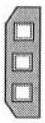
TX AND RX OPTIONS AND CONNECTIONS

WARNINGS IF USING A LI-PO OR LI-FE TRANSMITTER BATTERY

- Use **ONLY** a 2 Cell Li-Po or Li-Fe battery pack of desired capacity. **DO NOT USE A 3 CELL LI-PO OR LI-FE BATTERY PACK** or the transmitter will be damaged.
- Do NOT charge your battery through the transmitter using the Charging Jack. The battery **MUST** be removed from the transmitter for charging or the transmitter could be damaged.
- Use a charger specifically designed to charge Li-Po or Li-Fe batteries.
- When changing the connector on your battery to match the battery power plug in the base of the transmitter, please observe correct polarity. Connecting with reverse polarity will damage the transmitter.



- Observe all safety precautions provided with your Li-Po or Li-Fe battery before and during use, and during the charging process.
- Damage to the transmitter caused by improper use, wrong battery type, or reverse polarity will not be covered under warranty.

RECEIVER CONNECTIONS AND MOUNTING

Use the diagram below to make the connections to your 92744 2.4GHz FHSS-3 receiver included with your radio control system.

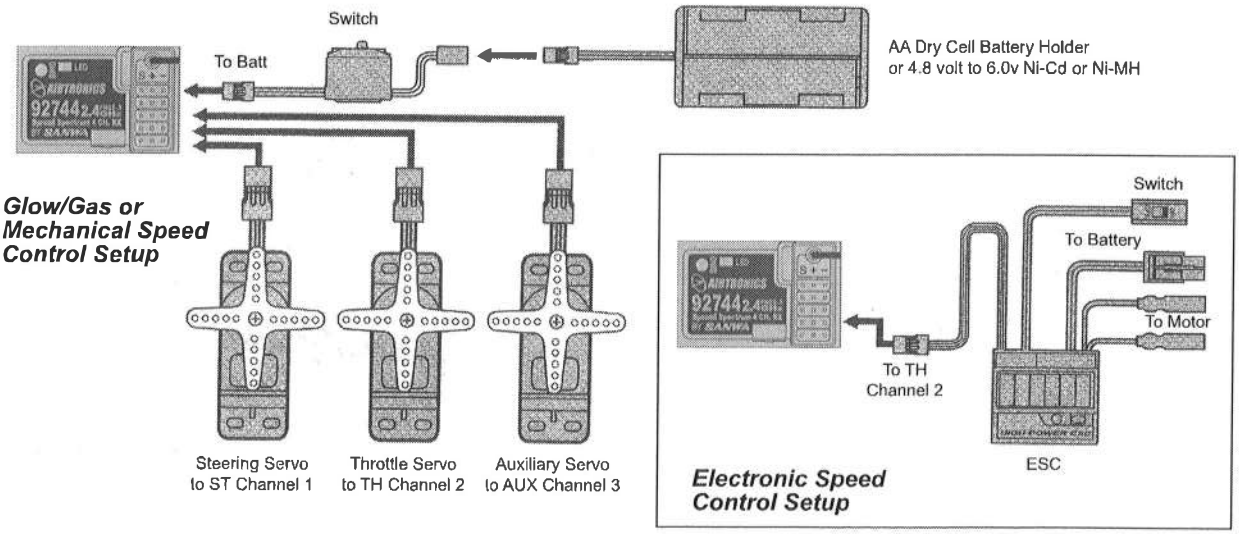
⚠ The 92744 receiver's Nominal Input Voltage is 4.8v ~ 6.0v. A 2 cell Li-Po or 2 cell Li-Fe battery can be used to power the receiver, however, a voltage regulator MUST be used. We recommend a switching type voltage regulator and it must be able to handle the amperage demands of the servos used in your model.

⚠ If you're using an Electronic Speed Control with BEC circuitry, verify that it reduces the voltage down to 4.8v ~ 6.0v before making your connections and turning your radio control system ON.

- We suggest Binding the transmitter and receiver, and setting the Throttle Fail Safe position, prior to mounting your 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 when installing it in your model.

WARNING The receiver is NOT equipped with BEC circuitry. DO NOT use a receiver battery any greater than 6.0 volts to power the receiver. Use only a 4.8 volt to 6.0 volt receiver battery, an ESC with a BEC circuit that lowers the voltage to the receiver, or a voltage regulator that lowers the voltage to the receiver.

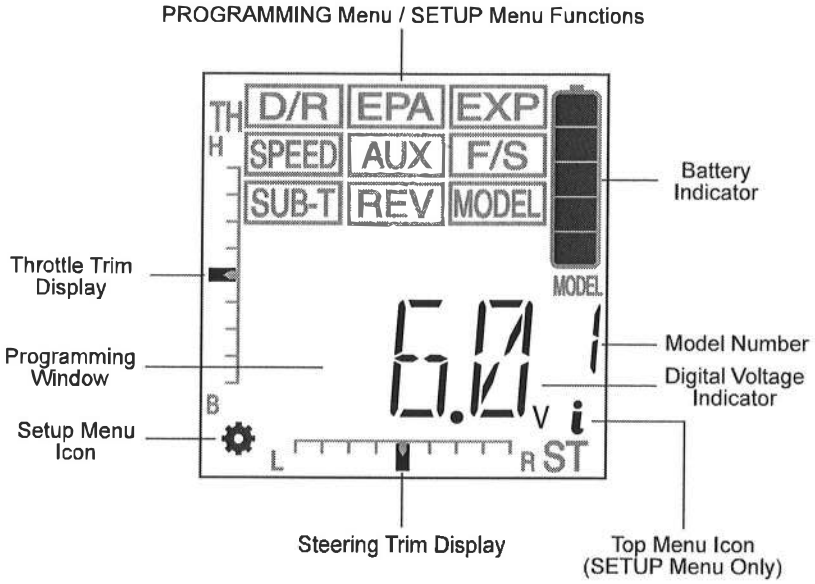
⚠ Set your model on a stand so the wheels are off the ground before turning on your radio control system or connecting your motor for the first time.



LCD AND PROGRAMMING KEYS

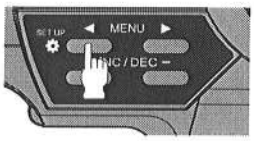
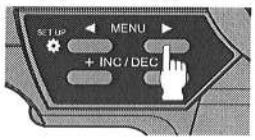
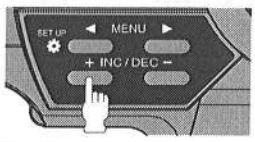
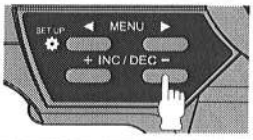
The MX-3X 2.4GHz FHSS-3 transmitter features four Programming Keys that are used to facilitate transmitter programming. The four Programming Keys consist of two MENU Keys (Right and Left), one +/INC (Increase) Key, and one DEC/- (Decrease) Key. This section summarizes the functions of each of the 4 Programming Keys in addition to describing the main areas of the Multi-Function LCD.

MULTI-FUNCTION LCD OVERVIEW



⚠ Because certain areas of the LCD are printed onto the display, the PROGRAMMING menu selections displayed will NOT change when cycling through the various SETUP menu options. This is normal because those areas of the LCD are printed onto the display. For example, when you enter the SETUP menu and highlight D/R, MOD will be displayed in the Programming Window, when you highlight EXP, TRM will be displayed in the Programming Window, etc.

PROGRAMMING KEY FUNCTIONS

PROGRAMMING KEY	NAME	FUNCTION
	◀ Left MENU Key	Scrolls left (backward) through the individual functions assigned to the currently highlighted menu. In addition, when held down while turning the transmitter ON, enters the SETUP menu.
	Right MENU Key ▶	Scrolls right (forward) through the individual functions assigned to the currently highlighted menu.
	+/INC Key (Increase)	Increases number values in the Programming Window and is used to make programming selections.
	DEC/- Key (Decrease)	Decreases number values in the Programming Window and is used to make programming selections.

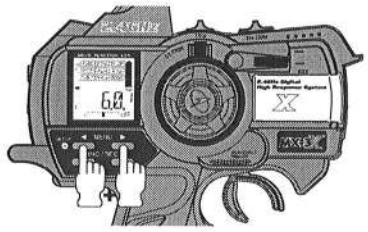
LCD AND PROGRAMMING KEYS

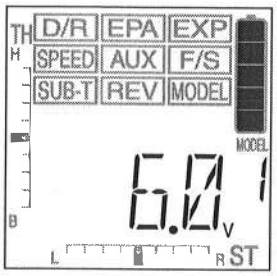
PROGRAMMING KEY SHORTCUTS

The Programming Keys can be used to change important information displayed in the Programming Window. The information that can be displayed will vary depending on what menu you're currently in and/or what is currently displayed in the Programming Window.

Display the Digital Voltage Indicator

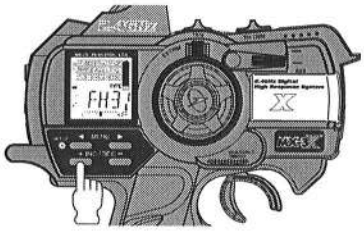
While within a PROGRAMMING menu, pressing the Right MENU key and the Left MENU key at the same time will display the Digital Voltage Indicator.

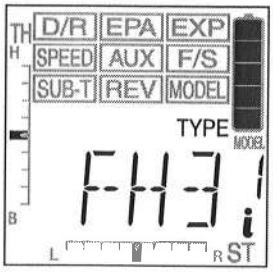




Display the Current Modulation Type

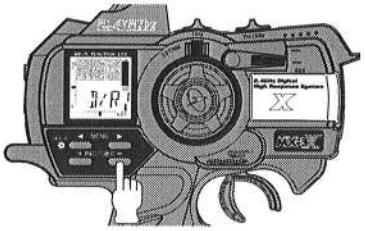
While the Digital Voltage Indicator is displayed, pressing and HOLDING the +/INC key will display the current Modulation Type in use.

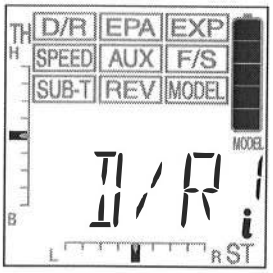




Display the Current TRM Switch Function

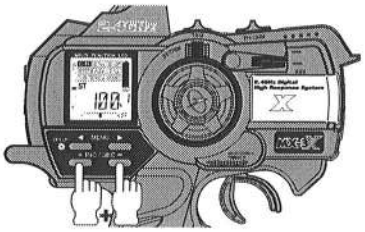
While the Digital Voltage Indicator is displayed, pressing and HOLDING the DEC/- key will display the current function assigned to the TRM switch.

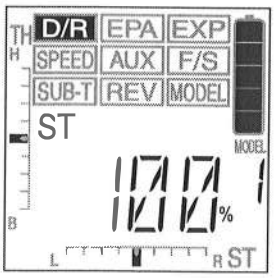




Reset Programming Value to Default

While within a PROGRAMMING menu, pressing the +/INC key and the DEC/- key at the same time will reset the Programming Value to the default value.

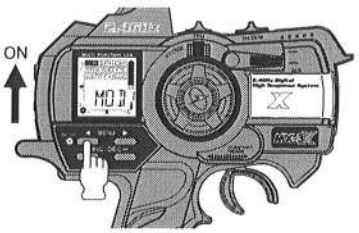


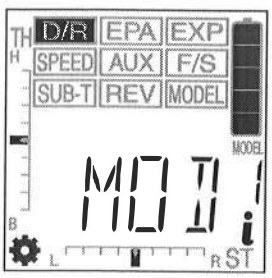


Enter the SETUP Menu

To enter the SETUP menu, press and hold the Left MENU key and turn the transmitter ON.

⚠ All SETUP menu options displayed are indicated by the Setup Menu ⚙ icon in the lower left corner of the LCD. The **i** icon indicates that you are at the top level of that specific menu.





MENU FLOW CHART

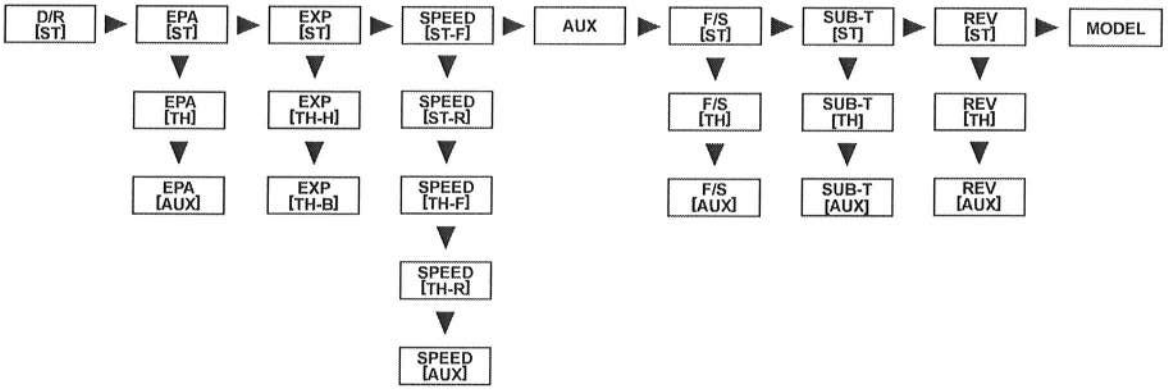
The Menu Flow Chart shows the different menus that are available for programming your transmitter. The default setting when the transmitter is turned ON the very first time is the PROGRAMMING menu with the Digital Voltage Indicator displayed. When the transmitter is subsequently turned ON, the last screen displayed when the transmitter was turned OFF will be displayed.

Pressing either the Right MENU key or the Left MENU key scrolls through the individual functions assigned to the currently highlighted menu. For example, press the Right MENU key to highlight the EPA menu. The EPA menu will be highlighted and ST will be displayed in the Programming Window. Pressing the Right MENU key again will move the selection to TH and so on until the EXP menu is highlighted.

⚠ To enter the SETUP menu, press and hold the Left MENU key and turn the transmitter ON. For more information, see page 39.

SETUP MENU

PROGRAMMING MENU



SETUP MENU

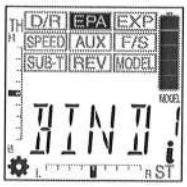
MENU	MENU NAME	MENU DESCRIPTION
MOD	Modulation Type	Change the Transmitter Modulation Type
BIND	Binding	Bind the Transmitter and Receiver
TRM	Trim Switch Assign	Assign Various Auxiliary Functions to the TRM Switch
STEP	Trim Step Resolution	Adjust the Resolution of the Steering and Throttle Trim Switches
NAME	Model Naming	Name Each of Your Individual Models
M_CLR	Model Clear	Reset Model-Specific Programming Data to the Default Values
BEEP	Audible Key Tone	Turn Audible Key Tones ON or OFF
ALRM	Inactivity Alarm	Turn the Inactivity Alarm ON or OFF
BATT	Battery Cell Count	Used to Ensure Correct Operation of the Low Voltage Alarm

PROGRAMMING MENU

MENU	MENU NAME	MENU DESCRIPTION
D/R	Steering Dual Rate	Adjust Steering Dual Rate
EPA	End Point Adjustment	Adjust Steering, Throttle, and Auxiliary End Point Adjustments
EXP	Exponential	Adjust Steering and Throttle Exponential
SPEED	Servo Speed	Adjust Steering and Throttle Servo Transit Speed
AUX	Auxiliary Functions	Change and Adjust Auxiliary Functions and Channel Mixing
F/S	Fail Safe	Program Transmitter Fail Safe Functions
SUB-T	Servo Sub-Trim	Adjust Steering and Throttle Servo Centering
REV	Servo Reversing	Adjust Steering, Throttle, and Auxiliary Servo Reversing
MODEL	Model Select	Select Saved Models

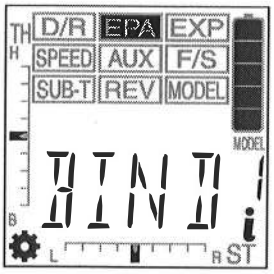
TRANSMITTER AND RECEIVER BINDING

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



⚠ The MX-3X 2.4GHz FHSS-3 radio control system uses FHSS-3 technology, however, the transmitter is compatible with both FHSS-3 and FHSS-2 Airtronics 2.4GHz receivers. To bind the transmitter to an Airtronics FHSS-2 2.4GHz receiver (available separately), the transmitter Modulation Type must first be changed to FH2. For more information, see page 39.

⚠ Before beginning the Binding process, connect your servos and battery to the receiver, using the diagram on page 11. Make sure that the receiver is turned OFF and that the transmitter is turned ON and in the SETUP menu.



Transmitter and Receiver Binding

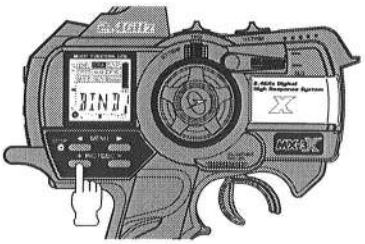
1) Enter the SETUP menu by following the procedures described on page 39.

2) Press the Right or Left MENU key to highlight the EPA menu. BIND will be displayed in the Programming Window.

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

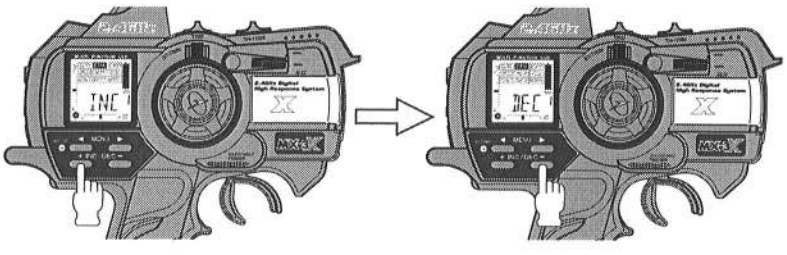
⚠ Use the tip of a pencil or a 1.5mm hex wrench to reach the Bind Button on the receiver.

3) Press the +/INC key on the transmitter. PUSH INC will flash in the Programming Window.



⚠ After releasing the Bind Button, you must press the +/INC key quickly (within a couple of seconds). If you take too much time, you may need to restart the Binding process.

4) Press the +/INC key a second time. PUSH DEC will flash. Press the DEC/- key once. BIND will be displayed in the Programming Window, the LCD and the Power Indicator Light will flash, then the Bind LED on the receiver will turn solid indicating the Binding process is complete.

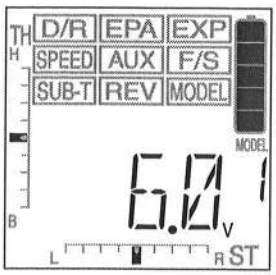


5) After verifying that the Binding process is complete (solid blue Bind LED on the receiver) and the servos operating normally, press either the Right MENU key or the Left MENU key to return to the BIND menu.

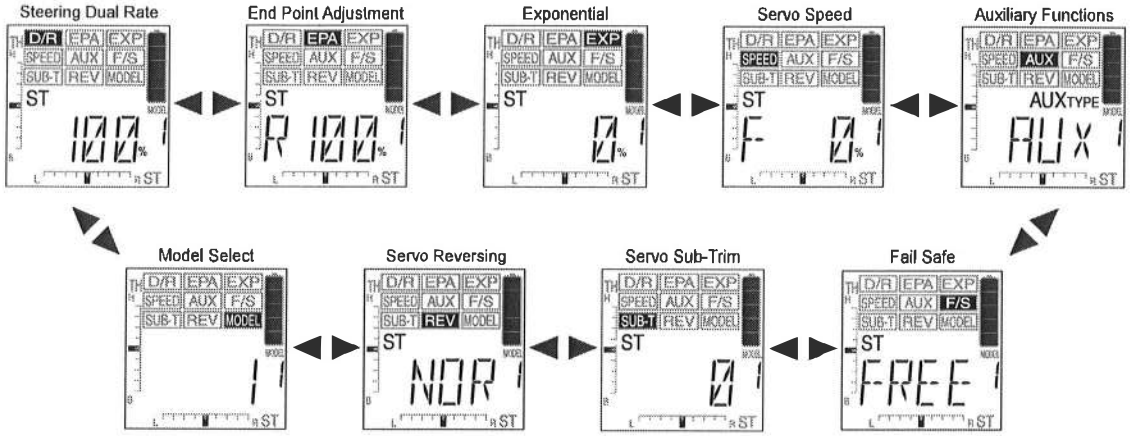
⚠ When the Binding procedure is successful, the Bind LED will stay solid blue and the Power Indicator Light will flash slowly when both the transmitter and receiver are turned ON. If the Bind LED on the receiver is flashing rapidly, the transmitter and receiver are not paired. In this case, turn both the transmitter and receiver OFF, then repeat the Binding procedure.

PROGRAMMING MENU

To enter the PROGRAMMING menu, turn the transmitter ON. when the transmitter is turned ON the very first time is the PROGRAMMING menu with the Digital Voltage Indicator displayed. When the transmitter is subsequently turned ON, the last screen displayed when the transmitter was turned OFF will be displayed.



The following PROGRAMMING menus are available by repeatedly pressing the Right MENU key or the Left MENU key:

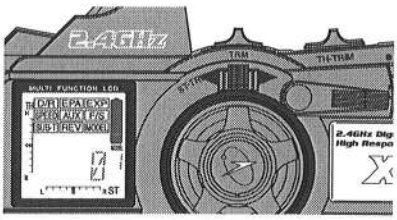


D/R - STEERING DUAL RATE

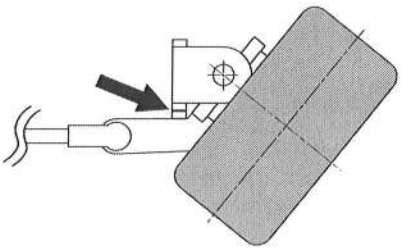
The Steering Dual Rate function is used to change the amount of steering servo travel compared to the amount of physical movement of the steering wheel. For example, by increasing the Steering Dual Rate, you can make the steering servo travel more which might prevent your model from pushing during turns. If your model oversteers during turns, you can reduce the amount of Steering Dual Rate.

Centering the Steering Servo and Wheels

1) Set the Steering Trim to '0' using the ST-TRIM switch. Push the ST-TRIM switch forward to increase Steering Trim toward the right and pull the ST-TRIM switch back to increase Steering Trim toward the left. The current amount of Steering Trim is indicated on the LCD in both digital format in the Programming Window and in scaled format along the bottom of the display.

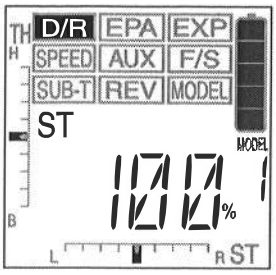


2) Attach the steering linkage to the servo horn per your model's assembly manual, then install the servo horn onto the steering servo, making sure it's as close to being centered as possible. Use the Servo Sub-Trim function to center the servo arm exactly, then mechanically adjust both wheels to point straight ahead. For more information, see page 35.



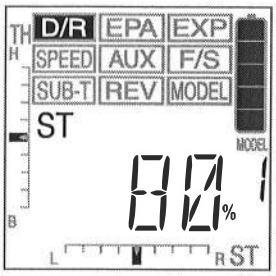
3) Move the steering wheel right and left to full. Adjust the Dual Rate percentage value to decrease (DEC/-) or increase (+/INC) the amount of steering to reach the steering stops without binding. For more information, see the next page.

WARNING The Steering Dual Rate percentage value should not be increased to the point where your steering linkage and servo bind when the steering wheel is moved all the way to the right or left. Binding will cause the steering servo to 'buzz', resulting in a quicker loss of battery power and eventual damage to the servo.



Adjusting Steering Dual Rate

1) Press the Right or Left MENU key to highlight the D/R menu. ST 100% will be displayed in the Programming Window.



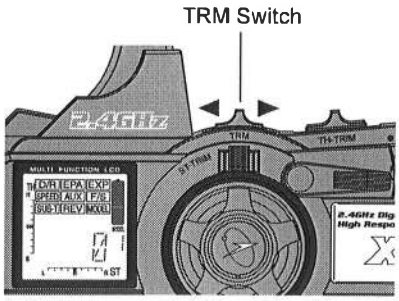
2) Press the +/INC or DEC/- keys to increase or decrease the Steering Dual Rate percentage value. When the Steering Dual Rate percentage value is decreased, steering servo travel is decreased. When the Steering Dual Rate percentage value is increased, steering servo travel is increased.

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

3) After the Steering Dual Rate percentage value has been set, adjust the independent left and right End Points using the End Point Adjustment function. For information, see the next page.

Assigning Steering Dual Rate to the TRM Switch

1) In the default configuration, the TRM switch is used to change the Dual Rate percentage value without accessing the Programming Menu. This allows you to adjust the Dual Rate percentage value easily during use. Press the TRM switch forward to decrease the Dual Rate percentage value and press the TRM switch backward to increase the Dual Rate percentage value. The increment percentage value that the TRM switch adjusts the Steering Dual Rate can be changed to suit your preference. For more information, see page 41.



EPA - END POINT ADJUSTMENT

The End Point Adjustment function is used to adjust the desired amount of servo travel in both directions independently. This makes it possible to balance servo travel in both directions. The End Point Adjustment function can be adjusted for the Steering channel (Right and Left), the Throttle channel (Throttle High and Throttle Brake), and Auxiliary channel 3 (High and Low).

WARNING End Point Adjustment percentage values should not be increased to the point where your linkages and servos bind when moved all the way to the right or left. Binding will cause the servos to 'buzz', resulting in a quicker loss of battery power and eventual damage to the servos.

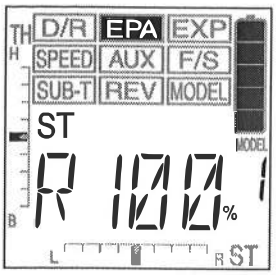
Adjusting Steering End Point Adjustment

Your model's turning radius can differ from left to right because of variations in linkage, suspension balance, tire diameter, or weight distribution. In such cases, Left Steering servo travel and Right Steering servo travel are adjustable using the End Point Adjustment function.

⚠ Before making Steering End Point Adjustments, you must make sure that the servo horn is centered. Install the servo horn onto the steering servo, making sure it's as close to being centered as possible, then us the Servo Sub-Trim function to center the servo arm exactly. For more information, see page 35.

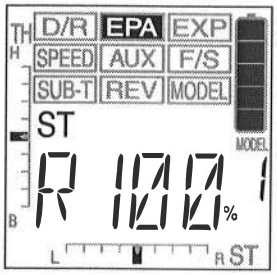
Adjusting Steering End Point Adjustment, Continued....

1) Press the Right or Left MENU key to highlight the EPA menu. ST L 100% or ST R 100% will be displayed in the Programming Window depending on the last position of the steering wheel.



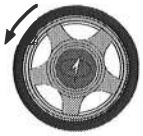
2) To set the Right Steering End Point Adjustment percentage value, turn and HOLD the steering wheel to the right. R 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of steering servo travel in that direction.

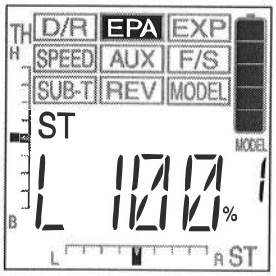
EPA ST R setting range is 0% to 150%. The default setting is 100%.



3) To set the Left Steering End Point Adjustment percentage value, turn and HOLD the steering wheel to the left. L 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of steering servo travel in that direction.

EPA ST L setting range is 0% to 150%. The default setting is 100%.



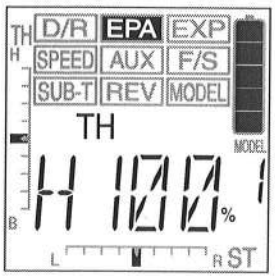


Adjusting Throttle End Point Adjustment

Your model's carburetor may not open completely, or it may open too much and cause the throttle servo to bind. If you're using an Electronic Speed Control, the Electronic Speed Control may not command full power, or the brake may not engage adequately. In such cases, Throttle High servo travel and Throttle Brake servo travel are adjustable using the End Point Adjustment function.

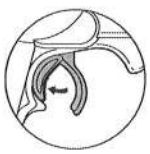
1) From within the EPA menu, press the Right MENU key to display TH. TH H 100% or TH B 100% will be displayed in the Programming Window depending on the last position of the throttle trigger.

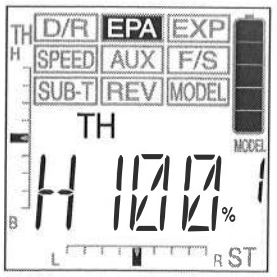
⚠ If you're using an Electronic Speed Control, the Throttle High and the Throttle Brake End Point Adjustment percentage values are both generally set to 100%, although the Throttle High direction may need to be increased to achieve full power. In some cases the End Point Adjustments can also be set directly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



2) To set the Throttle High End Point Adjustment percentage value, pull and HOLD the throttle trigger back. H 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of throttle servo travel in the High throttle direction.

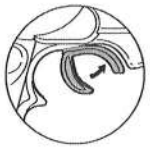
EPA TH H setting range is 0%to 140%. The default setting is 100%.

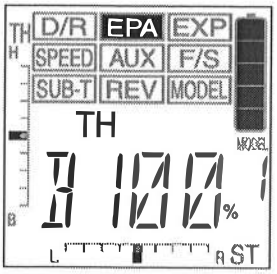




Adjusting Throttle End Point Adjustment. Continued....

3) To set the Throttle Brake End Point Adjustment percentage value, push and HOLD the throttle trigger forward. B 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of throttle servo travel in the Brake direction.

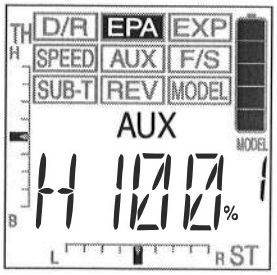




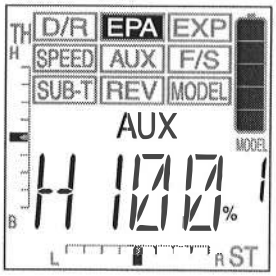
EPA TH B setting range is 0% to 160%. The default setting is 100%.

Adjusting Auxiliary Channel 3 End Point Adjustment

Auxiliary Channel 3 can be used for a number of different uses. One of the more common uses would be for the reverse function in a glow-powered monster truck. Often, the transmission only requires a small amount of throw, but the servo binds because of too much travel. In such a case, Auxiliary High servo travel and Auxiliary Low servo travel are adjustable using the End Point Adjustment function.

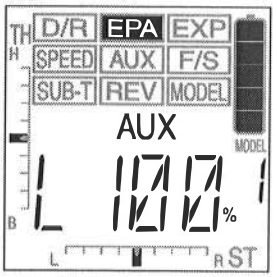


1) From within the EPA menu, press the Right MENU key to display AUX. AUX H 100% or AUX L 100% will be displayed in the Programming Window depending on the current position of the Auxiliary Lever.



2) To set the Auxiliary High End Point Adjustment percentage value, move the Auxiliary Lever UP. HIGH will be displayed momentarily in the Programming Window, then H 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of channel 3 servo travel in the High auxiliary direction.

EPA-AUX H setting range is 0% to 150%. The default setting is 100%.

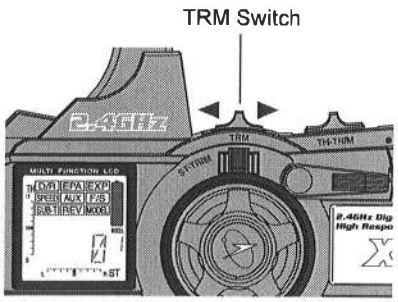


3) To set the Auxiliary Low End Point Adjustment percentage value, move the Auxiliary Lever DOWN. LOW will be displayed momentarily in the Programming Window, then L 100% will be displayed. Press the +/INC or DEC/- keys to increase or decrease the amount of channel 3 servo travel in the Low auxiliary direction.

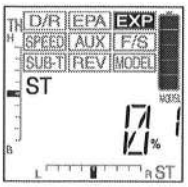
EPA-AUX L setting range is 0% to 150%. The default setting is 100%.

Assigning End Point Adjustment to the TRM Switch

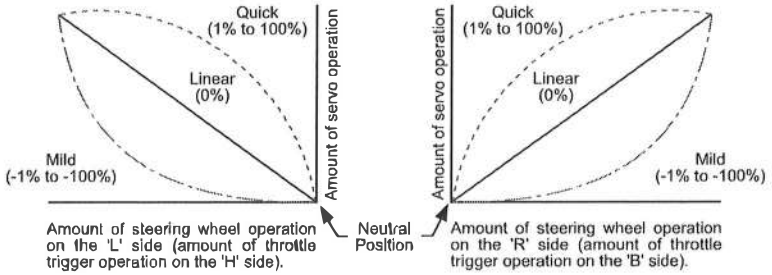
1) The TRM switch can be programmed to adjust Steering, Throttle, or Auxiliary End Point Adjustment percentage values without accessing the Programming Menu. This allows you to adjust the End Point Adjustment percentage values for one of these functions easily during use. Press the TRM switch forward to decrease the percentage value in 5% increments and press the TRM switch backward to increase the percentage value in 5% increments. The increment percentage value that the TRM switch adjusts either End Point Adjustment function can be changed to suit your preference. For more information, see page 41.



EXP - EXPONENTIAL



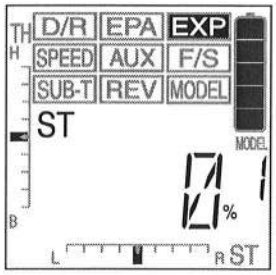
The Exponential function allows you to vary the amount of servo travel in relation to the movement of the steering wheel and the throttle trigger near the neutral positions to change the way the steering, throttle, and brake react to control movement. Increasing the Exponential percentage value will soften the control feel around neutral and decreasing the Exponential percentage value will heighten the control feel around neutral. Using a lower negative value allows for smoother control. Using a higher positive value may result in more 'twitchy' control response.



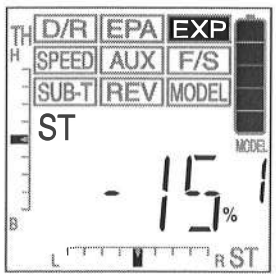
Adjusting Steering Exponential

Steering Exponential can be variably adjusted from Mild through Linear to Quick to allow you to set the most effective steering response for your model. Generally, if your model over-steers, reduce the Exponential percentage value, and if your model under-steers, increase the Exponential percentage value.

1) Press the Right or Left MENU key to highlight the EXP menu. ST 0% will be displayed in the Programming Window.



2) Press the +/INC or DEC/- keys to increase or decrease the Steering Exponential percentage value. Decreasing the Steering Exponential percentage value will make the steering less sensitive around neutral and increasing the Steering Exponential percentage value will make the steering more sensitive around neutral.



EXP-ST setting range is -100% (Mild) to 100% (Quick). The default setting is 0% (Linear).

⚠ Changes to the steering Exponential percentage value affects both right-hand and left-hand steering equally.

Adjusting Throttle High Exponential

Throttle High Exponential can be adjusted from Mild, Linear and Quick. In general, reduce the Exponential percentage value on a slippery track or with a model that has a higher-torque motor or engine. Increase the Exponential percentage value on a high-grip track or with a model that has a lower-torque motor or engine.

1) From within the EXP menu, press the Right MENU key to display TH. TH H 0% will be displayed in the Programming Window.