

High Level CSB Jig and Hornblock System

This jig will enable you to accurately mark out the position of anchor points for Continuous Spring Beams. If the jig is used in conjunction with our own Hornblocks and CSB Tags, these anchor points will automatically line up with holes in the tags, allowing for 0.5mm deflection of the wire under the weight of the loco.

For more information on the theory of CSBs go to <http://www.clag.org.uk/beam-annex3.html>

Preparation

Four **Master Bearings** are provided which should be kept exclusively for use with the jig.

For a chassis with **circular bearing holes** in the loco frames, carefully open up the axle holes so the **Master Bearings** are a snug fit and remove any burrs (Fig 1). Gently enlarge the central hole 'X' in the jig until one of the bearings is a snug push-fit, then use a blade to remove the cusp from the edges of the slots in the jig. The bearing needs to be a good, sliding fit in the slot. Remove any burrs.

If the outside diameter of the **Master Bearings is too small for the holes in your chassis**, open out the central hole 'X' in the jig, to suit your larger bearings. File two small, opposing flats of equal size on a couple of these bearings, so they slide in the slots in the jig, as shown in Figure 2. Keep this jig, and the adapted bearings, for use with chassis with larger holes.

If the **hornblock cutaways** are already removed, use the **Adaptor Plates**. Solder short lengths of 0.5mm wire into the small holes in the plates and open out the larger central hole to accept one of the Master Bearings. The wires locate in the top corners of the cutaways and the jig slots over the rear of the bearings (Fig 3).

How to use the jig

Fold the tops of the **Carrier Tags** to form a three-sided box (Fig. 4). Open out the large hole in the tag, so it's a good fit on the boss at the rear of the Hornblock Bearing and solder it in place making sure it is square.

Calculate the **horizontal position of the anchors**. If you're not sure how to go about this, study <http://www.clag.org.uk/beam-annex3.html> which gives examples of typical applications, with an **Excel spreadsheet** that can be used to calculate the specific spring size required and the exact anchor positions.

Decide which row of **Marker Holes** to use A, B, C, (or D for MiniBlox units) giving consideration to possible obstructions such as brake hangers, frame spacers etc. If you use the lower hole 'A' with Standard Hornblocks, you'll need to remove about 0.7mm from the top of the horncheeks, so the spring wire clears the etch (Fig. 7).

Once the anchor positions are decided, **locate the jig** over the axle bushes (Fig 5) and spot through the jig at the appropriate points using a 0.5mm drill bit. The holes are spaced at 1mm intervals, at whole or half millimetre horizontal distance from the jig centre, depending on which set of holes you use (Fig. 6).

If the jig doesn't reach the **outermost anchor points**, move it along to the next axle and use it as before. Using two bushes at any one time should be enough to register the jig accurately and this will ensure all your anchor points are drilled on the same horizontal line.

At the centre of the jig, drill through hole "Y" to create the **datum** for the High Level Hornblocks. When you come to fit the hornblock units, locate the first pair of hornblock etches using a short length of 0.4mm wire through hole 'Y', then use **axle jigs** and side rods to position the other hornblocks.

For **tenders**, locate the jig over a master bearing at each axle location, then spot through hole 'Y' to position the **MiniBlox**.

If your frames don't have **guidelines for hornblock cutaways**, use a 0.5mm drill bit and spot through the holes 'Z' to mark the top corners of the cutaways for your High Level Hornblock etches.

FOR MORE INFORMATION ON HIGH LEVEL PRODUCTS CONTACT
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'CSB' SYSTEM

