1:10 Scale Electric 4WD Off Road Race Truggy

INSTRUCTION MANUAL

VKAR Hobby Co.,Ltd
WWW.vkarracing.com

INTRODUCTION

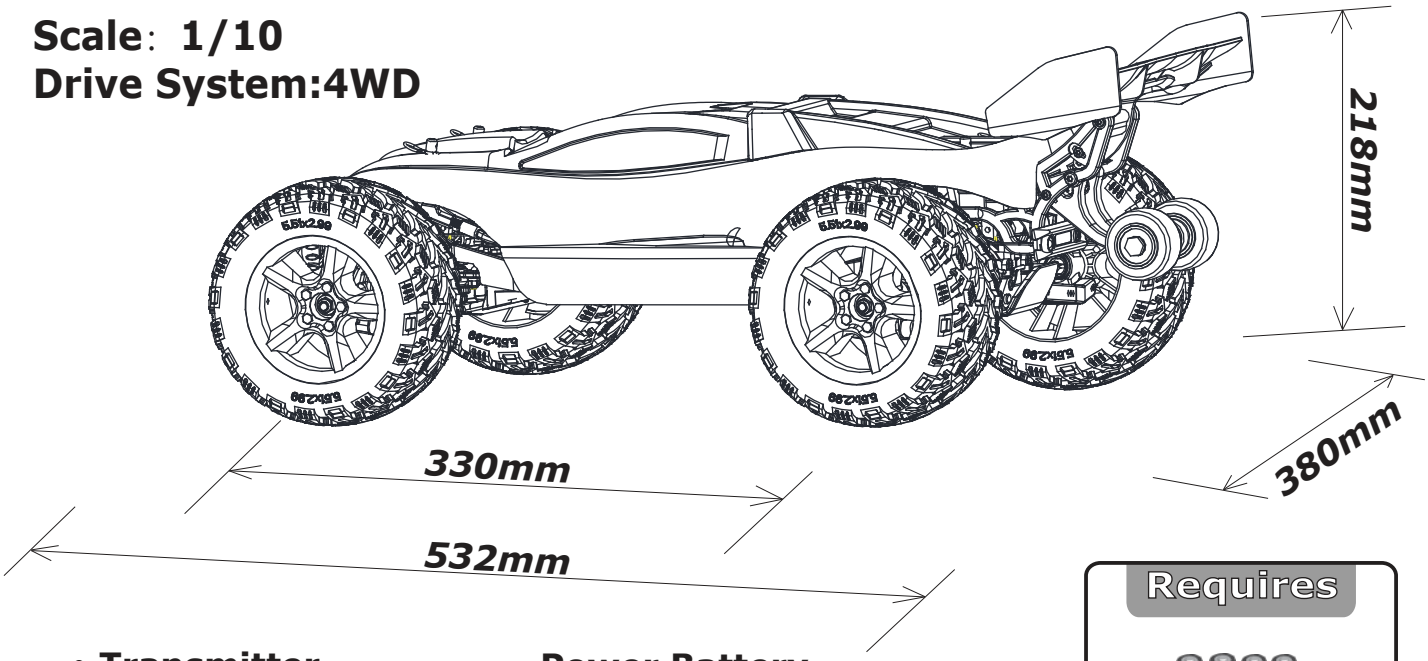
Thank you for purchasing VKAR product.This manual contains instructions on operating and maintaining the Bison .Please take a monent to read through this manual to familiarze yourself with this model.

FEATURES

- Bright LED light.
- Secure wheelie bar set.
- All rubber covered bearing throughout.
- Adjustable rear wing.
- Sealed,tunable limited-slip differentials.
- All terrain tires & agreessive electroplate wheel.
- Oil-filled ultra AL shocks with progressive dual-springs.
- Fully assembled and Ready-To-Run.

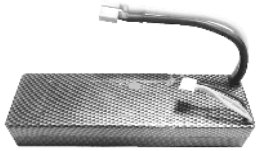
PRODUCT CONTENTS

Scale: **1/10**
Drive System:4WD



- **Transmitter**

- **Power Battery**



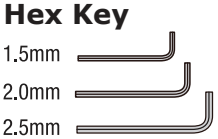
- **Charger**

Requires

4 PCS AAA Batteries (For Transmitter)

Tools Included

Hex Key



IMPORTANT INFORMATION

The Bison is a powerful RC car that will bring much enjoyment.Howewever,improper use can cause damage and bodily injuries.Please read the following information carefully to avoid casualties.

- This product is not a toy. Children under the age of 14 years old must be supervised by an adult.
- Read the instructions carefully to familiarize yourself with the model structure and its operating procedures before operating this model car. If you have never operated an RC car before, we recommend that you obtain someone experienced in operating such systems.
- Please make sure to check that the batteries inside the transmitter and the battery for the RC car are both fully charged before operating.
- Please use a spacious venue to operate this RC car. Avoid highways, bodies of water, or crowded areas.

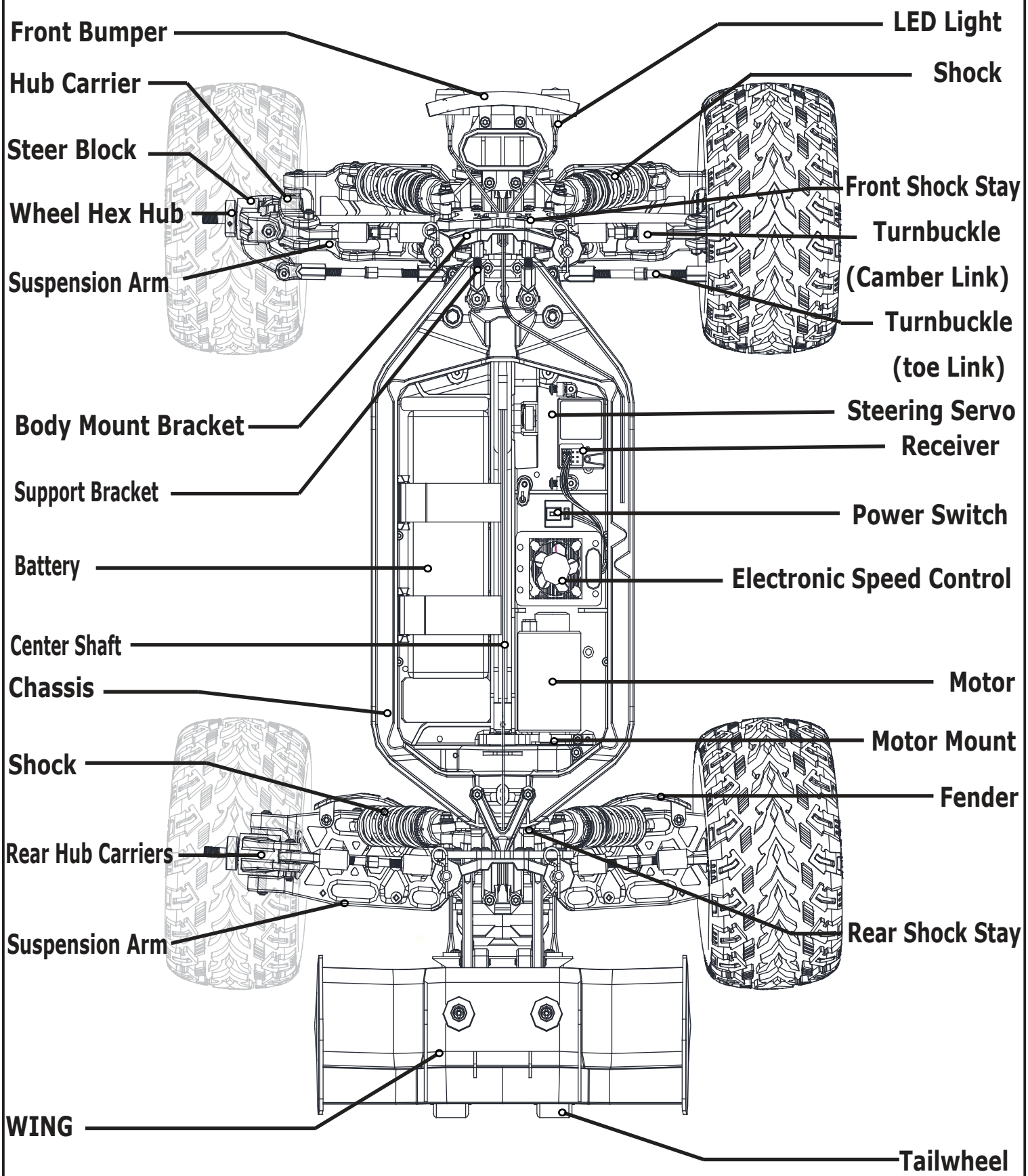
WARNING:

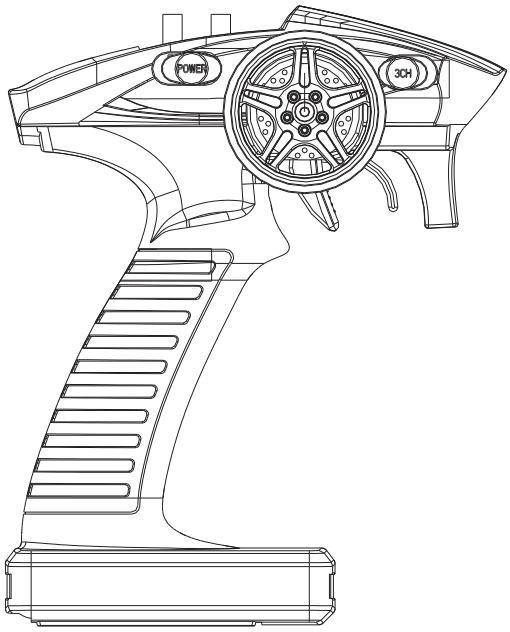
- Make sure to plug the battery in correctly.
- To operate the RC car, make sure to turn on the transmitter (controller) first before turning on the car. When you are done operating the car, make sure to turn off the car first before the transmitter.
- Take out the battery from the car when not in use.
- Check the wires inside the car for any loose connections.
- If you are using a battery that did not come with the car's package, make sure that the battery voltage does not exceed what the ESC can handle. Ask your local retailer for more information if needed.
- Do not touch the car when operating. The ESC and motor inside the car emits high heat when in use. Avoid physical contact until the car has cooled down.

This model can be operated with Ni-MH or Lithium Polymer batteries. Due to the battery's high energy,density,please pay attention to the following information to avoid injuries or damages.

- The battery MUST be removed from the RC car before charging.
- Wait for the battery to cool down before charging.
- The battery should be stored in a cool and dry place.

PARTS NAME

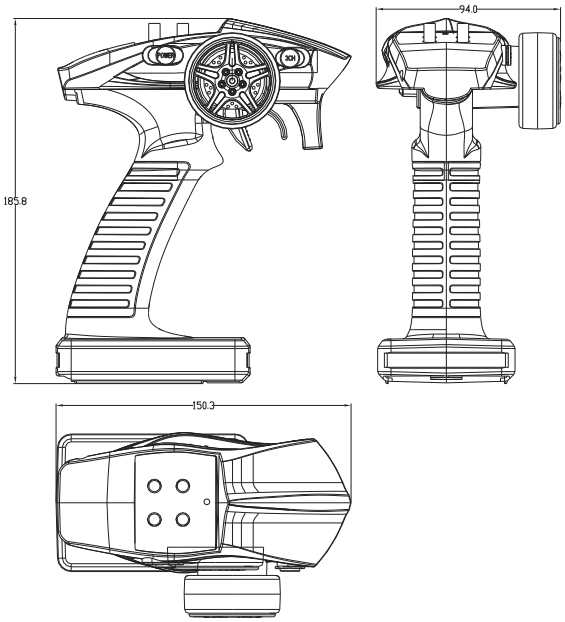

Front Bumper
Hub Carrier
Steer Block
Wheel Hex Hub
Suspension Arm
Body Mount Bracket
Support Bracket
Battery
Center Shaft
Chassis
Shock
Rear Hub Carriers
Suspension Arm
WING
LED Light
Shock
Front Shock Stay
Turnbuckle
(Camber Link)
Turnbuckle
(toe Link)
Steering Servo
Receiver
Power Switch
Electronic Speed Control
Motor
Motor Mount
Fender
Rear Shock Stay
Tailwheel



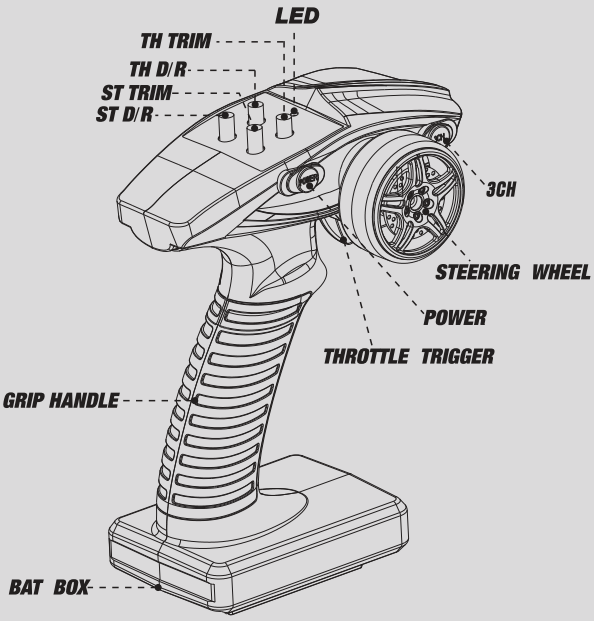
Install the batteries

(1) Remove the battery compartment cover.
(2) Replace the used batteries with new AA size batteries.

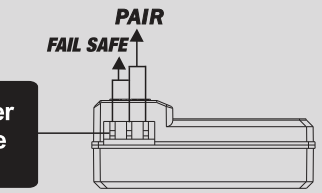
Please replace batteries when the power indicator blinks or the buzzer beeps.

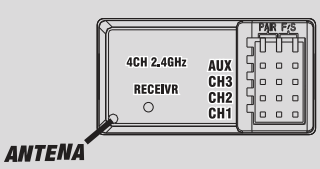


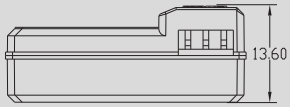
Function

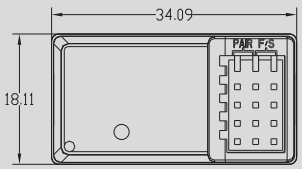


⚠ Warning：The Pin header can not connect to the power source.



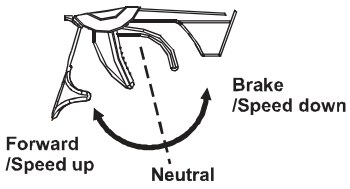


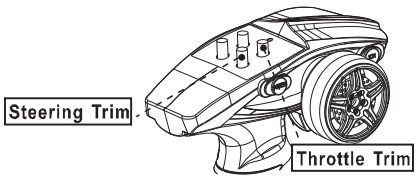




RADIO SYSTEM SETUP

A. Throttle Trigger



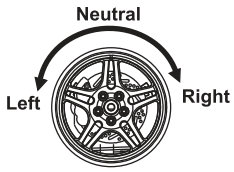


Keep the transmitter and receiver 40cm apart when operating.

Use the REV switches to reverse the steering or throttle operating direction.

1. Push the trigger forward to slow down or brake.
2. Pull the trigger backward to accelerate.

B. Steering Wheel



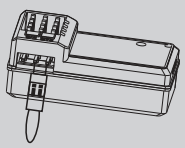
Throttle Trim: Trim the throttle servo slightly when the trigger is at the neutral position.

Steering Trim: If the front wheels do not align straight, use the steering trim to adjust.

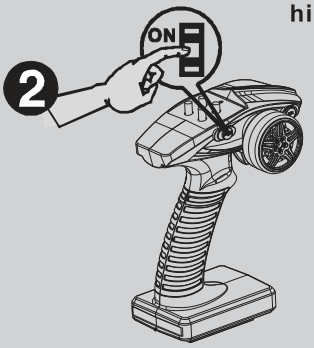
Operating Procedure

- Before operation:First turn on the transmitter,then the receiver. Lastly,connect the drive battery to the control unit
- After operation:Disconnect the battery from the control unit. Turn the receiver off, and then the transmitter.

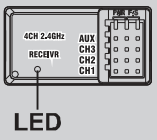
Binding the transmitter and receiver



1.After connecting the receiver to the power source, connec ting the Bind connector to the " pair" Pin header. The LED on the receiver should start flas hing rapidly.



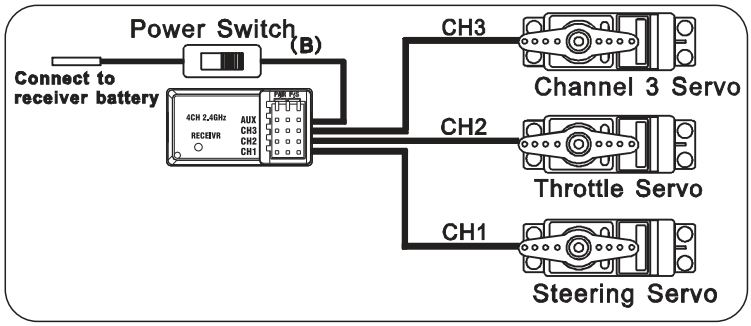
2. Switch on the transmitter, then pull the Bind connec tor out of the receiver.



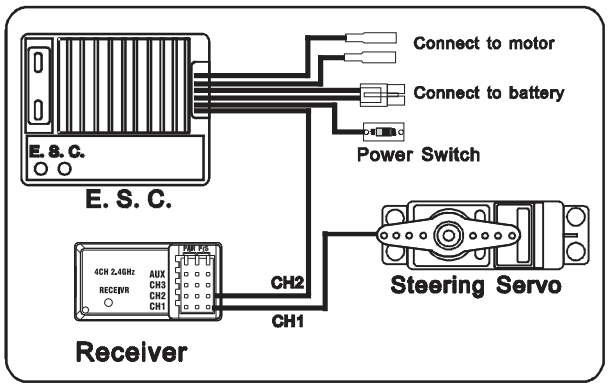
3. The LED on the receiver should become solid.That is, making the remote control code successfully.(Binding the transmitter and receiver.)

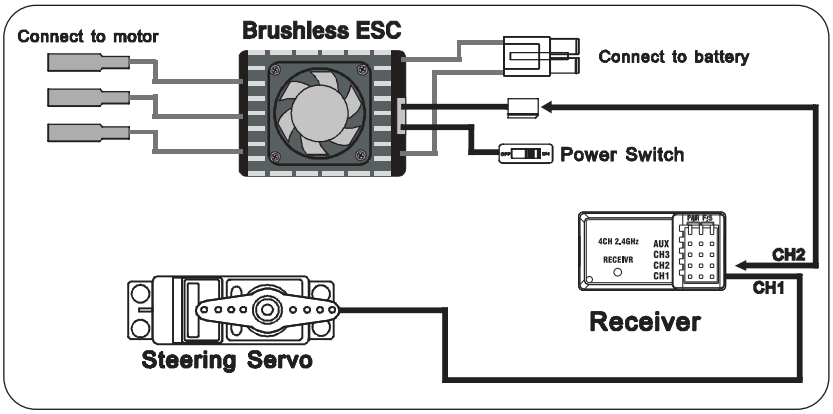
Receiver and servo connection

Gas powered model



Electrical powered model





⟩⟩ ELECTRONICS SETUP

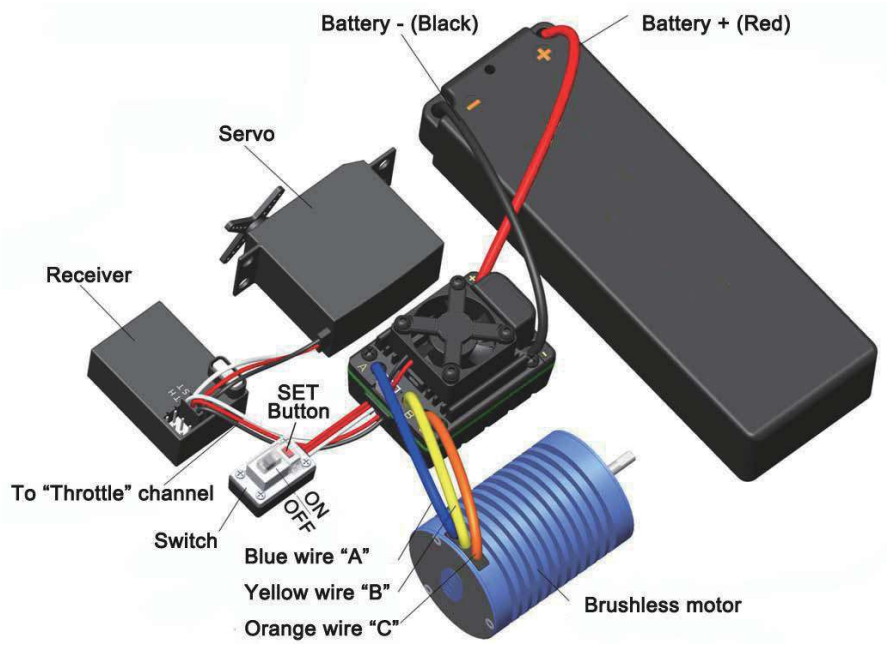
【BEGIN TO USE THE NEW ESC】

1. Connect the ESC, motor, receiver, battery and servo according to the following diagram

"+" and "-" wires of the ESC are connected with the battery pack, and #A, #B and #C are connected with the motor wires. The "SET" button is used for programming the ESC.

The control cable of the ESC (trio wires with black, red and white color) is connected with the throttle channel of the receiver (Usually CH2).

1The #A, #B, #C wires of the ESC can be connected with the motor wires freely (without any order). If the motor runs in the opposite direction, please swap any two wire connections.



Note: You can use the transmitter to set the throttle channel to the "Reverse" direction, and then the motor will run oppositely. Please calibrate the throttle range again after changing the direction of throttle channel.

2. Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC match the throttle range, you must calibrate it when you begin to use a new ESC, or a new transmitter, or after changing the settings of the neutral position of throttle channel, ATV or EPA parameters, otherwise the ESC cannot work properly.

There are 3 points need to be set, they are the top point of "forward" ,"backward" and the neutral point.

The following pictures show how to set the throttle range with a **Futaba**™ transmitter.

A) Switch off the ESC, turn on the transmitter, set the direction of throttle channel to "REV", set the "EPA/ATV" value of throttle channel to "100%", and disable the "ABS" brake function of your transmitter. (*Note2)

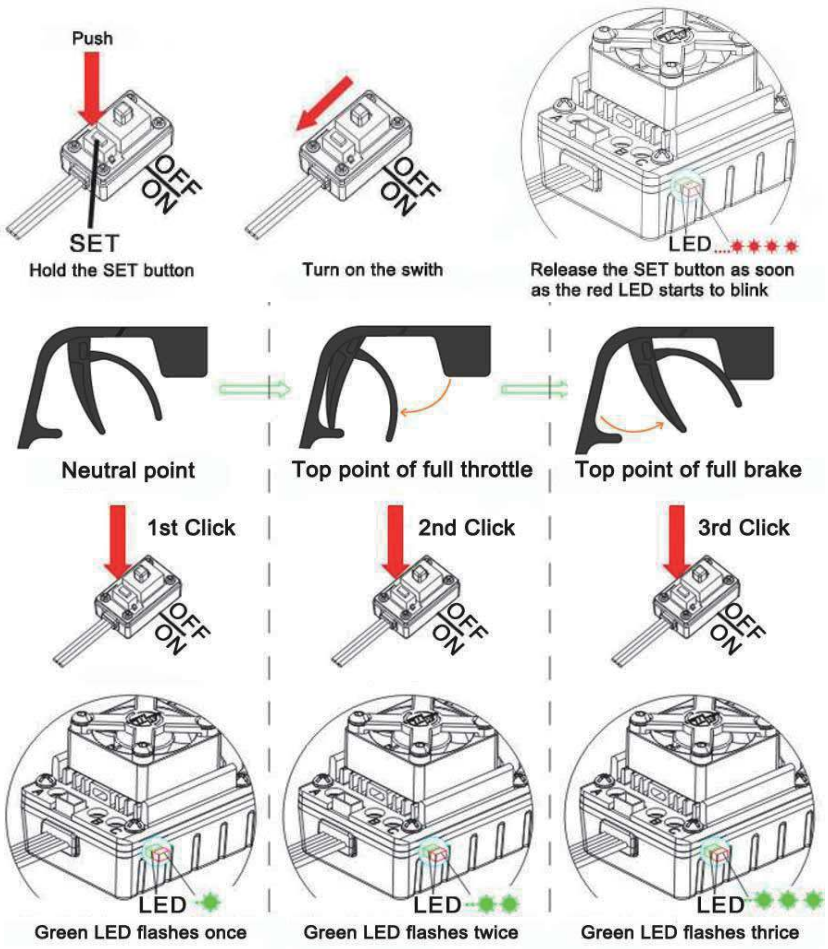
B) Hold the "SET" key and then switch on the ESC, when the red LED begins to flash, release the key immediately.

(Please check the picture on the right side)

C) Set the THREE points according to the steps shown in the picture on the right side.
   1) Neutral point
   2) End point of forward direction
   3) End point of backward direction

D) When the process of calibration is finished, the motor can be started after 3 seconds.

Note2: If you don't release the "SET" key after the red LED begins to flash, the ESC will enter the program mode, in such a case, please switch off the ESC and re-calibrate the throttle range again from step A to step D.



3. The LED Status in Normal Running

a) When the throttle stick is in the neutral range, neither the Red LED nor the Green LED lights up.
b) When the car moves forward, the Red LED solidly lights; the Green LED also lights up when the throttle stick is at the top position (100% throttle).
c) When the car brakes, the Red LED solidly lights; the Green LED also lights up when the throttle stick is at the bottom position and the maximum brake force is set to 100%.
d) When the car reverses, the Red LED solidly lights.

【ALERT TONES】

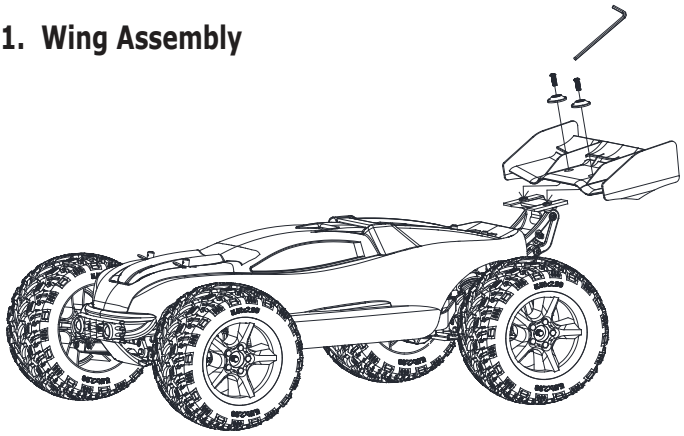
1. Input voltage abnormal alert tone: The ESC begins to check the input voltage when power on, if it is out of the normal range, such an alert tone will be emitted: "beep-beep-, beep-beep-, beep-beep-" (There is 1 second time interval between every "beep-beep-" tone).
2. Throttle signal abnormal alert tone: When the ESC can't detect the normal throttle signal, such an alert tone will be emitted: "beep-, beep-, beep-" (There is 2 seconds time interval between every "beep-" tone).

【PROTECTION FUNCTION】

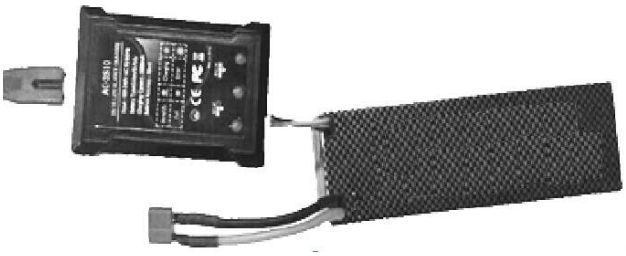
1. Low voltage cut-off protection: If the voltage of a Lipo battery pack is lower than the threshold for 2 seconds, the ESC will cut off the output power. Please note that the ESC cannot be restarted if the voltage of each Lipo cell is lower than 3.5V.
   For NiMH battery packs, if the voltage of the whole NiMH battery pack is higher than 9.0V but lower than 12V, it will be considered as a 3S Lipo; If it is lower than 9.0V, it will be considered as a 2S Lipo. For example, if the NiMH battery pack is 8.0V, and the threshold is set to 2.6V/Cell, it is considered as a 2S Lipo, and the low-voltage cut-off threshold for this NiMH battery pack is 2.6*2=5.2V.
2. Over-heat protection: When the temperature of the ESC is over a factory preset threshold for 5 seconds, the ESC will cut off the output power. You can disable the over-heat protection function for competition race.
3. Throttle signal loss protection: The ESC will cut off the output power if the throttle signal is lost for 0.2 second.

Quidck Start Guide

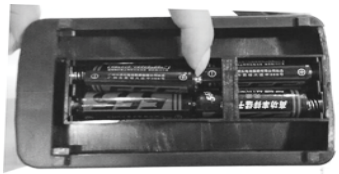
1. Wing Assembly



2. Charging the Battery



3. Loading the Battery

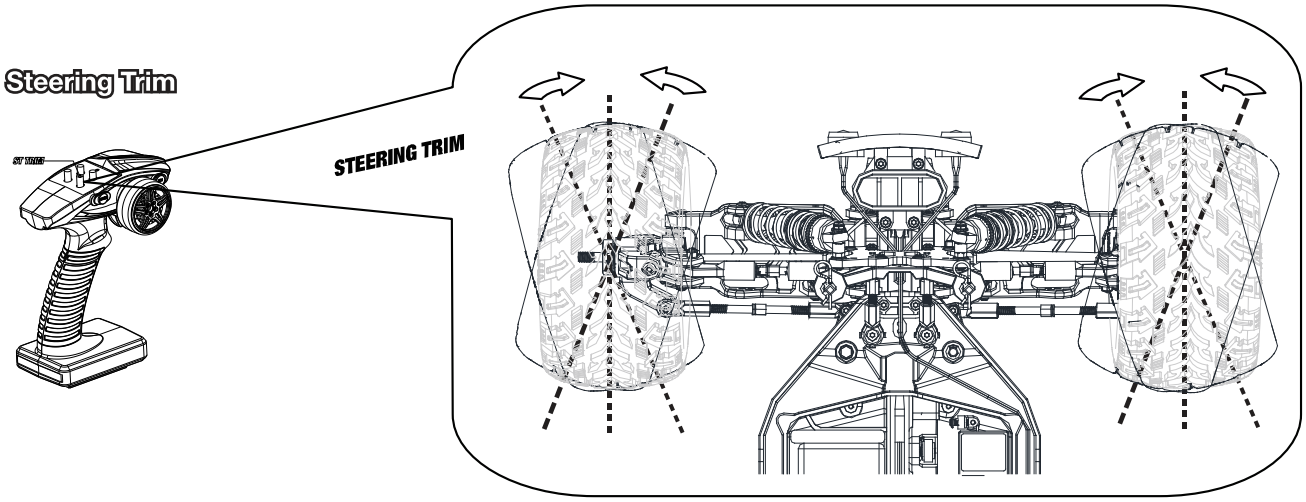


RADIO SYSTEM SETUP

The manufacturer has already done the basic adjustments. However, always check the following before operating this model

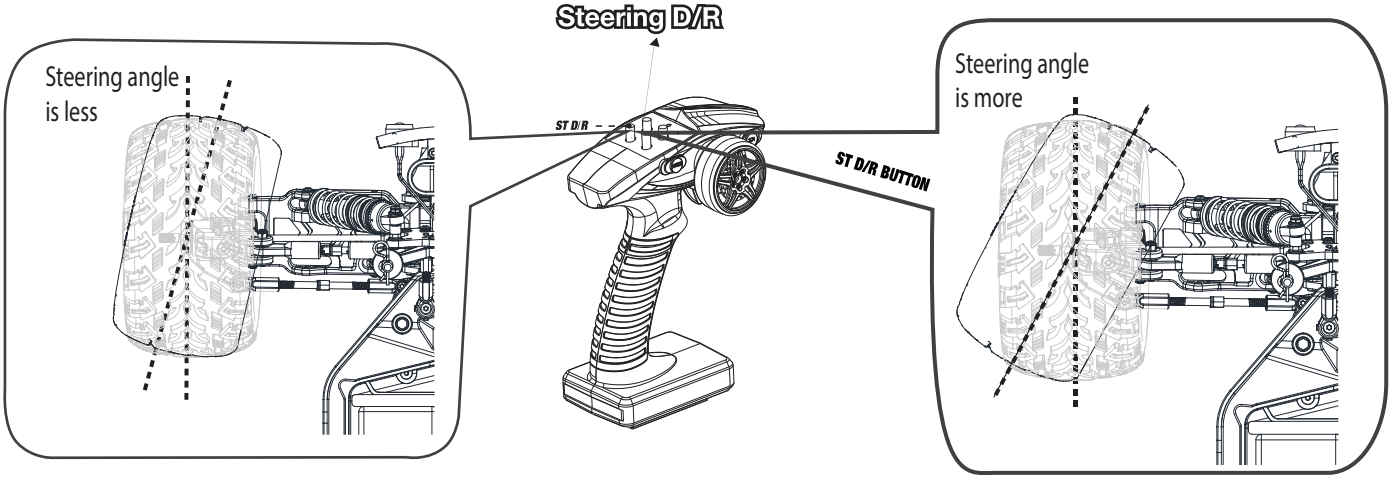
Setting up steering trim

If the steering wheel on your transmitter is set to neutral and your front tires are not straight, adjust the steering trim on the transmitter as shown below. You may need to adjust it again when operating the model.

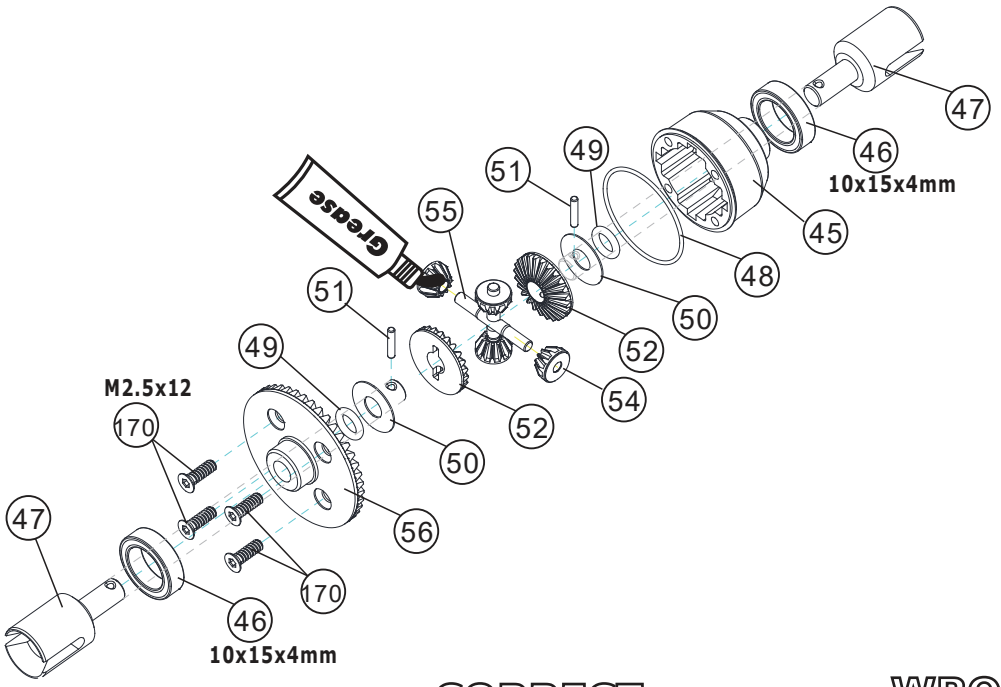


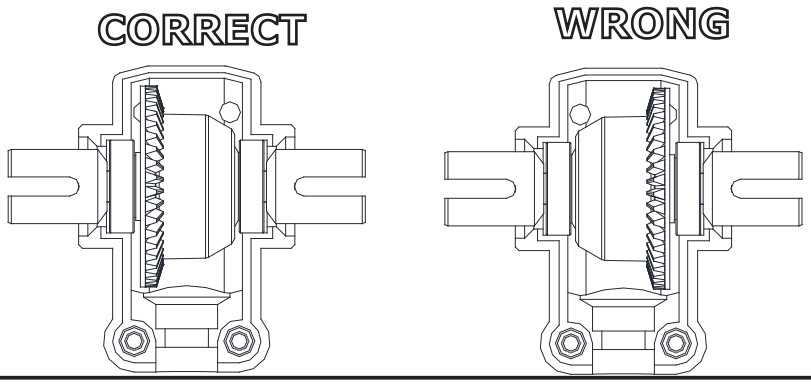
Setting up steering D/R

Use the steering D/R on your transmitter (as shown below) to adjust the steering angle of the steering wheel.



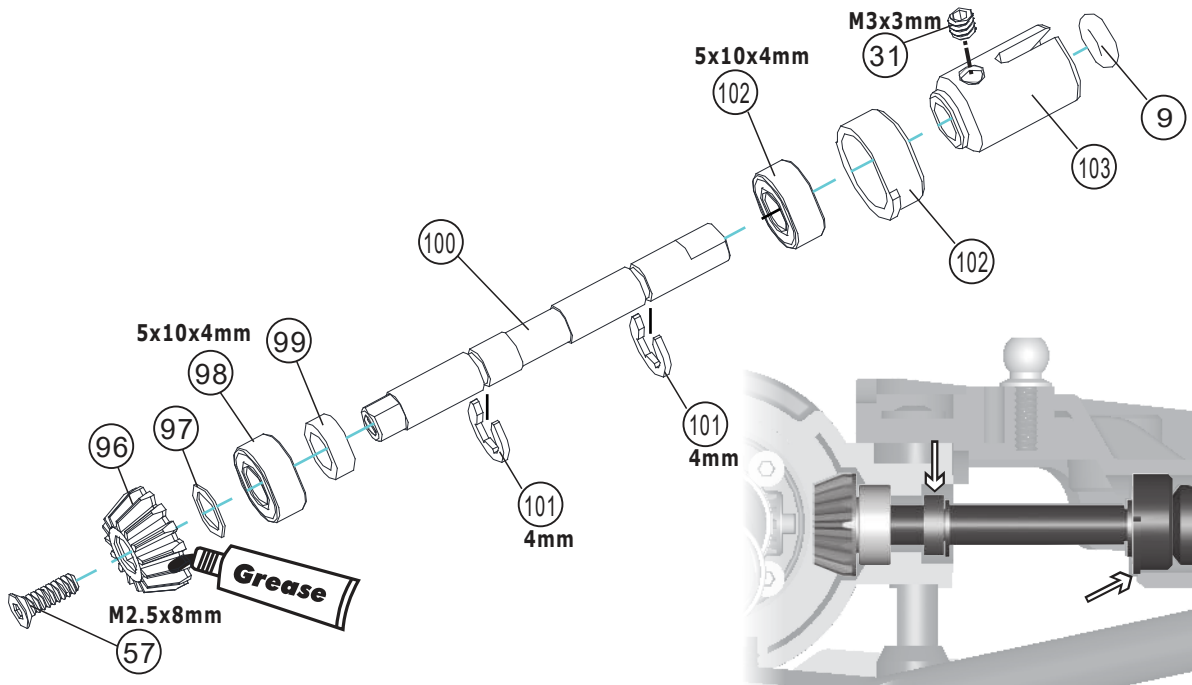
Differential Assembly



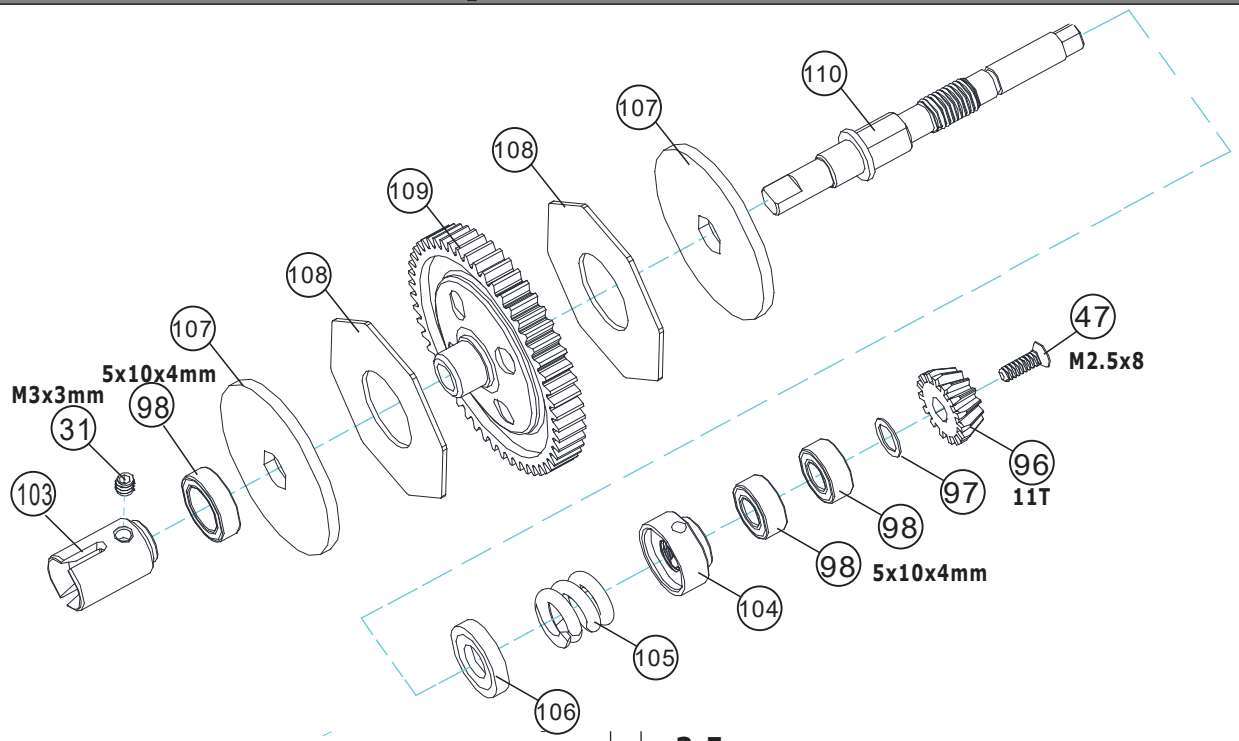


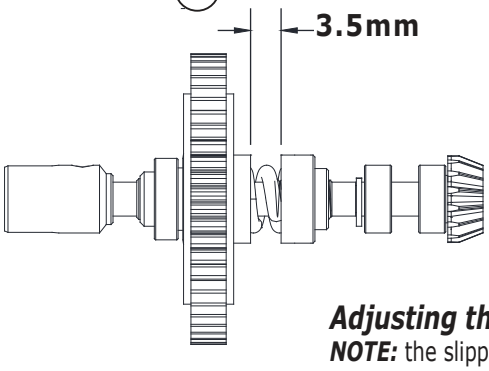
NOTE: *When installing the differential into gear box,please pay attention to the direction.*

Front Driver Shaft Assembly



Rear Driver Shaft Assembly



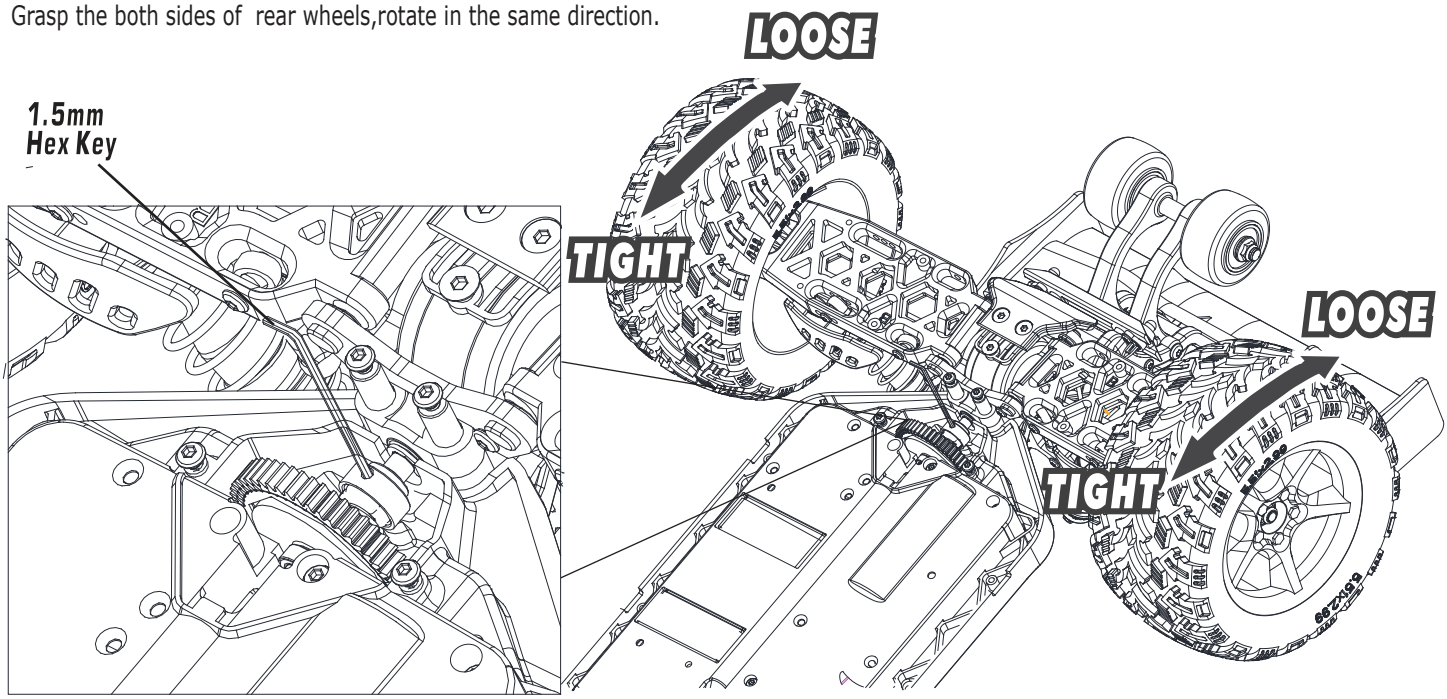


Adjusting the Slipper clutch

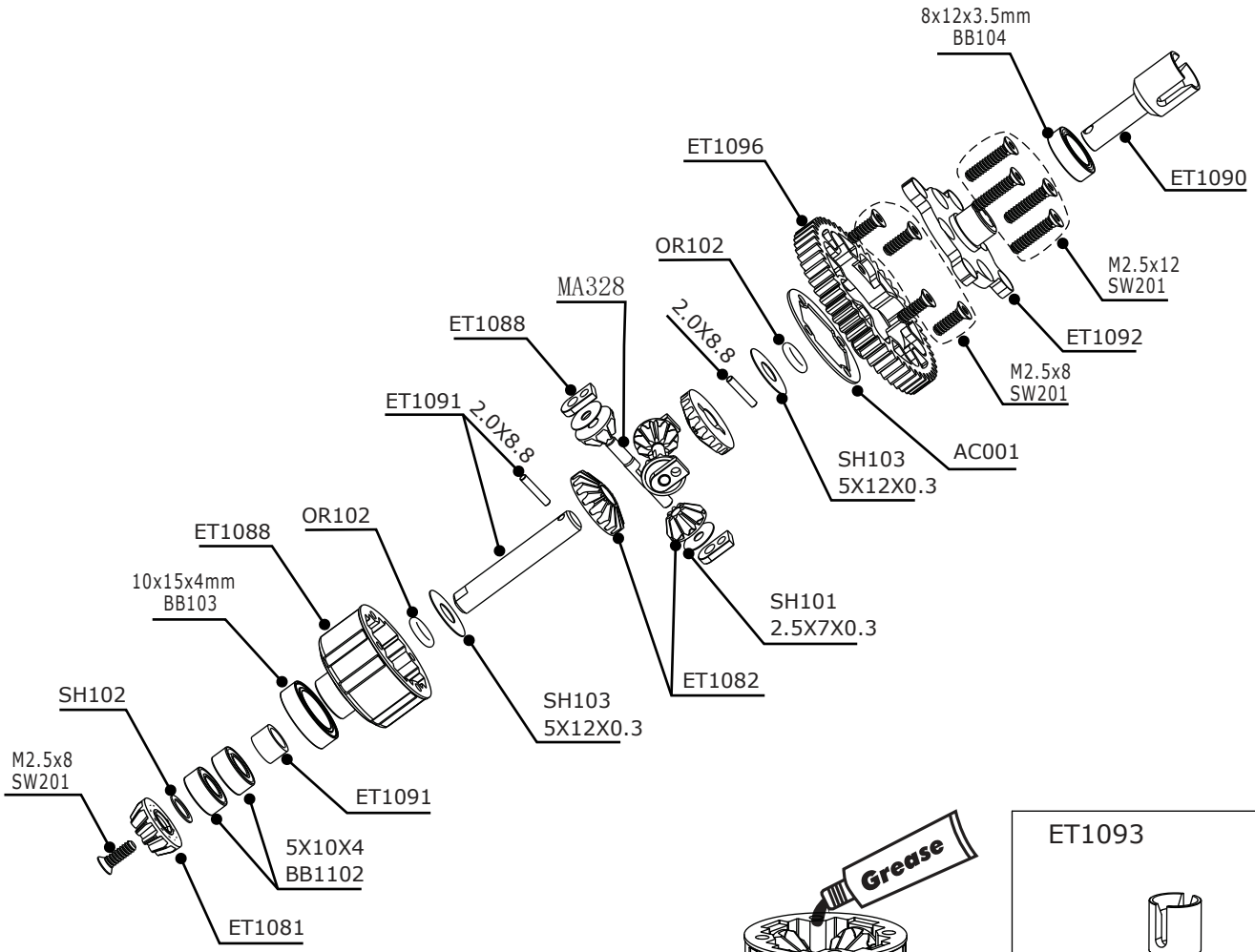
NOTE: the slipper clutch adjustment too loose or tight may result in damsge the gear during racing.

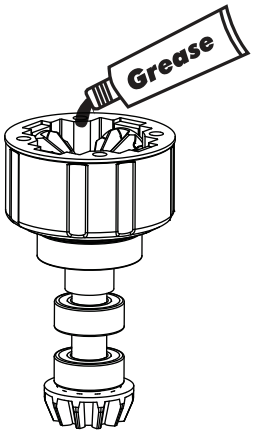
TIPS:The slipper clutch adjstment short cut

Use 1.5mm hex key,Insert the hold as the picture below.
Grasp the both sides of rear wheels,rotate in the same direction.



CENTRAL DIFFERENTIAL ASSEMBLY





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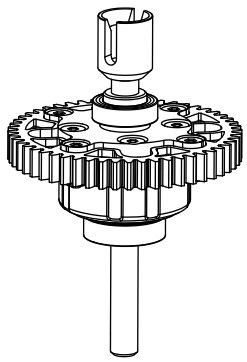
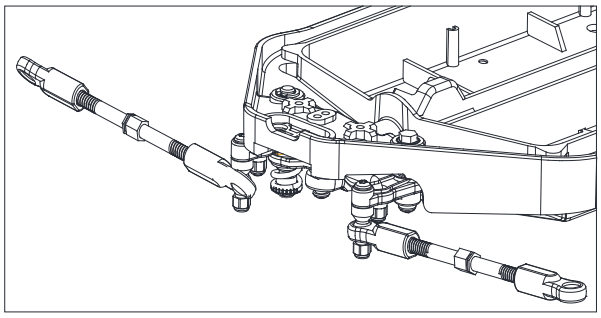
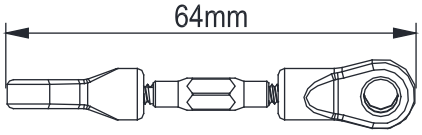
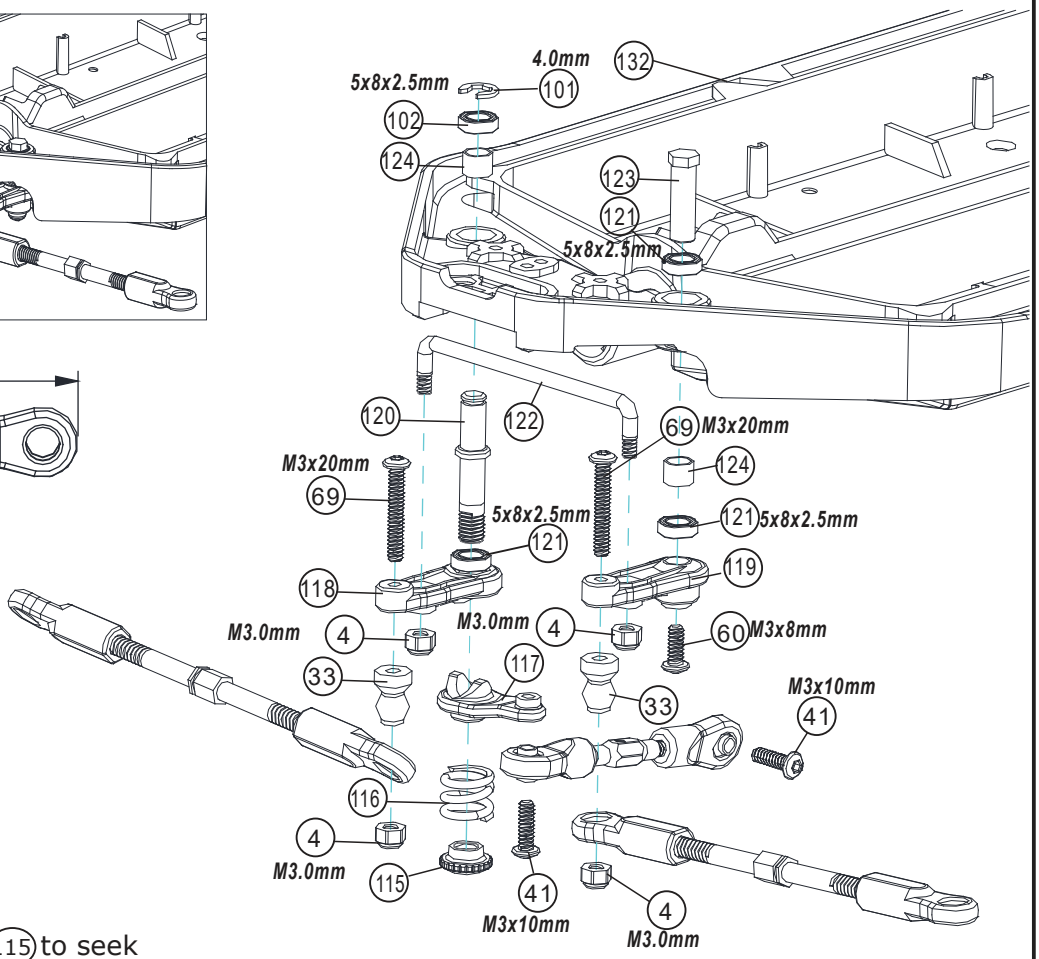


Steering Assembly

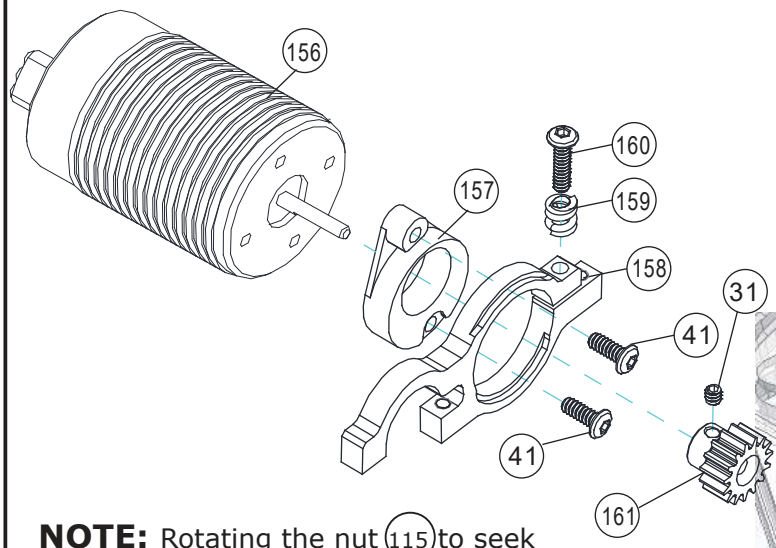


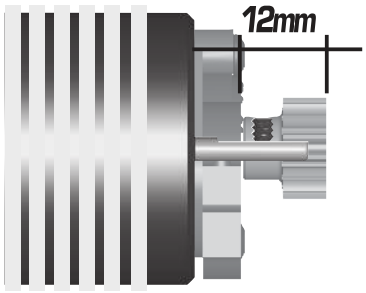


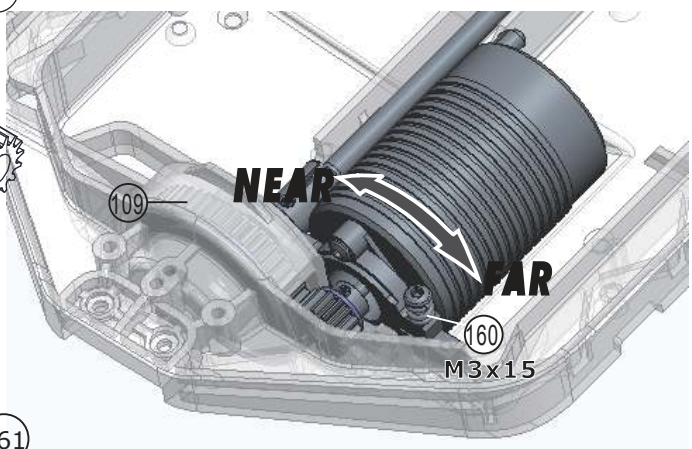


NOTE: Rotating the nut (115) to seek suitable degree of tightness.

Motor Mount Assembly



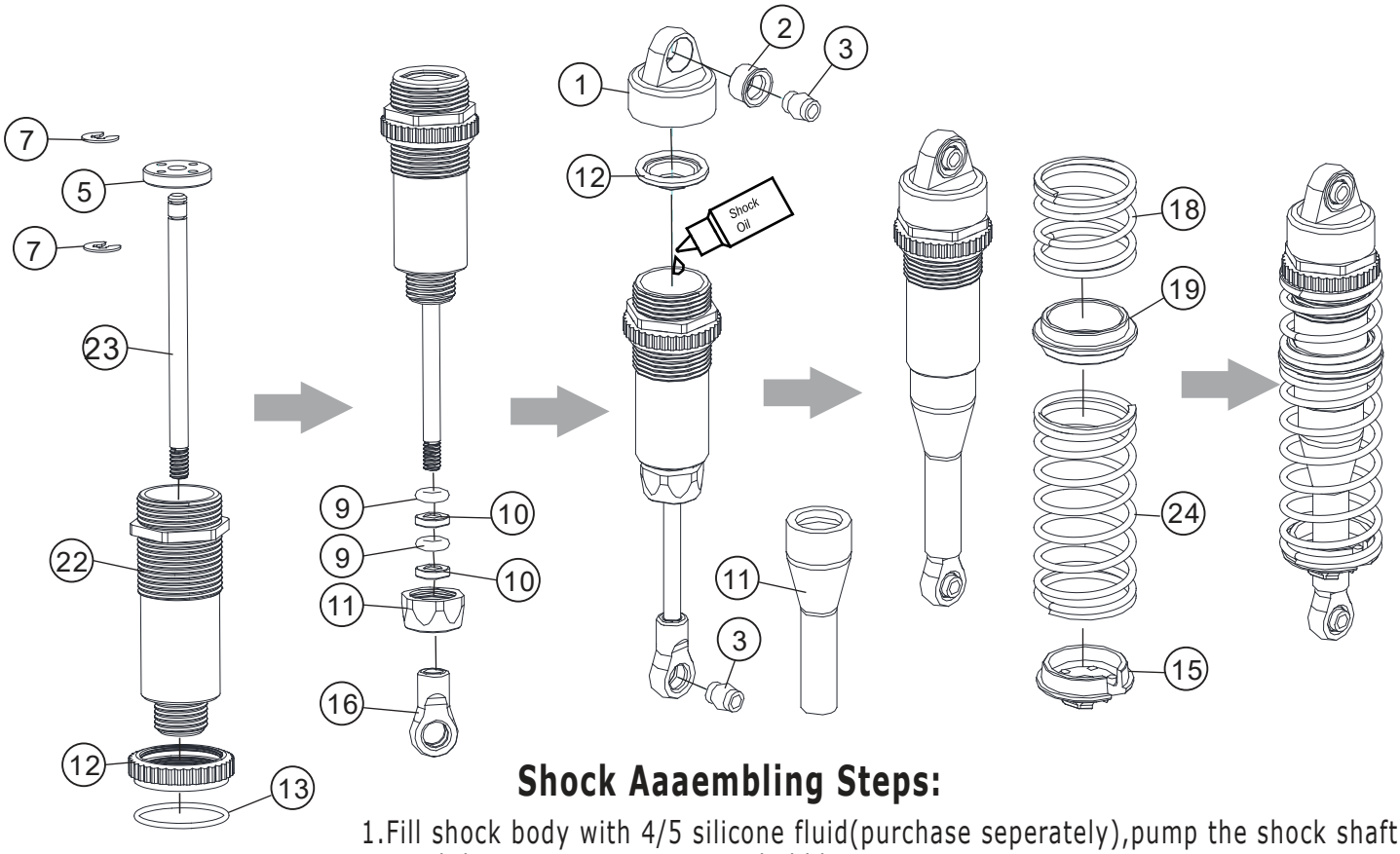




NOTE: Rotating the nut (115) to seek suitable degree of tightness.

NOTE: Look out the interval between motor gear (161) and spur gear (109) if the screw is loosened (160) please adjust it.

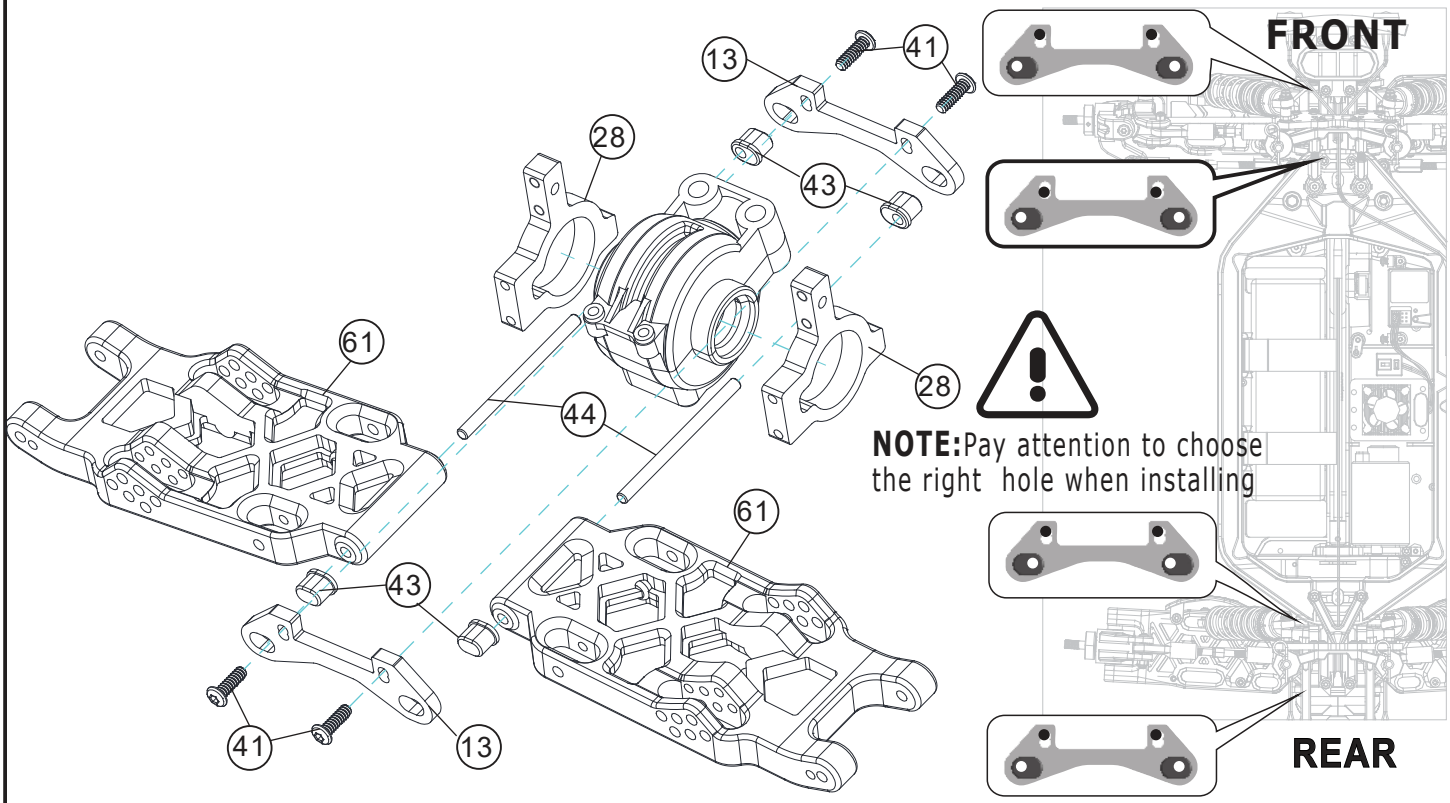
Shock Assembly



Shock Aaaembling Steps:

1.Fill shock body with 4/5 silicone fluid(purchase seperately),pump the shock shaft up and down to remove any air bubbles.
2.Wait the air bubbles pumped out,then pull down the shock shaft to the bottom,fill the silicone fluid up to 2 mm,after that ,tighten the shock head 1.
3.Install the spring,shock assembling finished.

Suspension Arms Assembly



SPARE PARTS

ET1001

Front x2

ET1002

Rear x2

ET1003

Right x1 Left x1
x2

ET1004

Left x1 Right x1
x4 x4

ET1005

x2 x2

ET1006

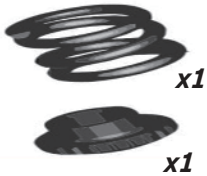
Front x1

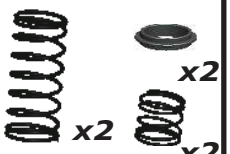
ET1007

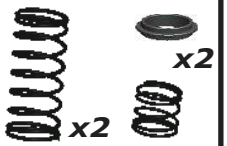
Rear x1

ET1008

x2

ES1022

x1
x1

ET1010

x2
x2 x2
Front

ET1011

x2
x2 x2
Rear

ET1012

x2

ET1013

Left x1
x1
Right x4

ET1014

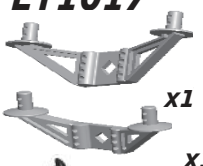
x1

ET1015

x2
2X16.8 x2

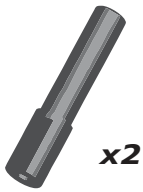
ET1016

x1
x1

ET1017

x1
x1
M3x8 x4

ET1018

x1
M3x15 x2
M3x8 x2 x2

ET1019

x2

ET1020

x2

ET1021

x1 x1
x1 x1
x1 x2
M4x10
x6 x2
M3x8 M3x6

ET1022

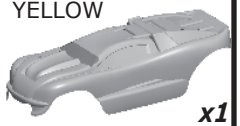
x1
M3x10 x3

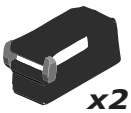
ET1023

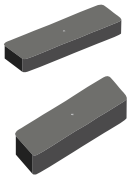
x1 x1
x1 x4
M3x8
x1 x8
M3x10

ET1024

x1
x2
M3x8 x2

ET1025
YELLOW

x1
x4

ET1026

x2
20X225

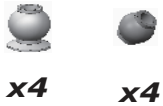
ET1027

x1
x1

ET1028

x2 x2

ET1029

x1
x1
x2
M4X10

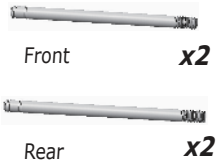
ET1030

x4 x4

ET1031

x2
x2

ET1032

x2
x2
x2

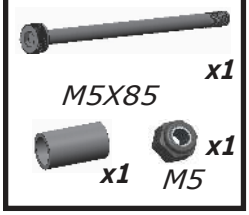
ET1033

Front x2
Rear x2

ET1034

x4

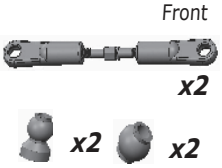
ET1035

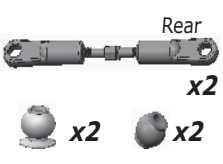
x2
x2 x2
M3x16 M4x15

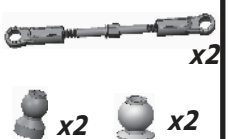
ET1036

x1
M5X85
x1 x1
x1 M5

ET1037

x2

ET1038

Front
x2
x2 x2
6.8mm

ET1039

Rear
x2
x2 x2
6.8mm

ET1040

x2
x2 x2

ET1041

x1
x1
5.8mm

ET1042

3x46mm x2
3x40mm x2

SPARE PARTS

ET1043

x4

x4
M4x12

ET1044

x1

ES1001

x1

ES1002

x1

ES1003

x1

ES1040

x2

ES1046

x2

ET1080 32T

x1

ET1081 11T

x1

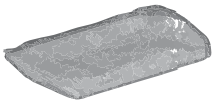
ET1082

x2 x4

MA310B

Φ5
x1

x1

MA358

x1

MA316

x1

x1

ET1091


2*8.8mm x1

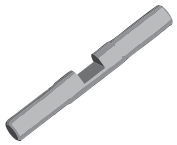
MA320

x10

MA321

x1

x2

MA328

x2

MA330

x1

x1

x1

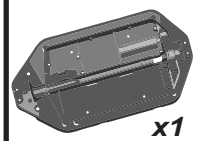
MA354-B

x1 x1 x1

ET1095

x1

x1

MA337

x1

x1

x1

ET1084

x2

MA349

x1

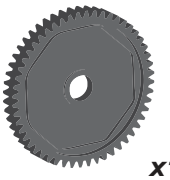
x1

MA350

x2

MA331

x1

MA355

x1

MA357

x2

MA311

x2

MA319

x1

x1

x1

ET1092

x1

SPARE PARTS

ET1098

x1

ET1099

x1

ET1045

x2 x4
x2 x2
M3x16
x2 x2
M3x8
x2
Front x1

ET1046

x2 x4
x2 x2
M3x16
x2 x2
M3x8
x2
Rear x1

ET1047

x1

x2 x2
M3x16 M4x15

ET1048

x1

ET1049

2x16.8
M5 x2

ET1050
Front

x1

x1

ET1051
Rear

x1

x1

ET1052

x2

ET1025S
SILVER

x1

ET1025G
GREEN

x1

ELECTRONIC COMPONENTS

ET1053

x1

MA391

3670(2850KV) x1

MA392

11.1V*3500MAH x1

ET1056

9KG x1

ET1057

x1

MA390

80A x1

MA704

7.4V*4000MAH x1

OPTIONAL PARTS

MA393

x2 x2

ET1073B

x1

ET1093

x1

ET1088

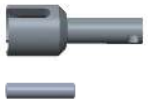
x4 x1

ET1096

x4 x1

ET1094

x1

ET1090

2X8.8 X1

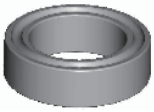
SPARE PARTS

BB101

5x8x2.5 x4

BB102

5x10x4 x4

BB103

10x15x4 x4

BB104

8x12x3.5 x4

SH102

ID 5x7x0.2mm x10

SH103

ID 5x12x0.3mm x10

MA396

X1

SPARE PARTS

SW101

IM3x3 x10

SW104

IM4x20 x10

SW201

KM2.5x8 x10

SW202

KM4x8 x10

SW206

SM3x15 x10

SW303

PM3x10 x10

SW306

PM3x8 x10

SW308

PM3x23 x10

SW309

PM3x6 x10

SW310

PM3x16 x10

SW311

自攻SM3x10 x10

SW312

PM3x20 x10

SW313

PM4x15 x10

SW314

PM4x12 x10

NT101

M3 NYLON x10

NT102

M3 FLANGED x10

NT103

M3 NYLON x10

NT105

M5 NYLON x10

EC101

2.5mm x10

EC102

4.0mm x10

OR101

ID 3.0x2.0mm x10

OR102

ID 4.5x1.5mm x10

OR104

ID 21.5x0.8mm x10

OR107

ID 16x1mm x10

PN105

2x8.8mm x10

PN104

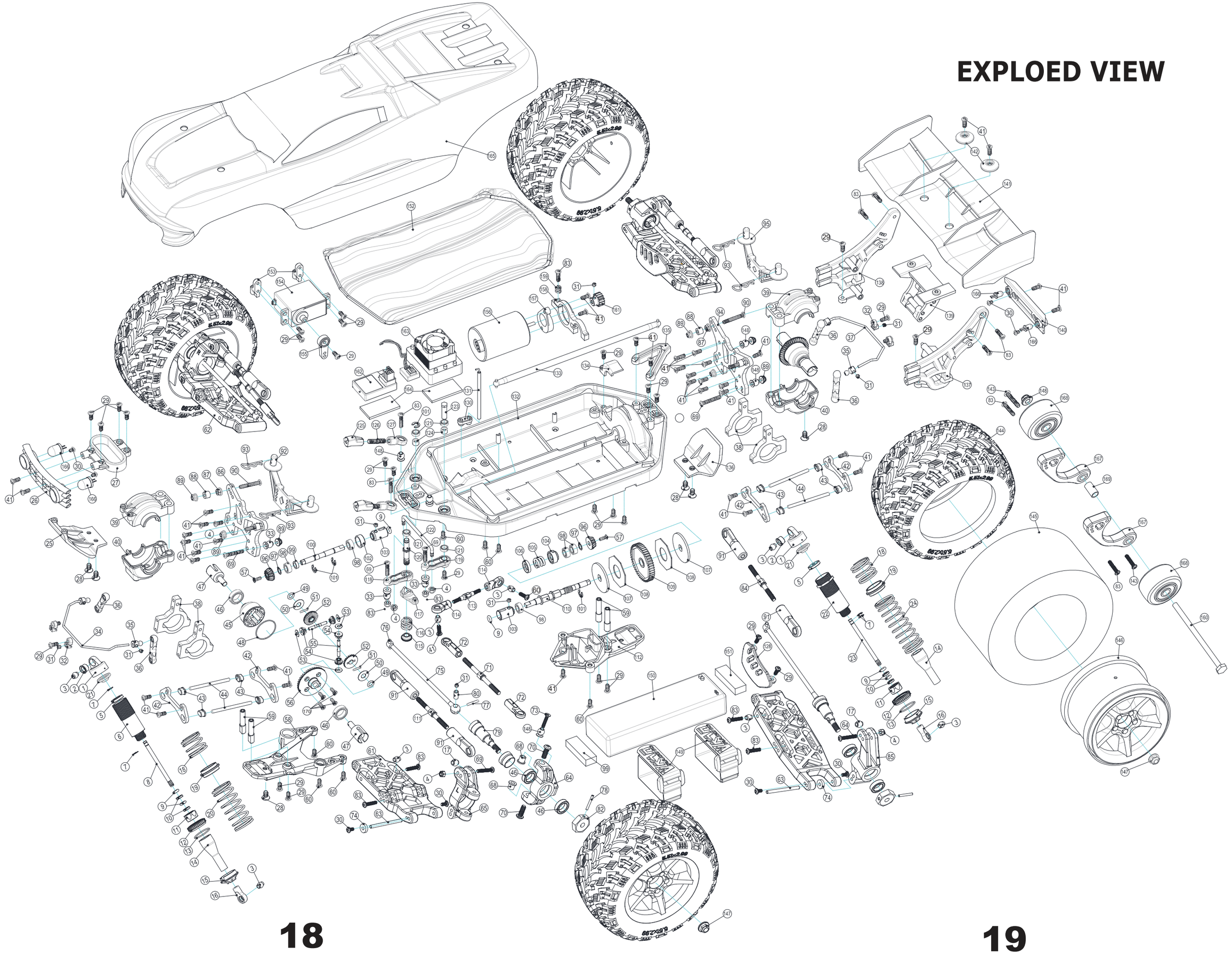
2.0x16.8mm x10

AC001
x2

Bill Of Material

Number	Name	Specification	Dosage	Number	Name	Specification	Dosage	Number	Name	Specification	Dosage
1	Hydraulic top button	1	4	58	Lower Deck-F		1	115	Saver Spring		1
2	Hydraulic ball head covered	4	4	59	Box Post		4	116	Saver Spring		1
3	Universal _Ball	5.8	14	60	Screw	M3x12	18	117	Servo Saver-B		1
4	Nylon Nut	M3	8	61	Front Suspension Arm		2	118	Servo Saver-A		1
5	Shock_picston		4	62	Rear Suspension Arm		2	119	Steering Arm		1
6	Shock_body-F		2	63	PIN	3X40	4	120	Steer Post-R		1
7	E-Clip 2.5		8	64	Steer Holder L		1	121	Bearing	5X8X2 .5	4
8	Shock Shaft		2	65	Steer Block L		1	122	Steer Link		1
9	O-ring3x2		10	66	Steer Block R		1	123	Steer Post-R		1
10	Shock_Support		8	67	Steer Holder R		1	124	Sleeve 4.5		2
11	Shock_Cap		4	68	Kinpin Case		4	125	Bumper F		2
12	Shock Ring		4	69	Screw	M3x20	6	126	Screw	M4x20	2
13	O- Ring	16x1	4	70	Screw	M4x12	4	127	Support Bracket F		2
14	Dust Cover		4	71	Push-pull Rod		2	128	Fender L		1
15	Slingshot stop		4	72	Ball Cup 24		4	129	Fender R		1
16	Hydraulic ball head buckle		4	73	Screw	M3x15	2	130	Antenna Mount		1
17	6.8 Ball Screw B		2	74	Washer	3x6x2	4	131	Tube		1
18	Shock_Spring-S		4	75	CVD shaft		1	132	Main Chassis		1
19	Shock_Plastic Parts		4	76	PIN	2X12	1	133	Iron Center Shaft		1
20	Shock Spring-F		2	77	PIN	2X16.8	1	134	Gear Cover		1
21	Air Vessel		4	78	PIN	3X12.7	1	135	Bumper		1
22	Shock_Body-R		2	79	CVD Holder		1	136	Bumper		1
23	Shock Shaft		2	80	Fixed pin		1	137	Holder_L		1
24	Shock Spring-R		2	81	CVD Ring		1	138	Holder_R		1
25	Bumper		1	82	Wheel Hub		1	139	Holder		1
26	Bumper		1	83	Screw M3x16		16	140	Fixed dam		1
27	Bumper		1	84	Push-pull Rod 50		2	141	Wing		1
28	Screw	M4X10	6	85	Rear Hub Carriers		2	142	Pressure_pad		2
29	Screw	M3X8	26	86	Shock Stay-F		1	143	Screw	M4x15	2
30	Screw	M3X6	12	87	Nut M3		4	144	Rally_tyes		4
31	Screw	M3x3	11	88	Washer		4	145	Tire Inner		4
32	Pressure_pad		4	89	Nut M3		8	146	Wheel		4
33	6.8 Ball Screw_C		2	90	Screw	M3x23	4	147	Nut M5	M5	5
34	Front Anti-roll Bar		1	91	Ball Cup 34		8	148	6.8 Ball Screw_B		8
35	4.8_Ball-Sleeve		4	92	Body Mount Bracket-F		1	149	Magic Tape		2
36	Ball Cup 26		4	93	Spring Lock		4	150	LI-PO Battery		1
37	Rear Anti-roll Bar		1	94	Shock Stay-R		1	151	Sponge Block		1
38	Bulkhead		4	95	Body Mount Bracket R		1	152	Mantle		1
39	Gear Box		2	96	Differential gear 11T		2	153	Servfo Stay		2
40	Gear Box		2	97	Spacer		2	154	SERVO	9KG	1
41	Screw	M3X10	28	98	Bearing	5X10X4	5	155	Servo_Arm		1
42	Arm Holder		4	99	Sponge Block		1	156	Motor	3660 2500KV	1
43	Pin Cap		8	100	Drive Shaft-F		1	157	Motor Mount-B		1
44	Pin	3x46	4	101	E-Clip	4.0	4	158	Motor Mount-A		1
45	Differential Housing		2	102	Bearing bush		1	159	Screw Spring		1
46	Bearing	10X15X4	12	103	Drive cup		2	160	Screw	M5X85	1
47	CVD Holder		1	104	Slipper Screw		1	161	Motor Gear	15T-Φ5	1
48	ASBESTOS CUSHION		2	105	Saver Spring		1	162	Receiver		1
49	O_Ring	4.5x1.5	4	106	Pre Ring		1	163	ESC	60A	1
50	Spacer	5X12X0.3	4	107	Driver Disc		2	164	Post		2
51	PIN	2.0X8.8	4	108	Slipper Sheet		2	165	Painted Body		1
52	Differential gear	18T	4	109	Spur Gear	52T	1	166	LED		1
53	Spacer	2.5x7x0.2	8	110	Driver Shaft-R		1	167	Tail Wheel Holder		2
54	Differential gear	9T	8	111	Push-pull Rod		2	168	Tail Wheel		2
55	Differential pin		4	112	Lower Deck-R		1	169	Tail Wheel Holder		1
56	Drive the cone gear	32T	2	113	Servo Rod		1	170	Screw	M2.5*12	
57	Screw	M2.5x8	10	114	Ball Cup 16		2				

EXPLOED VIEW



VKAR Hobby Co.,Ltd
www.vkarracing.com

Tel：0769-88039076
0769-88030083
Fax: 0769-81620956
Email contact：Eric@vkarracing.com
Address:302,Building A,Yiben Industrial park,No.124 BBK road ,Usha community, Chang'an town, Dongguan City,Guangdong Province,China 523860.