



30cc Beaver



Assembly Manual

Congratulations on your purchase of this excellent almost-ready-to-fly *RIC* model! This ARF adopts the latest design features and emphasizes high performance, light weight and fun. The plane is designed by

professional engineers and built by skilled craftsmen.



Specifications:

Wing Span:	87" (2210mm)
Length(Including Spinner):	62" (1580mm)
Wing Area:	935 in ² (60.4 dm ²)
Flying Weight:	11 to 12 lbs(5-5.5kg)
Engine:	.91-1.20(2C) 1.10-1.40 (4C) 20 - 35cc Gas
Radio:	4+ Channels
Servos :	5 servos required 80 oz/in

FEATURES

1. Latest Structure
2. Light weight construction and high structural strength
3. Super Quality
4. Complete with accessories
5. Easy installation
6. Low wing loading
7. Anodized 6061 T-6 wheels
8. Advanced PU wheels

A QUICK WORD ABOUT SAFETY AND RADIO CONTROL FLYING MODELS

With radio control aircraft, like any hobby or sport, there are certain risks. The operator of these models is responsible for these risks. If misused or abused, you may cause serious bodily injury and/or damage to property. With this in mind, you will want to be certain that you build your model carefully and correctly. If you are not an experienced flier, have your work checked by an experienced pilot and ask for help in learning to fly the model safely. This model aircraft is not a toy and must be operated and flown in a safe manner at all times. Always perform a pre-flight check of the model which includes proper movements of all control surfaces, proper function of the radio gear, structural integrity, and radio range.

Models are not insurable but operators are. You can obtain coverage through membership in the Academy of Model Aeronautics (AMA). For an AMA information package call 1-800-435-9262, ex t. 292 or visit the AMA website at "www.modelaircraft .org".

By the act of using the final assembled model, the purchaser/operator accepts all resulting liability.

Items Required to Complete This Model:

<ul style="list-style-type: none">• 20-35cc gas engine• Appropriate propeller for your engine• Required engine and exhaust mounting hardware• Batteries for ignition and radio system• Appropriate HD switches• Receiver of your choice• Appropriate HD extensions• 5-6 good quality servos (120oz/in)	<ul style="list-style-type: none">• Covering iron and heat gun• Assortments of hobby tools such as screwdrivers, hobby knife, drill, pliers, etc.• Isopropyl alcohol• Ruler or tape measure• Blue thread-lock or equivalent• Thin and thick CA• 30-minute epoxy
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Note: As with all kits, it's a good idea to read all the instructions and study the parts before you begin construction. Handle the parts of this kit with care so you do not damage any of the structure or covering. Inspect all the parts for any shipping damage and report any issues to Slipstream dealers as soon as you can. Make sure you have a flat and sturdy workbench and follow all safety advice for the tools and adhesives you plan to use.

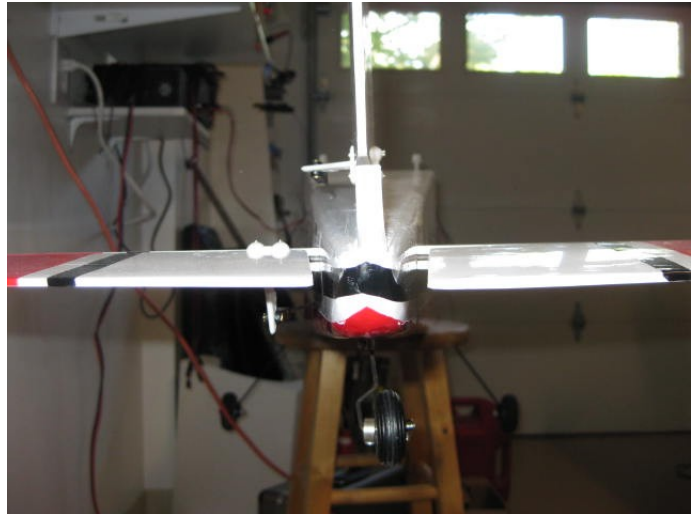
AIRCRAFT COVERING:

1. With all ARFs, varying temperatures and storage delays can cause the covering material to loosen over time during transportation, Slipstream recommends lightly going over all the covering with a covering iron set at medium temperature. Be sure to use a soft covering over your iron so that you do not scratch the covering surface. Be sure you go over all seams and edges of the covering to assure it is secure to the airframe and other covering. Be careful not to apply too much heat or you may cause bubbles or damage to the covering, A heat gun may also be used along with a soft cotton cloth to shrink loose coverings. Be extremely careful when using a heat gun.
2. Be sure to seal any exposed wood with a thin coating of epoxy to prevent engine oil from soaking in. This is especially important around the engine compartment and servo openings with exposed areas.
3. Some modelers prefer to seal the hinge gaps using strips of appropriate covering or clear trim tape. We have found this to be helpful with models intended for higher speed flight or models with unusually large hinge gaps. Slipstream aircraft utilize a very tight double beveled hinge line and do not normally require this step, Sealing the hinge caps is therefore

left as an option for the modeler.

RUDDER INSTALLATION:

1. Locate the vertical stabilizer, rudder and the tail gear set.
2. Install the vertical stabilizer. Cut away the covering where the vertical stabilizer will reside. The alignment stab on the vertical stabilizer will align the stab longitudinally. Use a right angle triangle or a similar tool to make sure that the stab will be vertical when it is glued in. Mix up a little epoxy and glue the vertical stabilizer in place.
3. Locate the tail wheel assembly and insert it through the hole on the bottom. There will be some of the rod that will protrude from the top, just behind the vertical stabilizer. You will have to make a 90 degree bend on the rod. This will be inserted into the rudder.
4. The rudder is pre-slotted to accept CA-hinges. Locate the CA-hinges and insert them into the rudder (do not glue in yet). Align the rudder onto the vertical stab and mark the location where the tail wheel rod will be inserted. Take an appropriate drill bit size and carefully drill where the tail wheel rod will reside in the rudder. Also recess the portion of the rudder where the rod is. Use thin Ca to harden the exposed wood.
5. Locate the small piece of dress fairing and glue it in behind the vertical stabilizer.
6. Install the rudder and use thin CA to glue in the CA-hinges. See picture below for completed assembly.



LANDING GEAR ASSEMBLY:

1. Locate the supplied main landing gear parts and sort them out on your workbench.
2. Bolt the main gear to the bottom of the fuselage using the supplied bolts. Use a small drop of thread-lock to secure the bolts in place. Use an appropriate wrench to hold the blind nut in place while securing the bolt.
3. Install the main wheel axles to the composite landing gear and tighten the nylon-insert lock nut. Install one wheel collar onto the axle. Use second wheel collar as a guide to achieve a gap on the inboard of the axle. Use a small drop of thread-lock and tighten in place. Slide the wheel onto the axle and install a second wheel collar also using thread-lock on the set screw.

4. Center the tail wheel bracket on the rear of the fuselage and screw in place using three of the supplied wood screws. Remove the screws and harden the holes with a drop of thin CA. Allow the CA to cure and then permanently install the tail wheel bracket.

RUDDER CONTROL INSTALLATION:

1. The ARF is supplied with a pushrod for the rudder. Guide the rod through the plastic sleeve in the fuselage. Make sure that the threaded end is on the rudder side. Install the plastic control horn supplied on the rudder. Make sure that you place the horn in line with the pushrod. Install the clevis onto the rod and clip it to the horn.
2. Install your rudder servo into the pre-cut location in the fuselage. You will need a 0.75 inch arms on the servo. Set up your radio accordingly and center the rudder servo. The geometry of your servo arm relative to the rudder horn is critical for proper rudder operation without binding.

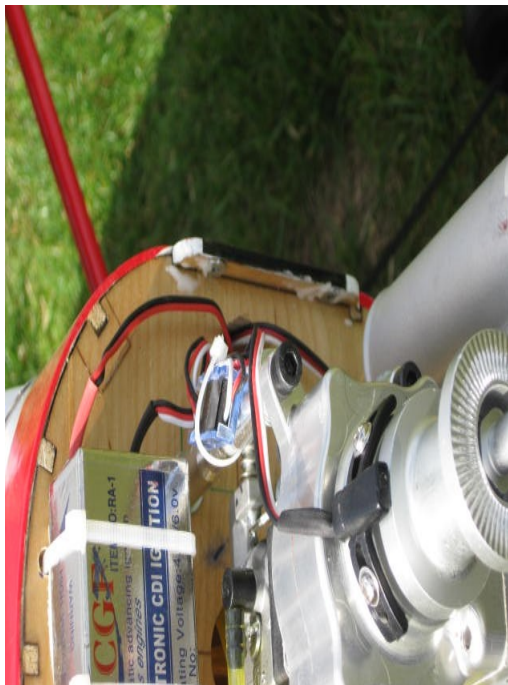


ENGINE EXHAUST & FUEL SYSTEM INSTALLATION:

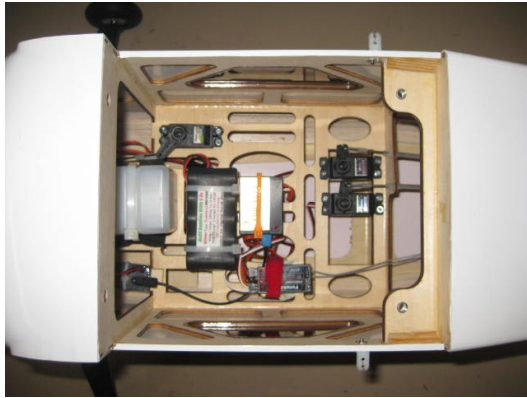
1. Use the provided template that comes with your engine (if provided) to align the engine. The center line for the mounting of the engine is marked on the firewall.
2. Use the guide to align the engine and drill the mounting holes. You may have to cut the firewall as necessary if using a rear-carburetor engine. Notice that the engine center line is offset to the left to compensate for the right thrust built into the engine box.
3. Place the cowling in place on the fuselage and measure the distance from the firewall to about 0.5 inch in front of the cowling. This figure represents the back of the spinner and will help you determine if you need to space your engine out from the firewall using washers or additional wood. Mount your engine securely using

bolts, washers, and locknuts and according to the manufacturer's instructions. The use of thread-lock is also highly recommended for the engine bolts. The pictures below show the different type of engines that can be mounted (side of rear-carburetor).

4. Mount the ignition module according to the manufacturer's instructions. Secure the pickup lead and ignition wires with zip ties so that they do not vibrate or touch any hot part of the engine or exhaust. The author prefers to protect the ignition wires with cable wrap to prevent wear of the mesh shielding,
5. Mount your ignition battery securely to the engine box. A good location is just above the engine. The ignition switch should be mounted to the fuselage side wall just behind the cowling, Secure all wiring connection neatly and firmly. See pictures below for a typical setup.



6. The throttle servo is mounted inside the fuselage as shown below. There are cutouts on the left and right side. Mount it where the pushrod functions smoothly. See picture below.



7. The fuel tank is pre-assembled. Complete the installation in the fuselage using zip ties or velcro straps to hold the tank in position. Connect a fuel line between the tank and carburetor, a fuel line between the tank vent and the bottom of the fuselage, and a fill line to a fueling dot which can be mounted to the fuselage side opposite your ignition switch. Make sure your vent line does not come close to any hot exhaust part such as the muffler. Slipstream recommends the use of small zip ties or fuel line clamps to secure the lines to the tank.

COWLING INSTALLATION:

1. Fit the cowling in place and make any cutouts necessary to clear your engine and exhaust components. Trial fit and trim as necessary being careful and accurate. Be sure to allow enough air exit area in the bottom of the cowling to provide adequate airflow over the engine. When satisfied with the final fit, attach the cowling to the fuselage using the supplied screws.

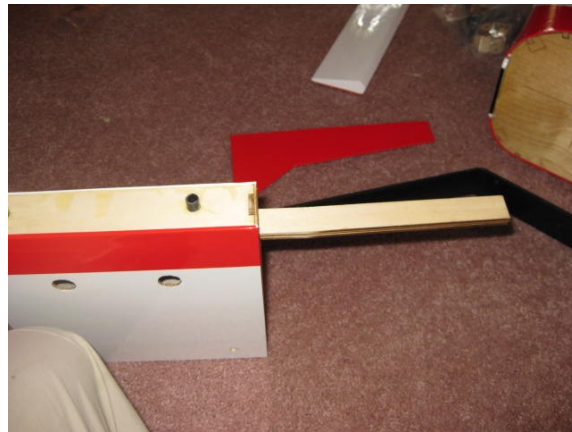
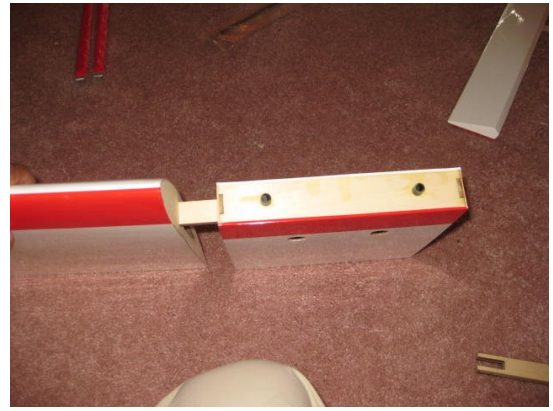
2. Install the propeller and spinner. Gasoline engines are very powerful and can cause damage to persons or property if propellers and spinners are not installed properly. Follow the manufacturer's instructions and make sure your propellers are well balanced, properly drilled, and display no cracks or chips.

HORIZONTAL STABILIZER AND ELEVATOR CONTROLS ASSEMBLY:

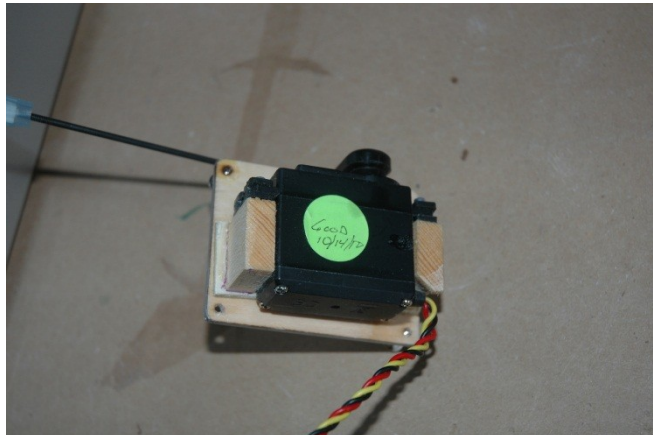
1. Locate the one piece stabilizer. Slide it in the stabilizer cutout in the back of the fuselage and center it. To ensure squareness of the assembly, measure the distance of the trailing tip of the wing to the trailing tip of the stabilizer on both sides. Make sure that they are equal. Once this is done, mark the area where the stabilizer meets the fuselage with a fine marker. Remove the stabilizer from the fuselage and carefully cut the covering off.
2. Locate the elevator couplers and prepare to place it in the fuselage along with the stabilizer.
3. Prepare some 30 minute epoxy. Have some paper towels soaked in isopropyl alcohol to wipe off the excess epoxy. Apply the epoxy over the expose area of the stabilizer and reinstall the stabilizer onto the fuselage. Wipe off the excess epoxy. Redo the measurement to ensure the squareness and center of the stabilizer. Set it aside and let to allow the glue to dry.
4. Locate and prepare the CA-hinges for installing the elevators onto the stabilizer. Ensure that the two halves travel equally when using the elevator coupler. Once all is checked for correctness, harden the holes where the coupler inserts into the elevator with thin CA to harden the wood. Employ the same method that was used to install the rudder.
5. Locate the pushrod and install it in the same manner as was installed in the rudder.

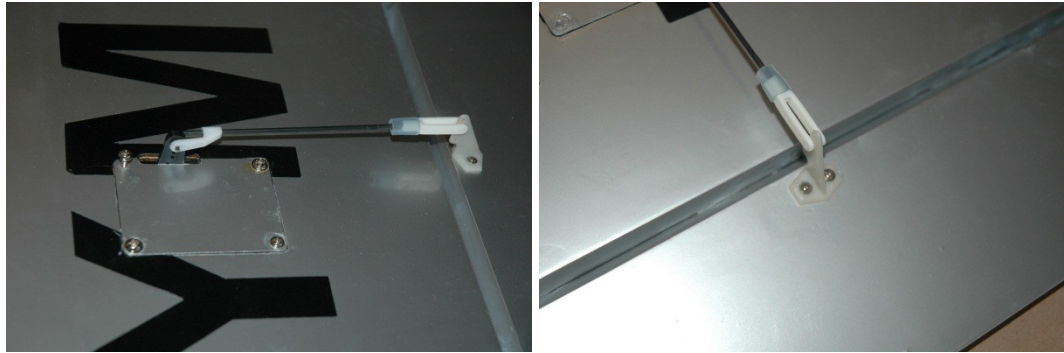
WING AND AILERON CONTROLS ASSEMBLY:

1. Locate the 3 pieces of the wing and joiners.



2. Do a trial fit and make sure that everything fits smoothly. Once that is achieved, mix some 30 minute epoxy and glue them all together. Use isopropyl alcohol to wipe away the excess epoxy.
3. Locate the servo mounting plate and blocks. Glue the blocks onto the plate using your servo as a guide. Ensure that the servo arm exits smoothly without rubbing the exit slot.





4. Use your radio and ensure the centering and direction of the servo. Once that is done, mount the servo plate onto the wing as shown in the picture above.
5. Install the ailerons using the provided CA-hinges and glue them in just like the installation of the rudder.
6. Line up the pushrod and mark the location of the horn. Install the horn as shown in the picture above.
7. Locate the two wing struts. The installation of the strut is NOT optional. The mounting hardware is already pre-installed in the wings and fuselage. Use Loctite when screwing them in.



BALANCING AND PRE-FLIGHT:

The CG location for this aircraft is right on the spar.

Recommended control surface deflections:

	Low Rate	High Rate
Elevator	15 degrees	30 degrees
Rudder	25 degrees	40-45 degrees
Ailerons	25 degrees	35 degrees

FINAL ASSEMBLY AND PRE-FLIGHT INSPECTIONS:

1. Before arriving at your flying field, be sure all your batteries are properly charged and all radio system are in proper working order.
2. Install the wings onto the using the provided nylon bolts. Install the wing struts ensuring that you use Loctite.
3. Fill your fuel tank making sure your vent line is not plugged or capped. With the canopy off, this is a good time to check for any fuel leaks.
4. Check all control surfaces for secure hinges by performing a slight tug on the control surfaces and observing if there is any give in the hinges. Check all control rods, ball links, servo screws, etc. for proper operation and installation.
5. Check your batteries and perform a proper range check once again with the engine off and running. Be sure all surfaces are moving in the correct direction and the proper amount for your flying setup.
6. You are now ready for your maiden flight! Good luck and enjoy your new aircraft! If you have any comments or questions about this manual or the aircraft please email: info@slipstreamrc.net