

Extra330LX 3.0m V2

Instruction Manual



Even though this Extra330LX 3.0m seems to be very similar to its predecessor with just a longer canopy and a little bigger control surfaces, by no means this is the case. It is a completely new design, where almost nothing bases on something which had been done before. This Extra is a real REVOLUTION in the Large Scale Aerobatic Market, something never done before, something so special and so different that it was a real risk to start this project in the first place - because many told us that what we were trying to do was impossible. Boy were they wrong! The CARF-Models Extra330LX 3.0m is actually defying gravity and inertia.

CARF-MODELS 

Liability Exclusions & Safety Responsibility

You have acquired a kit, which can be assembled into a fully working R/C model when fitted out with suitable accessories, as described in the instruction manual with the kit. However, as manufacturers, we at CARF-Models are not in a position to influence the way you build and operate your model, and we have no control over the methods you use to install, operate and maintain the radio control system components. For this reason we are obliged to deny all liability for loss, damage or costs which are incurred due to the incompetent or incorrect application and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by binding law, the obligation of the CARF-Models company to pay compensation is excluded, regardless of the legal argument employed. This applies to personal injury, death, damage to buildings, loss of turnover and business, interruption of business or other direct and indirect consequent damages. In all circumstances our total liability is limited to the amount which you actually paid for this model.

BY OPERATING THIS MODEL YOU ASSUME FULL RESPONSIBILITY FOR YOUR ACTIONS!

It is important to understand that CARF-Models Ltd., is unable to monitor whether you follow the instructions contained in this instruction manual regarding the construction, operation and maintenance of the aircraft, nor whether you install and use the radio control system correctly. For this reason we at CARF-Models are unable to guarantee or provide a contractual agreement with any individual or company that the model you have made will function correctly and safely. You, as operator of the model, must rely upon your own expertise and judgement in acquiring and operating this model.

Personal safety

There are a couple of things that are good to keep in mind when you are assembling your CARF-Models Extra330LX 3m. Some of them are common sense, but it doesn't hurt to be reminded. While you are working with tools and sharp implements, be aware of others around you and the environment you are working in. When cutting or sanding materials, always wear a face mask to avoid inhaling particles. Keep your work environment clean and tidy at all times. A clean workshop will enhance the experience. Protect all parts from scratches and dents. Use rubber matting on your bench, and be careful of components like screws getting between the part you are working on and the bench. BE CAREFUL with the two combined ultra torque servos, open pushrods, and bell cranks - there is imminent danger to break your fingers when you switch on the RC system.

Assembly process

This manual is set to provide detailed pictures of the building steps. You may wish to change and do some things in a different order, which is fine provided you keep in mind that some things need to be done before some others. When planning out the installation of your components, always keep the centre of gravity location in mind. If you plan ahead you can avoid having to add weight to your model. It is far easier to remedy a nose heavy model than a tail heavy model. A few grams of lead at the rear is preferable to hundreds of grams in the nose! You will find that it is easiest to fit items that cannot be relocated, like aileron, elevator, rudder and throttle servos, before you do a preliminary C of G check. Receivers, ignition and batteries etc. can generally be relocated to suit your requirements.

Most of all, enjoy the process of creating your new CARF Extra330LX 3m, a job well done is always satisfying!

Extra330LX 3.0m V2

Category – Aerobatic Prop Planes



About

This is a quick guide to the successful installation of RC and propulsion equipment into your new Extra330LX 3.0m. We do not have a lengthy manual to bore you with how to tighten a bolt or how to clean a surface before gluing and such. We will provide within this manual the specific details of rigging this airplane successfully for many hundreds of hours of competition flying.

The CARF-Models Extra330LX 3.0m is a ground breaking design with a completely new approach of connecting your servos to the control surfaces of the airplane. The control surfaces are also attached to the wings/stabs in a new way for CARF-Models. If you are used to CARF-Models Aerobatic airplanes, with the skin hinged controls or the center hinged controls on the hinge posts, you will have to get accustomed with a new way of doing things. Please be open minded for the new design, and please do not alter any of the design or the hardware we provide.

All the equipment we provide is thoroughly tested in this airplane. We did so many flights with the help of nameful pilots, with very rough engines that create a lot of vibration and incredible power and various servos to make sure to recommend the best working equipment for you – and that's what we do with this manual now. PLEASE do yourself a favor and do not modify any of the design until you have a considerable amount of flights on the airplane and have a feel for WHY you might want to change this or that, if anything. Please give us the chance to show you that our research and development has been serious and successful and the sophisticated final setup we came up with works better than anything else we tried. We tried a lot!

We have seen a lot of equipment and hardware problems and failures during our testing. What you hold in your hands now is the result of all this hard work. Every detail has a reason. If it isn't exactly what you would have used, please give us the benefit of the doubt, and consider that we might have ALSO been trying to use something else instead which hasn't been working reliably or safely. We do not intend to save cost by providing a cheap solution in hardware and equipment. We are ONLY driven by our test results.

What do you need???

An example of the basic and main accessories required...



This is list of required products to complete your Extra330LX 3.0m KIT. This list only is a recommendation of what to equip your airplane with. There is no reason similar products from other brands cannot be used in this plane. There are many ways and products on the market you can use with the Extra330LX 3.0m.

Amount	Required	Possible Accessories
1x	Engine	DA 170cc / GP 178cc / DLE 170cc / ZDZ 195
1x /4x	Engine Standoffs	4x Selfmade Aluminium Standoffs
1x	Propeller	Falcon / Xoar Carbon Prop 30x12 / 30x13 / 31x12 31x13
1x	Spinner	Falcon / Xoar Carbon Spinner 6"
1x	Exhausts	Zimmermann Exhaust SET
1x	Kill Switch	Powerbox Spark Switch RS
1x	Throttle Servo	Mac Gregor MGB 6928HV
8x	High Torque Servos	Mac Gregor MGB8555HV
8x	Double Servo Arms	CARF Double Servos Arms 25T
1x	1,5L Tank	Aerobatic Fuel Tank 1500cc
1x	700ml Tank	Aerobatic Smoke Tank 700cc
1x	Smoke Pump	Holy Smokes Smoke Pump
2x	Wheels	Lightweight Foam Wheels 6" / Spot-On RC Fly Wheelz 4,5"
1x	Tail Gear	Tail Gear 150-170cc Size
1x	Power Supplie	Jeti Central Box CB220 / Powerbox Competition SR2
2x	RX Batteries	Gens Ace Lipo 2s 2500 - 3500mAh
1x	Ignition Battery	Gens Ace Lipo 2s 2000 - 4000mAh
-	Servo Wire	Powerbox Servo Wire Maxi
-	JR Connectors	JR Connectors

Build Description

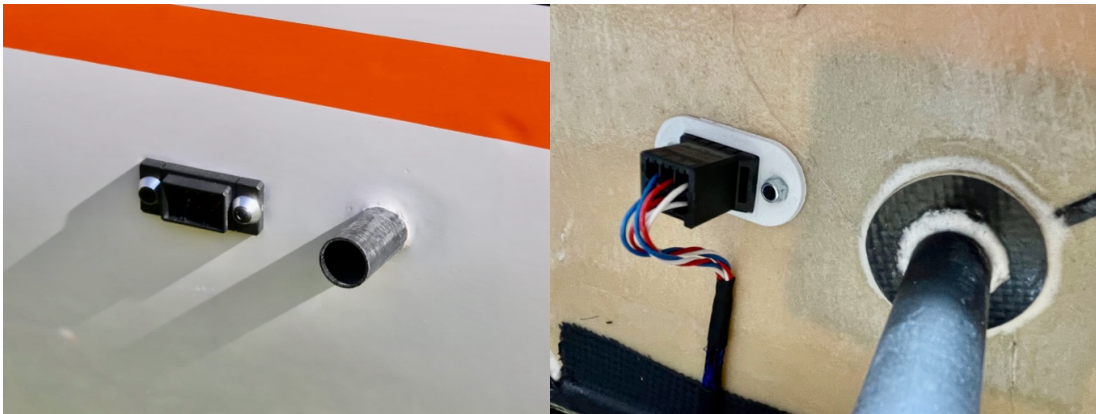
Wings

- Make sure the servos are tight on the mounting plate (16x allen bolt M3)
- Drill a hole between the servos and place a rubber grommet to put the servo wire through
- The carbon arm needs to be placed below the actual servo arm
- Connect the both servos with the linkage included in the hardware package (it's important that the two servos won't work against each other! = Servomatching)
- Use 4x allen bolt M3 with washers and stop nuts



- Get the servos on full travel to fit the servo board into the wing
- Place the finished and in the best case preprogrammed servo board in the wing using the 16x allen metal screws
- Assemble the aileron linkages with the M4 threads, 4mm carbon tubes, M4 nuts, M4 ball links and M4 aluminium clevis
- Check both linkages have the same length from the ball link hole to the aluminium clevis hole
- Install the aileron linkage with the included M3 bolt, washers, stop nuts and the pin for the aluminium clevis
- You may have to extend the linkage slot a bit in the length for more aileron deflection

Wing Connector



- As shown in the picture before you can use a Multiplex plug as well as other types of connectors for the wing (plugs, screws and washers not included)

Stab

The elevators are moved by a large bell crank in the tail of the airplane.

- Install and gang the two elevator servos following the guidelines given in the previous chapter for the ailerons with the included linkage hardware (it's important that the two servos won't work against each other! = Servomatching)
- Make sure the servos are tight on the mounting plate (8x allen bolt M3)
- The carbon Arm needs to be placed below the servo arm
- Connect the both servos with the linkage using 4x allen bolts M3 with washers and stop nuts

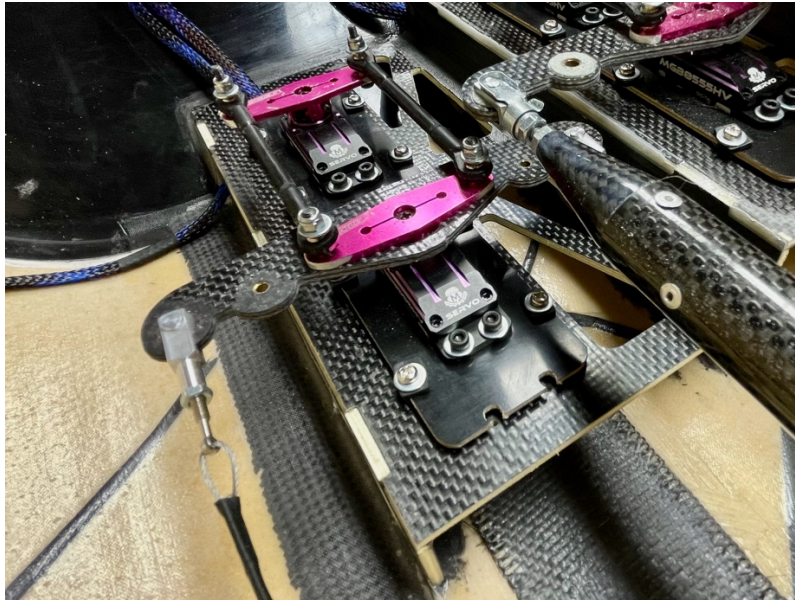


- Place the servo board with the installed and ganged servos into the wooden support beside the rudder servo
- Use the 8x allen metal screws to screw the servo board in place (yes only 8x screws, there is no need to use screws at the two left and right holes)
- Connect the steel clevis of the preinstalled elevator pushrod and move the system from end to end to make sure there is no rubbing or binding
- You may have to sand the servo arm a bit to get more elevator deflection

Rudder

Servo installation

- Install and gang the two rudder servos following the guidelines given in the previous chapter for the ailerons and elevators with the included linkage hardware (**it's important that the two servos won't work against each other! = Servomatching**)
- Make sure the servos are tight on the mounting plate (8x allen bolt M3)
- The carbon Arm needs to be placed below the servo arm
- Connect the both servos with the linkage using 4x allen bolts M3 with washers and stop nuts



- Place the servo board with the installed and ganged servos into the wooden support in the middle of the fuselage behind the muffler compartment
- Use the 8x allen metal screws to screw the servo board in place (yes only 8x screws, there is no need to use screws at the two left and right holes)

The rudder cable installation will be done in the next step...

Rudder cable installation

Even tho this pictures show the Extra330LX 2.6m, it's exactly the same procedure with this Extra330LX 3.0m V2

The rudder is connected via a rather traditional pull/pull setup (no crossover of the cables).
The exit hole for the rudder wire already should be installed by the factory.

- Create the rudder cables with the two M3 ball links on rudder side first and fit them through the slot into the fuselage
- Then create the two M3 aluminum clevises ad crimp them on the servo side
- Double-loop the ends of the rudder cables in the back as well as in the front to make sure they won't slip out
- Crimp them to the correct length and allow a few mm of length adjustment with the threaded ends
- Then move the system from end to end to see that nothing is binding or rubbing



Engine, Canister, Spinner, Prop & Fuel Tank installation

Engine installation

- The firewall is not set with the perfect offset to match the cowling
- Special standoffs are needed for the engine mount (different standoffs for different engines)
- We recommend to stand the plane up on its tail with the upper half of the cowling bolted
- Then use the engine with your standoffs and the 6" spinner to perfectly line up the motor and drill your holes
- Before drilling bigger holes for M6 T-Nuts make sure your engine really is middle by assembling the whole cowling
- Now drill bigger holes to fit 4x T-Nuts from the back of the firewall and screw your engine with 4x M6 50 - 60mm bolts and M6 washers
- Don't forget to put a drop of Loctite on each of your engine bolts
- If you like you still can add 4x M6 washers with M6 stop nuts from the back



Canister installation

- The KIT has no canister mount included
- Take your time to create a mount which should be placed in the middle of the canisters (in the best case this position is at the rear of the gear mount)
- Now fit a mount your created mount into your muffler compartment
- We recommend to secure your manifold/canister connection with screws between the clamps so the canisters cannot go off or turn so easily
- The result should look pretty similar to what's shown in picture 3 or 6
- If you want to place something like your power supply or anything else on the muffler compartment you should add some wood or similar material in the muffler compartment to be able to thighten the screws correctly
- In case you like to mount your ignition switch or smoke pump inside behind the firewall on the muffler compartment you need to place some wood parts inside the muffler compartment at the choosen positions

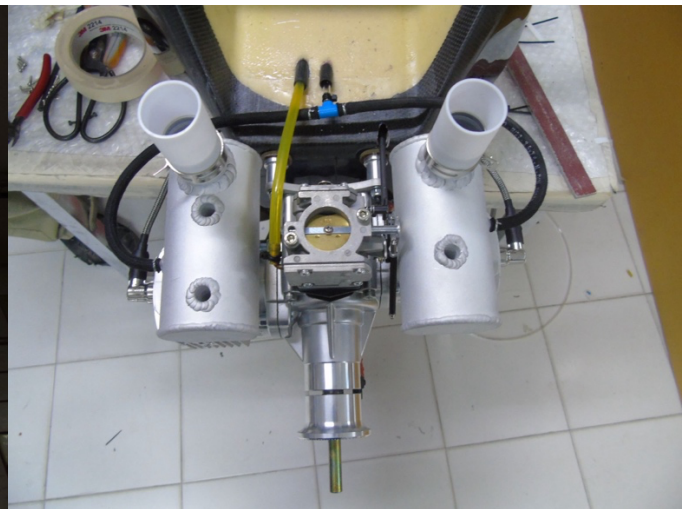
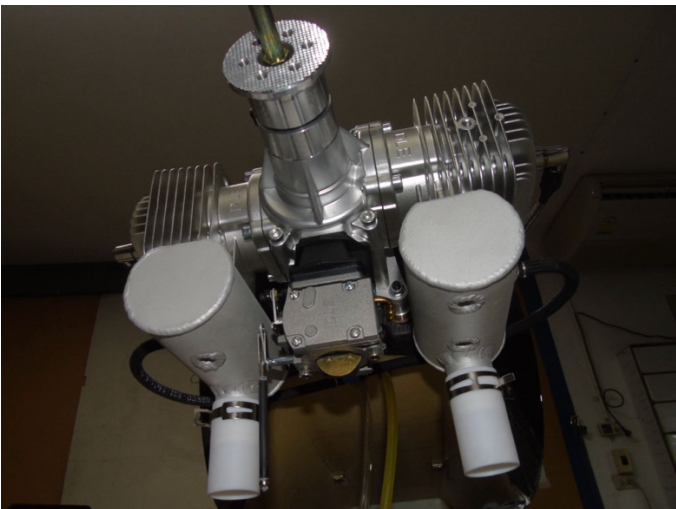
↓ Installation of the canisters mounted at the gear mount ↓





- If you are going to use stock mufflers please just install them to your engine and cut the two holes into the lower cowling

⇩ Installation of stock mufflers ⇩



- If you want to install your ignition switch or smoke pump on the muffler compartment later, you'll need to install some wood plates at your preferred positions from the inside of the muffler compartment

Propeller and Spinner installation

- After you have drilled the spinner backplate as well as the propeller you place them on the crankshaft pin
- You should be able to screw every single screw by hand until they are all in (if that's not possible you need to sand or extend the hole until it is)
- Tighten the propeller screws in a crossover and then thighten them clockwise
- Next you need to check if the spinner hatch fits along with your propeller and in case it doesn't extend the propeller slot all around to have a gap of approx. 3mm between the propeller and spinner hatch
- Then secure the spinner hatch with the in the spinner included 6x flat round head screws



Fuel Tank installation

- There is no fuel tank tray included in the KIT
- Take your time to create a mount which should be placed in the middle of muffler compartment right in front of the wing tube
- You'll probably need to sand the position area and glue the tray to the muffler compartment in front of the wing tube (make sure the tray has a strong connection to the muffler compartment)

Only strapping the fuel tank to the muffler compartment will not work. It's just not strong enough to hold a filled fuel tank!

- Before placing the fuel tank we recommend to put a 4mm brass tube in the fuel line to prevent the fuel line turning around
- To attach the fuel tank we recommend to put some welcro or double sided tape between the tank and the tray (put some welcro all around the fuel tank and tray as well)

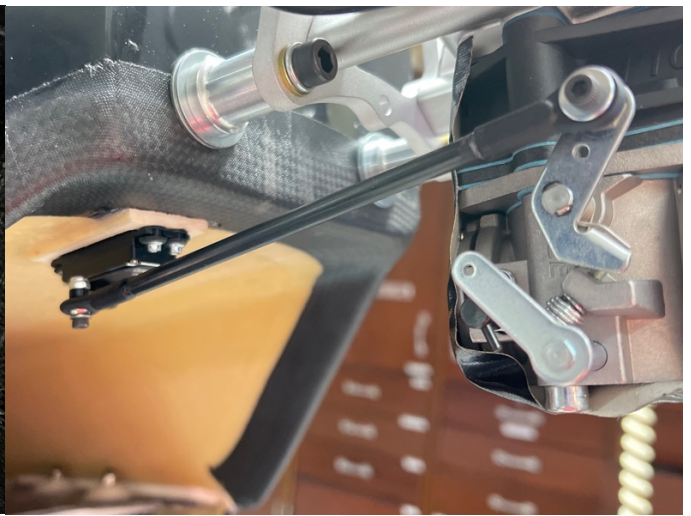
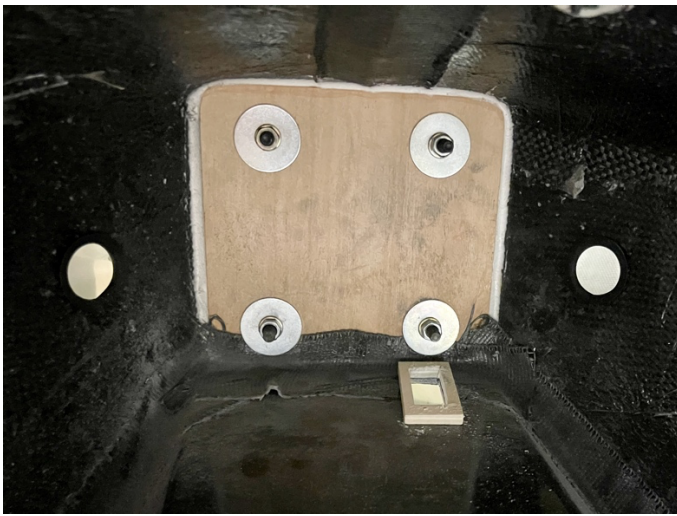


Throttle Servo, Ignition, Baffling & Air Exit

Throttle Servo installation

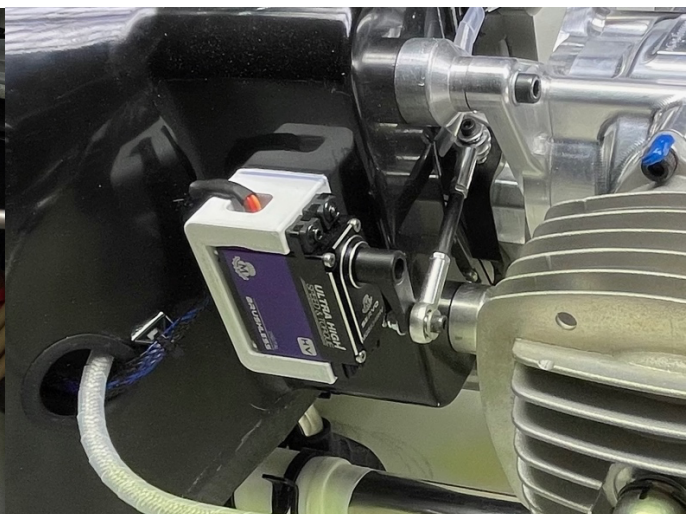
⇓ For most standard engines ⇓

- Create a servo slot with a wood frame into the muffler compartment
- Place your throttle Servo in this servo slot and screw it with 4x Servo Screws from your Servo accessories
- Assemble the included throttle linkage (M3 thread, 2x M3 ball links, 2x M3 bolts, 2x M3 washers and 2xM3 stop nuts and if you prefer, but not included, a 3mm carbon tube)
- Use the throttle linkage to link the throttle arm with your servo arm
- We recommend to drill two holes with approx. 20 - 25mm diameter on the side of the firewall for your ignition caps



⇓ For most the ZDZ 195 engine ⇓

- For this special engine you will need to install your throttle servo on the left side of the engine dome very similar to how it's done in the second picture



Ignition installation

- Take a small wood board more less the same size as your ignition and glue it to the top inside the fuselage front or on the left or right side of the firewall (at the inside)
- Drill two slots on the left and right side of your glued board for a strap of welcro
- Another option is two drill two approx. 4mm holes on each side of your glued board for two cable ties on each side
- Now you place your ignition to the installed board using double sided tape and finish the installation by put on your welcro strap or your cable ties
- With each of both (welcro or cable ties) you already can organize your ignition wires a little bit



Cowling

- It's time for the cowling
- If you don't use a choke servo and you'll do it manually you need to attach a choke linkage to the your carburetor and find the right spot to drill a small hole into the cowling
- Fit that choke linkage through the hole and mount the lower cowling with the included M3 bolts first
- We recommend to use a good baffling for your engine what will be shown in the next step
- If you don't feel the need to use baffles you can mount the upper cowling with the M3 bolts at this point (otherwise you have to finish the next step before you install the upper cowling)

For the all engines, but especially the ZDZ 195 bafflings are a must have to not overheat your new engine!



Baffling

- You can just use some soft styrofoam like epp to create easy bafflings which will adjust to the cylinders because of the cylinder temperature (very useful for two cylinder engines)
- This is the best and easiest way to create bafflings for the cylinders and the carburator
- If you're using a four cylinder engine you're baffling needs to be more professional



Air Exit & other things

- In case there will be a lot of heat in the muffler compartment you somehow have to open a part of the fuselage behind the landing gear mount
- We recommend to open the fuselage the same or similar way as shown in picture 1
- Another option is to cut big holes in this area and create some nice parts for better airflow like picture 2
- The way it's done in picture 2 also prevents smoke oil getting into the muffler compartment
- If you want to place something like your power supply or anything else on the muffler compartment you should add some wood or similar material in the muffler compartment to be able to thighten the screws correctly
- In case you like to mount your ignition switch or smoke pump inside behind the firewall on the muffler compartment you need to place some wood parts inside the muffler compartment at the choosen positions



Air Inlets

- These inlets are very important if you're using the ZDZ 195 engine
- The air coming through the inlets will bring fresh air to the rear carburetor of the engine

This is essential for the performance of the ZDZ 195 engine!



Landing Gear, Gear Cuffs, Wheels, Wheel Pants & Tail Wheel installation

Landing Gear

- Take the included landing gear hardware to mount your landing gear to the fuselage
- Place your landing gear and center it within the slot
- Clamp it with the two carbon boards and the 4x M4 flat head bolts (a drop of loctide recommended)
- You don't need to tighten them too much



Gear Cuffs

- Next up you put the gear cuffs on and adjust them to the carbon landing gear and the fuselage (that's another way to check if your landing gear is centered)
- We recommend to either drill 8 or 12 small holes, secure the gear cuffs with 4 - 6 screws each at the bottom
- On each top side left & right you should drill 5 holes and use 5 screws to mount the gear cuffs
- For smoke users (use clear to mount the gear cuffs before you install the screws, to prevent smoke oil from getting into the gear mount)



Wheels & Wheel Pants

- Mount your wheel axle to the landing gear and place your wheel on it
- Glue the included wood part into the wheel pants to later place the T-Nut to secure your wheel pant
- Install your wheel pant and secure it with a M3 bolt, a washer and a T-Nut from inside (a drop of loctide recommended)



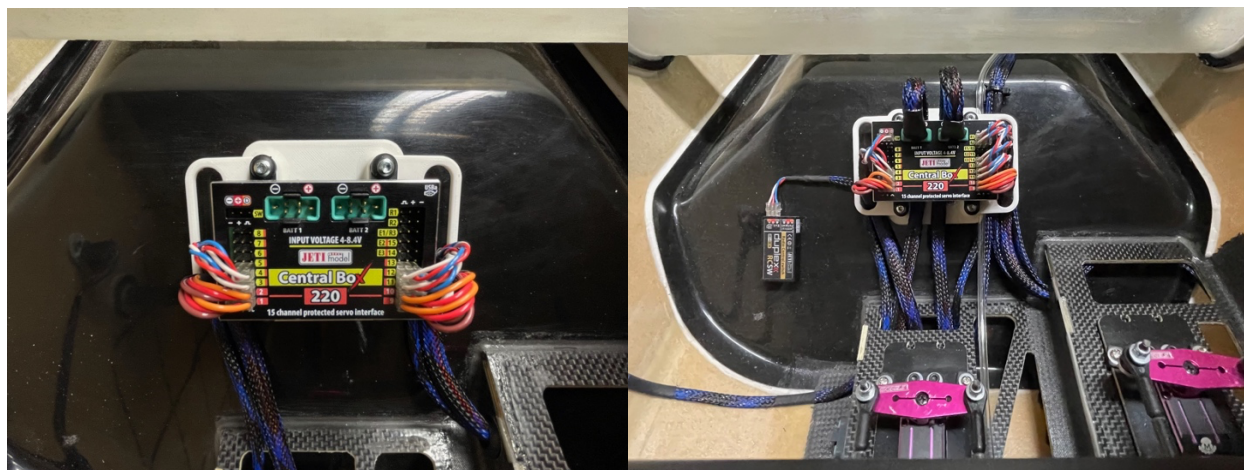
Tail Wheel

- Fix the tail wheel in position using tape and mark the spots where you need to drill two holes in your tail wheel and tail hatch
- During your tail wheel is preplaced put your rudder to full deflection and mark the maximum spot of the ball link for the steering pin (at full deflection there should still be approx. 10mm of the steel pin behind the ball link)
- Now install two M3 T-Nuts from inside the tail hatch
- Take the tail wheel off the fuselage and drill a hole in the bottom of the rudder as marked for the ball link
- Now you glue in your ball link into the rudder (use some thick epoxy or resin)
- It's absolutely enough to just glue the ball link, there is no need to put a wood block or similar on top
- Fit your steering pin into the ball link and mount your assembled tail wheel with 2x M3 bolts & M3 washers and a drop of loctide



RC Power System

- Mount your central box or similar power supplies on the back side of the muffler compartment
- You already should have glued some kind of wood plate from the inside of the muffler compartment a few steps before (if not, please do so)
- Place your power system and use included mount to screw it in place
- Please don't only use double sided tape to secure your power system
- It's the heart of the plane and shouldn't be able to move or fall off and cause an accident
- If your system doesn't have mounts use some welcro, cable ties or design your own mount to secure it



Canopy installation

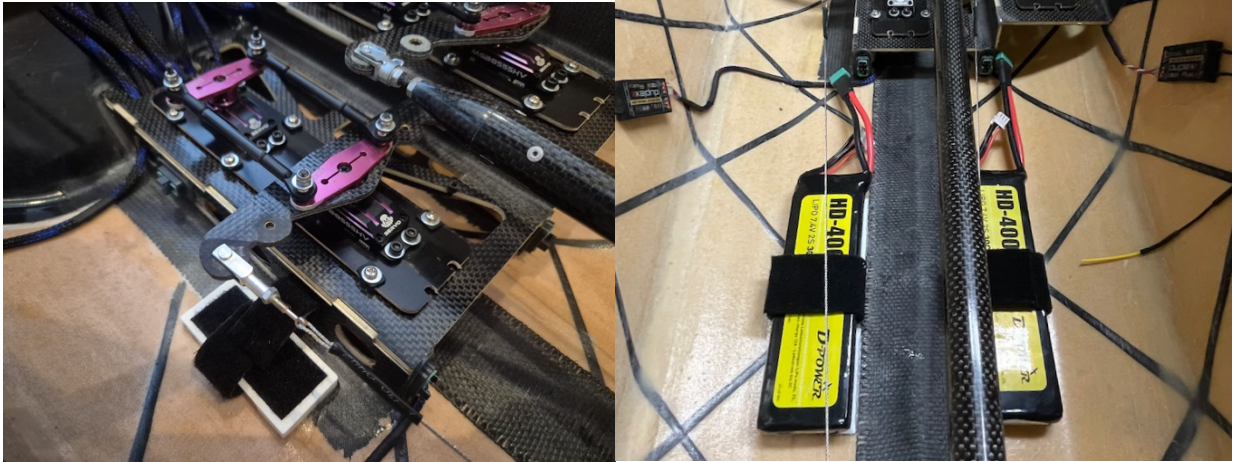
Even tho this pictures show the Extra330LX 2.6m canopy, it's exactly the same procedure with the Extra330LX 3.0m V2 canopy

- The canopy needs to be trimmed at the cut line (we recommend trimming step by step and meanwhile see how the canopy fits)
- We recommend covering the canopy except the area which will be glued with some kind of protection (not done on the pictures...)
- As well as protecting the canopy frame with some tape
- Prepare yourself with a couple of small but strong magnets
- Fit in the canopy and glue it step by step all around with your canopy glue and put the magnets back on
- Wait until everything is dry and remove the magnets as well as the canopy and frame protection



Center of Gravity & Batteries

- The center of gravity should be measured at the middle of the wing tube. If the plane takes the tail down a little bit the cg will be fine
- The ignition battery can be placed on the left side of the rudder servo tray
- The two rx-batteries should be placed between the end of the canopy and the rear end of the elevator servo tray
- We recommend to mount the rx-batteries on the fuselage bottom or if you prefer they can be placed on sides left and right to have a little bit easier access



Final Setting

Control Throws:

You can set up all the control throws to the maximum possible travel. Then add between 35 – 60% Expo to the ailerons and the elevator, for the rudder 20 – 45% Expo should be enough.

For low rates you can reduce the elevator and rudder control throws by 35% and the aileron throws by 20%, but that is very much up to your personal preference.

This manual has been created while the first Extra330LX's 3.0m V2 have been test flown. We have made subsequent changes in the production line with whatever we found during the test flights to be improved. So, the first handful of airplane might differ slightly from the details shown in this manual, but all values given here are current and can be immediately used for any Extra330LX delivered. Thank you for being a loyal customer, for choosing a fine and technologically very sophisticated aircraft over many other, maybe simpler built choices on the market. We are sure you will enjoy every minute of building and flying your Game Changer and taking the Extra330LX 3.0m V2 to its limits.

We hope you have enjoyed assembling your CARF-Models Extra330LX 3.0m V2 and you have many years of happy flying with it. If you have found yourself in difficulty and need some assistance, your sales rep is only an email away. Please contact your rep and they will endeavour to assist you, and get you back on track. Alternatively you can contact us via the emails below. We also welcome your feedback, please contact us if you would like to see something added or altered. We are always looking to improve our products and the information we supply.

www.carf-models.com

Extra330LX 3.0m V2 Manual (March 2025)

Hardware KIT Components Extra330LX 3.0m V2

Part	Product	Quantity
Fuselage	Allen bolt M4x12 mm (canopy lock)	1
	Allen bolt M3x10 mm (cowling)	22
	Allen bolt M4x10 mm (flat head bolt)	1
	T-Nut M4	2
	Allen Bolt M4 x 12 mm	2
	Washer D4 mm	2
Milled Parts	Carbon control arm for stab	1
	Carbon control arm for rudder	1
	Carbon control arm for aileron	2
	Servo mount Aileron	2
	Servo mount Rudder / Elevator	2
	throttle servo mount (CNC milled)	1
Landing Gear & Wheel Pants	Allen bolt M6 x 90 mm	2
	Stop nut M6	2
	Nut M6	2
	Washer M6	4
	Wheel Collar M6	4
	Sheet metal screws 2.9 x13 mm	18
	Flat head bolt M5x40 mm	4
	Plywood 3mm	2
Wings L/R	All Thread M3 x 57mm	4
	Allen bolt M3x20 mm	8
	Stop nut M3	24
	Plastic ball link M3	8
	Washer M3	48
	Sheet metal screws 2.9x16mm	24
	Knurled Plastic nut M6	2
	Allen bolt M3x12mm	16
	Allen bolt M3x16mm	2
	Stop nut M3	2
	All Thread M4x130mm	2
	Nut M4	4
	Steel clevis with pin d4 / M4	2
	Plastic Ball Link M4	2
	Carbon tube outside 6mm,inside 4mmx110mm	2
	Elevator	Allen bolt M3 x 12 mm
All Thread M3 x 57mm		2
Washer M3		24
Stop nut M3		12
Allen bolt M3 x 20 mm		4
Ball links M3		4
Sheet metal screws 2.9x16 mm		12
Allen bolt M3x12 mm		8
Allen bolt M3 x 12 mm		2
Rudder Servo	Allen bolt M3x12 mm	8
	All Thread M3 x 57mm	2
	Ball links M3	4
	Stop nut M3	12
	Washer M3	24
	Allen bolt M3x20 mm	4

	Sheet metal screws 2.9x16 mm	12
Rudder		
	Ball link M3	2
	Steel cable 0.8 mmx1500 mm	2
	Allen bolt M3x20 mm	4
	Crimp tube 2.8	8
	Stop Nut M3	2
	Nut M3	4
	Threaded end with hole for steel cable	4
	Aluminum clevis M3 with Pin and Clip	2
Spare Items		
	Plastic Ball Link M3	1
	Plastic Ball Link M4	1
	Steel Clevis with Clip M4	1
	Aluminum clevis M3 with Pin and Clip	1