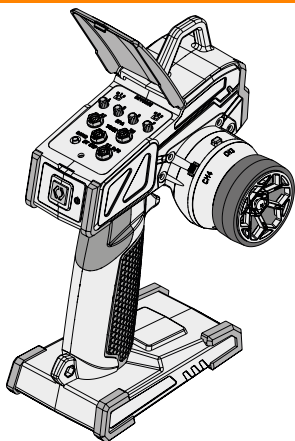




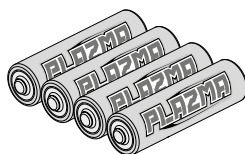
TF-51 2.4 GHZ FHSS DIGITAL SYSTEM Instruction Manual

Components

TF-51 Transmitter



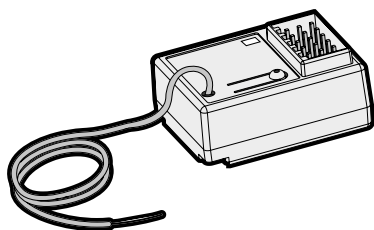
Equipment Needed



101939

PLAZMA 1.5V Alkaline AA Battery

RF-51/N Receiver



#160555

HPI RF-51 Receiver for electric vehicles

#160556

HPI RF-51N Receiver for nitro vehicles



www.hpiracing.com

HPI RACING A/S
Jegindøvej 21
DK-8800 Viborg

info@hpiracing.com

Operating Suggestions

Thank you for selecting this HPI RACING product!

Be sure to thoroughly read and understand these instructions before using this product. Pay particular attention to the items labeled Caution and Attention. Failure to follow these instructions may result in damage to your RC car and injury to yourself and other people.



Caution

If you make changes or adjustments not shown in the instruction manual, your vehicle may be damaged.

Safety Guidelines about Products

- Turn on the transmitter first then the receiver. Turn off the receiver first then the transmitter.
- Before running you must check the radio function.
- After running, the motor, ESC and wires may be hot. Do not touch as they can cause burns.
- This radio is made of precision electronics, do not expose to extreme heat, vibration, shock or water.
- Do not cut antenna wire.
- 2.4GHz radio frequency only functions by line of sight, if you drive behind a solid object or around a corner and lose sight of the vehicle you may lose control of the RC car.
- Be careful to not short circuit any of the wires as this will cause damage to the unit.
- Do not disassemble and make any modifications to the transmitter and receiver/ESC.



Cautions

Failure to follow these instructions can damage your kit, and cause serious bodily injury or death.



Attention

Failure to follow these instructions can cause injury to yourself or others. You might also cause property damage or damage your kit.

En: More Information
De: Weitere Informationen
Fr: Plus d'informations
Es: Más información
Fi: Lisätietoja
No: Mer informasjon

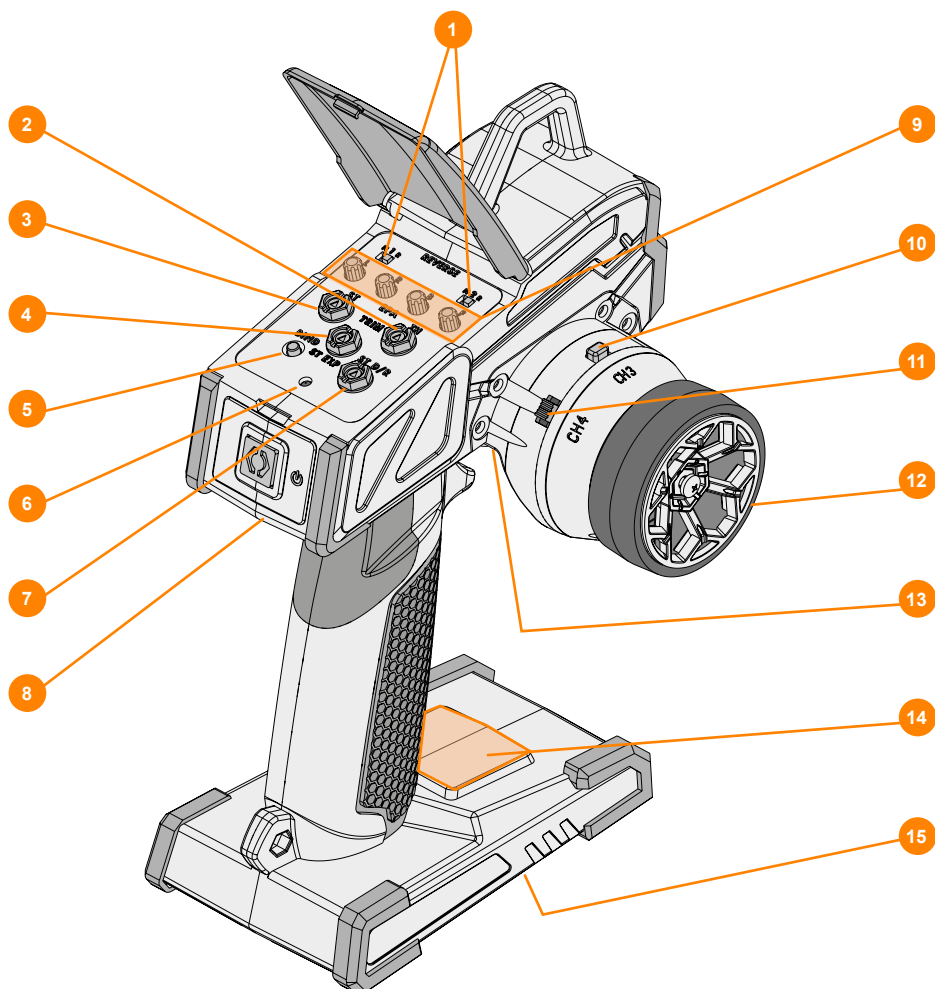
Da: Mere information
Sv: Mer information
Pt: Mais informações
It: Ulteriori informazioni
Tr: Daha fazla bilgi
Ro: Mai multe informații

Pl: Więcej informacji
Cs: Více informací
Zh: 更多信息
Ja: 詳細情報



1 Overview

1-1 Transmitter Controls



1 Reverse Switches

2 Throttle Trim

3 Steering Trim

4 Steering Exponential

5 Bind Button

6 Power Indicator

7 Steering Dual Rate

8 Power on/ off

9 End Point Adjustments

10 CH3: Spare Channel

11 CH4: Spare Channel

12 Steering Wheel (CH1)

13 Throttle Trigger (CH 2)

14 Magnetic Area

15 Battery Cover

1-2 Transmitter Operation

This transmitter is for use with the RF-51/N Receiver.

These functions only work as described when used with those products.

1-2-1 Reverse Switches

These functions reverse the motion direction of the steering channel (1) and the throttle channel (2) respectively.



1-2-2 Throttle Trim

To be used for centering the throttle



1-2-3 Steering Trim

To be used for centering the steering



1-2-4 Steering Exponential

To be used for setting the control response curve of the steering.



1-2-5 Bind Button

The bind button is used to bind the transmitter to the car receiver.



1-2-6 Power Indicator

A solid light indicates good batteries, a flashing light indicates low batteries

1-2-7 Steering Dual Rate

To be used to adjust steering servo throw.



1-2-8 Power Switch

Hold down to power on the transmitter

1-2-9 End Point / EPA

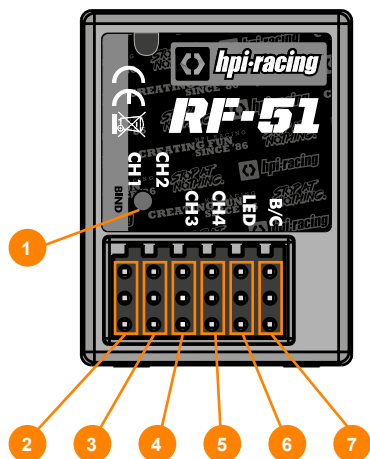
End point adjustments allow you to set the limits of steering and throttle



1-2-10 Magnetic Area

Magnetic area suitable for securing bodyclips or small screws while working on your RC vehicle

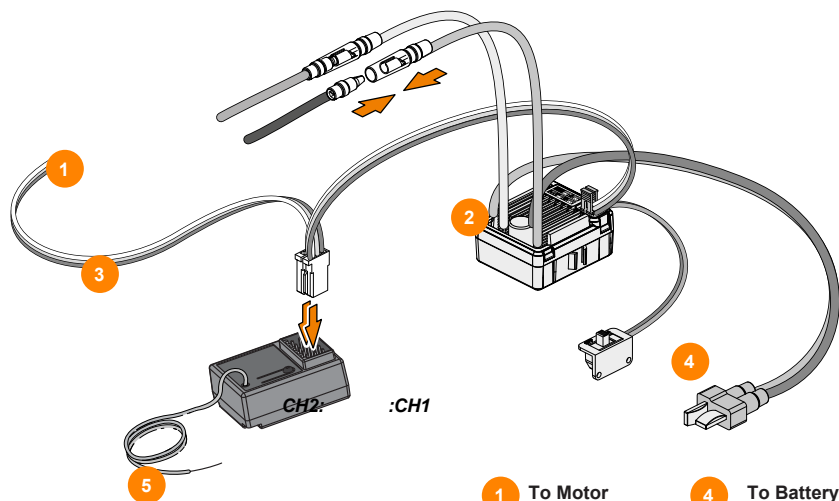
1-3 Receiver Functions/Connections



- 1 Bind Button
- 2 Receiver Battery connection
- 3 For use with HPI LED Adaptor. (#160581)
- 4 CH4: For transponder or other accessories.
- 5 CH3: For transponder or other accessories.
- 6 CH2: Throttle Servo
- 7 CH1: Steering Servo

If using HPI LED adaptor #160581, CH3 switch is used for the LED ON-OFF Functions.

1-4 Receiver External Connections



- 1 To Motor
- 2 ESC
- 3 To Servo
- 4 To Battery
- 5 Antenna



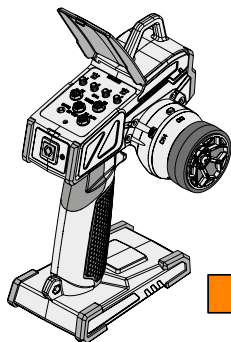
Attention

Do not make sharp bends or cut the antenna.

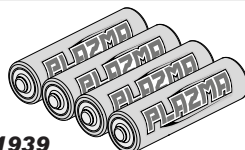
2 Getting Started

2-1 Transmitter Battery Installation

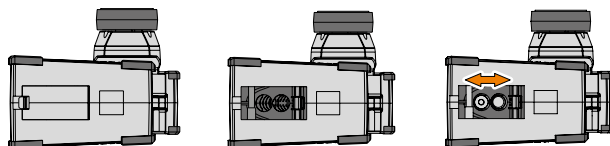
- 1** Open battery cover at the bottom of transmitter and install batteries



! Do not mix batteries of different ages or types.

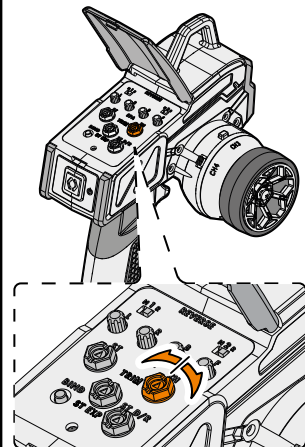


101939
PLAZMA 1.5V Alkaline AA Battery
(Not Included)

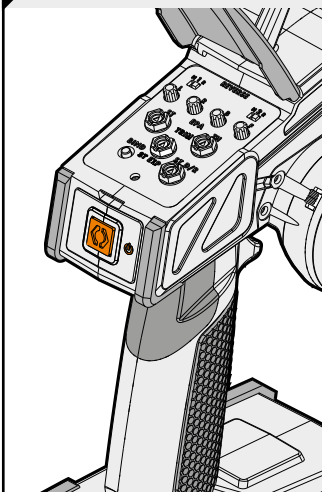


2-2 Switching On

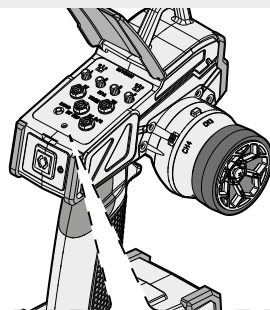
- 1** Center Throttle Trim



- 2** Turn on Transmitter



- 3** Check Batteries



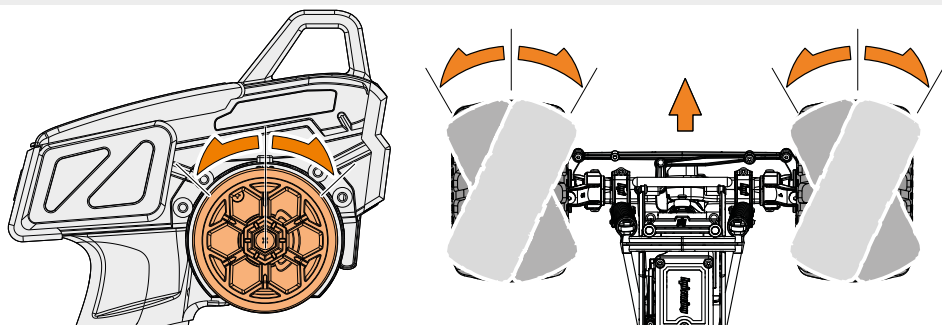
-  Good Batteries
-  Low Batteries
(Light Blinks)

- 3** Place car on stand, connect battery and turn on receiver

2-3 Basic Operation

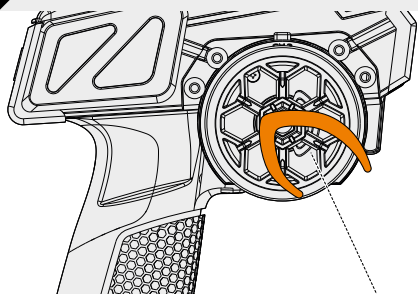
2-3-1 Steering

- 1** Steering is normally back = left, forward = right. This is adjustable - see transmitter manual for further information.

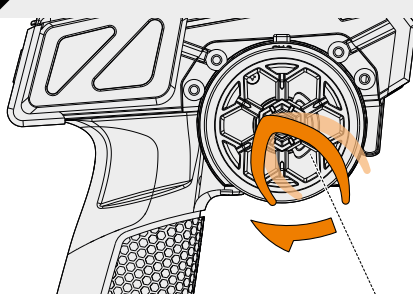


2-3-2 Acceleration

- 1** Throttle Trigger - neutral position



- 1^A** Throttle Trigger - acceleration/forwards

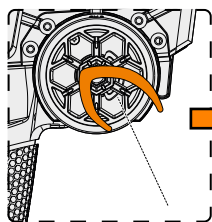


2-3-3 Reverse/Braking

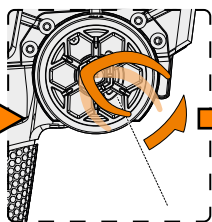
- 1** Throttle Trigger - Reverse/braking

Braking

1. Stop (Neutral)

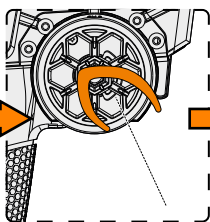


2. Brake

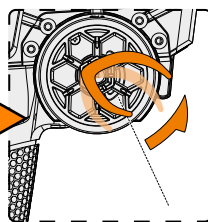


Reverse

3. Stop (Neutral)



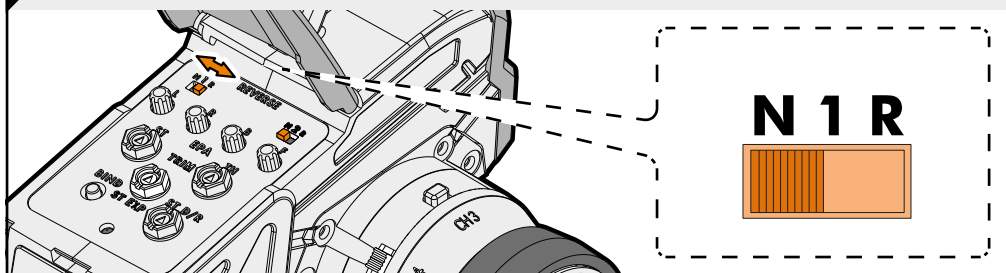
4. Reverse



2-4 Steering Adjustments

2-4-1 Steering Reverse

- 1 To change direction of steering - e.g for left handed use.

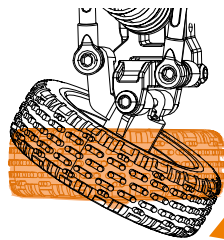
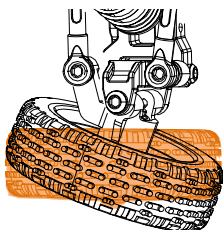
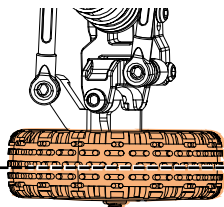
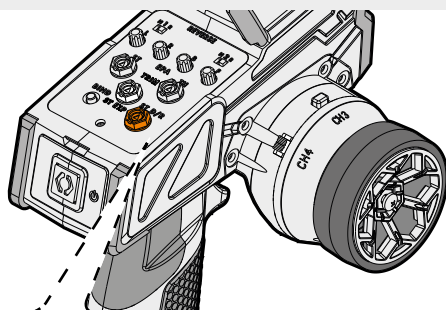


2-4-2 Steering Dual Rate

- 1 To be used to adjust steering servo throw.

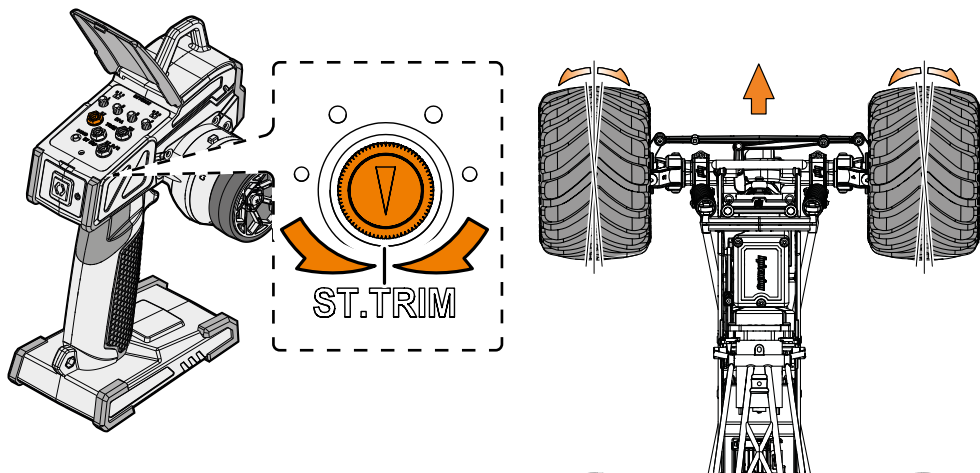
Turning the knob anticlockwise to reduce the steering throw.

The steering rudder amount is recommended to be controlled within 75% to avoid excessive steering resulting in friction between the front wheel and the car shell, and the appropriate steering range can better maintain the body attitude and control comfort.



2-4-3 Steering Trim

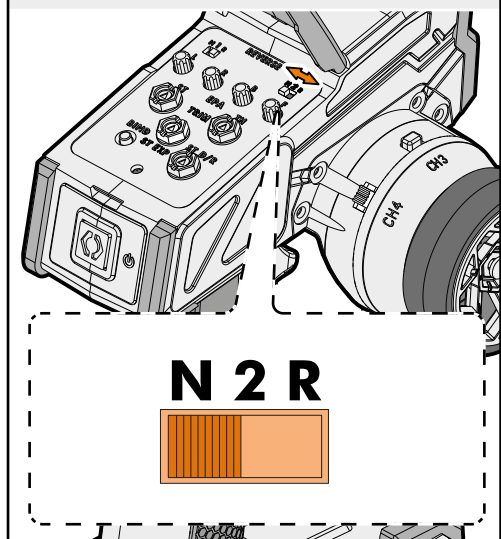
- 1** Adjust steering trim until wheels are in correct alignment so that car drives straight



2-5 Throttle Adjustments

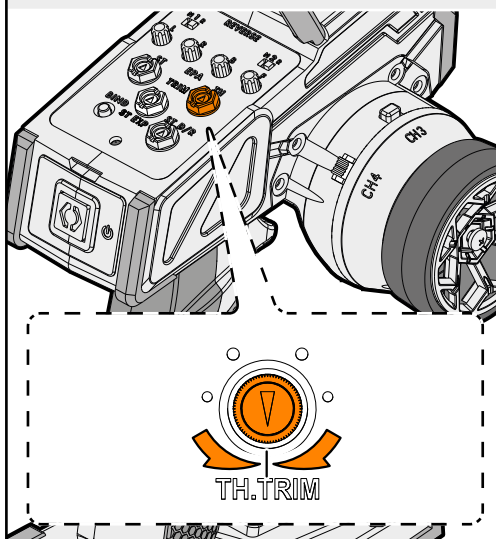
2-5-1 Throttle Reverse

- 1** To Reverse the Throttle Direction



2-5-2 Throttle Trim

- 1** If the vehicle moves without any throttle input, adjust the Throttle Trim until the vehicle remains stationary.



3 Setup/Customisation

3-1 Binding/Pairing

Programming a receiver to recognize the code of only one specific transmitter. Binding and fail-safe is preset from the factory.



Cautions

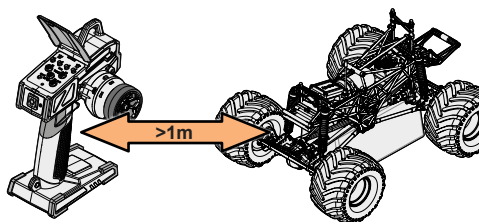
Any new binding of transmitter & receiver will clear the preset fail safe.



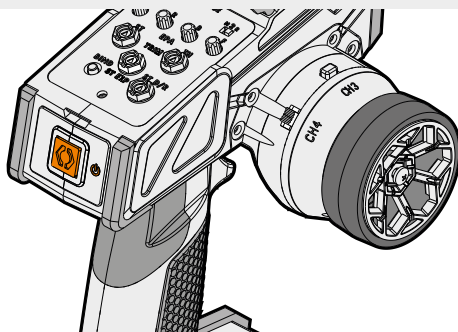
Cautions

If you change transmitters or add a receiver, you must re-bind before operating your vehicle.

- 1** Place the transmitter and the receiver close to each other (within one meter).



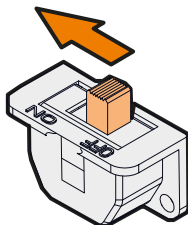
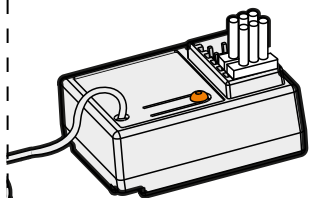
- 2** Turn on Transmitter



- 3** Press and hold the receiver setup button, then turn the power switch to the ON position. The LED will then flash quickly.



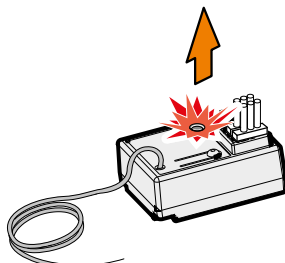
Hold the button down.



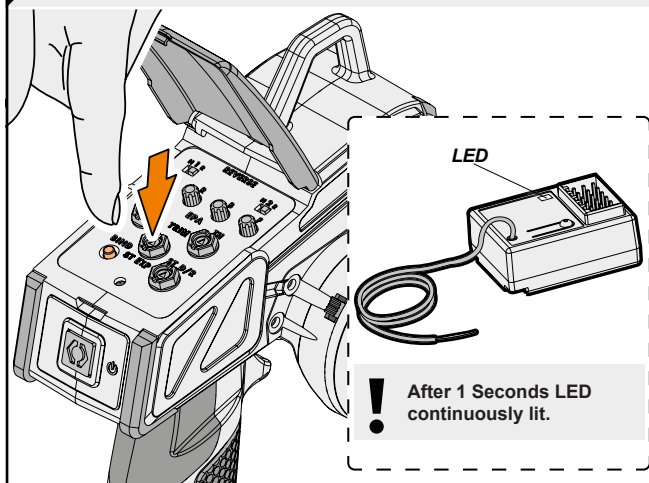
- 4** Release the setup button after 1 second



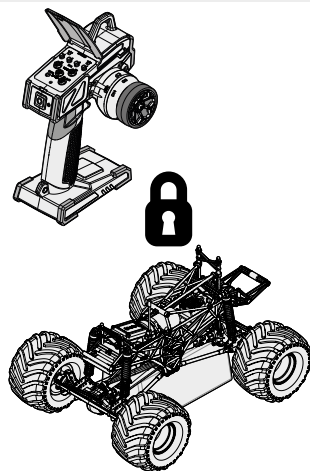
After 1 Seconds



- 5** Press and hold the binding button on the transmitter for 1 second until the LED on the receiver is continuously lit.



- 6** Binding Complete.



3-2 Fail Safe System

This car has a built-in fail safe system that will stop the car if the radio glitches, either because of interference or if the car goes out of range.

Situations when the fail safe will operate.

HPI RF-51/ RF-51N

When transmitter radio signal is cut off.

HPI RF-51N Only

When receiver battery charge is low.

When fail safe is operating, the red LED will continuously flash.

3-2-1 Checking Fail Safe

To check the failsafe:

1. Set the car so that the wheels can turn, but it will not move, either by putting on a stand or turning upside down.
2. Turn on the transmitter, and then the car.
3. Move the throttle trigger to turn the car wheels (accelerate).
4. Whilst the car is running, turn off the transmitter.

If the failsafe is working, the car's wheels should stop turning.



Cautions

Any new binding of transmitter & receiver will clear the preset fail safe.

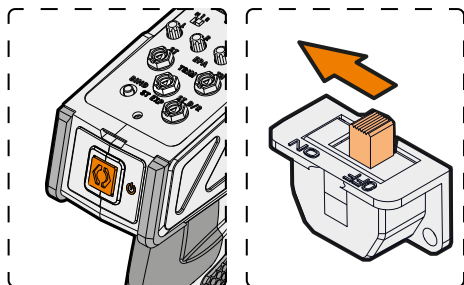


Cautions

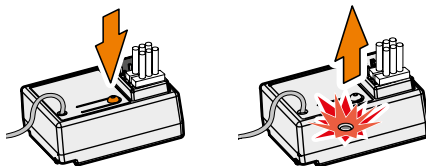
The fail safe cannot completely protect your car.

3-2-2 Fail Safe Setup

- 1** Turn on transmitter and Car/ESC



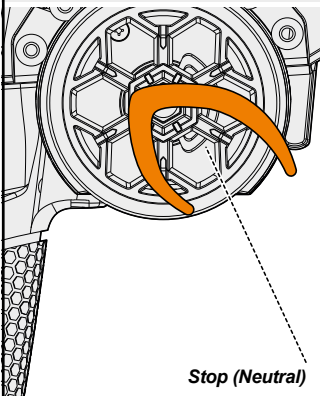
- 2** Press the setup button on the receiver then release. LED will flash.



- 3** **NOTE:** Start step 4 within five seconds.

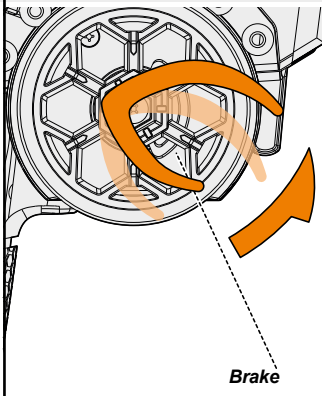
! After five seconds fail safe setup will reset, the LED will be continuously lit and you will have to start over at step one above.

- 4^A** **ELECTRIC:** Leave throttle trigger in neutral position.



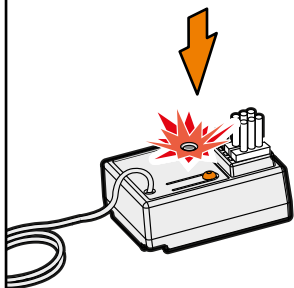
Stop (Neutral)

- 4^B** **NITRO:** Move throttle trigger in brake position.

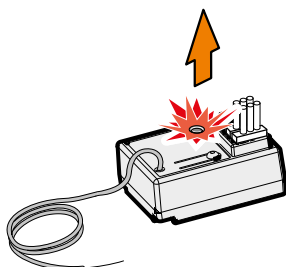


Brake

- 5** Press the setup button and hold it down. The LED will flash quickly.



- 6** Once the receiver LED remains lit, release the setup button on the receiver. For Nitro models, release throttle trigger to neutral position.



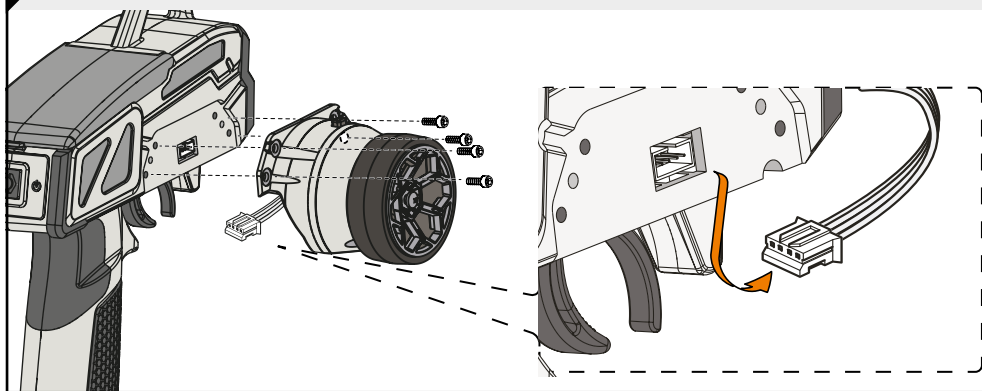
- 7** To confirm fail safe is working refer to step 7, section 5-1



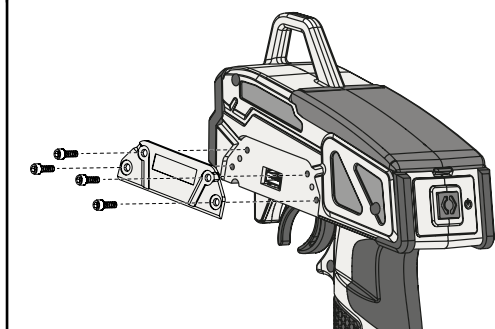
3-3 Steering Wheel Adjustment

The steering module on the TF-51 can be swapped from one side of the Transmitter body to the other. This allows for Left as well as Right handed use.

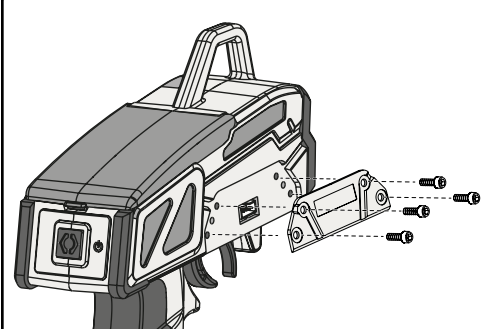
- 1** Remove screws holding steering wheel and disconnect wiring loom



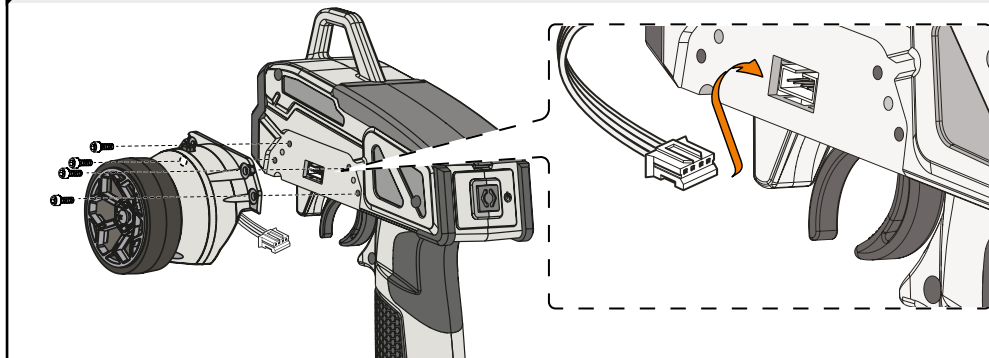
- 2** Remove blanking plate on opposite side



- 3** Re-fit blanking plate in place of steering wheel



- 4** Re-fit steering wheel and re-connect wiring loom



3-4 End point adjustments

End point adjustments (EPA) allow you to set the limits of travel of a cars steering and throttle in relation to the corresponding movements on a transmitter.

This is especially important for the steering so that the servo is not overextending the steering mechanism when the transmitter steering wheel is at maximum position.

The TF51/RF-51 system allows for individual end points to be set for each direction of both the steering and the throttle.

The four knobs are:

L = Steering (Left)

R= Steering Right)

B= Throttle (Brake)

F= Throttle (Forward)



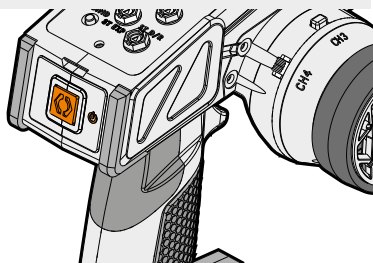
Cautions

Do not adjust the servo beyond its limit. Damage may occur.

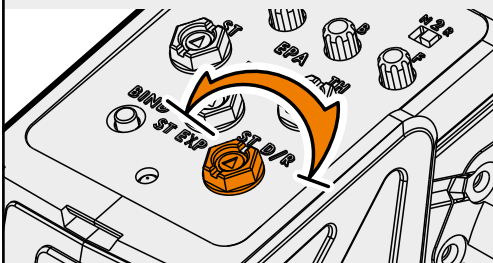
3-4-1 Steering EPAs

- 1** Place the car on a stand, Switch on the transmitter, then turn on the receiver.

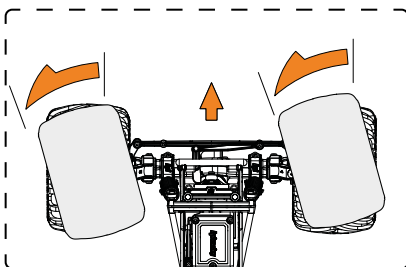
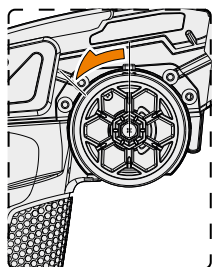
ON



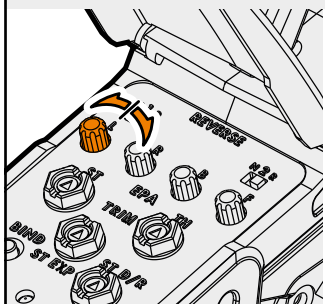
- 2** Turn the dual rate dial to maximum setting.



- 3** Turn steering wheel all the way to the left

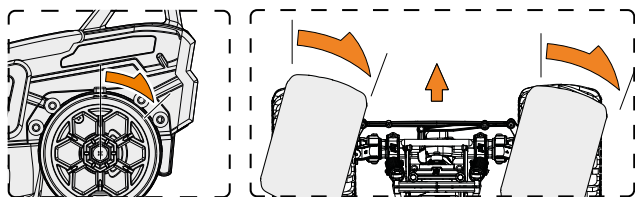


- 4** Adjust the end point (L) to the desired angle, so that the servo is at it's maximum.



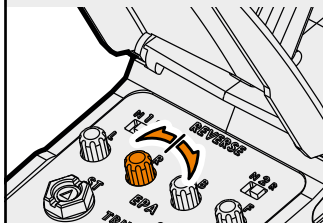
5

Turn steering wheel all the way to the right



6

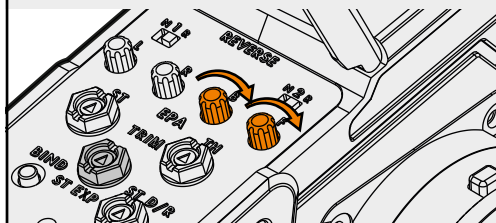
Adjust the end point (R) to the desired angle, so that the servo is at its maximum.



3-4-1 Throttle EPAs (Electric Setup)

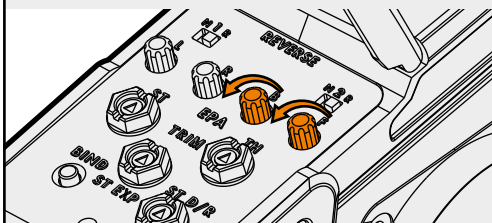
1

Set the end point dials on the transmitter to the maximum setting.



2

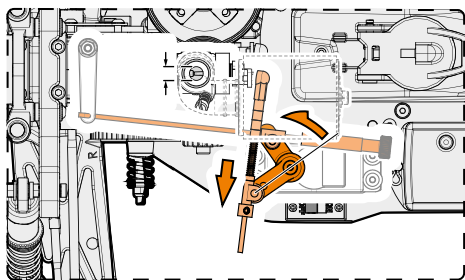
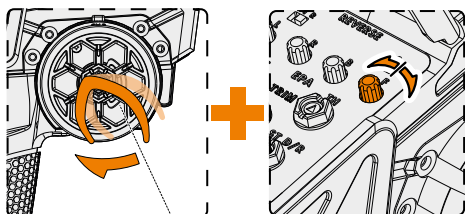
After both the Transmitter and RC Vehicle are powered, the EPA settings can be adjusted to reduce your vehicles top speed/braking rate.



3-4-1 Throttle EPAs (Nitro Setup)

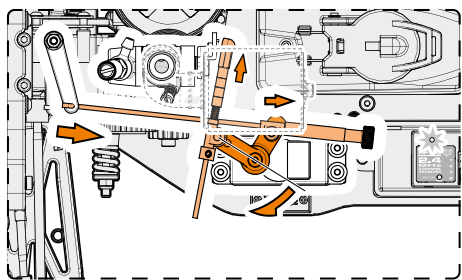
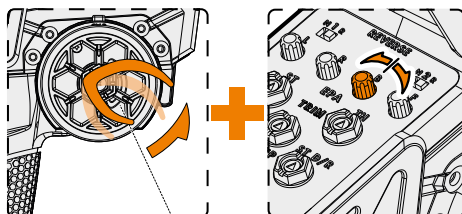
1

Pull the trigger to maximum throttle and adjust your end point until the carburetor is wide open.



2

Push the trigger to maximum brake and adjust your end point until the brakes are fully applied.

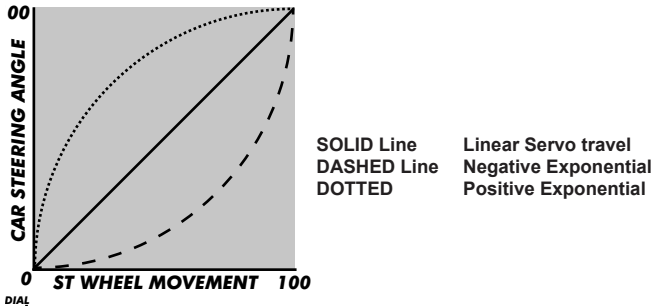
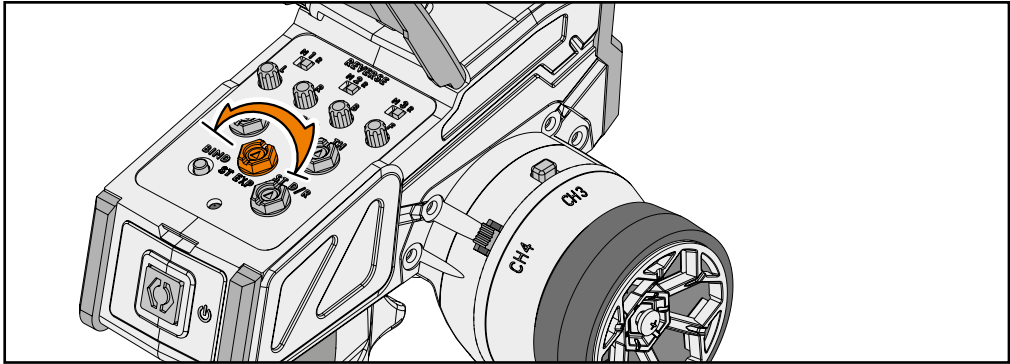


3-5 Steering Exponential

ST EXP (Steering Exponential) controls the response curve of the steering servo (CH1).

Setting to 0 (Standard), the steering servo will respond linearly as you turn the wheel. Turning the dial towards the Negative, the initial steering response will be lessened, but the response will speed up towards the endpoints of the steering wheel movement. This will decrease steering sensitivity.

Turning the dial towards the Positive, the initial steering response will be increased and the response will be lessened towards the endpoints of the steering wheel movement. This will increase steering sensitivity.



4 After Use

4-1 Switching Off

IMPORTANT: Always power OFF the ESC/Receiver before the transmitter.

1. Remove the car body
2. Switch off the vehicle's ESC/Receiver (short press ≤ 1 second) power and disconnect the battery.
3. Turn off the transmitter power
4. Remove the battery when not using the car.



Attention

Always power OFF the ESC/Receiver before the transmitter to prevent loss of control.



Caution

Disconnect the battery whenever the model is not in use.

If left connected, the vehicle may start unexpectedly or the battery may overheat and cause a fire.



Tip

Transmitter will emit an audible beep after 15 mins of inactivity as a reminder to turn it off.

5 Troubleshooting

If RC car does not move or you have no control, see below

Problem	Cause	Remedy
Does Not Move.	Battery is not placed properly in the transmitter.	Place batteries in the transmitter properly.
	Weak or no battery in model.	Install charged battery.
	Damaged motor.	Replace with new motor.
	Frayed or broken wiring.	Splice and insulate wiring completely.
	ESC is shut down by heat protection circuit.	Stop driving immediately, do not drive the car until the Speed Controller cools down.
No Control.	Weak or no batteries in transmitter or model.	Install charged or fresh batteries.
	Neutral position or trim is incorrect.	Adjust the steering trim.
	Binding Setup is incorrect.	Make sure binding is setup properly.
Steering and Throttle Function Reversed.	Servo reverse switch is in the wrong position.	Set to correct position.
	Wires from ESC to motor are improperly connected.	Re-connect the motor.

FCC COMPLIANCE STATEMENT

This device transmits in the range 2.4 to 2.4835 GHz and has been tested to comply with the limits for a Part 15 Class B device 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. Any change or modification to the device not expressly approved by the manufacturer may void the user's authority to operate the equipment. 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.

Canada Compliance Statement:

This Class B digital apparatus complies with Canadian ICES-003. (Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.) This equipment complies with the FCC/IC radiation exposure limits set forth for FCC and Industry Canada portable transmitting devices operation in an uncontrolled environment. The equipment should only be used or installed at locations where there is normally at least a 20cm separation between the antenna and all persons. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

CE Compliance statement

- En** The radio equipment type in this product transmits in the frequency range 2.4 to 2.4835 GHz with a maximum power of 18dBm and is in compliance with EU Directive 2014/53/EU. The full text of the Declaration of Conformity is available at www.hpiracing.com/ce
- De** Die Fernsteuerung in diesem Produkt überträgt in dem Frequenzbereich 2.4 bis 2.4835 GHz mit einer maximalen Stärke von 20dBm und sie ist in Übereinstimmung mit der EU Richtlinie 2014/53/EU. Der volle Text und die Erklärungen zur Konformität finden Sie unter www.hpiracing.com/ce
- Fr** Cet appareil transmet dans la gamme de fréquence de 2,4 à 2,4835 GHz avec une puissance de 20dBm et est conforme à la Directive UE 2014/53 / UE. Le texte intégral de la Déclaration de conformité est disponible sur www.hpiracing.com/ce
- Es** El tipo de equipo de radio en este producto transmite en el rango de frecuencia de 2.4 a 2.4835 GHz con una potencia máxima de 20dBm y cumple con la Directiva de la UE 2014/53/UE. El texto completo de la Declaración de conformidad está disponible en www.hpiracing.com/ce
- FI** Tuotteen radiolähetin toimii taajuusalueella 2,4–2,4835 GHz ja suurimmalla teholla 20 dBm, ja se on EU-direktiivin 2014/53/EU mukainen. Vaatimustenmukaisuusilmoituksen koko teksti: www.hpiracing.com/ce
- No** Radioutstyrstypen i dette produktet sender på frekvensområdet 2,4 til 2,4835 GHz med en maksimal effekt på 20 dBm og er i samsvar med EU-direktiv 2014/53/EU. Den fullstendige teksten til samsvarserklæringen er tilgjengelig på www.hpiracing.com/ce
- Da** Radioudstyret i dette produkt sender på frekvensområdet 2,4 til 2,4835 GHz med en maksimal effekt på 20 dBm og er i overensstemmelse med EU-direktiv 2014/53/EU. Den fulde overensstemmelseserklæring findes på www.hpiracing.com/ce
- Sv** Radioutrustningen i denna produkt sänder i frekvensområdet 2,4 till 2,4835 GHz med en maximal effekt på 20 dBm och uppfyller EU-direktiv 2014/53/EU. Den fullständiga försäkringen om överensstämmelse finns på www.hpiracing.com/ce
- Pt** O tipo de equipamento de rádio neste produto transmite na faixa de frequência de 2.4 a 2.4835 GHz com uma potência máxima de 20dBm e está em conformidade com a Diretiva Europeia 2014/53/EU. O texto completo da Declaração de Conformidade está disponível em: www.hpiracing.com/ce
- It** Il tipo di equipaggiamento radio in questo prodotto trasmette nella gamma di frequenze 2.4 - 2.4835 GHz con una potenza massima di 20dBm e rispetta la Direttiva UE 2014/53/EU. Il testo completo della Dichiarazione di Conformità è disponibile su www.hpiracing.com/ce
- Tr** Bu üründe radyo ekipmanı türü, 2.4 - 2.4835 GHz frekans aralığında maksimum 20dBm güçte yayın yapar ve AB Direktifi 2014/53/EU ile uyumludur. Uygunluk Beyanının tam metnine şu adresten ulaşabilirsiniz: www.hpiracing.com/ce
- Ro** Tipul echipamentului radio din acest produs transmite în intervalul de frecvențe 2.4 - 2.4835 GHz cu o putere maximă de 20dBm și respectă Directiva UE 2014/53/EU. Textul complet al Declarației de Conformitate este disponibil pe www.hpiracing.com/ce
- Pl** Sprzęt radiowy w tym produkcie działa w paśmie częstotliwości 2,4 do 2,4835 GHz z maksymalną mocą 20 dBm i spełnia wymogi dyrektywy UE 2014/53/EU. Pełna treść Deklaracji Zgodności dostępna jest na stronie: www.hpiracing.com/ce
- Cs** Rádiové zařízení v tomto produktu vysílá v pásmu 2,4 až 2,4835 GHz s maximálním výkonem 20 dBm a je v souladu se směrnici EU 2014/53/EU. Plné znění Prohlášení o shodě je k dispozici na stránce: www.hpiracing.com/ce



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Serial Number
Seriennummer
Numéro de série
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