

SUPER FLYING MODEL
MANUFACTURE

MTH HOBBY PRODUCTS INDUSTRIAL CO., LTD.

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No.8741

SUPER STICK 120 FALCON

SPECIFICATIONS

WING SPAN: 1810 mm

LENGTH: 1490mm

WING AREA: 63.8 dm²

WEIGHT: 3.8 Kgs

RADIO: 5~6 Channels

ENGINE: 20 cc 2-stroke

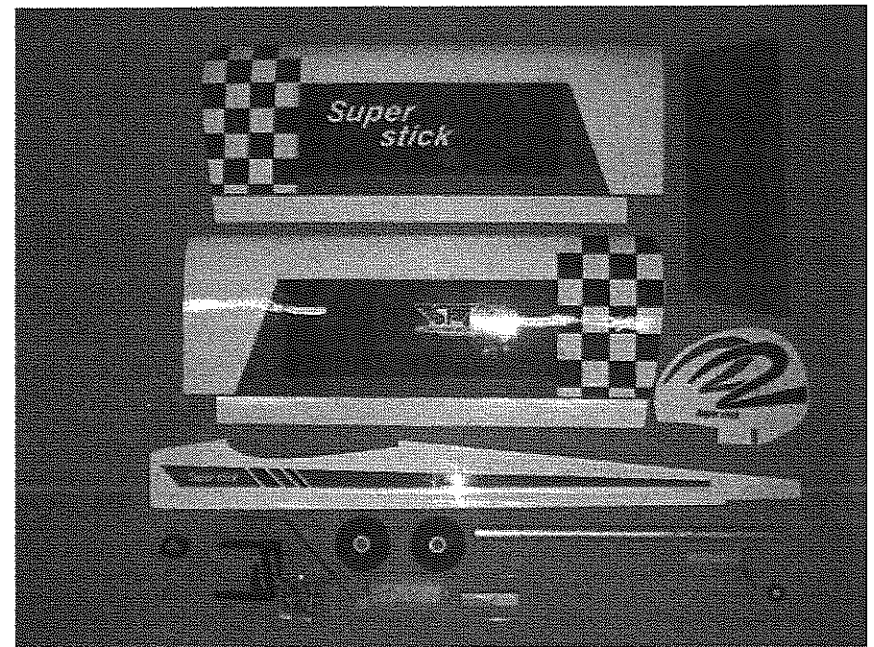
.90~1.20 4-Stroke

Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, following all instructions included with your radio.

Before beginning the assembly, remove each part from its bag for inspection. Closely inspect the fuselage, wing panels, rudder and stabilizer for damage. If you find any damaged or missing parts, contact the place of purchase.

INSTRUCTION MANUAL



Contents of Kit / Parts Layout

Recommended radio and equipment (not included in kit):

For GP version:

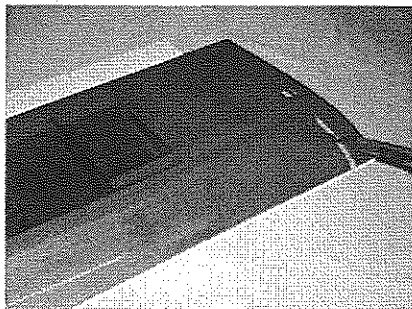
6 channels radio x 1 piece
Receiver x 1 piece
45g servo x 5 pieces
30cm extension x 2 pieces
60cm extension x 2 pieces
Engine: 20cc 2-stroke
.90-.120 4-stroke
Y-harness x 1 piece
Switch x 1 piece
Spinner
Propeller: refer to the instruction
of the engine

For EP version:

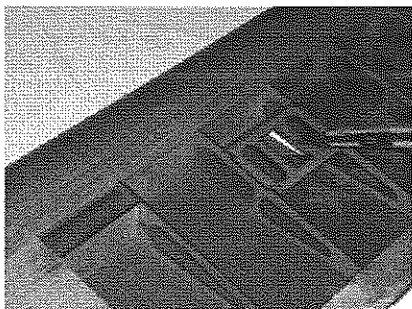
6 channels radio x 1 piece
Receiver x 1 piece
45g servo x 4 pieces
30cm extension x 2 pieces
60cm extension x 2 pieces
Y-harness x 1 piece
Switch x 1 piece
Spinner / ESC: 100A
Battery: Li-Po 6-cell 4500mAh or up
Motor: 400KV brushless ; thrust power:
4 KGS up
Propeller: 16 x 8

Tools and suppliers needed (not included in kit):

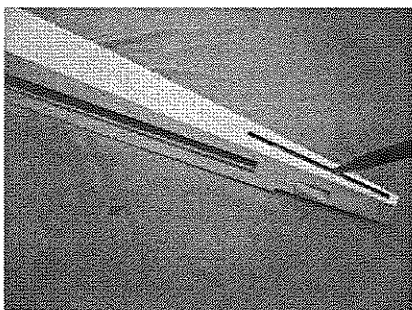
Phillips screws driver #0/#1; Curved scissors; Hex wrench 1.5/3.0mm
Hobby knife; Rule ; Pliers ; Z-bender; Sanding Paper; Epoxy 5-30 minutes
Marker; CA glue; UHU foam glue; Super glue; Cross wrench ; Reamer
Solder Iron; Thread Lock; Side cutter; Driller 2mm/4mm/6.2mm;
Transparent Tape; Adhesive Tape; Electric Driller; Hand driller



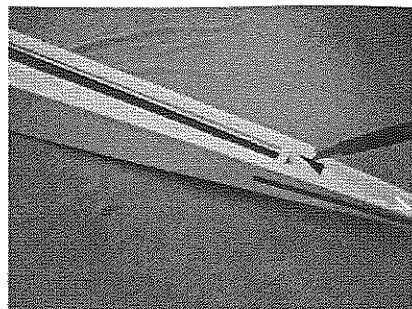
Use hobby knife to cut away the covering over the slot on the root of the main wing.



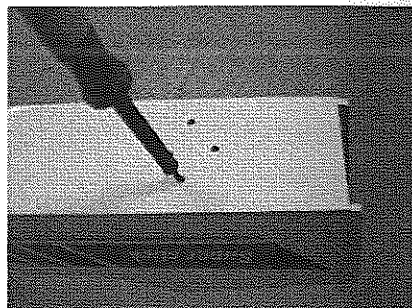
Try to find the servo tray on the back of the main wing. Use hobby knife to remove the covering over the servo tray.



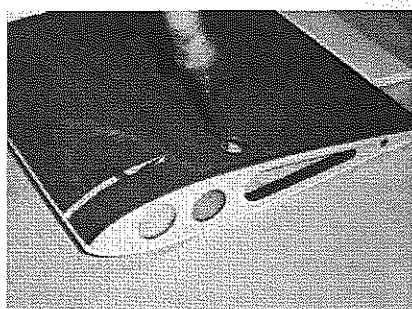
Try to find the slot on the tail of the fuselage. It's for inserting the vertical. Use hobby knife to remove the covering over the slot.



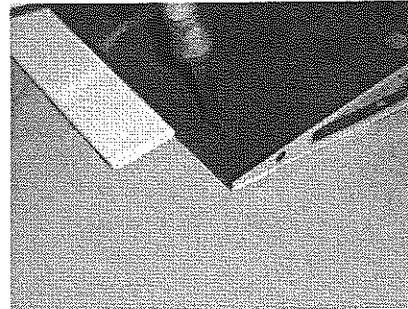
Try to find the servo hole on both sides of the tail fuselage. Use hobby to remove the covering over the holes.



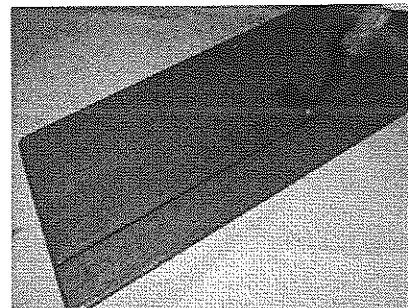
Try to find the pre-serving holes on the bottom of the fuselage. They are for fixing the landing gear. Use solder iron to open the holes.



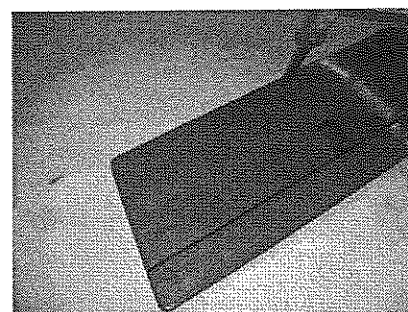
Try to find the hole on the root of the main wing. It's the exit for the cables. Use solder iron to trim the hole.



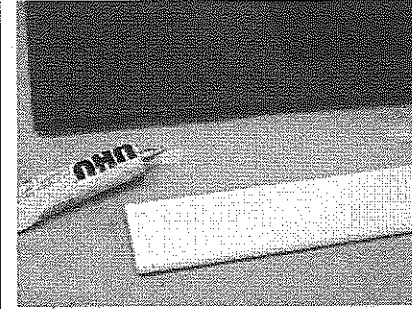
Use solder iron to make the hole for the wing bolt.



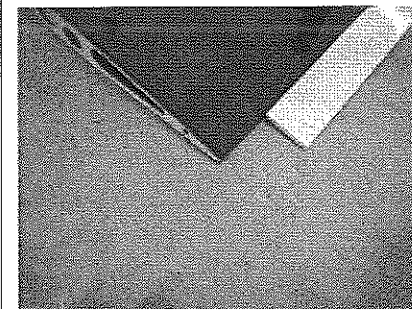
Try to find the holes on the elevator. They are for installing the tail gear. Use solder iron to remove the covering.



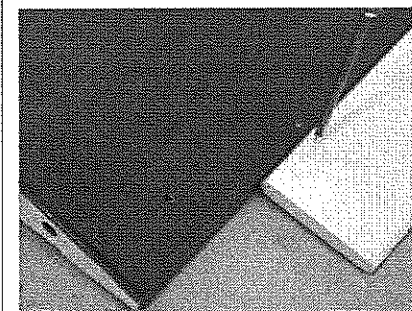
Use solder iron to open the hole on the front edge of the elevator.



Take the hinges out of the hardware bag. Bend the hinges several times. Spread the UHU glue on the hinges and insert into the main wing and aileron.



Put the back of the main wing on the working table. Try to find the center location on the hinges. Use driller to drill the hole on this location.



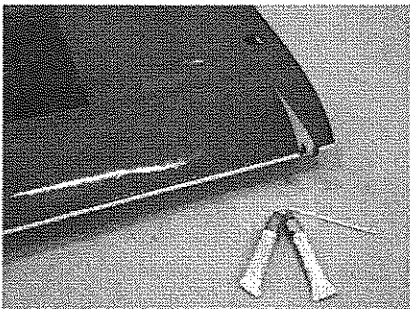
Use 2x8mm tapping screws to fix the hinges.



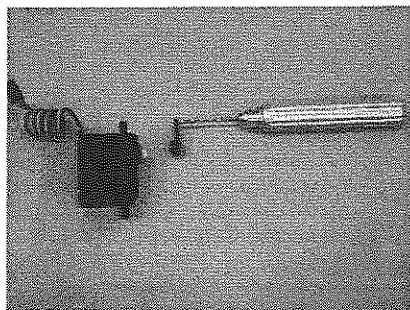
Spread UHU glue on the hinges and assemble the elevator on horizontal. Also use tapping screw to secure the hinges in place. Spread UHU glue on the hinges and insert into the vertical. Use tapping screws to secure only one side of hinges on the vertical.



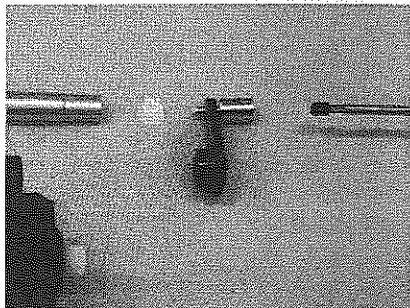
Take 4 pieces of main wing planking out of the hardware bag. Use AB glue to secure the planking together. Use clip to hold the planking together waiting for the glue to dry enough.



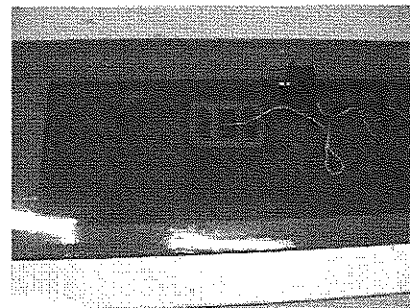
Spread generous AB glue into the slot on the root of the main wing. Insert the planking into the slot.



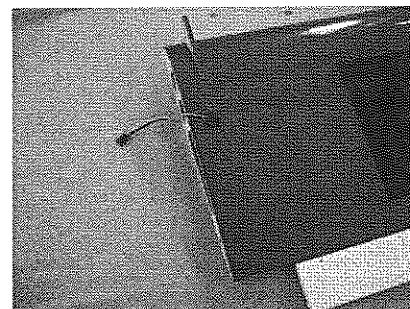
Use 2mm drill to open a hole on the servo arm when assemble the rod connector on the servo arm. Please drill the 2mm hole when assemble the rod connector in the following steps.



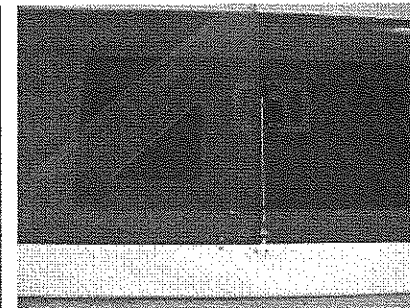
Connect the rod stand on the servo arm. Use 3mm hex screw and plastic nut to secure the rod stand. Please keep the rod stand move freely.



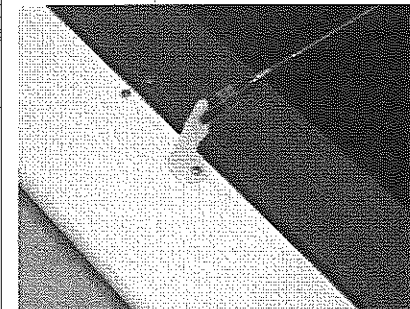
Find a piece of 500mm pushrod. Insert the no-thread end from the root of the main wing through the servo-tray hole. If necessary, use nipple pliers to pull the rod out of the hole. Connect the servo with 30mm extension. Apply a piece of tape to fix the connection. Use a piece of tape to fix the end of extension on the rod for temporary. Pull out the rod, so the end of the extension will be out of the main wing.



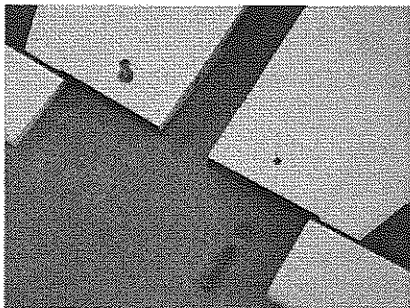
Remove the tape. Use nipple pliers to pull the extension out of the hole.



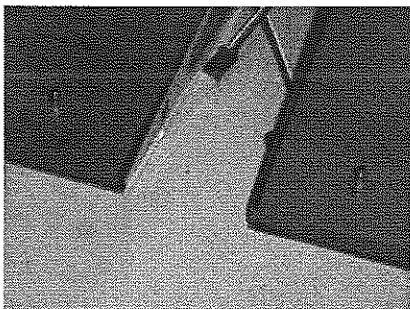
Secure the servo on the servo tray with the screws come with the servo. Find a piece of 330mm pushrod from the hardware bag. Insert a piece of 5mm silicone tube. Use a tri-angle ruler to locate the control horn place on the aileron.



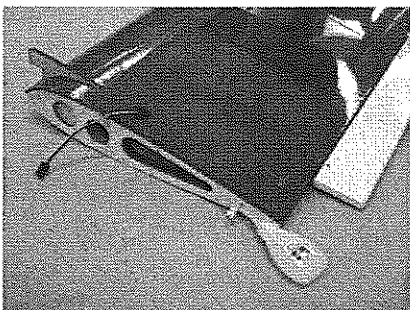
Use 2mm drill to drill the hole for securing the control horn. Use 2mm x 15mm screws to secure the control horn and fixing plate in place. Set the servo at neutral position and connect with the pushrod. Connect the clevis with control horn and slide the silicone tube to the clevis for avoiding losing off during flying. Use nipple pliers to cut off the extra rod.



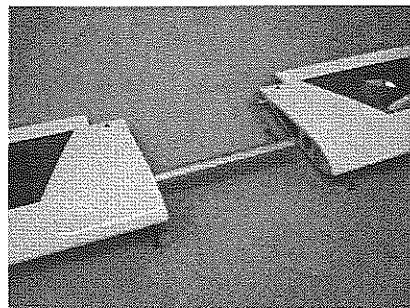
Take the M4x 40mm wing bolts and 4mm washers out of hardware bag and assemble on the main wing.



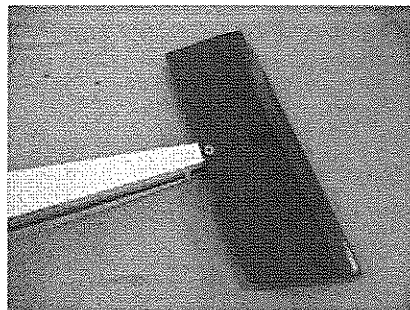
Insert a piece of 5mm silicon tube on the wing bolts for avoiding losing during assembling.



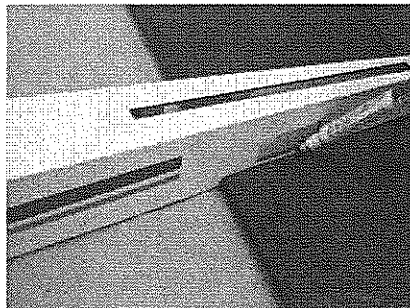
Find a piece of dowel from the hardware bag. Use pencil to make a mark on the center. Drop some instant glue on one end of dowel and insert into the main wing.



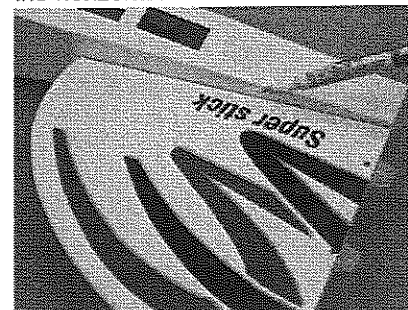
Insert the aluminum tube to the main wing as a wing joiner. If the fit is too tight, use sanding paper to sand the aluminum tube until it fit the hole smoothly.



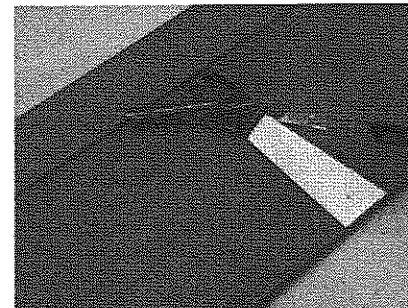
Try to fit the horizontal on the tail of fuselage. When satisfy the location, use 3x15mm tapping screws and 3mm x 20mm washers to secure the horizontal in place for temporary.



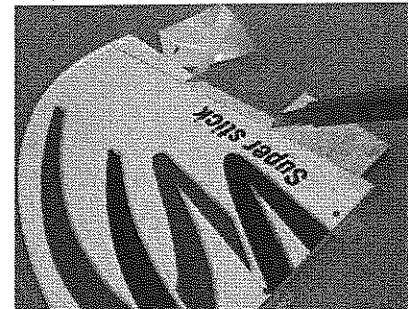
Use marker to trace the outline of the fuselage on the horizontal. Remove the horizontal.



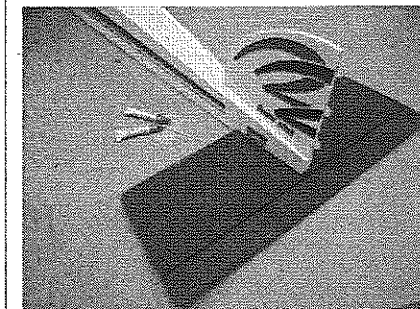
Try to fit the vertical on the tail of fuselage. When satisfy the location, use the marker to trace the contacting area on the vertical. Remove the vertical.



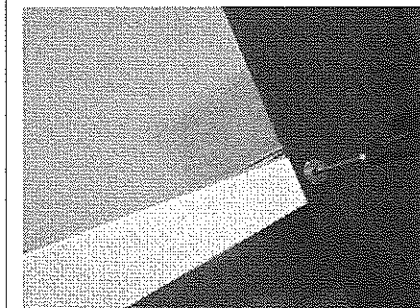
Place the horizontal on the working table. Use hobby knife to cut off the covering inside the marking area carefully. Please don't cut into the wood.



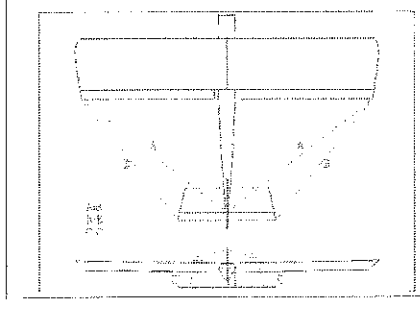
Place the vertical on the working table. Use hobby knife to cut off the covering inside the marking area carefully. Please don't cut into the wood.



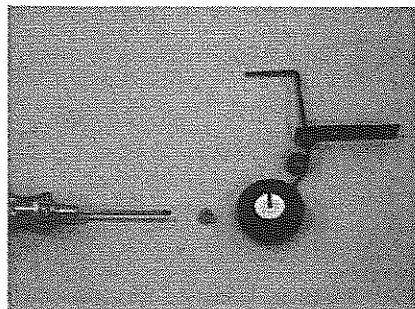
Apply 30-min epoxy on the contacting area of vertical and horizontal. Assemble the horizontal and vertical on the fuselage.



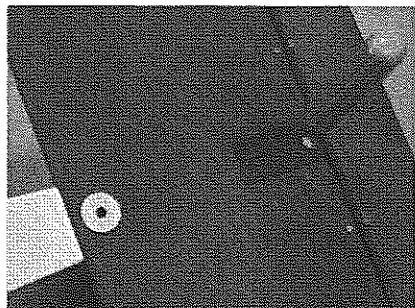
Use 3x15mm tapping screw and washer to secure the horizontal on the fuselage.



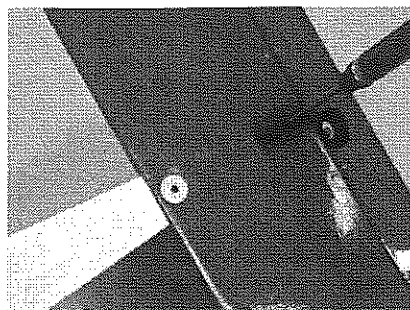
Try to fit the main wing on the fuselage. Use ruler to make sure the distance from two sides of main wing to the horizontal must be the same. The angle between the horizontal and vertical must be 90 degree.



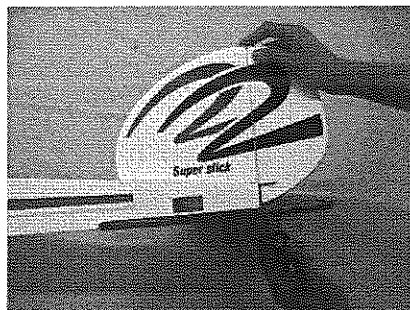
Fit the tail wheel into the tail gear. Secure the tail with collar and M3 x 4mm hex screw.



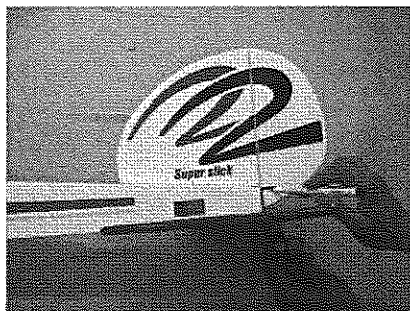
Place the tail gear combination on the horizontal. Align the tail gear with the hole on the horizontal. Use a pencil to mark the center line and position for securing the tail gear. Remove the tail gear. Use 2mm driller to drill holes on the marking position.



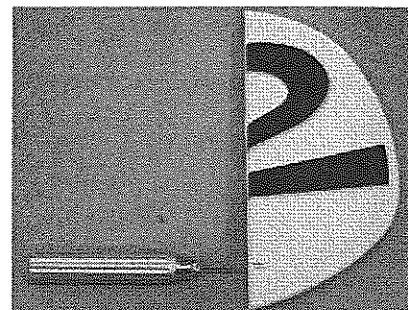
Use 3x15mm tapping screws to securing the tail gear combination on the horizontal.



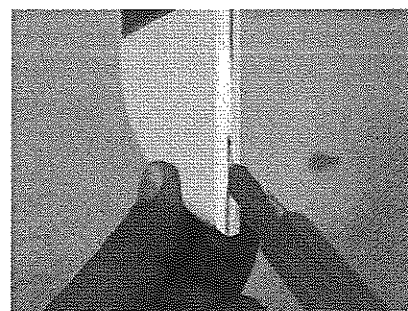
Assemble the hinges into the rudder and try to fit the rudder on the vertical. Please note the top of the rudder and vertical must be the same height. Push the tail gear to the end.



Hole the tail gear and use marker to mark the position on the rudder.



Remove the rudder. Use 2mm driller to drill on the rudder as the photo shows. Please note it's must be 2mm deeper than the wire of the tail gear.



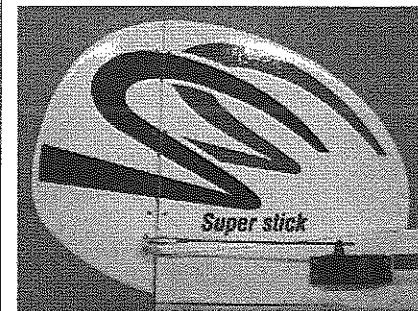
Use a hobby knife to open a slot (w: 2mm, depth: 2mm) on the pre-drilled hole.



Apply UHU glue to secure the wire and hinges in place.



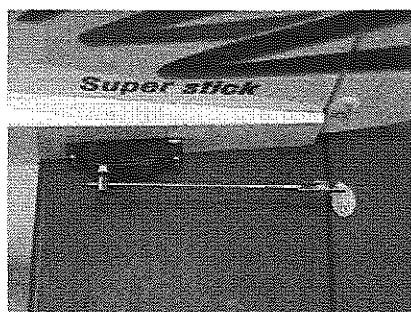
Use 2x8mm tapping screws to secure the rudder on the vertical.



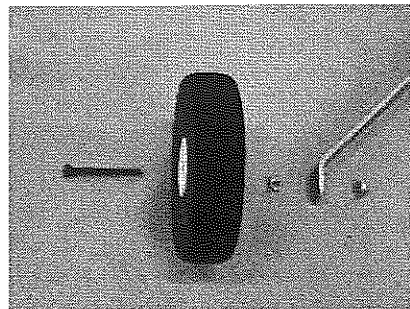
Connect the servo with 60cm extension. Apply a piece of tape on the connecting plug. Secure the servo in place with the screws come with servo. Assemble the rod stand with M3x4 hex screw and plastic nut. Find a piece of 330mm pushrod from the hardware bag. Slide one piece of 5mm silicone tube to the rod. Screw in the metal clevis on the end of the rod. Align the servo arm; find a best location on the rudder for securing the control horn. Securing the control horn with 2mm x 15mm screws on the rudder. Set the servo at neutral position. Connect the clevis with the control horn. Push the silicone tube to the clevis. Use 1.5 hex wrenches to secure the 3mm hex screw.



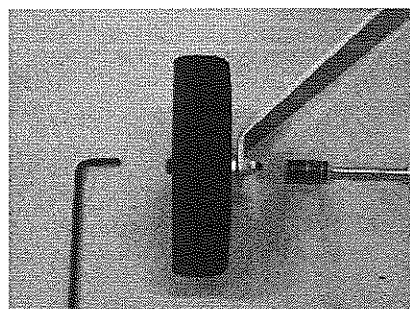
Before securing the servo on the elevator; please add one piece of servo planking for reinforcement.



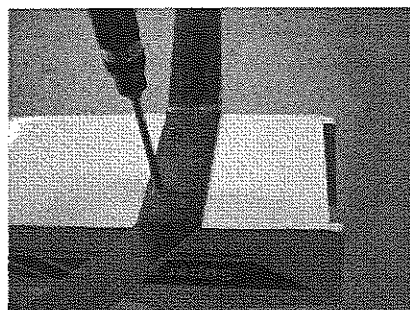
Find a piece of 330mm pushrod from the hardware bag. Slide one piece of 5mm silicone tube to the rod. Screw in the metal clevis on the end of the rod. Align the servo arm; find a best location on the rudder for securing the control horn. Securing the control horn with 2mm x 15mm screws on the rudder. Set the servo at neutral position. Connect the clevis with the control horn. Push the silicone tube to the clevis. Use 1.5 hex wrenches to secure the 3mm hex screw.



Take M4 x 40mm hex screws, sponge wheels, 4mm nuts, 4mm lock nuts on the working table waiting for assembling the main gear assembly.



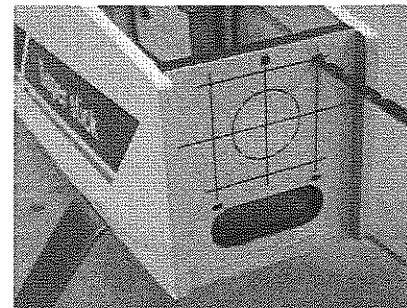
Use 3mm hex wrench to hold the screw and use the 8mm nut driver to secure the lock nut. Please keep the wheel moving freely when securing the lock nut.



Please find the pre-serving holes on the bottom of the fuselage for securing the main gear. Secure the

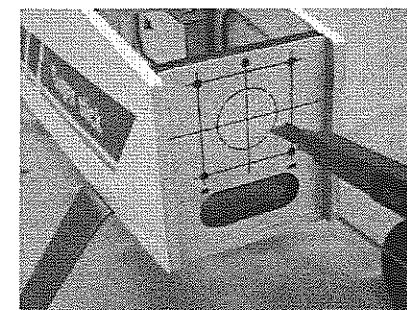
main gear with M4 x 15mm screws.

FOR GP VERSION

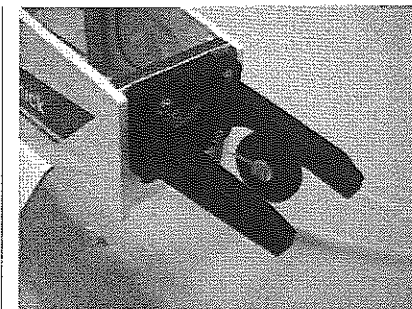


There are laser-markings on the firewall for showing location to mount the engine mount. Use 4mm drill to open the holes.

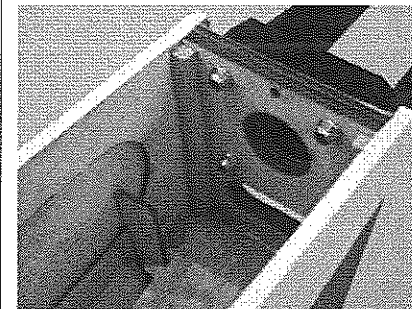
(Note: the engine used on this manual is DLE 20CC gas engine. If use other engine, please adjust the width of the engine mount and the location on the firewall.)



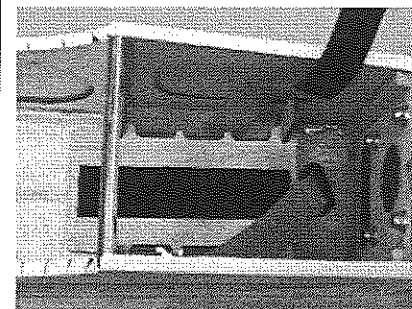
Use hobby knife to remove the planking inside the center hole on the firewall.



Place the engine mount on the firewall and insert the M4 x 30mm screws. The DLE 20cc engine will be installed up-side down.

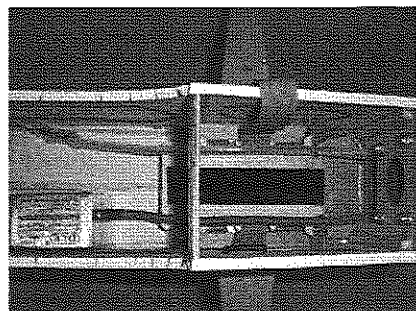


Secure the engine mount with 4mm lock nuts.

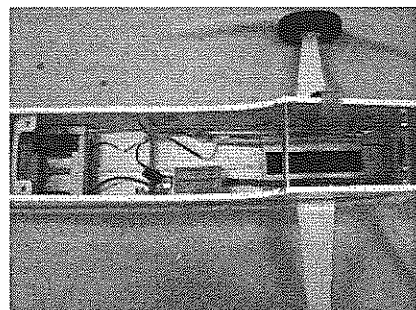


Take the battery tray, Hook-and-Loop strap, adhesive Velcro-tape and 420 c.c. fuel tank out of the hardware bag. Apply one piece of adhesive Velcro-tape on the battery tray and another piece of Velcro-tape on the

fuel tank. Insert the Hook-and Loop strap through the center of the battery tray. Drop some instant glue on the conjunction of F2 and F3.



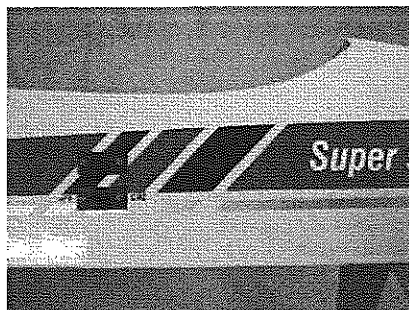
Apply a piece of adhesive tape on the igniter (CDI come with the gas engine) and fix on the side of fuselage. Pull the connector of plug and switch cable from the sides of F3 to the bottom of firewall.



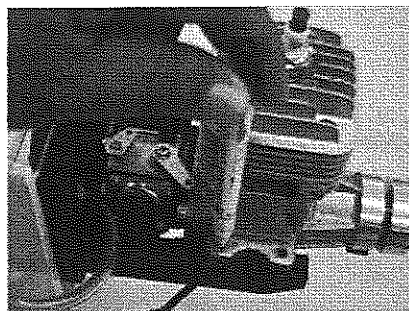
Secure the throttle servo on the servo tray with the screws come with the servo. Assemble the rod stand on the servo arm with M3 x 4mm hex screws and plastic nut. Find a piece of 500 mm pushrod. Use Z-bender to make a Z end on one end of the rod. Insert the other end of rod from F1 (the bottom of the engine mount) to the hole on the F4 and connect with rod stand.



Connect the fuel inlet port (black one) and outlet port with fuel tube. Fit the fuel tank onto the battery tray and secure it in place with the Hook-and-Loop strap.

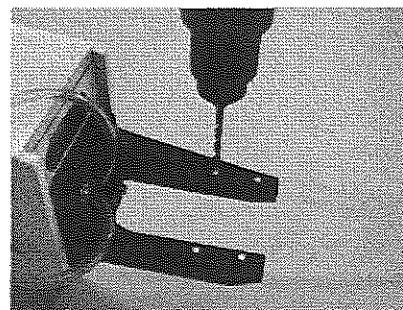


Assemble the receiver switch and igniter switch (locate on the CDI) on the side of the fuselage; located on the negative direction of the muffler.

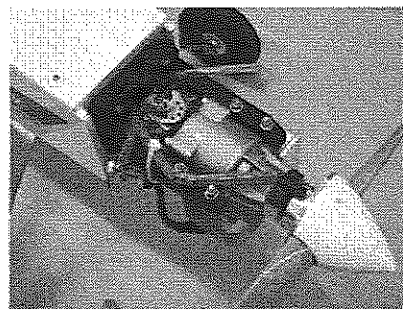


Try to fit the engine on the engine mount. Use marker to mark the

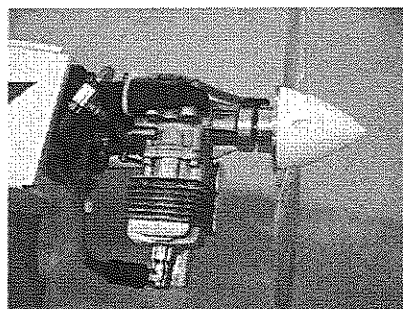
position for securing the engine on the engine mount.



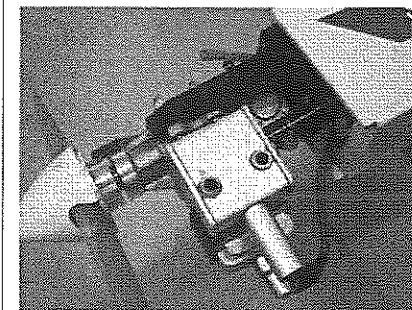
Remove the engine and use 4mm electric driller to drill holes on the marking. Make sure the holes are drilled vertically.



Connect the Z-end of the rod with throttle. Secure the engine in place with M3 x 30mm screws and M4 lock nuts. Assemble propeller and spinner on the engine.



Prepare one piece of 2-way fuel filter and 5 pieces of tube clips. Place a clip on the connection of the tube and two ends of filter for avoiding losing off during flying. Insert a clip from the filter to the carburetor. Connect the 3rd holes of the filter with 5cm fueling tube and secure with a clip. Use a fueling tube stopper to stuff up the other end of the tube.

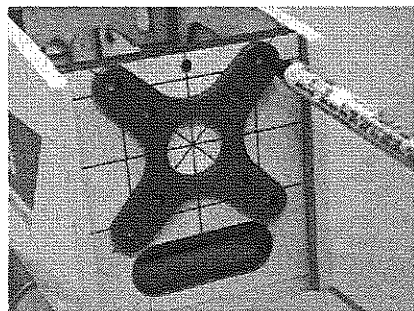


Assemble the muffler on the engine with the screws supplied with the engine.

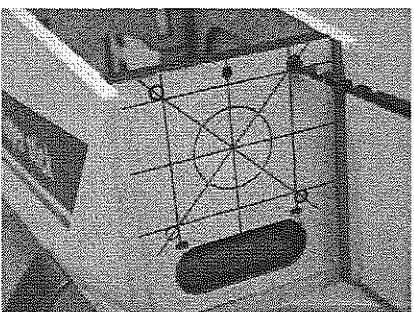


Secure the battery on the battery tray. Connect the servo and Y-harness to the receiver and secure with adhesive tape. Set all the throw and throttle. Secure the M3x4mm hex screw.

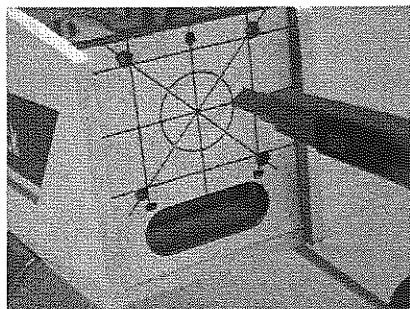
FOR EP VERSION



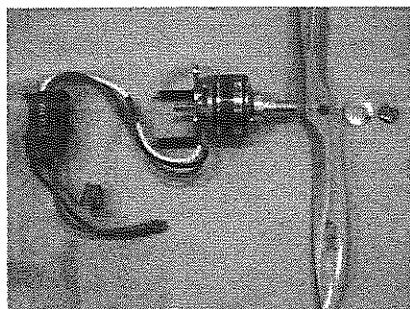
Place the motor mount (shipped with motor) on the firewall. The center of the drawing on the firewall must be located on the center of the motor mount. Use marker to mark the position for securing the motor mount.



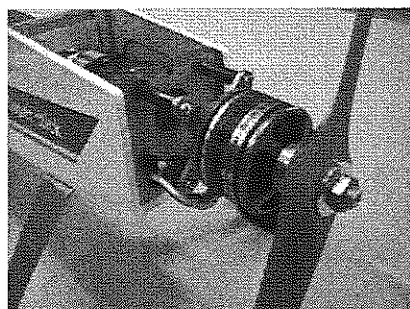
Remove the motor mount. Use drill to open the 4 holes which were marked from last step for installing the clutch nails



Use hobby knife to open the center hole on the firewall.

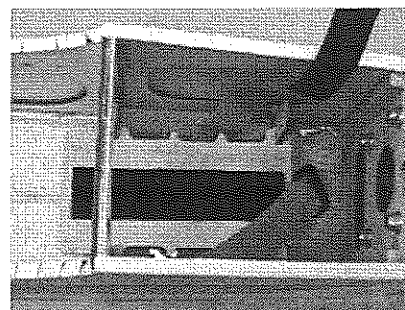


Assemble the motor on the motor mount. Use solder iron to connect the motor plug with the ESC plug. Connect the ESC with battery for checking the rotation of the motor.

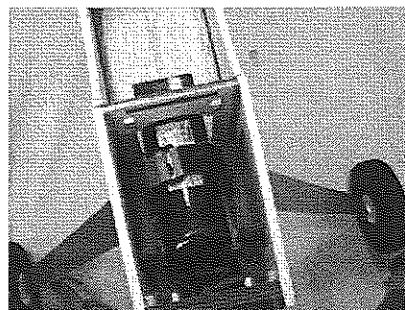


Secure the motor mount on the firewall with the screws and washers shipped with the motor. Use gauge to measure the center position of the aluminum nut.

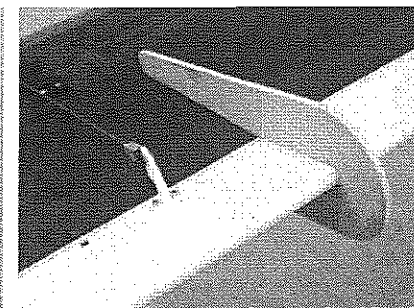
Enlarge the hole of the propeller for securing the aluminum nut onto the propeller.



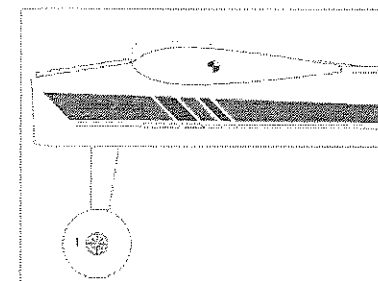
Take the battery tray, Hook-and-Loop strap and adhesive Velcro-tape out of the hardware bag. Apply one piece of adhesive Velcro-tape on the battery tray and another piece of Velcro-tape on the battery. Insert the Hook-and-Loop strap through the center of the battery tray. Drop some instant glue on the conjunction of F2 and F3.



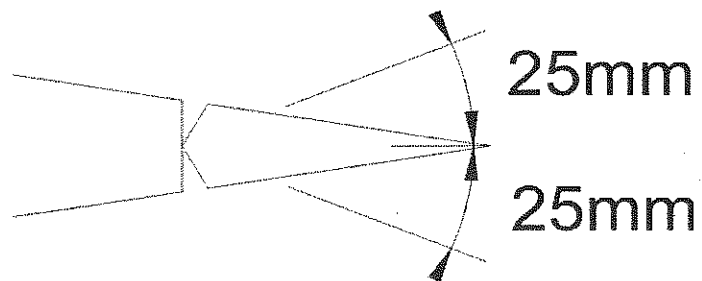
Secure the ESC inside the fuselage with double-side adhesive tape. Place the battery on the battery tray and use Hook-and-Loop to fix the battery in position.



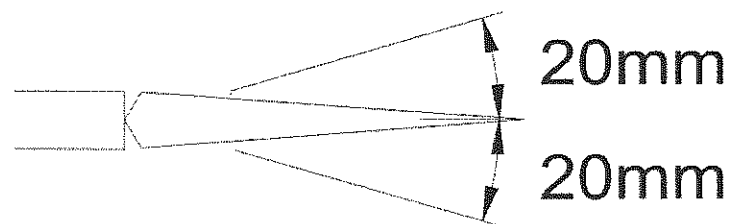
Caution: It is very important to center the aileron. Please find a planking gauge inside the hardware bag. Insert the gauge from the aileron to hole the rib on the main wing. Use hex wrench to adjust the screw on the rod connector.



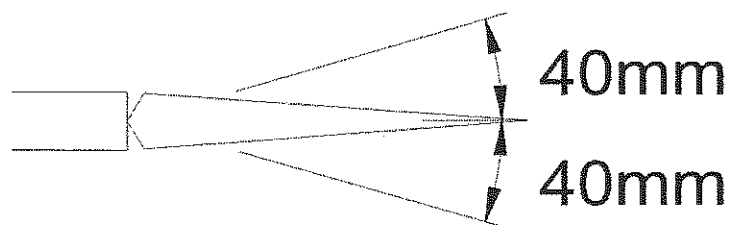
C.G. Location is 119mm backward from the leading edge of the main wing..



AILERONS THROW



ELEVATOR THROW



RUDDER THROW