

# Pilot

## Bergfalke II-55 Glider

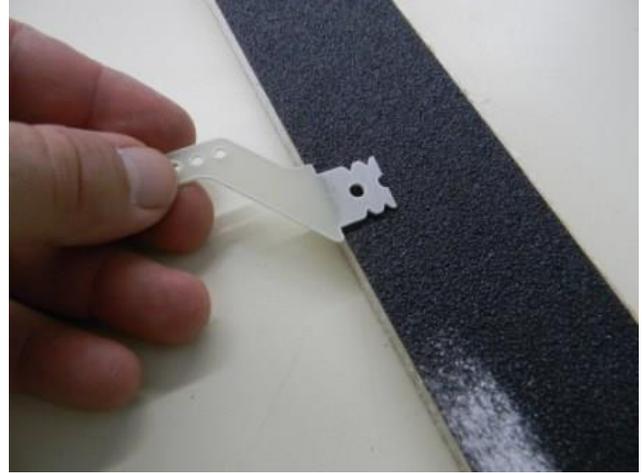
5,5meter/217" wing span

-Instruction manual-





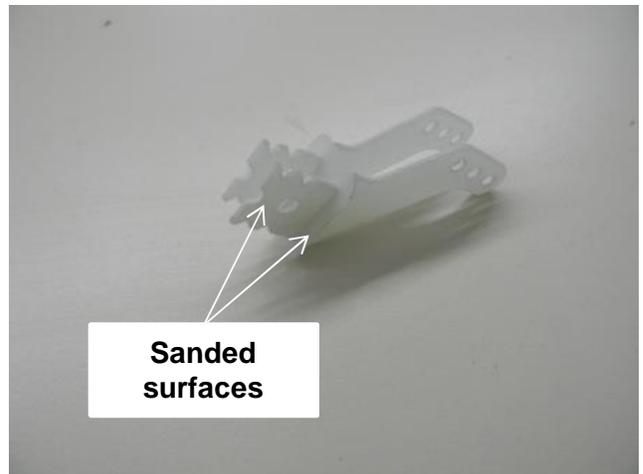
**1-) Locate the stab/elevator assembly. From the bottom Left side, cut into the covering, exposing both pre-cut slots.**



**2-) Using a sanding bar, sand the top section of two supplied control horns on both sides and clean with alcohol.**



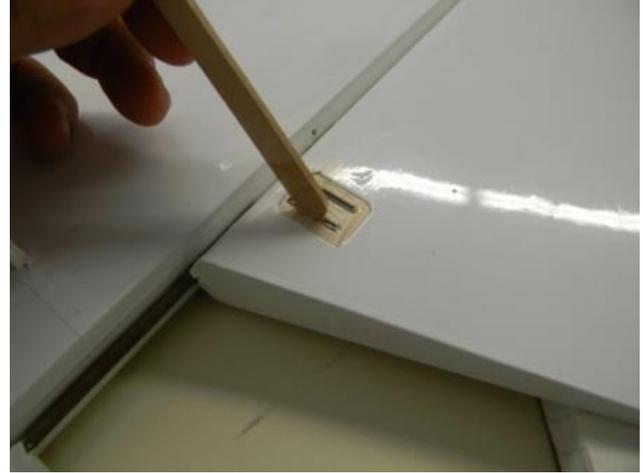
**3-) Sand one side only of the horn retainer as shown. The sanded side will face on the elevator surface.**



**4-) Trial fit both horns with the horn retainer and adjust as required for perfect matting.**



**5-) Insert the horn assembly into the Left elevator and cut the covering around the horn retainer.**



**6-) Remove the covering. Mix some 30-minute epoxy and apply some into the elevator slots.**



**7-) Also apply epoxy on the horn assembly, where it will fit into the elevator.**



**8-) Align both horns so that the holes in both of them are parallel to each other. Let the epoxy cure. Repeat the same process for the Right elevator.**



**9-) Locate the rudder and repeat the same process as the elevator to open the cavity for the rudder horn.**



**10-) Sand the two rudder horns (center-section only) and clean with alcohol.**



**11-) Also sand the two rudder horn retainers (Left/Right) and clean with alcohol.**



**12-) Slide one retainer as shown to keep the assembly in line. The sanded surface must face inwards of both horns.**



**13-) Like the elevator, apply epoxy to the horn assembly and insert into position.**



**14-) Position the second horn retainer with epoxy and adjust both horns so that they properly match.**



**15-) Repeat the horn assembly procedure for both ailerons.**



**16-) Locate the wheel & accessories.**



**17-) Insert the screw from one side, slide on one spacer and the wheel.**



**18-) on the other side, slide the other spacer, push in the screw and secure the screw using the Nylon lock-nut.**



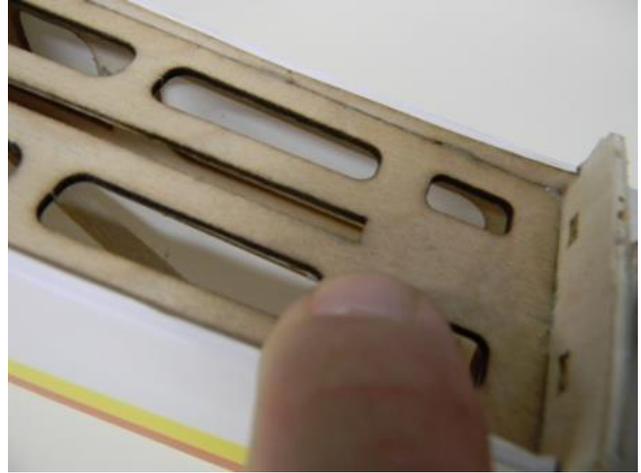
**19-) On the top and bottom (front section) of the stab, locate the two small holes. Remove the covering to expose the holes.**



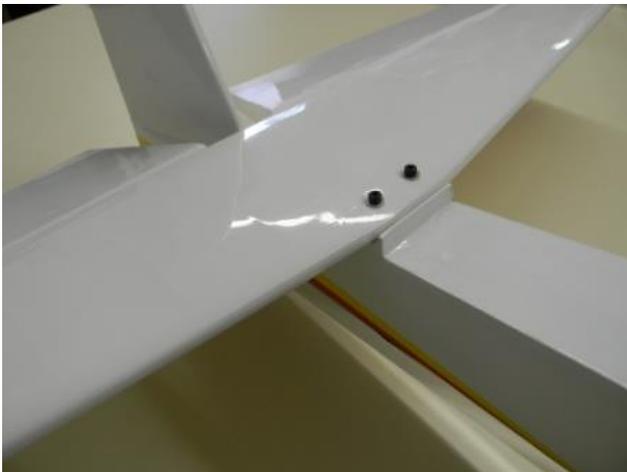
**20-) Do the same on the front of the stab fuselage saddle section to expose the pre-installed blind-nuts.**



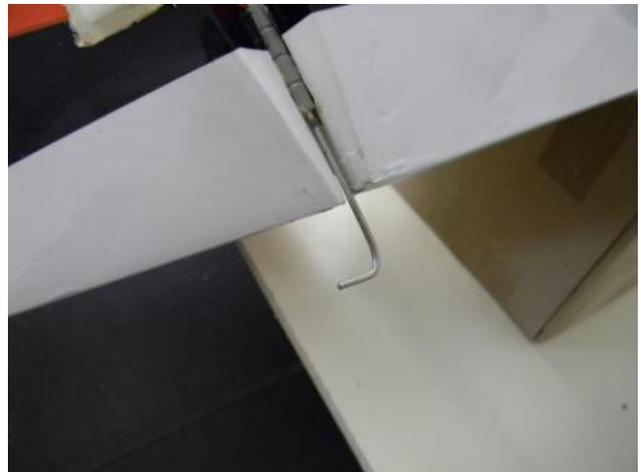
**21-) Underneath the stab, at the rear section, notice the small notch.**



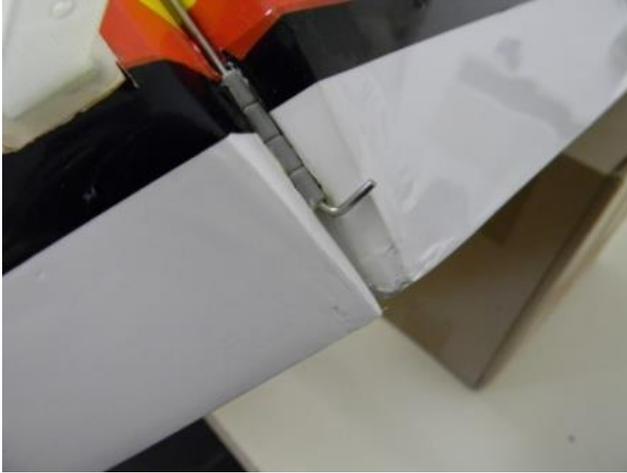
**22-) This notch will inter-lock with the fuselage stab saddle section.**



**23-) Position the stab by sliding it into the inter-lock inside the fuselage and secure it with two 40mm screws and washers. Once positioned, glue the stab to the fuselage, after final assembly only.**



**24-) Position the rudder onto the fin by aligning the pre-installed hinges and slide the steel wire through all of the hinges as shown.**



**25-) Push the steel wire until it reaches the bottom hinge as shown.**



**26-) From the top, slide the plastic round disc and secure it with the small wheel collar.**



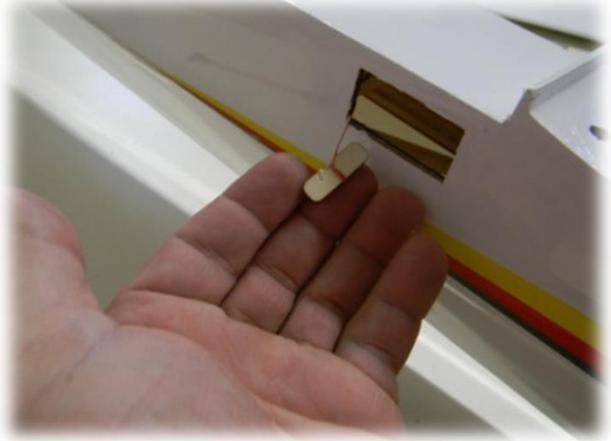
**27-) Then, cut the steel wire flush with the wheel collar.**



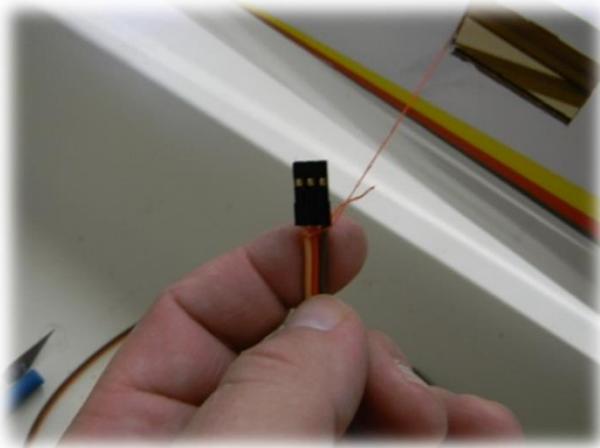
**28-) On the rear Left side of the fuselage, in front of the stab saddle, open the elevator servo cavity by cutting the covering film.**



**29-) The elevator servo requires a 48" (121cm) servo lead extension. Secure both the servo and the extension with one of the supplied Grey safety clips.**



**30-) Inside the fuselage, there is a small wood piece with a Red string attached to it. Snap off the wood piece.**



**31-) Cut off the string and attach it to the servo extension lead. Use tape to "wrap" the string around the connector. Inside the cockpit section, pull on the other end of the Red string and pull in the extension lead.**



**32-) Insert the elevator servo. Drill small pilot holes and secure with servo screws. NOTE: The front of the servo must go towards the front of the fuselage.**



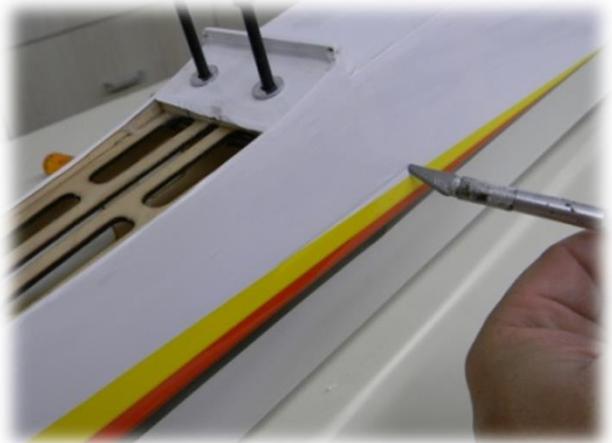
**33-) Secure the stab to the fuselage. Plug your elevator servo in your receiver and center it. Attach the supplied elevator pushrod to the servo arm. That pushrod has two ball-links factory installed onto it.**



**34-) Attach the other end of the pushrods to the elevator horn. Use the supplied key to adjust the pushrod mechanically.**



**35-) Completed elevator assembly. Now, remove the stab for the next step. Repeat the process for the Right elevator servo.**



**36-) Carefully seek the small cavity for the rudder pull-pull cables on both sides of the fuselage. Look at the picture carefully for reference. Use a knife to cut and remove the covering.**



**37-) The opened cavity will look like this on the Right side.**



**38-) Left side. Go around any covering openings with a "covering iron" to prevent the covering from peeling off.**



**39-) Use one of your servo arms and the supplied composite rudder arm.**



**40-) Secure your arm underneath the composite arm, making sure that both center holes are in line.**



**41-) Once centered, secure both of them using thick C.A. Let cure.**



**42-) Drill two holes (more/depending of your servo arm choice) and insert some of the supplied small screws.**



**43-) On the other side, install small nuts on the small screws and secure them with thick C.A.**



**44-) Install your rudder servo, plug it into your receiver and center it. Secure the rudder servo arm assembly. Locate the pull-pull cables. Two of the ball links are not crimped on the cables. Remove them and screw them to the rudder arm as shown.**



**45-) A simple trick to "fish-in" the pull-pull cables is to use a small diameter pushrod and "tape" one end of one of the cables. Then, pull the cables in.**



**46-) Secure the pre-assembled cable ends to the rudder horn.**



**47-) Attach the other ends to the ball link connectors as shown and "crimp" the Brass retainers. NOTE: Crosse the cables in an "X" fashion inside the fuselage. This will provide a thither pull-pull cable set-up.**



**48-) Cut the remaining cable and slide over the heat-shrinkable tube over the Brass crimps. Using a heat-gun, shrink the tube as shown.**



**49-) In the cockpit, front section, there is a cavity for the "tow release system". Install a servo in that cavity.**



**50-) Look for a pushrod with one ball link on one end only. Attach it to this servo. This pushrod will exit from the nose and will secure the towing cable to your glider (see next two pictures)**



**A-) Closed position.**



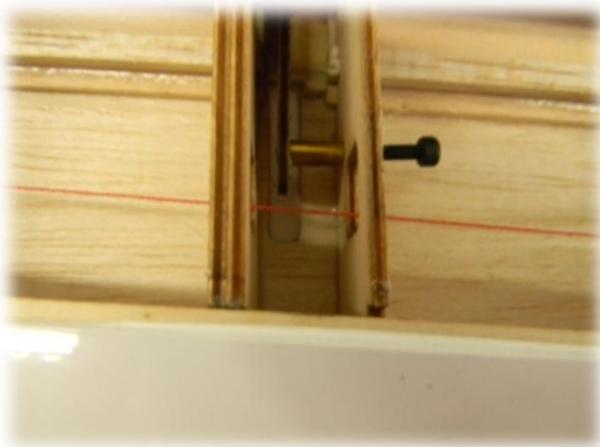
**B-) Open position.**



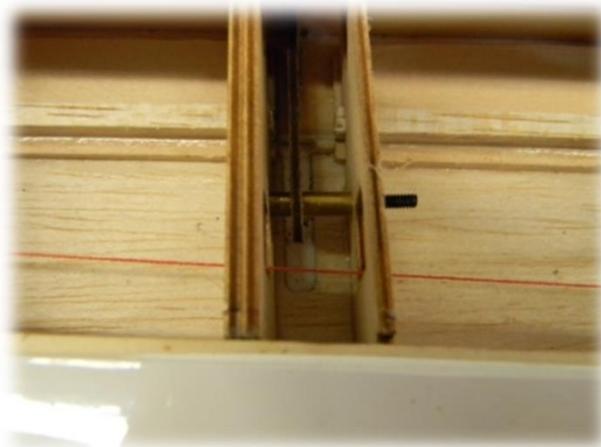
**51-) Wing spoilers. Temporarily secure the spoilers in place on the wing panels using masking tape at both ends of each spoilers.**



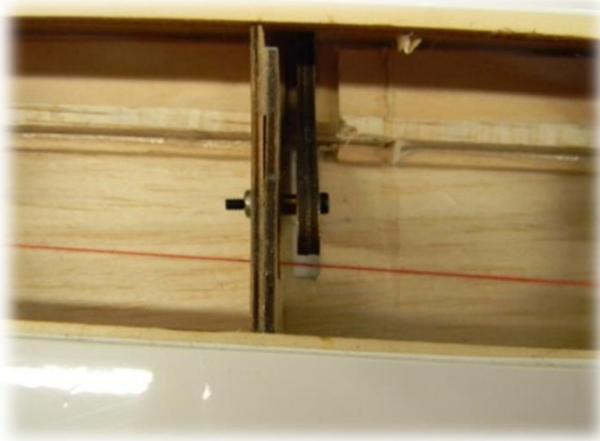
**52-) Also place a strip of masking tape in the middle of the spoilers (important)**



**53-) Start with either tip spoiler hinges. Insert one Brass spacer using one of the M3 screws.**



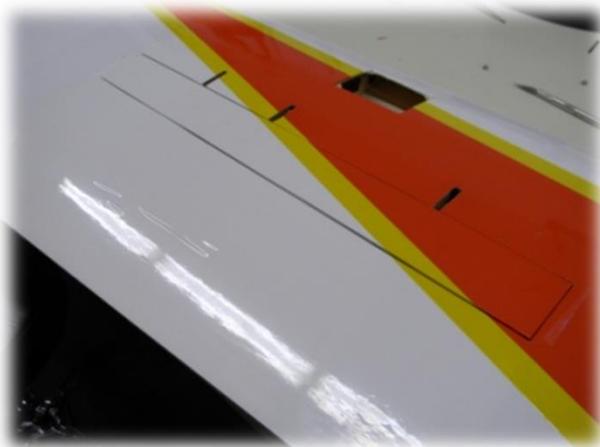
**54-) Then, add another smaller Brass spacer as shown. You will need to "shave" the spacers for proper fitting between the spoiler hinges. Then, secure the screw with an M3 nut (Do not over thigh the nut)**



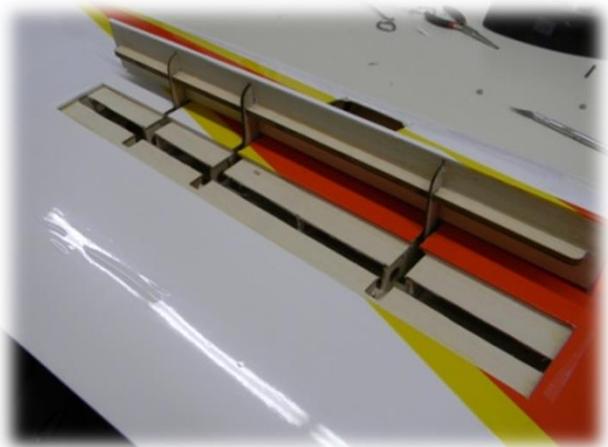
**55-) Same process for the center spoiler hinge.**



**56-) Remove the masking tape. Using your finger, locate the three slots in the wing, in front of the spoilers. Once located, cut the covering to allow the spoilers to move upwards.**



**A-) Spoilers down position.**



**B-) Spoilers up position.**



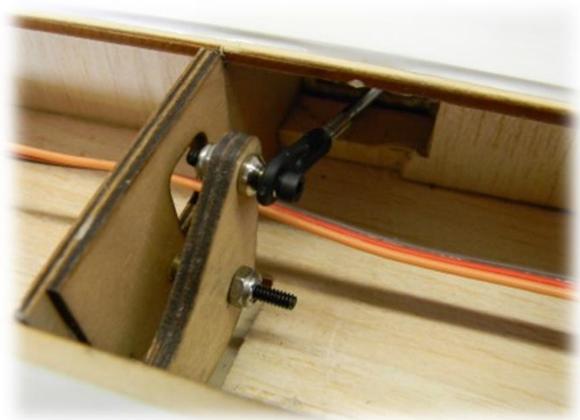
**57-) Prepare the spoiler servo by attaching an appropriate servo lead extension and securing with a Grey safety clip. As for the elevator, you will find a Red string attached to the root rib and near the servo cavity to "fish-in" the servo lead extensions.**



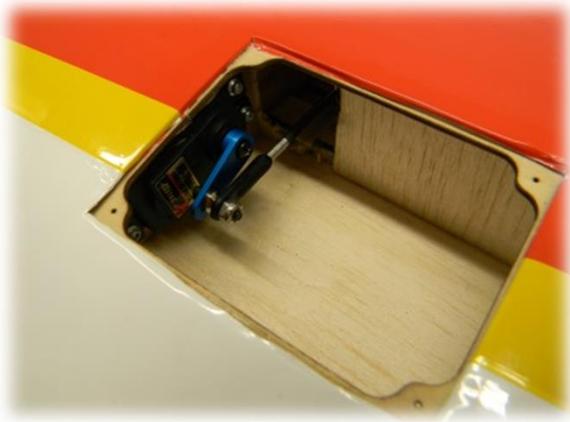
**58-) Position the servo exactly as shown and secure with servo screws. A long screwdriver will work fine to secure the screws in place.**



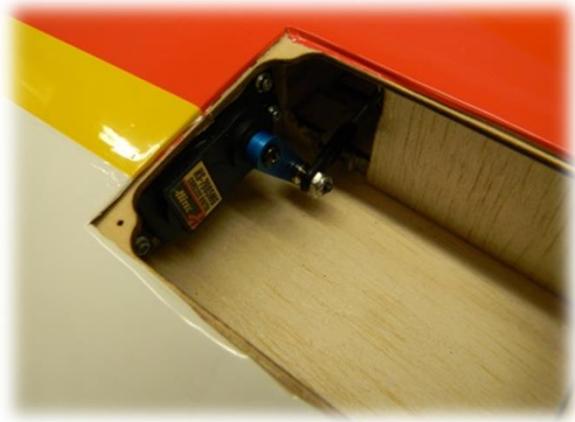
**59-) Prepare a 3 1/4" (82mm) long pushrod and put one ball link at each ends.**



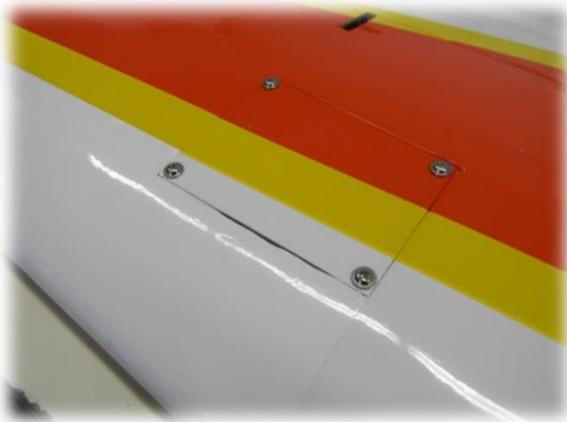
**60-) Slide the pushrod from the bottom of the wing into the front servo cavity. Attach one end of the pushrod to the center spoiler rib as shown.**



**A-) Spoilers DOWN.**



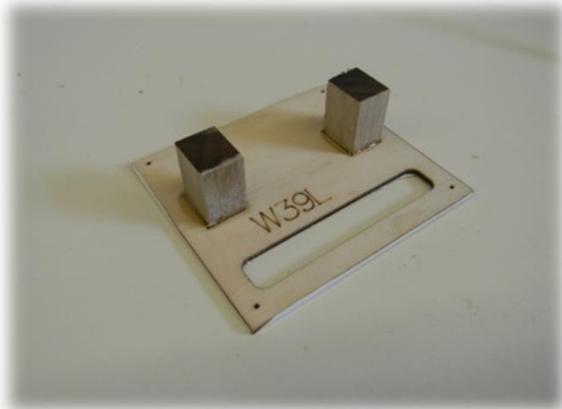
**B-) Spoilers UP.**



**61-) Secure the top spoiler servo cover at each corners with the supplied wood screws.**



**62-) Secure the bottom spoiler cover at each corners and center with the supplied wood screws.**



**63-) Aileron servo. Bond two supplied wood blocks with 30-minute epoxy as shown. Just follow the laser-burned lines on both W39L covers for reference.**



**64-) Secure one servo on the cover with four servo screws.**



**65-) The picture is self-explanatory. Secure the cover with the supplied wood screws.**



**66-) Make sure that there is no play or friction at all pivot points in the linkages.**

## **-Surface deflections-**

### **Elevators:**

- Low rate: 15 degrees (up/down)
- Hi rate: 21 degrees (up/down)

### **Rudder:**

- Low rate: 15 degrees (Right/Left)
- Hi rate: 20 degrees (Right/Left)

### **Ailerons:**

- Low rate: 13 degrees up/4 degrees down
- Hi rate: 18 degrees up/7degrees down

### **Spoilers:**

- Full speed: Flush with the wing skin
- Brake speed: 40 degrees open/up position

## **-Centre of gravity-**

-The C.G is located at  $\frac{3}{4}$ "/19mm behind the leading edge of both wing panels, near the fuselage section.

-It is normal to add up to 4 pounds/1.8 kilo in the nose section to balance this glider.