

## Instruction manual

### FLITEWORK SHINY (FLWA4180)



Version 1.00



TECHNICAL DATA:	
Wingspan	1200 mm
Length	1080 mm
Take off weight	915 g
Wing load	36,7 g/dm <sup>2</sup>
RC channels	Aileron, Elevator, Throttle
Battery	3s 2200 mAh

**Please read the instruction manual carefully and take notice of the safety guidelines.**  
If the model is given to a third party, always include this instruction manual to the model.

The Flitework GmbH assumes no liability in case of misprints. Technical amendments reserved.

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Designed in Austria - Made in China

## TABLE OF CONTENTS

Technical Data.....	1	Installing the elevator.....	5, 6, 7
Introduction.....	2	Installing the receiver.....	7
General informations.....	2	Mounting the main wings.....	7
Environment protection infos.....	2	Center of gravity.....	8
Safety precautions.....	3	Setting the control throws.....	8
Recommended accessories.....	3	Lighting.....	8
Additional items required.....	3	Spare parts.....	9
Kit check.....	3	Check the control directions.....	9
Content of delivery.....	4	Check list.....	9
		Service lines.....	9
		Personal notes.....	10, 11

### Introduction

The Flitework Shiny is a unique model which has completely indirect illumination with about 300 LEDs. With this model, it is easily possible to fly in complete darkness. Its classic design as balsa, plywood construction keeps weight and causes good natured flight properties.

Therefore, Shiny becomes your steady companion, at day and at night.

#### Attention please!

Remote controlled model planes are not a toy! For assembling, flying and servicing such models, you need a high grade of technical comprehension and liability. Careless assembling and operation may cause personal and material damage.

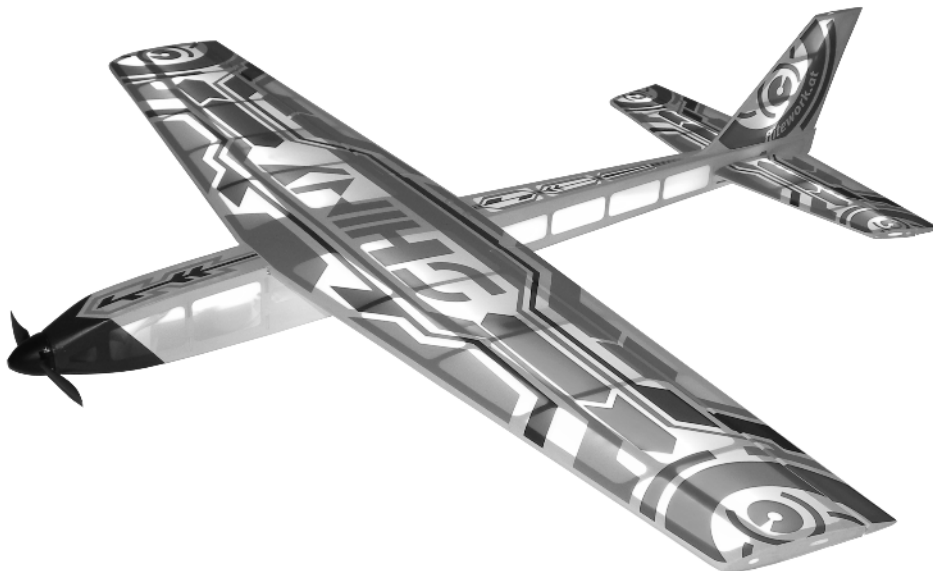
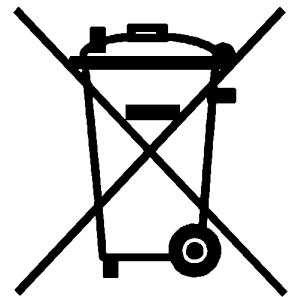
Because the Flitework GmbH has no influence on assembly, RC installation, operation and servicing of the flight device, any liability is rejected under explicit advice to these dangers.

### GENERAL INFORMATIONS

- Read this manual and its safety precautions carefully! Keep this manual and if you give the model to a third party, put this manual to the model.
- Take care, that you are familiar with your transmitter and all electronic components, used in your plane.
- Take care of all safety instructions of tools, which are you using to assemble this model.
- Only take glues, which are recommended for the specific materials and which are approved for model business.
- Before assembling please check all parts of this kit. If some parts are missing or have a mistake, please call.

### ENVIRONMENT PROTECTION INFOS

- The symbols on the package show you, that the model and its accessories should not be put to waste. All electric and electronic parts should be deposited to places of waste management.
- Batteries and accumulators must be removed from the devices and should be deposited to the correct waste management organisation. Take information from your home town government.



## SAFETY PRECAUTIONS

1. Your Shiny should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Shiny, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.
2. You must assemble the model according to the instructions. Do not alter or modify the model, as doing so may result in a unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.
3. You must take time to build straight, true and strong.
4. You must use an R/C radio system that is in first-class condition.
5. You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air.
6. You must check the operation of the model before every flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check clevises or other connectors often and replace them if they show any signs of wear or fatigue.
7. If you are not already an experienced R/C pilot, you should fly the model only with the help of a competent, experienced R/C pilot.
8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, or if an engine larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

### Flitework quality

We, as the kit manufacturer, provide you with a top quality kit and instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model and no representations are expressed or implied as to the performance or safety of your completed model.

### RECOMMENDED ACCESSORIES

- Hobby knife
- Flat screw driver
- Philips screw driver
- 5 min. Epoxy glue
- CA glue thin
- 1,5mm driller
- Thread lock - blue
- Mini grinder

### ADDITIONAL ITEMS REQUIRED

- 1 x Lipo battery 3s 2200 - 2500 mAh 25C  
Order No. GPMP0861 or FPWP 2253
- 1 x Receiver min. 3 channel  
Best. Nr.: TACL0624

### KIT CHECK

Before starting to build, use the Kit Contents list to take an inventory of this kit to make sure it is complete and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact Hobbico Product Support.

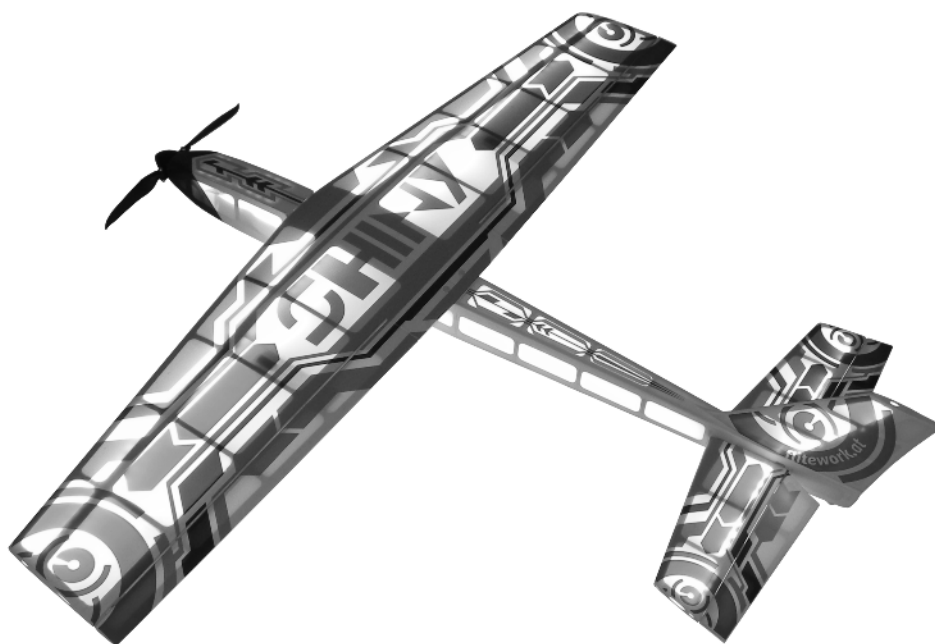
Service center Revell GmbH  
Henschelstr. 20-30, 32257 Bünde,  
Germany  
Tel: +49 52239 65144  
Email: [service@hobbico.de](mailto:service@hobbico.de)

Hobbico Product Support  
3002 N. Apollo Drive Suite 1  
Champaign IL 61822 USA  
Telephone: (217) 398-8970 ext. 6  
Fax: (217) 398-7721  
E-mail: [airsupport@hobbico.com](mailto:airsupport@hobbico.com)

## CONTENT OF DELIVERY

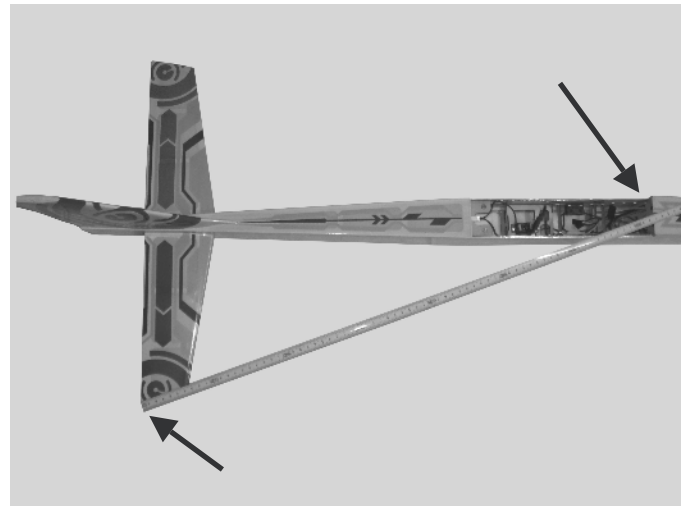
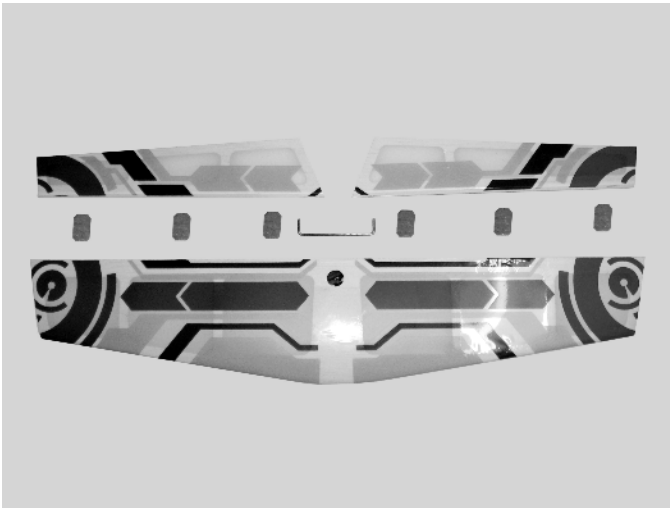


- 1x Fuselage, including pre mounted elevator servo, brushless motor, ESC and LED illumination
- 1x Main wing with aileron servos and indirect lighting
- 1x Elevator with elevator flaps, hinges and connection clamp
- 1x Elevator linkage
- 1x Plastic screws and velcro tape for battery

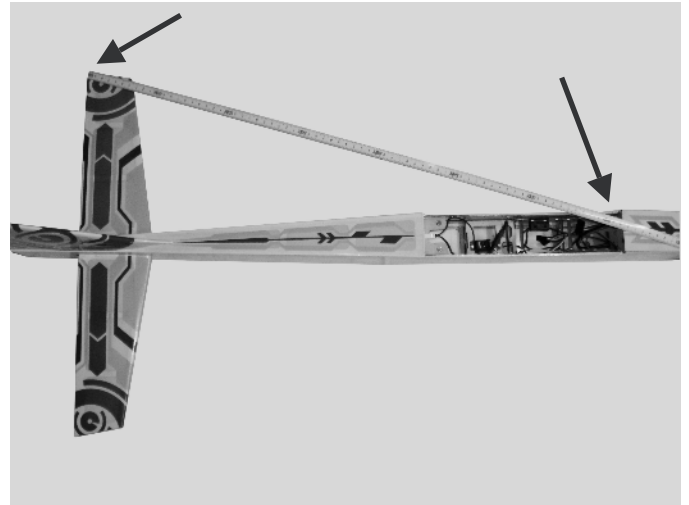


## INSTALLING THE ELEVATOR

Check with a measuring tape the distance from both sides, like you can see in the picture.



Prepare the elevator, the elevator flaps, the connection bracket and the 6 piece fleece hinges.



Mark the position of the elevator, using a fine non permanent marker on upper and lower side of the elevator.

Put the lighting connector in a position, that you can insert the elevator easy into the fuselages cut out. On the left side, there is some space to place the cable temporary.



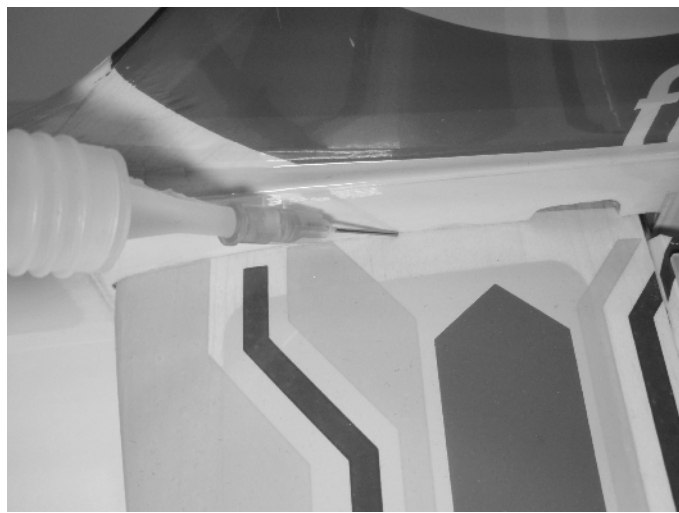
Now take out the elevator from the fuselage and remove the covering film between the marks, you have made before.

Insert the elevator into the fuselage and take care, that there is the same distance on both sides. Also the elevator should have a right angle against the center line of the fuselage.

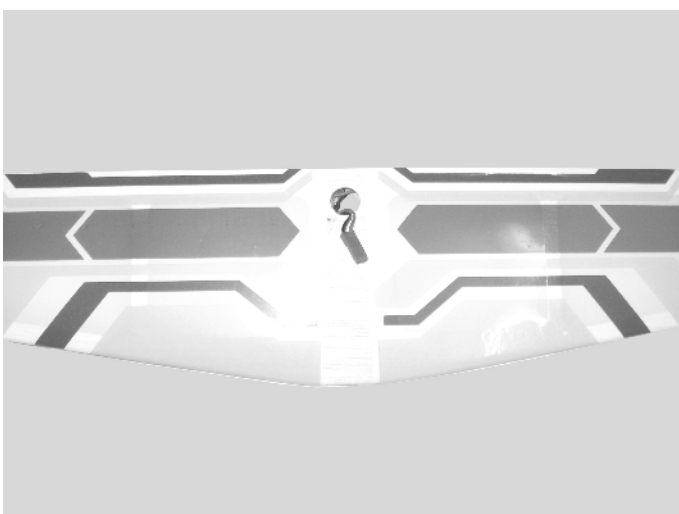
**Don't hurt the balsa wood planking with the hobby knife!**



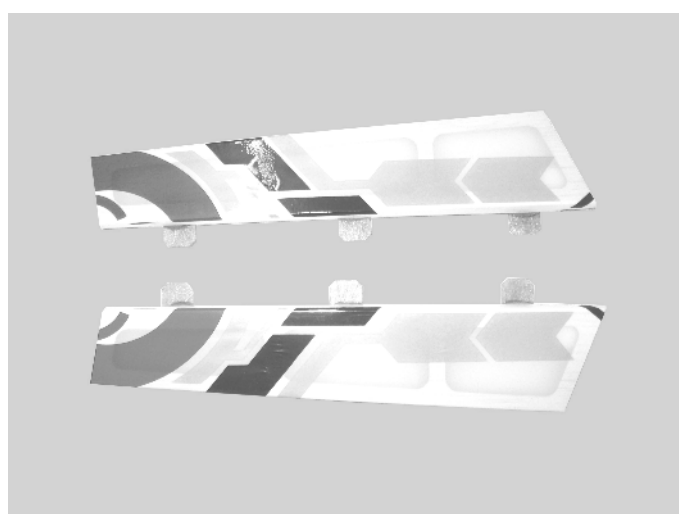
Put out the lightning connector through the hole in elevators upper side.



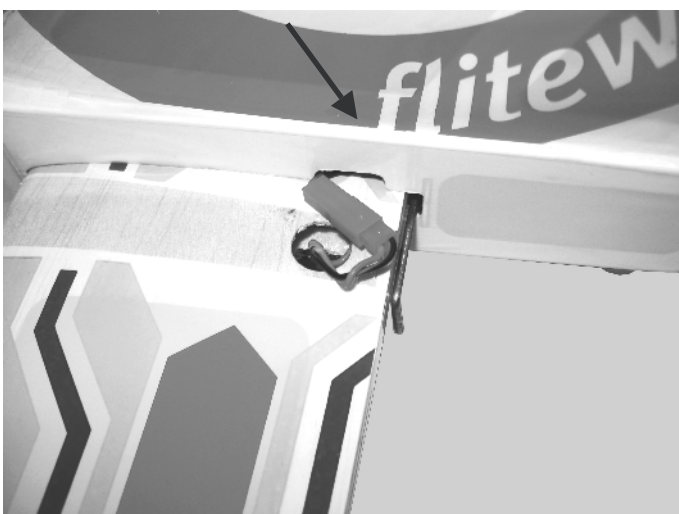
CA drops on the covering film cause ugly smudges.



Connect the BEC connector of the elevator with the connector, coming out of the tail of the fuselage. Through the little cut out on the left side, you can put the plug connection back into the fuselage.



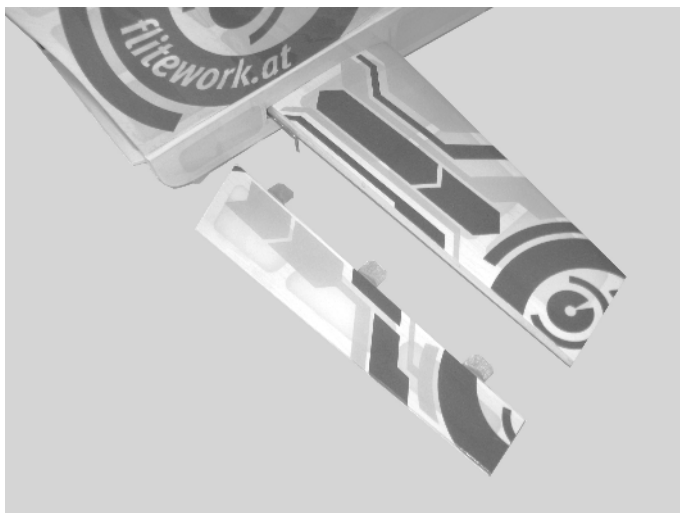
First glue the hinges to the elevator flaps, using 5 min. Epoxy glue. Take care, to put enough glue into the slots of the flaps. Also apply the glue on both sides to the middle of the hinges. Insert the hinges into the slots and move the hinges back and forth some times to dispense the glue. Remove the oozing glue with a cotton stick. Now let the glue harden.



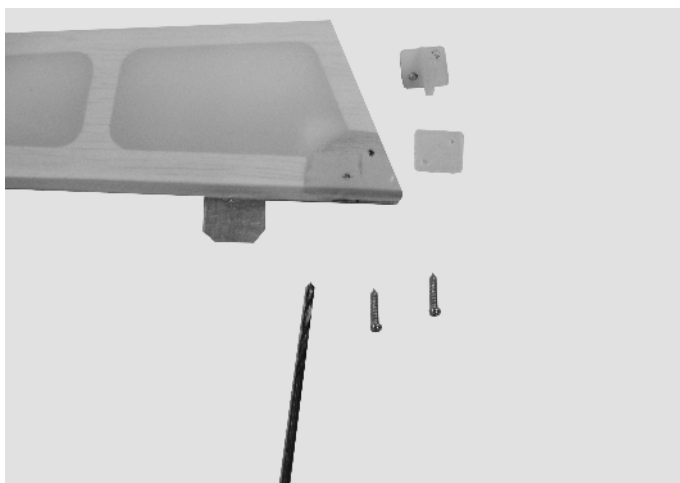
Adjust the elevator again, like before and then glue the elevator to the fuselage, using thin liquid CA glue. With an injection needle you can place the CA glue perfectly. Avoid CA drops on the covering film!



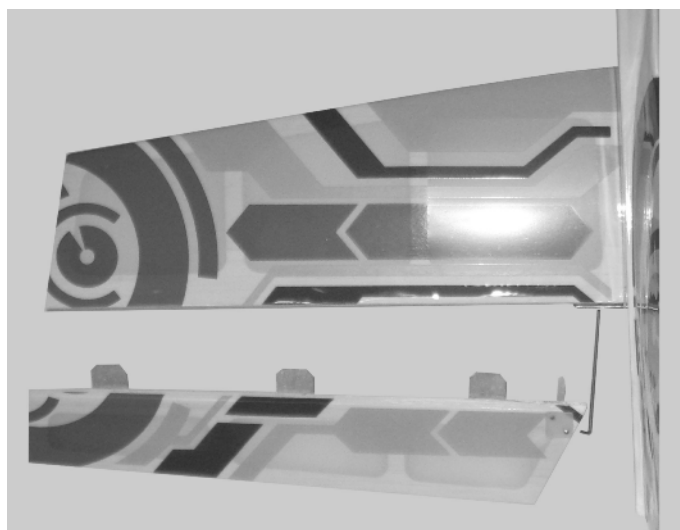
The connection bracket should be sanded at the glueing areas. Degrease it with brake cleaner. Insert the bracket into the fuselage.



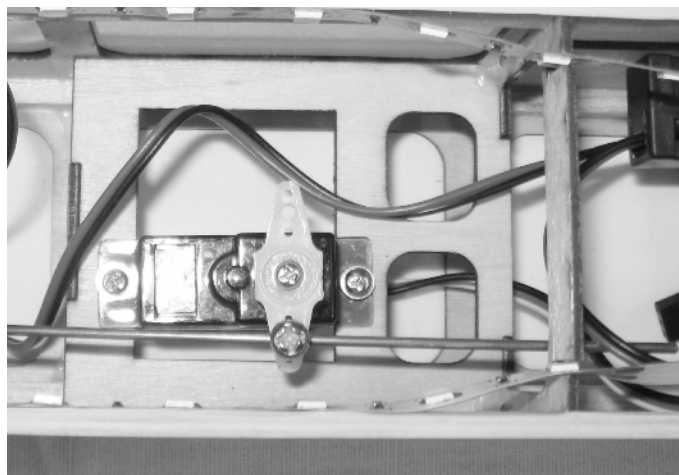
Put enough 5 min. epoxy into the slots and into the drilling for the bracket. Now install the right flap and fix it with tape until the epoxy is hardened. Remove the glue overflow with cotton sticks.



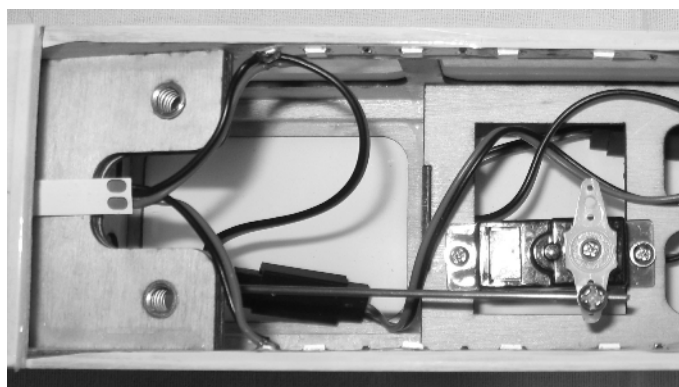
Bring the elevator lever on the left flap in position and mark for drilling. Then drill 2 1,5mm holes through the elevator flap. Mount the lever, using the 2 tapping screws and the opposite plate.



Now you can glue the left elevator flap towards the elevator. Take care, that both flaps have the same direction. Distorted elevator flaps cause rotation of the model like ailerons.

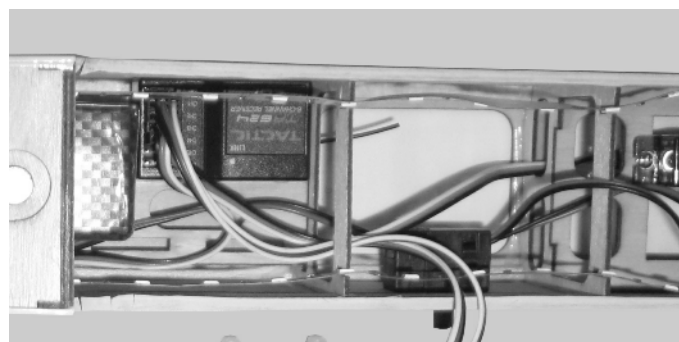


Insert the elevator linkage and connect it to the elevator lever. Shorten the linkage and fix it on the servo arm. Use thread lock for the clamp screw.



## INSTALLING THE RECEIVER

The next picture shows you a possibility to mount the receiver.



In this position the antenna is free and not surrounded with other cables. Also you can easily connect the aileron cables.

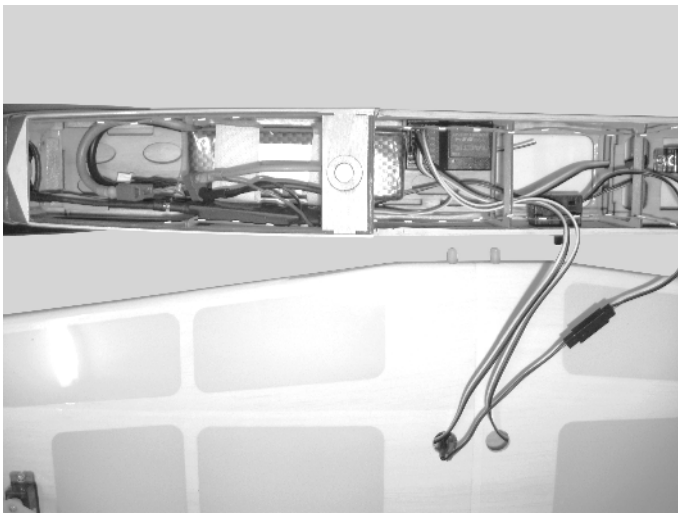
For mounting the receiver, use a soft adhesive pad.

**Take care, that there is enough space from the antenna to the servo- and lightning cables!!**

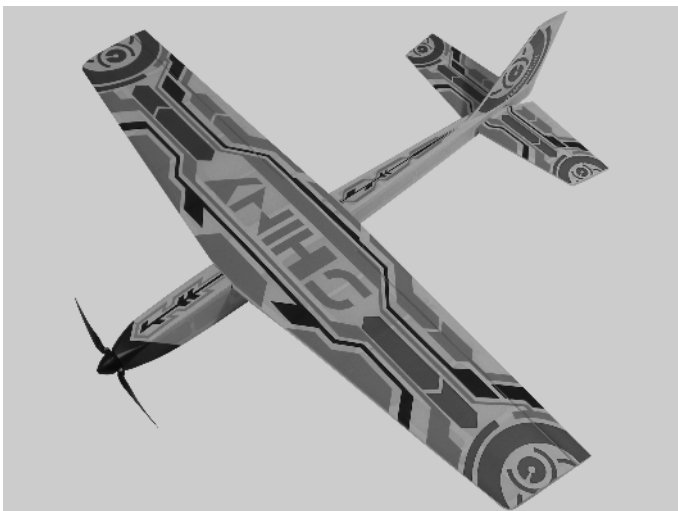
## MOUNTING THE MAIN WINGS

Shorten the plastic screws to a length of 25mm.

Then connect the aileron servo cables and the lightning cable.



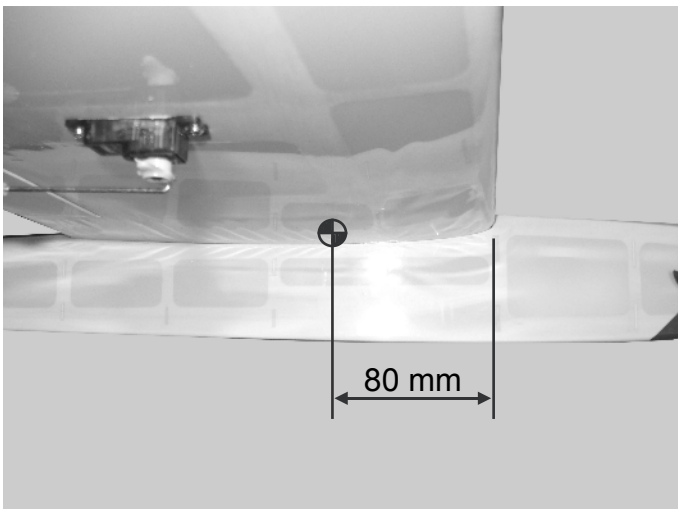
Insert the 2 connection bolts of the wing into the fuselage during clapping the wing in its position. Take care, that no cables are jammed between fuselage and wing. Screw in the two plastic screws and tighten it, but not too strong.



Now Shiny is ready for the pre flight adjustments.

### CENTER OF GRAVITY

The CG is located 80mm behind the leading edge of the wing, near the fuselage.



The CG should be reached automatically, if you install a 3s 2200mAh battery with a weight of 170g to 180g

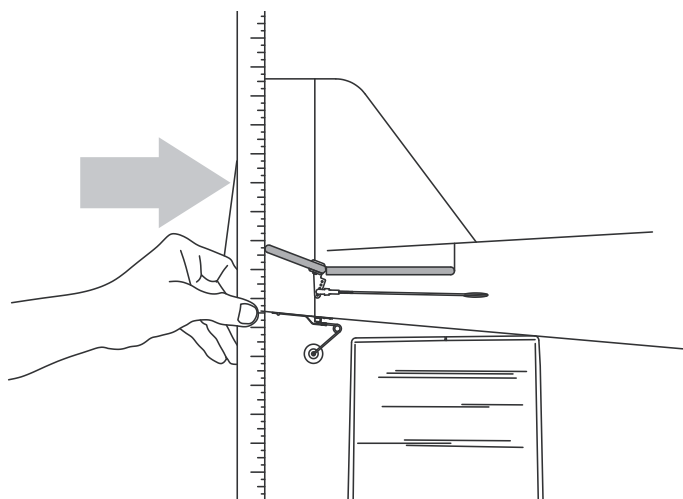
in the shown position. For a secure battery mounting we recommend to use a small sheet of anti-slip mat below the battery, glued to the bottom frame.

Also a Flitework battery belt 200mm would be very useful.



### SETTING THE CONTROL THROWS

Elevator	Ailerons
+/- 15mm	+/- 20mm



These control throws are only a recommendation. You should amend to your personal flight feeling and flight style.

If you like to differentiate the ailerons, try 20mm up and 10mm down.

### LIGHTING

The lighting needs 12V DC and is supplied by the 3s 2200mAh battery.

**Never use a 4s battery, because it will destroy the lighting system and could cause fire in the plane!!**

The illumination can be switched on with the switch on the left side of the fuselage below the wing. The flight duration will be decreased for one minute to 5 minutes, if you have switched on the lighting, depend on your flight style.

**Attention! Flying in the dark requires experience. Please reach your personal limit step by step.**



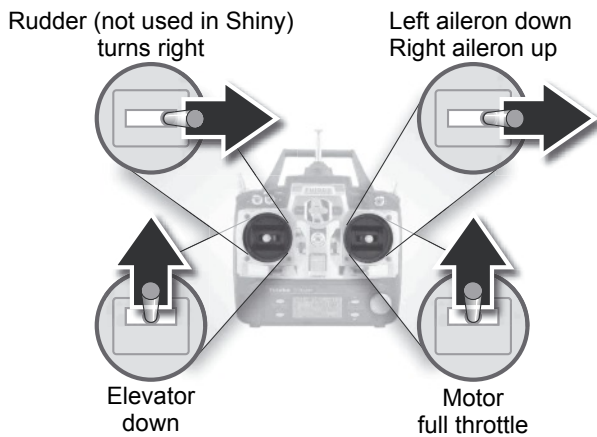
## SPARE PARTS

FLWA4181	Shiny fuselage
FLWA4182	Shiny elevator complete
FLWA4183	Shiny main wing with lighting, no servos
FLWA4184	Shiny folding prop
FLWA4185	Shiny brushless motor
FLWA4186	Shiny ESC 40A
FLWA4187	Shiny battery cover
FLWA4188	Shiny servo
FLWA4189	Shiny screws and linkage set

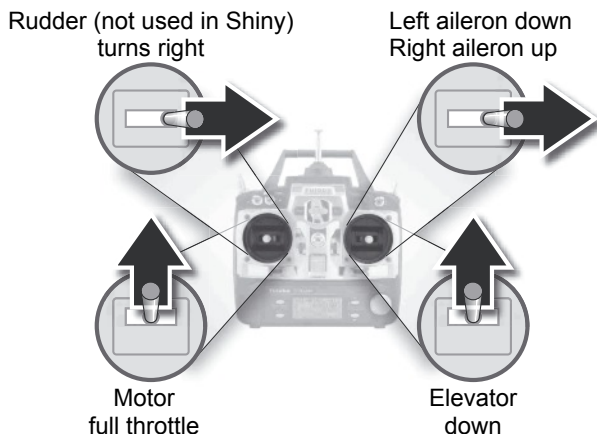
## CHECK THE CONTROL DIRECTIONS

1. Turn on the transmitter and receiver and center the trims. If necessary, remove the servo arms from the servos and reposition them so they are centered. Reinstall the screws that hold on the servo arms.
2. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.

### 4-CHANNEL SETUP (MODE 1)



### 4-CHANNEL SETUP (MODE 2)



3. Make certain that the control surfaces and the electric motor respond in the correct direction as shown in the diagram. If any of the controls respond in the wrong direction, use the servo reversing in the transmitter to reverse the servos connected to those controls. Be certain the control surfaces have remained centered. Adjust if necessary.

#### Attention!!

**Never try the function and working direction of electric motors with mounted propeller!**

## CHECK LIST

During the last few moments of preparation your mind may be elsewhere anticipating the excitement of the first flight. Because of this, you may be more likely to overlook certain checks and procedures that should be performed before the model is flown. To help avoid this, a checklist is provided to make sure these important areas are not overlooked. Many are covered in the instruction manual, so where appropriate, refer to the manual for complete instructions. Be sure to check the items off as they are completed (that's why it's called a check list!).

- 1. Check the C.G. according to the measurements provided in the manual.
- 2. Be certain the battery and receiver are securely mounted in the fuse. Simply stuffing them into place with foam rubber is not sufficient.
- 3. Look for a correct position of your receiver antenna or antennas. The antenna should not be close to other wires inside the fuselage.
- 4. Balance your model also laterally.
- 5. Use threadlocking compound to secure critical fasteners such as the set screws that hold the wheel axles to the struts, screws that hold the carburetor arm (if applicable), screw-lock pushrod connectors, etc.
- 7. Make sure all hinges are securely glued in place.
- 8. Reinforce holes for wood screws with thin CA where appropriate (servo mounting screws, cowl mounting screws, etc.).
- 9. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.

## PERSONAL NOTES

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- 10. Make sure there are silicone retainers on all the clevises and that all servo arms are secured to the servos with the screws included with your radio.
- 11. Secure connections between servo wires and Y connectors or servo extensions and the connection between your battery pack and the on/off switch with vinyl tape, heat shrink tubing or special clips suitable for that purpose.
- 12. Make sure any servo extension cords you may have used do not interfere with other systems (servo arms, pushrods, etc.).
- 13. Balance your propeller (and spare propellers).
- 14. Tighten the propeller nut and spinner.
- 15. Place your name, address, AMA number and telephone number on or inside your model.
- 16. Inspect all cables from flight to flight!
- 17. If you wish to photograph your model, do so before your first flight.
- 18. Range check your radio when you get to the flying field.



### **HOBIBICO SERVICE LINE EUROPE**

**Service department Revell GmbH**  
**Henschelstr. 20-30, 32257 Bünde, Germany**  
**Tel: +49 52239 65144**  
**Email: [service@hobbico.de](mailto:service@hobbico.de)**

### **HOBIBICO SERVICE LINE USA**

**Hobbico Product Support**  
**3002 N. Apollo Drive Suite 1**  
**Champaign IL 61822 USA**  
**Telephone: (217) 398-8970 ext. 6**  
**Fax: (217) 398-7721**  
**E-mail: [airsupport@hobbico.com](mailto:airsupport@hobbico.com)**

### **FLITEWORK SERVICE LINE**

**Service department Flitework GmbH**  
**Geymannstr. 27, 4713 Gallspach, Austria**  
**Tel: +43 664 3231 059**  
**Email: [technik@flitework.at](mailto:technik@flitework.at)**



***Remember to think.***

***Have a ball!***

***But always stay in control and fly in  
a safe manner.***

***GOOD LUCK AND  
GREAT FLYING!***



Flitework GmbH

Geymannstraße 27  
4713 Gallspach  
Austria / Europe

Tel: +43 664 3231059

Skype: flitework

Mail.: office@flitework.at

***www.flitework.at***