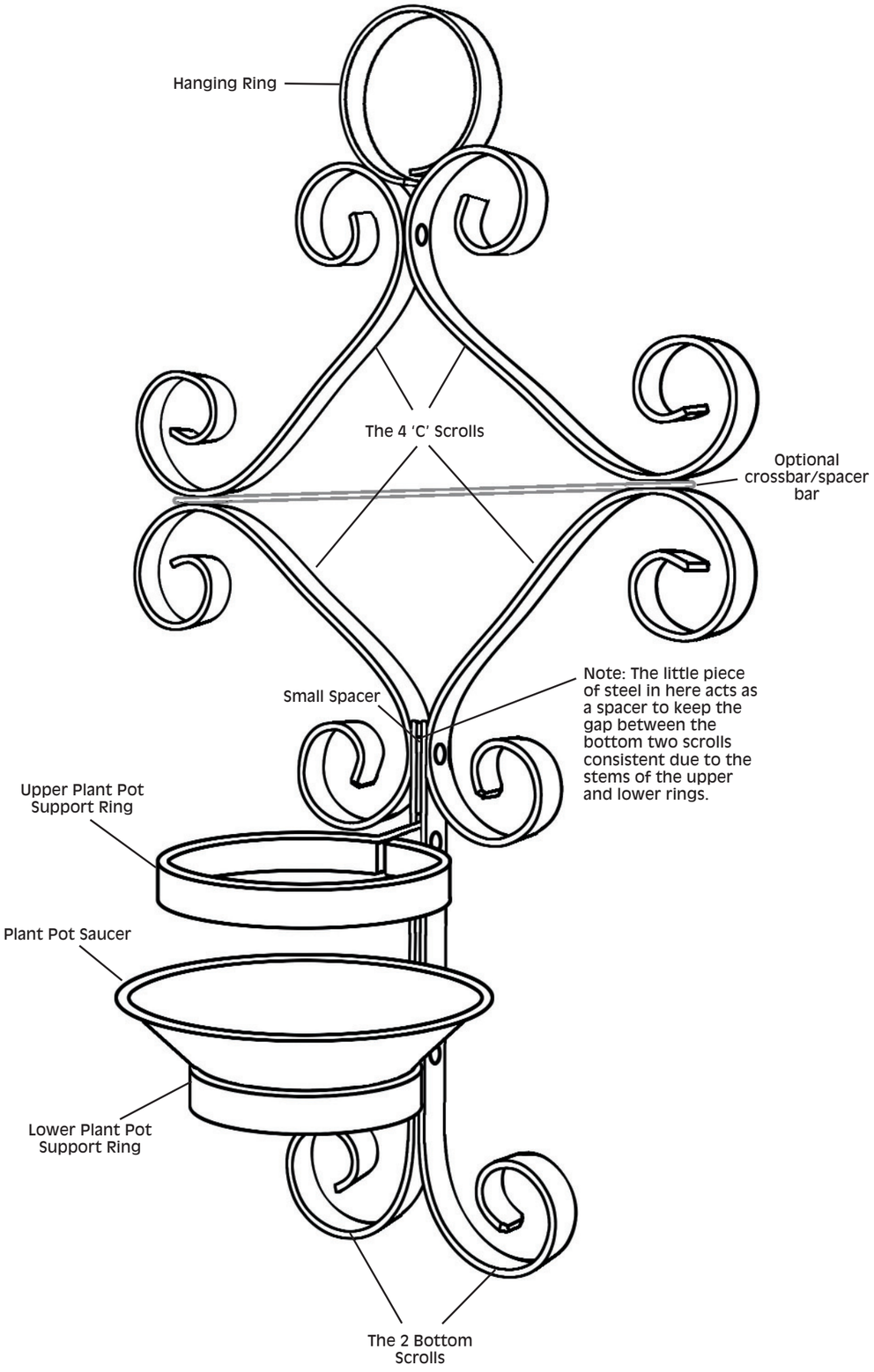


DIAGRAM No. 2
Showing rivetting points