

# BOOT CLEANER

## Tools Required to Make this Design:

Scrolling: Mk 3/3 Former  
 Punching: Master Punch/Shear (or XL5+ Power Bender fitted with 5mm Punch Block & Pin)  
 Riveting: Master RBR (or XL5+ Power Bender)  
 Bending: Master RBR (or XL5+ Power Bender)  
 Rolling: Master RBR (or XL5+ Power Bender)  
 Cutting: Master Punch/Shear (or XL5+ Power Bender)

**SPECIAL NOTE** – If you only have Practical Tools you can still make a similar looking item to this using 20mm x 3mm steel instead. Although this may require a slight adjustment to the Mk 2/3 former (or Mk2/2H former) scrolling dimensions accordingly. The rolling and bending and riveting can be done on the Practical RBR and the cutting and punching on the Practical Punch/Shear.

### 1 Upright Sides 1195mm (x 2)

COMPONENT 1

Take two 1524mm (5') lengths of 25 x 5mm steel and, it is recommended, that you first remove any excess oil, grease or scale with a cloth or abrasive paper.

Cut each bar down to down to 1195mm and trim all corners to give a neater finish. Using Component 1 on the Design Sheet overleaf as a guide, lay out each length in turn and, using a fine tip marker or pencil, mark

Scroll Position S1, Hole Positions H1, H2, H3, H4, H5 & H6. Finally, mark bend points B1 and B2 making sure to mark the solid lined B1 & B2 on one side of the bar and the dotted lined B1 & 2 on the same face as the S1 mark.

Start by punching all hole positions H1 to H6 on the Master Punch/Shear (fitted with the 5mm Punch Block & Pin).

Next, set up the Master R/B/R tool for bending and using Template 1 as guide put a 90° bend at both points marked B1 remembering to turn the bar over when doing the second bend. Then set up the Master RBR to bend an angle of 135 degrees at the two B2 positions using template 2 as a guide. Again take care to ensure you bend in the bar in the right direction and the component should appear as shown here and in Diagram 1.

When all bends are completed, place the end of the bar with the S1 mark strip in 3/3 Former and scroll to point S1.

When both components have been formed, lay them out side by side as shown in Diagram 2 but without the infill scrolls. Make sure the sides are even all the way down with a consistent gap of approx. 85mm. Finally, rivet the two Upright sides together at holes H5 & H6 using the rivets provided.



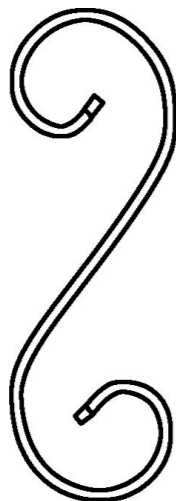
### 2 Scrolls 500mm (x 3)

COMPONENT 2

Take one 1524mm bar and mark out and cut three 500mm lengths and again, trim all corners. Using Component 2 on the Design Sheet overleaf as a guide, lay out each length in turn and, using a fine tip marker or pencil, mark the Scroll Positions S2 200mm from each end but make sure the marks are on opposite faces of the bar to ensure an S scroll is formed.

Place the first bar in the 3/3 Former and scroll up to the S2 mark and repeat at the opposite end and on the opposite face to form the S scroll. Then repeat to make the other two S scrolls and make sure all scrolls are as identical as possible.

Place the scrolls inside the two uprights with the top scroll as far up the uprights as possible and all scrolls touch. If the scrolls don't quite fit make any fine adjustments if necessary to ensure a snug fit. Using Diagram 2 as a guide, mark the points where the scrolls touch the uprights. Punch the six holes and rivet together with the rivets provided.

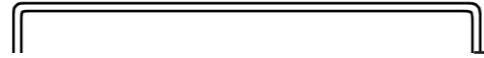


### 3 Support Bars 300mm (x 2)

COMPONENT 3

From another 1524mm length cut two more steel bars of 300mm and using Component 3 on the Design Sheet overleaf as a guide, lay out each length in turn and mark the holes H2, H7 & H9 and the two bending points B3.

Punch all hole positions and bend 90 degree angles at B7. Attach these Support Bars at Hole H2 to the Hole H2 on the Uprights with temporary Nuts and Bolts provided



### 4 Base 1270mm (x 1)

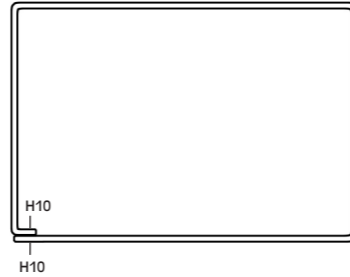
COMPONENT 4

Take another 1524mm length of steel and cut down to 1270mm and mark the two hole positions H10 and 4 bend positions B4 as shown overleaf for component 4.

Start by punching the two holes at H10 using the 5mm Punch Pin & Block. Then use the Master RBR at all four points to 90° using Template 1.

Once you have created the rectangular frame shown here, make sure the 25mm overlap is on the inside of the frame and the hole H10 on the overlap should meet up with the other hole H10.

Place a rivet in these holes and rivet the frame together.



### 5 Brush bars 120mm (x 2)

COMPONENT 5

From the offcuts from the above components mark out two lengths of 120mm. Mark out Holes H11 and punch these on the centreline of the bar. Then make a mark in the centre of the bar and take care to set the punch to punch a hole H3 5mm in from on edge and then flip it over to punch another hole 5mm in from the other edge as shown in the diagram shown overleaf for component 5

### 4 Assembly

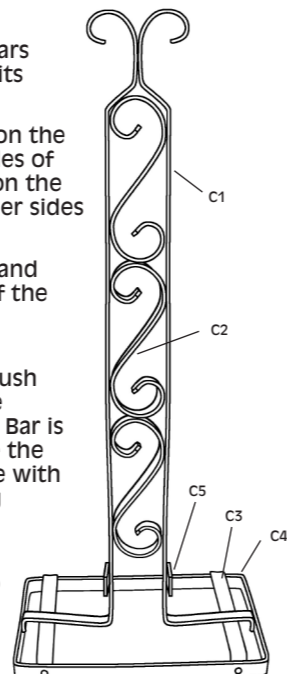
Place the Uprights with Support Bars inside the Base making sure it all fits snugly.

Mark on Base where the holes H1 on the Uprights meet the two shorter sides of the Base and where the holes H7 on the support bars line up with the longer sides on the Base.

Then punch holes at all six marks and when happy with the alignment of the Base and Uprights, rivet together starting with holes H7.

Next align holes H3 & H4 on the Brush bars with the holes H3 & H4 on the Uprights and make sure the Brush Bar is on the outside of the Upright. Use the Nuts and Bolts to fix these in place with the button head of the bolt facing outwards (to go under the brush).

Finally attach four wooden scrubbing brushes (NOT SUPPLIED) to the Support Bars and Brush Bars using short 5mm woodscrews through the pre-punched holes H7 and H11.



**Finishing**  
 The finished item 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.

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## Design Pack BOOT CLEANER

Note – this project is not supplied with the four wooden scrubbing brush heads. These can be sourced from various hardware stores including Wilkinson's and various on-line stores

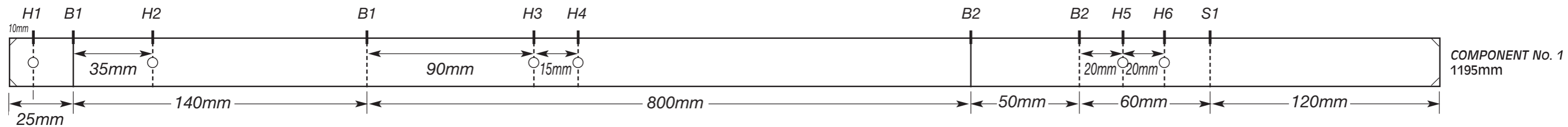
### DIFFICULTY RATING:

EASY	
STRAIGHTFORWARD	✓
MORE COMPLEX	

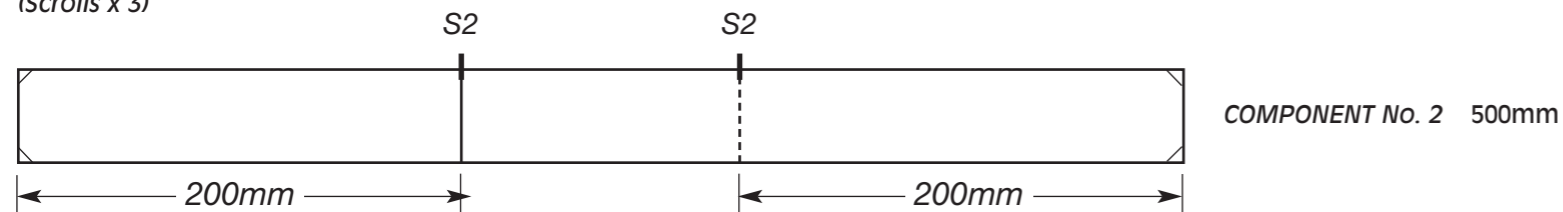


# Design Pack: BOOT CLEANER - DESIGN SHEET

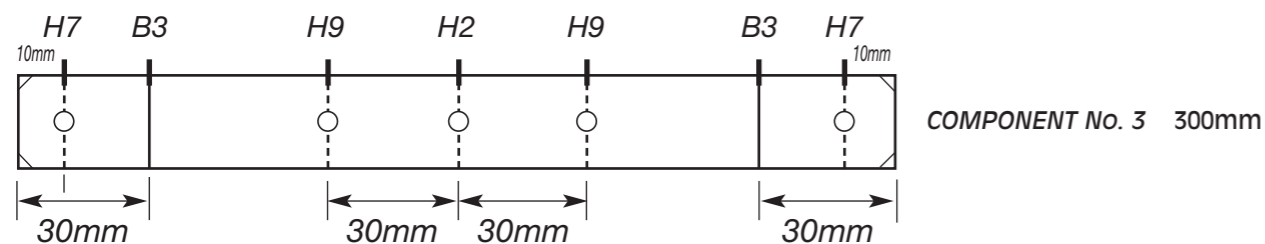
(Upright Side x 2)



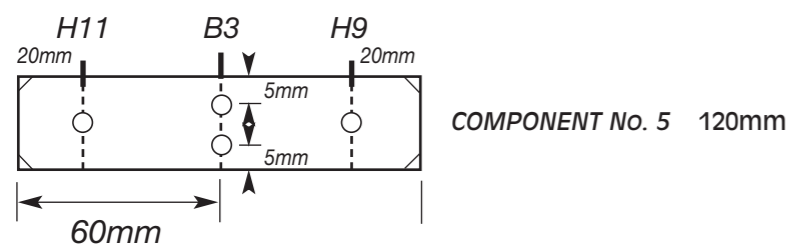
(Scrolls x 3)



(Support Bars x 2)



(Top Brush Bars x 2)



## List of Materials Required:

5 x 1524mm (5ft) Lengths of 25mm x 5mm Steel Strip [Re-Order Ref: MC040]

1 Pack 15mm x 5mm Rivets [Re-Order Ref: MC055L]

1 Pack 16mm x 5mm Nuts & Bolts [Re-Order Ref: MC063]

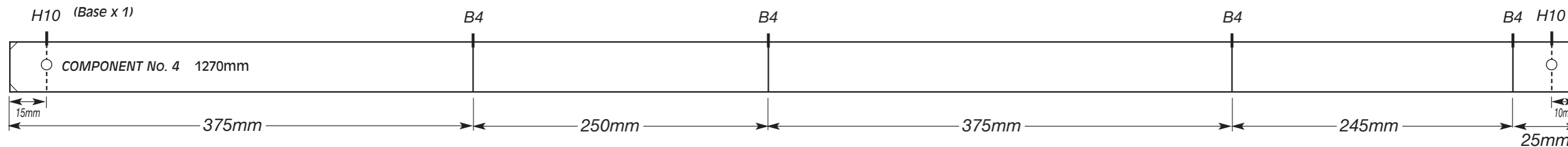


DIAGRAM 1

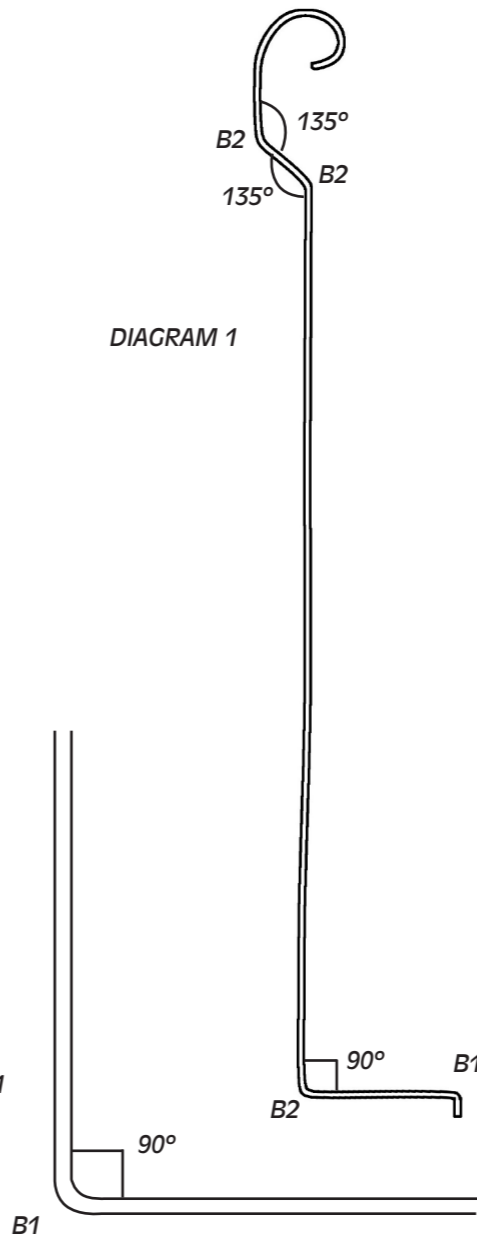
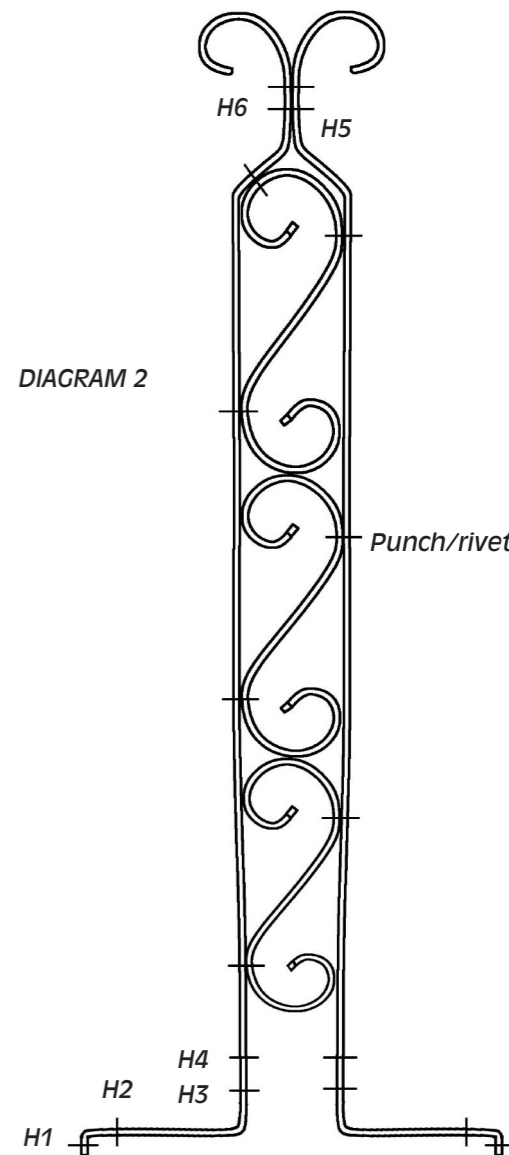
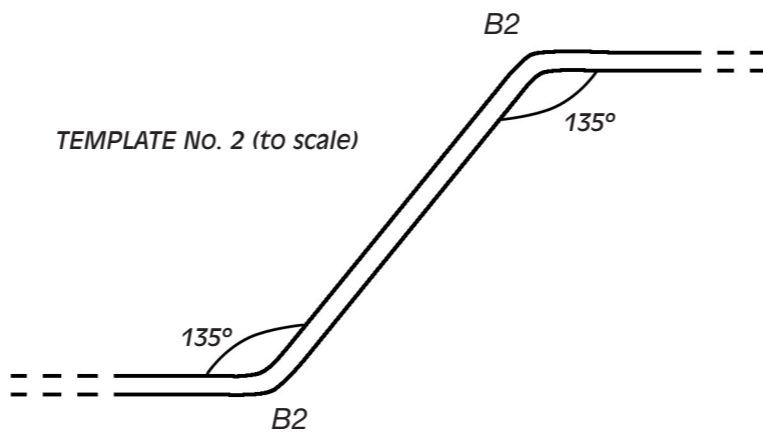


DIAGRAM 2



TEMPLATE No. 2 (to scale)



TEMPLATE No. 1

