

Syncro30 Radio Control Outboard Motor Owners Manual

Read entire manual before operating your motor

Recommended for ages 16 and older

Warning: Spinning parts may cause injury.

- Never operate near people or pets, without all parts and covers, or with broken parts.
- Do not operate your motor out of water.
- Always operate while attached to a boat or suitable stand.
- Unplug battery and turn off transmitter when not in use.
- The aluminum body of the motor will become hot under heavy loading.

Warning: Lithium Polymer (lipo) batteries are powerful and contain volatile flammable materials. Improper use or handling can easily start fires. Follow manufacturers recommendations and warnings.

Syncro30 Performance Specifications

Minimum recommended light boat size – 8" wide x 16" long
See Foam Boat Building Guide at RadioControlOutboards.com

Syncro30 Maximum Boat Size Recommendations and Amp draw

	2 Cell Lipo Operation 7.4 volt nominal (8.4 volt max)	3 Cell Lipo Operation ¹ 11.1 volt nominal (12.6 volt max)
Maximum Flat Bottom Boat ^{2,3} Total Weight – including motor and battery	4 pounds 1800 grams	1.5 pounds 680 grams
Maximum Current @ full throttle and full load	5 amps	9 amps

1 – Overloading motor at 11.1 volts will lead to overheating. See the 11.1 Volt Operation section of this manual.

2 – The rating is reduced by hulls with additional shape and features. Only flat bottom boats are recommended at 11.1 volts.

3 – The use of the low pitch propeller provided with the motor will provide some improvement for these ratings.

Continuous power output – 0.040 horsepower (30 watts)
Peak power output – 0.107 horsepower (80 watts @ 11.1 v)
Weight – 8 ounces (230 grams)
Overall height (measure with prop shaft horizontal) – 10 ½" (266mm)
Min and Max transom height⁴ – 2.25" (57mm) to 3.25" (82.5mm)
Min and Max transom thickness – 3/8" (9.5mm) to 5/8" (15.9mm)
Battery connector XT-60, male contacts, female housing
Battery cable length – 17" (430mm)

4 – Transom height given for light boats. With heavier boats, larger transom heights are recommended. When under full power, performance is best when top of lower unit is even with or slightly under surface of water exiting back of boat.

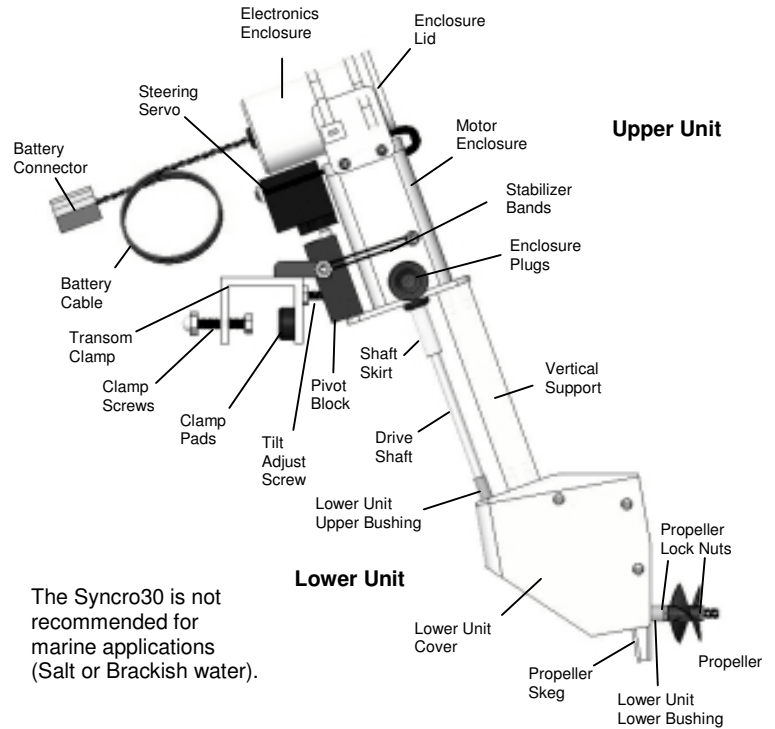
Important!!! Upper bushing on lower unit must be wetted during operation. Operation out of water may over heat bushing and melt plastic bracket.

Installing A Radio

The Syncro30 requires a 2 or 3 channel Transmitter/Receiver set. The typical set includes a transmitter with a trigger throttle and a steering wheel. See RadioControlOutboards.com for recommendations.

Follow manufacturers instructions to set up transmitter and receiver. While receivers have a location for a battery, this is not required in the Syncro30.

A receiver battery is not required when used with a Syncro30. Do not attach a battery to the receiver when using it in the Syncro30, doing so may cause permanent damage to the ESC. The Syncro30 Electronic Speed Control (ESC) will provide power for the receiver from the battery plugged into the Syncro30 battery connector. Typically power from the ESC may be used while setting up the transmitter and receiver.



The Syncro30 is not recommended for marine applications (Salt or Brackish water).

1. Prepare receiver for installation by coiling and taping the antenna wire to the back of the receiver. Any cellophane tape will do. Do not cut or trim

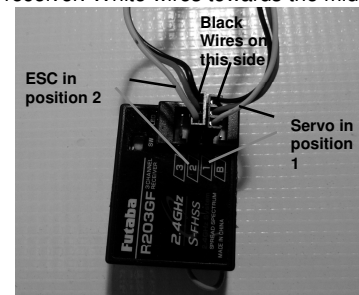


any of the antenna wire. The actual antenna is the short stripped section at the end. Be careful not to kink this part. Keep it as straight as possible.

2. Plug wires from servo and ESC into the receiver. The servo wire passes from the servo through the grommet into the enclosure. The ESC wire is attached to the ESC inside the enclosure.

- Plug the wire from the servo into position 1
- Plug the wire from the ESC into position 2

Important!!! Always install the connectors so that the black wire is closest to the edge of the receiver. White wires towards the middle of receiver.



3. Insert receiver into electronics enclosure with connectors pointing down and going in last. Push wires into space next to the connectors. Pop the lid into place. Done.



Attaching to boat

The Syncro30 will apply significant torque to the transom. The transom must be strong and the motor firmly attached. The motor will clamp to transoms 3/8" to 5/8" thick. Open clamp screws and slip over transom. Tighten clamp screws until clamp pads are compressed by 1/3 to 1/2 original thickness. A 5/16" socket may be used to help achieve this.

Powering up the Motor

Important!!! Only operate the Syncro30 when the lower unit is immersed in water. Operation with the lower unit out of water may damage the drive shaft and plastic bracket supporting bushings in the lower unit.

The Syncro30 is rated for continuous duty at 7.4 volt (2 cell lithium polymer battery). With a 7.4 volt battery the Syncro30 will push boats up to 4 pounds. To do so the battery must be rated to supply 5 amps on a continuous basis. Because boating requires a great deal of power, we recommend 1200mah to 2200mah lithium polymer batteries. The battery must have the mating XT-60 connector. See RadioControlOutboards.com for more.

With a suitable battery the Syncro30 may be powered up. To do so, first power up transmitter. Plug battery into Syncro30 connector. Always ensure connector is inserted so red wires match and black wires match. When transmitter and receiver establish communication steering will become active. When ESC turns on it will emit some tones. First a single tone indicating unit is on. Then short tones. Two tones for 7.4 volt two cell battery. Three tones for 11.1 volt three cell battery. Finally ESC will emit three tones with a 1-2-3 sound. Once sounded, boat is ready for launch. If ESC emits a repeated single tone, it is indicating something is wrong. The most likely cause being transmitter is off.

Because lithium polymer batteries are damaged below 3.0 volts per cell, the Syncro30 will shut down if it senses less than 6.5 volts. Usually when this happens the battery will recover after 10 seconds to a minute. If this occurs, immediately drive boat back to shore at low throttle and recharge.

See the Motor Boating Guide at RadioControlOutboards.com for important information about boating.

11.1 Volt Operation

Operation at 11.1 volts requires a light flat bottom boat. With a total boat weight (including motor and battery,) of less than 1.5 pounds (680 grams). See the Foam Boat Building Guide on the home page at RadioControlOutboards.com for details. Other shapes and heavier boats will likely overheat the ESC. At 11.1 volts a Syncro30 has up to 80 watts of power available. Because the power output is heat limited, continuous 80 watt operation at 11.1 volts will overheat the ESC. If the boat is light, power demand will be less and continuous operation will be possible. Using lower pitch propeller will allow slightly heavier boats. Exact performance at 11.1 volts will depend on boat weight, hull shape and air temperature. High air temperature will contribute to overheating. Operation at 11.1V will increase wear. If ESC overheats the motor will stop operating, but the steering will remain active. The ESC will typically cool in less than thirty seconds. Once it cools it will operate. If this occurs it is best to use this time to retrieve the boat. Repeated over heating is not recommended. Heavy overloading may cause immediate damage. Do not exceed specifications.

ESC does not provide protection for over discharging 11.1 volt batteries. Note length of time you run boat and bring it in when you sense slowing.

Tilt Adjustment Screw

Tilt Adjust Screw threads into the Pivot Block. Threading Tilt Adjust Screw further into the Pivot Block will cause the propeller shaft to point deeper into the water and the bow to ride lower. Threading Tilt adjustment screw further out of the Pivot Block will cause the propeller shaft to point more towards the surface and the bow to ride higher. The tilt adjustment screw can be turned with a 1/4" wrench or needle nose pliers.

Venting the motor Enclosure

Important!!! During operation, water may enter the motor enclosure. This is normal. This water must be drained after each boating session. Remove both plugs from motor enclosure. Pour out and allow to dry any water in the enclosure. Allow to dry for at least several hours. It is best to store motor without the plugs installed in a dry, low humidity location.

Stabilizer Bands

The Syncro30 is provided with bands to prevent steering wobble. Any similar size rubber bands will do. Tension on bands need be firm but not

tight. Wrap an extra wrap around bolt through pivot block and stretch other end around screw on motor enclosure.

Capsizing and Immersing the Motor

The enclosures in the upper unit are water resistant to stand up to splashing. When immersed some water may enter the enclosures. Repeated or prolonged immersion of the upper unit is not recommended. If motor is immersed in water, do the following. Immediately release throttle on transmitter. Leave transmitter on. Retrieve boat and motor. Disconnect battery from motor and turn off transmitter. Remove motor enclosure plugs and drain water. Remove the lid from the electronics enclosure. Check for water. If water is present, pull out radio wipe off any water. Allow everything to dry completely. Depending on how wet things got, this may take minutes up to a day. Once dry re-assemble.

Changing the Propeller

To remove propeller, hold propeller and remove outer propeller lock nut. Lock nuts take a 7mm wrench but needle nose pliers work. Always hold propeller carefully. It is possible to break a propeller with your fingers. With outer lock nut removed, hold inner lock nut with wrench or needle nose pliers and **unscrew** the propeller from the shaft. The inside of the propeller is threaded so that it unscrews just like the nut.

To install a new propeller, ensure inner lock nut is positioned so propeller shaft has approximately 1/16" of front to rear play. Thread propeller partway onto shaft. The edge of the propeller blade which is rounded goes on first and the straight edges go to the back. Hold lock nut in position and thread propeller up against it. Firmly tighten the two together and verify propeller shaft can move from front to rear by approximately 1/16". Use care, wrench or pliers can catch on tip of the propeller and break it. Finally, thread the outer lock nut on and tighten firmly against propeller.

Regular Maintenance

The Syncro30 requires only periodic lubrication of the upper and lower bushings in the lower unit. Approximately every 15 hours of operation, after boating before storage, apply one drop of Tri-Flow Superior Lubricant to the drive shaft as it enters upper bushing of lower unit, and one drop between front propeller nut and lower bushing. Rotate shaft by hand to work oil in. Wipe off excess. Tri-Flow Superior Lubricant is a product and trademark of The Sherwin Williams Company. It is available in many local retailers and online. The 2 oz drip bottle works great.

Fasteners – Over time, the fasteners on the Syncro30 may loosen. Periodically check to see that the fasteners are not loose.

Important!!! – the two screws which hold the servo must be tight but not be over tightened. Over tightening these screws may damage the servo. The screws are to be tightened only enough to partially compress the pads between the servo and the motor enclosure.

Long Term Maintenance

Because radio control outboard motoring is a demanding application, very long term use of the motor may require repairs and rebuilds. See RadioControlOutboards.com for spare parts and repair instructions.

The Syncro30 is not Recommended for marine (Salt or Brackish water). Relatively clean fresh water is recommended. Particularly dirty or silt filled water will shorten the life of the motor.

Limited Warranty

The Syncro30 is warranted for 90 days from date of purchase against defects in materials and workmanship under normal use. This warranty does not cover damage caused by overloading the motor in any way or any other conditions, malfunctions, or damage not resulting from defects in materials and workmanship. This warranty is voided by use of the motor without the recommended lubrication. During the warranty period we will repair or replace any product which proves to be defective due to improper materials or workmanship, under normal use and maintenance. To obtain warranty service you must contact for return authorization and provide the product to RadioControlOutboards.com.

Disclaimer

RadioControlOutboards.com is not responsible for any damaged incurred due either to the Syncro30 performing or not performing it's intended function. Radio control devices may fail and the Syncro30 is intended for hobby applications and is not to be used for applications which affect the safety of people, pets, or property. The operator assumes all liability incurred as a result of operating the Syncro30.