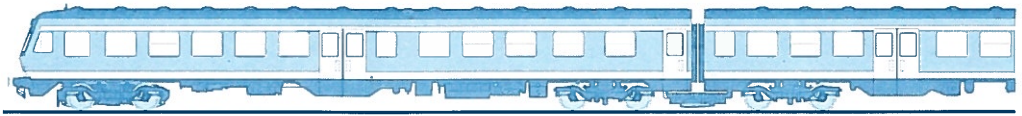


## Operating instructions

### L13315x



## Class 614/914 diesel multiple unit

### **Information on the original:**

*In 1971 the DB launched the development of two prototype class 614 units. These diesel multiple units were designed specifically for local and regional traffic and were characterised by bodywork that tapered inward towards the top. This was done with a view to incorporating a curve induced (active) tilt mechanism and is what gave the units their particular look. However, as the envisaged tilt system did not meet expectations it was never built into the 40 series units delivered between 1973 and 1976 but the original bodywork shape was retained.*

*While the intermediate coaches for 25 of the units were built by MAN, the power cars to go with them were produced by Waggonfabrik Uerdingen and equipped with a 330-kW or a 376-kW engine. The final 15 units, built from 1975, were entirely constructed by MAN. Originally designed to operate simply as 3-car sets, giving 204 seats in 2<sup>nd</sup> class and 2 x 12 seats in 1<sup>st</sup>, they were nevertheless equipped for multiple unit operation and they also sometimes (in the beginning) worked in 4-car formation, strengthened by an additional intermediate coach. A multiple unit operation was used not very often, in later years it was very seldom.*

*The first 25 units went to Bw Nürnberg, from where they were used on rails of all Frankonian regions. The livery carried by these units varied by region. Typically they could be seen in vermilion/pebble grey "pop" livery. The last 15 units went to Bw Braunschweig, now in livery oceanblue/ivory, where they were going to Paderborn, Göttingen, Münster or Bielefeld.*

*The units were later painted in mint turquoise/light grey and then at least almost exclusively in "traffic red". In the end most of the DB AG units latterly based at Nürnberg and Braunschweig were modernised inside and externally, f.ex. losing their baggage compartment, changing windows and gaining a window. It goes without saying that the LILIPUT model fully reproduces these bodywork detail changes!*

*At February 15, 2011 – after a using time of exactly 40 years, the last unit which was based in Nürnberg since its delivery in 1973, and even already had the "pop" livery (614 005/006 and 914 003) – was given to the DB museum in Nürnberg. This unit is now ready for special use.*

*We at LILIPUT would like to thank you for purchasing this model  
and wish you many hours of enjoyment from it.*

Fig. 1



No. 1 end car  
(Unit A)

Intermediate car  
(Unit C)

\* Intermediate car (Additional car)

No. 2 end car  
(Unit B)

## Initial preparation

Carefully remove the individual vehicles from the blister pack. Both **end cars** are motorised, with one motor in each car. However, only the **no. 1 end car (Fig. 1)**, which has the upward pointing “nose” on the coupler (**H**) in **Fig. 2a/b**, can be operated singly for test purposes. The **no. 2 end car** will only run as part of a complete formation.

## Coupling the unit

The individual cars are fitted with special couplers which ensure electrical continuity within the unit. First, put the cars on the track a short distance apart. Ensure that opposite handed couplers are facing each other within the unit (i.e. **with “nose” H opposite without “nose” H**) as shown in **Fig. 2a**. Then gently push the cars together until the couplers only just touch.

To complete the coupling-up process, we recommend lifting both car ends by about 2 cm and, using a finger as support for the coupler with the “nose” (**H**) as shown in **Fig. 2b**, gently easing both couplers towards each other until they are fully engaged and being careful not to bend them downwards.

Further vehicles can then be coupled within the unit using the same procedure. Once all couplers are fully engaged the unit is ready for operation.

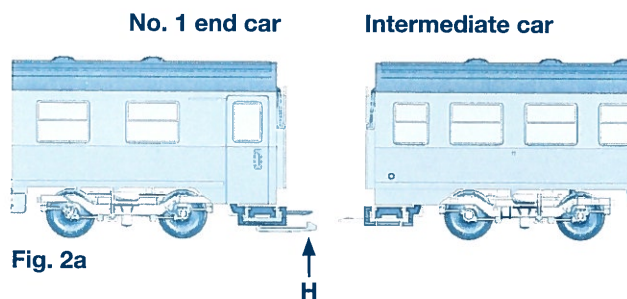


Fig. 2a

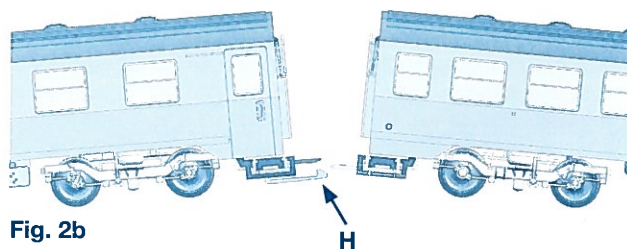


Fig. 2b

\* Note: The basic 3-car model consists of both end cars and one intermediate car. Prototype operation also features 4-car units, so the LILIPUT range includes an individually available additional intermediate car which can be added to the unit consist. This car can run either side of the original intermediate car and **Fig. 1** shows just one of the formations possible.

## Uncoupling the cars

The cars may be uncoupled by using a screwdriver blade, inserted from the side (**Fig. 2c**), to push down on the coupler “nose” (**H**), enabling the cars to be separated.

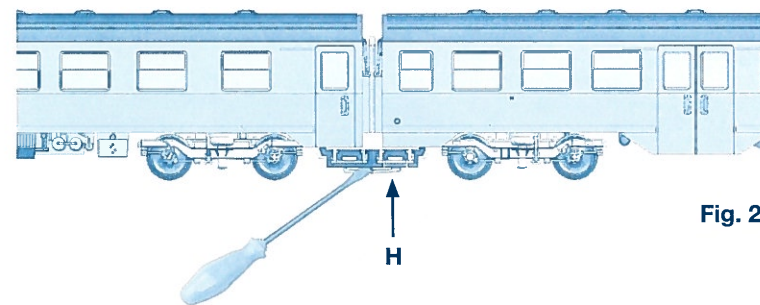


Fig. 2c

## Care and servicing of your model

– This is recommended after 30 to 40 hours of operation –

To keep your model in good life-long operating condition it should be regularly maintained. This does not require the model to be opened up. The model simply needs to be laid upside-down on a soft surface, avoiding damage to any roof detail, and the wheels carefully cleaned with a cotton bud tip dipped in white spirit.

**Please Note: On no account should any attempt be made to turn the motorised wheels by hand!**

After cleaning the wheels, lubricate the bearings (**L**) as shown in **Fig. 3** with a drop of light lubricating oil. Use regular household grade lube oil applied by means of a fine hollow or solid needle.

**Caution! Do not use kitchen or cooking oil, or hand cream!**

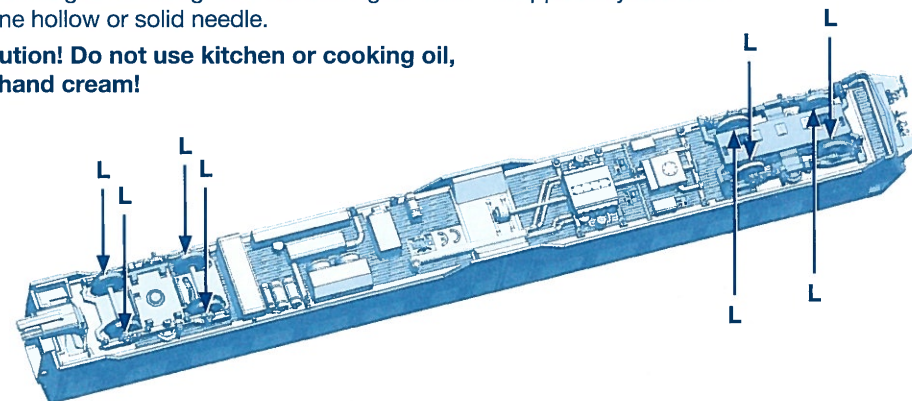


Fig. 3

Lubrication of the transmission mechanism can also be carried out without opening up the model. All that is required is to rotate each motorised bogie to one side, as shown in **Fig. 4**. This allows access between bogie and underframe to the worm and wormwheel (**O**), so that the complete transmission can be lubricated using a pipette (**Z**). After this, the end cars should be briefly run alternately to and fro in order to allow the lubrication to disperse evenly.

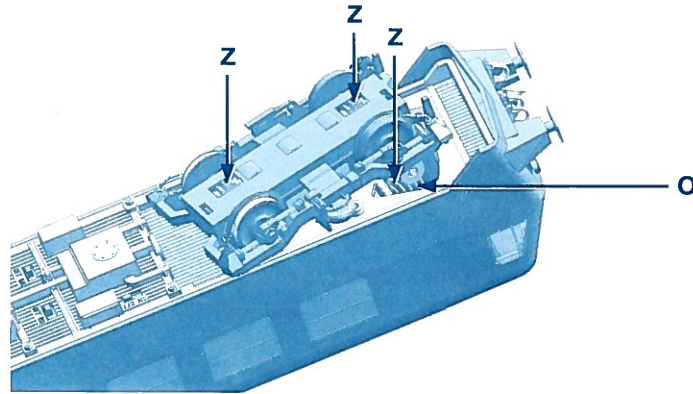


Fig. 4

## Getting started with your DC version of the model

### Changing the factory settings

The factory setting of the DC model provides for current collection by all wheels of both end cars. If you wish to change the setting, you will need to make the adjustment on the **no. 1 end car**.

There are 3 switches on the underside of the car underframe, as shown in **Fig. 5a**. The factory setting for all of them is "ON".

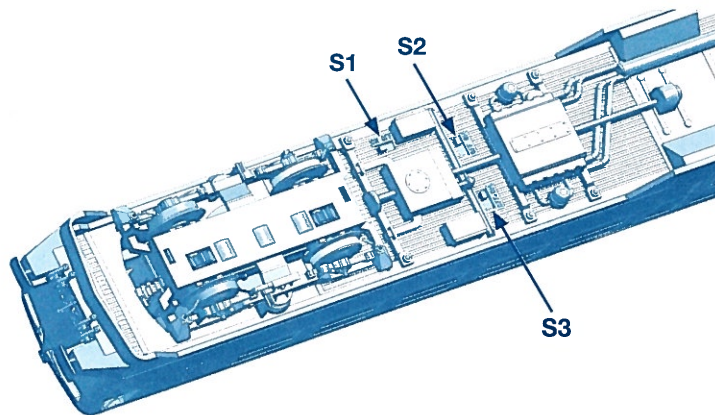


Fig. 5a

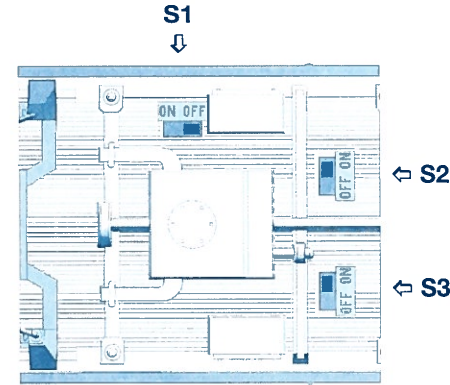


Fig. 5b

If your layout features block section controlled movement or automatic stopping in a terminus station, switch **S1** needs to be in the "OFF" position (**Fig. 5b**).

This ensures that only the leading end car picks up traction current.

Switch **S2** allows the interior lighting to be turned on or off.

When the unit is operated digitally this switch must remain in the "ON" position; the interior lights are then decoder-controlled.

Switch **S3** controls the cab interior lighting, i.e. it turns it on or off.

In digital operation this switch should remain in the "ON" position; the cab lighting is then decoder-controlled.

### Opening up the model

In order to allow any of the following work to be carried out, it is first necessary to detach the carbody of **no. 1 end car** from the underframe. This can be done by simultaneously inserting your thumbnails between the underframe and the carbody on each side of the car near the motorised bogie, see **Fig. 6**.

The bodysides can then be extended outwards slightly (1.) whilst gently pulling the underframe out from the carbody by gripping the bogie sides with both index fingers (2.).

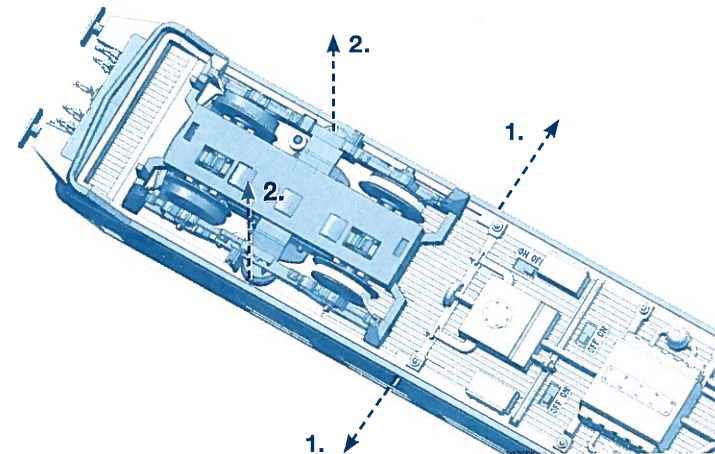


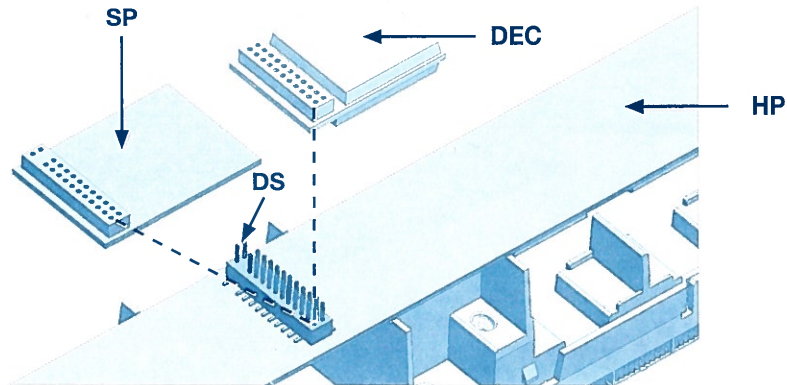
Fig. 6

## Installing a digital or sound decoder

Before starting the conversion, please ensure that all functions are operating correctly in DC mode. The 21+2-pin digital interface (**DS**) is located on the main circuit board (**HP**, Fig. 7a).

The 23-pin interface circuit board (**SP**) as installed contains the stop function circuit. Once you convert to digital by installing a decoder (**DEC**) the stop function is no longer available.

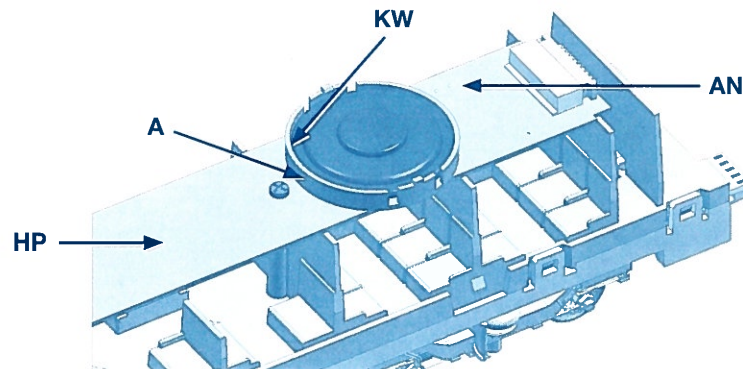
Fig. 7a



## Installing a speaker

The recess (**A**) for speaker installation is also located on the main circuit board (**HP**), see Fig. 7b. The speaker (23 mm dia.) must be snap-fitted in the recess provided with the membrane facing downwards, i.e. towards the circuit board. Better and louder sound effects can be obtained by insertion of an adhesive beaded rim (**KW**) around the speaker in the recess. The speaker connection (**AN**) is located immediately adjacent to the recess.

Fig. 7b



## The AC version of the model

If you have acquired the **AC version** of this LILIPUT model for **centre stud contact operation** please note the following:

This model is fitted with a built-in (ESU-Lokpilot) digital decoder in **no. 1 end car** which offers you the choice of analogue operation (on 16 V AC) or digital operation. The accompanying manual provided by ESU gives information about the functionality of the decoder.

Current collection from the centre stud contacts is provided by a skate fitted to the unmotorsed bogie of each of the **end cars, nos. 1 and 2**. The skate as installed, together with its retaining clip (**R**), is shown in Fig. 8.

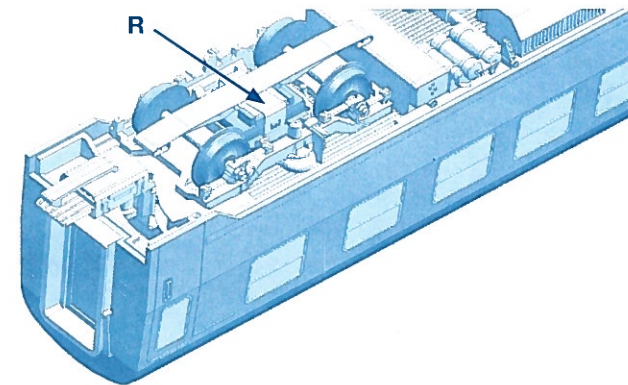


Fig. 8

Fig. 9 shows the skate and the retaining clip (**R**) removed from the bogie. When fitting the skate, the retaining clip simply snaps into position by means of two lugs. To remove the skate, gently move the side (**S**) of the retaining clip outwards with a screwdriver.

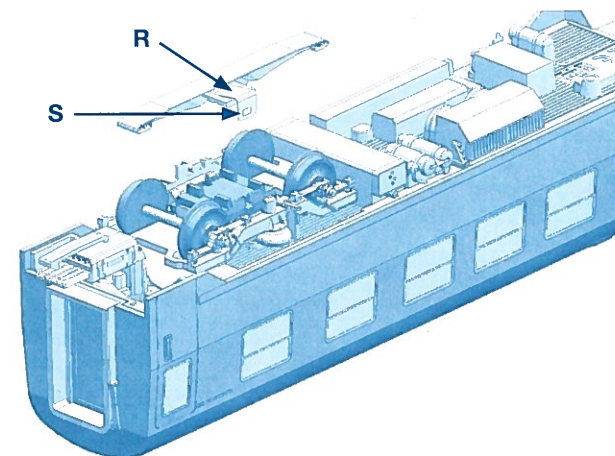
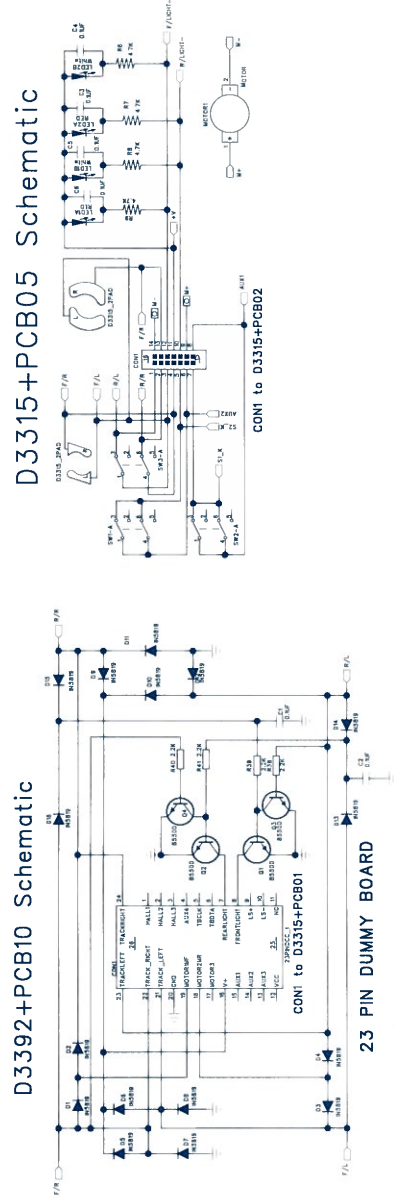
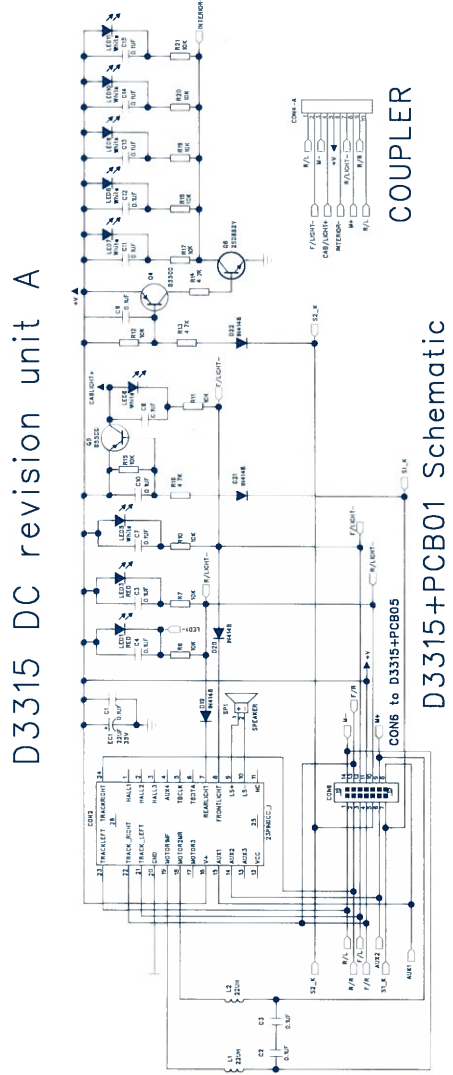


Fig. 9

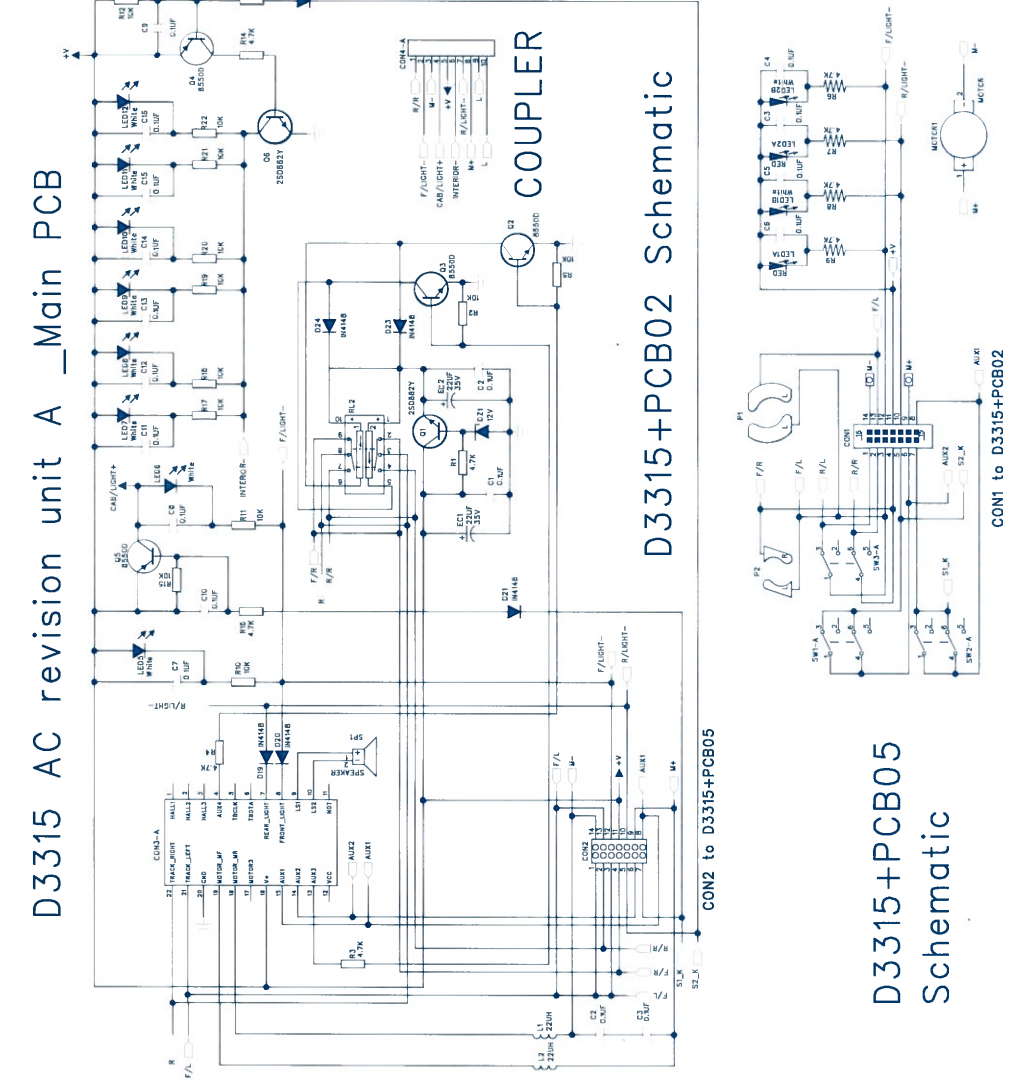
## Circuit diagrams

For those who wish to know more about the electrical detail of the model we are pleased to provide herewith a complete set of circuit diagrams.

### Circuit diagram DC: No. 1 end car (Unit A)



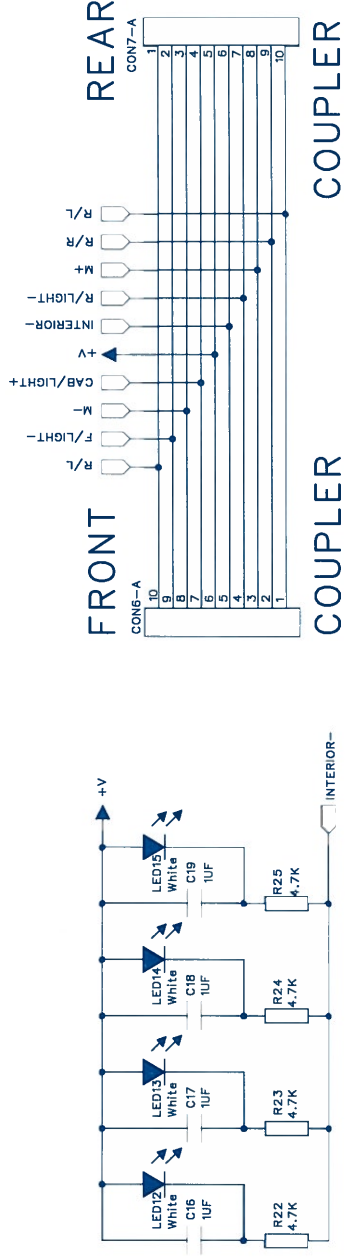
### Circuit diagram AC: No. 1 end car (Unit A)



### D3315+PCB05 Schematic

Circuit diagram DC/AC: Intermediate car (Unit C)

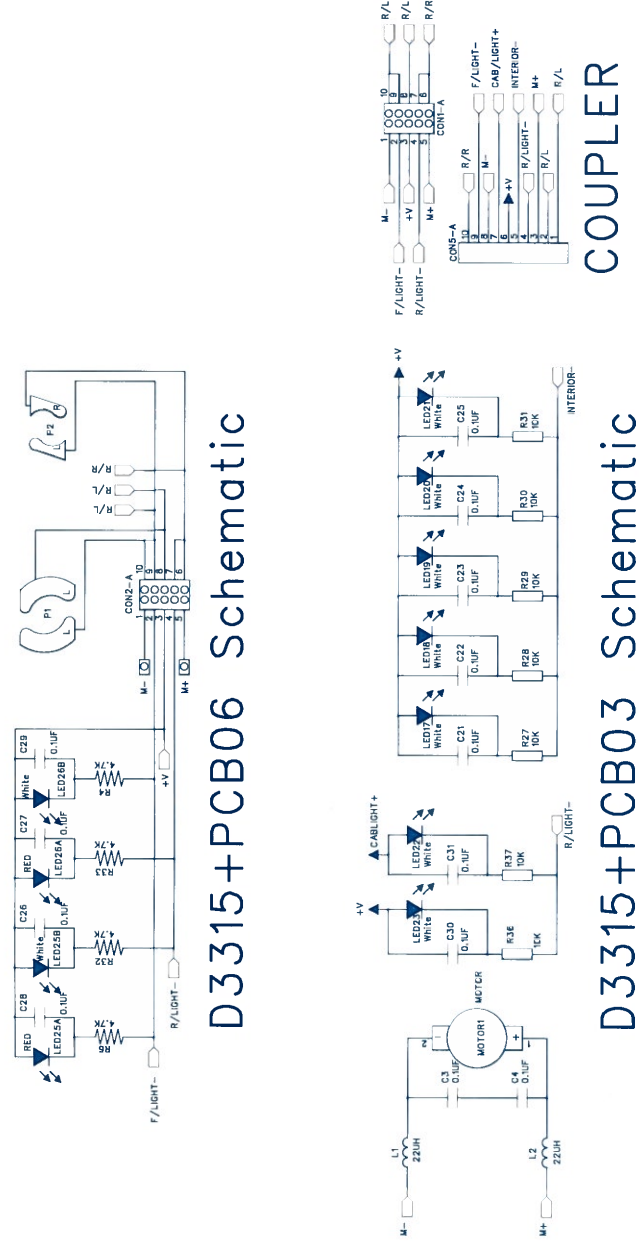
# D33315 DC/AC Unit C



D33315+PCB04 Schematic

Circuit diagram DC/AC: No. 2 end car (Unit B)

# D33315 DC/AC Unit B



D33315+PCB06 Schematic

D33315+PCB03 Schematic

## Warranty coupon

Should your LILIPUT model be faulty or not work properly or require repair, you can either contact the dealer from whom you purchased the product or contact the customer services department directly of one of the following addresses below.

### GERMANY:

BACHMANN EUROPE PLC  
NIEDERLASSUNG DEUTSCHLAND  
AM UMSpannWERK 5  
D - 90518 ALTDORF BEI NÜRNBERG

### SWITZERLAND:

MODELLBAU UND ELEKTRONIK  
STETTACHSTRASSE 193  
CH - 8051 ZÜRICH

### ALL OTHER COUNTRIES:

BACHMANN EUROPE PLC  
MOAT WAY, BARWELL  
GB - LEICESTERSHIRE LE9 8EY

**Important!** We recommend that you keep the original box. It is the best place to store your model, when it is not in use. Please be aware, that carpet fibres can destroy the fine mechanism of the locomotive. Subject to changes in design, version and technical data. Please retain these data and instructions for further reference. This product has been manufactured according to the European toy Safety Directive (CE). • **Wichtig!** Wir empfehlen die Originalverpackung aufzubewahren, sie ist der beste Schutz für Ihr Modell, wenn dieses nicht gerade auf Ihrer Anlage unterwegs ist. Beim Betrieb der Lok auf Teppichböden kann die feine Mechanik durch Fasern zerstört werden. Änderungen in Konstruktion und Ausführung vorbehalten. Bitte bewahren Sie diese Beschreibung zum späteren Gebrauch auf. Dieses Produkt wurde nach

Vorschriften der europäischen Spielzeugrichtlinien (CE) hergestellt. • **Importante!** Raccomandiamo di tenere la scatola originale. E' il posto migliore in cui tenere il tuo modello quando non è in uso. Fibre di tappeti possono distruggere il fine meccanismo



### Warranty conditions:

This LILIPUT model has a warranty of two years from the date of purchase on repairs and parts, as long as it was purchased from an authorised dealer and if this certificate has been stamped with the address of the dealership and the date of purchase has been entered. The warranty permits Bachmann Europe Plc either to rectify any fault or to replace the faulty parts. Further claims are excluded.

Please note that no liability can be assumed for any parts subsequently fitted or for any damage caused thereby.

Dealer's stamp with day of purchasing:

della locomotiva. Preghiamo di conservare questi dati ed istruzioni per altre informazioni. Quest'articolo è stato prodotto in accordo con la Direttiva Europea Sicurezza giochi (CE).

**Attention!** At an incorrect use there exists danger of hurting because of cutting edges and tips! • **Achtung!** Bei unsachmäßigem Gebrauch besteht Verletzungsgefahr durch funktionsbedingte scharfe Kanten und Spitzen! • **Attention!** Il y a danger de blessure à un emploi incorrect à cause des aiguilles et arêtes vives! • **Voorzichtig!** Bij ondoelmatig gebruik bestaat verwondingsgevaar door scherpe zijkanten en uitsteeksels! • **Attenzione!** Un uso improprio comporta pericolo di ferimenti attraverso punte e spigoli taglienti! • **Atencion!** Un empleo incorrecto puede causar heridas debido a las puntas y aristas agudas! • **Atenção!** Por utilização incorrecta existe o perigo de estragos, em virtude de cortes nas abas e nas pontas! • **Προσοχή!** Η ακατάλληλη χρήση εγκλείει κινδύνους μικрот τραυματισμών, εξ αιτίας κοπτερων αιμιων και προεξοχουδν! • **Bemærk!** Ved ukorrekt brug kan de funktionsbetingede skarpe kanter og spidser forfølde skade!

