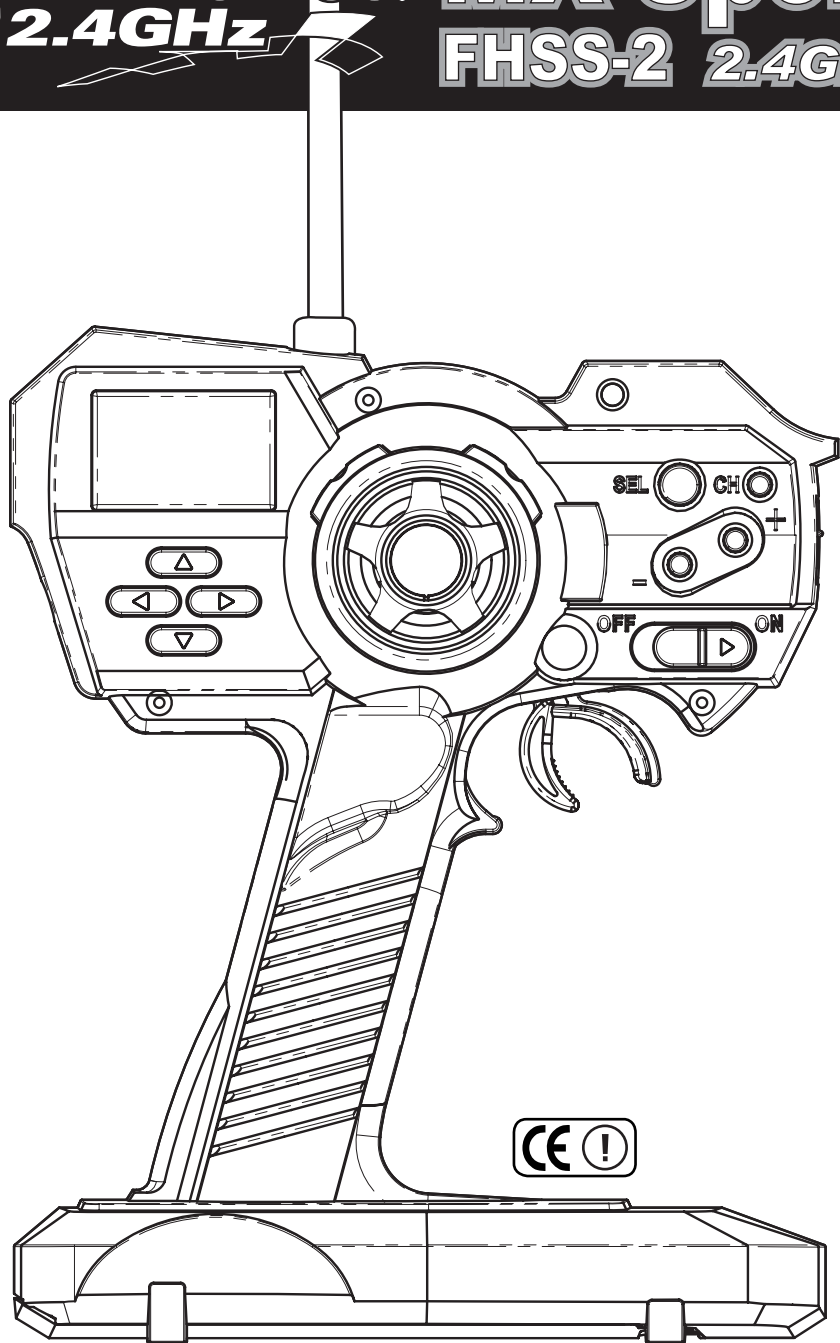


AIRTRONICS
2.4GHz

MX-Sport
FHSS-2 2.4GHz



3 CHANNEL COMPUTER RADIO SYSTEM

Instruction Manual Content

1. Safety Precautions -----	02
2. Before Operating -----	03-06
3. Initial Setup -----	07
4. Transmitter -----	08-12
5. Function Guide -----	13
6. References -----	14-15

SAFETY PRECAUTIONS



- YOUR MODEL CAN CAUSE SERIOUS DAMAGE OR INJURY SO PLEASE USE CAUTION AND COURTESY AT ALL TIME.
- DO NOT EXPOSE THE RADIO SYSTEM TO WATER OR EXCESSIVE MOISTURE.
- PLEASE WATER PROOF THE RECEIVER AND SERVOS BY PLACING THEM IN A WATER TIGHT RADIO BOX WHEN OPERATING R/C BAST MODELS.
- IF YOU HAVE LITTLE OR NO EXPERIENCE OPERATING R/C MODELS, WE STRONGLY RECOMMEND YOU TO SEEK THE ASSISTANCE OF EXPERIENCED MODELERS OR YOUR LOCAL HOBBY SHOP FOR GUIDANCE

BEFORE OPERATING

Features

- LCD screen displays digital adjustments and settings
- Four edit keys for setup
- 10 model memory (#0-9)
Use up to three letters, numbers, or symbols to easily identify models.
- Dual Rate Steering (D/R Steering)
Steering angle can be changed using digital trim.
- Digital Trim
Steering Trim, Throttle Trim, Adjustable Throttle ATL, and D/R steering can all be adjusted using digital trim switches.
- Switch function reassignment (DT1, DT2, DT3, DT4)
Allows for assignment of a function to any digital trim switches (digital trim switches, rocker switches).
All switches are digital so there is no need to readjust trim position for different models after initial setup.

Tx Specifications

Receiver:

Model: RX-371
Frequency: 2.4GHz ISM Band
Power supply: DC 4.8~6.0V
Weight: 9.5 grams
Dimensions: 1.03"(L) x 1.18"(W) x 0.62"(H)

Transmitter

Model: MX-SG FHSS-2
Power supply: 8AA alkaline dry cells DC 12V or
8 cell NiCd pack
Weight: 405 gm
Frequencies: 2.4GHz ISM Band

BINDING (RECEIVER to TRANSMITTER)

After installing the FHSS-2 Receiver, you are now ready to bind them together. Binding is the process that will match the FHSS-2 Receiver to Transmitter electronically as a match set. You can bind additional FHSS-2 Receiver to your Transmitter to operate many other cars, trucks and/or boats.

Throttle Fail Safe is a feature that will move the throttle servo to a preset position that you set. If no user preset is added, the Fail Safe will set it-self to the neutral throttle position.

BINDING:

1. Turn the power switch to the ON position on the Transmitter.
Transmitter LED will turn on after 6 seconds.
2. Depress and hold the FHSS-2 Receiver Binding button.
3. Turn the power switch to the ON position on the FHSS-2 Receiver and continue holding the Binding button.
The FHSS-2 Receiver LED will flash slowly.
4. Release the Binding button on the FHSS-2 Receiver after 2 seconds.
5. Depress and hold the Binding button on the transmitter until the LED on the FHSS-2 Receiver flashes rapidly.
6. Binding is now complete. Both Transmitter and Receiver LED will now stay on.
7. Operate the controls to confirm.

THROTTLE FAIL SAFE

After binding of the Transmitter and Receiver, you can set the Throttle Fail Safe feature

1. Turn the power switch to the ON position on the transmitter. Confirm Transmitter LED is on.
2. Turn the power switch to the ON position on the FHSS-2 Receiver. Confirm FHSS-2 Receiver LED is on.
3. Move controls to confirm connection between transmitter and receiver.
4. Move throttle lever to your desired Fail Safe position and hold.

NOTE: If the throttle lever is left in the neutral position. Fail Safe will be set at that position.

5. Depress the binding button on the FHSS-2 Receiver for 4 seconds. LED will flash slow
6. Release the throttle lever after the receiver LED starts to flash rapidly, and discontinue pressing the Binding button on the receiver.
7. Confirm that the Throttle Fail Safe is working properly by turning the transmitter power switch OFF. The servo should move to the preset fail safe position. Turn the transmitter power switch back on to confirm full control.

BEFORE OPERATING

Transmitter

● Controls

Throttle Trim (DT2)
(See Page 7 for the operating instructions)

LCD Screen

Throttle ATL (DT4)
(See Page 7 for the operating instructions)

Steering Dual Rate (DT3)
(See Page 7 for the operating instructions)

Antenna

Steering Wheel

Steering Trim (DT1)
(See Page 7 for the operating instructions)

Power Indicating LED

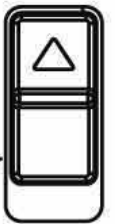
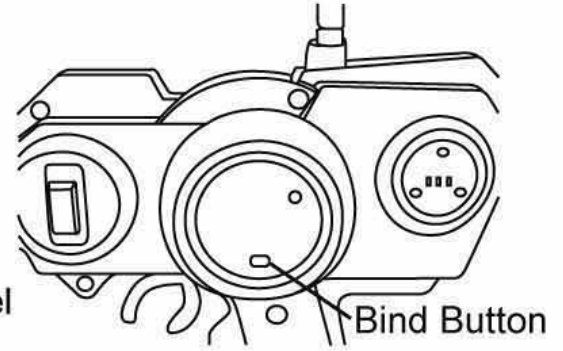
3CH SWITCH

Edit Keys

On/Off Switch

Throttle Trigger

Battery Compartment



BEFORE OPERATING

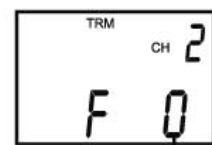
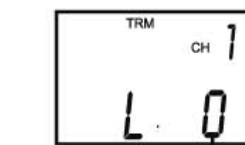
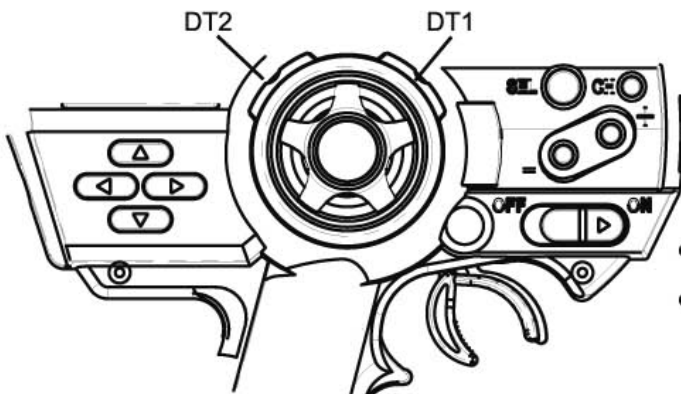
Turning the transmitter off:

Wait at least two seconds before turning off the transmitter if any adjustments were made using the trim switches or edit keys. If power is turned off less than two seconds after any adjustments were made, they will not be stored in memory.

● Digital Trim Switch Operation (Throttle Trim and Steering Trim)

(Initial settings : DT1-Steering Trim; DT2-Throttle Trim)

Move the switch left or right to adjust the setting.



- A tone will sound to indicate each step.
- Once the minimum or maximum value is reached the tone will still sound but no changes are being made.

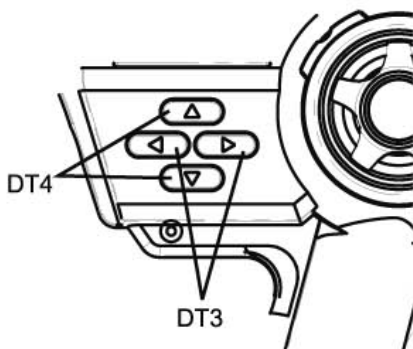
Trim Operation When using the digital trim, adjustments have no influence on maximum servo travel in order to prevent linkage binding.

When D/R Steering or Throttle ATL value is less 100% , the digital trim adjustments may affect servo travel end point.

● Rocker Switch Operation (D/R Steering and Throttle ATL)

(Initial settings : DT3-D/R Steering; DT4-Throttle ATL)

Push the switch left/right or up/down to adjust the current value.



- A tone will sound to indicate each step
- Once the minimum or maximum value is reached the tone will still sound but no changes are being made.



BEFORE OPERATING

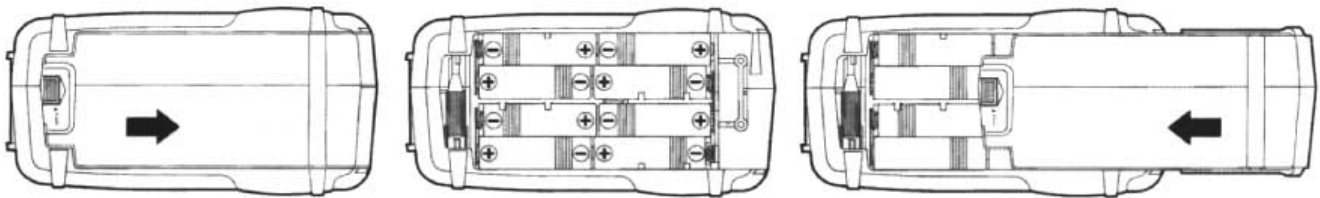
● **Battery Replacement**

For dry cell battery system

Load the eight batteries in accordance with the polarity marking on the battery holder. (8AA Size Batteries)

Battery Replacement

1. Remove the battery cover from the transmitter.
2. Remove the old batteries.
3. Insert the eight new AA batteries according to the polarity markings.
4. Replace the battery cover.
5. Slide the power switch to the ON position and check the LCD for the battery voltage. If voltage is low, check that the batteries are properly inserted and are making sufficient contact.



- ⚠ Always check the voltage of the transmitter before use.

⚠ **Caution**

- ⚠ Always be sure to insert the batteries correctly according to the markings, or the transmitter may be damaged.
- ⚠ When the transmitter will not be used for a long time, remove the batteries to prevent leaks and corrosion. If a leak should occur, clean the battery compartment and contacts thoroughly, making sure all contacts are corrosion free.

Low Battery Alarm:

An alarm will sound if the transmitter voltage drops below 8.5V. This alarm is meant as a safety feature only. The transmitter should not be operated below 9.0V. If the low battery alarm sounds, replace batteries immediately with fresh AA batteries to prevent loss of control.

● **Data Backup**

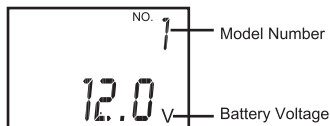
The data for every function of the transmitter is stored in a memory chip that does not require battery backup. The transmitter can be used without worrying about backup battery life.

INITIAL SETUP

Transmitter Setup

- **Slide the on/off switch to the ON position.**

Display when power is turned ON



- **Model Number Check**

When the power is turned on the currently selected model number is displayed. To setup a different model number, please use the Model Setup Function found on page 12.

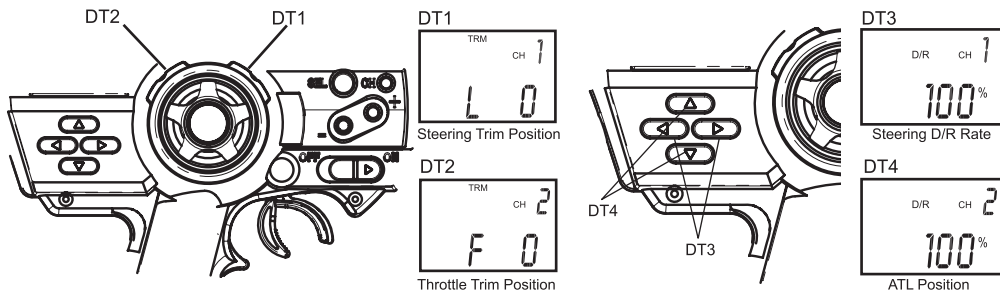
- **Digital Trim Setup**

- Steering trim (DT1)

Initially, steering trim is assigned to DT1 (page 04) Manipulate the DT1 switch to make sure that the steering trim value is displayed and operates. After verifying that the value changes, reset trim value to center (0).

- Throttle trim (DT2)

Initially, steering trim is assigned to DT2 (page 04). Manipulate the DT2 switch to make sure that the throttle trim value is displayed and operates. After verifying that the value changes, reset trim value to center (0).



- Dual rate steering (DT3)

Initially, D/R steering is assigned to DT3 (page 04) Manipulate the DT3 switch to make sure that the D/R steering value displays and operates. After verifying that the value changes, reset the D/R steering rate to 100%.

- Adjustable throttle ATL (DT4)

Initially, ATL is assigned to DT4 (page 04) Manipulate the DT4 switch to make sure that the ATL value displays and changes. After verifying that the value changes, reset the ATL rate to 100%.

TRANSMITTER FUNCTIONS

Servo Reverse / REV

REV reverses the direction in which the servos respond related to transmitter operation (Steering and Throttle)

After reversing servos, all trim adjustment will shift to the opposite side of center

Screen Check

(Initial screen)



(Setup screen)



Press "SEL" key to select desired function screen.



Press "CH" key to select the channel to be changed



* Servo direction
OFF : Normal
REV : Reversed



* CH3 function is not available in 2CH transmitter

● Servo Reverse (REV) Setting

1. Press the "SEL" key to select the desired function, REV (see drawing above).
2. Select channels 1, 2, or 3 using the "CH" key. (Channel 1 corresponds to steering, channel 2 corresponds to throttle, and channel 3 is forwards/reverse.)
3. Use the "+" or "-" key to reverse the servo direction. (Use the same method to change either channel).
4. After finishing adjustments, press the "SEL" key to return to the initial screen.

TRANSMITTER FUNCTIONS

End Point Adjustment / EPA

EPA should be used when adjustments are being made to left/right steering angle and throttle high/brake side during linkage setup.

EPA adjusts the maximum angle causing a different turning radius.

End Point Adjustment

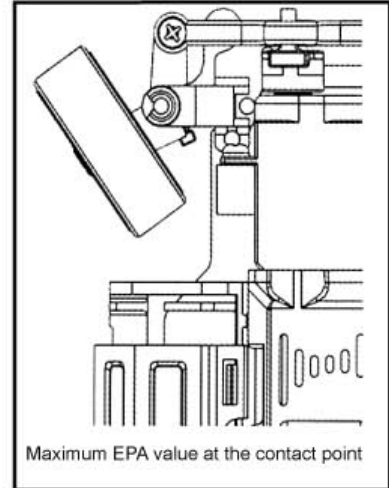
EPA is used to adjust the maximum servo travel for each channel. Always check linkages while adjusting EPA.

Adjustable Throttle Limiter

ALT trim adjusts the amount of overall brake throw the model will have. Thus when adjusting throttle using EPA, the ALT must be considered.

Warning!

Do not over apply EPA as this will cause binding to occur and will result in servo failure.

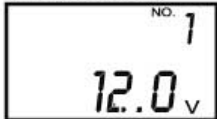


Warning


The servo may malfunction and the model may lose control if unreasonable force is applied to the servo horn during steering operation.

Screen Check

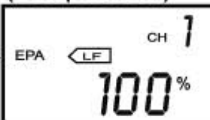
(Initial screen)



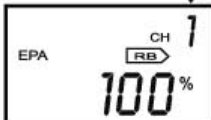
 Press "SEL" key to select desired function screen

 Press "CH" key to select the channel to be changed

(Setup screen)



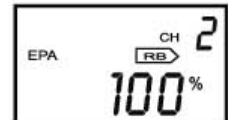
Left side steering



Right side steering.



Forward side throttle



Brake side throttle

EPA range

- 0 - 120% for each channel and direction

Adjustment buttons - Use "+" and "-" keys for changing values

Pressing and holding the "+" or "-" key for more than 1 second will increase the speed of value change

● EPA Steering Adjustment

1. Set the D/R steering switch (Initial DT3) to its maximum rate (100%).
2. Press the "SEL" key to select the desired function, EPA (see drawing above).
3. Select channel 1 using the "CH" key
4. Left side steering
 - Make sure the display shows "CH1". Turn the steering wheel all the way to the left and then use the "+" and "-" keys to adjust the steering angle.
5. Right side steering
 - Make sure the display shows "CH1". Turn the steering wheel all the way to the right and then use the "+" and "-" keys to adjust the steering angle.
6. After finishing adjustments, press the "SEL" key to return to the initial screen.

TRANSMITTER FUNCTIONS

● EPA Throttle Adjustment

1. Set the ATL switch (initial DT4) to its maximum rate (100%).
2. Press the "SEL" key to select the desired function, EPA (see drawing above).
3. Select channel 2 using the "CH" key.
4. Forward throttle adjustment
 - make sure the display shows "CH2". Pull the throttle trigger all the way back and then use the "+" and "-" keys to adjust maximum forward throttle amount. If using an ESC(Electronic Speed Controller), set to 100%.
5. Brake/reverse Throttle Adjustment
 - make sure the display shows "CH2". Push the throttle trigger all the way forward and then use the "+" and "-" keys to adjust maximum brake/throttle amount. If using an ESC(Electronic Speed Controller), set to 100%.
6. After finishing adjustments, press the "SEL" key to return to the initial screen.

EXP adjustment

EXP is used to adjust the central servo travel value for each channel (Ch1 or Ch2)

Screen Check

(Initial screen)

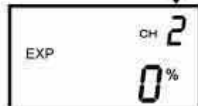
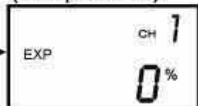


Press "SEL" key to select desired function screen



Press "CH" key to select the channel to be changed

(Setup screen)



EXP range

0-(±) 100% for each channel

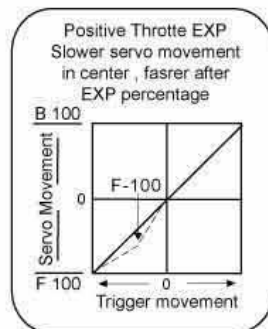
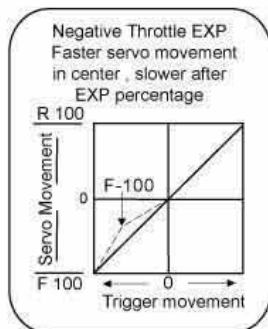
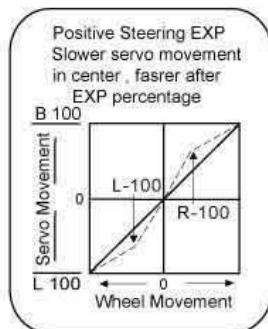
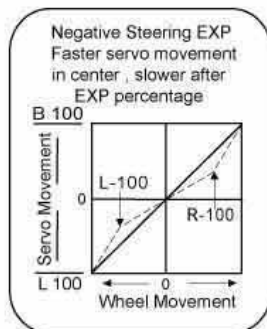
Adjustment buttons-use "+" or "-" keys for changing values

EXP Steering Adjustment

1. Press the "SEL" key to select the desired function. EXP (see drawing above)
2. Select channel 1 using the "CH" key.
3. Use the "+" and "-" keys to adjust the EXP value.
4. After finishing adjustments , press the "SEL" key to return to the initial screen.
 - ※ Steering EXP will work in both left and right directions.

EXP Throttle Adjustment

1. Press the "SEL" key to select the desired function. EXP (see drawing above)
2. Select channel 2 using the "CH" key.
3. Use the "+" and "-" keys to adjust the EXP value.
4. After finishing adjustments , press the "SEL" key to return to the initial screen.
 - ※ Throttle EXP only works in forward directions.

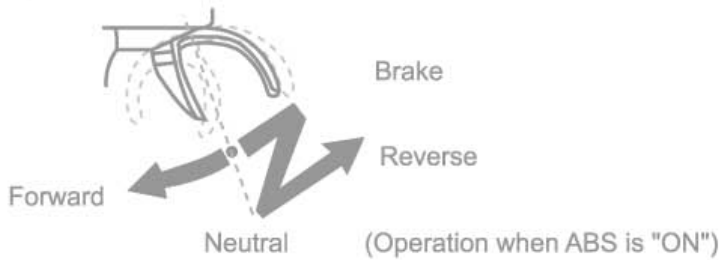


EXP Steering

EXP Throttle

TRANSMITTER FUNCTIONS

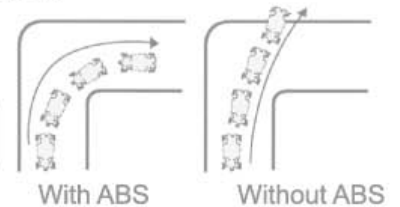
ABS Anti-Lock Braking System / ABS



Applying the brakes while cornering can cause understeering or oversteering to occur due to brake lockup. Understeering or oversteering can be prevented by using the ABS function. Using the ABS function, when the brakes are applied to the throttle servo will pulse, producing the same effect as pumping the brakes in a full size vehicle. The ABS function has settings for slow, normal, and fast pulse.

Operation

-The throttle servo will pulse with ABS function on when brakes are applied.



Screen Check

(Initial scree)



Press "SEL" key to select desired function screen

(Setup screen)



ABS setup function

CH2 ABS : OFF/SLW/NOM/FST

- ABS OFF : NO ABS, vehicle will stop with throttle trigger pushed forward
- ABS SLW : For slow pulse ,vehicle will stop with throttle trigger pushed forward
- ABS NOM : For medium pulse , vehicle will stop with throttle trigger pushed forward
- ABS FST : For fast pulse , vehicle will stop with throttle trigger pushed forward

ABS adjustment

1. Prss the "SEL" key to select the desired function, ABS (see drawing below)
2. Change the ABS setting using the "+" or "-" keys.
3. After finishg adjustments, press the "SEL" key to return to the initial screen.

OFF : ABS off	NOM : ABS for medium pulse
FST : ABS for fast pulse	SLW : ABS for slow pulse

If servo is not strong enough, ABS function can't use and your servo can cause serious damage

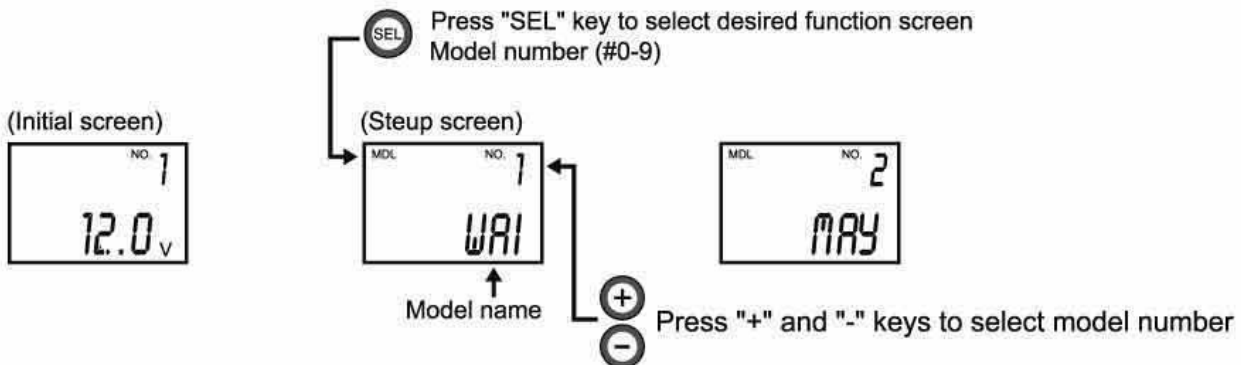
TRANSMITTER FUNCTIONS

Model Name / NAME

This function allows for the assignment of a name (three characters, numbers or letters) to each of the 10 model memories (#0-9).

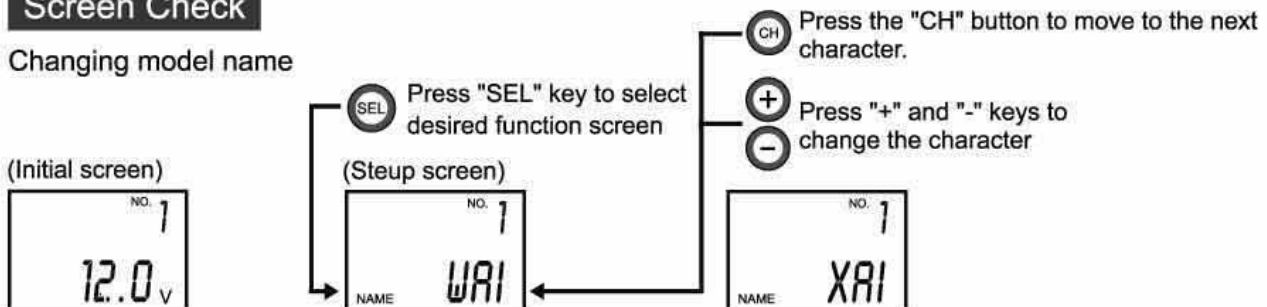
Screen Check

Selecting model number



Screen Check

Changing model name



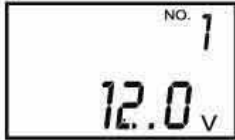
● Model Name Assignment

1. Press the "SEL" key to select the desired function, NAME (see drawing above).
2. Select the character you want to change using the "CH" button.
3. Use the "+" or "-" keys to change the character to the desired character.
4. Repeat steps 2 and 3 to assign the model name.
5. After finishing adjustments wait at least two seconds before turning off.
※ The character you want to change will blink.

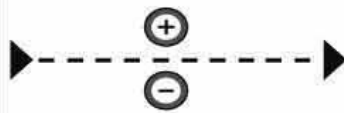
FUNCTION GUIDE (This is a map of the different functions and where to find them.)

Turn on Transmitter

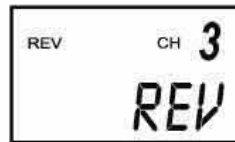
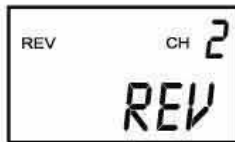
(Initial screen)



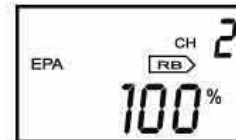
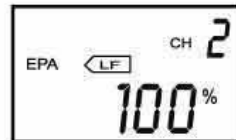
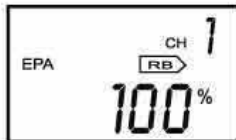
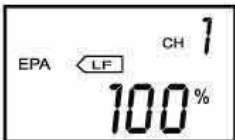
SEL ↓ Model select / MDL



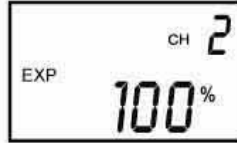
SEL ↓ Servo reverse / REV



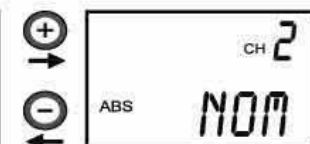
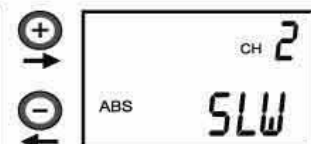
SEL ↓ End point adjust /EPA



SEL ↓ EXP function



SEL ↓ ABS function / ABS



SEL ↓ Model name /NAME



REFERENCES

Terms

ABS (Anti-lock Braking System)- To eliminate wheel lockup under braking which might result in understeering or oversteering.

ATL (Adjustable Throttle Limiter) - Use to adjust the amount of travel available to the braking side of the throttle trigger or servo.

CH1 (Channel 1) - Use to control steering.

CH2 (Channel 2) - Use to control throttle.

CH3 (Channel 3) - Use to control forward and reverse.

D/R (Steering Dual Rate) - Use to adjust the amount of steering travel available.

DT (Digital Trim) - Digital switches used to make adjustments on the transmitter.

EPA (End Point Adjustment) - EPA is used to adjust the maximum servo travel for each channel / servo.

REV (Servo Reversing) - Reverses the direction in which the servo responds, related to transmitter operation.

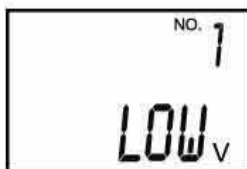
Servo - Electric motors used to do physical work inside a radio control vehicle.

Power Alarm

● Low battery Alarm

An alarm will sound if the transmitter voltage drops below 8.5V and the LCD screen will show "LOW" (see drawing below).

This alarm is meant as a safety feature only. The transmitter should not be operated below 9V.



LCD screen

Audible alarm : Continuous tone



Warning

If the battery alarm sounds, turn off the car then transmitter as soon as possible to prevent loss of control.

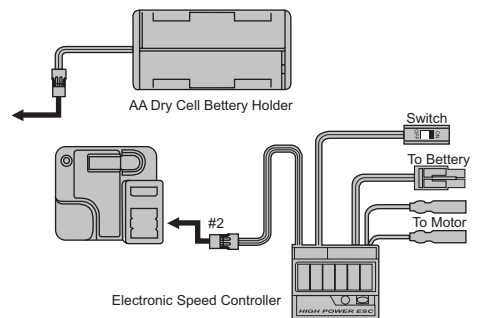
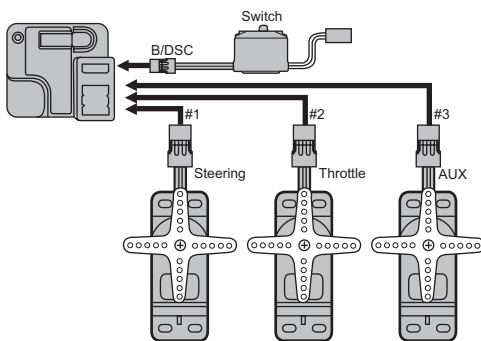
REFERENCES

Troubleshooting

If you experience problems with your system, including erratic control or short range control problems, check the following table for probable causes. If none of the following suggestions fix the problem, return the unit to the service department.

Problem	Possible Cause	Solution
Transmitter will not turn on or voltage is low	Dead or low batteries	Replace batteries
	Batteries inserted incorrectly	Check orientation of batteries, ensure that they are inserted according to the markings
	Faulty contacts	Ensure that contacts are not damaged and are making good contact with the batteries
Decreased range of control or erratic control	Corroded or dirty contacts	Check contacts for corrosion, clean if necessary
		Ensure the antenna is screwed all the way in

Receiver and Servo Connections



FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING: Changes or modifications made to this equipment not expressly approved by Airtronics may void the FCC authorization to operate this equipment.

RF Exposure Statement

This transmitter has been tested and meets the FCC RF exposure guidelines when used with the Airtronics accessories supplied or designated for this product, and provided at least 20 cm separation between the antenna and the user's body is maintained. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.



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