90 Class
2-cycle engine

120 Class
4-cycle engine

Cap 10

AEROBATIC MODEL

INSTRUCTION MANUAL / Montageanleitung

SPECIFICATIONS

Wingspan	1970mm
Length	1610mm
Electric Motor	1950 Watt (PULSAR 140)
Gas Engine	20 - 26cc
Radio	5 Channel / 6 Servos

Technische Daten

|	
Spannweite	1970mm
Länge	1610mm
Elektroantrieb	1950 Watt (PULSAR 140)
Verbrennerantrieb	20 -26cc
Fernsteuerung	5 Kanal / 6 Servos

WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of controll and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if you are unexperienced.

ACHTUNG! Dieses ferngesteuerte Modell ist KEIN Spielzeug! Es ist für fortgeschrittene Modellflugpiloten bestimmt, die ausreichende Erfahrung im Umgang mit derartigen Modellen besitzen Bei unsachgemäßer Verwendung kann hoher Personen- und/oder Sachschaden entstehen. Fragen Sie in einem Modellbauverein in Ihrer Nähe um professionelle Unterstützung, wenn Sie Hilfe im Bau und Betrieb benötigen. Der Zusammenbau dieses Modells ist durch die vielen Abbildungen selbsterklärend und ist für fortgeschrittene, erfahrene Modellbauer bestimmt.

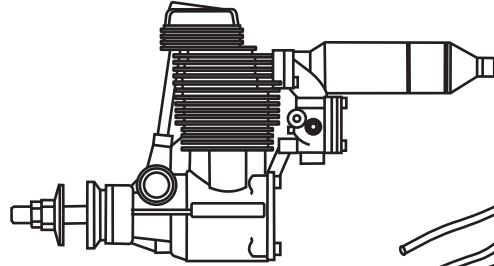*RADIO CONTROLED ALMOST READY-TO-FLY ENGINE POWERED ALL BALSA PLANE*

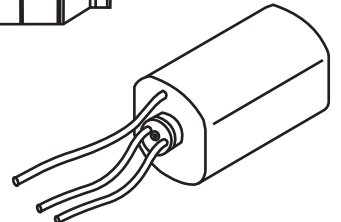## REQUIRED FOR OPERATION (Purchase separately)
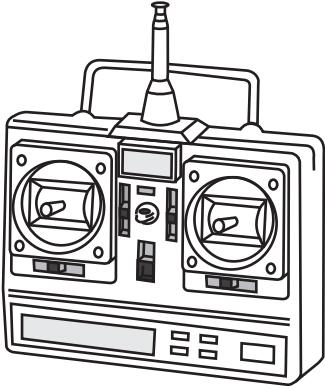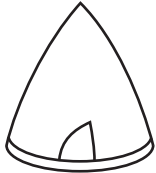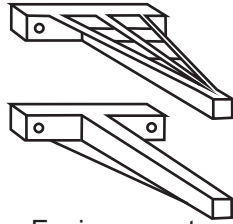
Minimum 5 channel radio
for airplane
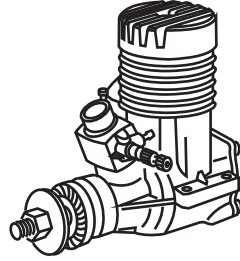
.90 - 2 cycle

.120 - 4 cycle
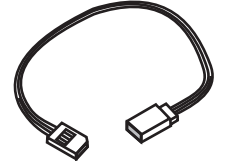
450 ~ 500cc Fuel tank

70mm Spinner

Engine mount
(for .90 -2T& .120 -4T)

Silicone tube

Propeller for .90-2T
or .120-4T

Extension for aileron servo
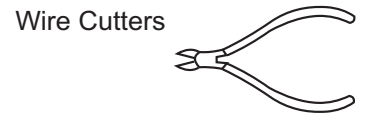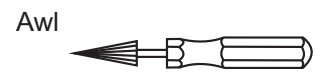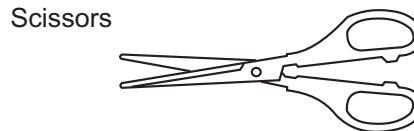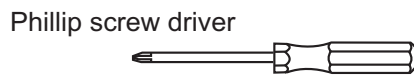
GLUE

CA

Cyanoacrylate Glue

SILICON

Silicon Glue

EPOXY A

EPOXY B

Epoxy Glue (30 minutes type)

TOLLS REQUIRED (Purchase separately)

Hobby knife

Needle nose Pliers

Sander

Phillip screw driver

Scissors

Hex Wrench

Awl

Wire Cutters

The pre-covered film on ARF kit may wrinkle due to variations
of temperature. Smooth out as explained right.
 * Use an iron or heat gun. Start as low setting. Increase the
setting if necessary. If it is too high, you may damage the
film

Low setting
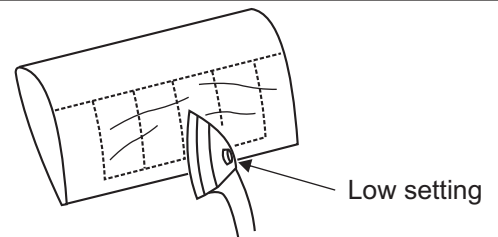
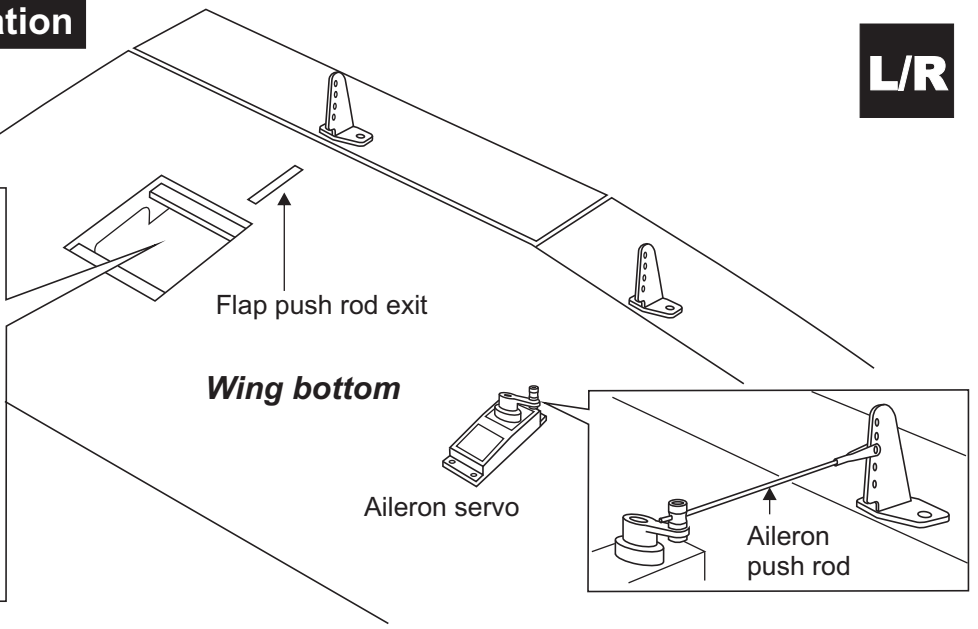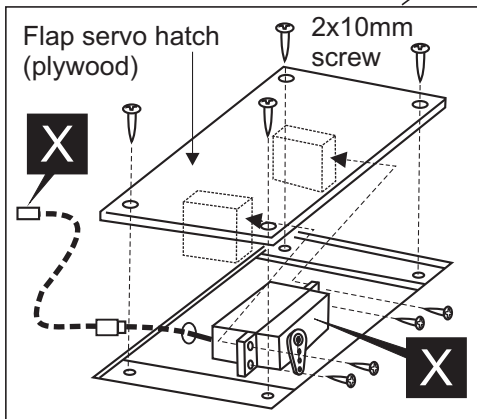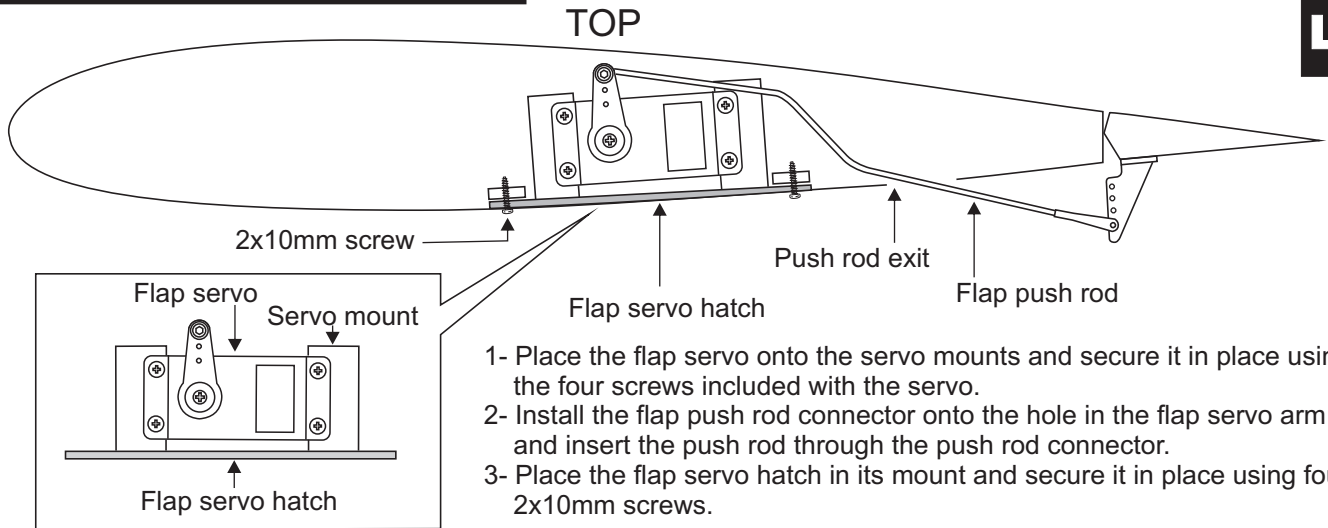|			
1.5mm Drill holes using the stated size of drill (in this case 1.5 mm Ø)	**!** Take particular care here	Hatched-in areas: remove covering film carefully	Check during assembly that these parts move freely, without binding
A B Use epoxy glue	**CA** Apply cyano glue	**L/R** Assemble left and right sides the same way.	**X** Not included. These parts must be purchased separately

1- Main wing: servo installation

L/R

Flap servo hatch (plywood)

2x10mm screw

X

Flap push rod exit

Wing bottom

Aileron servo

Aileron push rod

X

2- Main wing: servo installation

CAUTION: one of the flap servos is revert servo

L/R

TOP

2x10mm screw

Flap servo

Servo mount
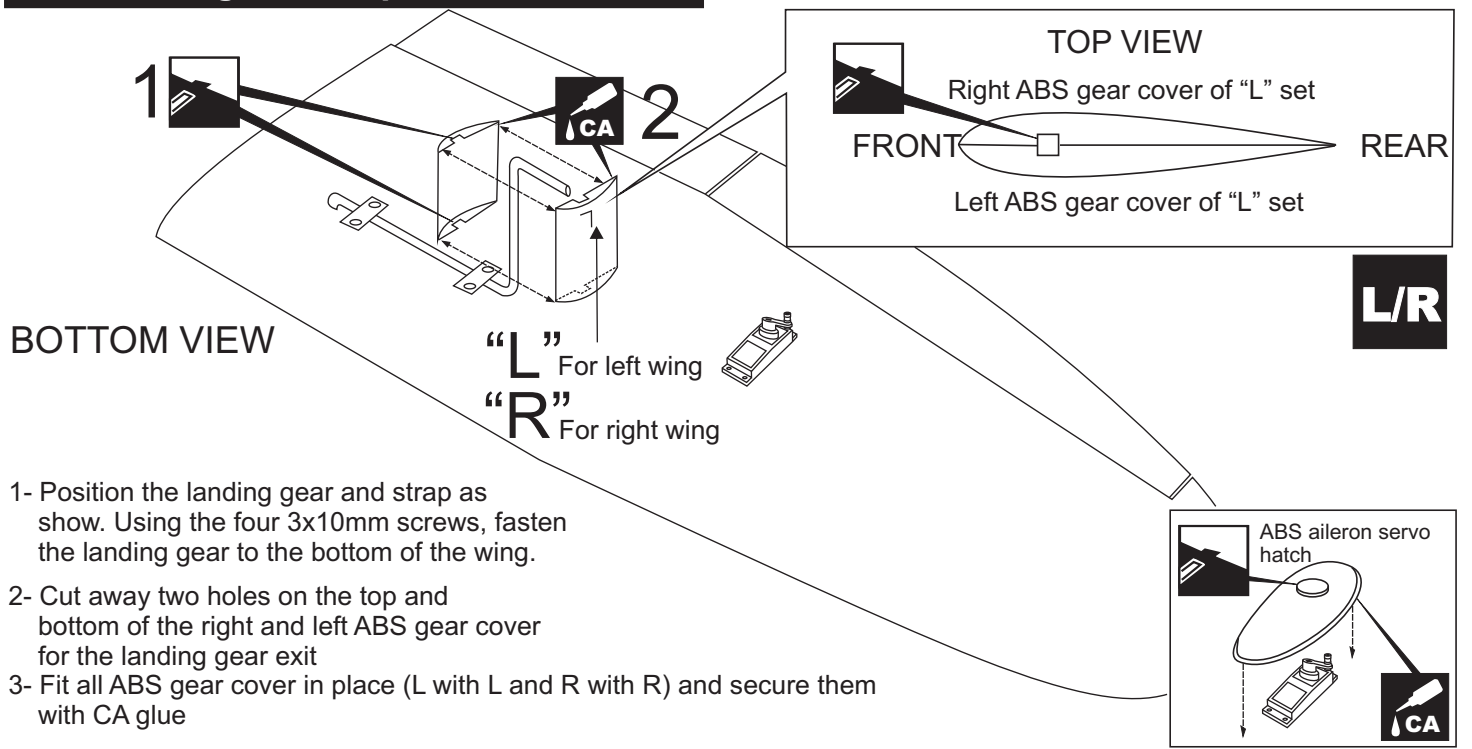
Flap servo hatch

Push rod exit

Flap push rod

Flap servo hatch

1- Place the flap servo onto the servo mounts and secure it in place using the four screws included with the servo.
2- Install the flap push rod connector onto the hole in the flap servo arm and insert the push rod through the push rod connector.
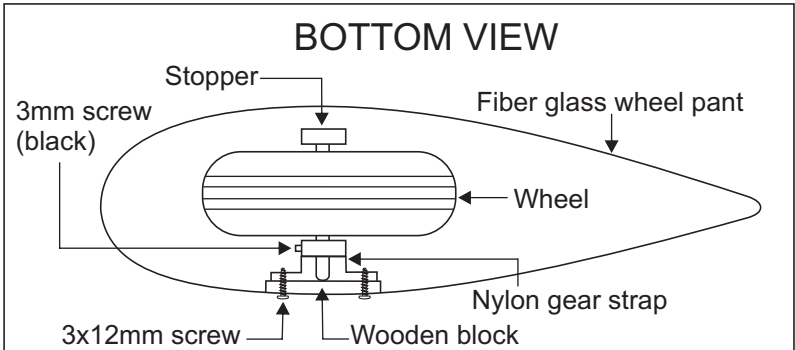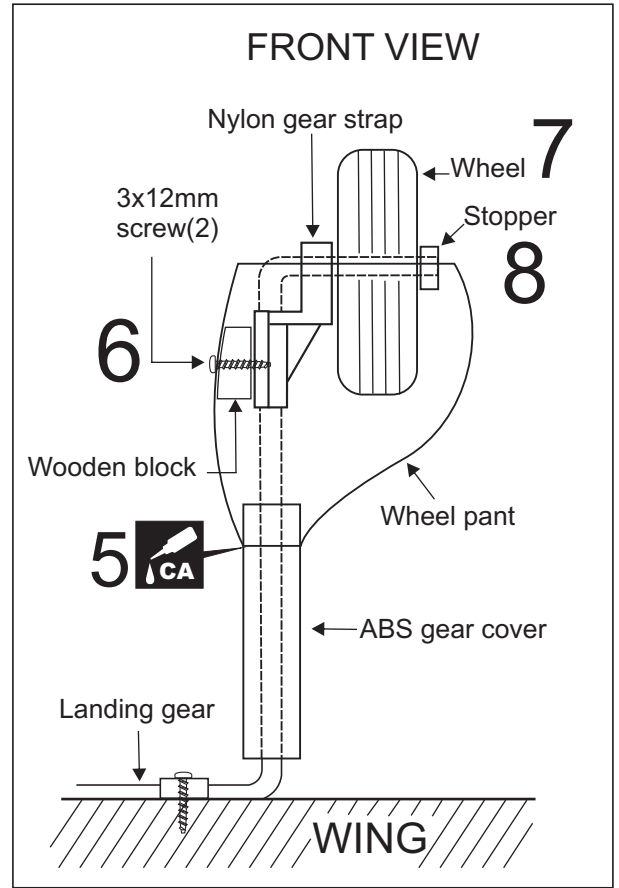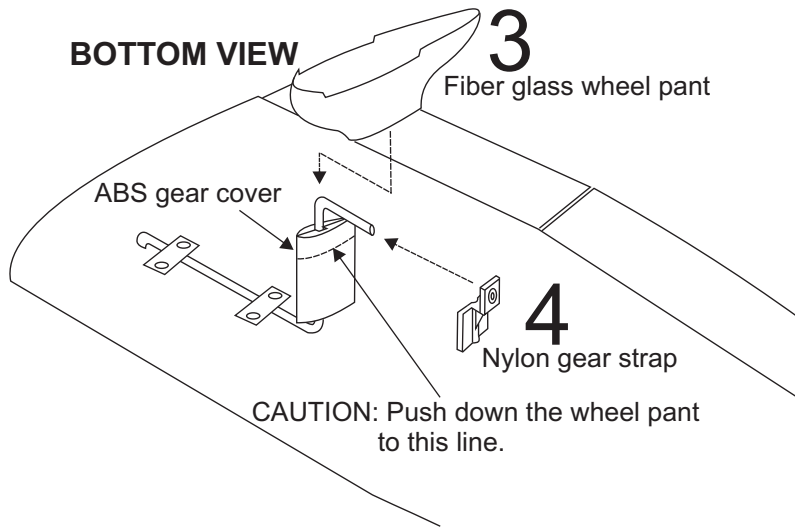3- Place the flap servo hatch in its mount and secure it in place using four 2x10mm screws.

3- Main wing: Wheel pants installation

1

2

CA

TOP VIEW

Right ABS gear cover of "L" set

FRONT

REAR

Left ABS gear cover of "L" set

L/R

BOTTOM VIEW

"L" For left wing

"R" For right wing

1- Position the landing gear and strap as show. Using the four 3x10mm screws, fasten the landing gear to the bottom of the wing.

2- Cut away two holes on the top and bottom of the right and left ABS gear cover for the landing gear exit

3- Fit all ABS gear cover in place (L with L and R with R) and secure them with CA glue

ABS aileron servo hatch

CA

4- Main wing: Wheel pants installation

BOTTOM VIEW

3

Fiber glass wheel pant

ABS gear cover

4

Nylon gear strap

CAUTION: Push down the wheel pant to this line.

BOTTOM VIEW

Stopper

3mm screw (black)

Fiber glass wheel pant

Wheel

Nylon gear strap

3x12mm screw

Wooden block

FRONT VIEW

Nylon gear strap

3x12mm screw(2)

Wheel 7

Stopper

8

6

5 CA

Wooden block

Wheel pant

ABS gear cover

Landing gear

WING

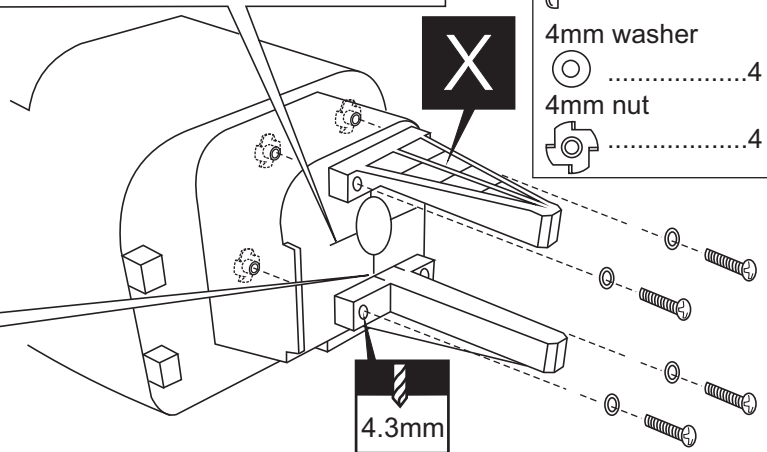# 5- Engine mounts installation

1- Set the engine on the engine mounts
2- Place the engine mounts with the engine to the fire wall and secure it with tittle CA glue.
3- Using a pencil or felt tipped pen, mark the engine mounting plate where the four holes are to be drilled
4- Remove the engine and drill a 11/64" (4.3mm) hole through the fire wall at each of the four marks made in Step 3 above.
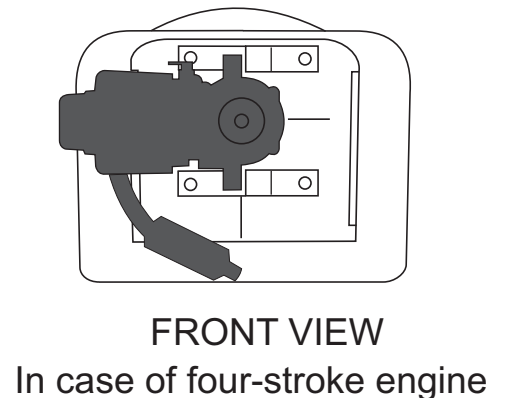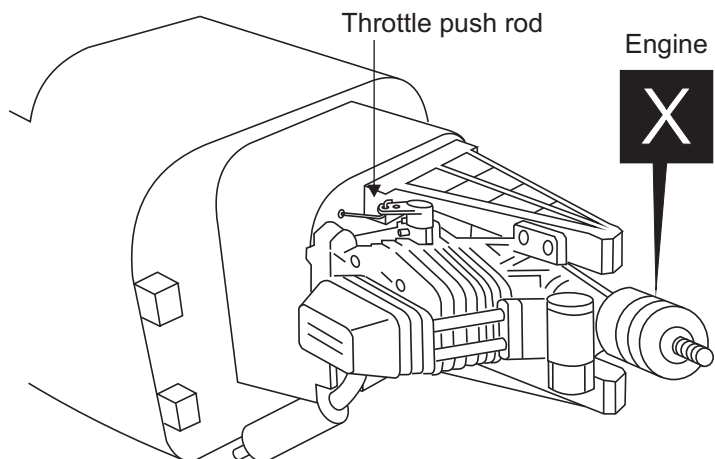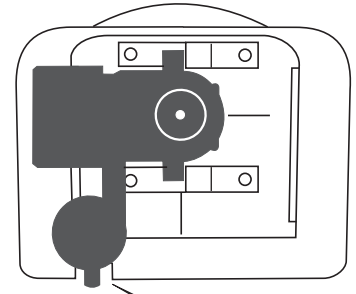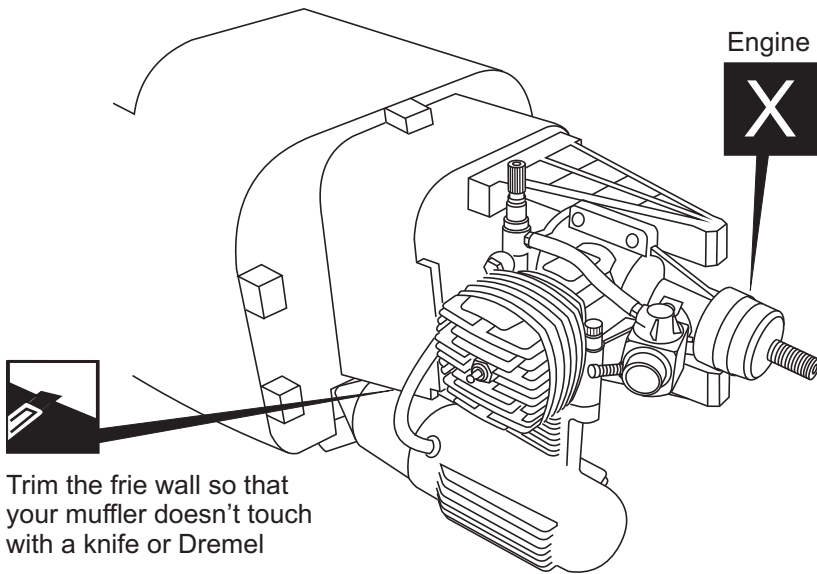
CAUTION: Align the mark on both mounts with the center mark on the fire wall

CAUTION: Engine thrust on fire wall is aleady adjust at factory

CAUTION: Align the engine center with fire wall marked line

X

4.3mm

4x25mm screws 4

4mm washer 4

4mm nut 4

6- Four stroke engine installation

Throttle push rod

Engine

X

FRONT VIEW
In case of four-stroke engine

7- Two stroke engine installation

Engine

X

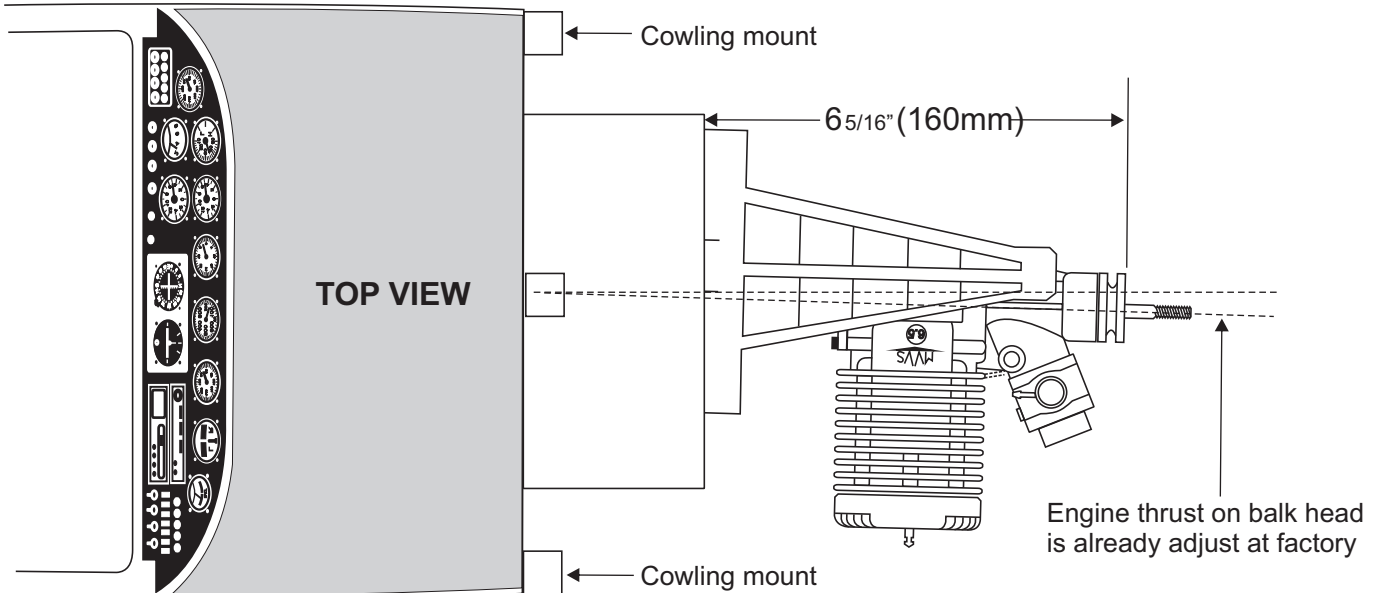Trim the frie wall so that your muffler doesn't touch with a knife or Dremel

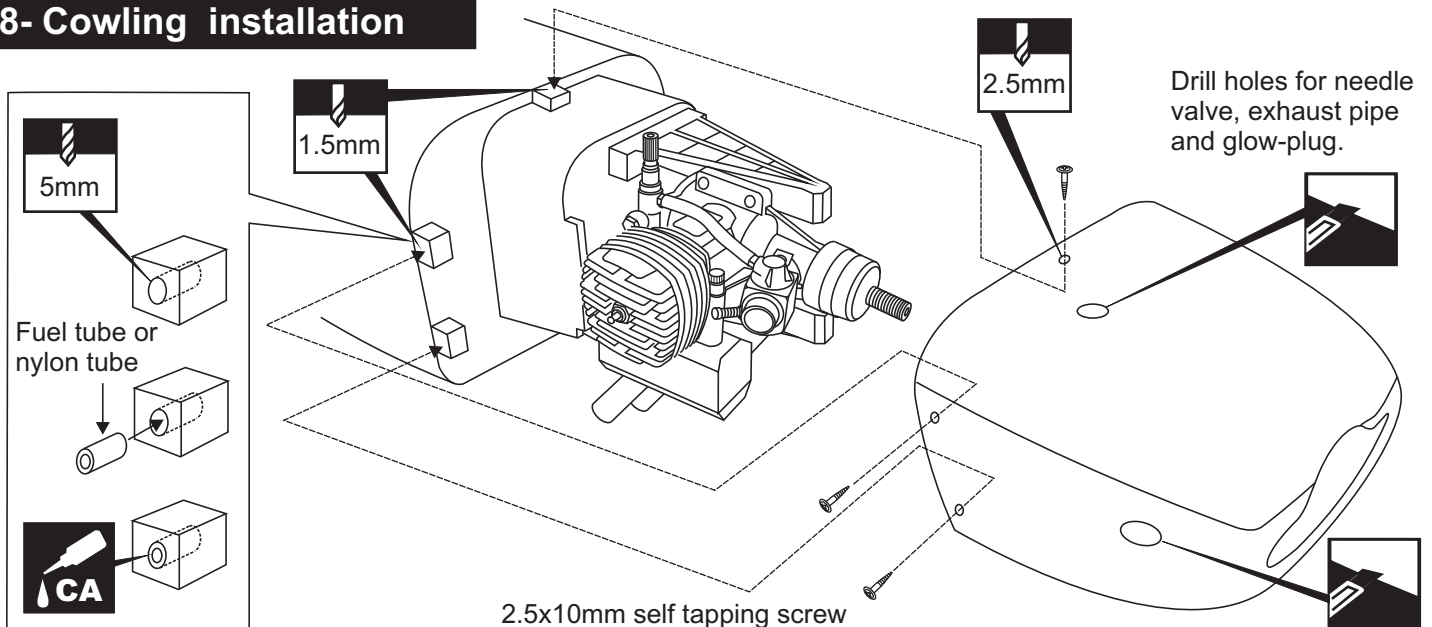Trim the frie wall so that your muffler doesn't touch with a knife or Dremel

FRONT VIEW
In case of two-stroke engine
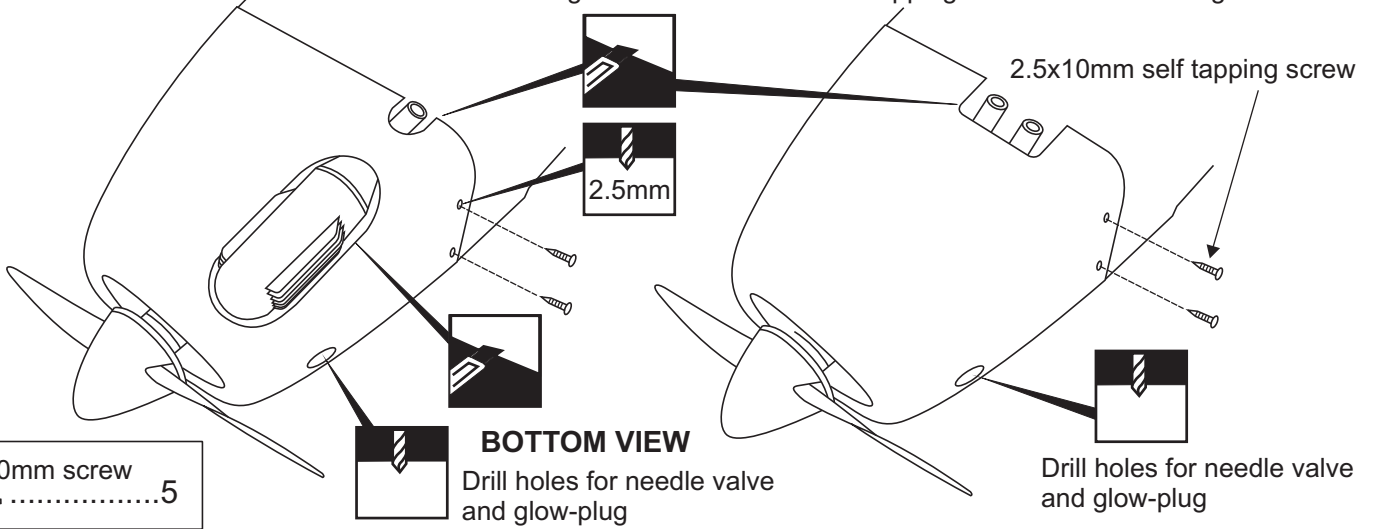
7- Two stroke engine installation

Cowling mount

6 5/16" (160mm)

TOP VIEW

Engine thrust on balk head is already adjust at factory

Cowling mount

8- Cowling installation

1.5mm

2.5mm

Drill holes for needle valve, exhaust pipe and glow-plug.

5mm
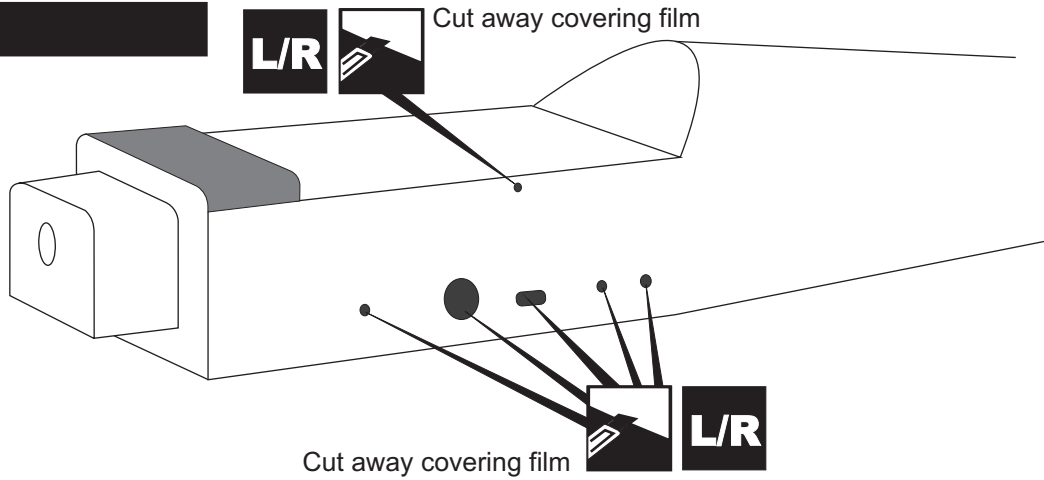
Fuel tube or nylon tube

CA

2.5x10mm self tapping screw

9- Cowling installation

Trim the cowl with a knife or Dremel so that your engine and muffler don't touch
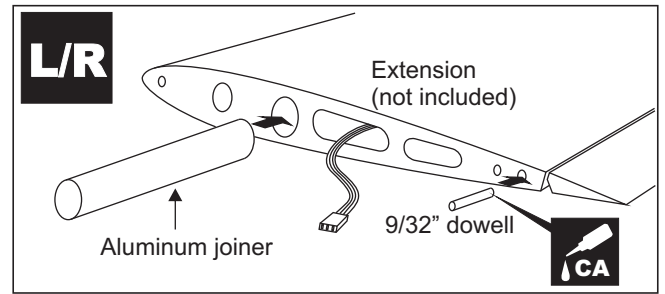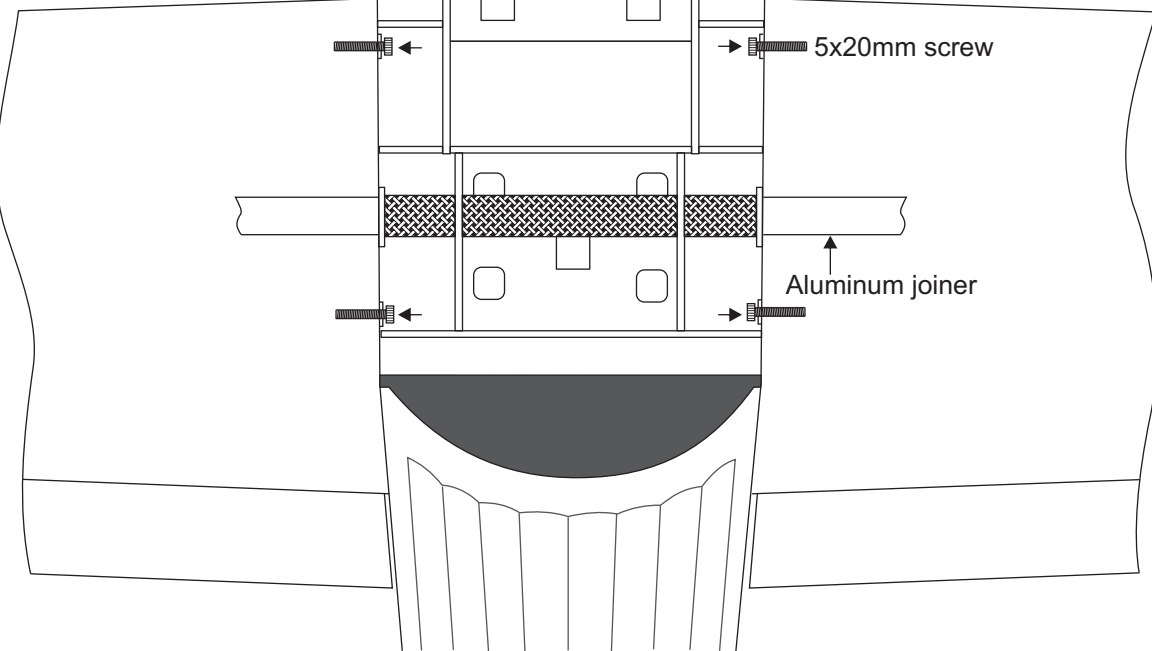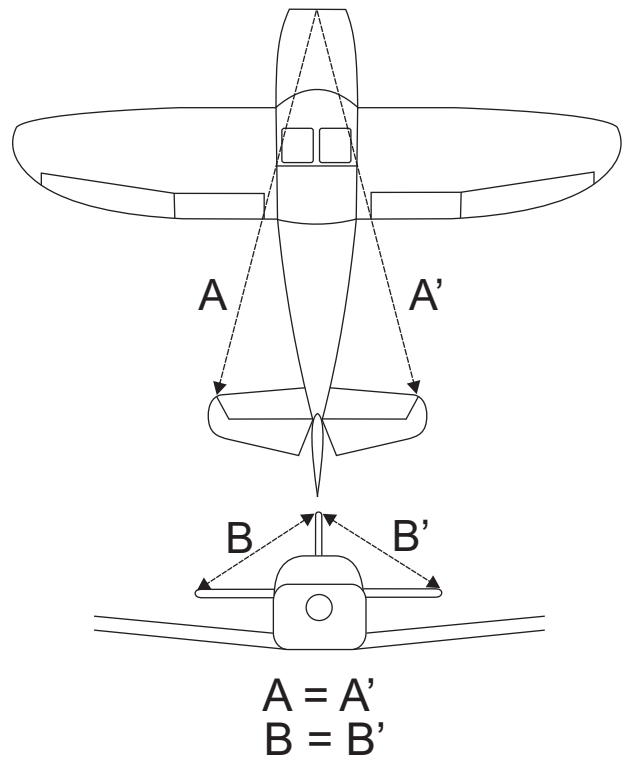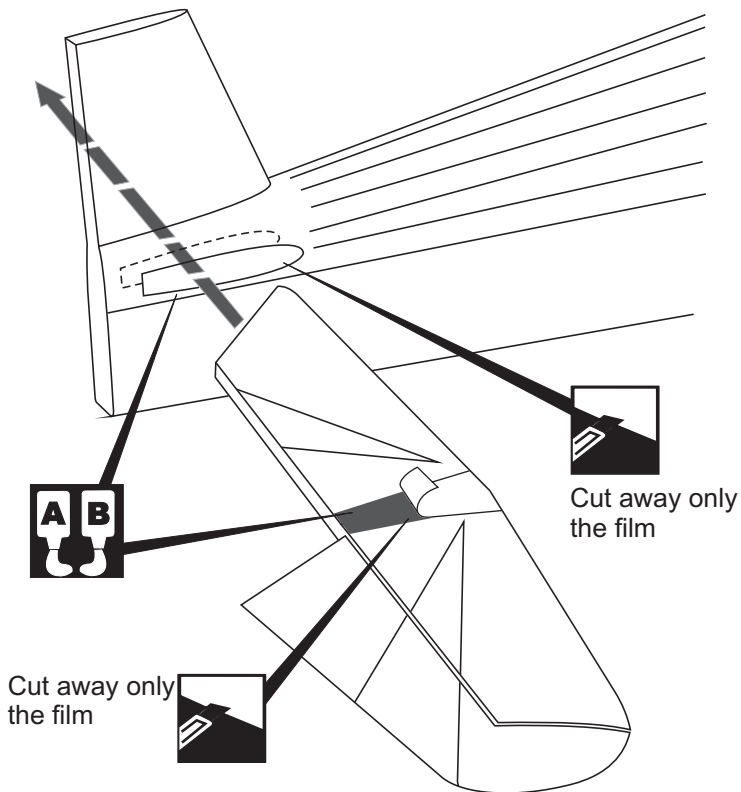Fix the cowling with the 2.5x10mm self tapping screws on the cowling mounts.

2.5x10mm self tapping screw

2.5mm

BOTTOM VIEW
Drill holes for needle valve
and glow-plug

Drill holes for needle valve
and glow-plug

2.5x10mm screw
.................5

10- Fuselage

L/R

Cut away covering film

Cut away covering film

L/R

11- Main wing

5x20mm screw
........4

Washer
...................4

L/R

Extension
(not included)

Aluminum joiner

9/32" dowell

CA

5x20mm screw

Aluminum joiner

12- Horizontal Tail

Cut away only the film

Cut away only the film

A

A B

A = A'
B = B'

B   B'

Warning: Securely glue together. If coming of during flights, you lose control of your plane which leads to accidents!

1- Trial fit the horizontal stabilizer in place
2- Using a pencil, trace around the vertical stabilizer where it meets the fuselage. (both sides).
3- Remove the horizon stabilizer from the fuselage.
4- Using a sharp hobby knife, cut away the covering inside the lines which were marked in step 2. Do NOT cut into the wood as this will affect the structural integrity of the stabilizer
5- Using a mixing stick, spread the epoxy on the horizontal stabilizer and fuselage where it meets the horizontal stabilizer.
6- Insert the horizontal stabilizer into the fuselage and secure it in place using masking tape and allow the epoxy to cure completely. Using rubbing alcohol and paper towel, clean the excess epoxy.

13- Elevator

Plastic control horn

....................2

Plastic back plate

....................2

2x30mm screw

....................4
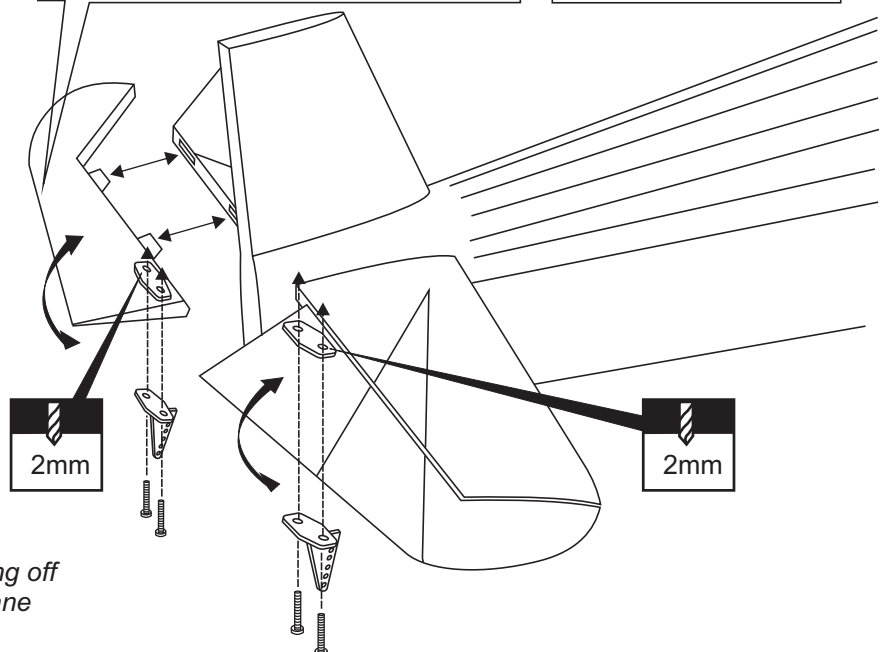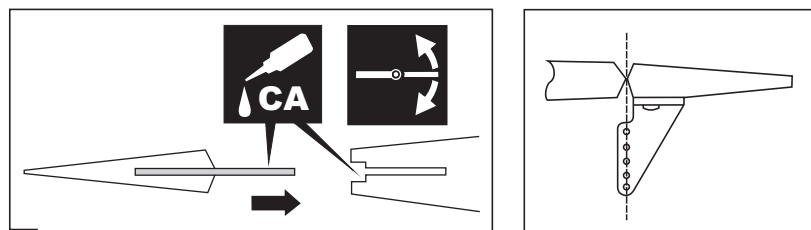
When you are satisfied with the alignment of the control horn mark the mounting hole positions with a felt tipped pen or a pencil.
Remove the control horn and drill two 2mm (5/64") holes through the elevator
Insert the elevator push rod into the elevator control horn. Attach the elevator control horn using two 2x20mm screw and a back plate.
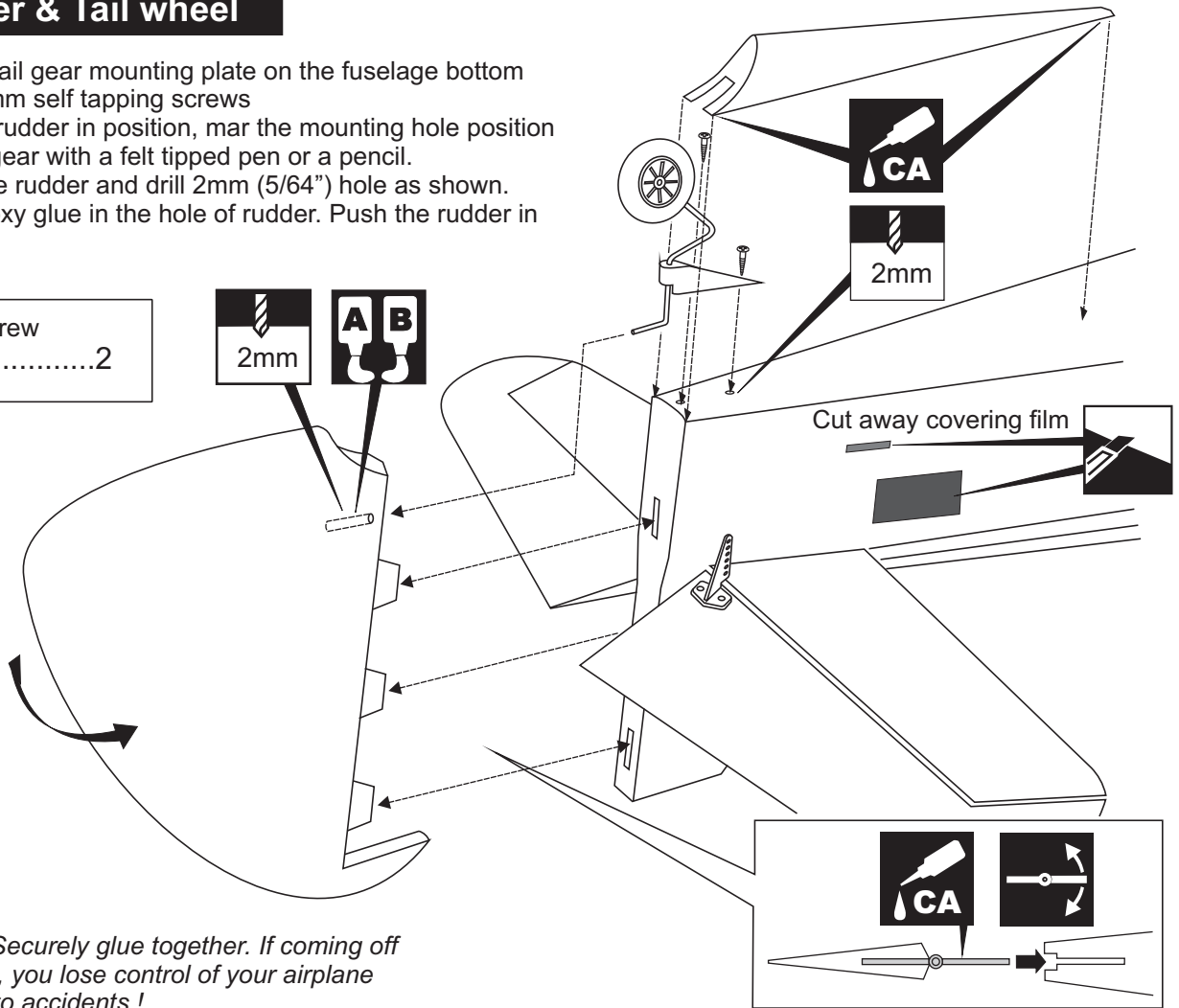
WARNING! Securely glue together. If coming off during flights, you lose control of your airplane which leads to accidents !

CA

2mm

2mm

14- Rudder & Tail wheel

1- Attach the tail gear mounting plate on the fuselage bottom with 3x10mm self tapping screws
2- Trial fit the rudder in position, mar the mounting hole position for the tail gear with a felt tipped pen or a pencil.
3- Remove the rudder and drill 2mm (5/64") hole as shown.
4- Put the epoxy glue in the hole of rudder. Push the rudder in place

3x10mm screw
.................2

2mm

A B

2mm

CA

2mm

Cut away covering film

CA

WARNING! Securely glue together. If coming off during flights, you lose control of your airplane which leads to accidents !

15- Push rod & Control horn

Linkage Stopper set
....2

Plastic control horn
......................2

2x30mm screw
.............2

Rod adjuster
.........4

2mm screw
..........2
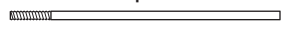
..........2

0.4x2.4m 1

2x8mm collar
............4

170x2mm push rod ..4

2mm nut

2x8mm collar

X

Elevator servo

2x30mm screw
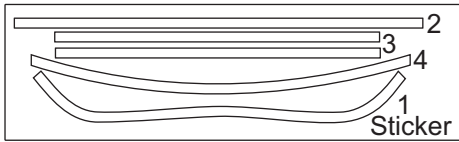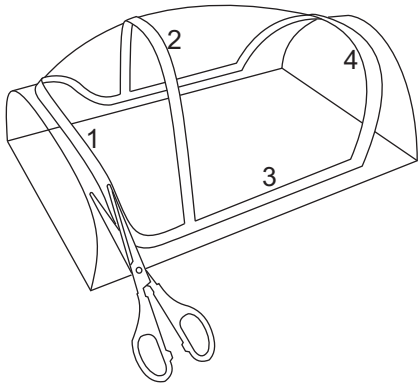
16- Pull-pull system

Throttle servo X

Rudder servo X

0.4mm steel wire
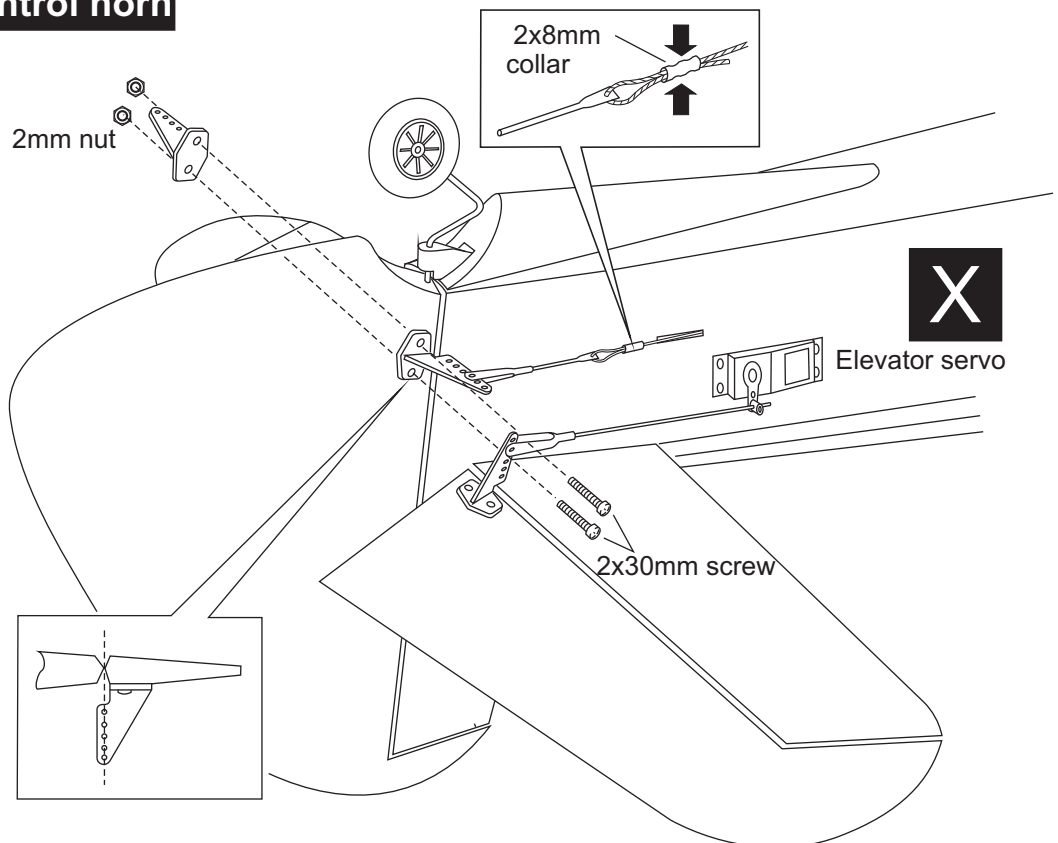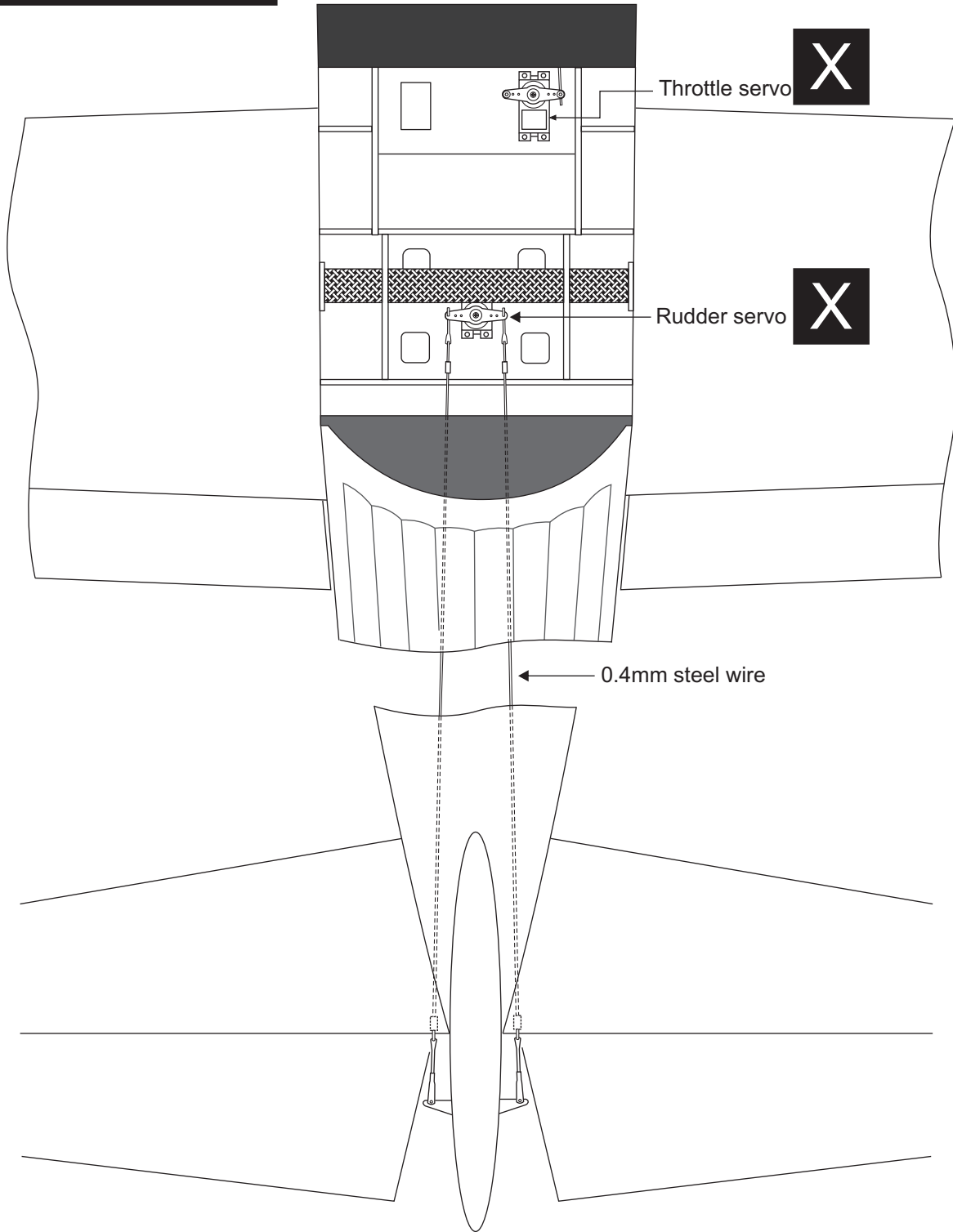
17- Fuel tank

Fuel tank not included X

To muffler

Filler tube
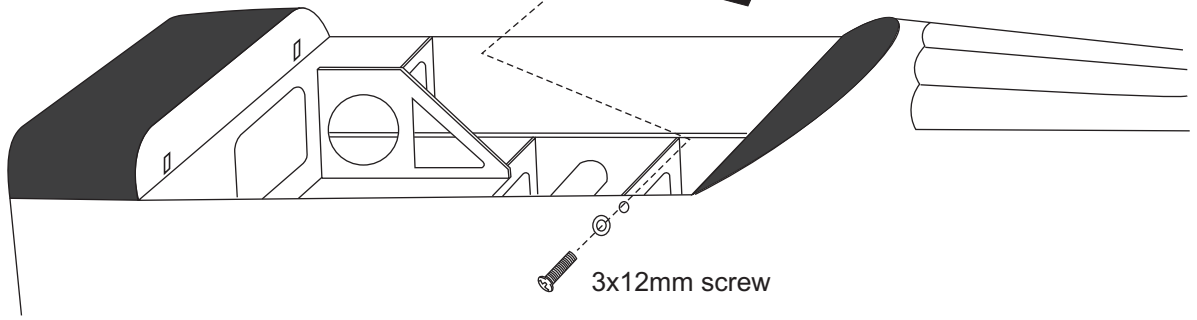
X

To engine

18- Canopy

2
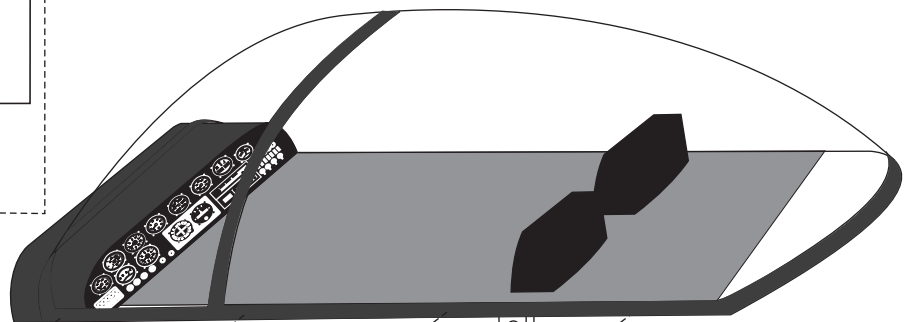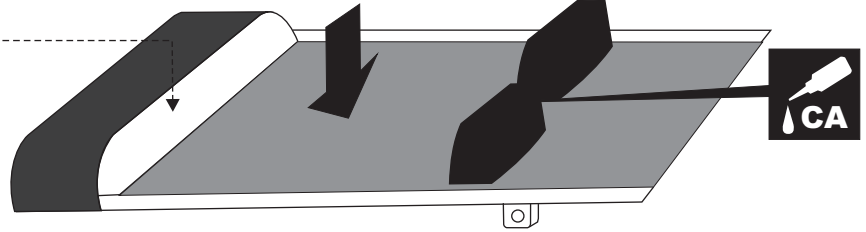4
1
3
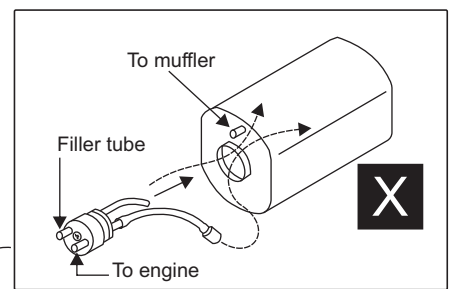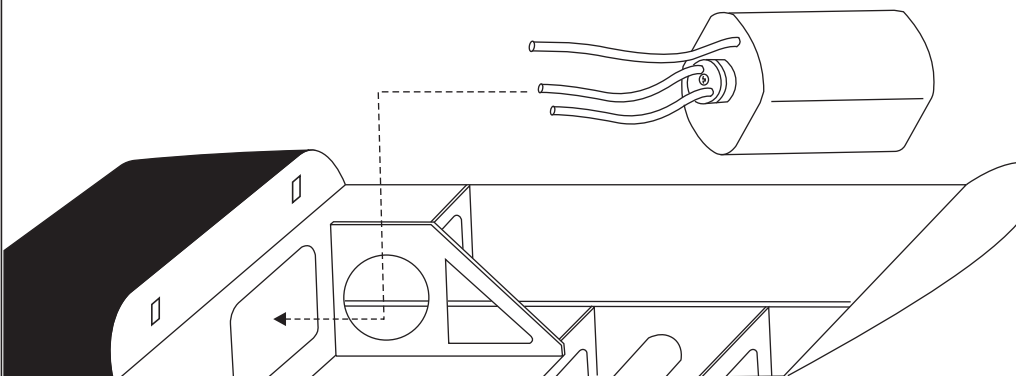
Apply the canopy frame stickers.
It is easy to put them on according
with the number

2
3
4
1
Sticker

Sticker

CA

2x10mm screw
................8

3x12mm screw
................6

Washer
................6

2x10mm screw

3x12mm screw

19- Decor

Sticker

Sticker ► *Pilot: Daniel Heligoin*   "French Connection Airs...,"

Sticker

NORTHSTAR AVIONICS

Sticker

20- Decor

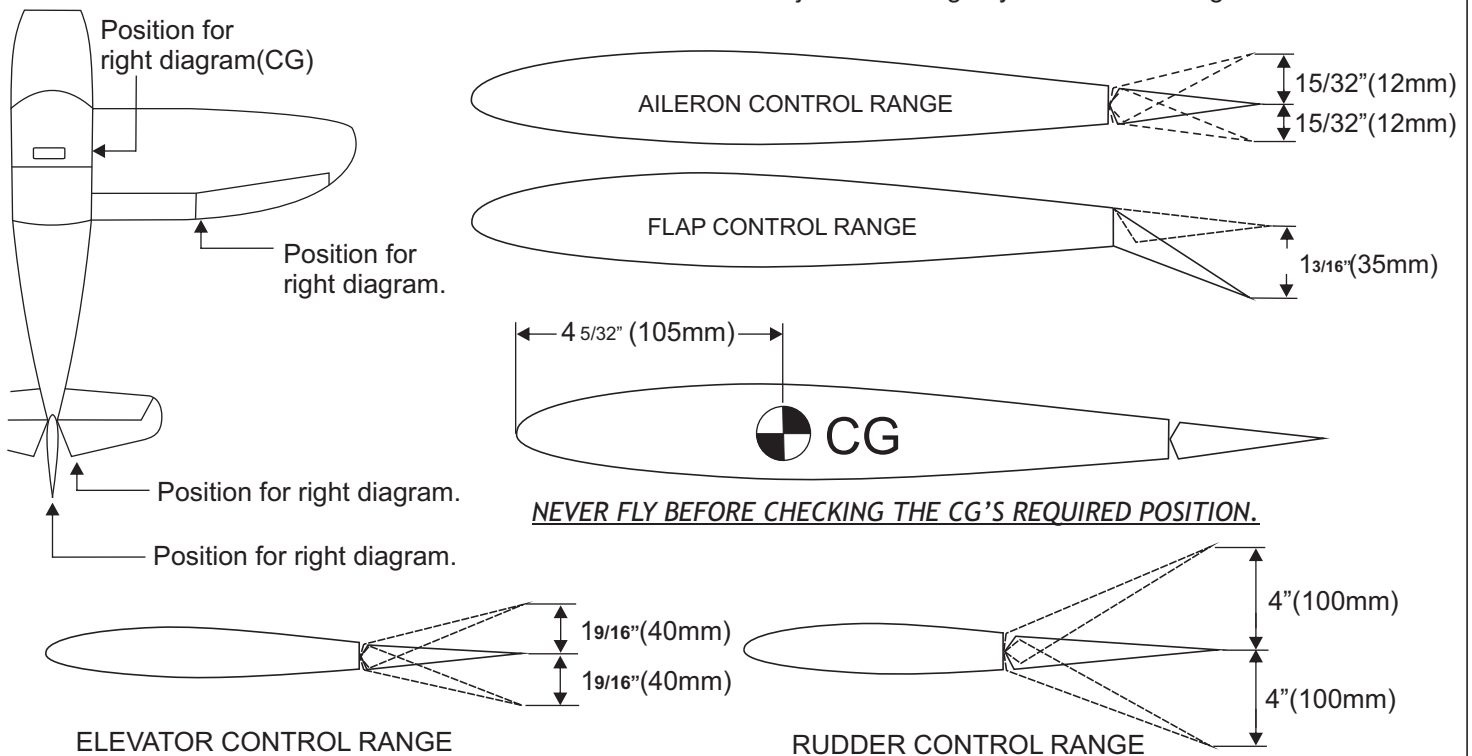Sticker

Sticker
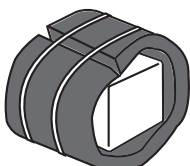
CAP 10

2

NORTHSTAR AVIONICS

N86KB

Sticker
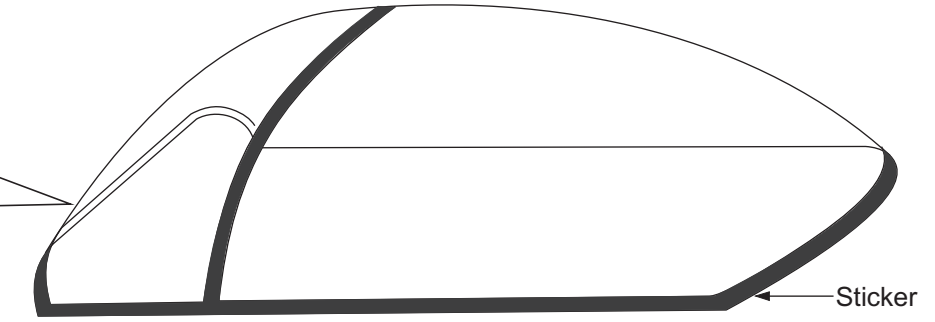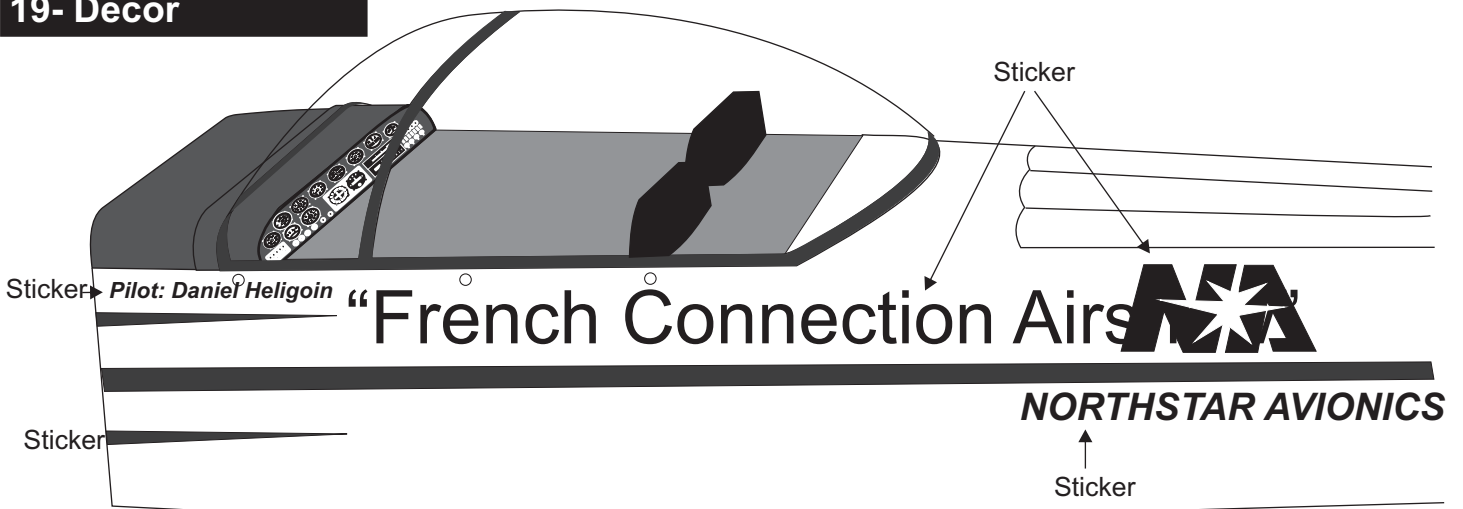
Sticker
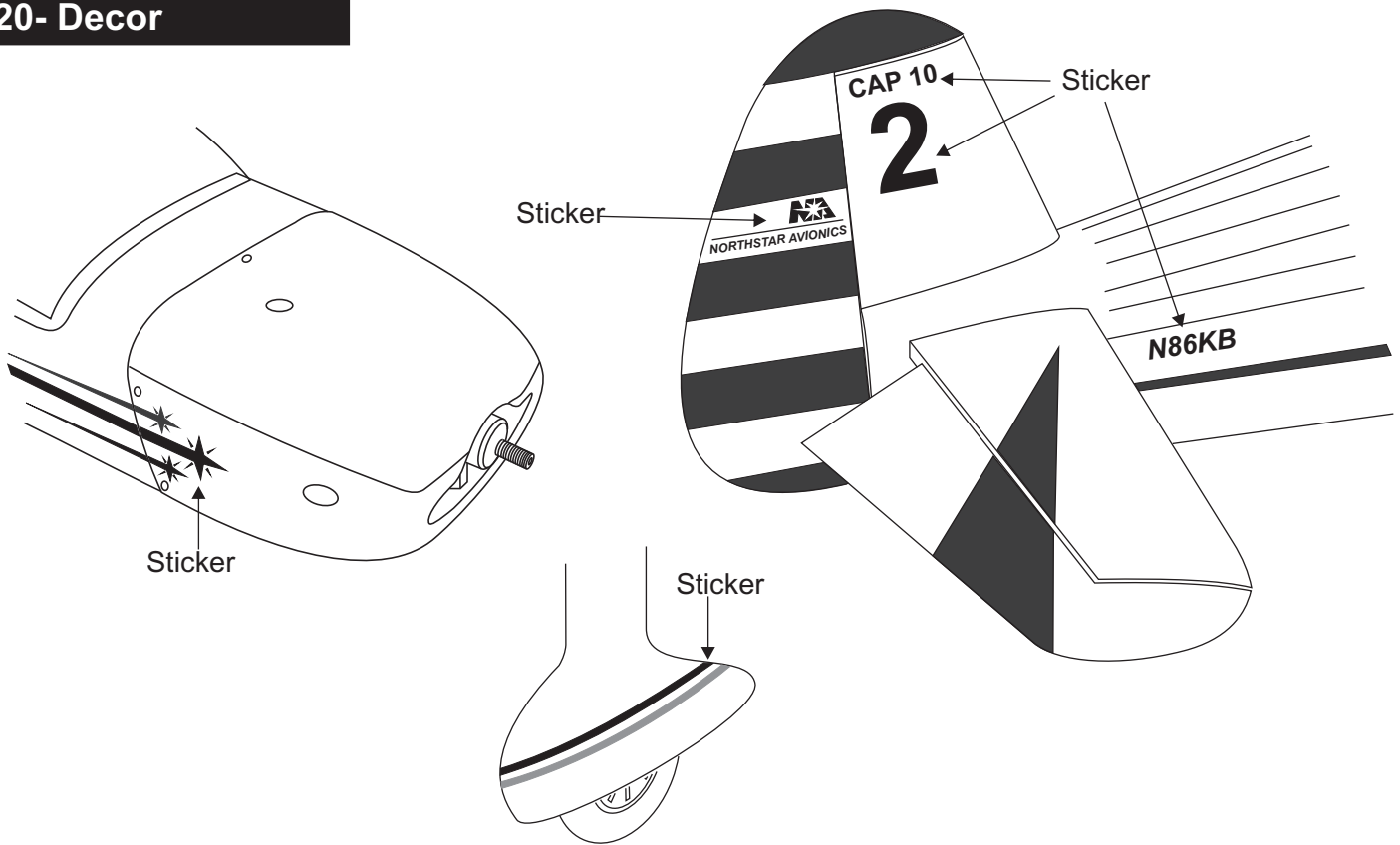
21- Balance & Control range

Adjust the travel of each control surface to the values in the diagrams these values fit general flight capabilites. Readjust according to your needs and flight level.

Position for right diagram(CG)

Position for right diagram.

Position for right diagram.

Position for right diagram.

AILERON CONTROL RANGE

15/32"(12mm)
15/32"(12mm)

FLAP CONTROL RANGE

1 3/16"(35mm)

4 5/32" (105mm)

CG

NEVER FLY BEFORE CHECKING THE CG'S REQUIRED POSITION.

1 9/16"(40mm)
1 9/16"(40mm)

ELEVATOR CONTROL RANGE

4"(100mm)
4"(100mm)

RUDDER CONTROL RANGE

Foam Pad

X

Shift the location of the receiver and battery pack as needed to obtain the specification

Carefully install the receiver and battery pack to ensure that they will not shift during flight