

PENNY FARTHING CLOCK

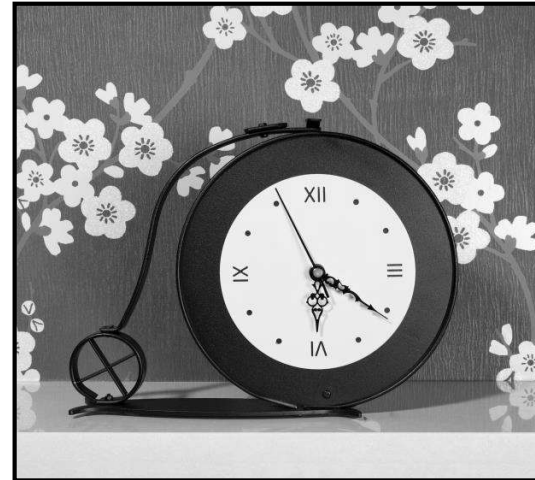
Tools Required To Make this Design:

Punching: Practical Punch/Shear (or Master Punch/Shear or XL5+ Power Bender fitted with 3mm Punch Block & Pins)
 Cutting: Practical Punch/Shear (or Master Punch/Shear or XL5+ Power Bender)
 Riveting: Practical RBR
 Bending: Practical RBR
 Rolling: Practical RBR

We recommend that before starting you wipe all steel bars down so that they are free of grease, scale or dirt. After cutting any component, we also recommend that you trim the corners for a neater finish, if preferred, unless these instructions tell you otherwise. Use a fine tip marker pen, pencil or scribe for marking hole, bend, scroll, roll points on the bars.

Component 1	Large Wheel 15mm x 3mm x 620mm (1)
From 1 length of 15 x 3 x 914mm steel strip, using the Practical Punch/Shear Tool (PPS), cut 1 strip, 620mm long. Set aside remainder of steel strip for Component 2. Using the Practical Riveting, Bending & Rolling Tool (PRBR) roll the strip into a complete circle. See Component 1 on Assembly/Template Sheet 1 for profile.	
Component 2	Small Wheel 15mm x 3mm x 170mm (1)
From left over steel for Component 1, cut 1 strip, 170mm long. Using the PRBR, roll the strip into a complete circle. See Component 2 on Assembly/Template Sheet 1 for profile.	
Components 3 & 4	Small Wheel Spokes 10mm x 1.6mm x 50mm (1) 10mm x 1.6mm x 25mm (2)
From 1 length of 10 x 1.6 x 914mm steel strip, cut 1 strip 50mm long (approx) and 2 strips, each 25mm long (approx). Wedge the 50mm strip inside the small wheel (Component 2) to form a "cross spoke" and wedge the 2 25mm strips between the 50mm strip and the inside face of the small wheel. If the strips are too long they will need to be trimmed down. If they are too short they will not stay in position. Adjust/make new strips accordingly. The end result should be a small wheel with 4 spokes. See Front View on Assembly/Template Sheet 1	
Component 5	Cross Bar 15mm x 3mm x 250mm (1)
From 1 length of 15 x 3 x 914mm steel strip, using the Practical Punch/Shear Tool (PPS), cut 1 strip, 250mm long and chamfer all the corners with the same tool. On the strip, mark hole positions H1-H3, roll positions R1-R3 and bend position B1. Using the PRBR, roll the strip between R1 and R2. Turn the strip over and then roll between R2 and R3. Using the PRBR, bend at B1, then using the PPS, punch all the marked holes. See Template 1 on Assembly/Template Sheet 1 for profile.	
Component 6	Saddle 15mm x 3mm x 30mm (1)
From a cut-off of 15 x 3mm steel strip, cut 1 strip, 30mm long. Chamfer all the corners and punch hole H4.	

Component 7	Handle Bars 10mm x 1.6mm x 70mm (1)
From a cut-off of 10 x 1.6mm steel strip, cut 1 strip, 70mm long. Chamfer all corners. On the strip mark hole position H5 and bend positions B2-B4. Punch hole H5 and bend the strip at positions B2-B4. See Template 2 on Assembly/Template Sheet 1 for profile.	
Component 8	Small Tabs 10mm x 1.6mm x 30mm (2)
From a cut-off of 10 x 1.6mm steel strip, cut 2 strips each 30mm long. On the strip mark hole positions H6 & H7 and bend position B5. Punch marked holes and bend the strip at B5. Trim the ends of the steel to match Template 3 on Assembly/Template Sheet 1.	
Assembly Instructions	
1) Take the large clock back plate and drill a 3mm diameter hole, 5mm from the top and from the bottom of the clock face (i.e. at 6 & 12 o'clock). Use the Front view on the Assembly/Template Sheet 1 as a guide.	
2) Take the Split Base Plate and drill one hole at each end. See Template 4 on the Assembly/Template Sheet 1 for hole setting out.	
3) Approximately 5mm from the gap in both the large wheel and small wheel components, mark and punch a hole. These are the bottom holes (at 6 o'clock). Directly above these holes (at 12 o'clock) punch 1 hole at the top of each wheel.	
4) Using the PRBR rivet the Saddle (Component 6) to the Cross Bar (Component 5) at hole position H2.	
5) Attach the Handle Bar (Component 7) to the top of the Cross Bar (Component 5) at hole position H3 using a 12 x 3mm bolt. Before screwing the nut on, extend the bolt through the "12 o'clock hole" hole position on the large wheel (Component 1), then through hole position H6 of one of the small Tabs (Component 8). Attach the nut to the bolt on the underside of the small Tab and finger tighten to hold Components 1, 5, 7, and 8 together.	
Assembly Instructions continued on back cover.	



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Design Pack

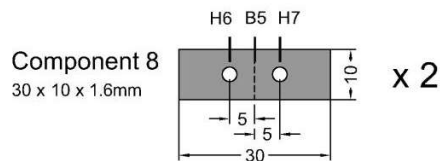
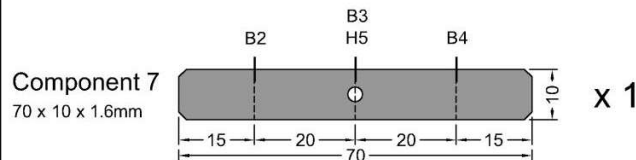
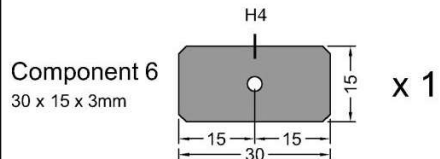
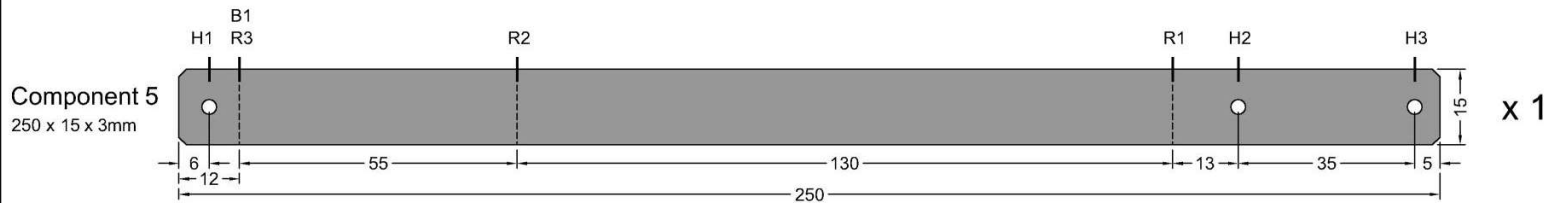
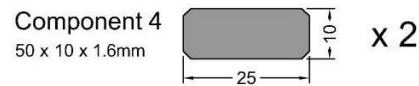
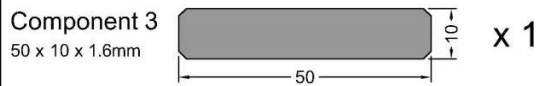
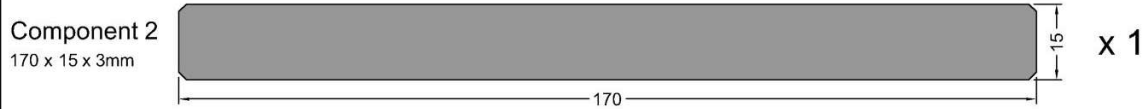
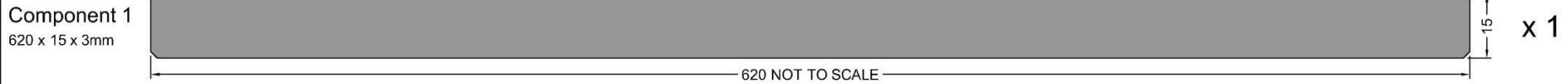
Penny Farthing Clock

Difficulty Rating:	
Easy	
Straightforward	✓
More complex	

8) Rivet the Cross Bar to the small wheel using hole position H1 on Component 5 and the "12 o'clock hole on the small wheel.
 9) Attach the Split Base Plate to the bottom of the small wheel with a 10mm x 3mm nut and bolt using the "6 o'clock" hole on the small wheel and the vacant hole at the end of the base plate.
 10) Finally, add the Roman Clock Face, Clock Movement and the Clock Hands.
 Hint: For the best effect, try painting the clock face in a contrasting colour to the back plate before assembling the clock, see photo of finished clock on the front cover.

Assembly Instructions continued/.....
 6) Attach the Split Base Plate to the bottom of the large wheel with a 12mm x 3mm nut and bolt using the "6 o'clock" hole on the large wheel and the hole at the end of the base plate. Before screwing the nut on, extend the bolt through hole position H6 of the remaining small Tab (Component 8). Attach the nut to the bolt on the top side of the small Tab and finger tighten to hold the base plate, the large wheel and the small tab together. Ensure the vertical faces of the small Tabs are in the same plane to permit fixing of clock face, see next instruction.
 7) Offer up the large clock face, opening up the holes slightly if needed and fix the clock face to vertical faces of the small Tabs using 10mm x 3mm bolts through hole positions H7 on each Tab. Attach the nut and tighten to secure the clock face to the Tabs.





ALL COMPONENTS ARE DRAWN TO SCALE EXCEPT COMPONENT 1

List of Materials Required:

- 2 x 914mm (3ft) Length of 15mm x 3mm Steel Strip (Re-Order Ref: MC037)
- 1 X 914mm (3ft) Lengths of 10mm x 1.6mm Steel strip (Re-Order Ref: MC031)
- 3 x 10mm x 3mm Nuts & Bolts (Re-Order Ref: MC060L)
- 2 x 12mm x 3mm Nuts & Bolts (Re-Order Ref: MC061)
- 2 x 8mm x 3mm Rivets (Re-Order Ref: MC051L)
- 1 x Bowed Split Plate (Re-Order Ref: MC1258)
- 4 x Small Bumper Feet (Re-Order Ref: MC1274)
- 1 x Roman Round Clock Face-Small (Re-Order Ref: MC1405)
- 1 x Clock hands (Black) (Re-Order Ref: MC1245)
- 1 x Large Clock Back plate (Re-Order Ref: MC1264)
- 1 x Clock Movement (14mm) (Re-Order Ref: MC1240)

DESIGN PACK: PENNY FARTHING CLOCK

ASSEMBLY / TEMPLATE
SHEET

1

