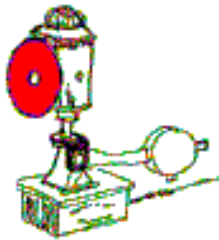




McKENZIE & HOLLAND GROUND SIGNALS



Cast & etched parts for three signals

For the NER, GER, GCR, HR etc.

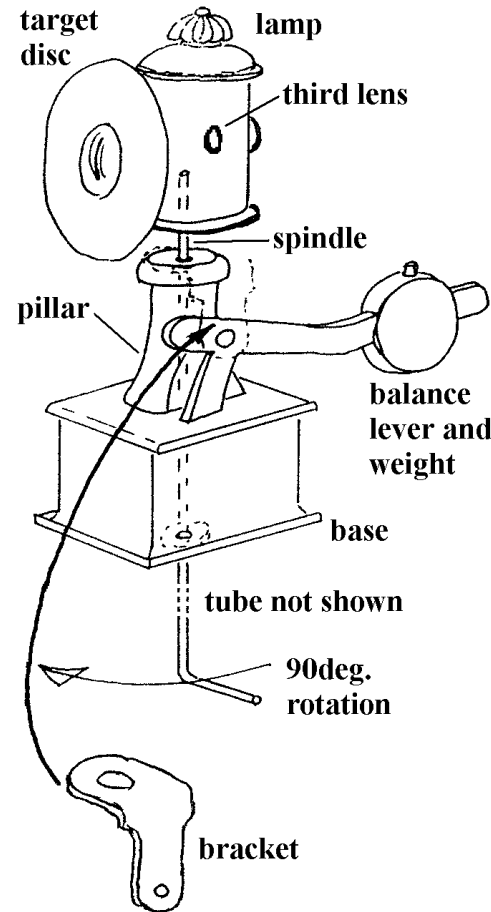
This kit represents the standard McKenzie & Holland rotating ground signal, as supplied to a large number of railway companies. Many were still in use in BR days, but the type is now probably extinct on Network Rail. Note that the LNER modernised some on its territory by fitting them with a square-cased lamp (not yet available as an MSE part).

The parts are designed for soldered assembly. Use a 25-50W pencil bit iron with 70° and 145° solders and a liquid flux. Burnish both sides of the fret before removing any parts. The signals (but not the balance levers) are intended to operate.

Parts supplied:

Etched brass fret of balance levers, target discs etc
 3 x cast whitmetal bases
 3 x cast whitmetal lamps
 3 x 4.5cm of 1/16" brass tube
 3 x 6cm of 0.7mm brass rod
 7.5cm of 28swg brass wire

Assembly instructions:



The lamp:

Orient the lamp with the mould parting line vertical and the more rounded lens to the left. Drill no.70 (0.70mm) on the mould line, level with the lens centre line as shown

over. Solder in the 0.7mm brass wire, cut it close to the lamp surface, and then file smooth. This provides the lamp's missing third lens.

Remove the casting sprue from the bottom and file off the mould parting lines. Drill the centre of the base no.70 (0.70mm), and solder in the 0.7mm wire spindle. Solder the target disc around the more rounded lamp lens.

The base:

Remove the casting sprue from the bottom and file off the mould parting lines. From the top, carefully drill no.75 (0.50mm) down the centre of the pillar and right through the entire casting. Open out the hole to no.69 (0.75mm). Insert the spindle, and check for free rotation.

From the bottom, using the no.69 hole as a centre, drill a 1/16" (1.6mm) hole a few mm deep. Solder the tube into this hole. This will almost certainly block the no.69 hole somewhere in the centre of the casting, so clear it by re-drilling from the top. Again, insert the spindle, and check for free rotation. The spindle is deliberately smaller than the tube hole, to allow for some degree of misalignment.

The balance lever and bracket:

The balance lever may be attached to either side of the base, but always points to the rear. Without removing the parts from the fret, open out the large hole in the bracket to no.69 (0.75mm), and the small hole, together with the hole in the balance lever, to no.78 (0.40mm). Orient the fret so the top half-etched side is facing you. If the lever is to go on the right-hand side of the signal (as seen from the front), solder the weight onto the top side of the lever, and onto the bottom side for a left-hand arm.

Remove the lever and bracket from the fret. Solder a brass wire axle into the lever hole, then solder the bracket over the lever. The outer end of the lever should be perpendicular to the bracket sides. Trim the ends of the axle almost flush with the joint and bend the bracket as shown. Trim the crank end of the lever so it is just clear of the base top when the bracket is placed on top of the pillar. Solder the bracket to the top of the pillar (getting the holes concentric) and the crank to the base.

Painting:

Wash the two assemblies thoroughly. The lamp and base were usually painted white, grey or black, so prime and topcoat accordingly. The target front is either red, or yellow for signals that could be passed at danger, such as those leading into a headshunt. With a black lamp, a white rectangle was often painted around the third lens, to provide a more visible daytime indication. Touch in each lens with silver.

Final assembly:

Drill a 1/16" (1.6mm) location hole in the baseboard at the correct location. Temporarily insert the tube and mark off and remove any excess underside length. Insert the axle into the tube, and use a small piece of the excess tube to form a retaining washer. Solder this to the axle where it exits the tube, using a paper spacing washer to avoid solder creep. Replace the complete signal on the layout. The axle may then be coupled to a crank and connected to your chosen means of operation.

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