

# ■ ■ ■ DENFORD

## User Guide

# Denford F1 Race Track



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## 3: Warning Notices

### Warranty Disclaimer.

The Warranty on your Denford Race Track or Race System will be invalidated if any modifications are made that are not authorised by Denford Ltd.

### Maintenance Disclaimer.

Always obtain permission from the person responsible for electrical equipment in your establishment before accessing the electrical control panels housed in the Start and Stop Gates if supplied. All work must be carried out by personnel suitably qualified to remove the access covers to the electrical systems. Denford Limited cannot accept responsibility for any damage, injury and/or loss that may occur through incorrect electrical practices.

Safe operation of the Denford F1 Race Track and Race System is outlined on page 18 of this booklet.

***Use of the Denford Race Track & Race System for any purpose other than those for which it is designed may result in injury, and may also invalidate the warranty.***

## 4: Unpacking / Re-packing the track

The Denford Race Track is supplied in cardboard packaging as standard. A flight case is available as an accessory.

The cardboard packaging consists three cardboard boxes, the two long cardboard boxes house the track sections and the smaller box contains the track legs and leg braces.

The two long cardboard boxes hold eleven track sections in total, six sections in one box and five sections in the other. The track sections are protected inside the cardboard boxes by either cardboard sleeves or separated by foam dividers.

To remove the track sections from the cardboard sleeves so they can be used for re-packing the track, cut down the corners of the left hand end of the sleeve as shown.



## 4: Unpacking / Re-packing the track

Slide out the track sections noting that they are held together at both ends with rubber bands to stop them moving in transit. Retain the rubber bands for re-packing the track.



When unpacking the track it is important to take care not to damage the cardboard boxes or the track section sleeves as these may be required to re-pack the track after use.

When re-packing the track sections into the cardboard sleeves ensure the two track sections are positioned as shown and that the rubber bands are placed around the ends of the centre aluminium sections as shown. Note: there are 11 track sections so one of the cardboard sleeves will only have one track section in it, it is important to put this into the long cardboard box last so it is on top and less likely to be damaged.

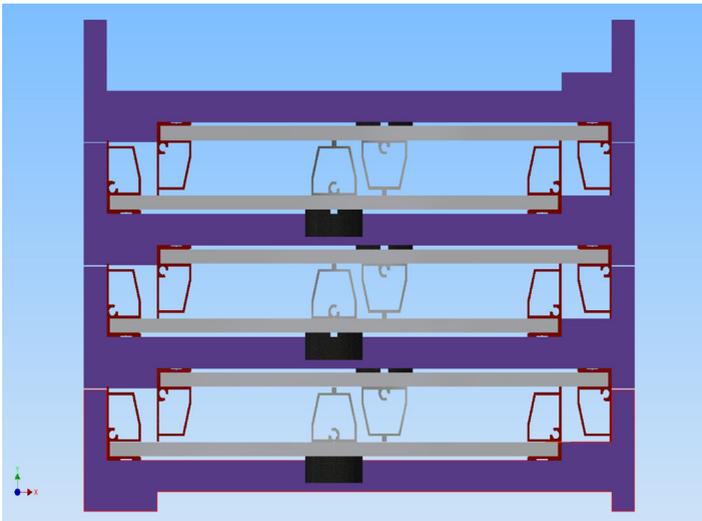
## 4: Unpacking / Re-packing the track cont:

If the track sections are packed in the boxes protected and separated by foam spacers, carefully lift out the track sections removing and saving the foam spacers for use when repacking the track.

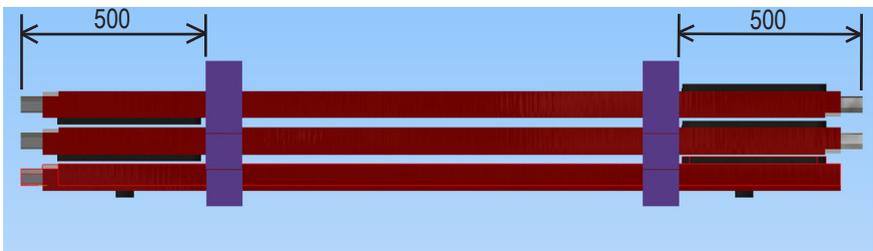


## 4: Unpacking / Re-packing the track cont:

When re-packing track sections into the cardboard box it is important to carefully position the foam spacers to avoid damage to the track sections. To position the foam spacers (shown in purple) and track sections correctly please refer to the diagram below.

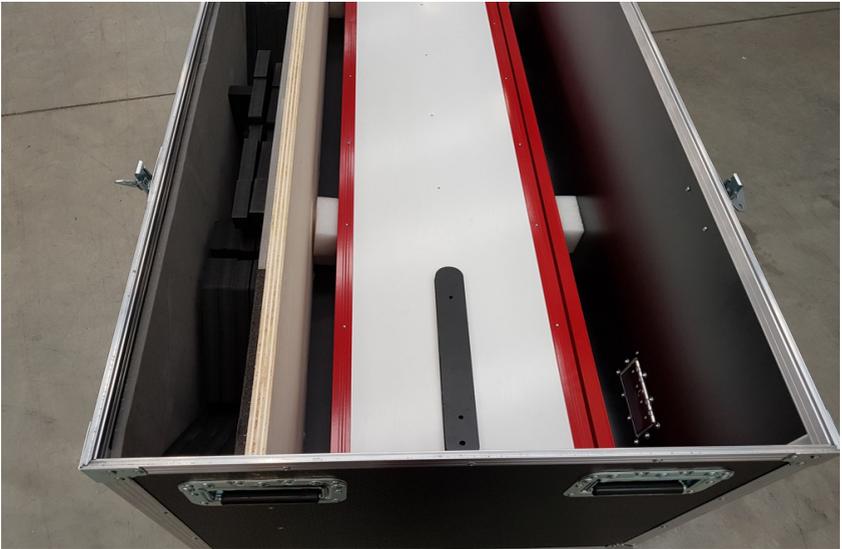


Four spacers are positioned either end of the track sections no less than 500mm from the ends of the sections as shown below to avoid fowling the track location and positioning blocks located under the track sections.



## 4: Unpacking / Re-packing the track cont:

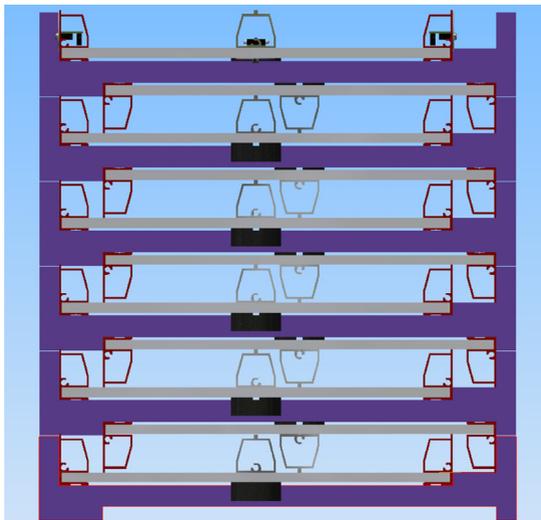
When a track is supplied in a flight case the track sections, legs and braces are all packed in the one case. The track sections are packed horizontally, supported and protected by foam spacers. The legs and leg braces are packed vertically in a separate padded compartment



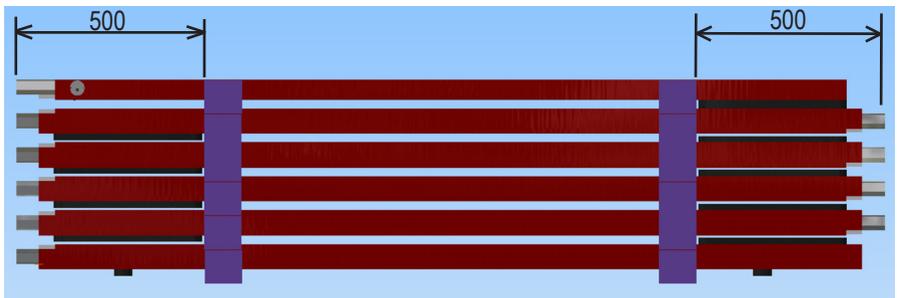
It is important to remove the track sections carefully and place the track spacers back in the case for re-packing the track after use. The track legs and leg braces are stored in a separate padded compartment within the packing case and can be easily removed.

## 4: Unpacking / Re-packing the track cont:

When re-packing track sections into a flight case it is important to carefully position the foam spacers to avoid damage to the track sections. To position the foam spacers (shown in purple) and track sections correctly please refer to the diagram below.



Six spacers are positioned at either end of the track sections no less than 500mm from the ends of the sections as shown to avoid fowling the track location and positioning blocks located under the track sections.





## 5: Identifying Track Parts

When the Denford Race Track is unpacked you should have the following equipment listed below:

Track Sections as follows:

1 - Off Start Section

9 - Off Mid Sections

1 - Off Finish Section

12 - Off Track Support Leg

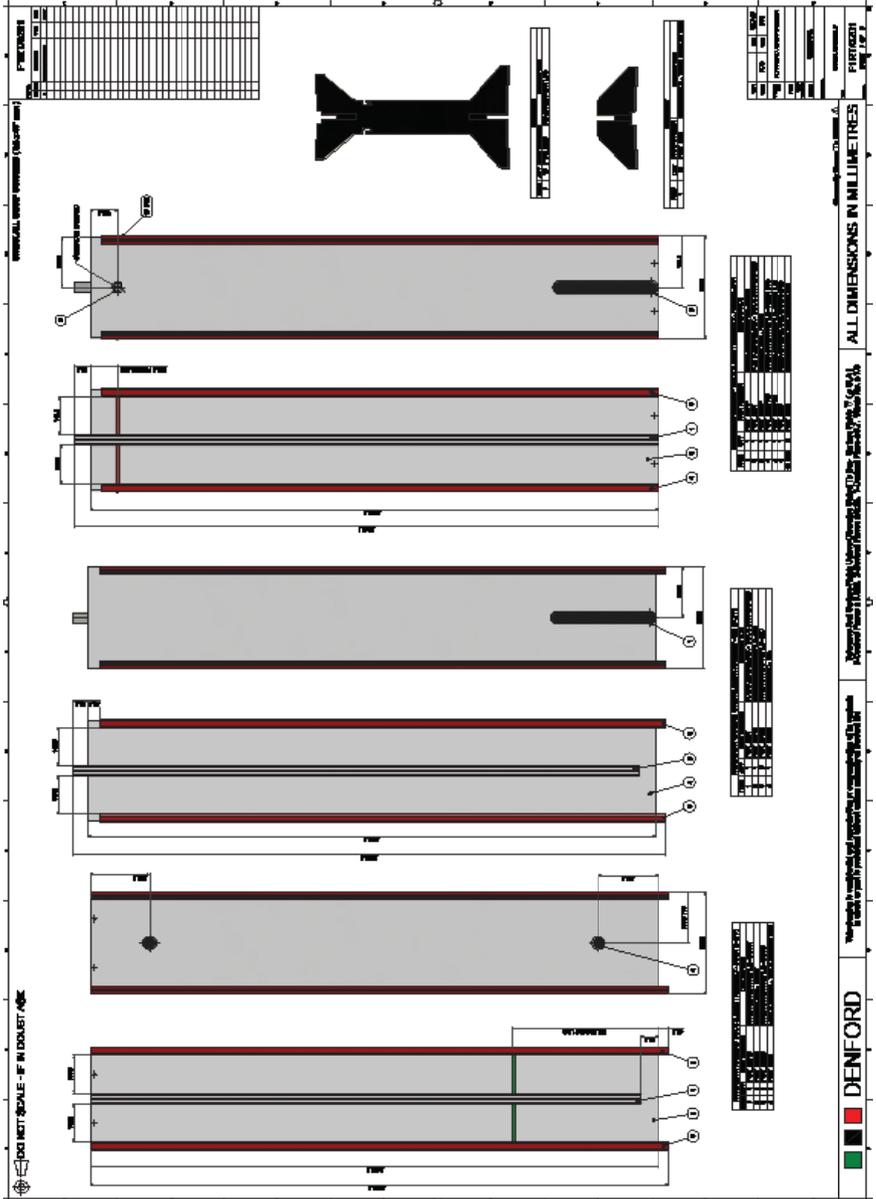
14 - Off Leg Support Brace

10 - Off Track Connection Thumb Screws, 9-Off 30mm long 1-Off 20mm long.

1 - Off Spool - Tether Line

The following drawing will make identification of the parts easier for assembly of the track.

# 5: Identifying Track Parts



## 6: Assembling the Track

No tools are required to assemble the track.

The track must be assembled by two or more people. It is advisable to have two people to support the sections whilst a third person can help align the mating parts. Care must be taken when lifting and positioning the track sections otherwise damage can occur to the track.

It is essential to locate a flat unobstructed area with enough space to position the track which is nearly 24m in length when assembled. Adequate space is required around the track but especially at the ends to allow for loading and unloading of the cars.

Ensure that you have a power supply close to the area you choose to position the start section.

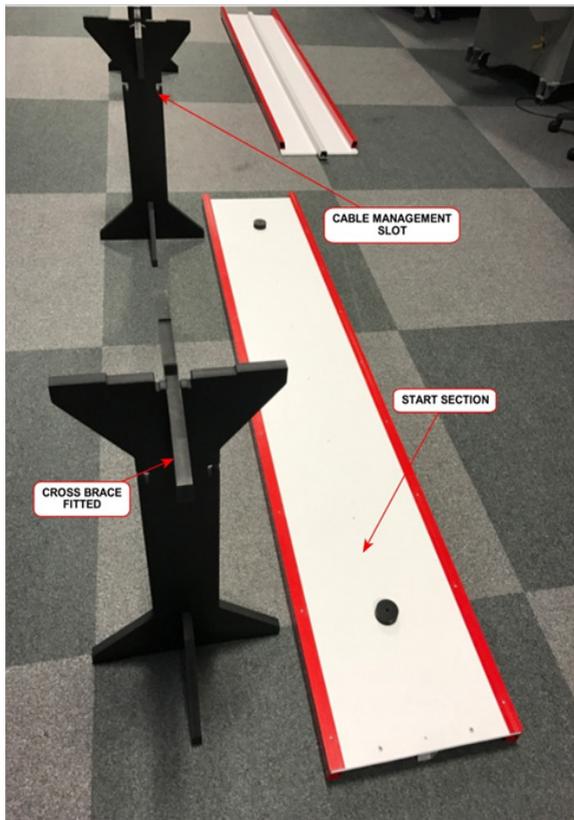
It is important that you position the first section of track correctly and take care aligning it as it will be difficult to reposition it once it is assembled.

## 6: Assembling the Track cont:

Locate the Start section of the track. This can be clearly identified by the two circular discs mounted to the underside

Take a track support leg and 2 cross braces and assemble the first leg. Ensure the leg has the wider section on the floor and the cable management slots are correctly positioned.

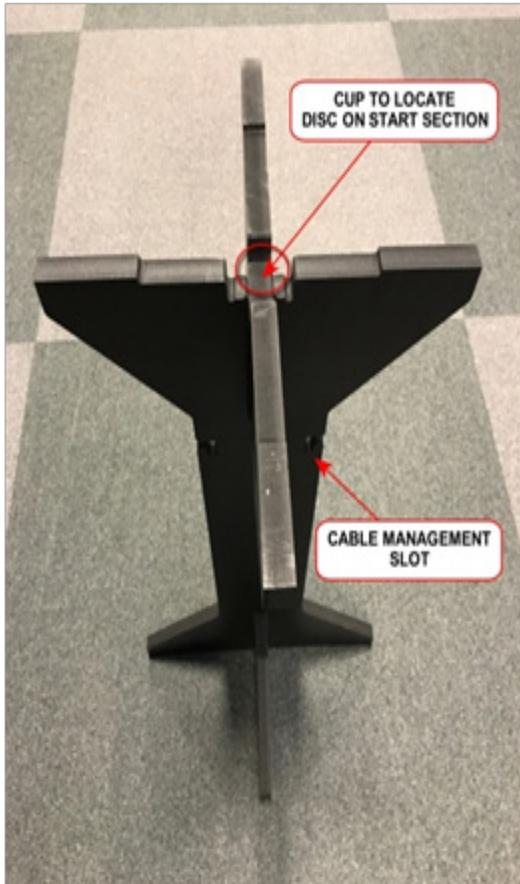
Assemble the second leg in the same way. These legs are the only two that have a cross brace top and Bottom.



## 6: Assembling the Track cont:

Align the legs so that they are spaced to line up with the discs on the underside of the track.

Lift the start section onto the Legs and locate the round discs in the cup created by the top of the Leg and the cross brace. Adjust the position of the two legs are correctly spaced and then take care to check the alignment of the section.



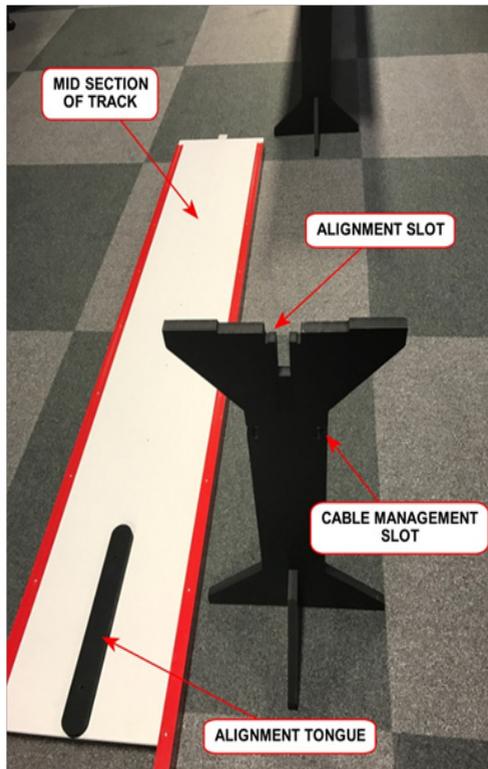
## 6: Assembling the Track cont:

Lift the Mid section up and place the central rail onto the start section of track, then place the other end onto the support leg.

Take care to ensure the leg is correctly positioned with the cable slots at the top and the alignment tongue fits into the alignment slot on the leg.

This must be done prior to sliding the sections together to prevent damage to the track surface.

One person should hold the start section while another slides the two track sections together.



## 6: Assembling the Track cont:

Once the sections are pushed together check the alignment of the support leg as this will ensure the faces of the track sections are flush.



## 6: Assembling the Track cont:

As each section of track is assembled to the next the track sections should be secured together by inserting the thumb clamping screws provided from the underside of the track.

To secure the Start Section to the first Mid Section of track the thumb screw is inserted through a pre drilled hole in the track board as shown below. Use the shorter of the thumb screws provided here to avoid the thumb screw mis-clamping.



## 6: Assembling the Track cont:

To secure the remaining sections of track together use the longer thumb screws which are inserted through the pre drilled holes in the track positioning blocks as shown below.

Note: The finish section of track is the last section to be fitted and can be identified as the aluminium sections finish flush with the end of the track and the Emitter and receiver circuits are mounted at the finish line.



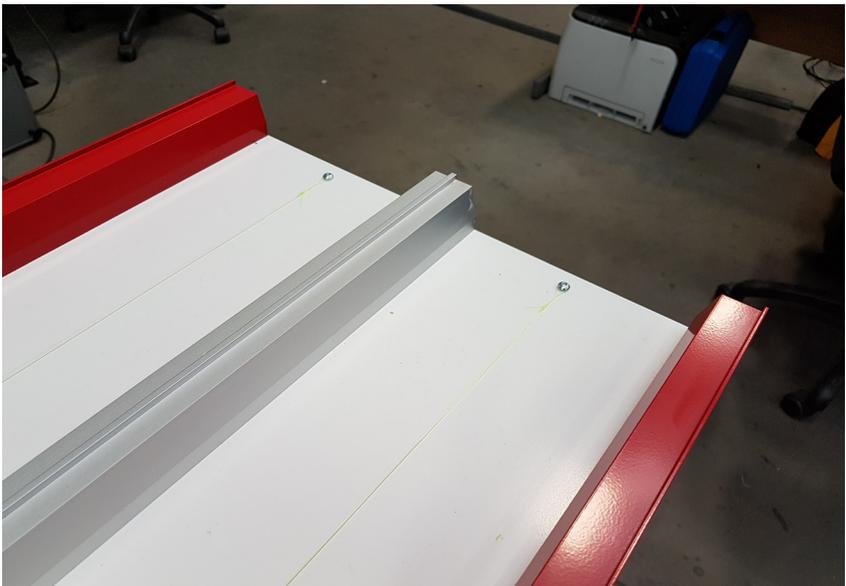
**Do not** over tighten the thumb clamping screws as this can damage the track.

If during operation it is required to realign or adjust the track sections for any reason always slacken the thumb clamping screws first to avoid damaging the track.

## 6: Assembling the Track cont:

When the track is fully assembled the guide lines can be fitted. These are nylon cords to which the cars are attached prior to racing.

On both the start and finish sections there are small screws near the edge of the track boards as shown below to which the cord is attached with a loop. The loop enables the cord to be unhooked from the screw to load and un-load the cars during racing. The cords should be cut and looped so that they are taught when fitted.



## 7: Safe Operation of the Denford Race Track & Race System

Teachers and/or responsible adults should observe and implement the following safety guidelines prior to and during operation of the Denford Race Track & Race System. Denford Ltd is not responsible for bodily injury or property damage resulting from misuse of its products or failure to observe or implement proper safety guidelines.

- a. The Denford Race Track & Race System should only be operated by adults or students under adult supervision.
- b. It is not recommended to fire the Start Box's without cars in place.
- c. The operator or other persons must not place their hands in front of the cars during launching.
- d. Do not launch anything other than the cars designed for Denford Race Track.
- f. Always ensure the car is attached to the tether line before launching.
- g. Do not tamper with the electronic components comprising the Denford Race System.
- h. Ensure that participants and spectators are positioned clear of the designated track area when racing commences.
- j. Ensure that either a Denford Deceleration system or towels are used to stop the cars at the end of the track.



## Denford F1 Race Track Spare Parts:

A range of spare parts is available for the Denford F1 Race Track as follows, please contact Denford Ltd for current pricing:

Track Sections:	Part No.
Start Section .....	F1RT/0201S
Mid Section .....	F1RT/0201M
Finish Section .....	F1RT/0201F
Finish Line Emitter Sensor (Middle Sensor).....	F1RS/0852
Finish Line Receiver Sensor (Outer Sensors).....	F1RS/0853
Track Support Leg .....	F1RT/0205
Cross Brace (Track Support Leg) .....	F1RT/0206
Tether Line Spool.....	BI06008
Thumb Screw Short (Track Clamping) .....	BI06025
Thumb Screw Long (Track Clamping) .....	BI06026



# On-Line Technical Forum

TECHNICAL SUPPORT AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK

Denford's Technical Forum is a free of charge on-line technical support service that is available to Denford customers 24 hours a day, 7 days a week.

"The technical forum has provided a wealth of information and support for our 20-year-old Denford CNC machine, in fact just as good as the support we receive for our brand new CNC Router!"



As well as offering comprehensive technical support, Denford's On-Line Technical Forum enables customers to share ideas and projects with other users. Media such as teaching material, project work, PDFs, images, drawings and text documents are easily attached to messages for all users to view and comment on.

You can also read the latest Denford news before anyone else, and keep track of machine and software upgrades, some of which can be downloaded direct from the Technical Forum web site.

The On-Line Technical Forum has proved to be hugely popular with customers. One recent user posted a note to inform us that the Technical Forum has "provided a wealth of information and support for our 20-year-old Denford CNC machine, in fact just as good as the support we receive for our brand new CNC Router!"

Of course the traditional methods of phone and email are still available, but try out this new service by simply logging on to [www.denforddata.com/bb/](http://www.denforddata.com/bb/) and register.

Denford's On-Line Technical Forum is a free of charge service that can be accessed 24 hours a day, 7 days a week.

The On-Line Technical Forum is available to Denford customers, old and new, and it couldn't be easier to use. Just visit <http://www.denforddata.com/bb/> and register on line.....it's that simple.

Denford's On-Line Technical Forum opens up the traditional communication channels that can restrict customer and technical support, due to availability of staff, teaching commitments or different time zones.

A multitude of topics relating to Denford machines and software (both new and old) are covered within the forum, which is simple to search, and easy to use.

Denford's Technical Team and Denford customers from around the world regularly log on to the forum to offer support and advice and, most importantly, post a solution for all to see.



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