



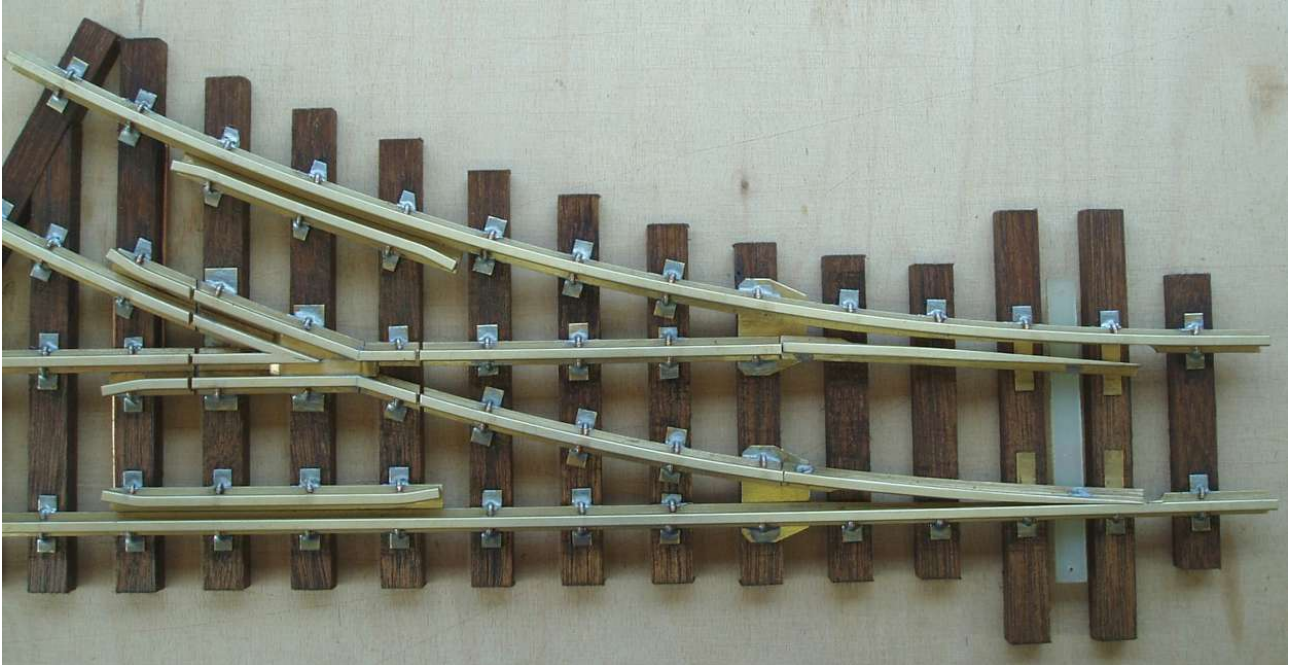
Guide to GRS Custom Pointwork

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Guide to GRS Custom Pointwork



Customers please note that ALL Stock Points are manufactured for use with GRS or Tenmille ground throw levers! (as picture above).

The picture above is of a stock 2ft 6" r/h point. The 2 extra length sleepers at the toe end are to allow fitting of ground throw levers ONLY, on either side of the point, to suit customer preference. In the picture also can be seen 2 isolation cuts for a DEAD frog with jumper wires just visible at the end of the frog check rails fitted for electrical continuity through the point.



Picture 2, (below left) is a close up of the standard Tie Bar as fitted to ALL stock GRS points.

Just visible above, the holes drilled at each end of the tie bar for connection to the ground throw levers, either directly or by means of an extension wire, with the levers mounted directly on to the extended sleepers.

It is NOT POSSIBLE to fit electrically driven, DCC controlled point motors, or Manual LGB Flick Boxes directly to these points!!

Where point motors as described above are required, modifications to the point are required and are best done at point and time of manufacture!!

The modifications when done at the time of manufacture carry a small extra cost on the overall cost of the point.

When retro fitting is required, because of the extra work involved, there is a charge levied on the point.

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The process being, the 2 extra length sleepers need to be cut to the same length as those either side of the tie bar, the standard tie bar needs to be removed and replaced with a different one ie. Slotted at one end rather than drilled at both and the point motor or manual flick box fitted to the point.

Removal of the original tie bar requires some careful work to avoid damage to any other parts of the point, such as the blades themselves, the stock rails or the pivot pins.

Customers are strongly advised therefore to check, decide and advise GRS staff that point motors are now, or will be required at some stage in the future, to allow the points to be prepared prior to purchase.

This group of pictures illustrate why modification to the points is required and how it is carried out. **It is not intended as a DIY guide.**

The first picture shows an LGB E.P.L motor against the point.



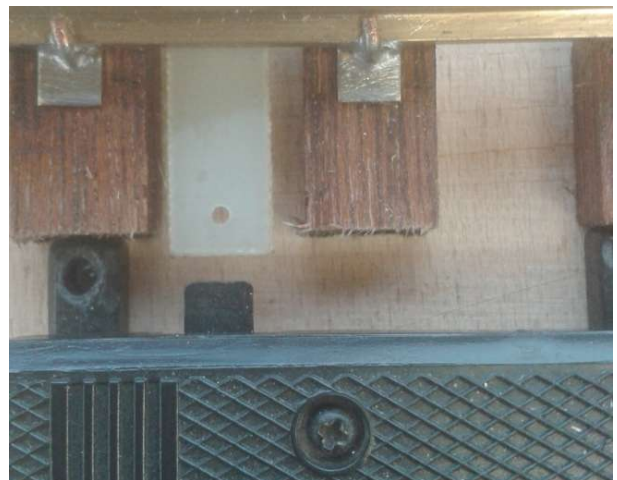
It is obvious that the long sleepers stop the operating arm of the EPL unit from reaching the tie bar.

It is possible to fit the EPL unit in this remote position and to make a connection from the EPL unit to the tie bar, but, the main problem is that an EPL unit drive arm gives a total throw of approximately 12mm against a throw of 6mm total throw at the blades!

From experience, EPL units are relatively weak and require the full length of throw of the operating arm to be effective, any less movement and they will not change throw the blades. The weakness of these units can also be a problem even when fitted if the blades are a little stiff after manufacture, this is obviously not a problem for ground throw levers, but will be for EPL units and LGB Flick Boxes, therefore the blades are made deliberately slack during manufacture to accommodate this.

Train-line point motors could be fitted in this manner and would work because they employ a totally different drive or throw method internally, they utilise a miniature servo motor instead of the rotary electro magnets in EPL units and the throw arm has a spring loaded element built into the operating arm.

This next picture shows the extra length sleepers cut down and again an EPL unit placed alongside the point.





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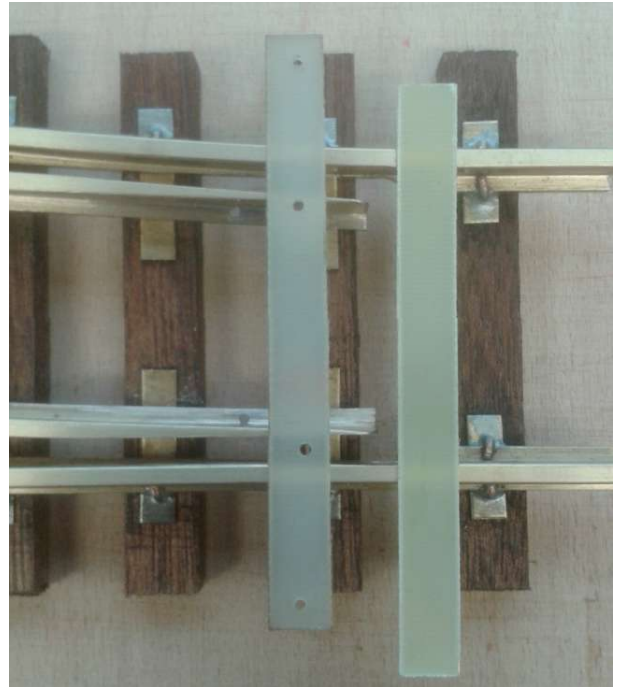
Here we can see the EPL arm still short of the tie bar, below is a LGB Flick Box, set against the sleepers and just reaching the tie bar at one position.



In the opposite position, it can be seen the tie bar is short of the arm with the flick box in the same position



The original Tie Bar needs to be removed and replaced with a longer one!



The picture above shows the original tie bar removed and a new blank cut.



This picture shows the new Tie Bar drilled for fitting to the blades and a SLOT in the end of the Tie Bar where the operating arm of the Flick Box, the EPL unit or the Train-Line motor will locate.

The reason for the slot as opposed to the holes has been mentioned previously in this text i.e. It allows the FULL throw of the flick box and the EPL motor to operate the points. Where a Train-Line motor is fitted, the slot is not really required but it takes some of the pressure off the internal spring unit, prolonging it's life.

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This picture shows the new tie bar fitted and the flick box against the ends of the cut down sleepers ready to be fixed to the point.



The next 2 pictures show the EPL unit and the Train-line unit in the same position ready to be fixed to the point/s.



All 3 units require the same Tie bar and it should be stated that all, including the tie bar, can be fitted to either side of the point and facing towards the toe end, or the frog end as required by customer specification.

Previously, point motors were attached to the points with a plate, riveted through the sleepers, with the plate underneath and the motor held down with 4 nuts and bolts.

A potential problem here was sleepers splitting at the ends due to the rivets so near to the ends, another problem where points were to be mounted on a flat baseboard. the point would not be level unless packed under the opposite side, but this would then raise the point above track level!

A revised mounting method is now employed using short lengths of Aluminium 'U' channel, fitted snugly over the sleeper ends. The channels are secured to the sleepers with screws, but because the channels are a snug push fit, there is very little chance of the sleepers splitting.

The point motor of choice is then fitted under the channel, secured with 2 bolts and nuts in a similar fashion to mounting the motors to LGB points.

A secondary benefit is that the base of the motor is now flush with the base of the point, NO tipping or packing.

This picture shows the component parts required, the channels already pressed onto the sleepers, in this instance, to accept a flick box. EPL units or Train-line boxes would use the same components, fixed to different sleepers.

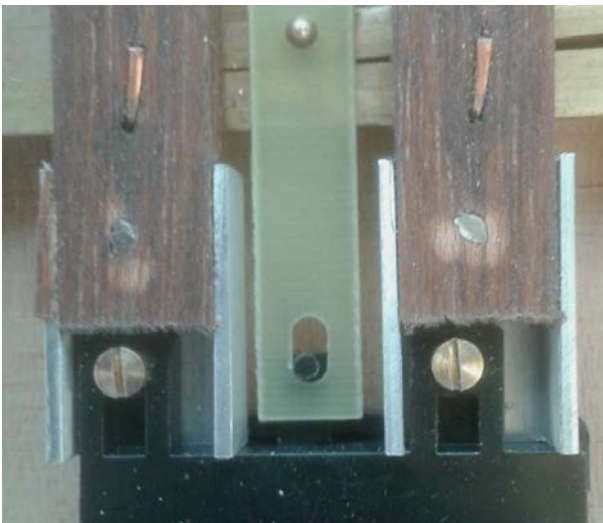




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In this picture the channels have been fitted to the sleepers with screws and the excess length of the screws ground off flush.



The flick box / motor is offered up to the channels ensuring correct alignment with the tie bar slot and the mounting holes are drilled through the channels and the bolts inserted.



The point is turned over (below left), the nuts are fitted and tightened up and correct operation and free movement is established with a little tweaking as required.



A little touch up with a coat of paint for appearance and fitting complete.



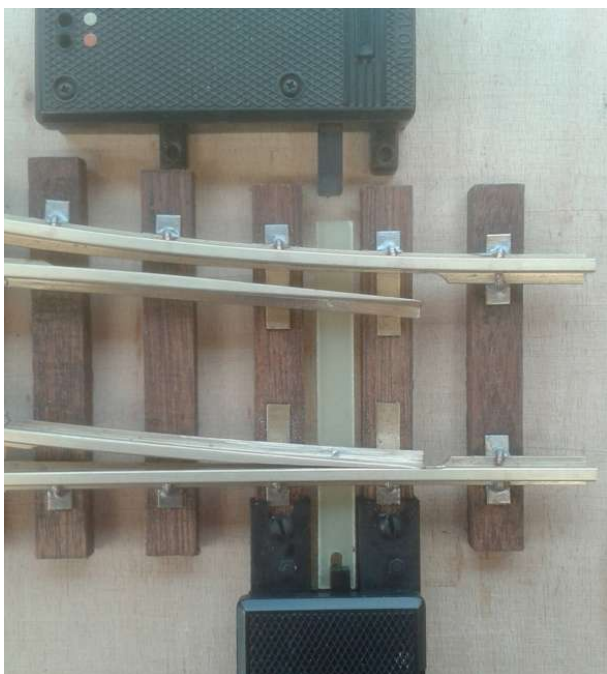
This picture shows the completed fitting on a flat surface with no lift or tilt.

As mentioned before, EPL units and Train-line motors would be fitted in the same way as described in the text.

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The picture below is of this point above, with an EPL unit in a position where it would / could be fitted but using different sleepers and on either side of the point



The point used for illustration here is of a Dead Frog configuration, EPL units can be fitted with a supplementary switch unit, allowing the point to be wired for Live Frog operation. Train-line motors are pre-wired for Digital control and can be fitted, internally, with a micro switch which can also be wired for Live Frog operation.

Customers are strongly urged to convey their FULL requirements to GRS staff members at the time of purchase in the shop or by any other method of contact or ordering either Stock, or Custom built pointwork.



Where it all happens!!

Thank You for your co operation. GRS Track Engineer.