
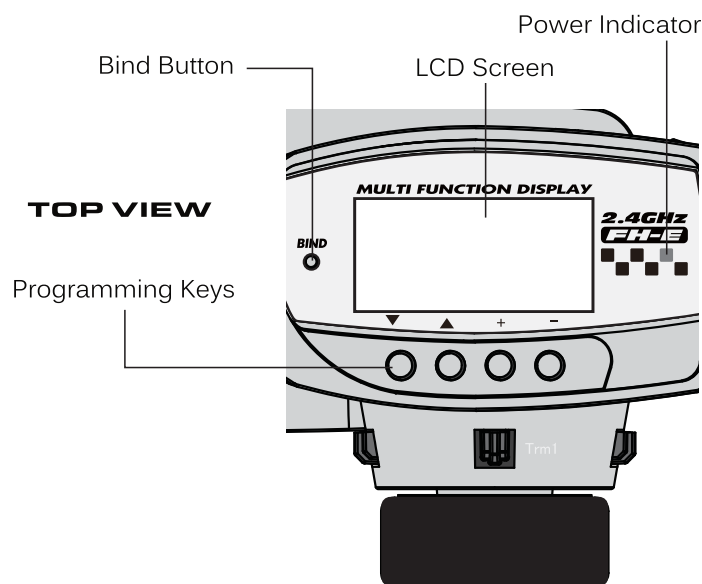
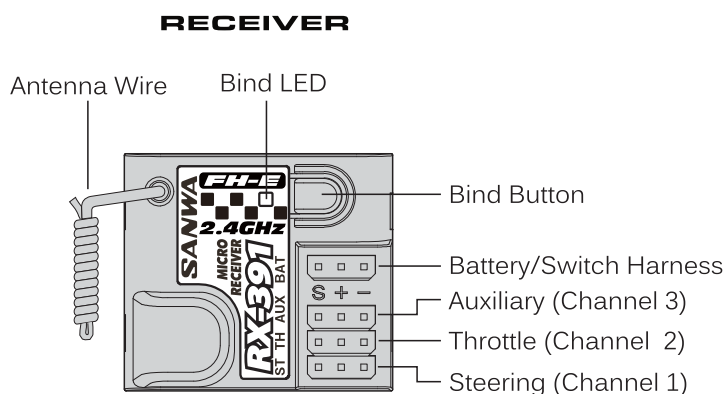
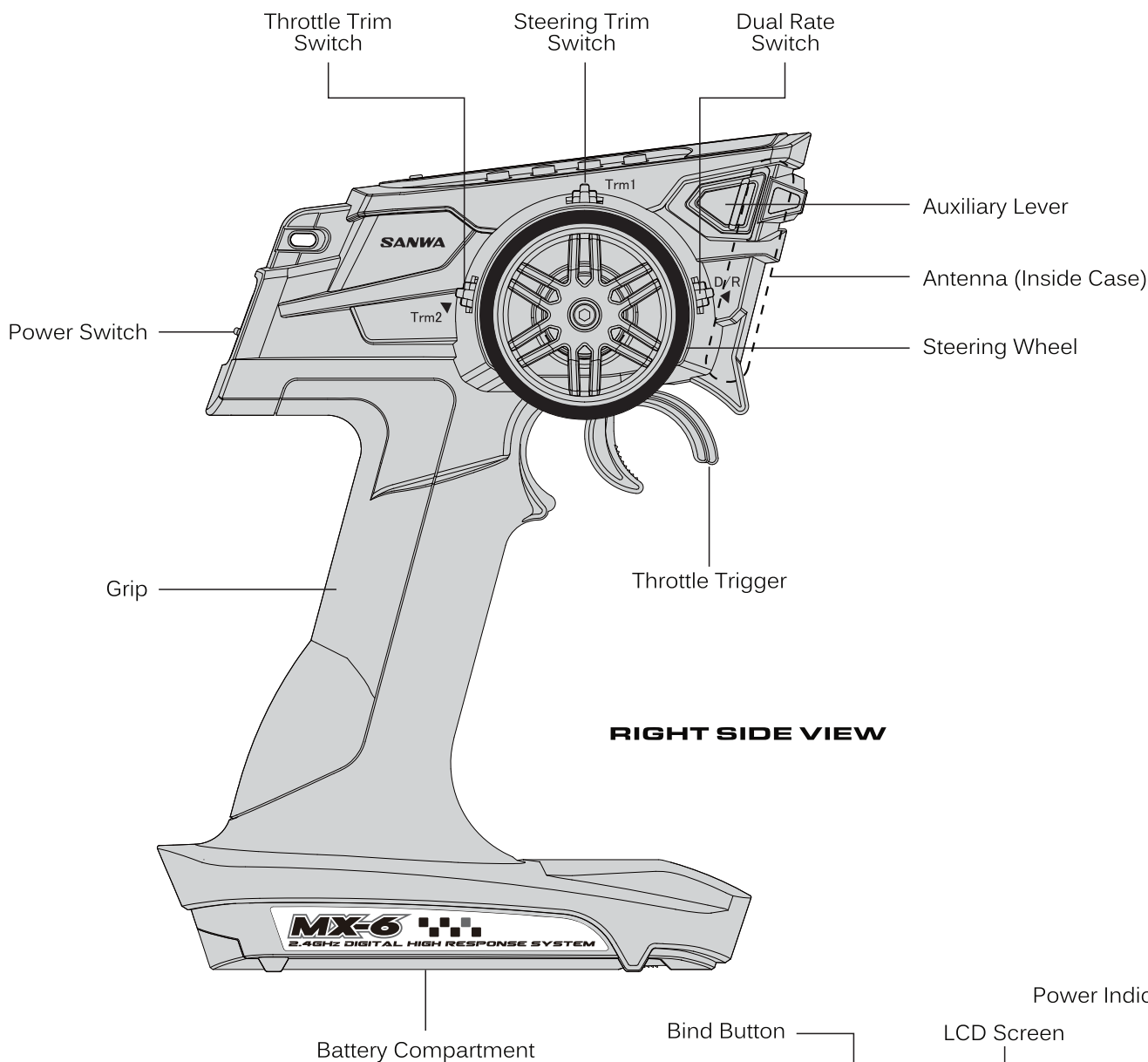


MX-6 3-CHANNEL 2.4GHZ RADIO SYSTEM USER'S GUIDE

TRANSMITTER AND RECEIVER DIAGRAMS

Use the diagrams below to familiarize yourself with the different parts of your MX-6 3-Channel 2.4GHz FHSS-E transmitter and RX-391 receiver. Descriptions of these parts can be found in the *Transmitter and Receiver Layout Descriptions* section on the next page.

 The transmitter antenna is mounted internally and is located in the front portion of the transmitter. When you're driving your model, hold the transmitter so that it's orientated as close to vertical as possible at all times and try not to 'follow' your model with the transmitter. This provides the best RF signal between the transmitter and the receiver. Do NOT cover the front of the transmitter in any way during use! Doing so can block the RF signal, resulting in the loss of control of your model.



S = Signal + = Positive - = Negative

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TRANSMITTER AND RECEIVER DIAGRAM DESCRIPTIONS

Antenna: Transmits the signal from the transmitter to the receiver in the model.

Antenna Wire: Receives the transmitter signal. The antenna wire should be installed through a nylon tube (antenna tube) in the vertical position for the best reception. Do not alter the length of the antenna or the operation of the receiver will be compromised.

Auxiliary Lever: Controls Auxiliary channel 3 High and Low servo travel.

Battery Compartment: Houses the four 'AA' Alkaline cells that power the transmitter.

Bind Button: Used in the process of binding the transmitter and receiver.

Bind LED: Displays the current status of the receiver.

Dual Rate Switch: Used to adjust Steering Dual Rate quickly and easily while your driving.

Grip: The grip is molded in an ergonomic shape for increased comfort, control and feel. It's moulded with a textured surface to help prevent slipping.

LCD Screen: The heart of the programming and display features of the transmitter. All programming and transmitter display functions are shown on the LCD screen.

Power Indicator: Illuminates red, indicating the transmitter is turned ON.

Power Switch: Turns the transmitter ON and OFF.

Programming Keys: The programming keys consist of four different keys - the MENU UP key, the MENU DOWN key, the INCREASE key and the DECREASE key. These four keys are used to program the functions of your transmitter, select saved models and change the Modulation Type.

Steering Trim Switch: Used to adjust Steering Trim quickly and easily while you're driving.

Steering Wheel: Proportionally operates the model's right and left steering control. The steering wheel features a foam grip for increased comfort, control and feel.

Throttle Trigger: Controls the speed of the model, both forward and backward, or the model's brake.

Throttle Trim Switch: Used to adjust Throttle Trim quickly and easily while you're driving.

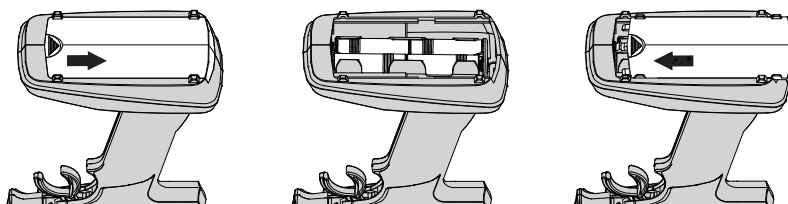
TRANSMITTER LOW VOLTAGE ALARM

The transmitter features a Low Voltage Alarm to warn you when the transmitter batteries need to be replaced or recharged (if using rechargeable batteries). The Low Voltage Alarm will sound when the transmitter batteries reach 4.6 volts. If the Low Voltage Alarm sounds while you are driving, you should stop as soon as it's safe, then replace or recharge the transmitter batteries.


If the Low Voltage Alarm sounds after replacing or recharging the transmitter batteries, there may be a problem with the transmitter.

BATTERY INSTALLATION

- 1) Remove the battery cover from the bottom of the transmitter by pushing firmly on the battery cover in the direction of the arrow.



- 2) Install four fresh 'AA' Alkaline batteries into the battery holder, making sure that the polarity is correct. The direction that each battery should be installed is molded into the bottom of the battery holder (+ positive and - negative).
- 3) Slide the battery cover back onto the transmitter and push it firmly until it 'clicks' closed.

 If you choose to use rechargeable batteries (as described in the *Transmitter Battery Recommendations* section on page 5), they will need to be charged with a dedicated charger outside of the transmitter. Transmitter power output, range and speed are the same, regardless of the battery voltage and type used. If using a Li-Po or Li-Fe battery pack, please observe the following warnings:

- Do not use a 3S Li-Po or 3S Li-Fe battery pack or the transmitter will be damaged. Use only a 2S Li-Po or 2S Li-Fe battery pack.
- You will need to remove the dry cell battery holder in the transmitter and solder a plug on the transmitter's power wires to match your battery pack. Please observe correct polarity (red + positive and black - negative).
- Observe all safety precautions provided with your Li-Po or Li-Fe battery pack.
- Damage to the transmitter and/or receiver caused by improper use, wrong battery type, incorrect voltage or reverse polarity will not be covered under warranty.

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RECEIVER CONNECTIONS AND MOUNTING

Use the diagram below to make the connections to the RX-391 3-Channel 2.4GHz FHSS-E receiver included with your MX-6 3-Channel 2.4GHz FHSS-E radio control system.

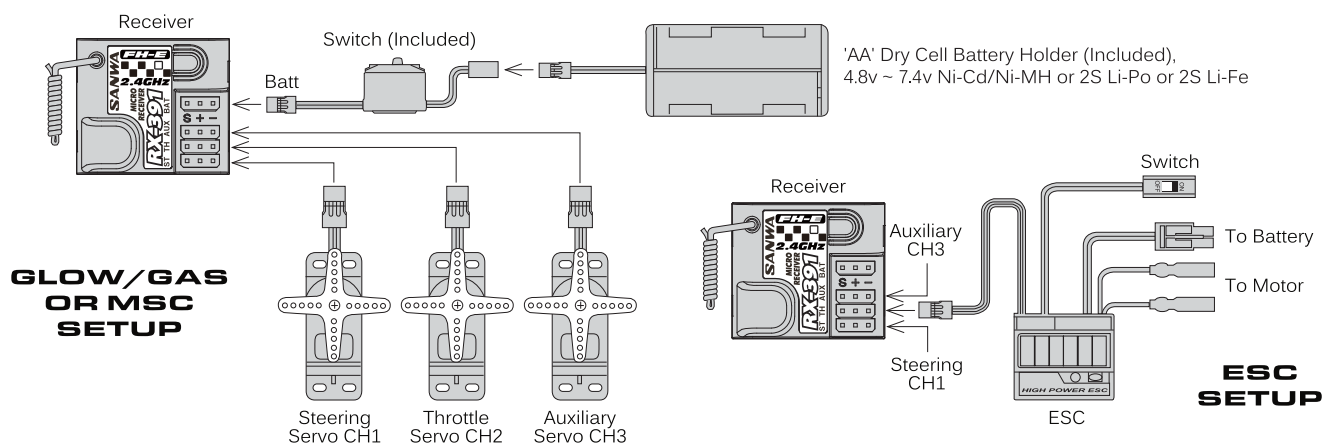
! The receiver's Nominal Input Voltage is 4.8 ~ 7.4 volts. A 2 cell Li-Po or 2 cell Li-Fe battery pack can be used to power the receiver without the use of a voltage regulator. In addition, this allows you to take advantage of the higher torque and speed provided by using 7.4 volt digital servos.

Use a 2 cell Li-Po or 2 cell Li-Fe battery pack ONLY if your servos are rated to handle the higher voltage.

! If you're using an Electronic Speed Control with BEC circuitry, verify that it reduces the voltage to between 4.8 and 7.4 volts before making your connections and turning your radio control system ON.

- We suggest binding the transmitter and receiver and making all receiver connections to check for correct operation prior to mounting the receiver in your model.
- The receiver should be mounted as far away from any electrical components as possible.
- Route the receiver antenna up through a plastic tube so that it is in the vertical position.
- To protect the receiver from vibration and other damage, we recommend wrapping the receiver in shock absorbing foam or using double-sided foam tape when installing it in your model.

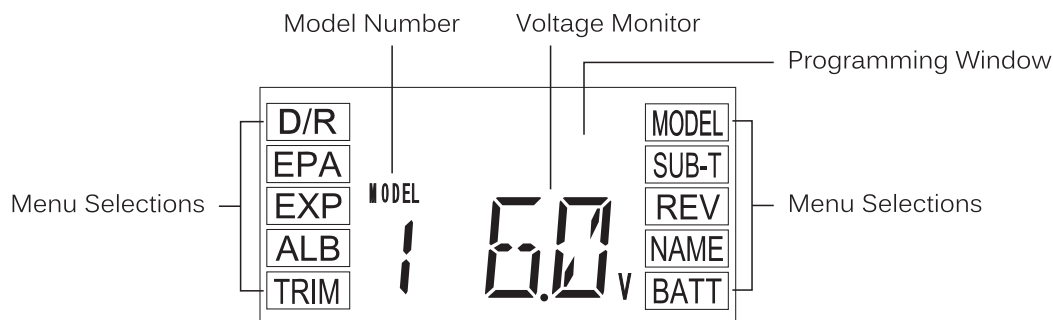
! As a safety precaution, set your model on a stand so the wheels are off the ground before turning on your radio control system or connecting your motor for the first time.



! Do not use servos rated for 4.8 or 6.0 volts with a 2S Li-Po or Li-Fe receiver battery pack or damage to the servos could result.

LCD AND PROGRAMMING KEYS

The transmitter features four programming keys that are used to facilitate transmitter programming. The programming keys consist of four different keys - the MENU UP key, the MENU DOWN key, the INCREASE key and the DECREASE key. These four keys are used to program the functions of your transmitter, select saved models and change the Modulation Type. This section summarizes the functions of each of the four programming keys, in addition to describing the main areas of the LCD screen



Model Number: Displays the model that is currently loaded into memory. Up to 10 different models can be stored.

Menu Selections: Displays the available Programming Menus. The currently Active menu will flash. The information displayed in the Programming Window will vary based on the menu selected.

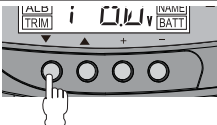
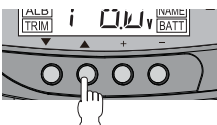
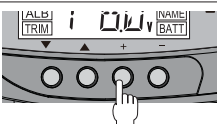
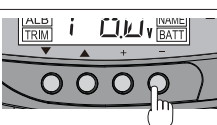
Programming Window: Displays transmitter programming information. When the transmitter is turned ON, the BATT menu will be selected, the current model number will be shown and the Voltage Monitor will display the transmitter's current voltage.

Voltage Monitor: Displays the current voltage of the transmitter batteries. When the transmitter batteries reach 4.6 volts, the Low Voltage Alarm will sound.

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LCD AND PROGRAMMING KEYS

Selecting menus and programming the transmitter is accomplished using the four programming keys.

PROGRAMMING KEY	NAME	FUNCTION
	▼ MENU DOWN	Cycles down through the list of menus and sub-menu functions you would like to make programming changes to. Press the MENU UP and MENU DOWN keys at the same time to display the Voltage Monitor.
	▲ MENU UP	Cycles up through the list of menus and sub-menu functions you would like to make programming changes to. Press the MENU UP and MENU DOWN keys at the same time to display the Voltage Monitor.
	+ INCREASE	Increases Programming Values and used to select models. Press the INCREASE and DECREASE keys at the same time to reset Programming Values to default.
	- DECREASE	Decreases Programming Values and used to select models. Press the INCREASE and DECREASE keys at the same time to reset Programming Values to default.

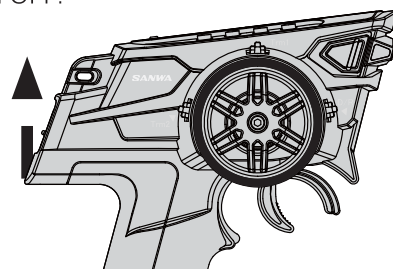
TRANSMITTER AND RECEIVER BINDING

The Binding function allows you to bind the transmitter and receiver pair. When new, it is necessary to pair the transmitter and receiver to prevent interference from radio controllers operated by other users. This operation is referred to as 'binding'. Once the binding procedure is complete, the setting is remembered even when the transmitter and receiver are turned OFF, therefore, this procedure usually only needs to be done once. Bind codes are unique to each transmitter and receiver pair, so you can bind multiple receivers to the same transmitter.

⚠ Before beginning the binding procedure, connect the switch harness, servos and the receiver battery to your receiver, using the diagram on page 8. Make sure that both the transmitter and the receiver are turned OFF.

⚠ The transmitter is compatible with FH-E receivers.

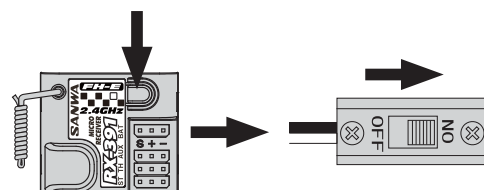
1) Turn the transmitter ON. The Power Indicator on the transmitter will illuminate red.



2) While holding down the Bind Button on the receiver, turn the receiver ON. The Bind LED on the receiver will flash slowly. Release the Bind Button. The Bind LED on the receiver will continue to flash slowly.

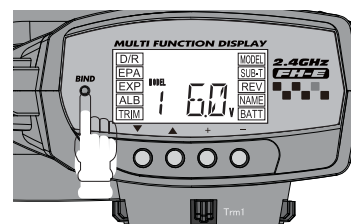
* * *

⚠ You must complete step 3 below within 10 seconds after pressing the Bind Button on the receiver or you will need to start the binding procedure over.



3) Quickly press the Bind Button on the transmitter. The Bind LED on the receiver will flash rapidly, go out momentarily, then illuminate solid blue, indicating the binding procedure is complete.

* * * * * → *



⚠ When the binding procedure is successful, the Bind LED on the receiver will stay solid blue when both the transmitter and receiver are turned ON. If the Bind LED on the receiver is flashing rapidly or not illuminated at all, the transmitter and receiver are not paired. In this case, turn both the transmitter and receiver OFF, then repeat the binding procedure again.

⚠ Under some circumstances, the receiver may not operate after turning the transmitter and receiver ON. If this occurs, perform the binding procedure again.

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THROTTLE FAIL SAFE PROGRAMMING

The Throttle Fail Safe function automatically moves the throttle servo to a predetermined position in the event that the signal between the transmitter and the receiver is interrupted, whether due to signal degradation or to low transmitter battery voltage. For example, the Throttle Fail Safe function can be set so that the throttle returns to idle or the brake engages so that your model doesn't run away if the signal is lost.

 The Throttle Fail Safe function will not operate if the receiver loses power, for example, if the receiver battery comes loose or if the receiver battery is drained.

Setting the Throttle Fail Safe Position:


- 1) Turn the transmitter ON, then turn the receiver ON. The Power Indicator on the transmitter should be illuminated and the Bind LED on the receiver should also be illuminated.
- 2) Move the transmitter steering wheel and throttle trigger to verify correct servo movement.
- 3) Move the throttle trigger to the desired Throttle Fail Safe position. While holding the throttle trigger in the desired position, press and HOLD the Bind Button on the receiver. After approximately 2 seconds, the Bind LED will begin to flash slowly. Continue holding the Bind Button until the Bind LED begins to flash rapidly (approximately 2 more seconds). Once the Bind LED begins to flash rapidly, release the Bind Button.
- 4) Turn the transmitter OFF to test the Throttle Fail Safe operation. The throttle servo should move to the position that you set previously in step 3.

Clearing the Throttle Fail Safe Setting:

- 1) To clear the currently programmed Throttle Fail Safe setting, re-bind the transmitter and receiver pair.

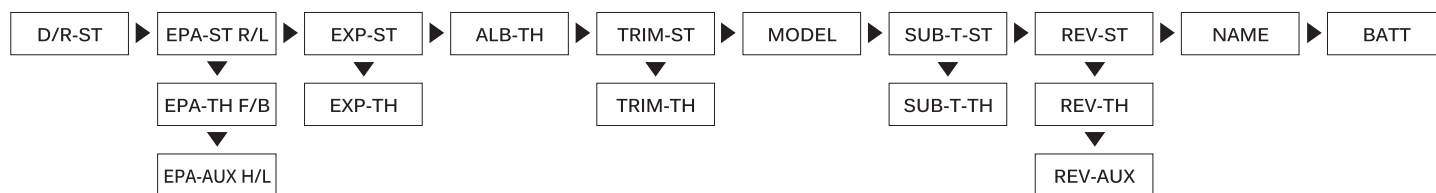
PROGRAMMING MENUS OVERVIEW

When the transmitter is turned ON, the Voltage Monitor will be displayed. To cycle through the different Programming Menus, press the MENU UP or MENU DOWN keys. The currently selected Programming Menu will flash.

 When you make Programming Value changes, those changes are reflected immediately. There is no need to 'save' your changes.

If you're in a Programming Menu when you turn the transmitter OFF, the Voltage Monitor will be displayed when the transmitter is turned back ON. If you adjust the Steering Trim, Throttle Trim, or Steering Dual Rate using either of the three switches, the value will be displayed on the LCD screen for approximately 5 seconds, then revert to the last menu you were in.

Use the flow chart below to familiarize yourself with the layout of the various Programming Menus available. Each is available by repeatedly pressing the MENU UP or MENU DOWN keys.



MENU	MENU NAME	MENU DESCRIPTION	PAGE #
D/R	Dual Rate	Adjust Steering Dual Rate	Page 11
EPA	End Point Adjustment	Adjust Steering, Throttle and Auxiliary End Points	Page 11
EXP	Exponential	Adjust Steering and Throttle Exponential	Page 13
ALB	Anti-Lock Braking	Program Throttle Anti-Lock Braking	Page 14
TRIM	Servo Trim	Adjust Steering and Throttle Servo Trim	Page 15
MODEL	Model Select	Select Programmed Models 1 Through 10	Page 16
SUB-T	Servo Sub-Trim	Adjust Steering and Throttle Servo Sub-Trim	Page 16
REV	Servo Reversing	Adjust Steering, Throttle and Auxiliary Servo Travel Direction	Page 17
NAME	Model Name	Name Your Models	Page 18
BATT	Voltage Monitor	Displays Transmitter Battery Voltage and Current Model Number	Page 18

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D/R - DUAL RATE

The Dual Rate function allows you to change the control authority of your model's steering by changing the amount of servo travel relative to control input. For example, by increasing the Dual Rate, you can make the steering servo travel more which might prevent your model from pushing during turns. If your model oversteers during turns, you can reduce the amount of Dual Rate.

IMPORTANT: Prior to programming the Dual Rate function, you should adjust the Left and Right Steering End Points, using the End Point Adjustment function. For more information, see the *End Point Adjustment* section below.

Adjusting the Steering Dual Rate Percentage Value:

- 1) Press the MENU UP or MENU DOWN keys to open the D/R menu. D/R will flash and ST 100% will be displayed.



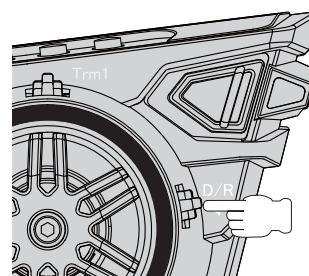
- 2) Press the INCREASE or DECREASE keys to change the Steering Dual Rate percentage value. When the Steering Dual Rate percentage value is decreased, steering servo travel is decreased. When the Steering Dual Rate percentage value is increased, steering servo travel is increased.

D/R ST setting range is 0% to 100%. The default setting is 100%.



! Dual Rate is a percentage of End Point Adjustment. For example, if you set the Steering Dual Rate percentage value to 100%, the steering will travel the same amount as defined by your Steering End Point Adjustment programming. If you set the Steering Dual Rate percentage value to 50%, the steering will travel half that amount.

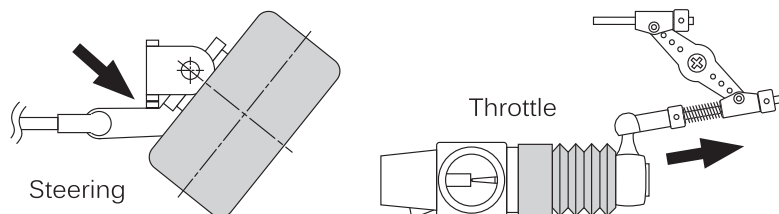
- 3) Steering Dual Rate can be adjusted at any time while driving using the Dual Rate Switch. Press the Dual Rate Switch forward to increase the Steering Dual Rate percentage value and press the Dual Rate Switch backward to decrease the Steering Dual Rate percentage value.



EPA - END POINT ADJUSTMENT

The End Point Adjustment function allows you to adjust servo travel in each direction. This makes it possible to balance servo travel in both directions and set the maximum desired amount of servo travel. For example, on a gas-powered model, if you pull the throttle trigger and the carburetor does not open completely, you can increase the Throttle Forward End Point Adjustment so that the carburetor opens completely. Another example is with steering. If your model turns sharper to the right than to the left, you can increase the Steering Left End Point Adjustment to balance the steering.

The End Point Adjustment function can be adjusted for the Steering channel (Left and Right), the Throttle channel (Forward and Brake) and Auxiliary Channel 3 (High and Low).



! If you're using an electronic speed control, the Throttle Forward and the Throttle Brake End Point Adjustment percentage values are both generally set to 100%, although the Throttle Forward direction may need to be increased to achieve full power. In some cases the End Point Adjustments can also be set directly via the electronic speed control.

WARNING: End Point Adjustment percentage values should not be increased to the point where your linkages and/or servos bind when moved all the way in either direction. Binding will cause the servos to 'buzz', draining the receiver battery quickly and eventually damaging the servos.

! Before making End Point Adjustments, the servo horns need to be centered. Install the servo horns onto the servos, making sure that they're as close to being centered as possible, then use the Servo Sub-Trim function to center the servo arms exactly. For more information, see the *Servo Sub-Trim* section on page 16.