



**London & North Western Railway  
(LNWR) 2<sup>ND</sup> Brake coach kit  
7mm scale( "O" gauge)**



**Era 1**  
Pre-grouping

**7mm Scale**  
**Pre-coloured 3D**  
**printed parts**



**OTM704**

[Diagram3D.com](http://Diagram3D.com)



## Introduction

These instructions begin with a list of contents. **Please examine your kit** to ensure that you have received all the components listed.

The instructions use images of actual kits. The construction procedure is similar for most kits. If special parts or procedures apply then that will be noted for this kit.

The current version of documentation for this and any other of our products can be downloaded from our website: <https://www.Diagram3D.com>.

## Not included

- Adhesive to attach the parts. PVA is recommended for the MDF parts, contact adhesive for plastic parts.
- Craft knife, Clamps, weights or any other tools.
- Paint and filler
- Wheels, bearings, couplings etc.

## Intended Audience

*This kit is intended to reduce the time, complication and labour associated with the construction of a detailed model of a carriage body using prepared parts which can be conveniently assembled without specialist knowledge .*

***This is not a complete kit of parts.*** The choice of some details (wheels, couplings) is left to the modeller. This kit includes small parts and requires the use of sharp tools. It is not suitable for children without adult supervision.

## Hints on assembly

### Separate MDF parts by cutting the reverse side of the fret.

*Separating MDF components cleanly is more easily accomplished by completing the half etched portions on the reverse of the fret rather than cutting from the front.*

*At each stage, once the required components have been separated from the frets, test the assembly without glue to ensure that the parts are trimmed correctly and fit properly before final assembly with adhesive.*

### Pre-assemble and check parts at each stage.

*Allow as much time as needed for the adhesive to set.*

***The assembly steps below are strong recommendations but should not be taken as definitive or prescriptive.***

### Allow adhesive time to set

## Copyright Statement

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## Current Documents

**The current version of documentation for this and any other of our products can be downloaded from [www.Diagram3D.com](http://www.Diagram3D.com) in PDF format.**

## Feedback

We welcome your comments and suggestions, especially images of models "in progress" or completed.



## Contents

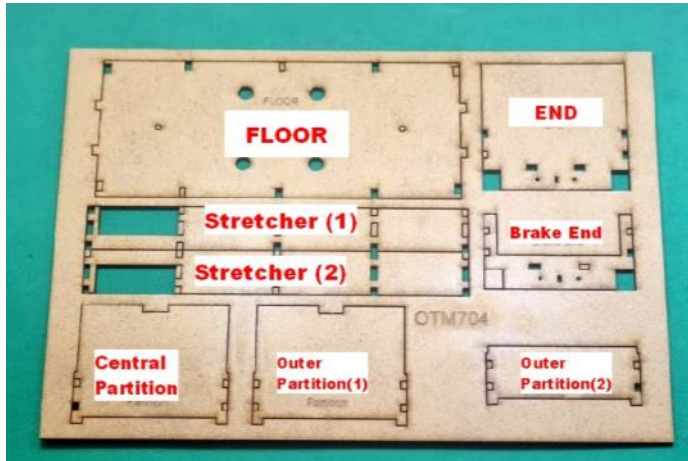
### MDF Components

**Check your kit to confirm its contents using the information below**

MDF parts are supplied pre-cut, partially attached to a panel which preserves their integrity and ensures that the correct parts are present. Please do not separate these parts until it is time to use them.

Refer to the illustration below to identify the components listed below.

Component	Quantity
Floor	1
Ends	2
Stretchers	2
Partitions	3



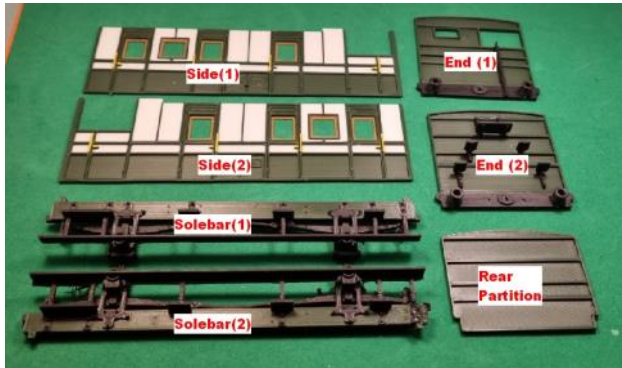
### 3D printed Components

Refer to the illustration on the next page to identify the components listed below.

Component	Quantity
Coach Sides	2
Coach Ends + partition	2 + 1
Solebars including axleguard details	2
Solebar Mounting clips + screws	1 set
Roof	1
Roof mounting clips+ Buffer Heads	1 set
Oil lamps	2
wheels + axles (for display usage only)	1 set
Brakes + Brake Wheel	1 set

### Other Components

2 x Glazing Bars, normally included with the 3D printed parts.



### Assembly

#### MDF Body

*Total preparation and assembly time about 5 minutes.*

*Allow sufficient time for the adhesive to dry thoroughly*

Detach the MDF partitions, floor and stretchers. For this kit, the central partition is full height, one is half height and the other (at the guards end) is full height. Insert the partitions into the floor, glue in position and allow to set. Refer to the image below.

Now attach the stretchers taking care that the guards end has a cutout. Finally attach the ends. The resulting box structure forms the central core of the coach body.





## Assembly

### Solebars

*Total preparation  
and assembly time  
about 10 minutes.*

Using the solebar mounting set and solebars, attach each solebar to a mounting clip. Ensure that the clip is flush with edge of the solebar. See the (generic) image.



Take the each of the two floor mounting clips and attach to the corresponding holes in the floor.



Finally, using the screws provided, screw the solebars into place.



## Assembly

### Roof

*Total preparation  
and assembly time  
about 5 minutes.*

The roof has locating points for oil lamps on top.



Underneath it has locating points for the soft rubber clips provided.

Attach the clip(s) and lamp(s). The the roof can be clipped into position as required.





### Final assembly

*Allow sufficient time for the adhesive to dry thoroughly*

The final assembly consists of attaching the sides and ends to the MDF body. Begin with the ends ensuring that they line up with the holes in the MDF ends. The sides can then be positioned on the bufferbeams. The sides overlap the ends. There is a full 3D partition which is placed at the guards end as shown in the image below. The brake wheel is attached to the outer end as shown below. The brake shoes are attached to the solebars facing towards the rear wheels.

The roof clips onto the partitions. Removing the roof allows the glazing to be slotted into position.

Finally, the flexible buffer heads are inserted into the bufferbeams to complete assembly.



### Display Wheels

This kit includes two axles with four 3D printed wheels which can be used for display purposes only.

Otherwise it is recommended that appropriate wheels are used instead.



### Historical Notes

This vehicle is typical of the period. It is based on a line drawing held by the LNWR society. This vehicle has been described as one of the "exhibition coaches" referring to the Great Exhibition 1851. The brake end is partly conjectural, based on available information and similar vehicles of the period (notably a NLR brake second). The braking arrangement on the rear two wheels is derived from the line drawing.

### Underframe

This vehicle was 19 feet long and the wheelbase was 11 feet.

No specific details survive for the underframe. However the LNWR had a distinctive common standard for axleguards. Early coaches had metal steps below the doors extending to a lower footboard at axlebox level. The coaches would have had side chains as well as the central couplings. In the 1880's new legislation required coaches to have continuous footboards following the accidental death of a prominent Member of Parliament in 1878.

### Livery

This model is depicted in an early version of LNWR livery, which was green for the lower panels and a light colour above, according to "LNWR Liveries" published by the LNWR society.

### Finally...

Congratulations on completing this kit. We hope you enjoyed making it as much as we did.. If you enjoyed making this kit then take time to visit [www.Diagram3D.com](http://www.Diagram3D.com) to find similar items. Our website has free downloads of historical information. Downloadable assembly instructions for all of our products

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