

Cobalt Alpha Mimic

OWNERS
MANUAL

Cobalt Alpha Mimic

Realistic Signal Box diagrams made easy

The Cobalt Alpha Mimic:

Thank you for buying Cobalt Alpha-Mimic.

Every Alpha-Mimic is thoroughly tested during production and prior to packing for sale, so the entire process of installing and operating it should be problem free.

This pack will include

* These instructions PLUS:

* 1x Alpha Mimic Control Board

* 1x Alpha Mimic Linking Lead (to join 2 Mimic Control Boards)

* 24 LEDs with 240mm leads and 2-pin connector (colour will be Red, Green or Red+Green depending on your choice when purchased)

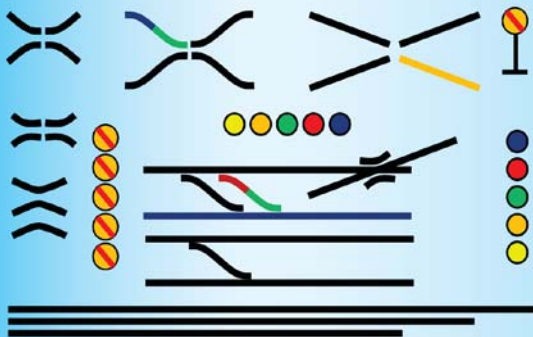
Your Alpha Mimic Warranty is 12 months from the date of purchase.

Please read these instructions carefully before you start to unpack your Alpha-Mimic or start to create and assemble your Mimic panel or signal box diagram as they contain both important information AND advice on the best way to create your panels.

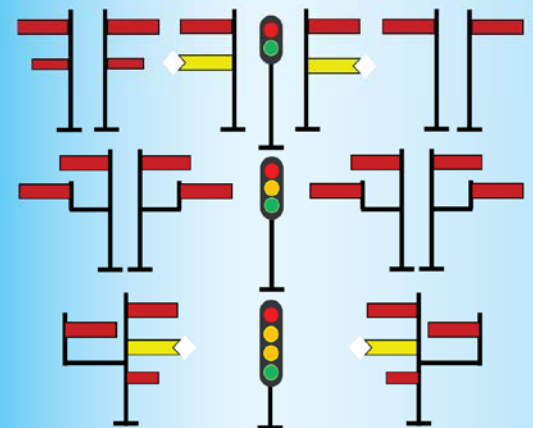
DCCconcepts also offer useful "art tools" in the form of pre-prepared computer files containing a whole host of track symbols and related items usually associated with real-world signal box diagrams.

We have created them to help you create good looking control panels with minimum effort, and in order to make them as usable as possible, we've made them compatible with commonly used desktop software.

Here are a few examples of the symbols in those files. They are totally scaleable and line widths will stay constant when stretched or compressed. Colours can be changed too.



We have included a range of semaphores as well - it is by no means complete but those we have done will give you a good start in creating any that you may need for your panel!



Important Information:

While we have made Alpha Mimic very simple to use and connect, remember that it is a sophisticated switching system that is managed by digital micro-controllers. All electronics are sensitive to how you handle them and it is very important that you read all instructions before you install and connect them.

Never connect Alpha Mimic directly to any high power source and do not power the control PCB directly from any source other than a DCC track or power bus with a track voltage between 11 and 20 volts. Incorrect wiring or wrong power supply choices will lead to failure which is not covered by warranty.

- Use only with "DCC-Standards compliant" DCC Control systems please.
- Installation and all connections must always be done with the power off.
- Do not exceed the load limits of any output. Use only Alpha-Mimic LEDs. Multiple LEDs can be connected using Alpha Mimic adapter cables. If you are using Alpha Mimic LEDs than you may connect up to 10 per output.
- We can not accept responsibility for product failure if you attempt to use non standard wiring or connections or if you choose to connect other brand LEDs or anything outside the scope of this manual, so if you do, be careful.
- If you do choose/use other LEDs, load limit is 50mA per output.

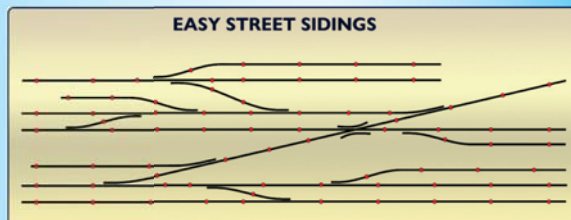
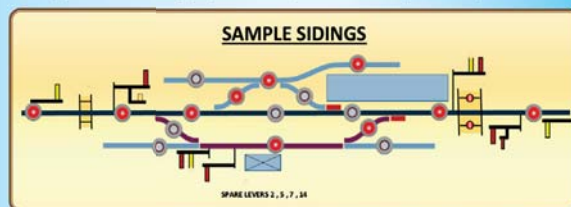
Cobalt Alpha Mimic

Wiring & connecting Alpha Mimic. (1) Make the panel

Assembling your Cobalt Alpha Mimic track diagram. Relax and enjoy the process as it's very simple!

To make it easier to create a realistic control panel, we have made some "easy to use" track diagram symbols and saved them into files compatible with Microsoft Word, Microsoft Excel, Microsoft Publisher and similar common desktop programmes.

Here are two pictures of Signal box type diagrams that we made using them - one large (L=100cm), one smaller (L=25cm):



As you can see, the symbols are able to be usable in a large range of panel sizes and can be stretched or changed without changing line width. They can also be coloured to your choice in the software or copied & pasted as often as you want or need when creating a panel. If using an MS Word type program, don't forget to turn off "Snap to Grid" so you have proper control of positioning for each line.

They can be accessed at www.dccconcepts.com or, email us at questions@dccconcepts.com and we will send you a set. ANYONE who can use basic desktop software can do it with ease, so please do at least have a go! Here's how we did it.

(1) Decide on the panel size. Unless your layout is quite small do not try to make one mimic panel for the whole layout as it may be confusing if you do. Just like the real thing, break it up into main Station, Yard, Engine shed area, etc and make one panel for each.

(2) make a rough sketch of the trackwork so you have a reference for how many tracks and turnouts to include. This will make planning track spacing easier. (if you will use an extension display allow for it from the start. It will need a space that is 47mm wide, 25mm high)

(3) Design the panel and check it a couple of times. Its really easy to leave something out and corrections are best done before you do the printing! Think about colouring - we used standard background gradients from Microsoft publisher, but there is no limit if you are creative!

(4) Have it printed on 120-50 GSM paper at a local stationery supplier. Get them to laminate it too for long life. Carefully cut it out with a sharp NEW blade. Take your time!

(5) If you added a nice wide border as we do, after carefully cutting it out you can run around it carefully with a marker pen matching the border to get rid of the white line at the edges really easily AND tidily.

(6) Cut a piece of 3 to 5mm MDF to the right size for the panel. Take your time and work neatly. Mark it out for 3mm machine screws to fix it with at the corners (and midway along the top/bottom if big). Countersink the holes on the top surface so that the heads recess fully and be invisible under the panel surface.

(7) Add the Machine screws and tighten a nut at the rear. Fill the screw head area and sand smooth. These 4-6 mount points will give you a well secured panel that is easy to fix in place tidily.

(8) Place the laminated paper diagram on a hard surface. Carefully cut each LED hole with a 7mm hole punch.

(9) Position the drawing temporarily onto the MDF panel and draw around each of the cut holes to show you where to drill. Drill (6.5 to 7mm bit) and slightly countersink the holes back and front / sand afterwards to neaten it up. Now paint the panel all over and let it dry.

(10) It is time to fix the diagram to the panel. First spray permanent contact glue (We like 3M brand) onto the panel & onto the back of the diagram. When tacky, use a couple of pencils or similar in the LED holes to help you align perfectly and put them together.

Use a clean cloth to evenly smooth down the panel's surface.

We are now ready to start assembly of your panel...

DCCconcepts Thinking outside the square

sales@dccconcepts.com www.dccconcepts.com



MADE
in
CHINA
Created by
DCCconcepts

The complete range of Cobalt & Alpha products can be found on our website at

www.dccconcepts.com

Cobalt & Alpha Mimic

Wiring and connecting Alpha Mimic. (2) The basics

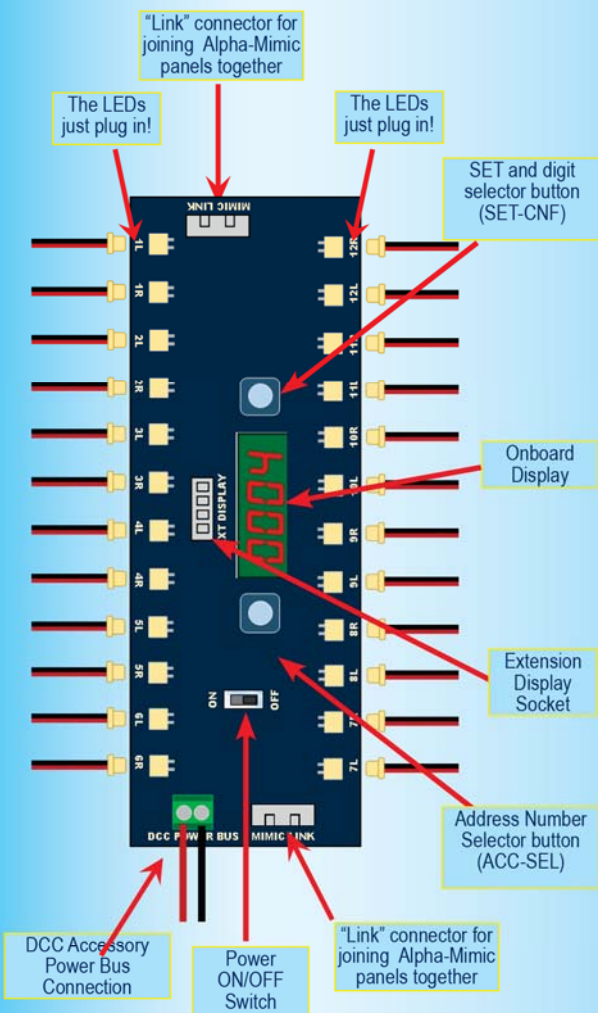
The basic wiring connections for Cobalt & Alpha Mimic. This is the easiest panel wiring you will ever do!

Alpha Mimic is totally plug-and-play with everything linked by easy to use connectors except the DCC Accessory bus wires, and they use a simplescrewdriver connection!

We provide a simple linking cable with every Alpha Mimic so you can daisy-chain together as many as you need and even the optional extension display cable just plugs in!

LEDs can add lots of work on DIY panels but we focussed on keeping it easy so our specially designed Green, Red and Red-Green LEDs are also mounted on 240mm plug in leads.

Even extending them or adding multiple LEDs doesn't complicate life as the extension packs that contain additional matching LEDs also include both single and 6-way adapters, so from start to finish, you will never have to cut and solder anything!



Your Alpha Mimic panel can be supplied with Red, Green or dual colour Red+ Green LEDs and it includes the following: * 1x Alpha Mimic PCB * 1x Alpha Mimic interconnector lead * 24x Alpha Mimic LEDs * Instructions.

Alpha Mimic Plug-and-play Accessories & Add-on items

- * DCD-ADX Extension Display
- * DCD-MLRD Add on kit with 24 Pre-wired Red LEDs & Extension Leads
- * DCD-MLGR Add on kit with 24 Pre-wired Green LEDs & Extension Leads
- * DCD-MLRG Add on kit with 24 Pre-wired Dual RED/Green LEDs & Extension Leads



* Need help? please email us at:
Sales@dccconcepts.com
* Or visit our website at:
www.dccconcepts.com
* All contact details available there!



Cobalt & Alpha Mimic

Wiring & connecting Alpha Mimic. (3) Just plug it in.

Adding the Cobalt & Alpha Mimic LEDs into your track diagrams is a simple plug-and-play process. If it is a larger panel or you want several LEDs added to indicate routes on plain track you may also need an extension pack (see page 4, bottom)

Plan ahead so you have everything you need!

Do you have your Alpha Mimic ready? OK, lets finish your panel.

First, let's add the LEDs to the control panel:

- (1) take one LED and check that it fits comfortably (pressed in from the front of the assembled panel). If it is tight use either a reamer or a tight "Cigar roll" of wet and dry sandpaper (appx 150 grit) and enlarge the holes just a little. The objective is a firm but not too-tight fit.
- (2) Once the holes are adjusted, insert all of the LEDs. If they are loose when you checked, then use just a very small amount of PVA or similar glue to hold them in place.
- (3) Find a clear space on the back of the panel that is reasonably central to mount the Alpha-Mimic panel (at least 135 x 50mm) and also make sure it is in the right place to allow the extension display connection if you use it OR to allow more than 1 to be mounted if you have more than 12 points to control.

(4) Mount the Alpha-Mimic(s) and any extension displays. We prefer to use several small squares of 3M double sided foam tape to mount Alpha-Mimic but you can screw the Mimic PC Board in place if preferred (Be careful with screw length!).

(5) Connect additional Alpha-Mimics with the lead provided. They simply daisy-chain.

(6) Now it is time to connect the LEDs to the Alpha-Mimic panel. If there is one LED per output, connect them directly. If you wish to have several additional LEDs in each route "Leg" to clarify routes as we have with the "Easy Street" diagram, use the adapter cables provided in the Add-on LED packs. (You can of course just cut and splice the leads, but be sure to match polarity correctly and make sure that you also insulate all joints with heatshrink to prevent short circuits)

(7) Once the LEDs are all connected properly, it is time to connect your Alpha-Panel to your DCC Track or DCC Accessory Power bus.

Alpha Power draws very little power so as long as the wires are not too long, they do not need to exceed 16x.02 (DCCconcepts dropper wire or 0.5mm² small twin wire is adequate).

If you have multiple Alpha-Mimic panels, then power transfers between them with the "MIMIC LINK" socket and lead provided. Please note that only the first panel really needs power DCC connections.

(8) Your panel should light up. Test by changing all turnouts. (by default, the first connections are set to address #1, and the last is #12

If any LED does not light or the wrong LED changes, then check the connections and re-arrange the wiring for the correct sequence.

Setting your Cobalt & Alpha Mimic DCC Addresses:

Alpha-Mimic has a semi-automatic addressing ability so you will only need to set up the first address on Alpha Mimic and the rest will be changed automatically.

If you have multiple Alpha Mimic units on a panel & want a consistent address series, daisy chain them together while setting addresses. Then, when you set address #1 on the first Alpha-Mimic in the chain, they will automatically "Cascade" addresses from that number on throughout the chain, to a limit of 2044 (As per DCC standards)

- (1) Turn Alpha-Mimic OFF using the onboard ON-OFF switch.
- (2) Hold down the LHS (ACC-SEL) selector switch and while it is depressed, turn on again with the ON-OFF switch. The display will now flash.
- (3) You can now choose the address that you want for output number by momentary presses of the switches each side of the display.

The LHS (ACC-SEL) switch will now change which of the 4 digits is changed (it cycles through the 4 digits). The RHS Switch (SET-CNF) changes the actual value of each digit and will cycle through 0-9.

(4) Once you have the display set to the address you want, press and HOLD the RHS (SET-CNF) for several seconds. The display will flash "YES" when it has been accepted and memorised.

That's it! You can now change your points/turnouts or signals using either your DCC system OR any switch attached to the layout via Cobalt Alpha or Alpha Central OR your computer control system... and the display will change to reflect the real state of your trackwork.

Any questions? Email questions@dccconcepts.com

The Cobalt and Alpha family

Designed to work together and make it easy for you.

Cobalt name is best known for its unique point or turnout motors, but the "Cobalt Collection" has evolved to be much more than that. It also includes many versatile digital devices and between them, Cobalt and Cobalt Alpha now offer many things to do with better control of layout and trackwork!

Turnout motor range is expanding too... and with the release of the incredibly small and sophisticated Cobalt-SS, our Cobalt turnout motor range now includes both under-board and above layout motors and many digital control devices and related accessories

The more recently released Cobalt Alpha range has re-defined and greatly simplified control panel creation and use by reducing wiring, making panel creation easier and greatly extending the convenience layout accessory control for both DC and DCC modellers.

This is not the end of new Cobalt range developments though!

The Cobalt collection continues to grow and will soon also include a sophisticated but easy to use product called Alpha-Commander for clever "automation" of train activity, some high quality auto-reversers and overload protection devices plus easy to use and very capable detection systems for signalling and layout automation.

All of these things are already in development. Once they are finally released, The Cobalt Collection will be complete.

To stay in touch with developments, more information, plus lots of useful articles and advice, please visit www.dccconcepts.com often.

Lets review selected items from the Cobalt family

The Cobalt iP Digital Point Motor

Cobalt iP Digital is without doubt the best turnout motor available!

To allow DCC + full manual control we've added a second set of momentary push button switch contacts for fully independent left/right "change direction" control (instead of 1-button toggled action).

Cobalt iP Digital is comfortable with 7-23v DCC track power and is super-easy to install as it's delivered self-centred and ready to go!

Cobalt iP Digital also has three simple-to-use software commands built in. We've made use of these easy by utilising standard "Address-setting procedures" to activate or deactivate them. These new software selections activate or deactivate the self centering function and also let you "flip the change direction".



This allows you to synchronise or change operating direction so that it matches perfectly with track diagrams on screen-based control systems & with any brand of layout control software, route control or similar digital control methods.

(It also makes it possible to install Cobalt iP digital facing either the Toe or Heel of the point, so installations in tight places are easier!)

The Cobalt-S signal box lever

The Cobalt-S Lever range is unique to DCCconcepts.

Designed with quality and functionality at its core, Cobalt-S has been created and built without compromise to be the best available representation of a traditional signal box lever.

Featuring solid brass levers, a solid engineering plastic case and literally, gold plated phosphor bronze contacts on the 3 built-in SPDT switches, Cobalt-S will interface perfectly with DC or DCC layouts.

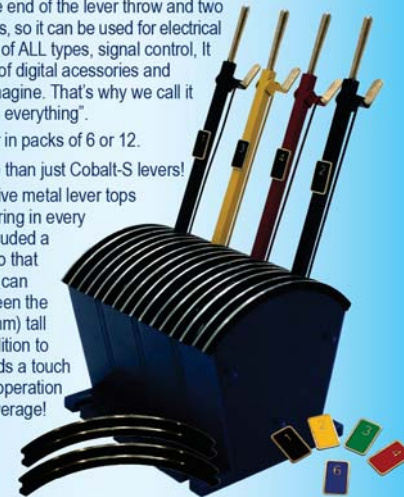
Cobalt-S is VERY versatile.

It has both a momentary SPDT switch with contact that is made only at the extreme end of the lever throw and two on-on type SPDT switches, so it can be used for electrical interlocking, point control of ALL types, signal control, It is also usable for control of digital accessories and anything else you may imagine. That's why we call it "The switch that switches everything".

Cobalt-S is sold singly, or in packs of 6 or 12.

Each pack includes more than just Cobalt-S levers!

You will find these attractive metal lever tops and etched brass numbering in every pack... we have even included a spacer with every lever so that those with thicker fingers can increase the space between the levers to suit! At 5" (140mm) tall they are an imposing addition to any control panel that adds a touch of realism to your layout operation that is well beyond the average!



MADE
in
CHINACreated by
DCCconceptsThe complete range of Cobalt & Alpha
products can be found on our website atwww.dccconcepts.com

Cobalt Alpha Central

Clever, sophisticated and very simple to use

Open the box, plug it in & change a turnout - it's that easy!

DCCconcepts Cobalt Alpha Central combines the super-intelligent heart of Cobalt Alpha with two full sets of Alpha-Switch-D component and it can control a dozen DCC-Digital Accessory Decoders straight out of the box!

It's very simple to use!



What is in the box?

Cobalt Alpha Central is already directly connectable to the command bus of all NCE DCC systems with a standard RJ12 cable.

Add Cobalt Alpha Box and an appropriate low cost adapter cable if needed and EVERY brand of DCC system plus AC or DC modellers can take advantage of Cobalt Alpha to reduce control panel complexity.

How does Alpha Central connect for DC or DCC users? If you like to drive your locomotives with DC or AC you won't need to change or add decoders to them, but you will need to add a DCC-standards based accessory decoder to each turnout or each active accessory - and create an accessory power bus powered by Alpha Box. Alpha Box is a low cost high power (5 amp) interface for Cobalt Alpha that converts Alpha data to a "Brand-Free" digital format, delivering it to the Accessory power bus to work the accessory decoders.**DCC users of ANY brand can also use the very versatile "Alpha Box"**

Either as a command centre for the DCC Accessory power bus if their accessory use is separated from train driving activity OR to up-Spec. the system to a full 5 amp system. It's the perfect upgrade for low power and low feature train-set systems AND adds both power and Alpha Integration to higher spec systems.

Here is the input side of Alpha Box

As you can see, it allows ANY brand of DCC System to connect via the track power inputs. At a command bus level, NCE & Roco can connect directly and other DCC system brands, such as Gaugemaster, Lenz, Digitrax or MRC can utilise low cost "adapters" that we have created to make it easy.

On the output side: Is a command bus link (NCE, Roco, Lenz, GM, MRC, Digitrax) that can be used to extend the command bus via Alpha Box.

The track power output is here too. We've used larger connectors for this as power bus wire can be quite substantial. Of course the track power output is really well protected by quick acting electronic overload circuitry that gives audible warning of problems, also flashing an LED when it needs a reset!

Good DCC performance needs a really good power supply!**Alpha Power: A high quality 5 amp regulated DC power supply.** Similar in size and appearance to Alpha Box, Alpha Power is supplied with a direct connection lead for use with Alpha Box as well as "pluggable screw Terminals" for use with other brands.

The power output of Alpha Power is conservatively rated at 5 amps continuous and because we used the entire aluminium case as its heat-sink, there is no need for fan cooling, so it is silent in operation.

Alpha-Power has intelligent short circuit and overload protection and will warn you of any problems with an LED and audible alarm.

Alpha Power has an incredibly stable 18v DC regulated power output that has been tested in use and found to be ideal with almost any DCC brand including Lenz, NCE, ESU, MRC, Gaugemaster, Roco, RocoZ21, ZTC, Bachmann Dynamis, Hornby, Zimo and all Digitrax 5 amp or larger systems.

Alpha Power is tested and approved for worldwide use and complies with all applicable CE and FCC regulations.

Alpha Power is designed to work reliably at any voltage between 100-240v AC 50-60Hz and in testing retains a stable voltage level of 18v +/- 0.1 volts at 5 amps at all mains voltage input levels.

Cobalt Alpha Central - Part numbers

DCD-AEC Cobalt Alpha "Alpha Central" with Alpha-link cable.
DCD-AUX Cobalt Alpha "Alpha Box" with 6-wire Bus connection cords
DCD-PWR Cobalt Alpha "Alpha Power" with Alpha-Box link cable.See the full Cobalt Alpha Range at www.dccconcepts.com

Use Cobalt and Alpha products for turnout or layout control and nothing is impossible any more!

Cobalt-SS Surface Mounted Point Motor

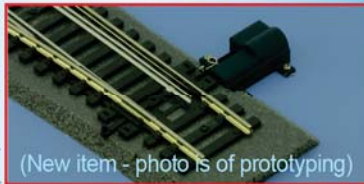
Unbelievably small, DC or DCC and super smart too!

Smallest, smartest and very versatile!

The current generation Cobalt iP Analog and iP Digital are already the best, toughest and most reliable turnout motors ever made, but occasionally there just is not enough room to fit them under the baseboard.

Cobalt-SS has been created to fill that gap. You can choose what SS stands for - call it Super Small, Small and Sophisticated or Small and Smooth - They all fit Cobalt-SS perfectly!

This picture tells the story really well. The Cobalt-SS pre-production sample is shown beside a commonly used 4mm scale (OO/HO) Code 75 turnout during our testing of linkage designs.



(New item - photo is of prototyping)

It really IS that small! Only 22x25mm, and a super slim 7.2mm thick adjacent to the pointwork, it can totally disappear on many installations as its lower than the balast top in OO and HO installations using 5mm track underlay. Even in N its unobtrusive as it really is as small as a postage stamp (remember them?)

Cobalt-SS is equally usable on DC or DCC powered layouts with NO need for an added Accessory decoder, and fully controllable by all forms of momentary switches OR Digital devices, it also has all of the features of its big brothers!

Installation is a pleasure with no soldering needed! Cobalt-SS has at its heart an ultra-precise, low current "Stepper Motor" control system and each motor is linked to its control PCB by a pre-fitted 4-wire control harness.

Feature-wise, Cobalt-SS has it all. Super-simple adjustable throw length for N, OO/HO or O scale without the need for programming or CV changes. Frog Switching, LED control for signals and panel LEDs and an additional SPDT switch for interlocking or other things are built in so there is nothing else to buy.

It's Automation-ready too! Switching terminals will also respond to detector triggers and switches in parallel and even the LED outputs have been carefully designed so that they can also provide direct computer IO status, for complete feedback and full integration into layout control software or layout automation.



(New item photo is of prototyping)

Suitable for N, OO, HO or O scale, it is supplied complete with everything including mounting screws, so there is nothing more to buy either - in addition to mounting screws each Cobalt-SS is of course supplied complete with detailed instructions, a wide selection of linkages and... for those that want that final perfect touch of realism... we even include examples of a realistic scale model of a "Westinghouse EP turnout motor" which is appropriate for layouts from pre-WW2 to the present day!

Remote mounting & drive from a distance are easy too, as the simple linkages we use allow easy adoption of mechanical or "wire-in-tube linkages" for those places where you want the motor far away from the turnout that it controls!

Finally... Because we are modellers too, just making a new Turnout motor wasn't enough... so we added a neat scale model of the Westinghouse EP turnout motor to each Cobalt-SS pack in N, OO/HO and O scale for those modellers who like the finer details - but we still were not satisfied...



(New item photo is of prototyping)

So: Very soon we will also add a turnout accessory that's NEVER, ever been contemplated before by ANY model turnout motor manufacturer:

A complete and ready-to-install Cobalt-SS accessory pack containing "near to scale" fully workable point rodding, with pre-assembled cranks made from turned and etched brass, Cast Brass Rod stools and true-to-scale rodding, rod stools and other accessories, all ready to install.

Even pre-made for you to reduce the need for fine soldering skills and take away the other really fiddly tasks this will still need accurate work and care to get right, but even without being fully working, it will STILL be much closer to scale than current options from others and it will also look great, so have a go! You could of course also take that last added step with a little effort...

For the brave... Take the ultimate step in realistic control and either remote mount Cobalt-SS and control your turnouts via realistic rodding or, at the extreme, mount a few of your Cobalt-SS motors within the signal box itself and actually drive turnout changes via working linkages!

the Cobalt-SS Range and Accessory packs

DCP-CBSS-2 Cobalt-SS twin pack: 2 motors, control PCB & Accessories
DCP-CBSS-6 Cobalt-SS 6-pack: 6 motors, control PCBs & Accessories
DCP-CBSS-12 Cobalt-SS 12-pack: 12 motors, control PCBs & Accessories
DCP-LLP Cobalt-SS Long turnout linkage pack (linkages plus rod-in-tube)
DCP-FRP Cobalt-SS Full working point rodding kit (complete set)
DCP-RSP Cobalt-SS Cast Brass rod stools and point rodding set
DCP-WEP-N 12x N-Scale Westinghouse EP turnout motors
DCP-WEP-OO 12x OO-Scale Westinghouse EP turnout motors (Usable in HO)
DCP-WEP-O 12x O-Scale Westinghouse EP turnout motors

Signals for MIMIC GS range



Early 2-light



Standard LMS BR



Modern UK type



US&S US EC type

All will be a simple 2-wire connection with Micro JST for MIMIC