



Thank you for choosing the Team Magic E5HX 4WD Monster Truck.

The E5HX 4WD Monster Truck is designed for easy to drive and uses top quality parts for performance and durability.

Before you start, we suggest you read though the instruction manual first. We hopes you having fun and enjoy our product.

General Operation Tips:

- ▶ Read the instruction manual before operate.
- ▶ Clear a work area and try to work on a light color towel to avoid missing dropped parts.
- ▶ Don't over-tighten fasteners. Many assembly problems are caused by over-tightening screws or nuts. Please driving it slowly and feel the resistance force's feedback.
- ▶ When parts doesn't fit, please double check the position or the condition of parts.
- ▶ Check the instructions when there are any problems. If you cannot figure out what's wrong, please contact dealer, distributor or Team Magic. Don't use force beyond what the instructions call for. Using the right tools makes assembly much easier. The instructions below finely indicate you what tools to get to make things easier.

A Good Dealer Is Extremely Important!!

A good hobby dealer can help you with most problems you might encounter. This is the main reason why we suggest you buy the products from a good dealer rather than from the cheapest dealer. Bring your problematic parts to the dealer and, most likely, you'll walk away soon thereafter with the problem solved. If you think that you really don't have the mechanical skills to solve the problem, you may pay your dealer to finish the job for you.



Thank you for purchasing the E5HX 4WD Monster Truck. Before start, you will need to check the following procedures.



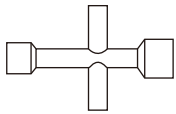
Water Warning

- ▶ After vehicle gets wet, please unplug the ESC from the battery to avoid putting users in danger. Also, rust proofing the bearings and metal parts is highly recommended.
- ▶ To prevent the fire foam absorbing water and deform the tires, please seal holes upon wheel rims before the car crossing water.



1 Included Tools

- Cross Wrench
(4, 5, 5.5 & 7mm)
116043

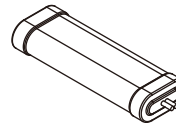


2 Required Items

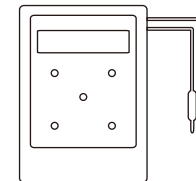
- AA Alkaline Batteries
For Transmitter X 4



- 7.4v / 11.1v Rechargeable
Battery Pack X 1



- Battery Pack charger

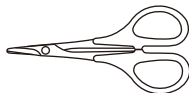


3 Helpful Equipments

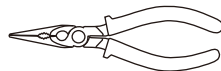
- Hobby Knife
⚠ Super Sharp Warning!!



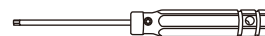
- Body Scissors
(for body cutting)
#116006



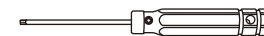
- Needlenose Pliers



- TM Black RC Hex Wrench
Metric Size 1.5mm
#117057-1



- TM Black RC Hex Wrench
Metric Size 2.0mm
#117057-2



- TM Black RC Hex Wrench
Metric Size 2.5mm
#117057-3



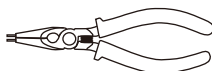
- TM Black RC Hex Wrench
Metric Size 3.0mm
#117057-4



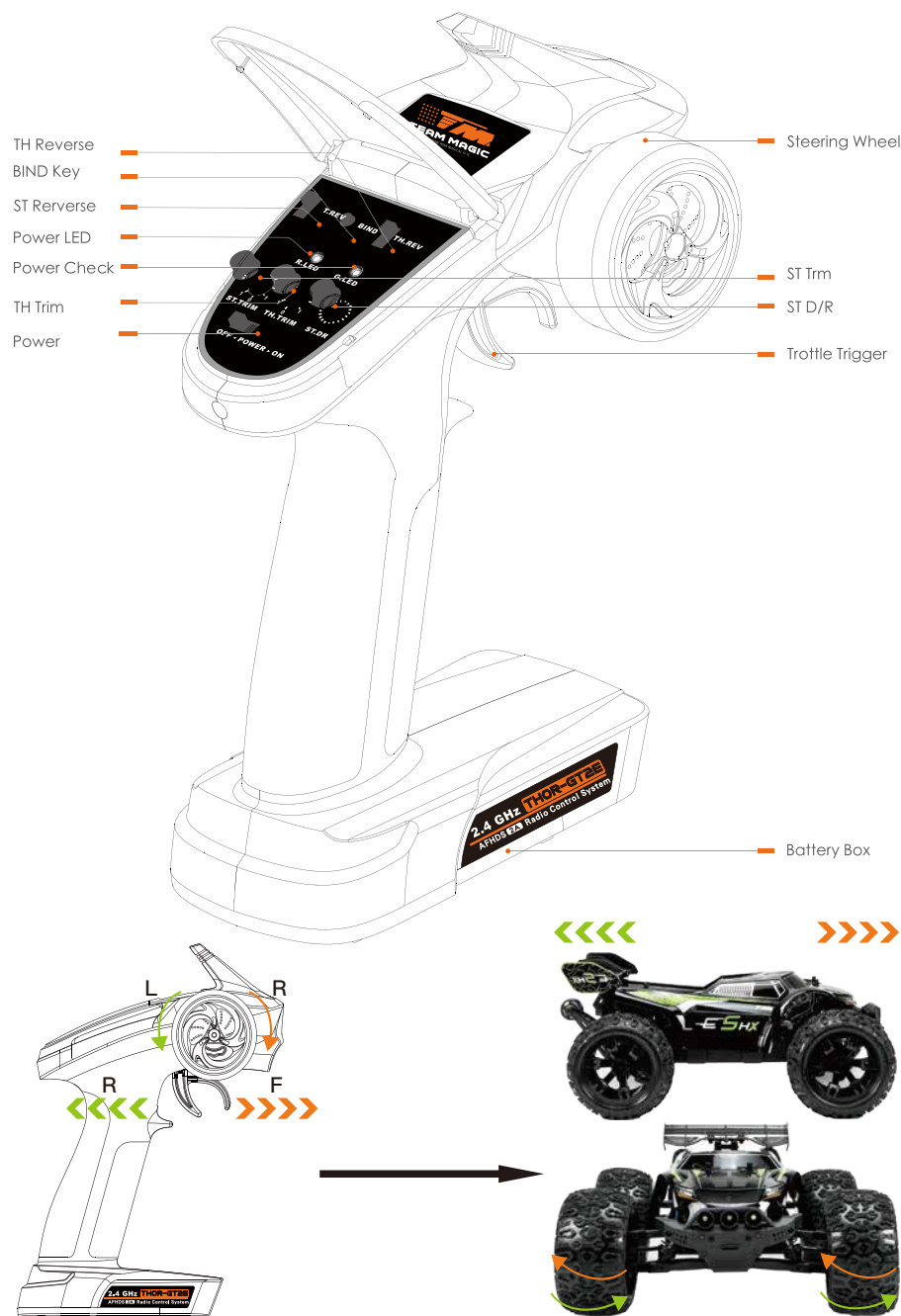
- TM Black HC Nut Driver
5.5mm (for 3mm nut)
#117010



- Circlip Plier
#117032



Transmitter Overview



Basic Operations

Install the Battery

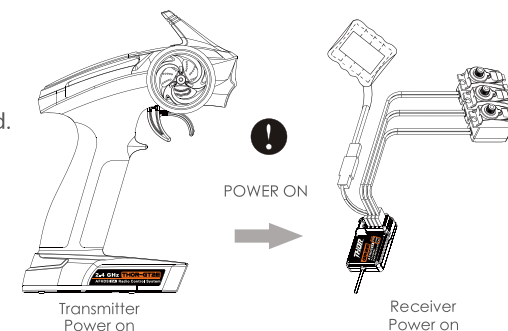
1. Remove the battery compartment cover.
2. Insert 4 fully-charged AA batteries into the compartment.



Power On

Please follow the following steps:

1. Connect everything.
 - Make sure that the batteries are fully charged.
 - Make sure the receiver is off.
2. Move the transmitters power switch to its on position.
3. Connect the power supply to the receiver. The receivers LED should be solid to indicate that it is connected.

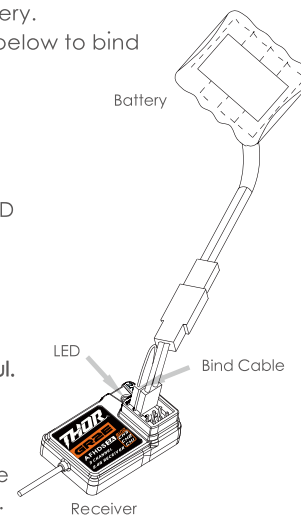


Binding

The transmitter and receiver have been pre-bound before delivery.

If you are using another transmitter or receiver, follow the steps below to bind the transmitter and receiver:

1. Ensure you are using the AFHDS 2A protocol.
2. Insert the transmitters batteries.
3. Connect the bind cable to the receivers B/CH3 port.
4. Connect power to the receiver's VCC port. The receiver's LED should begin to flash indicating that it has entered bind mode.
5. On the transmitter:
 - Hold the bind button and toggle the transmitters power switch to its on position.
 - If the receiver's LED stops flashing then binding has been successful.
6. Let go of the transmitter's bind button and remove the bind and power cable from the receiver.
7. Reconnect power to the receivers VCC port and test to make sure everything is working as expected, if not, repeat the steps above.



Power Off

1. Disconnect the receiver power.
2. Hold the transmitter's power buttons to turn off the transmitter. Make sure to disconnect the receiver's power before turning off the transmitter. If you turn off the transmitter forcefully (by removing the battery), it may lead to unintended operation and cause an accident.

MAX10-80A-3S Sensorless Brushless Speed Controller User Manual

Congratulations and thank you for chosen Team Magic products.

The **MAX10-80A-3S** Sensorless speed controller is equipped with high -tech features to enhance your experience with Team Magic Brushless power systems.

Improper usage and unauthorized modifications to our product is extremely dangerous and may damage the product and related devices.

Please take your time reading following instructions carefully before you start using your Electronic Speed Controller (ESC).

Warnings

- Ensure all wires and connections are well insulated before connecting the ESC to related devices.
- Ensure all devices are well connected to prevent poor connection that may cause your vehicle out of control or other unpredictable issues.
- Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Please use a soldering iron with the power of at least 60W to solder all input/output wires and connectors.
- Do not hold the vehicle in the air and rev it up to full throttle, as rubber tires can expand to extremely size until explode and cause serious injury.
- Stop using the ESC when its casing temperature exceeds 90 °C / 194 °F to avoid the ESC or the motor gets damaged even destroyed.
(We recommend setting the "ESC Thermal Protection" to 105 °C / 221 °F, this refers to the internal temperature of the ESC.)
- We recommend removing the cooling fan from ESC before exposing vehicle to liquids, and fully dry it right after use.
- Always disconnect batteries after use, as the ESC will continue to consume the current power, even if the ESC is turned off.
(A long-time connecting will cause batteries discharge completely and break the ESC.)

Features

- ESC is compatible with both sensorless and sensed brushless motors. (only in sensorless mode)
- Fully waterproof design for all condition.
- Super internal switch-mode BEC with switchable voltage of 6V / 7.4V and cont. / peak current of 3A / 6A for usage with high torque and voltage servos.
- Highly reliable electronic switch design prevents mechanical switch failure due to dirt, water, dust and etc.
- Separate programming port easily connect to the LED program card or the LCD program box to the ESC.
- Proportional brake with 9 levels of maximum brake force and drag brake force.
- 5 levels of acceleration / punch from soft to aggressive for different vehicles, tires and tracks.
- Capacitor Protections: Innovative Capacitor Protection protects capacitors from exploding and causing irreversible damage to the ESC from overloading.
- Multiple Protection: Motor lock-up protection, low-voltage cutoff protection, thermal protection, overload protection and throttle signal loss protection.
- Single-button ESC programming and factory reset.
- Advanced programming via portable LED program card.

Specifications

Model	MAX10-120A-3S	MAX1-100A-3S	MAX10-80A-3S
Conf. / Peak Current	120A / 830A	100A / 650A	80A / 520A
Motor type	Sensored / Sensorless Brushless Motor		
Applications	1/10 Touring Car, Buggy, Truggy and Monster Truck		
Motor Limit & LiPo / NiMH Cells	Size: 3656 2S LiPo / 6 Cell NiMH: KV≤6000 3S LiPo / 9 Cell NiMH: KV≤4000	Size: 3656 2S LiPo / 6 Cell NiMH: KV≤5500 3S LiPo / 9 Cell NiMH: KV≤3500	Size: 3656 2S LiPo / 6 Cell NiMH: KV≤5000 3S LiPo / 9 Cell NiMH: KV≤3000
BEC Output	6V / 7.4V Switchable, Continuous Current of 3A (Switch mode)		
Fan (included)	Powered by the stable BEC voltage of 6V / 7.4V Note1		
Connectors	Input End: X / Out put: 4.0mm Female Gold Connectors		
Size / Weights (mm/g)	L x W x H: 49 x 39.5 x 34.7 (mm) / 105 (g)		
Programming Port	FAN / PRG Port		

Connections

[BEGIN TO USE THE NEW ESC]

Connect to ESC, Motor, Receiver, Battery and Servo

Wire A and Wire C of the ESC be connected to motor randomly.

If the motor runs in the opposite direction, switch any two wire connections.

Throttle range setting

In order to make the ESC match the throttle range, you must calibrate it when you begin to use the new ESC or the new transmitter, re-check the setting of neutral position of the throttle stick, "ATV" or "EPA" parameters, etc.

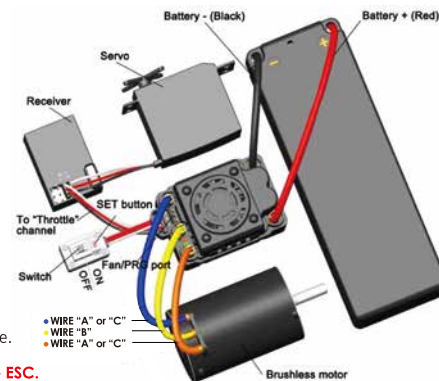
Check LED status in normal running

Normally, if the throttle stick is located in the neutral range, either the "Red LED" or the "Green LED" will light up.

The "Red LED" lights flash quickly when the car is braking.

The "Green LED" lights when the throttle stick is moved to the top point of the forward zone.

Warning!! For your safety, please remove the tires from the truck during setting the ESC.



ESC Setting

- 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" function of your transmitter.
- Press and hold the "SET" key and switch on the ESC, when the Red LED starts lighting, release the "SET" key. [Note2](#)
- Set the 3 points

The Neutral Point

Hold the throttle stick at the neutral point, and click the "SET" key, the "Green LED" will flashing 1 time.

The End Point of the Forward direction

Move the throttle stick to the end point of the forward direction, and click the "SET" key, the "Green LED" will flashing 2 times.

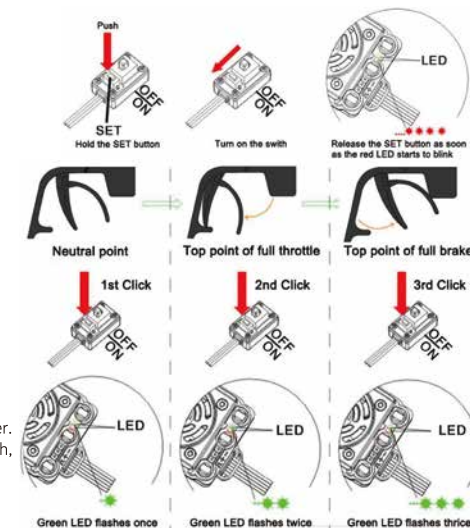
The End Point of the Backward direction

Move the throttle stick to the end point of the backward direction, and click the "SET" key, the "Green LED" will flashing 3 times.

- Throttle range is calibrated; motor would start after 3 seconds.

[Note 1](#) : Cooling fans is supplied by built-in ESC, be sure it working under 6V power.

[Note 2](#) : If you do not release the "SET" key as soon as the "Red LED" begins to flash, the ESC will enter to 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.



Power On-Off Warning

- Power ON/OFF :
Start with the ESC turned off: Press the ON/OFF bottom to turn on the ESC.
Start with the ESC turned on: Press and hold the ON/OFF bottom to turn off the ESC.
- Warning Tones : Turn on the ESC and the motor "beep" sound indicated the type of LiPo cell you have plugged in.
For example, 2 beep sounds indicated a 2S LiPo cells; 3 beep sounds means 3S LiPo cells.

Programmable Items

Programmable Items	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9
Running Mode	Fwd/Br	Fwd/Rev/Br							
LiPo Cells	Auto Calculation	2S	3S						
Low Voltage Cutoff	Disabled	Auto(Low)	Auto (intermediate)	Auto(High)					
ESC Thermal Protection	105°C/221°F	125°C/257°F							
Motor Thermal Protection	Disabled								
Motor Rotation	CCW	CW							
BEC Voltage	6.0V	7.4V							
Max Brake Force	12.50%	25.00%							
Max Reverse Force	25.00%	50.00%	37.50%	50.00%	62.50%	75.00%	87.50%	100.00%	Disabled
Start Mode (Punch)	Level 1	Level 2	Level 3	Level 4	Level 5				
Drag Brake	0%	2%	4%	6%	8%	10%	12%	14%	16%

Running Mode

Option 1: Forward with Brake

It has forward and brake functions only and is usually a racing mode.

Option 2: Forward / Reverse with Brake

Brake – Push the throttle trigger 1st Reverse – Push the throttle trigger 2nd

Notice!! The reverse function will not work if your motor does not stop completely.

MAX10-80A-3S Sensorless Brushless Speed Controller User Manual

• LiPo Cells

"Auto Calculation" is the default setting. If LiPo Batteries are often used with the same cell amount, setting this function manually to avoid the incorrect calculation which may cause the low-voltage cutoff protection malfunction.

• Cutoff Voltage

Sets the ESC voltage automatically to "Low" or cutoff the power offer to motor in order to keep the battery stay in the safe minimum voltage.

The ESC monitors the battery voltage all the time, when it goes below to cutoff threshold, the ESC will reduce the power to 50% immediately and cutoff the output for 10 second.

When the Red LED lights up with short single reaping flash (*.*.*) indicate that the low-voltage cutoff protection is activated.

Notice !! The reverse function will not work if your motor does not stop completely.

Warning !! If you set the Cutoff Voltage to "Disable", please pay attention to the output power change of your vehicle incase the batteries over-discharge.

• ESC Thermal Protection

When the temperature rich to the value you've preset, the ESC will automatically cutoff the output with the Green LED flashing(*.*.*). The output will not resume until the temperature gets down.

• Motor Thermal Protection

This function has been permanently set to "None" by the manufacturer

• Motor Rotation

CW : Clockwise / CCW : Counterclockwise

Pull the throttle trigger with the motor shaft facing you to check the motor rotation, switch any two wires (ESC to motor) if the motor runs in reverse.

• BEC Voltage

Option 1 : 6.0 V applicable to ordinary servos / Option 2 : 7.4 V applicable to high voltage servos

Warning !! Do not use the option 2 with ordinary servo, it might burnt out due to higher voltage.

• Max. Brake Force

The ESC provides the function to adjust the percentage of the braking power with the full brake applied.

Notice !! Higher brake force amount setting will shorten the braking time but causing damage to the pinion and the spur easily.

• Max. Reverse Force

The different reverse amount with the different reversing speed. For your safety, we recommends using the low amount.

• Start Mode / Punch

Punch level : 1 to 5 (very softly to very aggressively). It prevents tires from wheel-spinning during the tire warm-up process.

The level 4 & the level 5 are required on the battery's discharge capability which affect the vehicle starting-up and the large current providing in the short time. If the vehicle suddenly loses power in the starting-up process indicated that the discharge capability of battery is poor and needs to reduce the punch or increase the FDR setting (Final Drive Ratio).

• Drag Brake

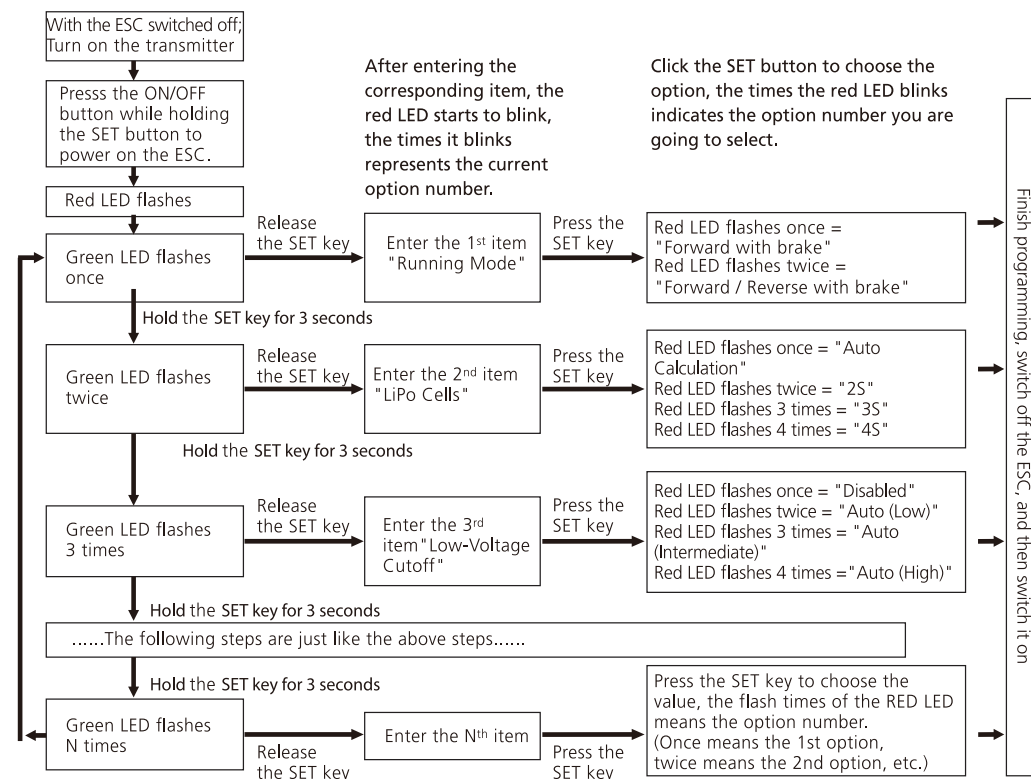
Drag brake is the braking produced when the trigger releasing from the fully speed to the neutral zone.

Troubleshooting

Trouble	Possible Reason	Solution
Motor and cooling fan doesn't work.	1. No power is supplied to the ESC. 2. The ESC switch is broke.	1. Reconnect the ESC and the batteries again. 2. Replace the broken switch.
Motor doesn't work with "beep" alarm.	The input voltahe is unstable.	Check the voltage of the battery pack.
Green and Red LED keep flashing rapidly.	The ESC doesn't detect any throttle signal / the ESC neutralthrottle value is different from the value in the transmitter.	Check the throttle wire is plugged reverse or not; Check the transmitter signal and re-calibrate the throttle range.
The accelerating motor runs in the opposite direction.	The (ESC-to- Motor) wires are disorder.	Swap any two wire connections between the ESC and the motor.
The motor suddenly stops running.	1. The throttle signal is lost. 2. The ESC is in the low voltage protection mode.	1. Check the transmitter and the receiver or the receiver signal wire 2. Red LED flashing means low voltage, Green LED flashing means over-heat.
The motor stuttered but couldn't start.	1. The gears might creaked. 2. The ESC might broken.	1. Check all soldering point. 2. Contact to the distributor.
The vehicle can not reverse.	The neutral posotion stay in braking zone / Set the "Running Mode" improperly / The ESC might broken.	1. Re-calibrate the throttle neutral position. 2. Re-set the "Running Mode" to "F/R with brake". 3. Contact to the distributor.
The car runs forward/backward slowly when the throttle trigger was at the neutral position.	1. The signal of the transmitter isn't stable. 2. The ESC calibration isn't proper.	1. Replace the transmitter. 2. Re-calibrate the throttle range or the neutral position of the transmitter.
The LED program card shows 3shorts lines(-.-.-) after it connected to the ESC.	The programming card/box was connected to the ESC via the throttle control cable.	Reconnect the ESC and the programming card by plugging the programming cable into the fan port.
Set the throttle neutral position : The Green LED doesn't falsh and no "beep" sounding ; The ESC unable to set the full throttle endpoint and the full brake endpoint.	The ESC throttle cable doesn't plugged correctly.	Re-plug the throttle cable properly into the throttle (TH) channel on your receiver.

ESC Programming

• Programming your ESC with the "SET" Keys.



• Programming your ESC with the "LED program card"

The LED program card is an optional accessory applicable for field use. It makes the ESC programming easy and quick.

1. connect the ESC and program card via a cable with 2 JR male connectors
2. Turn on the ESC and the program items will shows up.
3. Use bottoms on the program card to choosing "item" or "value"
4. Press "OK" to save your setting to your ESC.

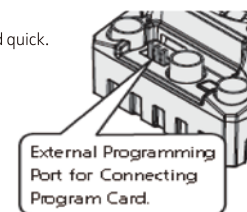
Factory Reset

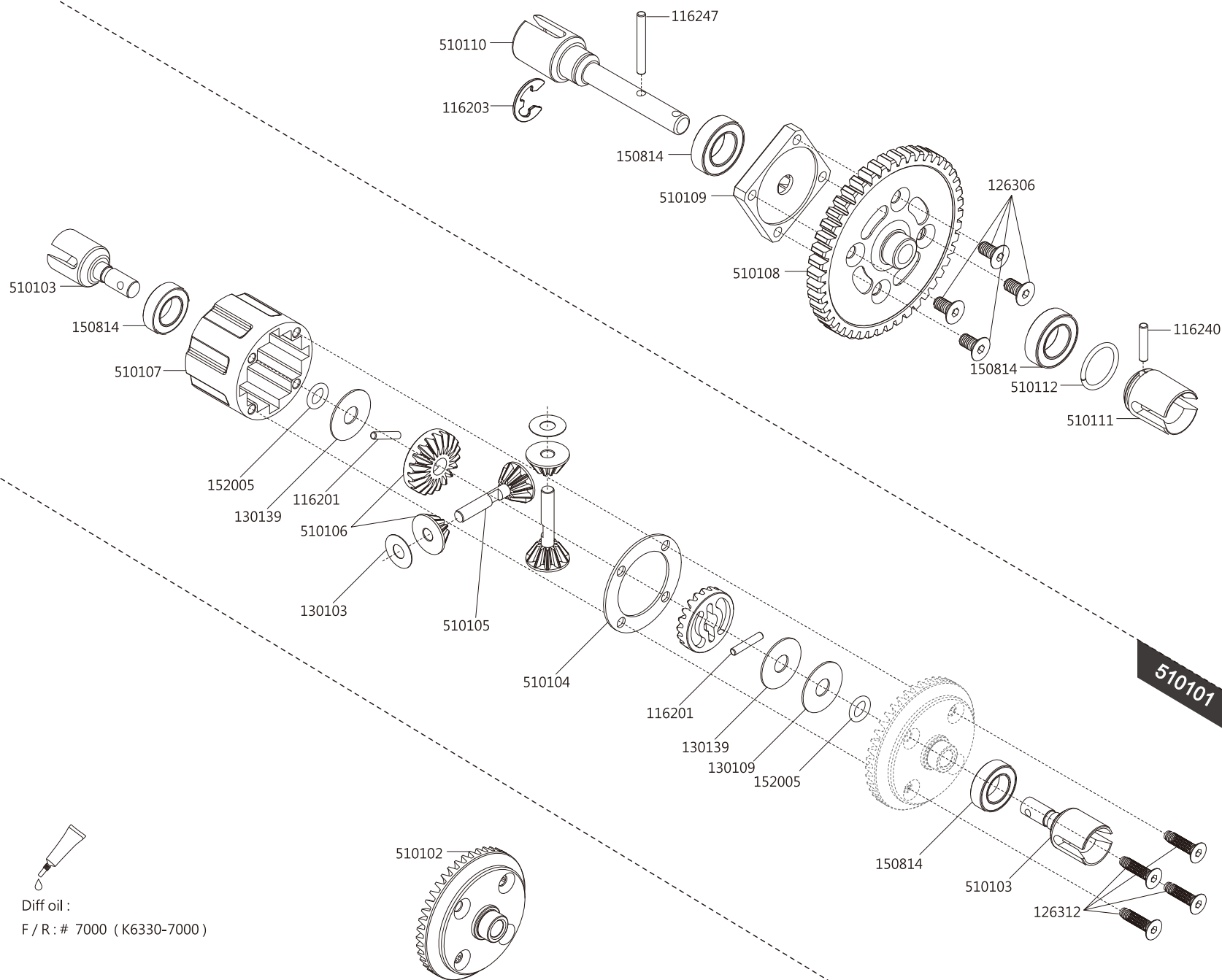
• Restore the default values with the "SET" button.

1. Move the trigger be at the neutral position then press and hold the "SET" button for 3 seconds.
2. Restored all default values (Green & Red LED flashing up simultaneously)
3. Turn off the ESC and back on and all setting will back to the factory default mode.

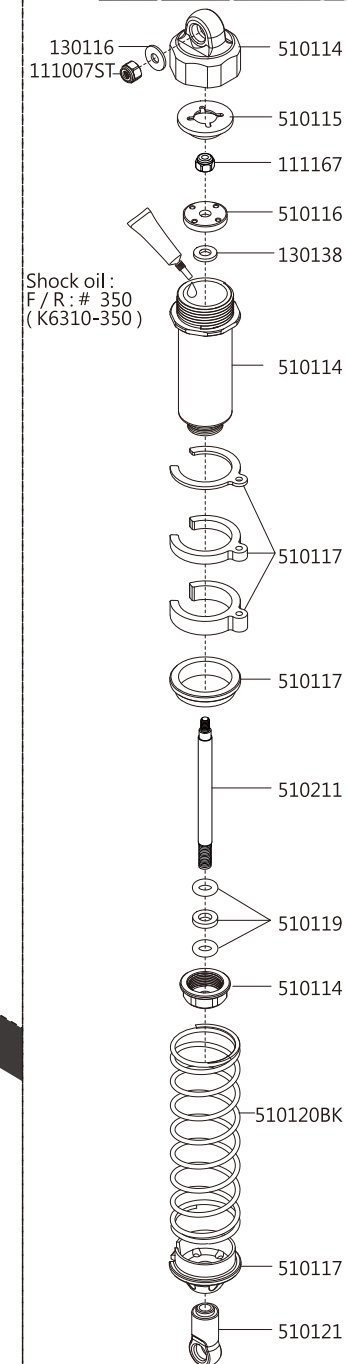
• Restore the default values with the "LED Program Card".

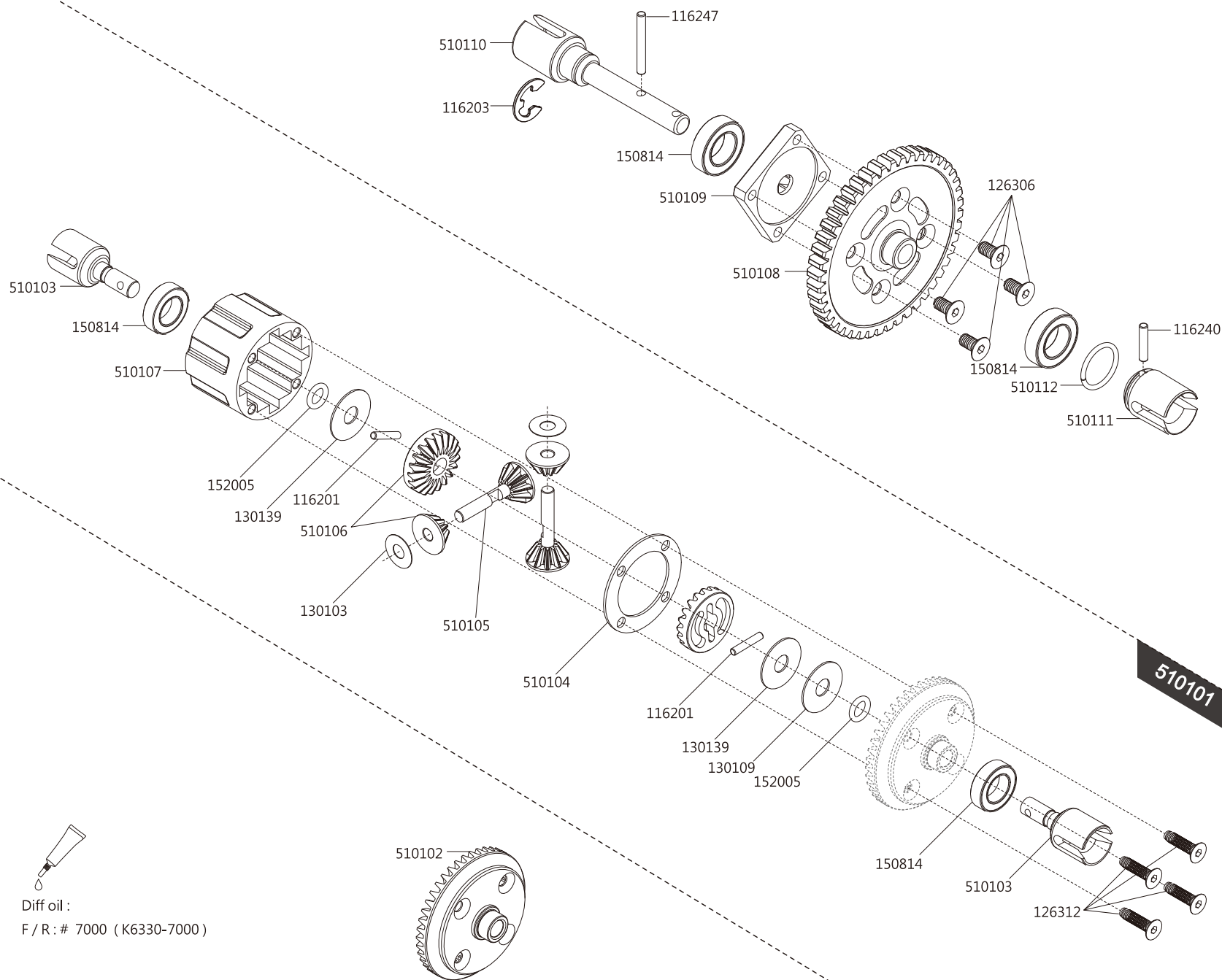
1. Connect the "LED Program Card" to the "ESC".
2. Press the "RESET" and the "OK" key to factory reset your ESC.



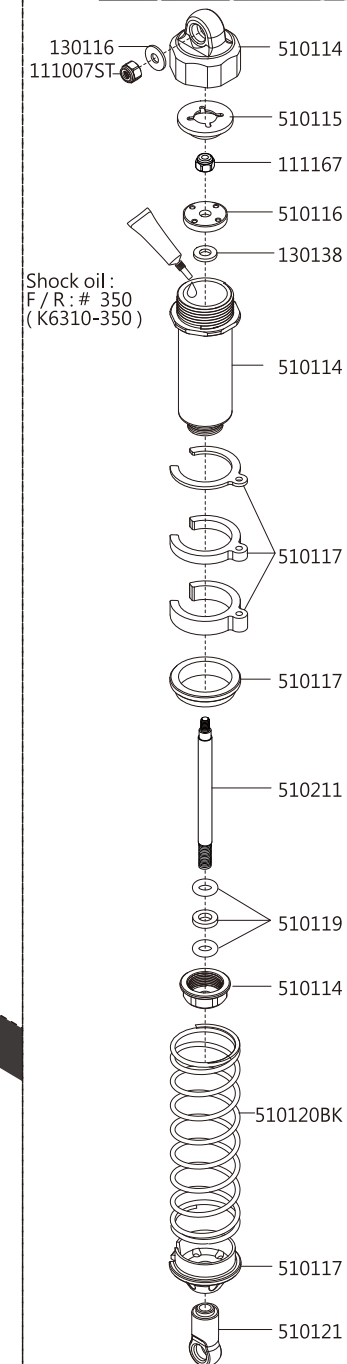


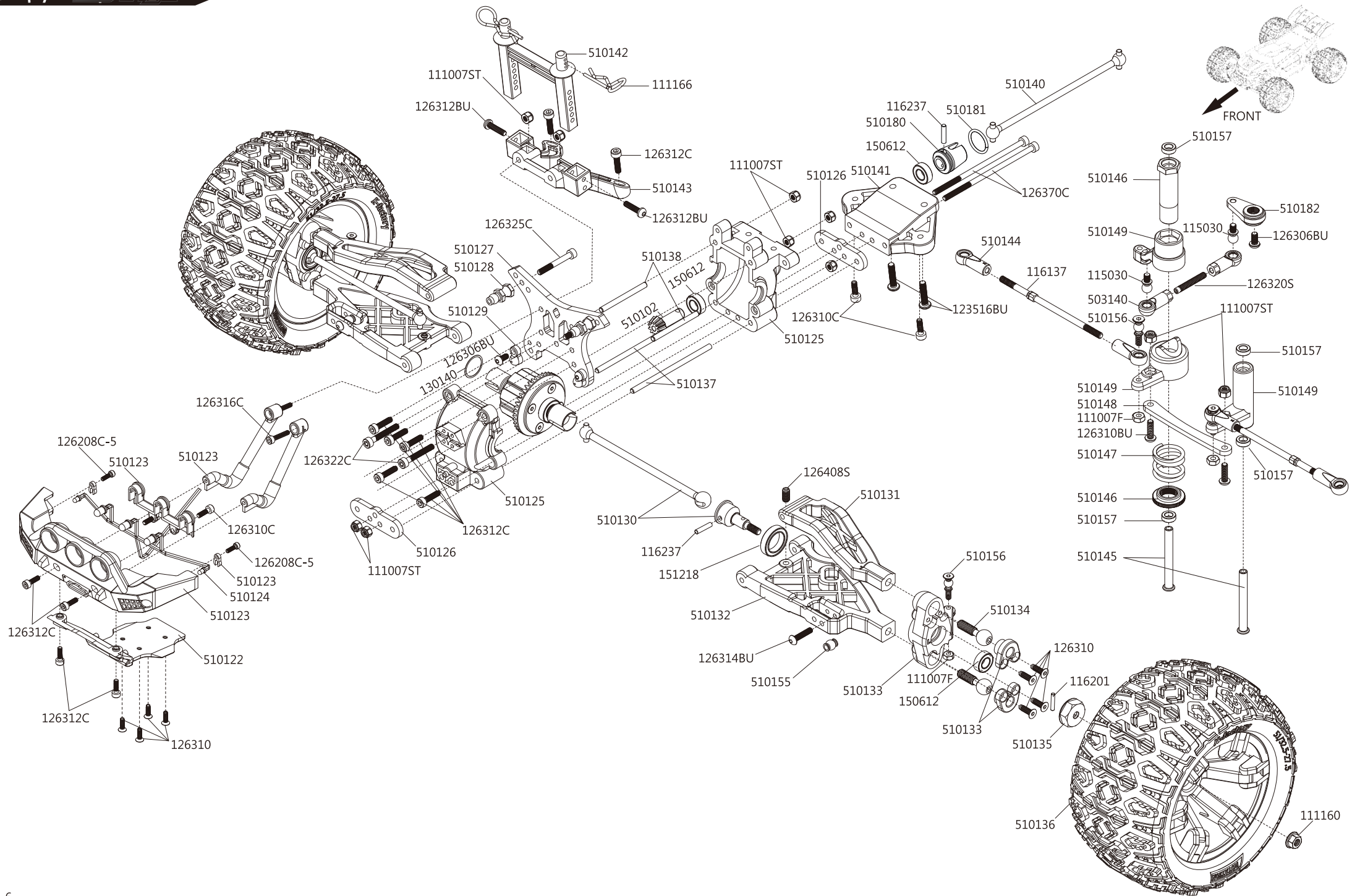
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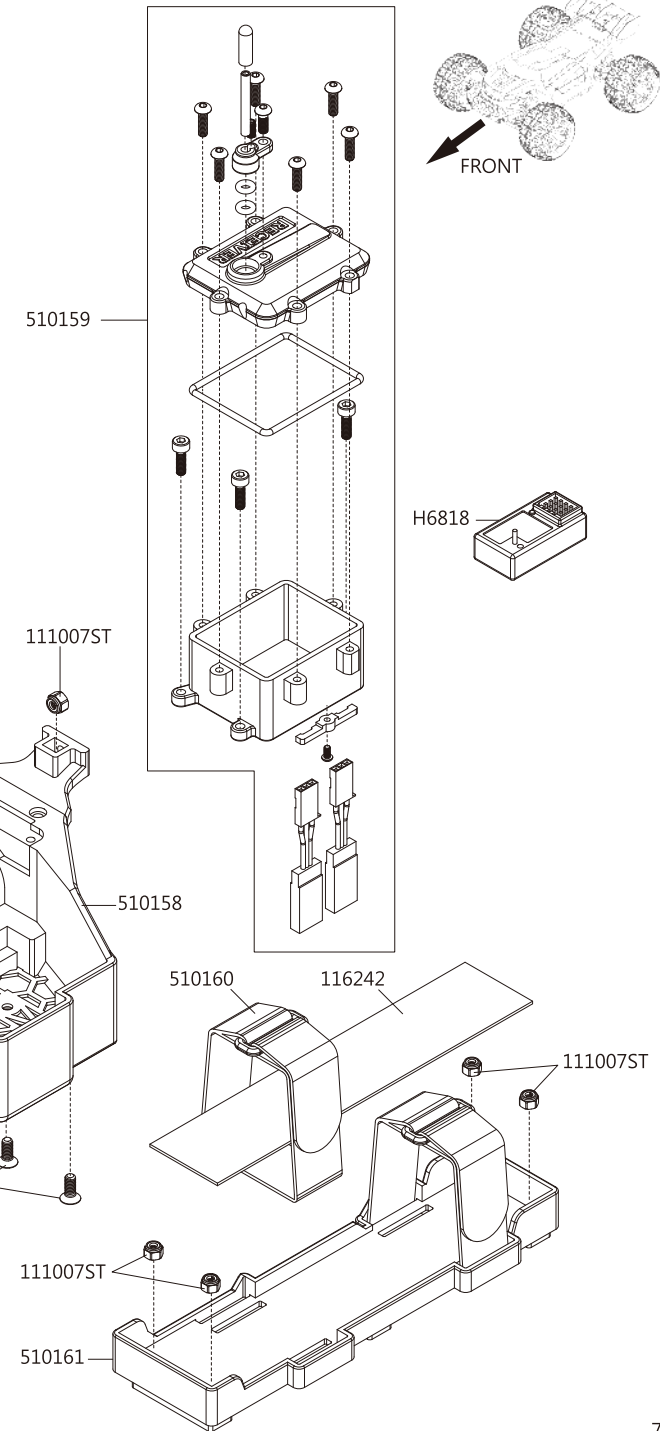
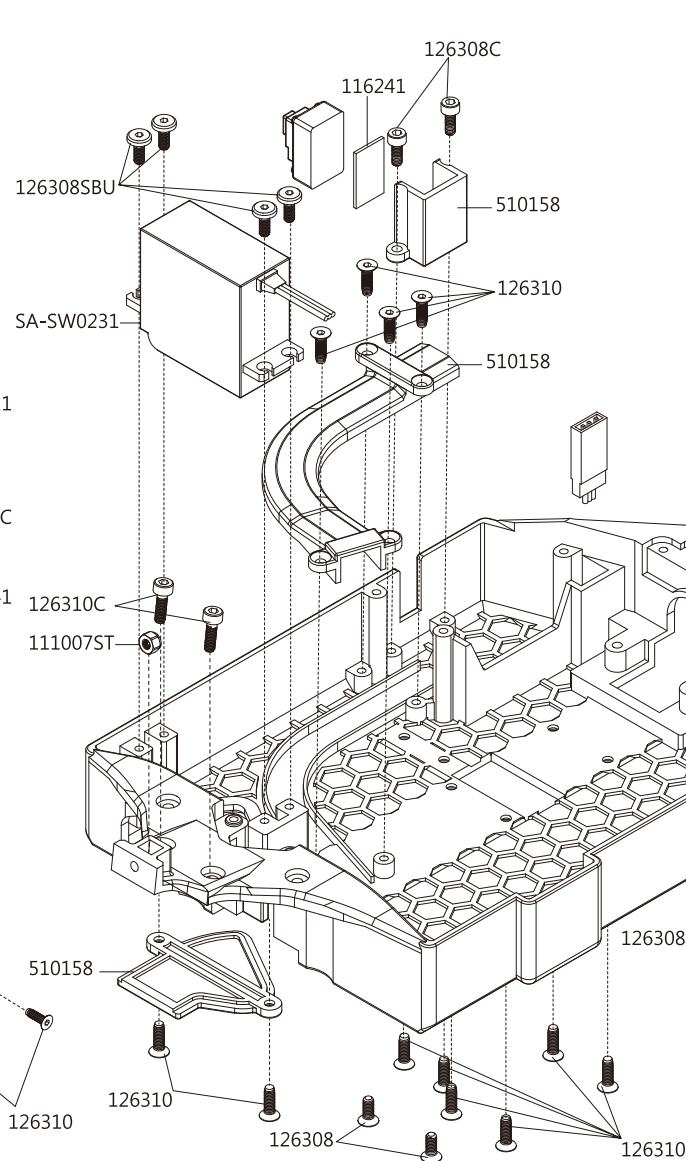
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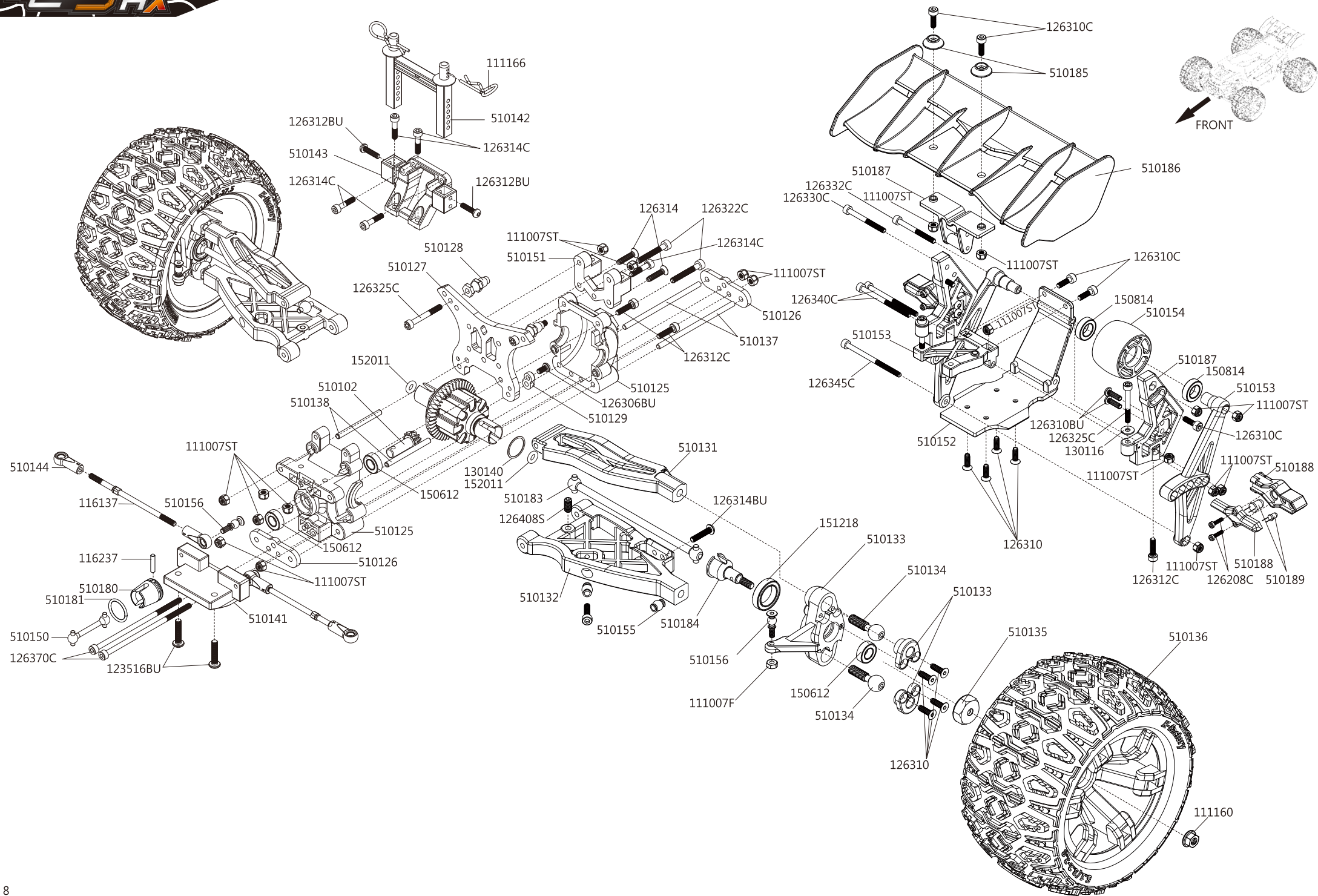




Exploded view diagram of the SA-SW023 assembly. The diagram shows the following components and their assembly order:

- 126310C
- 126308SBU
- 510163
- 510162
- 126312C
- 1264045
- 126306
- 510165
- 191015
- K6602-9
- 126308
- 191011
- 126308BU
- 510164
- 126310C
- 116241
- 126310C
- 111007ST
- 126310C
- 510164
- 126312C
- 510165
- 510166
- 126308C
- 126310
- 510167
- 510164
- 126310
- 510158





E5HX PART LIST

	PARTS
Item No.	Item Description
111007F	3mm Flat Locknut (10)
111007ST	3mm Steel Locknut (10)
111160	4mm Special Wheel Lock Nut (4)
111166	R8 Angled Body Clip (10)
111167	2.6mm Lock Nut (10)
115030	5X4mm Ball Stud(10)
116137	3x70mm Hardened Adjustable Rod (2)
116201	2x10.8mm Pin (10)
116203	E-clip 5 (10)
116237	2.5x11.8mm Pin (10)
116240	2x9.8mm Pin (10)
116241	3M Double Side Tape 4x2.2cm
116242	EVA Tape 3x14cm
116247	2x16.8mm Pin (10)
123516BU	3.5x16mm Steel BH Screw (6)
126208C-5	2.5x8mm Steel Cap Screw (6)
126306	3x6mm Steel FH Screw (6)
126306BU	3x6mm Steel Button Head Screw (6)
126308	3x8mm Steel F.H. Screw (6)
126308BU	3x8mm Steel Button Head Screw (6)
126308C	3x8mm Steel Cap Screw (6)
126308SBU	M3X8mm SBH Screw(10)
126310	3x10mm Steel F.H. Screw (6)
126310BU	3x10mm Button Head Screw (6)
126310C	3x10mm Cap Screw (6)
126312	3x12mm Steel F.H. Screw (6)
126312BU	3x12mm Button Head Screw (6)
126312C	3x12mm Cap Screw (6)
126314	3x14mm Steel FH Screw (6)
126314BU	3x14mm Button Head Screw (6)
126314C	3x14mm Cap Screw (6)
126316C	3x16mm Cap Screw (6)
126318C	3x18mm Cap Screw (6)
126320S	3x20m Set Screw (6)
126322C	3x22mm Cap Screw (6)
126325C	3x25mm Cap Screw (6)
126330C	3x30mm Cap Screw (6)
126332C	3x32mm Cap Screw (6)
126340C	3x40mm Cap Screw (6)
126345C	3x45mm Cap Screw (6)
126370C	3x70mm Cap Screw (6)
126404S	4x4mm Set Screw (6)
126408S	4x8mm Set Screw (6)

	PARTS
Item No.	Item Description
130103	4.2x10x0.2mm Shim (6)
130109	5.2x15x0.3 Washer (10)
130116	3.2x8x0.7 Washer (10)
130138	3.5x7x1 Washer (10)
130139	5.2x15x0.5 Washer (10)
150612	6x12x4mm Bearing (4)
150814	8x14x4mm Bearing (2)
151218	12x18x4mm Bearing (4)
152005	O-Ring 4.7X1.4mm(10)
152011	3.8x1.9 O-RING (10)
191011	THOR MAX-10 80A ESC for Brushless Motor (11.1V)
191015	THOR 3660 Brushless Motor 4400KV (11.1V)
503140	Long Ball Cup 5mm (6)
510101	E5 Complete Differential Kit (F/R)
510102	E5 Bevel Gear -43T/11T
510103	E5 F/R Differential Outdrive (2)
510104	E5 Differential Case Gasket (4)
510105	E5 Differential Bevel Shaft (2)
510106	E5 Differential Bevel Gear Set (for 1 diff)
510107	E5 Bevel Gear Case
510108	E5 Spur Gear-46T
510109	E5 Spur Gear Hub
510110	E5 Spur Gear Shaft
510111	E5 Spur Gear Shaft Outdriver
510112	E5 C-Clip 9.8x1.1mm (4)
510114	E5 Shock Body (2)
510115	E5 Shock Bladder (4)
510116	E5 Shock Piston (4)
510117	E5 Shock Spring Holder
510119	E5 Shock O-Ring & Washer
510120BK	E5 Shock Spring (2)-BK
510121	E5 Shock Pivot Ball Joints (4)
510122	E5 Front Skip Plate
510123	E5 Front Bumper
510124	E5 Front LED Light
510125	E5 Differential Box
510125	E5 Differential Box
510126	E5 Lower Arm Mount (2)
510127	E5 Shock Tower
510128	E5 Shock Pivot Ball Mount (2)
510129	E5 Pin Stopper (4)
510130	E5 Universal Driveshaft (2)
510131	E5 Upper Arm (2)

	PARTS
Item No.	Item Description
510132	E5 Lower Arm (2)
510133	E5 Steering Block (2)
510134	E5 Pivot Ball (9mm) (4)
510135	E5 Wheel Hexes 14mm (4)
510136	E5 Mounted Tire (Pair)
510137	E5 Lower Arm Hinge Pin (2)
510138	E5 Upper Arm Hinge Pin (2)
510140	E5 Center Driveshaft - Long
510141	E5 Chassis linkage block
510142	E5 Body Post (F/R)
510143	E5 Body Post Mount (F/R)
510144	E5 Ball Cup
510145	E5 Servo Saver Inner Post (2)
510146	E5 Servo Saver Post
510147	E5 Servo Saver Spring
510148	E5 Steering Linkage Plate
510149	E5 Servo Saver Nylon Parts
510150	E5 Center Driveshaft - Short
510151	E5 Wheelie Linkage
510152	E5 Wheelie Lower Mount
510153	E5 Wheelie Upper Mount
510154	E5 Wheelie Wheel
510155	E5 Pivot Ball (5mm) (6)
510156	E5 Pivot Ball Screw (5mm) (4)
510157	E5 Bushing 4x7x2.35 (4)
510158	E5 Chassis
510159	E5 Waterproof Receiver Box
510160	E5 Battery Straps (2)
510161	E5 Battery Mount
510162	E5 ESC Cover
510163	E5 Stainless Sand Filter (2)
510164	E5 Central linkage Plate
510165	E5 Adjust Motor Mount
510166	E5 Central Case
510167	E5 Extension Cord
510180	E5 Center Driveshaft Joint (2)
510181	E5 C-Clip 12x1.4mm (4)
510182	E5 Servo Arm - Short (Futaba) (2)
510183	E5 Rear Driveshaft (2)
510184	E5 Rear Outdrive (2)
510185	E5 Shims for Rear Wing (2)
510186	E5 Rear Wing
510187	E5 Rear Wing Support

[illegible]