

There are some things that have just never happened in the hobby, because they are seen as just too hard to manufacture.

That's never really bothered us, as we love to think laterally and like to be different. We also feel that adding a little inspiration (and the occasional challenge) for those in the hobby that like to work with their hands to make something special is well worth doing.

Working Point Rodding that's ready to go is one of those things we just had to try for!

Sure, there are etches and crank kits you can assemble if you have nimble fingers and lots of patience, as well as very good eyesight. You also need literally weeks of time, because the kit parts are fiddly to prepare and assemble, and rod stools made from whitemetal etc need a huge level of cleaning up before use - and you need dozens of them! Then there's the job of actually connecting it together.

So - The challenge was to create point rodding with real usability that is able to be assembled by the average modeller with a basic tool kit.

It needed to be close to scale to look right, but of course, the cranks had to be a tiny bit larger than scale because the most common pointwork used in the hobby has a huge gap between point blades and stock rails compared to the real thing and so slightly longer crank arms are needed.



Even then, the parts we had to create to make the cranks are, to say the least.... TINY.

This small photo tells the story: the rivet sitting on the coin is less than 2mm long and it is less than 0.6 mm across its narrowest point (which itself has a 0.25mm hole in it). Just one one of the many thousands of shouldered or "stepped" rivets that we had to create in order to assemble the rod cranks (it is used to hold the rod pockets onto the cranks).

Then of course it was necessary to actually assemble the cranks to the crank posts with another rivet that was nearly as small - and then of course set them accurately every time. ANYONE with less than perfect vision certainly need not apply for that job!

By the way - the rivet is sitting on a UK 5P coin (US/Au equivalent 5c).

Of course - rodding is far more than just the cranks... all of the rest also needs to be delicate and durable too.

The rods need to be square, fine, accurate and strong. The rod stools are actually very small in real life, but they need to be realistic in model form AND strong.... They also need to allow prototypical spacing of rod stools and so lots of them are needed- and because so many are needed they need to be perfect rather than approximate or needing lots of clean-up, like every other cottage-industry attempt at creating them - but they cannot be too expensive either.

Of course... not everyone is comfortable with soldering - so we also needed to be practical. Therefore, while soldering can be (and is) a great way to connect things, it also needs to be an option for some, and most importantly, taking care of the worst of the "hair shirt" parts and tasks by pre-assembling the cranks and making the hard-to-get-right connection of rods and cranks easy was also essential.

There was another motivation for this project too: it was the creation and instant success of the small, silent DCCconcepts Cobalt-SS motor, so making a system that would allow this tiny turnout motor to actually drive the rodding to change the turnout was a must.

FINALLY - we also used the cranks as part of a simple to use "distant mounting Kit" for Cobalt-SS, so that box can now be ticked too.

Rather than expand on this introduction, I'm now going to add some of the instruction manual content for DCCconcepts rodding here.

**DCCconcepts products are imagined, designed and manufactured by DCCconcepts Ltd
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Point Rodding

General product information

The DCCconcepts working point rodding range covers a wide range of related products from “start sets” to packs of components. Having pre-made cranks & perfectly formed rod stools will save hours of work.

DCR-WRP - £99.95. A complete pack with rodding, loads of cranks, linkages and other items needed to create working rodding. If you need more, you will be able to purchase it from our range as all components are also sold separately.

DCR-RDP - £29.95 Contains square rodding, rod-end pockets and micro-rivets to add to the rod-related parts supplied in the DCR-WRP set. It can also be used if you want to assemble rodding with your own cranks, etc.

DCR-SSLP - £24.95 This pack contains a range of components chosen to allow you to mount DCCconcepts Cobalt-SS motors or similar motors at a distance from the points or turnouts that they control. The pack includes phosphor bronze wire, Teflon tube, an assortment of cranks, fine gold plated pins, a pack of Cobalt-SS linkages and a 0.7mm HSS drill.

DCR-SCP.6 - £19.95 SIX short cranks with rod end pockets, 100 gold plated pins and a 0.7mm HSS drill.

DCR-MCP.6 - £19.95 SIX medium cranks with rod-end pockets, 100 gold plated pins and a 0.7mm HSS drill.

DCR-LCP.6 - £19.95 SIX tall cranks with rod-end pockets, 100 gold plated pins and a 0.7mm HSS drill.

DCR-CVP.6 - £19.95 SIX curved cranks with rod-end pockets, 100 gold plated pins and a 0.7mm HSS drill.

DCR-CCP.3 - £19.95 THREE compensating cranks with rod-end pockets, 50 gold plated pins and a 0.7mm HSS drill.

DCR-ACP - £49.95 SIX medium, TWO short and TWO long cranks. Also 20 unattached rod-end pockets and some of our tiny micro-rivets to secure them, plus 100 gold plated pins and a 0.7mm HSS drill.

DCR-RCP - £29.95 a pack of ONE HUNDRED finely scaled, ready-to-use, injection moulded point rodding stools.

DCR-P500 - £9.95 a pack of FIVE HUNDRED gold plated pins.

DCR-P100 - £3.95 a pack of ONE HUNDRED gold plated pins.

Warranties and After-Sales Service:

The warranty for DCCconcepts product is 12 months from date of purchase. We warrant that each “working point rodding” pack you purchase will be complete and that all items contained in the pack will have been checked and tested prior to packing.

(Please note that this is basically a carefully designed kit of parts and, as we have no control over the skill levels or abilities of its purchasers, we cannot make any specific performance guarantees. We have, however, done our best to take care of the most difficult parts of rod assembly for you and so all cranks are pre-assembled).

Work carefully! Be aware that very small items like the point rodding stools are as accurate as possible, but making them small enough to look correct means that they are also quite fragile. **Please note:** Warranties are not transferable & are offered to the original owner. We reserve the right to request proof of purchase.

Help and Advice:

These instructions should give you most of the information you will need to start your point rodding assembly.

Where we think it may help, to be sure you see them, we have repeated comments in some areas. We will constantly endeavour to add more advice and guidance to our website as time goes on. (Check our website for updates please)

However, we do understand that you may still have some questions, as experience has shown us that there will always be a need for help or advice for almost any product we create. Therefore we invite you to email or telephone us if you need more information.

Additional general Information:

Rodding: The square rodding included in these sets is made of stainless steel and it was made especially for this purpose. It is the correct size to accurately represent 4mm scale point rodding. It can be glued, crimped or soldered to the specially created rod pockets already fitted to your cranks.

If you wish to solder it, please use our S179 solder (DCS-S179) OR a solder with a little silver in it. You should also use our No-Clean Flux (DCS-SFNC) which will greatly aid smooth solder flow.

Please turn your soldering iron up to its maximum temperature in order to successfully solder stainless steel.

Rodding cranks: The cranks supplied are made from brass. Their tiny size meant that every part was especially created, with the cranks etched and the micro-rivets (rod-end to crank) and crank posts being turned on a jeweller's lathe because no "off the shelf" part was possible.

We have made the cranks as small as possible but please note that they are are slightly over-scale - this was necessary as most users of this point rodding will be OO gauge modellers using Peco pointwork and the larger gaps of ready-to-run pointwork need a larger crank throw.

Despite this, they are very fine and will look great when coloured. (We use marker pens for this by the way). Of course, being fully assembled and ready to use, they will also save you many hours of fiddly work.



Rodding stools: Our stools are injection moulded and finely detailed. Unlike whitemetal stools they require no clean up.

Please note that as they are so fine, they are also fragile so handle them carefully and always take any burrs off the end of the rods before inserting them into the stools. We recommend fixing them in place after threading and fitting all the rods.

(Acknowledging that you may damage a few rod stools when making complex installations, we have ensured that there is a large quantity with every kit and more stools are available in accessory packs.)

The Basics: This working point rodding system is a versatile set of parts that will allow you to achieve different things depending on your objective. Rodding and stools are carefully created to both look and perform well, so a run of rodding will look great whether operational or not - however you DO have the choice!

Cranks are fully assembled and have the rod end pockets already fixed to them so most of the hard work is already done for you. Your installation can be cosmetic, turnout-driven or prototypically "distant motor or lever driven" depending on your wishes and skill levels. The potential uses of this system are very wide - and totally up to you!

Cosmetic only: Research the area you are modelling and look for any examples similar to the track layout you have chosen.

Choose cranks according to the layout you are attempting. Take your time and work slowly. To fix rodding into the rod pockets already fixed to the cranks, you can gently crimp them with pliers, use superglue or solder them.

We recommend cranks are placed and rods pre-cut / filed smooth at the ends & tested for length before adding the rod stools to the rods.

Rod stools for square profile rodding are typically 36 to 44mm apart but it does change a little on straight vs curved runs and varies region to region so please check your prototype. We recommend that you fix the rod stools in place after overall assembly so that you minimise stress on their fragile top bars. Glue them in place only after it has all been tested.

To colour rodding, we recommend use of metal blackening chemicals if used carefully. However, you can also use permanent marker pens or an airbrush for colouring. (A heavy paint coat will just not look right.)

Active but turnout driven: Installation can be cosmetic but driven from the turnout for a neat visual effect on the layout. The rod ends can be concealed under a wooden planked track crossing or similar visual diversion quite easily.

This method puts minimum strain on the rodding and the turnout motor and requires less precision, so installing it this way is easier than actually driving the rodding from a distant-mounted turnout motor.

Using DCCconcepts working rodding to change a turnout from a remotely mounted drive system or turnout motor:

The ultimate approach is installing rodding that drives the turnouts from a distance, just as the prototype's fully mechanical systems did. It is also possible to have the motors hidden under the signal box for a truly prototypical look if you use miniature motor drives such as our Cobalt-SS surface-mount turnout motor.

If creating working rodding we also strongly recommend that you consider reinforcing the crank "post-to-base" connections with solder and also solder or crimp the rods into the rod pockets.

Using the Cobalt-SS DCR-SSLP distant mounting kit: This "rodding related" product is specifically designed to make remote mounting of the Cobalt-SS motor an easy task using our rod cranks and accessories. Rodding itself can do this, but acknowledging that many modern image modellers also want to do this, we have included some Teflon tube and phosphor bronze wire in this kit in place of rodding and rodding stools.

Steam era or transition era modellers can combine the DCR-SSLP set with point rodding if they wish to make a mechanical drive system.

In either case, each pack contains a set of Cobalt-SS links. If you do not want to bend the wire to make the linkage, you can cut and solder them to the wire at the point motor end of the drive to assist connection to Cobalt-SS.

Point Rodding Parts

The point rodding system has several components. This page takes a closer look at some of them and covers how they should be used as well as adding a few tips in relation to their installation. As with many modelling processes, there may be more than one way to achieve things, so if you want to do it differently, that is OK.

Note: We assume you have a good basic tool kit & an understanding of basic modelling terms throughout.

The Square Stainless Steel Rodding

We chose to use stainless steel so there would be no long-term problem because of corrosion, which could cause the rodding to jam with other materials.

Cutting: We recommend you use a jeweller's saw or a cut-off wheel to create clean cuts with no distortion. If you use cutters, they should be hardened.

Soldering: The grade of stainless steel we chose solders well using our S179 solder and No-Clean flux.

Before attempting to solder stainless steel, clean the area to be soldered with a fibreglass brush, fine file or any other abrasive means. Also, please turn your soldering iron up to its maximum temperature.

Joining: We have provided the rodding in lengths that should be adequate for most rod installations as each crank will, in itself, form a joint. Compensating cranks are usually used on longer runs, however there may be situations where you may want to join it.

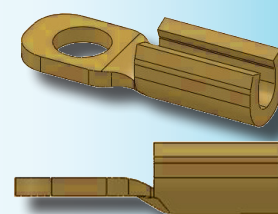
Joining-option 1: File rod ends to a shallow angle, pre-tin them with S179 solder and, after aligning and clamping them to a hard surface, re-heat the solder to create the joint. File smooth once cool.

Joining-option 2: Alternatively, use a short length of some thin-walled tube as a reinforcement at joints. Solder or glue then file it smooth.

The Specially Created Rod Pockets

Fixing the rods to the cranks was one of the most difficult things to do well when we were assembling kit-based cranks for our testing... and, knowing that it might be a step too far for many, we have tooled these tiny "rod-end pockets" and pre-fitted them to every crank, so you do not need to bother!

You can fix the brass pockets to the rodding with glue, by crimping or by soldering them with our DCS-S179 solder and No-Clean Flux.
(We recommend soldering.)



Before inserting the rods, clean up the rod end and gently file a chamfer on each face of the rod. This will help both with inserting them into the pockets and threading them through the rodding stools.

Make sure that the rod is placed into the pocket squarely so it will then fit properly into the rod stools without adding friction.

Also make sure that you do not insert it too far or it may limit the crank rotation.

Please note: You can of course use round rodding as some prototypes did. Check and test before use.

Diameters from 0.35 to 0.55mm will fit comfortably into both the rodding stools and the rod-end pockets.

The Pre-assembled Brass Cranks

There are several crank types available.

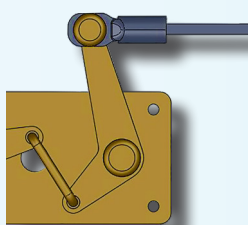
These include three heights of straight cranks, plus curved and compensating cranks.

All are already pre-assembled, fitted with rod-end pockets and ready to install.

Each crank has a baseplate with holes in the corners. We provide gold-plated hard metal pins to use in the installation.

(Etching is targeted at 0.7mm but you may sometimes need to open the holes a little with the drill provided)

We also recommend that you slightly countersink the holes with a larger drill (used in the hand) and also pre-drill the baseboards for the pins.



We check each crank prior to packing but you may occasionally wish to tighten up some pivot points.

If you do, be careful. Solder will do it, but you can also use a punch and light hammer.

If you use a hammer, tap gently on the rivet to be tightened and make sure that you do not shear or over-tighten them as any cranks damaged by your actions are not warrantable.

Once you have the full start set, all crank types are also available for you to buy separately when you need more.

The mounting pins are also sold separately as they will find many uses around most model railways.

The Plastic Rod Stools

The Rodding Stools: These highly detailed parts are very small and contain a lot of detail.

As it's impossible to make something this small in either lost wax brass or whitmetal without the need for extensive clean-up, we elected to use moulded engineering plastic.

Detail is excellent and very high volume production has kept the "per unit cost" very reasonable.

This has also allowed us to retain a fine look at a very close to scale size, although it does mean that these parts are quite delicate. Treat them with care.

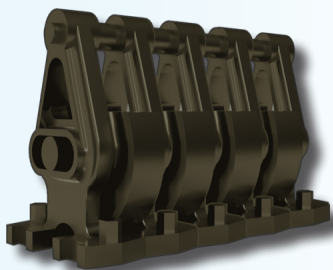
We suggest that you pre-fix all cranks and linkages and pre-cut / trial fit all rods before final assembly and threading the rods through the rodding stools.

Mounting: Each of the stools has a standard "Concrete I-beam" typically used by the prototype to install them, moulded onto it.

This mounting beam is usually buried in the ballast.

We tend to use our underlay sheets of 3 to 5mm EVA foam in our yards. This allows us to easily cut a square hole for the rodding stool base to fit in to.

Once it is all complete, drill and pin or, if you prefer, glue the rodding stools in place.



Wire-in-tube components

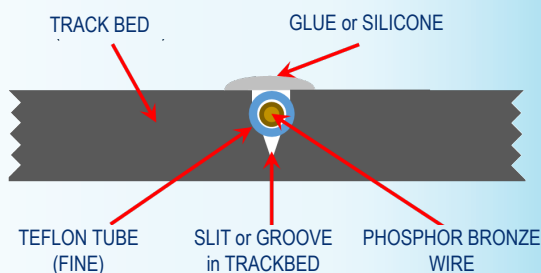
Our rodding is great to use, but sometimes, all you really want to do is mount a turnout motor remotely or perhaps at a distance from the turnout that it controls.

The DCR-SSLP Distant Mounting kit contains all that you will need to do this, even if you need to make the linkage at a right angle or around a curve.

The slippery TEFLON tube cannot corrode and make the drive rod stiff in operation. The phosphor bronze wire is flexible for easier bending and it also solders very easily.

You can use wire in tube with cranks (or even curve the wire-in-tube to a radius as small as a couple of inches) and still get smooth, easy-to-install distant control operation.

A DCR-SSLP Distant mounting kit makes it easy!



The Gold Plated pins

The need for pins to hold the cranks led us to consider other uses for them around the model railway.

We used gold plating as it is easy to solder.

Smooth plating makes them ideal for track or for stabilising track joints on curves or at the baseboard ends.

These fine, gold plated and hardened pins are 13.5mm long, 0.7mm diameter and the pin head is approximately 0.55mm thick and 1.55mm diameter.

They are gold plated (yes, real gold!).

This makes them corrosion free and so much easier to solder to than brass or other forms of plating.

They have been hardened so they will not bend in use.

The rod packs already include bags of 50 or more - far more than you will need to install your rodding cranks so you will have some left over for other purposes.

Supporting track at board ends:

Drive 2 or 3 of the pins into the baseboard at board ends and solder to the bottom of the rail to hold it in place almost invisibly.

Helping keep track curves smooth:

Do the same sort of thing where flex-track needs to be joined on a curve. Drive them in so they sit under the fishplates and solder to the fishplate while aligning the joint.

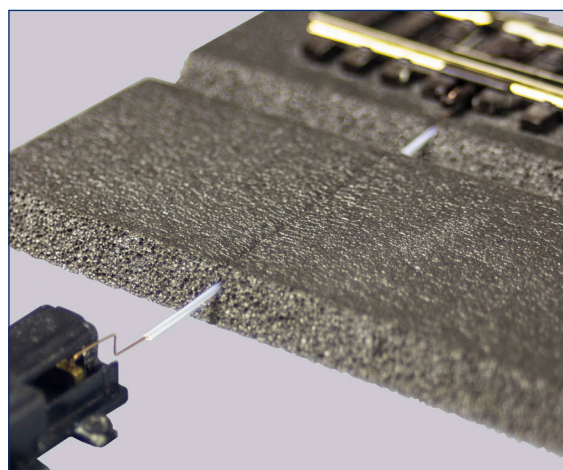
As steam loco connecting rod pins:

Cut them to length and use them as valve gear rivets (soldered).

To pin your track:

Small and subtle, they will hold track securely without ugly large heads being visible. You can colour them with a permanent marker pen!

Caution - cutting the pins: Do not use your track cutters as these are hardened pins and may damage them.



Planning and installing it all

Check your prototype when planning the rod layout.

Look carefully at the spacing for the stools as it will differ at times (for example, where cranks are grouped). The rodding stools will also be placed closer together on curves or may be further apart on long straight runs.

Installation overview:

As each installation will be quite different we can only provide you with general guidance here.

Rodding Stools:

The DCCconcepts stools are very close to scale.

This means they can also be fragile. Handle with care and do not fix finally until the testing is done. (We provide lots in the pack so an odd breakage is OK)

Rodding Cranks:

The cranks are quite fine too - so for working rodding that actually drives the turnout, we do recommend that you reinforce the base-to-post joint with solder.

Order of installation:

Based on our own experience, we recommend that you install your working point rodding in this order.

- Plan the rodding run carefully.
- Plan and prepare the crank positions.
- Pre-drill for the fixing pins AND dimple the board to allow for the crank centre post end.
- Pre-cut, shape fit and test the turnout linkages.
- Pre-cut the rodding lengths, smooth the rod ends.
- One at a time, assemble each rod run (add the rodding stools but don't fix them down yet).
- When it is all assembled and tested, space the stools properly and fix down permanently.

Preparing the cranks:

As mentioned earlier, you may wish to tighten some crank pins. If you do, be very careful please.

We also recommend that, if you install the cranks as part of a fully driven system, a little solder added to the base of the crank post (under the baseplate) and to the bottom of each crank arm may be useful as it will reinforce the rod pocket micro-rivets.

To do this, clean the brass with a fibreglass brush, add our DCS-SFNC No-Clean flux and a very small amount of DCS-S179 solder. Work carefully. It will only take a moment to do.

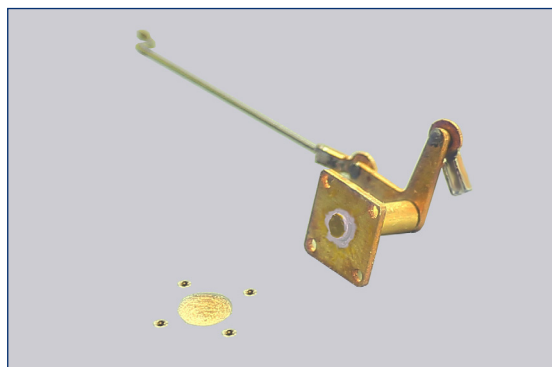
Preparing to fix the crank bases:

We strongly recommend that you PIN the crank bases in place - this will give the strongest fixing.

We have etched holes into each base but they may require clearing a little in order to insert the pins. We have packed a 0.7mm drill with the rodding sets to make this easier for you - alternately a fine broach or reamer will do an excellent, accurate job.

We also recommend that you countersink the holes slightly with a small drill before you insert the pins. Hand-powered use of an HSS drill of around 2mm diameter or similar is good for this.

(It lets the pin heads sit more neatly in the holes)



Above: The board is prepared, the shaft soldered to the crank base and the linkage is created & installed. Note the dimple in the centre to allow for the post end.

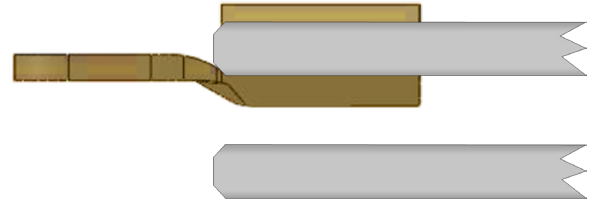
Preparing the Rods:

File a small bevel on the rod ends on all 4 sides.

This will make them easier to slip into the crank rod-end pockets and make threading them onto the stools very much easier.

Rods should only be inserted into the pockets to the limit of the collar (Inserting them any more may reduce the crank rotation ability).

Fix the rods to the rod-end pockets by carefully crimping the pocket, glueing or with solder.



Above: Rods are cut square and tapered at the end. They are only inserted to the end of the collar.

Practical examples:

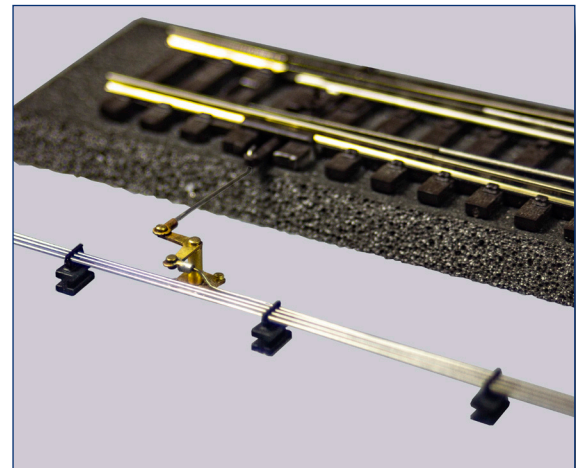
We have already shown and discussed some of the things to think about in previous pages, but these photographs of rodding that we connected to a Peco turnout may make some of it clearer for you.

Note the bending of the rod as it meets the crank in the image here.

We exaggerated it a little, but if a rod leaves a rodding run, the rod should always be pre-bent to allow it to join the crank slightly away from the run.

Keep it all parallel & symmetrical.

Similarly, if the height of the connection needs to change, a careful bend similar to this image is best.



Don't forget the rods & cranks at the Signal Box end!

As you can see, most cranks simply connect to the rod-ends directly here, but there is a slight curve to the linkage for the rod in the front centre of the picture - such box-by-box individuality is common as all installs are one-off.

Because you really CAN make fully working rodding with these parts, and Cobalt-SS motors are so small, there is really no reason why you could not hide the motors in the signal box and have all your turnouts operate via the rodding just like the prototype does in many places.



Follow a slow and steady routine:

Take your time, clean-up rod ends before using them and double-check your progress step by step. Do not rush. Keep it an enjoyable process.

To summarise:

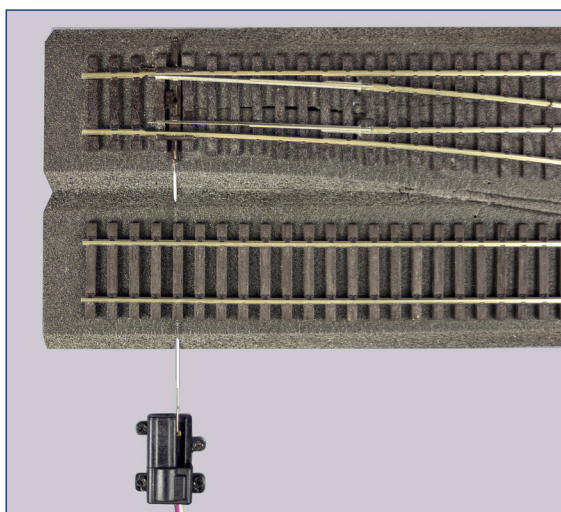
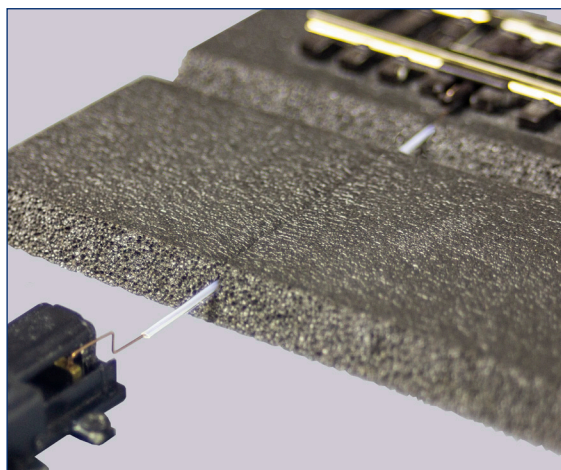
- Plan the overall rodding layout carefully.
- Prepare the cranks and turnout linkages.
- Prepare the crank fixing positions.
- Fix the cranks in place and prepare the rodding.
- Test fit the rodding, then thread onto the stools.
- Install the rodding and fix in place.
- Space the stools correctly then glue them down.

Whether you are installing working rodding or not, our brass cranks and distant mounting kit give you an exceptionally easy way to install Cobalt-SS away from the pointwork itself with very little effort.

The very fine Teflon tube and corrosion resistant fine phosphor bronze wire work smoothly together with very little friction. Curving of the wire-in-tube is no problem.

As you can see from the photos, it can be set into our DCCconcepts trackbed very easily - we simply made a cut with a craft knife to form a recess for the tube which needs little or no fixing or support, pressing it in with light finger pressure.

Again, a couple of images to get you started.



Because the drive friction is so low, it is OK to use the distant mounting kit in combination with multiple cranks. wire in tube and other rodding parts, making the drive an L shape or for that matter, a Z-shape arrangement.

If you enjoy a challenge and want to economise by using one turnout motor instead of two, then... YES, if you have the skills, you can make up a combination of cranks and rodding to drive two turnouts off one of our Cobalt-SS turnout motors!

***** Please DO remember that you MUST remove the snap springs from your pointwork *****

And... NO, we are sorry but you cannot use the working rodding with solenoids that thump backwards and forwards.

We will send the Society for the Prevention of Cruelty to Pointwork and rodding to your layout room if you try it!

All of us are modellers first and foremost and we love to see our products in action, so we would really appreciate it if you could send a picture to show us how you are using them!

**DCCconcepts products are imagined, designed and manufactured by DCCconcepts Ltd
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