Making Peco Better: Improving layout realism can be both easy and fun!

Making Peco better

Improving the realism of RTR turnouts in a few "easy to do" steps

Because it looks better, is easier to lay well and is durable, Peco code 75 has supplanted code 100 and is becoming the standard now for the "sensible average modeller" creating UK layouts and is common in layouts of other prototypes too . Used properly, Peco code 75 can be made to look good too, but it will never be other than a "Peco point", because of the tie-bar area design.

With little time & effort, we can make it more realistic - Here is our take on how to improve them.

Tools: *You'll already have many of these on the modelling bench.*

For modifying Peco code 75 track you will need these fairly standard modelling tools:

*** Track cutters (Click here) for removing Peco parts and cutting copper-clad * Some small modellers files for smoothing rail ends (Click here) * Soldering Iron for soldering sleepers and the droppers (Click here) * Small flat blade screwdriver for lifting spring tabs * Fine nippers or cutters (Click Here) for cutting frog rail links under the point (All newer electro-frog) * Jewellers saw, fine backsaw or fine cut-off wheel if cutting frog gaps (Older Peco electro-frog only, most are now pre-cut)**

Materials: *Apart from a Peco point, you will need...*

*** Tie-Bar ballast stickers (Click here)**

*** Copper-clad sleepers. (Order some when ordering other things, and we will supply you with some free of charge)**

*** Sapphire 179 Solder and Sapphire no-clean flux. (Click here)**

*** Red and Black power / dropper wire & Green dropper wire for the frog. (Click here)**

That's about it really…

You have what you need, and we are sure you can do it - so it's time for you to turn the page and read a little more... so you can see how easy it really can be.

And then - it'll be time to get on with it!

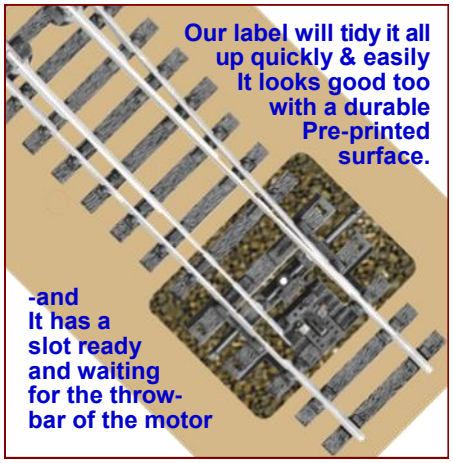
We'd like to introduce the easy-to-use and very helpful "Tie bar ballast label"

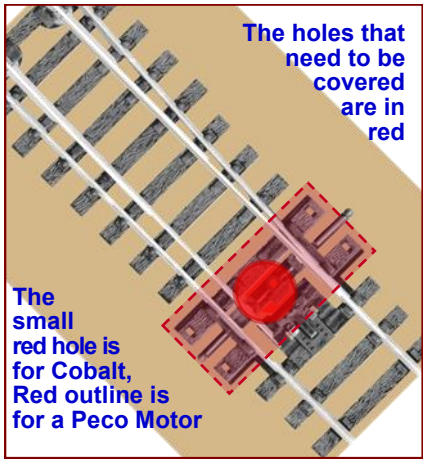
Some things are so simple that you wonder why they haven't been made before:

When you drill to mount any turnout motor, you always end up with an unsightly hole in the baseboard that also makes ballasting later a problem.

Our "ballast label" is self adhesive EXCEPT where the tie bar goes and has a slot pre-cut for the actuator wire . It is pre-printed with fine HO scale "Weathered ballast" but cut to size works in N too!

Using the label reduces the need to glue around





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GET RID OF SNAP ACTION SPRINGS!

They ARE needed for solenoids, but not for Cobalt!

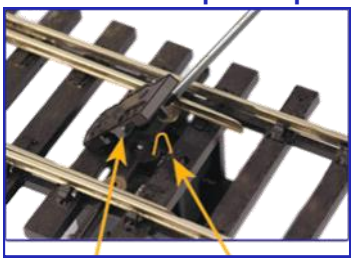
Cobalt motors have a smooth, positive action and there is no need whatsoever for any over-centre springs or snap action devices in the turnouts that it powers.

Besides - why would you want them to "snap" as they change when the rock-steady movement of a Cobalt point motor is far more reliable and much more prototypical!

So - for best results and greater realism… always REMOVE the snap-springs from Peco or similar points and turnouts.

Here is how its done. It really is very easy to do, and the inset pictures opposite show you how to go about it.

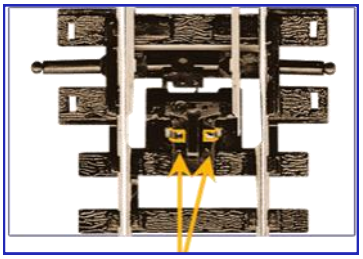
Turnout with a plastic pin.



Lever up the cover

Remove The Spring

Turnout with metal tabs



Bend up these tabs if they are fitted

(1) Depending on the turnout, the spring cover will be held either by a friction-fit plastic pin or two metal tabs. Either prise up the cover (if you can see no metal tabs it will be held by a plastic pin) or bend up the metal tabs as shown above and raise the cover to see the fine phosphor bronze spring.

(2) Gently grasp the spring with tweezers or fine pliers, then remove it completely... Now replace the spring cover and if it was held with metal tags, bend them back into closed position. Its that easy to do and takes only a moment.

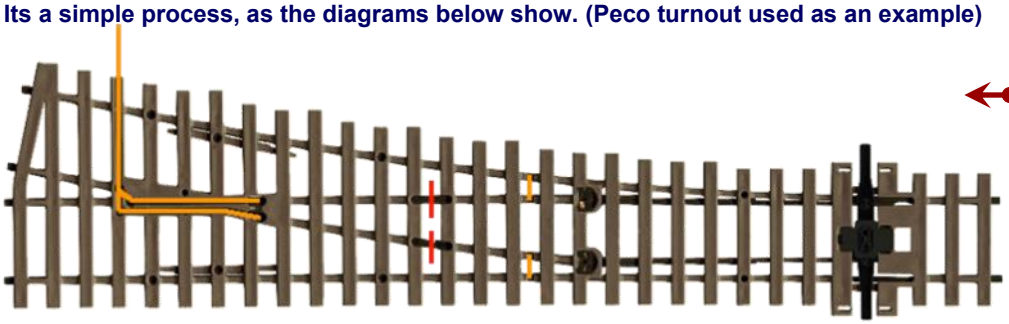
USE ONLY LIVE FROG TURNOUTS.... And prepare them for best performance and reliability!

There is no greater frustration than building a layout using insulated or insul-frog turnouts "because it looked easier to wire them" and then finding that there are intermittent shorts at the frog, that those point blades that use tabs to collect power stop working reliably as soon as they are ballasted and weathered to look good... or that shorter wheelbase locomotives stall on them when running slowly... as they WILL do as small loco's always run slowly in yards and sidings - and that's where the all of the turnout are!

So... You really should use Live frog turnouts exclusively. There is no doubt at all that live or "electro-frog" type turnouts are the very best choice for reliability on any permanent layout and as they also usually cost no more - So its simply a sensible decision!

Even then we can STILL make things better... and this has been made easier recently by Peco, as they now pre-prepare much of what needs doing, making it a ten minute job the make their electro frog turnouts about as good as they can ever be.

Its a simple process, as the diagrams below show. (Peco turnout used as an example)



Step 1 - improve the power flow

(1) turn it over. You should see a wire attached to the frog area. Pull it from its slot ready to attach a Green dropper (it'll be connected to the common wire of one of Cobalt's switches)

(2) There are two orange bars on the drawing to the left. These are wire links you should add (solder them between stock and closure rails).

(3) There are two red lines. Older turnouts will need the rails cut here. Newer turnouts already have the rails gapped., but there will be wire links here... Please remove or cut them.

That's it - just wires to attach now!

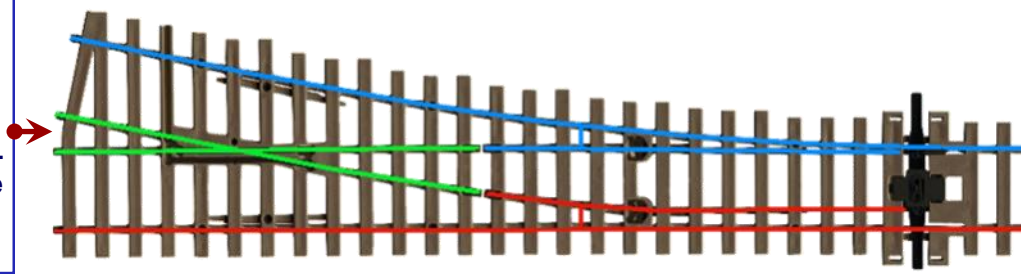
Step 2 - attach the droppers

(1) attach the green wire to the frog. Connect it to the common terminal of one of Cobalt's built-in high-power SPDT switches.

(2) Attach the other 2 wires (the red and black) for the track power to the blue and red rails. These wires go to the other two terminals on the same Cobalt switch.

Now, when you change the turnout, the frog polarity will change to match the route and you will have perfect running!

These quick & simple improvements will give better overall reliability to both DC and DCC powered layouts.



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The Transformation: from just another turnout.... to something a bit more like the "real thing"

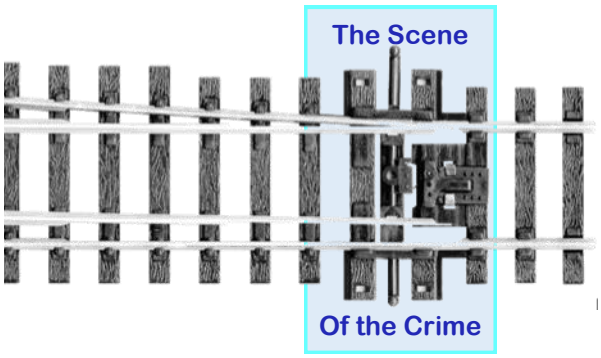
Ready to run out of the box turnouts have to be made easy to use for anyone, so there are lots of compromises made in the overall design. Most are also quite inaccurate in their overall general geometry but we aren't worrying about that, as there is one area that above all makes a RTR turnout look like a toy and that is the area around the Tie bar .

This has to be made heavily as unless the layout is permanent it gets a lot of stress... and it often has to cope with the action of some pretty violent solenoid type turnout motors AND act as their mounting point, as well as contain an over centre spring to compensate for the fact that most solenoids have no "latching ability.

None of this heavy, clunky stuff is needed any more when you use Cobalt, so we can spend about twenty minutes removing the parts that offend the eye and make a good turnout very much better... And make it far more realistic at the same time!

You may be very happy with your turnouts as they are and that is just fine. Do take the springs out though... Please. If you are one of those who don't need to make changes, then skip ahead a couple of pages and we'll talk about ballasting and painting turnouts.

For those who want a little more but don't feel confident enough to build their own turnouts, read on: We will do our best to show you how to make the whole turnout look so much more realistic in a few easy steps that really aren't too hard to achieve!



The start: Plan and prepare for the process properly

* **prepare the turnout** - Do the electrical mods from the previous page.

* **Look carefully at the turnout -** The area of interest for this project is around the Tie-bar, and for the more adventurous, refining the tie bar a bit.

Look closely at the area...there's pretty well nothing about it that could be called realistic no matter how generous we were, especially those heavy and incomplete sleepers with the holes in them!

* **Get ready...** Because we are going to show you how to replace them with something far better looking, for very little cost and with little effort!

First remove the offending parts:

Step 1: Remove the spring now if you didn't do it before...

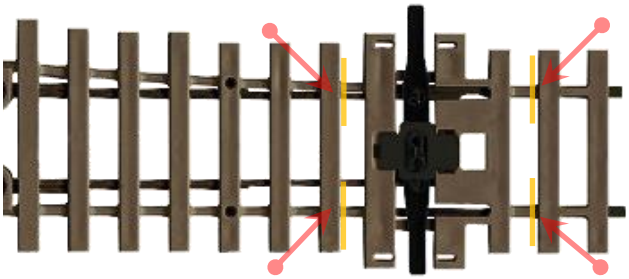
No need to replace the spring cover, we are going to get rid of all that!

Step 2: Turn it over, cut through the plastic web between the offending parts and the rest of the turnout. (Orange Lines show where to cut - We will leave the tie-bar but remove all the rest - read on first though!)

Step 3: Look at the side of the turnout. You will see on each side a thin web of plastic that holds the sleepers either side of the Tie-bar.

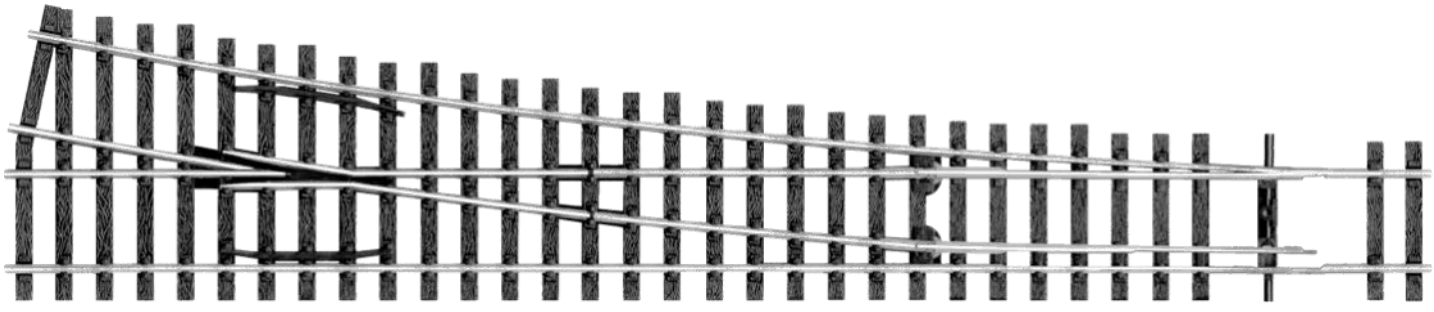
Cut it either side of the tie-bar and then carefully tweak the heavy-look sleepers away from the main part of the turnout and drop them in the bin!

You CAN leave the tie bar as is... but it's better not to. Cut the ends and the small square spring housings off and file it to a slightly better shape.



Take a minute to admire your handiwork:

Your turnout will now look like this... On the next page, you will see how easy it will be to make it look much nicer than it did before!



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Next step: Replace those ugly parts that we removed:

This is easily done with sleepers (ties) pre-cut copper-clad material—the same stuff that Circuit boards are made from. (These are available from DCCconcepts in the right width, which is 3mm (order 1.6mm fibreglass 3mm sleepers) .

If you can't find the correct width, then a few strokes of a file will correct wider ones, or if you want to cut your own that is fine... you can easily cut them from the sheets of PCB material that are available from most electronic parts suppliers.

Look closely at the drawings below and you will see there are a couple of lengths of sleeper (tie) needed. Cut them with saw or track cutters and then if needed, file the ends square. Once that is done, gap by removing a small amount of copper from the centre of each with a round backed needle file (This removes it more subtly than a slot with a file edge or saw).

Soldering the copper-clad sleepers in place.

(1) Clean the PCB sleeper (tie) surface with a fibreglass brush or fine wet and dry. Apply a little liquid flux to the area where the rail will sit. Tin the area as follows: Less is more when it comes to soldering flat-bottom rail to copper clad sleepers!

(2) Wipe all the solder OFF the tip of your Iron with a damp sponge. Then re-apply only a very small amount - just 1mm or so of solder wire at most. Put a light coat of solder on the sleeper (tie) where the rails will go - it should be thin, NOT a lump.

(3) Turn the turnout over and clean the bottom of the rails where these sleepers will go. Use a fine file if you like, or the methods above. Paint the bottom of the rails with some liquid flux.

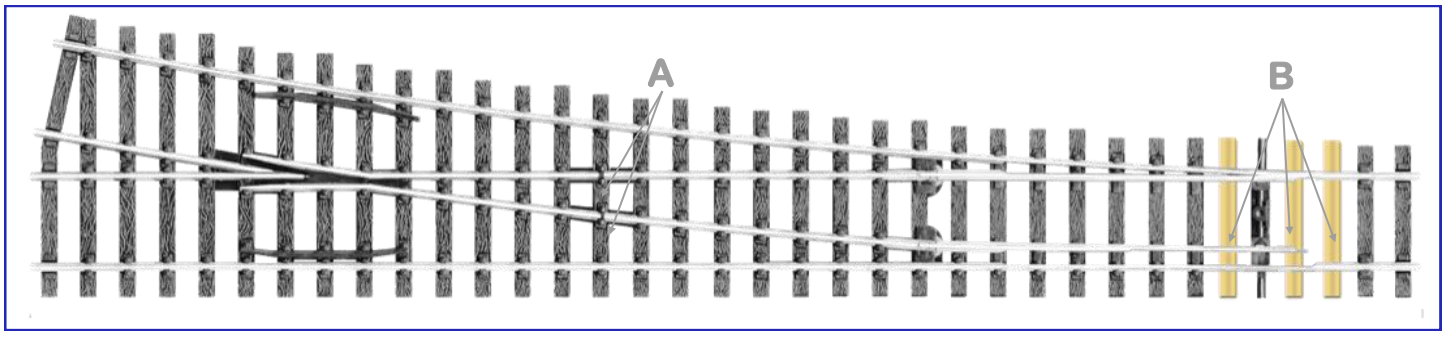
(4) Place the turnout on a flat surface that you can solder on. Place the sleepers (ties) in the correct position. Be accurate and keep them parallel with the existing plastic ones. (You MAY need to raise them very slightly if they are thinner than the originals - cut a strip of 1mm thick cardboard and it as a packer underneath to hold securely against the rail so you can do this easily)

(5) If you like, add a wee bit more flux - it can't hurt and is better than not enough! Apply the Iron so that the tip meets both sleeper and rail and move back and forth a couple of times with light pressure. Leave it in contact no more than about 3 seconds. In this time the flux should hiss and you will see the tinning soften and flow under the rail. Count to 5 then you can take the finger pressure off the rail and the joint will be solid—and nice and subtle if you didn't use too much solder! Repeat on all other joints.

TIP: Space the new copper-clad sleepers/ties so that they are even. Keep the ends of all of them in line with the straighter side even and it will look much better. Cut off those extensions on the tie bar too... We want it subtle!

Your turnout will now look like this: It looks so much better when the toy-like "Heavy look" around the tie bar area has been removed, doesn't it!

EXPERT TIP: installing a Cobalt motor after removing the spring: With the spring and original sleepers now removed, the point blades will be free to move back and forth. We need to encourage them to stay in place. This is simply achieved by giving the Throw-bar wire a slight forward bend, so that it applies pressure towards the turnout FROG end.



Now we are ready to lay the turnout... Before we do, its time for a quick checklist:

(1) Green "Frog dropper wire" soldered to the frog, bus wires in correct colours for the Power Bus soldered to each stock rail.

(2) Gaps cut OR links removed at A.. Gaps properly filed in copper-clad at B

(3) Turnout given a quick wash to remove any flux residue or swarf from filing (use a bathroom spray cleaner and rinse well.

(4) Hole marked and drilled for installing the Cobalt motor…

EXPERT TIP: soldering droppers to rail and turnouts:

(1) You need a soldering Iron with a clean, shiny, well tinned tip, some No-Clean flux & some sapphire 179 solder (DCCconcepts).

(2) Strip 6~8mm of insulation from the dropper wire and twist it well. Add a bit of flux. Tin it first, then bend 90 degrees at mid point of the tinned section. Then cut the end off the "L" so it is only about 2mm long. This bit will be soldered to the rail.

(3) Cut plastic web from between the sleepers where you will attach the dropper. File the rail bottom so its a clean metal surface.

(4) Add a bit of flux to the clean metal of the rail bottom and tin the rail bottom with just a little bit ofsolder.

(5) Add flux to the tinned rail. Hold the "L" of the wire to the rail. Apply the soldering Iron and the solder on the rail and dropper will flow together immediately. Remove the Iron/hold the wire steady. Count to three/let go. **That's it... a perfect join in seconds!**

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Now you have started on the path to greater realism….
Are you ready to consider the next logical step?

In track-making, DCCconcepts is proud to be breaking new ground. We are starting a project to make UK prototype track-work more realistic than ever, and products in this range will be released under the "Legacy" brand name.

Starting with the best ever track-making parts, this range will keep growing from now, so keep your ear to the ground!

We've started the long journey to better track by offering our range of pre-etched, pre-cut sleeper frets for building UK prototype track & turnouts (point-work) in 4mm scale to OO gauge. We'll soon add a range for creating EM/P4 track.

These top quality fibreglass sleeper frets are very versatile (the turnout fret for example will provide the correct timbers for any turnout between an A5 and B9) and they are VERY easy to use.

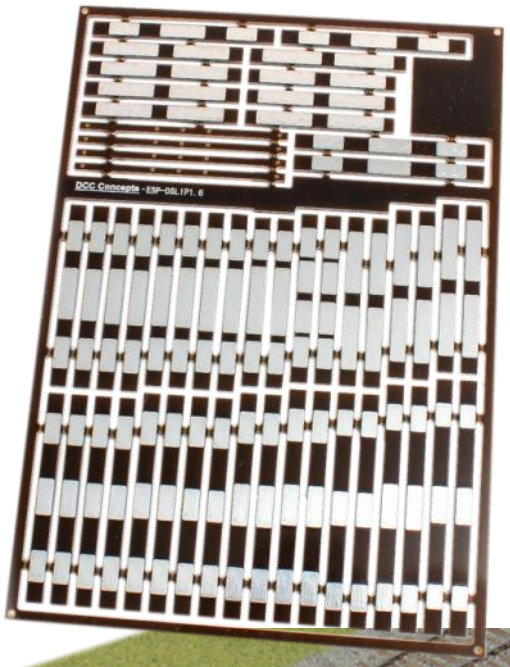
They take away all of the hard part of making track with copper-clad as they are ready to use… with pre-tinned copper pads ready to solder to… but ONLY where they need to be, so you do not even need to worry about cutting the gaps. Being professionally cut and etched, they look much better than hand cut sleepers too!

We make the frets in two thicknesses – for use on standard track with directly soldered rail OR in a thin version for those using chairs for proper UK bullhead track. Chairs will be coming soon….

Add the most accurate range of track-making gauges ever offered and you are ready to go. Why not have a try… you will be surprised what you can achieve.

Of course, templates are freely available and we can of course also help with good advice… and the perfect tools, solders and fluxes needed to complete the task. (templates for 16.5 & OO-SF are available really soon, EM and P4 will follow not long after)

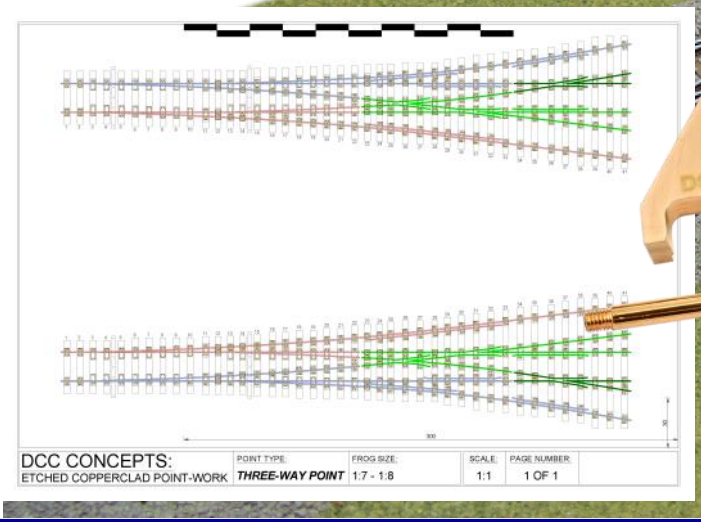
PS – of course our track-making parts and tools are very often useful and quite suitable for the creation of track in HO or for other gauges, scales and prototypes... so no matter what you enjoy modelling … please take a closer look



This fret will let you make any turnout between A5 and B9

We are adding FREE downloadable templates to our website and these will be available as soon as we go "Live" with our manuals and advice areas.

Check at **www.dccconcepts.com** soon!



DCCconcepts have the widest range, best quality and by far the most accurate track-making gauges available anywhere

See them at **www.dccconcepts.com** (available now)