

STYLISH CHAIR

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)

1 Main Side Frames 1210mm (x 2) COMPONENT 1

Take two 1524mm (5') lengths of 25 x 5mm steel and remove any excess oil, grease or scale with a cloth or abrasive paper. Cut them both down to 1210mm in length.

Next, trim all the corners on the two strips then, lay out and, using a fine tip marker or pencil, mark out all the Hole Positions H1, H2, H2A and H3, the two Scroll Positions S1, the two bending points B1, and the three rolling marks R1, R2 & R3. as shown in the Design Sheet Overleaf for Component No.1.

Firstly, place one end in the Mk 3/3 Former and scroll to 150mm (S1), swing round and repeat at the other end - making a long 'C' scroll. Repeat with the other Main Side Frame and offer the two long C scrolls up to each other to make sure they are identical.

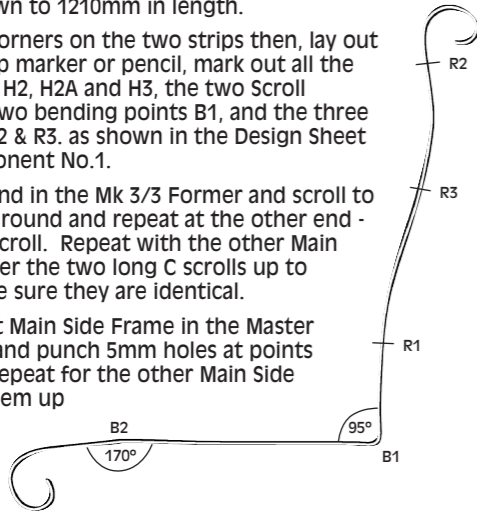
Next place the first Main Side Frame in the Master Punch/Shear tool and punch 5mm holes at points H1, H2A, H2 & H3. Repeat for the other Main Side Frame and offer them up to each other again to make sure they are identical and all holes are punched in the same position on both Frames.

Now set up the Master R/B/R tool for bending and bend an angle of approx. 95° (making sure you bend the right way - use the diagram here as a guide). To ensure you get the angle correct use Template 1 on the Design Sheet attached. Repeat for the other Main Side Frame.

Next turn the bar over and carefully make a small bend at 'B2' to create a slight angle of approx. 170° this time using Template 2 as a guide. Repeat for the other Main Side Frame.

Now set up the Master R/B/R tool for rolling and using Template No. 3 as a guide, roll a gradual curve between points R1 & R3 taking care to get the curve the right way to act as the lower lumber support. Repeat for the second Main Side Frame.

Then turn the bar over and roll a similar gradual curve again in the opposite sense between R3 and R2 to form the higher back support using Template no.3 as a guide. Repeat for the other Main Side Frame and at this point offer up the two Main Side Frames to make sure they are as identical as possible. Remember, if you over roll you can always place the steel bar in the other way round and roll to straighten it out and adjust a little



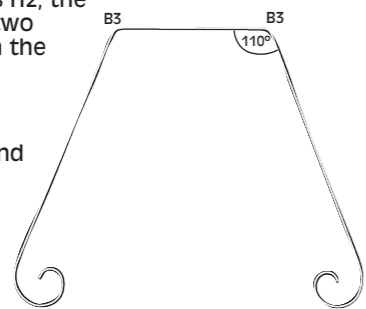
2 Legs 1440mm (x 2) COMPONENT 2

Take two 1524mm (5') lengths of 25 x 5mm steel and cut down to 1440mm and trim all corners. Lay out both lengths and mark the hole positions H2, the Scroll Positions S2 and the two bend points B3, as shown in the Design Sheet Overleaf for Component No. 2.

Next, place in the Mk 3/3 Former and scroll at each end up to the S2 position again making sure you are creating a long 'C' scroll. Repeat for the other legs and offer up to each other to make sure both 'C' scrolls are identical.

Next place one of the S scrolls in the Master Punch/Shear tool and punch the four 5mm holes at H2. Repeat on the other scroll and again offer up to make sure holes are aligned on both sets of legs.

Finally, set the Master R/B/R tool for bending and bend at points B3 to approx. 110° using Template No. 4 as a guide. Make sure you bend in the correct direction to create identical components that look like the illustration here.



- Bending:** Master RBR (or XL5+ Power Bender)
- Rolling:** Master RBR (or XL5+ Power Bender)
- Cutting:** Master Punch/Shear (or XL5+ Power Bender)

3 Leg Braces 762mm (x 2) COMPONENT 3

Take one length 1524mm (5') length of 25 x 5mm steel and cut in half (approx. 762mm), trim the corners and mark at the two scroll points S3 as shown in the Design Sheet Overleaf for Component No. 3.

Then use the Mk 3/3 Scroll former to scroll up to the marks to create a 'C' Scroll as shown here.

Repeat this on the other bar to form the second Leg Brace.

Next, using Diagram 4 on the Design Sheet as a guide, place one of the Braces between one of the pairs of Legs, mark where the Legs and the Leg Brace meet and punch 5mm holes at all four marks. Use the Nuts & Bolts provided to fix this temporarily in place on both pairs.



4 Arms 1200mm (x 2) COMPONENT 4

Take two 1524mm (5') lengths of 25 x 5mm steel and cut down to 1200mm and trim all corners.

Lay out both lengths and mark at the two scroll points (S1 & S4) as shown in the Design Sheet Overleaf for Component No.4.

Next, place the first bar in the Mk 3/3 Former and scroll to point S1 and then repeat on the other bar. Then at the other of the first bar scroll to point S4 to form a scroll as shown here. Repeat on the other bar.

Offer one of the Arms upto one of the Main Side Frames, using Diagram 6 on the Design sheet as a guide. The large scroll should touch Hole H2A and the small scroll should touch Hole H3 on the Main Side Frame. Mark carefully on the Arm the points where the large scroll touches Hole H2A on the Main Side Frame and where the small scroll touches Hole H3 on Main Side Frame.

Punch both 5mm holes in each Arm and use the Nuts & Bolts provided to temporarily fix each Arm to each Main Side Frame.



5 Seat Straps 495mm (x 6) COMPONENT 5

Take two 1524 mm (5') lengths of 25 x 5mm steel and cut six lengths of 495mm, taking great care to make sure they are all of the same length. The measuring bar on the Master Punch & Shear (or XL5+ Power bender) is ideal for this. When this is done trim all corners.

Next take great care to mark hole positions H2 and punch 5mm holes 12mm in from each end on the first Seat Strap and then use this as a reference when marking and punching the holes H2 on the other 5 Seat Straps. Check this by stacking all six bars on top of each other and making sure all the holes are aligned.

Next, use the Nut & Bolts provided to connect the two Main Frames together using these Seat Straps at Holes H2 and Hole H2A. At the same time you can attach the Legs at Holes H2. Note - make sure the Straps attach to the underside of the each Main side frames/Leg joint.

6 Back Straps 500mm (x 6) COMPONENT 6

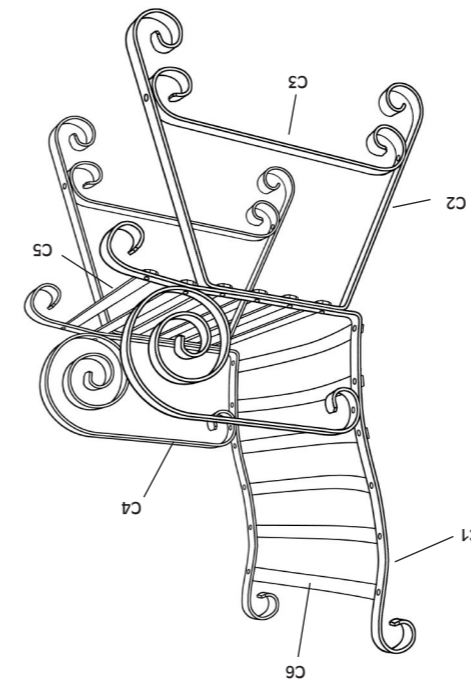
Next using the Design Sheet Overleaf for Component No.6 take two 1524mm (5') lengths 25 x 5mm steel and cut six lengths of 500mm. Again take great care to make sure they are all of the same length. The measuring bar on the Master Punch & Shear (or XL5+ Power bender) is ideal for this. When this is done, trim all corners.

Next take great care to mark two bend & roll points B4/R4 and the two hole positions H1 and punch 5mm holes at these points 12mm in from each end on the first Back Strap. Again use this as a reference when marking and punching the holes H1 on the remaining 5 Back Straps. Check this by stacking all six bars on top of each other and making sure all the holes are aligned.

Next, using Template No. 5 as a guide, roll between points R4 to create a nice cured back to the chair. Repeat on the other 5 bars so that the curves are all consistent.

Keep offering the Back Straps to the back of the chair and carefully make a shallow bend to bring the holes H1 in line with Holes H1 in Main Side Frames. Remember, if you over roll you can always place the steel bar in the other way round and roll to straighten it out and make the fine adjustments to get all the holes to marry up.

When happy, use the Nuts & Bolts provided to bolt the Back Straps to the back of the Main Side Frame



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66 CLOUGH ROAD, HULL HU5 1SR • TEL: 01482 345067 • FAX: 01482 441141
email: info@jandncrwood.co.uk • www.w.metal-craft.co.uk

However, even with aerosol or paint finish you can make your finished item look professional. In this case we used paints from the Plastic-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 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.

Assembly

Lastly, once you are happy with the overall fit of all the various components, go round each joint in turn and replace each Nut & Bolt with a rivet and then rivet the joint immediately on the Master RBR before going on to the next joint. Note - you will need the help of another person(s) to hold the chair above the Master RBR whilst you rivet each joint. In addition, make sure you use the longer 19mm x 5mm rivets for those joints where there are 3 bars to be riveted together and the 15mm x 5mm rivets for those joints with two bars.

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Design Pack STYLISH CHAIR

DIFFICULTY RATING:

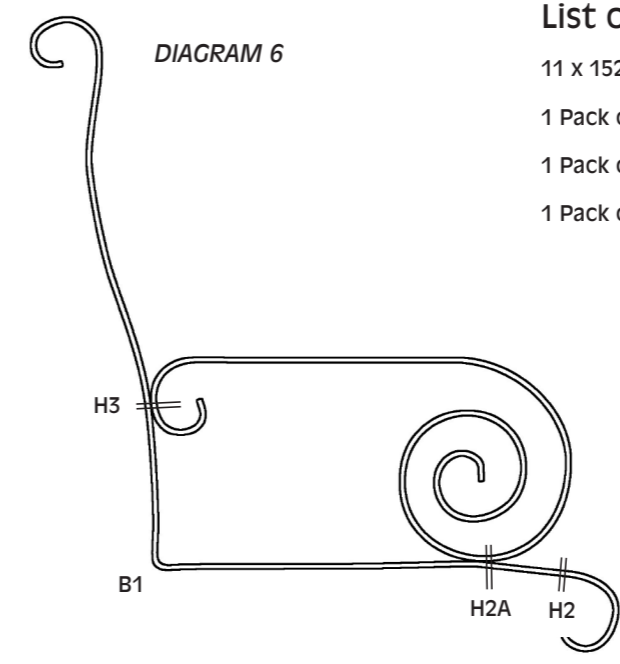
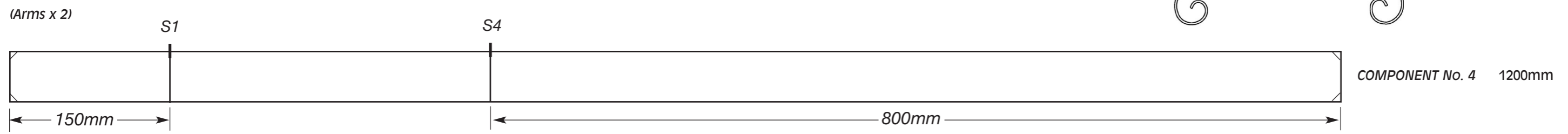
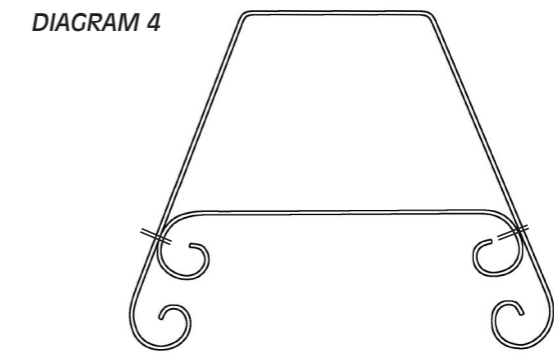
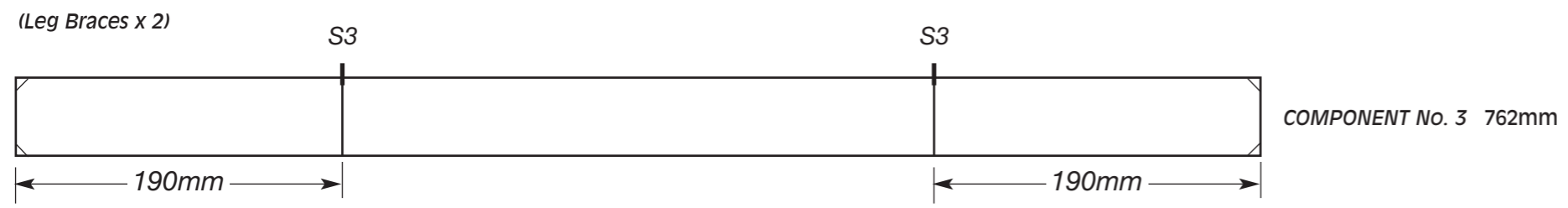
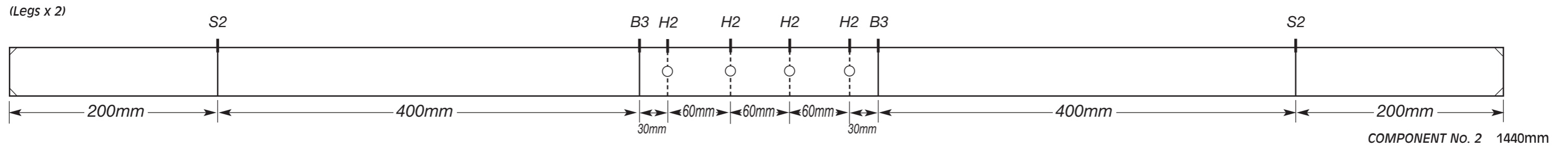
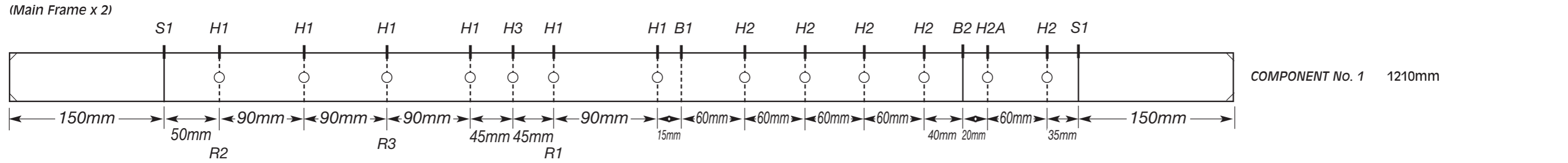
EASY

STRAIGHTFORWARD

MORE COMPLEX



Design Pack: STYLISH CHAIR - DESIGN SHEET (Diagrams)



- List of Materials Required:**
- 11 x 1524mm (5ft) Lengths of 25mm x 5mm Steel Strip [Re-Order Ref: MC040]
 - 1 Pack of 15mm x 5mm Rivets [Re-Order Ref: MC055L]
 - 1 Pack of 19mm x 5mm Rivets [Re-Order Ref: MC056L]
 - 1 Pack of 20mm x 5mm Nuts & Bolts [Re-Order Ref: MC064]

Design Pack: STYLISH CHAIR - DESIGN SHEET (Templates)

TEMPLATE No. 2

B2

170°

TEMPLATE No. 5

B6/R5

95°

B1

TEMPLATE No. 1

R2

R3

TEMPLATE No. 3

R1

TEMPLATE No. 4

110°

B3

B5/R4

