

Additional assembly instructions for Compound TOU's,

Index of drawings.	Compound TOU's
Drawing No.	Title of drawing
041	Single slip
042	Double slip

Note: To be read in conjunction with standard TOU instruction sheet.

Important notes before building Compounds (slips) with loose-heeled switches

1. The 0.5mm hole drilled through the switch and stock railheads, in the position of the toe tie bar to take the droppers, is offset on the right hand side by 2.33mm (7") towards the crossing. Note the operating bar on the right hand side is offset for this reason. If you choose to reverse this and have the left side leading toward the crossing using DN.1470X, then obviously the dimension reverses also.
2. The tie bars are at right angles to the line that bisects the crossing angles and are **not** radially across the switch as in a standard turnout. Thus the 0.5mm hole on the opposite side to the straight stock rail toe is on this line at right angles to the bisecting line – see FIG 1. In other words, the tie bar and the two 0.5mm holes are parallel to the toe timber and the two tie bars are parallel to each other, but 2.33mm apart.
3. It is standard GW practice** to have the switches at one end operated by a single lever locally or from the Signal Box, the switches' operating rods being linked together. With these 4mm compounds switches each pair of switches at one end must have the means of adjustment so that the pairs of switches close correctly, see drawing 042. It is useful to have an adjustable lever in the linkage for a single compound somewhere in the run to the motor or lever frame.

Introduction. The assembly follows the general principles of the standard TOU's.

Two etches are required for a double slip (DN.1470) but only one for the single slip (DN.1480). In addition an adjustable lever DN6001 may be used to set up the switches at either end so that they operate as a matched pair. Two such levers are required for a double slip. An angled lever (DN6010) is required to convert the operating direction at right angles to the slip. Again two are required for a double slip. Note that the DN6001 adjustable lever is identical to the standard DN6000 adjustable but has a lower height off the baseboard. This is to bring the operating rods closer to the baseboard to reduce any substantial canting between the TOU operating lever and the adjustable lever.

The main change between the standard TOU and the compounds is the intermediate operating bar support which can be identified as the smaller of these two parts. This is positioned additional to the usual operating bar support channel on the middle plate of the double slip and on the narrower plate of the single slip. This intermediate plate supports both operating bars. Apart from that and the Tufnol operating bars, the assembly is as the standard TOU. However, as mentioned above, whilst the drawing of the double compound is drawn with the right hand switches leading there will be occasions where you need the left hand side switches leading. In that case use the DN.1470X intermediate part.

The main part carries the notation "Left hand" and "Right hand" and these have the same meaning as before **(only on the single slip – see below for double slips)**. They are the direction of the throw of the turnout when viewed from above and must be positioned as such. The operating bar channels and the pivot sub-assembly are attached to the reverse side just as the standard TOU. In other words the marked side is uppermost with the parts on the other face.

Double slip. The double slip is drawn with the right hand switches leading, being closer to the crossing. In the compound you are about to build you may need the reverse handing so check the photographs if you have them. There may also be different length switch blades at one or both ends. The etched parts are marked left hand and right and the intermediate support part (which separates and supports the middle of the operating tufnol bars) is handed for the right-handed configuration. If you need the reverse hand with the left hand side leading (closer to the crossing) then the main part has to be turned over with the marking on the underside. The intermediate part will now not fit. The stores have a supply of a reverse handed intermediate part DN.1470X, which will be supplied gratis.

For this reverse handing, when you use the drilling jig for the tufnol operating bars you need to turn the operating bars over and use them upside down so to speak. That should be obvious as these holes must line up with the radiused slots in part DN.1470X when mounted and with the marking on the underside of the main part.

Operating bars

The double slip has two to each end and these are handed and notched so that they will pass one another in the operating channel. The drawing should make this clear. The forming jig for these has one side cut away and the Tufnol should be cut up to the metal of the jig. Whilst they are both the same, the jig indicates which end is the straight toe end, so one is used for the left hand and the other for the right. The bars must NOT be tight in the channels nor tight to each other, to take up the non radial action described in note 2 above. Allow plenty of clearance, say 0.5mm.

The single slip has just the one jig and this is used to make two identical operating bars, one being used for the left hand and the other for the right.

Positioning under the turnout

As previously, the etch can be built in-situ when the turnout is made on the building board, or it can be completed and Araldited to the underside of the turnout where it must be positioned as the drawing shows. It can be used for slip angles between 1 in 6 and 1 in 8. The centre line of the slots that take the droppers is 3mm away from the centre line of the toe timber, exactly as the standard TOU. However on the double slip the right hand tie rod **must be** offset 2.33mm toward the crossing so that the double slip is lined up on the **left hand side only**— see drawing. If you have built it left-hand leading then the slots will be reversed.

This rule applies for all crossing angles from 1 in 6 to 1 in 8. Note: This offset also applies to B & C switches if you are using those, which in true Great Western practise you should not as all compounds used loose-heeled switches.

Use Exactoscale lost wax brass fishplates or fabricated fishplates as the heel fishplates as standard TOUs, see “Notes on construction of Great Western old style curved (loose-heeled) leads (turnouts)”

**** Great Western practice.**

I repeat that all Great Western compounds used only loose-heeled switches for compounds. This practice was carried on in BR times.

Chris Yates drew my attention to my error of linking the switches at both ends on one side only and mirrored about a line through both crossing on both compounds as in the previous drawings. He asked David Smith for clarification and David confirmed that about from special cases due to local conditions the standard practice is to have one lever local to the switch linking the two switches at each end of a double compound and one lever only for each end of a single compound. Of course there would then be two levers, each for each end in the Signal box if the operation is from there. Both drawings have been re-drawn to correct this. An adjustable lever is inserted at each end to allow for fine adjustment so that on a double compound the switches nest correctly using a single lever.

This correction has led me to alter the assembly instructions for single turnouts and well as for the compounds.