Introduction

All new boards offered for entry in the West Sussex Area Group exhibition circuit, must be built to ensure compatibility with other boards, and will be checked and passed as suitable by the club exhibition manager, before being invited to exhibit.

It is clear that for an exhibition standard layout to operate effectively, it must all fit together in a standard form.
It should be obvious that although your board is a masterpiece of modelling, if it is too long, a tunnel mouth too small, connections are different, or your method of operating interferes with the main 3 tracks, it will not be acceptable to the exhibition manager.

Section 1 Basics

When boards are connected, it is standard exhibition practice to use at least 2 clamps at each end of the board. Each board offered for exhibitions must be supplied with at least 2 clamps.

There should be no wiring on the inside ends of the board that may impede the use of G clamps.

Where boards carry scenery above the surface of the board, the end scenery should be appropriately decorated. Scenery, tunnel mouths, bridges etc, must not interfere with a wide range of running stock. Minimum dimensions are shown on Page 4.

There will be no sharp edges, or parts liable to damage members handling boards. It is advisable to construct a cover for use when transporting your board, particularly at exhibitions.

At exhibitions a fire resistant cloth curtain is deployed around the periphery of the boards. Your board must allow for drawing pins to be easily inserted on the front.

Section 2 Board dimensions

Board dimension details are shown on Page 3. The dimensions shown are for basic boards. A template is available to simplify measuring the three main tracks.

The height of the board (36 inches) is from floor to the top of the board. Peco track is laid directly on the surface to ensure your tracks will be the same height as everyone else. If you wish to use any other make of track or method of installation, it is essential that your track height matches the club standard. Adjustable leg height is an option that can help with both uneven flooring and changes in standard track.

Additional sections may be fitted to the rear of your board at exhibitions, but must not interfere with adjacent boards, particularly near exhibition corners - see pages 4 and 5 for details.

Section 3 Connection between boards

Boards are connected together with G clamps. Three-inch track pieces are inserted to join the main line tracks together. You must provide track pieces and rail joiners. In addition, all rails are electrically connected via plug and socket - see Page 6. In order to protect wiring whilst handling, the wires from the plug and socket should be connected to an electrical 'chocolate strip' that is screwed to the board and then wired to the track or other connections.

There will be no point-work or electrical connection between tracks 1 and 2 and the remainder of the board.

Section 4 250v Supplies and Lighting

All 250 volt or mains connections will be separated from the board and must be double insulated. An insulated floor mounted box, which can be closed, will be used to house mains transformers. The connections to the board will be by a plug and socket inside the box. It is desirable to have fuses in the output circuit.

A cased transformer with two 16 volt ac outputs is commercially available. Gaugemaster M1

Low voltage exhibition lighting can be fitted using the club standard lighting or similar. Lighting must be arranged not to shine into people's eyes.

Section 5 Isolation

The club minimum standard is Tracks 1,2 and 3. Optional tracks 2a and 4 can be installed if desired. See layout Page 3.

When stock is running through the board on Track 3 (2a or 4 if fitted), both rails will be fully isolated from the board. When track 2a, the third or fourth tracks are switched to "through running", and you are running stock on your board, your power supply must be isolated from the third and fourth tracks.

Method 1 is to isolate with breaks in the rail which can turned on and off with an isolating switch. Diagram on Page 7
Method 2 is to use insulated rail joiners and connect the isolating switch in the wiring between the plugs and the board connections. Diagram on Page 8

Indicator LED's may be fitted if desired using either method. Page 8 shows the required connections for these circuits.

Section 6 Operating at Exhibitions

When stock is running at Exhibitions, the exhibition manager will have full control over all stock on the main 3 tracks. Track 3 running will always take precedence over stock running on individual boards.

Other operators need to be able to move and change stock when you are not in attendance at your board. All boards that are offered for exhibitions will be provided with a diagram showing where track isolation and power feed switches need to be set to achieve through running on track 3.

Section 7 Module on Test

Before being invited to operate at exhibitions all boards will be checked by the exhibition manager and two club members, to ensure the above standards are met. Existing boards will be treated the same way as new boards. You will be asked to agree to club standards, if you wish to be invited to bring your board to exhibitions.

The MOT is a two-stage process.

Stage 1 All new boards will be offered for inspection when track work and all electrical wiring is completed, but before any ballast is applied to the tracks.

Stage 2 New boards will be re-checked when all track ballast is completed and all scenery is fully in place

Boards will be passed as

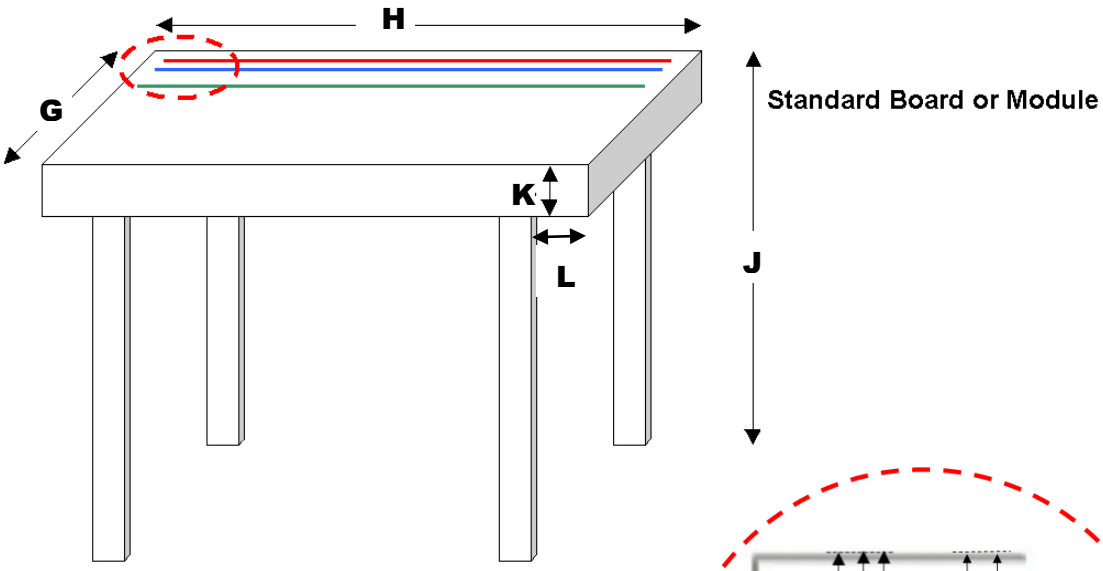
A1 - Fully Compliant Kit – the board fulfils all standards

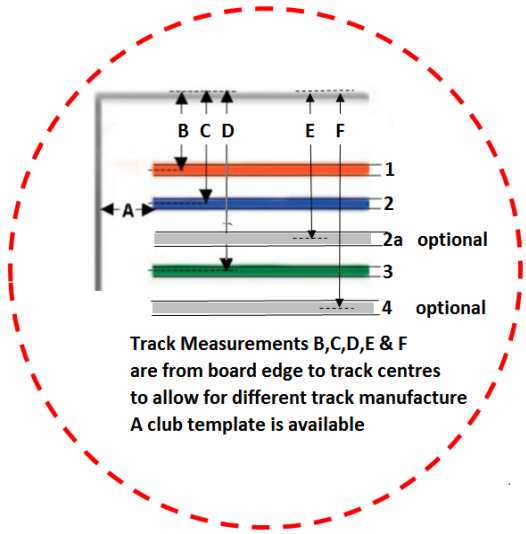
A2 - Mainly Compliant Kit – the board fulfils most standards and can be used under known circumstances

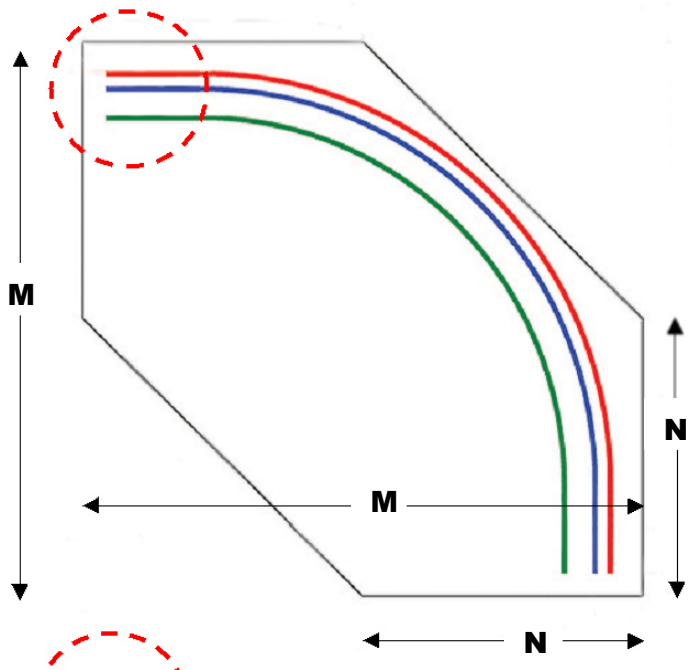
N1 - Some Unauthorised Kit – The board does not yet meet the required standards

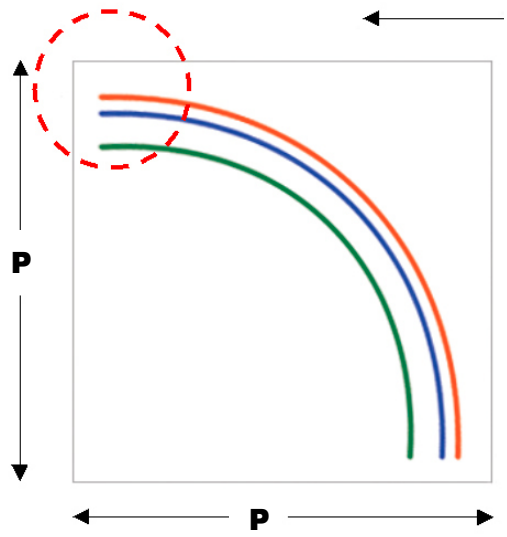
This Manual has been compiled from diagrams supplied by Ian Redman Phil Lovesay and Bill Warrick

Basic Dimensions

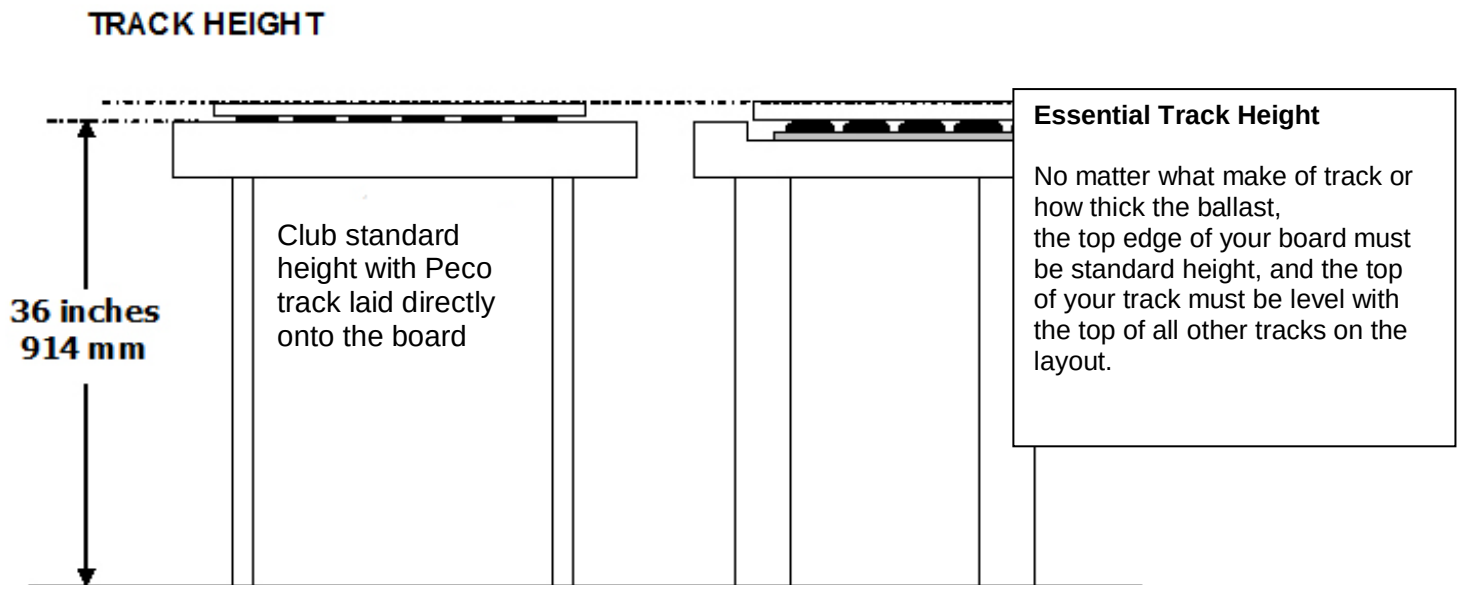


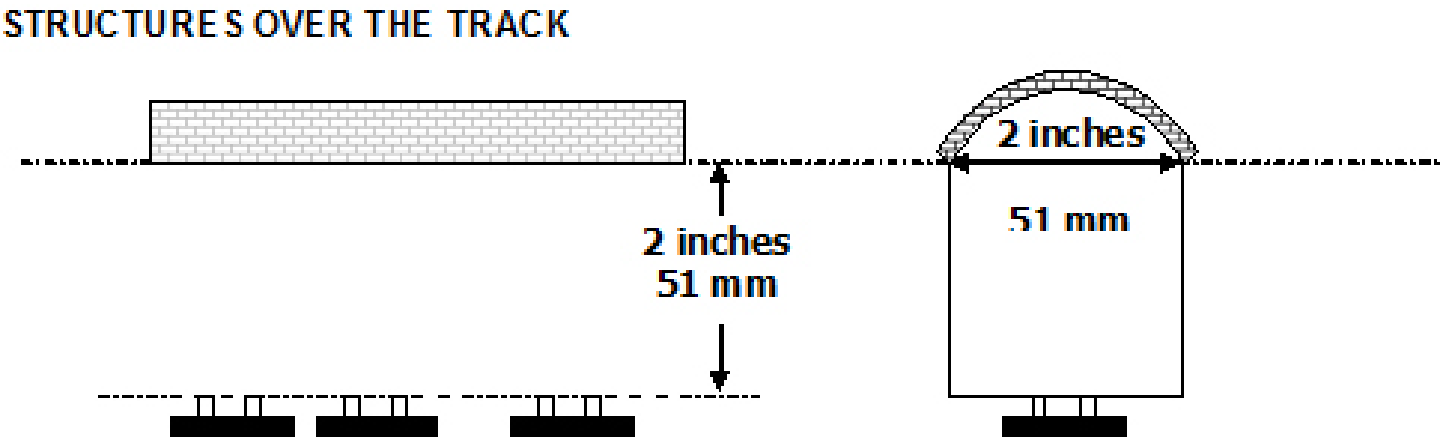






	Inches	mm
A	1½	38
B	2	51
C	3	76
D	5	127
E	4	102
F	6	152
G	12-24	305-610
H	48	1219
J	36	914
K	3	76
L	3	76
M	36	914
N	18	457
P	24	610





Essential Structure Height

In order to allow stock from any nationality or manufacturer to pass on the main three tracks of an exhibition layout, any bridges, structures or tunnel mouths must have sufficient clearance above and beside the track.

Depth Of The Board

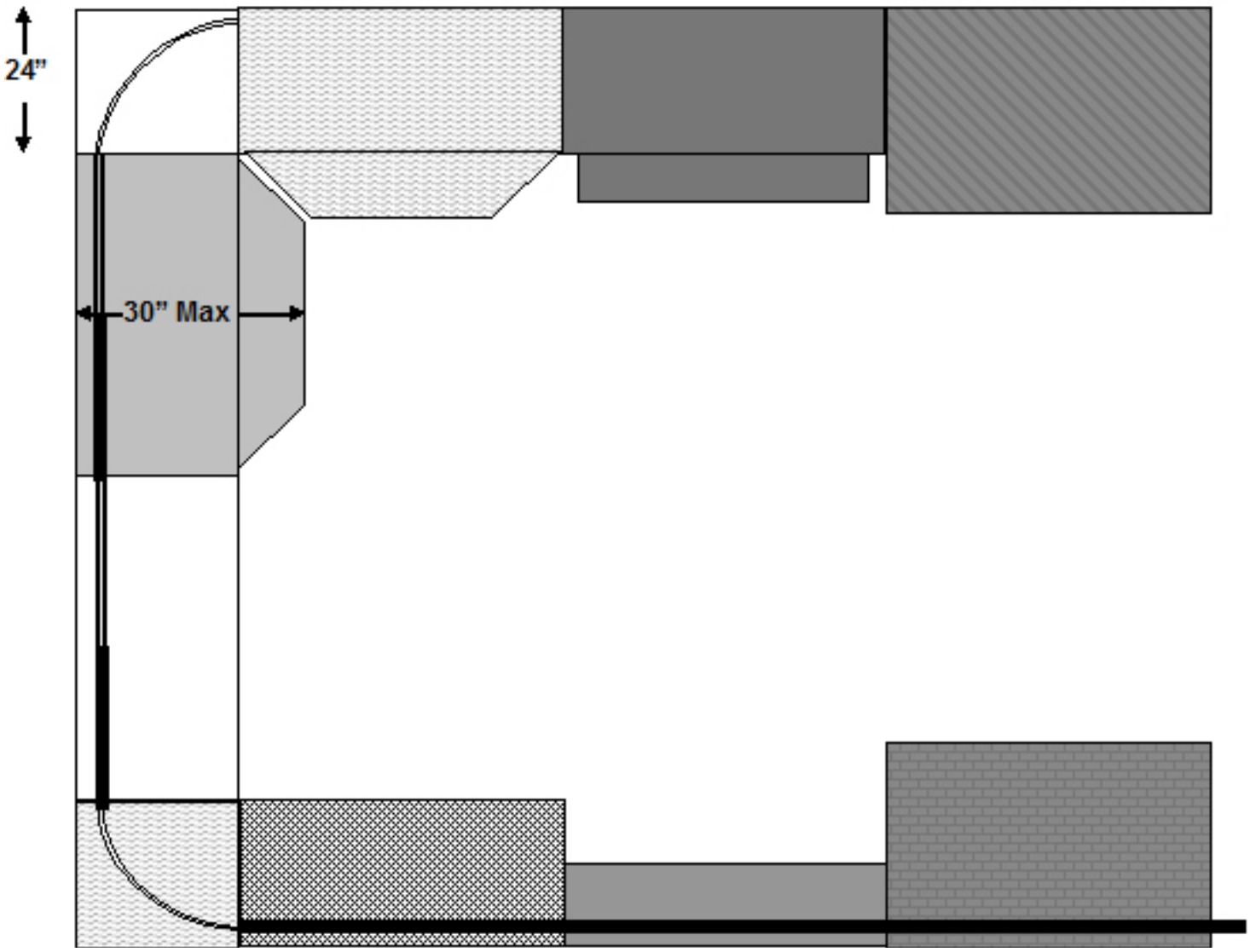
The recommended depth for all boards is 18 to 24 inches, with a maximum depth of 30 inches. Fitting one or more boards into a vehicle is fairly important and of prime consideration to some members. Operating space behind the boards when working at exhibitions, is the other factor that dictates the recommended depth of boards. At some exhibitions there will be plenty of space, other sites can be extremely limited.

Boards can be constructed up to 30 inches deep and can be accommodated in some parts of the layout. The restrictions will be adjacent to corners and opposite other boards or pillars that will restrict the layout. An alternative to a 30 inch board is a 24 inch board with an additional de-mountable unit at the rear.

The exhibition manager will decide which board will be used and where.

30 inch boards cannot be allowed to be adjacent to small corners, unless the rear portion of the board or add-on unit is chamfered, and does not interfere in any way with adjacent boards.

ADD ON UNITS and LARGER BOARDS



At some exhibitions the club is limited to operating space and uses smaller 'Two Foot ' corners.

Additional sections may be fitted to the rear of your board at exhibitions, but must not interfere with adjacent boards, particularly when used near exhibition corners.

Operators need working space behind their boards. Add on units and larger boards can limit operating space at exhibitions.

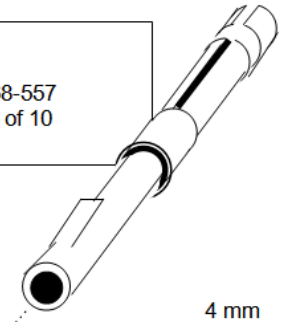
The exhibition manager will decide which boards will be deployed.

Inter Board Connections - Plugs and Sockets - Connecting Boards Together

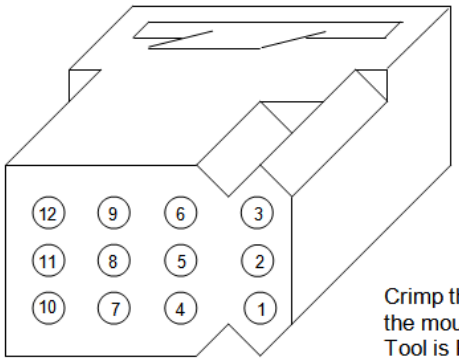
24 pin plugs are also available

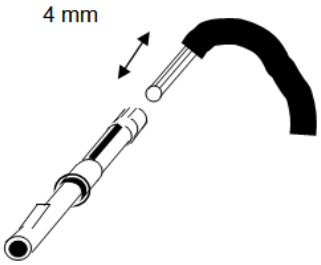
24 Way 466-781 B
24 Way 466-753 A

QM 1 Piece Insert
Size 16 Socket
Radio Spares No 468-557
Available in packets of 10



QM Chassis Mounting
12 Way - Rectangular Shell
Type B
Radio Spares No 466-775
Available in packets of 10



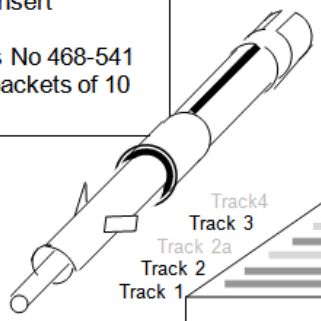


Insert 4 mm of bare wire & 2mm of Insulation into the rear of each socket.
Crimp or solder the bare wire.
Crimp the insulation separately.

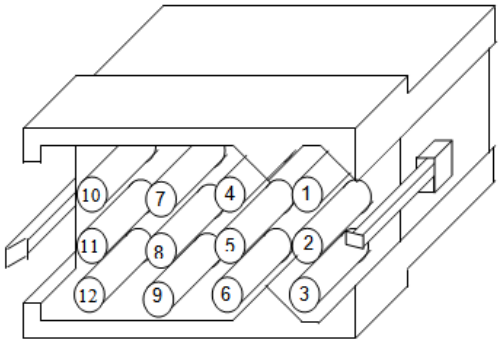
Crimp the wires to the sockets before you insert them into the rear of the mounting. You will need a special tool to remove the sockets.
Tool is RS 466 - 876

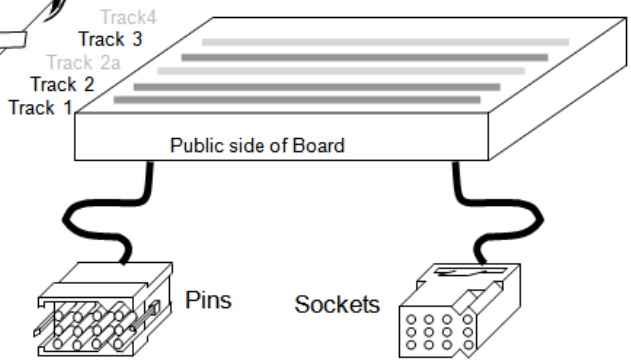
You do not have to fit all the pins & sockets, only 6 are required each end for the three tracks.

QM 1 Piece Insert
Size 16 Pin
Radio Spares No 468-541
Available in packets of 10



QM Cable Mounting
12 Way - Rectangular Shell
Type A
Radio Spares No 466-747
Available in packets of 10

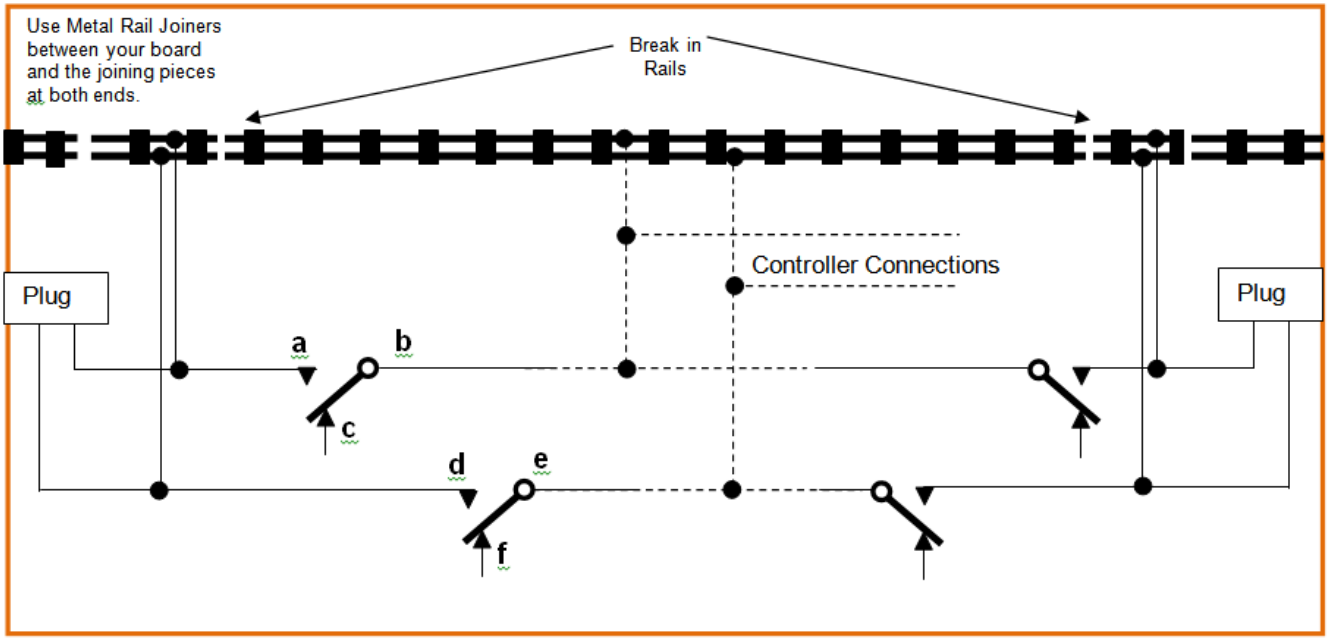


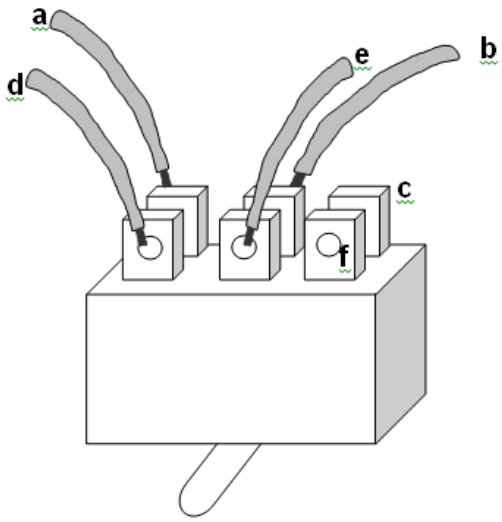


Pins & sockets are fitted at these ends to ensure they connect to the next board in the circuit.

Pin 1 = Front Rail Track 1	Pin 2 = Back Rail Track 1
Pin 3 = Front Rail Track 2	Pin 4 = Back Rail Track 2
Pin 5 = Front Rail Track 3	Pin 6 = Back Rail Track 3
Optional Tracks	
Pin 7 = Front Rail Track 4	Pin 8 = Back Rail Track 4
Pin 9 = Front Rail Track 2a	Pin 10 = Back Rail Track 2a

Track 3 Isolation Method 1 without LEDs





Minimum Standard

A double pole switch connected at each end of your board on Track 3, ensures that when you are moving stock, you are not affecting other people.

Only four connections are used on the switch in this circuit.

The switch is shown in the Isolated position

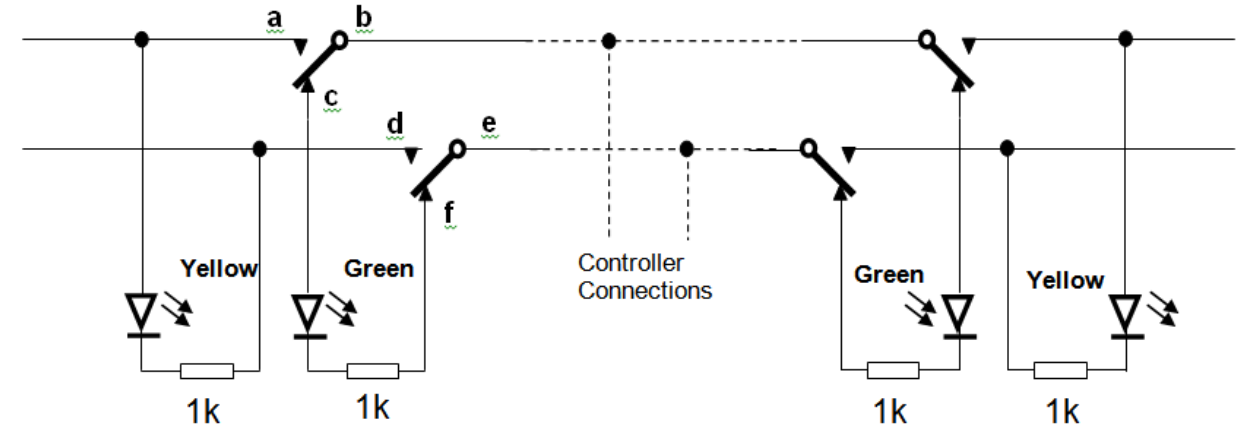
If your board has any connection to tracks 2a 3 or 4, the minimum standard for track isolation is that both rails at each end of the board must be isolated from your controller when you are operating on your own board. This prevents your power supply from affecting other people stock at exhibitions. Additionally when the 2a 3rd or 4th tracks are switched to "through running", and you are running stock on your board, your power supply must be isolated from the adjacent boards.

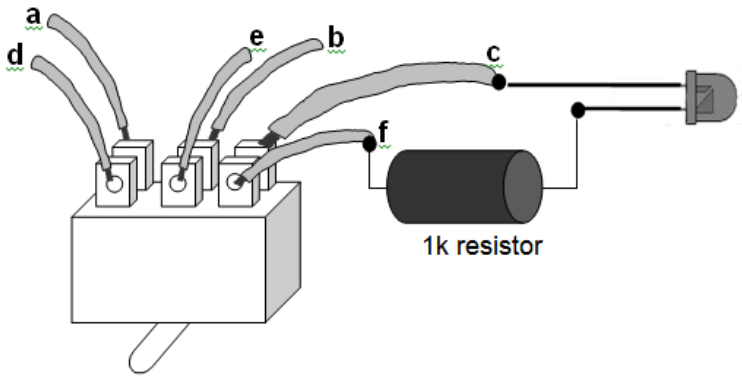
When running the third track at an exhibition it is normal practice for stock to be run up to a pre-arranged place on the layout and power disconnected by that operator. When you are ready to accept the stock, your isolator is switched to "through" and you can run the stock onto your board. You should then isolate again. If you do not re-isolate, you may either bring further stock up from the preceding section, and have too many trains running at once, or when the preceding operator sends their next stock, your stock will move at the wrong moment.

At some point you will want to send stock out on the third track. A similar process is used as above. When space is empty at the next pre-arranged place, your forward isolator can be switched through, and your stock run out. As soon as the stock arrives at the arranged place, your board must again be isolated for the same reasons as before.

The break in the rails is short circuited by the switch when you want to pass stock through.
If you need assistance with the diagrams – please ask.

Track 3 Isolation Method 1 with LEDs





Two Light Emitting Diodes can be installed at each end of the control panel. See notes for details.

The switch is shown in the isolated position and the green LED connected to show when power is applied on your board.

Circuit B Enhanced connections

If Light Emitting Diodes are fitted, improvements in operating are realised.

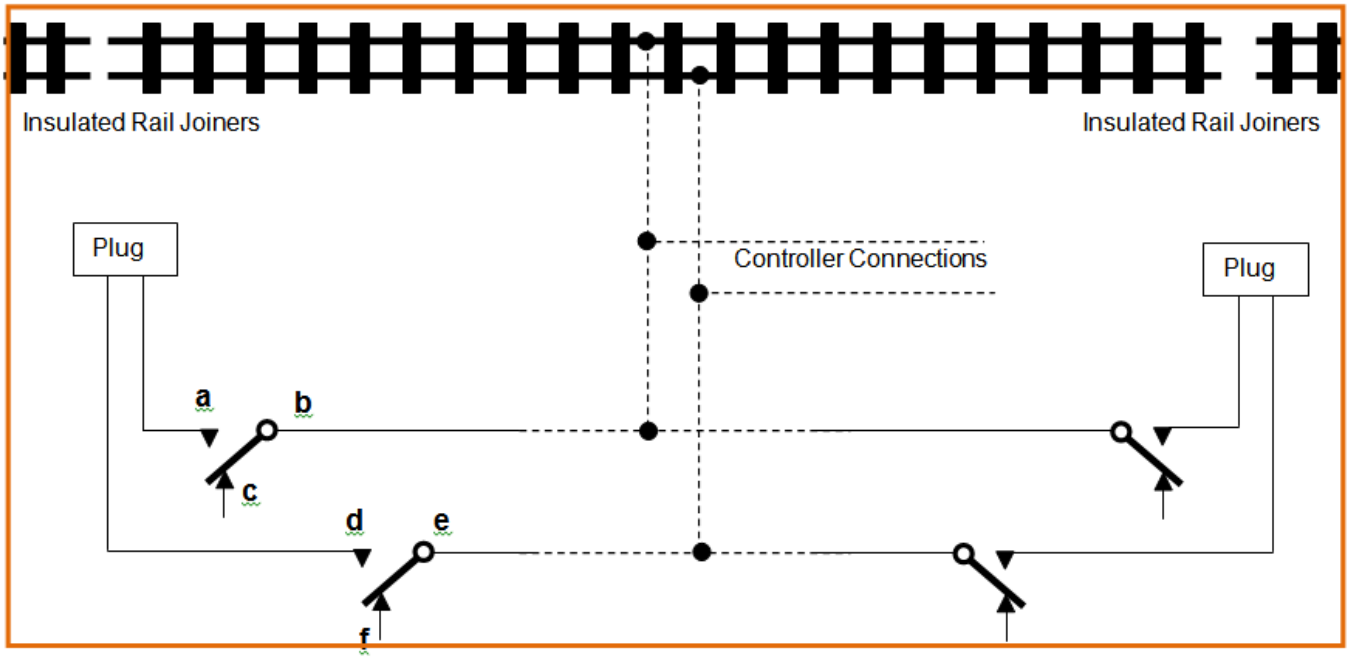
When isolated at either end of the board, the yellow LED will indicate that power is being applied to the track, which will normally mean stock is running. This is an advantage particularly when operating near corners or where it can be difficult or impossible to see what is happening. The green LEDs will show when your own power is applied, or if you are not isolated and other power is being applied.

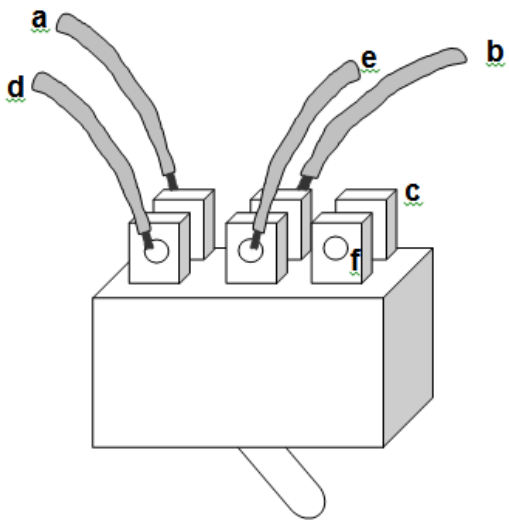
Basic LEDs are polarity sensitive i.e they only work if connected the correct way round. They are supplied with one leg longer than the other. The long leg must be connected to the positive side of any circuit in order to work.

The resistor ensures that the voltage supplied for the locomotives does not exceed what is required by the LED.

If you need assistance with the diagrams – please ask.

Track 3 Isolation Method 2 without LEDs





Minimum Standard

A double pole switch connected at each end of your board on Track 3, ensures that when you are moving stock, you are not affecting other people.

Only four connections are used on the switch in this circuit.

Method 2 uses Insulated Rail Joiners between the board and the 3 inch Track Piece

The switch is shown in the isolated position

Another isolation method is to connect the isolating switch between the plugs connecting the boards together, and the wiring on the board. In order for this to work the rails need joining with Insulated Rail Joiners. The overall effect is the same. LEDS can be added to this circuit in the same way as method 1

If you need assistance with the diagrams – please ask.