

PISTOL TYPE 2 CH AM RADIO
CONTROL SYSTEM

hitec

lynx



PISTOL TYPE 2CH RADIO CONTROL SYSTEM

LYNX AM
OPERATION
MANUAL



PISTOL TYPE 2CH RADIO CONTROL SYSTEM

hitec

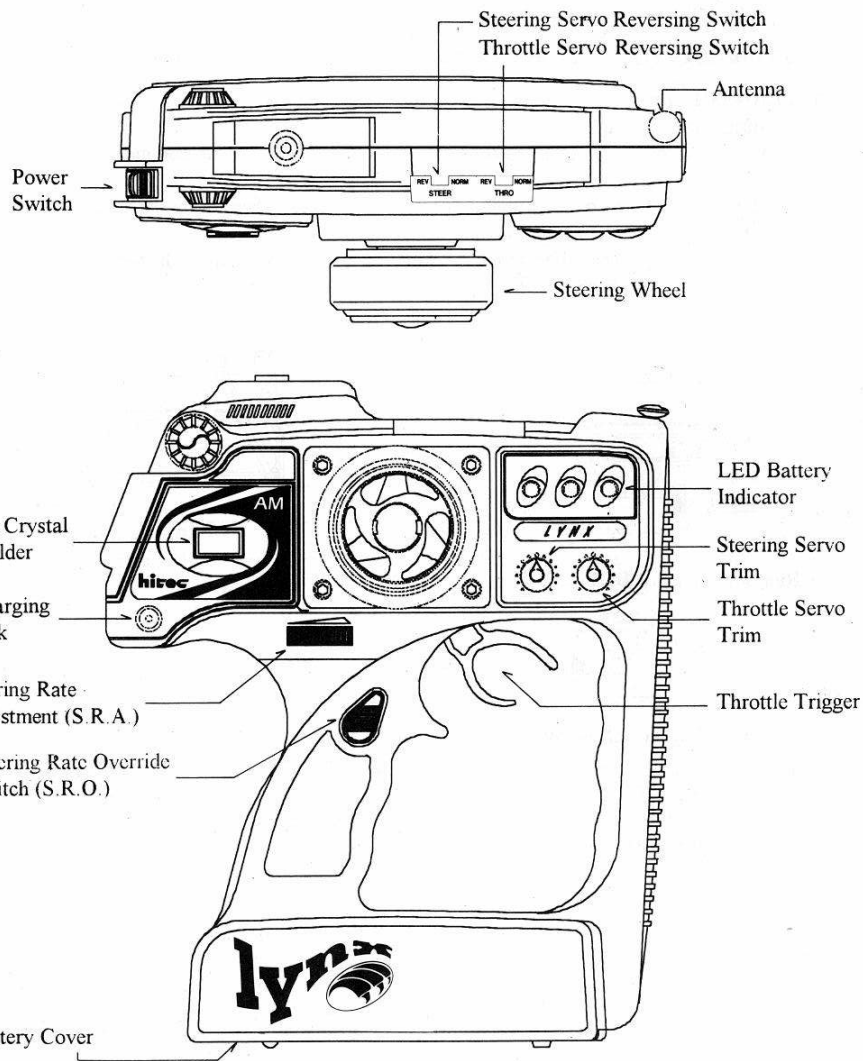
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INTRODUCTION

Thank you for purchasing the LYNX 2 Channel AM Radio System. The LYNX Radio is made of high quality, technically advanced components designed to achieve top performance from your RC vehicle. Team up with Hitec, the "R/Cers Partner" and enjoy the many facets of R/C fun.

LAY-OUT DIAGRAM



FEATURES AND SPECIFICATIONS

- * Pistol Grip 2 Channel AM Proportional System
- * Servo Reversing Switches (Both Channels)
- * Steering Rate Adjustment. Thumb Controlled (40% ~ 100%)
- * Steering Rate Adjustment Override Button (One Touch! 100% Steering Travel)
- * 3 L.E.D. Battery Status Indicator
- * NiCad Battery Charging Jack
- * Power Output : 500 mW
- * Current Drain : 180 mA

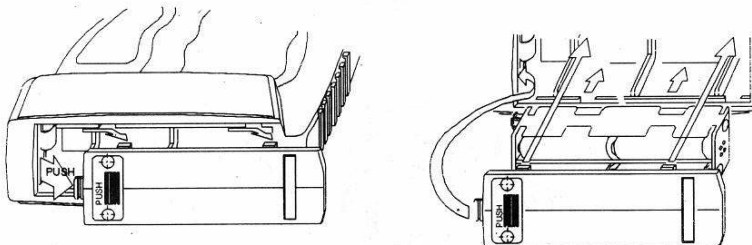
SETTING AND OPERATION

1. TRANSMITTER

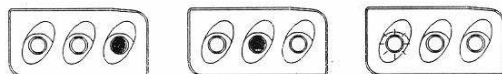
• Loading batteries:

You may use either NiCad batteries or Alkaline "AA" size. (NiCads Recommended)

- * Push the bottom battery cover in the direction of the arrow then lift up the cover
- * Load 8 AA batteries (Be sure the polarity is correct)
- * Reinstall battery case with connections to the top left
- * NiCads should be charged before use



• Reading the LED Battery Indicators



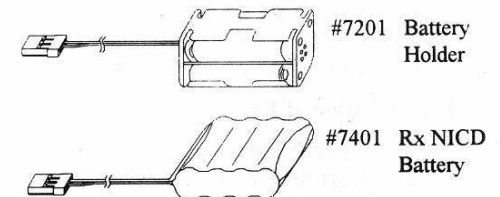
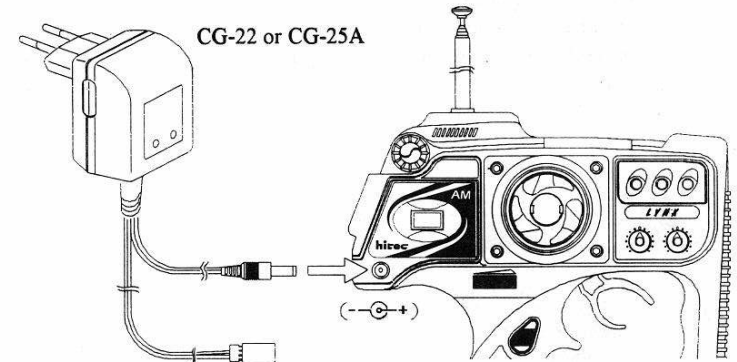
Full Power: *Green* Normal: *Amber* Warning: *Flashing Red*

With new alkaline or freshly charged NiCads, the *Green* light should be lit. With use, the *Green* light will turn to *Amber*. If the *Red* begins to flash, operation should be stopped and the batteries should be recharged or replaced immediately.

• Recharging NiCad Batteries

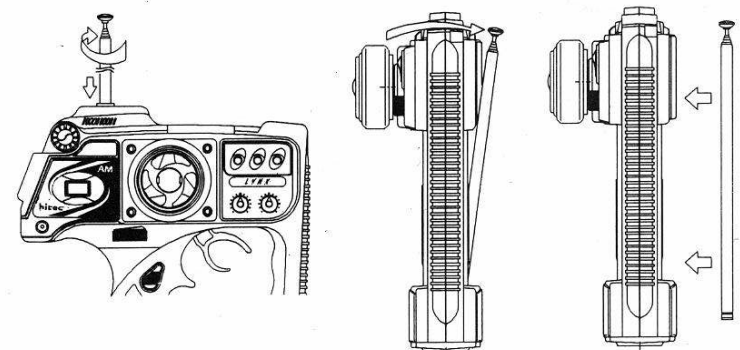
The LYNX is equipped with an external charging jack so there is no need to remove the battery pack from the transmitter. The Hitec *CG-22* or *25A* are made to charge these type of batteries overnight or for approximately 12-15 hours. Please refer to the following diagram, check to see that the charge lights lit after the connection is complete. It is advisable to cycle your batteries at least once every 5 or 6 charges. This

can be done by simply turning your transmitter on with the antenna connected and extended to let it run completely dead (**Warning!!! Always extend your antenna as not to overload the circuitry when radio is on.**), then follow the charging method and repeat this 3 times, this will remove the memory that the battery has stored up if you just simply charge a half dead pack.



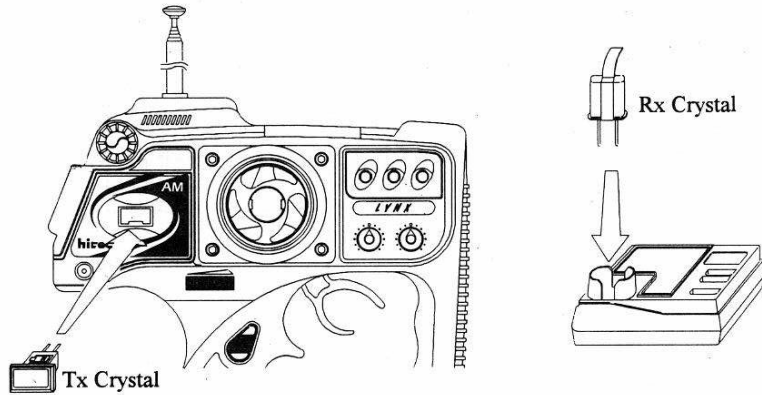
• Transmitter Antenna

You must attach the transmitter antenna by screwing it into the hole located at the top left/center of the transmitter. You may take the antenna out to store it. This storage area is located on the back side of the transmitter. Always attach your antenna before use, or you will experience severe shortage of operating range and could result in damage to your vehicle and or injuries to yourself and others.



• **Changing X-Tals**

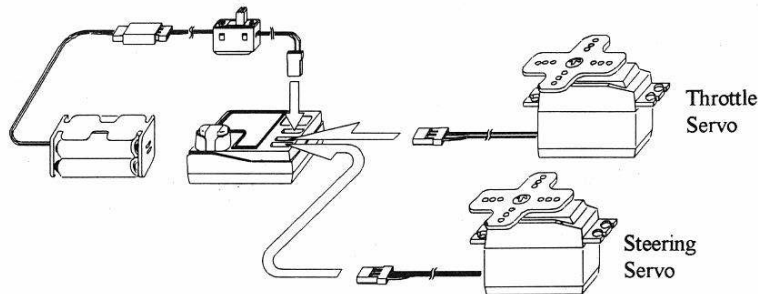
Changing X-Tal to avoid conflicts with other vehicles is possible where permitted. (You must check your local rules before doing so. For example in the US the FCC prohibits the changing of transmitter X-Tals on 72 and 75mhz) . If you are allowed to change X-tals, both the transmitter and receiver X-tals must be changed together. You must change within the same band, i.e. 75 MHz to 75 MHz , 27 MHz to 27 MHz, different bands can not be intermixed if your radio is on 75 MHz then 27 MHz X-tals cannot be used. *Use only Hitec X-tal when changing frequencies.*



2. **Installation of Receiver and Servos**

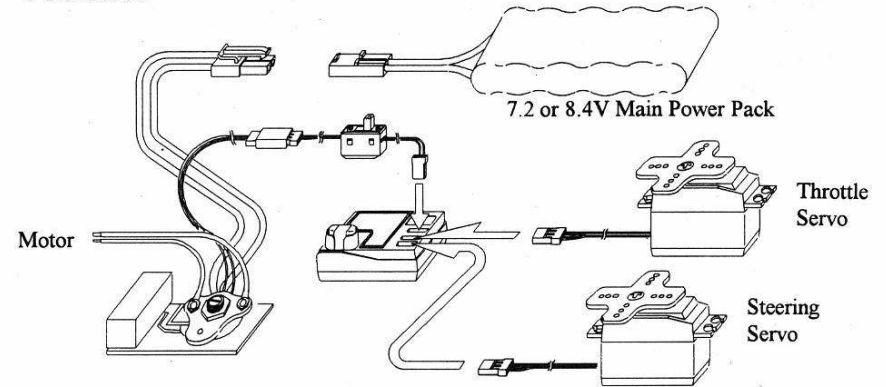
• **Using separate power source for the receiver**

When using a separate power pack for the receiver instead of sharing the main power source for running , please refer to the following diagram. After installation, turn on the power to the transmitter first then turn the receiver on (*Always turn the transmitter ON first and OFF last.*) This will prevent the receiver from picking up stray signals and going out of control. Now, move the controls to see if the servos are moving properly. If not, check your wiring or X-tals if the servos do not move at all.



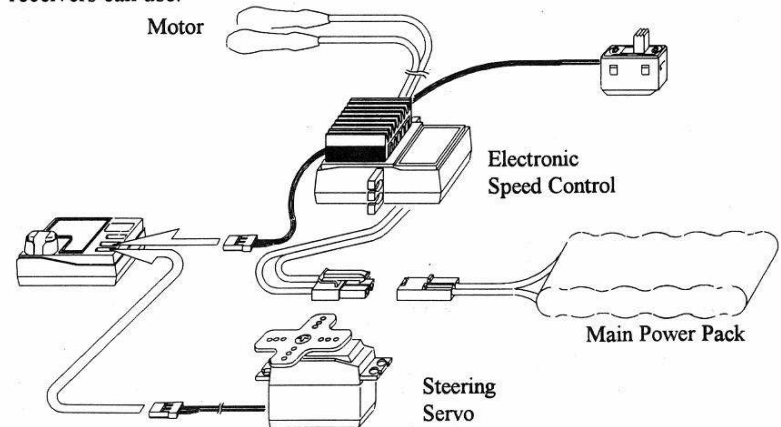
• **Battery Eliminator Circuitry (B.E.C.) with Mechanical Speed Control**

The B.E.C. circuit equipped in the receiver will eliminate the need to run a separate battery pack as discussed previously. This circuit drops the voltage from your main power pack (7.2 or 8.4V) down to a steady voltage of 5.6V. This enables the receiver to be directly connected to the main power via a power lead coming of the mechanical speed control then plugged into the switch harness then connected to the "Batt" slot on the receiver. If there is no lead connected to the speed control you can connect one, paying close attention to the polarity. Red is always positive, negative is black but not always, some companies use white or other colors, but remember **RED IS ALWAYS POSITIVE!**



• **Connection with Electronic Speed Control**

Electronic Speed Control such as the Hitec SP-520P has a built in B.E.C. system inside the speed control circuit (*Please verify whether your ESC has a built in B.E.C. circuit*) Plug the receiver connector from the speed control into the "THROTTLE" or #2 channel on the receiver, and the steering servo into the "STEERING" or #1 channel on the receiver. Now you can connect the main power to the speed control and when the power switch is turned on the speed control will regulate the power that the receivers can use.



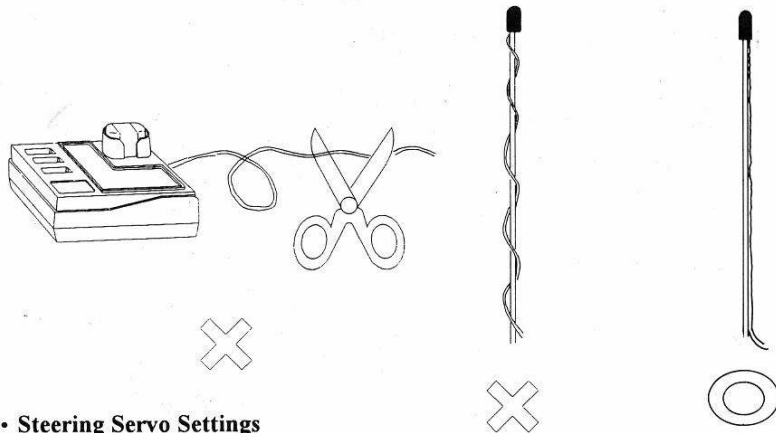
3. Transmitter, Receiver and servo settings

Now we come to the critical part as proper installation of these three main components is essential.

• Checking operation of the servo

- * After installation of the servo and receiver into your model is complete, turn the power "ON" the transmitter (*fully extend the antenna*) now turn on the receiver. (It is advisable to remove the pinion gear from your car so that the wheels do not engage for this test)
- * Check to see if both servos and/or speed control are working properly. If not, check the connections and/or make sure the main battery pack is charged.
- * Check to see if the servos are moving in the correct direction. If not, change the servo reversing switch located on the top of the transmitter to achieve the correct direction.
- * If everything checks out then turn the receiver "OFF" first, then the transmitter (Always remember to *Never* have the receiver "ON" without the transmitter being "ON". This means when turning your model "ON" *always* turn the transmitter "ON" first and "OFF" last)

Warning!!! : Do not shorten the length of the receiver antenna by cutting off any excess wire. This will severely affect the operating range and could result in injury to yourself and others.



• Steering Servo Settings

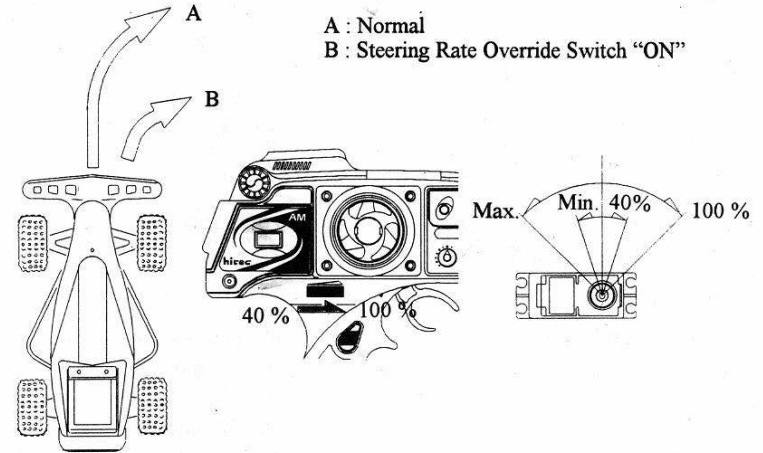
- Steering Rate Override Switch (S.R.O.)

The most notable feature in the LYNX is the "Steering Rate Override (S.R.O.) Switch". This feature allows you to override the dual rate and use 100% steering travel with one touch. This can be used in situations where your dual rates are set so the car does not "Oversteer" on the majority of the track but is set to low to get around the hairpin. By pushing the "SRO" switch as you approach the hairpin turn, you will get

full throw immediately and will be able to get around the turn faster. If you are stuck against the hose/board/wall/etc. and don't have enough steering throw to get you out, the "SRO" button on the LYNX can get you out when other radios can't. Experiment with this feature you will find it very beneficial.

- Steering Rate Adjustment (S.R.A.)

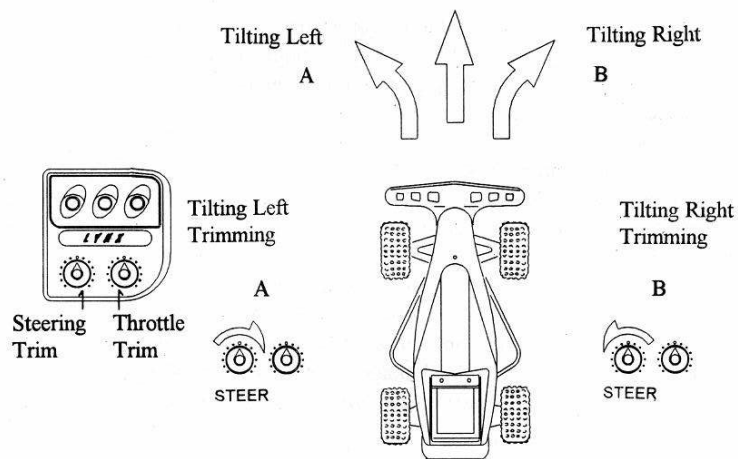
Dual rates for the steering servo can be adjusted via the thumb screw on the pistol grip. This adjustment is critical for racers to fine tune their cars handling "On the Fly". The rate can be selected from 40%-100%. If your car is loose "Oversteering" dial the adjustment back. If your car is pushing "Understeering" then dial the adjustment forward. This adjustment is a must for setting up your car to perform at its best. Adjust the servo so at 100% travel, (*the dial will be all the way forward*) the servo does not bind. If the servo binds, adjust the linkage to compensate. (*Consult your vehicle instruction manual for proper instructions on the linkage setup*)



- Steering servo trim setting

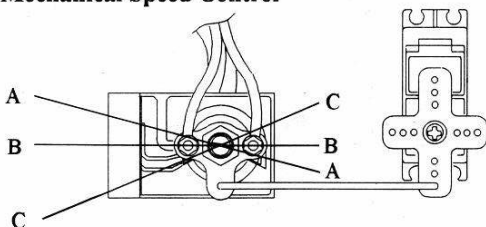
After verifying that the steering direction is correct, then set the steering trim knob to the center if the servo horn or arm should be at 90 degrees and the wheels should be straight. If not, then make the horn or arm 90 degrees by removing it and replacing it correctly. If the arm is at 90 degrees and the wheels are not straight, adjust the linkage to compensate. Once you've got these two setting correct, then use the steering trim for fine tuning. Note: (*Always Trim your car before you run or race*) This is a common mistake made by beginners, if you have to steer your car to go straight, you are fighting a losing battle. Make sure it goes straight before you run, and driving will become much easier.

Fine Tuning



• Throttle Servo Settings

- Using Mechanical Speed Control

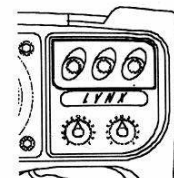


Adjust the servo link rod so that point "B" will come to the neutral position. Also when the trigger is pulled to the maximum point "C" should be as illustrated and at point "A" when the trigger is pushed to the limit. Check to see if the vehicle moves forward when the trigger is pulled. If the vehicle moves backwards then the "Throttle" reversing switch will need to be switched. If the model moves forward or reverse at the neutral position then use the throttle servo trim to fine tune.

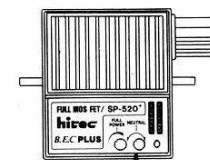
- Using electronic speed control

* Set the throttle trim in the center then adjust the ESC neutral point then the trim can be used for fine tune adjustments.

Hint : Set a little drag brake in cars that are Understeering into the corners and set no drag brake or a little "creep" for cars that Oversteer into the corners. This means the car will "creep" forward when the throttle is neutral, so you must push the trigger forward to keep the car from moving when stopped (This can only be done with forward only electronic speed controls). This is used in 4 wheel drive sedan cars quite frequently to allow them to carry more speed into and through the corner.



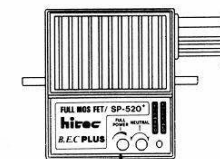
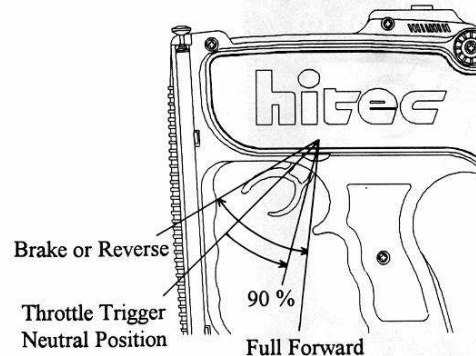
* Set the throttle trim in the center



Adjust Neutral Point

* Adjust the full power position of the ESC (*forward only*) when the trigger is pulled approximately 90% of the way. If the vehicle does not move forward when the trigger is pulled and does when the trigger is pushed, check the motor connection first, if that is correct then switch the "throttle" reversing switch to correct.

* Adjusting the full power position of the ESC (*Reversible version*) is the same as the forward only version, except you must make sure you are adjusting the forward not the reverse. If the trigger is pulled and the full power adjustment does not affect the speed but does when the trigger is pushed, the servo reversing switch for the "throttle" needs to be switched. After this is determined, use the same 90% as discussed previously for forward. Reverse on most speed controls is not adjustable.



Adjust Full Power Position

- Using throttle servo for Gas powered vehicles

* Gas powered vehicles require the throttle servo to be set up to operate the carburetor and the brakes together. Setups are different for individual applications so consult the manufactures manual for the proper set up procedure.