Instructions for Revell 1/48 B-17 Flying Fortress

Congratulations for your purchase of this Electronic kit. Please feel free to contact us anytime for advice, guidance, support or any help.

Detailed instructions dedicated to the 1/48 Revell B-17 Generation 3 (JST)

1 Foreword

What a wonderful adventure this project has been!!! Magic Scale Modeling is really happy to share it with you.

Our chance was to meet **Kai Wolter** during Scale Model World 2018 at Telford (UK).
We have developed an extensive relation and friendship with him.
Like cats, Kai has lived (at least) 9 lives so far, and has been involved in the Restoration team of the beautiful B-17G–110–VE, USAAF serial number 44-85829.called **Yankee Lady.**

Thanks to him, we had a privilege access to first hand documentation and authentic soundtracks of the 4 Wright Cyclone engines of the venerable and beautiful airplane.

That soundtrack became the fundament on which we have programmed our circuit board.

We can't recommend enough to visit them or to join their support program.

What better documentation can you imagine than bringing back a real B-17G to life ?

We have looooooooooved our meetings and work session with Kai.

Of course, we have also visited the Royal Airforce Museum at Hendon where another B-17 is preserved.

Please, visit our YouTube channel, Web Blog and Facebook page for dedicated information.

Are you ready to take off?

So, let's go for your B-17 build experience...

2 General instructions

The guidance to support you during the integration of this electronic set in your model is based on 5 major documents, identified as A, B, C, D and E.

The General instructions (A)
Very critical document **to be read end to end before any further step.**

Specific instructions (B, C, D and this document E)
Which are yours from the next page. The way to apply what you have learned to this specific model.

In case of any doubt or question, please do not hesitate to contact us – Details at the end of this document

Once these documents fully understood, the following dedicated instructions will make sense and you will enjoy every bit of a very successful and incredible project!

3 Recce phase

Where to install the Lights ?

3.1 Wings navigation lights

As usual for any airplanes, 2 wings navigation lights take place at the most outer side of the wings: red on port side, green on the starboard. From our notes, the light bulb is coloured; not the wind protection glass (as for certain airplanes).

3.2 Landing lights

2 landing lights, integrated in the wing leading edge.

3.3 Waist gunner (optional)

On each side of the fuselage, 1 waist gunner was defending the plane. Light is optional as not all kits offers large details. But if you plan to buy after-market (or scratch built) pieces, then lights are more than welcome to highlight the details.

3.4 Radio (optional)

Radio compartment is composed of 2 elements: the radio cabin itself and its roof top equipped with with a machine gun to welcome enemies' airplanes.
As for the waist gunner, not all kits provide a lot of details. Should you add something, light will be more than welcome.

3.5 Cockpit and bomber area

Cockpit will be illuminated with 2 LEDs: one on the ceiling of the cockpit and the second in the bomber area, in the nose of the aircraft.

3.6 Tail navigation light

It is included in our set, but not every version of the B-17 was equipped with a Tail Navigation light.
But, as usual, take care and refer to your documentation ...

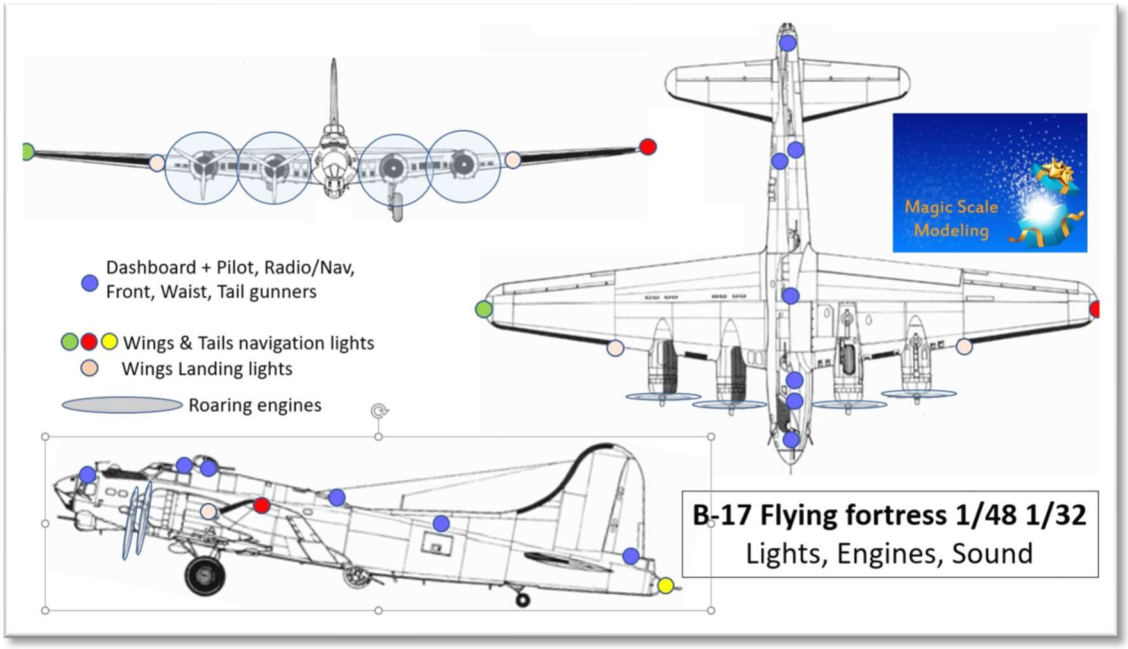
For example, B-17G 'Little Miss Mischief' is a Type G, build repaired with parts extracted from 17 other wrecks (!!), including the Tail section from a Type F which includes ... a tail navigation light.
From our notes, Versions A till F were equipped and G not anymore due to the Cheyenne tail turret.

In our building instructions, you will see that we have used the tail navigation light inside the airplane as a 'tail gunner light'.

4 Content of the Magic Scale Modeling kit

4.1 Overview (Document B)

The kit contains electronical components such as Electric engines, NanoLeds with cabling of different lengths, programmed circuit board, speakers, UV Glue, and 3D Printed parts.



4.2 Component checklist (Document C)

All components provided it this kit are summarized in the following table.

Model	Function	Device	Animation	Channel
B-17 Flying Fortress 1/48	Left Engine + External (Nr 1) + Cable adaptor	1 x M60	Clockwise rotation	3
B-17 Flying Fortress 1/48	Left Engine + Internal (Nr 2) + Cable adaptor	1 x M60	Clockwise rotation	5
B-17 Flying Fortress 1/48	Right Engine + Internal (Nr 3) + Cable adaptor	1 x M60	Clockwise rotation	6
B-17 Flying Fortress 1/48	Right Engine +External (Nr 4) + Cable adaptor	1 x M60	Clockwise rotation	9
B-17 Flying Fortress 1/48	3D printed parts	4 x Tube 13mm & Prop		
B-17 Flying Fortress 1/48	Wing Navigation lights + 1 x Hub (4+1) - 5cms	2 x NanoLeds - 60 cms WW	Plain light	0
B-17 Flying Fortress 1/48	Tail Navigation light (B17 Versions A-F)	1 x NanoLeds - 40 cms WW	Plain light	0
B-17 Flying Fortress 1/48	Landing lights	2 x NanoLeds - 60 cms WC	Plain light	1
B-17 Flying Fortress 1/48	Bomber + Cockpit lights	2 x NanoLeds - 40 cms WW	Plain light	10
B-17 Flying Fortress 1/48	IT Circuit Board MSM-2spk-JST			Power supply
B-17 Flying Fortress 1/48	Battery pack - UV Glue	Battery pack		
B-17 Flying Fortress 1/48	Speakers 2 X 28mm	2 x 28 mm speakers		Spk
	Optional			
B-17 Flying Fortress 1/48	Radio + 1 Waist gunners + Tail gunner + 1 x Hub (4+1) - 5cms	3 x NanoLeds - 40 cms WW	Plain light	11
B-17 Flying Fortress 1/48	Power supply by magnet through the wheels			

Column function

Description of the component.

Column Device

Indicates the quantity by components, the length for NanoLEDs, type of engine …

Some channels will receive more than one cable. Therefore, we provide you a specific connector (Y type) with 2 or 3 cable extension.

Column Animation

Tells you which animation will be performed and also which expected effect (plain light, clockwise rotation …)

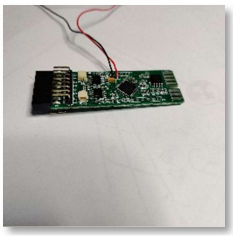
Column Channel

Now that you have read the generic instruction, you know that this refers to the ID of the channel on the programmed circuit board. **If not read yet, please, do it before going further**.

4.3 3-D printed parts

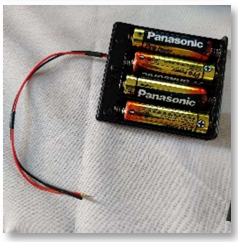
3-D printed parts will be used to encapsulate the electric engines into the plastic kit and a shaft to fit inside the propeller. This will help to make it rotate nicely.

4.4 Electronic Circuit



The electronic circuit contains all the logic that will pilot all the components and play the specific B-17 scenario.
The circuit will be feed by connected to AC/DC battery pack or local AC/DC sector plug, including or not the Wireless like power cables through the tires.

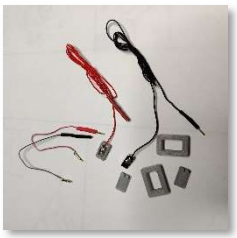
4.5 Battery pack



Battery pack should be completed with 4 AA 1.5-volt Alkaline Batteries, fully charged. **Alkaline batteries are not included in the set**.
The battery pack will be connected to the electronic circuit (for trials); then connected to metallic ‘pads’ linked to the ‘pistons’ (if option has been bought).

Red cables connected together; same for the black.

4.6 Wireless connections (optional)



Wireless connection needs to be introduced in the tires of the airplane, to provide power from the base to the airplane, without showing any cables.
This feature is optional.

4.7 Electrical engines

4 small M60 electric engines, with the ad-hoc wires for Clockwise rotation.
External diameter is 60mm and shaft is 0.8mm

4.8 Speakers

2 speakers to play the so characteristic B-17 sound; 1 for the left wing; 1 for the right. TO BE EXCLUSIVELY CONNECTED to SpL and SpR connectors.

4.9 NanoLEDs

The kit will provide you several NanoLEDs, of different length. Please refer to the components check list to determine where to place it depending on the function to produce.

4.10 Light Hubs

Both the 2 Wings navigation and the Tail navigation lights will be connected to channel 0. As the circuit board only offers 2 connectors, we'll add a light Hub. Please refer to Document A for further details.

Same approach whenever you have chosen to detail and light the Radio, Waist and Tail gunner cabins.

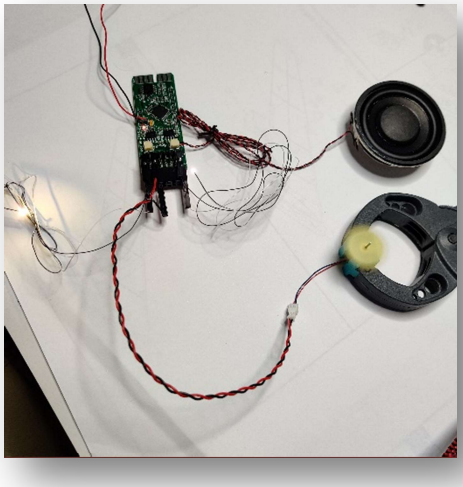
5 First trial

We know you are ready in the starting block to build your kit. Before jumping into the sea, let's have a first trial.

As specified in the generic instructions and the list here above, we will connect some devices:

- Battery pack
- Electronic circuit
- One speaker
- Some lights
- One electric engine

We recommend you **not to connect everything** for this first trial. It may end up quite messy!



Plug 4 standard batteries 1.5v at full capacity in the battery holder.
Connect one speaker as instructed by the general instructions.
Switch on … and Magic … The circuit board comes to life.
A red LED on the circuit board lights up.
A short jingle is played to confirm the program is alive and all components are OK.

Put one engine in one appropriate port number (3,5,6 or 9). Put a small tape on the axis of the engine to see it rotate.

Connect one or 2 NanoLEDs to the circuit.

During more less 2 minutes, the different NanoLeds will be lighted along the different pre-flight operations.

After more less two minutes, you'll hear the first engine getting into motion. The scenario of the B-17 will start the engine number 2.

You can of course plug more LEDs and/or Engine(s), up to you …

6 Integration in your kit

We will not comment how to build the whole kit, nor how to paint.
We will mainly focus on the specific instructions that will allow you to insert the Magic Scale Modeling product inside it. When needed, we will refer to the kit pieces numbering.
If we recommend cutting pieces, drilling holes, putting tapes, you can trust!
If you feel a different way, please feel free to use your own creativity.
Let's start a step-by-step integration.

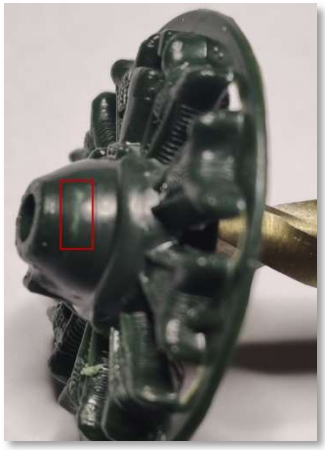
6.1 Engines assembly

Revell model propose a static version of the engine blades.
This engine assembly section will show you how to integrate the small electric engine inside pieces originally provided in Revell's kit. The final goal is to have the 4 engines inserted properly, so that the propeller's blades will rotate smoothly.
Once connected to the electronic circuit, you will test that all 4 engines are running (rotating) together.

6.1.1 Engine preparation

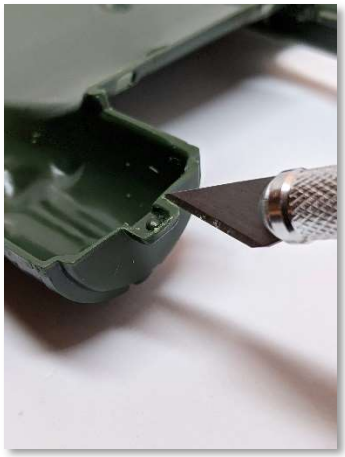
The following operations have to be repeated 4 times, one for each engine.
The first step is to remove the plastic strip inside the piece #47.

The second step is to drill **MANUALLY** inside the piece #47 with a 6mm drill, to allow the MSM engine to run deeper inside this piece.



Pay attention to drill as straight as possible (perpendicularly) and not too much deeper.

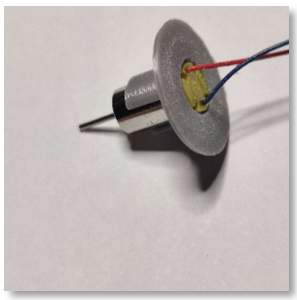
Always take a close look at the nose of the piece #47. When you see the green plastic changing colour, it means that you have drilled enough deeper.



Last step is to cut the half-rounded part located on both parts of the wings, initially used to fit the #47 and #46 pieces of the engine. We don't need it anymore.

This new 'hole' will receive the new MSM 3D printed piece that will encapsulate the small electric engine.

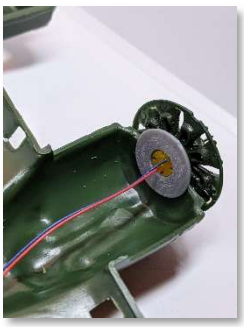
6.1.2 Engine integration



MSM B-17 kit provides a set of 3D printed parts to ease the integration of the electric devices. It will also help to have the engine correctly centered, so that the blades rotation will be smooth.

Insert the MSM electrical engine inside the provided 3D printed part as shown on illustration.

Don't try to insert this 3D part first in piece #47, and afterwards inserting the engine. If you need to remove it, you will break this 3D part.



Insert the engine and its 3D printed part inside the piece #47 as shown on illustrations.
This new set will take place on the half-rounded part you have just removed from previous step.
When dry fitting the 2 parts of the wings, they should match perfectly. If not, maybe you need to enlarge the 'hole'.

The result is perfect! The engine is enclosed, only the axis and its small rounded piece can be seen.

6.1.3 Propellers


The last 3D part provided must be integrated in the support for the 3 blades of the propeller to provide a perfect rotation.

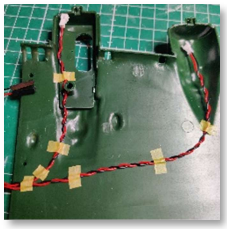
Gently insert the 3D printed shaft inside the plastic piece #48



Cut the excess shaft 3D part, so that only the interior of the shaft will remain.
Gently drill with a 0.8mm drill to ensure that no plastic waste will prevent the propellers to fit the engine axis.

6.2 Wing's cabling

6.2.1 Engine's cabling



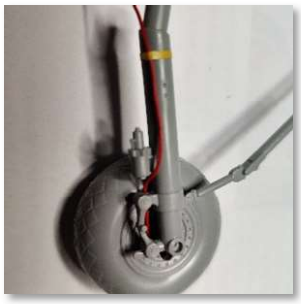
MSM electric engines have a specific cable (black and red) with one white connector on one side and 2 black connectors on the other.
The white connector will be inserted in the engine's cable.
Temporary tape the 2 cables (inner and outer engines)

6.2.2 Wireless cable connectors (optional)

<u>Pay attention: Soldering on the pistons are very thin and fragile</u>.
The electronic circuit provides 2 cables (1 red and 1 black) for the AC power. To hide a maximum the cables, you can use our wireless connectors.


From the interior part of the wheel, drill a 2mm hole to insert the piston. Drill a little bit with a round driller if needed.

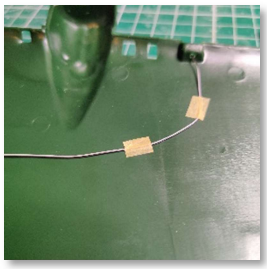
Where the wheels will be in contact with the base (perpendicularly), drill a small hole to allow the upper part of the piston to pass through.
To make your like easy, don't glue the 2 wheels parts before inserting the pistons.



From the pistons, you can fix the electric wire along the landing gear, as if it was a hydraulic pipe.

The red piston cable will connect the red connector of the electronic circuit; same for the black.

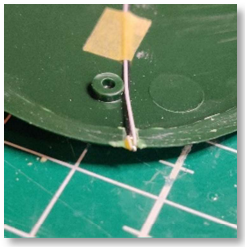
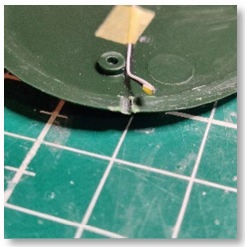
6.2.3 Landing lights




For the landing lights, drill a 1,2 – 1,4mm to pass the head of the LED Secure it with the UV glue.
Tape the LED wire.

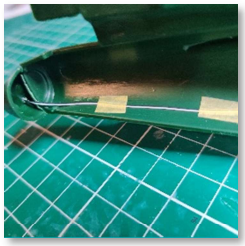
To benefit a maximum light reflection, paint the interior of the landing light with chrome colour.

6.2.4 Wing's navigation lights

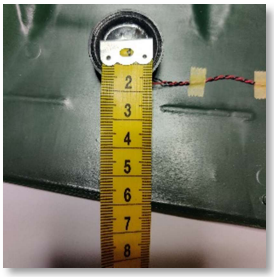
Navigation lights should first be painted clear red and clear green, using Tamiya (or other) red and green clear paints (see general instructions document).
After positioning (and testing), fix the navigation light and its cable with the UV glue.
Drill (or sand) a little bit the outer part of the wing, to allow the wire to pass smoothly. Dry fit the upper and lower part of the wings to be sure it perfectly fit.

6.2.5 Tail navigation light




Depending on the B-17 version you are building, the tail navigation light is mandatory. Drill 1,2 – 1,4 mm in the rear part of the fuselage. Place the head of the LED and secure it with UV glue.

6.2.6 Speakers

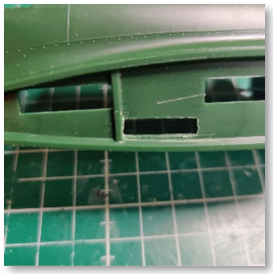




Last but not least, we still have 2 speakers to install inside the wings, one for the left, one for the right.

There is no specific place to best fit it in the wings. We recommend you to refer to the measures as on the illustrations (measures are in cm).

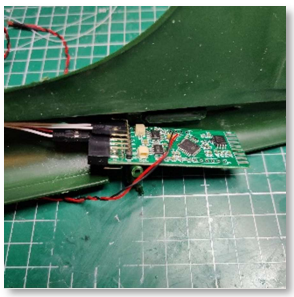
6.3 Fuselage cabling

6.3.1 Cables for the wings



To connect all cables coming from the wings to the electronic circuit, they have to pass from the wings to the fuselage.
Cut a 25mm x 8mm piece out of the wing's connection. All wings cables will pass through.

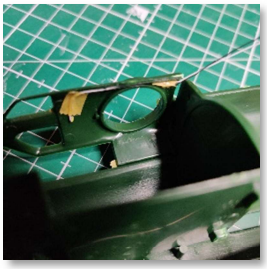
6.3.2 Electronic circuit installation



The best place to store the B-17 electronic circuit is in the rear part of the fuselage, nearly under the tail.

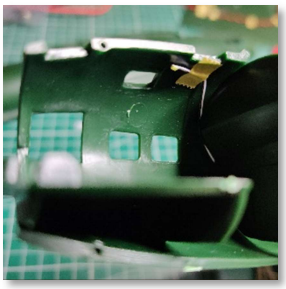
If you don't plan to detail the interior, you can place this circuit elsewhere, more in the centre of the aircraft.

6.3.3 Cockpit light



The cockpit illumination is done by placing a LED on the 'ceiling' of the cockpit. The cable will pass from the front to the back, hiding it as much as possible.

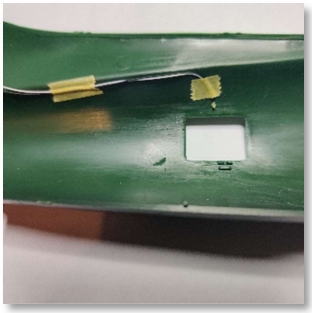
6.3.4 Bomber (front) compartment

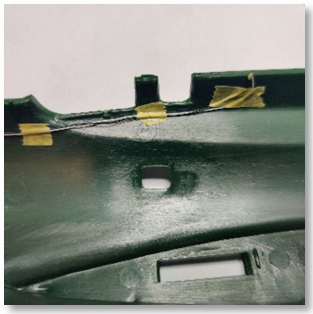


One LED is foreseen for the bomber compartment (nose of the airplane).
The small wires of the LED should fall along the fuselage, to be connected directly to the electronic circuit.

The wire should be glued (best with UV glue) so that it will remain quite non- visible through the widow panel of the fuselage.

6.3.5 Radio, waist and tail gunners (option)





2 LEDs are dedicated for the radio and for the waist gunners.

1 more LED for the tail gunner.

7 Conclusions

We hope you have enjoyed this Magic project.

Once again, do not hesitate to come back for any guidance and/or advise. Please, have a look at our Facebook page, web site and blog.

You are welcome anytime (GMT+1) by email, Facebook chat, phone or mobile

IF YOU LIKE IT :
Take care as the only real (big) issue with our Electronics is that you'll never see scale modeling without it anymore …
Please, keep us posted regarding your progresses

IF YOU DON'T LIKE IT:
Pack everything back properly and send it back to us within the 1 month following the shipment.

We'll refund you the purchase price.

Many thanks for your confidence
Kind modelling regards,

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