

# INSTRUCTION MANUAL

1/10 Scale Electric Crawler



□ NO.RH1052 MC31

# VRX Racing RTR Brushed 2.4GHz Crawler

Congratulations on your purchase of the VRX Racing 4WD electric cars.

These 1/10th scale model are almost fully assembled, but still need consumer to finish the body and wheels before using.



**WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and serious injury. This is not a toy and must be operated with caution and common sense. Failure to operate this product in a safe and responsible manner could result in damage, injury or damage to other property. This product is not intended for use by children without direct adult supervision. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, set-up or use, in order to operate correctly and avoid damage and serious injury.

## Safety Precautions and Warnings

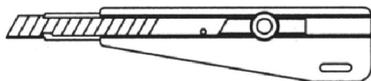
You are responsible for operating this model such that it does not endanger yourself and others, or result in damage to the product or the property of others. This model is controlled by a radio which is possibly subject to interference which can cause momentary loss of control so it is advisable to always keep a safe distance to avoid collisions and injury. Age Recommendation: 14 years or over. This is not a toy. This product is not intended for use by children without direct adult supervision.

Carefully follow these directions and warnings, plus those any additional equipment associated with the use of this model, chargers, ESC and motors, radio etc.

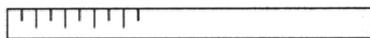
- Never operate your model with low transmitter batteries.
- Always operate your model in an open area away from cars, traffic or people.
- Never operate the model in the street or in populated areas.
- Always keep the vehicles in direct line of sight, you cannot control what you cannot see!
- Keep all chemicals, small parts and anything electrical out of the reach of the children.
- Avoid water exposure, moisture causes damage to electronics and may result in the loss of control or permanent damage.
- Avoid injury from high speed rotating parts, gears and axles etc.
- Novices should seek advice from more experienced people to operate the model correctly and meets its performance potential.
- Exercise caution when using tools and sharp instruments.
- Do not put fingers or any objects inside rotating or moving parts.
- Take care when carrying out repairs or maintenance as some parts may be sharp.
- Do NOT touch equipment such as motor electronic speed control and battery, immediately after using your model because they can generate high temperatures.
- Always turn on your transmitter before you turn on the receiver in the car. Always turn off the receiver before turning your transmitter off.
- Keep the wheels of the model off the ground, keep your hands away from the wheels when checking the operation of the radio equipment.
- Prolong motor life by preventing overheat conditions. Undue motor wear can result from frequent turns, rapid change of direction forwards/backwards, continuous stop/starts, pushing/pulling objects, driving in deep sand and tall grass, or driving continuously up hill.

# Required equipment for operation

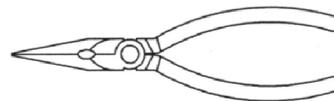
## 1. Tools required for building and maintenance:



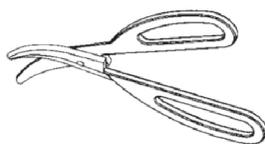
● Hobby knife



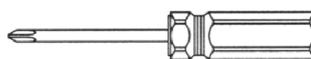
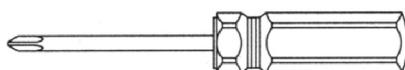
● Precision ruler



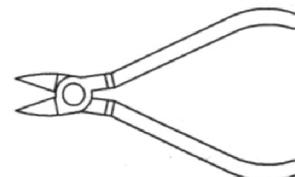
● Needle nose pliers



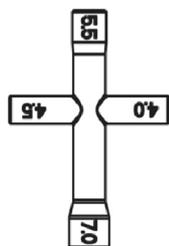
● Lexan scissors



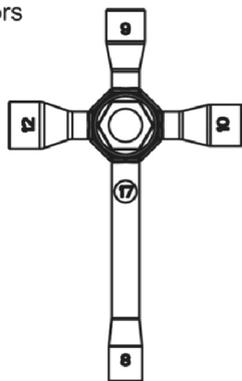
● Flat and Phillips screwdriver



● Wire cutters



● Cross wrench



● Cross wrench



● CA glue & rubber cement



● Thread locking compound



● Hex wrench

## WARNING!

Do not use a power screw driver to install screws into nylon or plastic materials. The fast locking may heat up the screws being installed that may break the molded parts or strip the threads during installation.

## 2. Additional items needed for operation:



4 pcs AA Alkaline batteries for transmitter

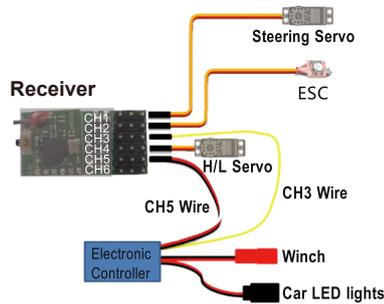
## IMPORTANT!

Check that all screws and nuts are tight before each use.

# Important Hintsheet For 5CH Radio Set

## 5CH 2.4GHz Radio System

The system includes a transmitter, a receiver and an electronics Controller and below is the connecting chart.



### Battery Installation:

1. Open the battery compartment cover.
2. Insert 4 AA fully charged batteries or 2S lipo batteries with correct polarity. (No response if battery polarity reversed.) Note: Batteries are not included.
3. Replace battery compartment cover.



### Binding Process:

The radio system is pre-bound for RTR cars. In case rebinding needed, please follow below steps.

1. Press receiver button, LED indicator fast flashing means entering into binding mode, the receiver will automatically looking for the nearest transmitter signal.
2. The indicator will always ON after successful bound.



### Use the 3rd Channel to control the car LED lights

Note: The voltage output of the receiver is 5V so the LED lights used must support a voltage of 5V, or 6V.

The LED bulb can not be differently connected the receiver. Make sure your LED lights come with a JST or similar connector suitable for receiver. Make sure the polarity is correct before connecting the LED lights.



Insert the LED light connector to the 6th channel of the receiver. Make sure the polarity is correct. The pin on the left side of the receiver is the signal pin, the middle one is the positive and the right side is the negative one.



Press the CH3 button, the CH3 indicator will light up and LED light will turn on. The power-on LED is off by default.

### Use the 4th Channel to control H/L Speed Servo on Crawler (Note: Your car may not have 2 speed gear)



Insert the H/L speed servo connector to the 4th channel of the receiver. Make sure the polarity is correct. The pin on the left side of the receiver is the signal pin, the middle one is the positive and the right side is the negative one.



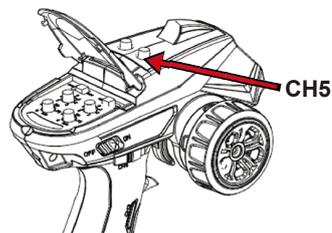
The CH4 is a slide switch with 2 positions. The default on the right is for Low speed and the left position is for High speed.

#### Important:

1. Use this function when the car is stopped for protecting gears!
2. If the wheels are not running after sliding the switch, switch back and forth again!

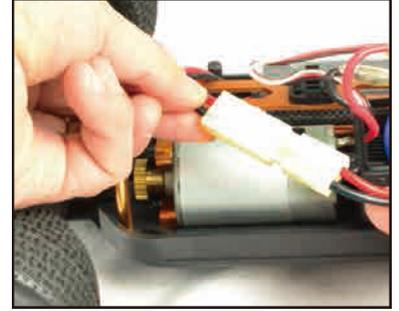
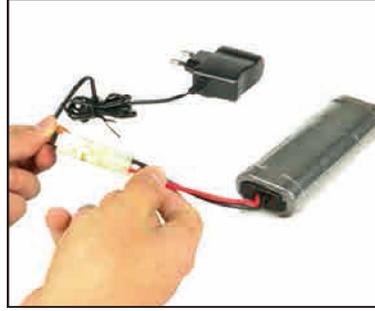
### Use the 5th Channel to Control the Winch

1. Push right button down to pull the winch cord out, stop and winch motor stops;
2. Push left button down to wind the winch cord back, stop and winch motor stops.



## Charging/Installing the Battery.

Always store your model with the battery pack unplugged and removed. Always charge your battery away from the vehicle. The included 300mAh mains charger will take approx 6 hours to charge a fully discharged battery, but always remove it from the charger if it becomes warm to the touch. Always disconnect the charger from the mains supply and the battery pack when not in use. Keep children away from charger and battery during the charging process.



To install a charge battery, firstly remove the body shell and insert the battery into the fasten the two Velcro straps to fix the battery stably. When connecting battery and turning car on, ensure it is off ground with wheels away from objects away from objects

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### Notes on Battery use:

Always allow the battery cool after use, before recharging.

Always inspect the battery before charging.

Any bare wires, split heat shrink or leakage is a sure sign of abuse.

Never attempt to charge dead or damaged batteries.

Do not disassemble the battery or cut the connector wires.

If the battery connector, battery case or cable insulation get hot enough to melt or split there is most likely a serious problem with your model, battery wires or speed controller. Find and correct the problem before installing another charged battery pack.

NEVER charge the battery unattended incase of overcharging, you need to be able to monitor the battery during charging.

Charge away from flammable objects and on a non-flammable surface incase the battery becomes too hot.

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## Getting Started

Refer to 2.4ghz binding manual for radio set-up.

Switch on transmitter

Hold vehicle clear of the ground, connect battery pack and switch on receiver.

Test the transmitter to check control of the vehicle with wheels off the ground.

Start driving slowly and if the vehicle does not go straight, adjust steering trim dial on Transmitter.

For the very first run use the throttle gently, to help the driver become accustomed to the vehicles behaviour and controls.

Although this vehicle features waterproof electronics they are not designed to be submerged in water. Potential damage can still occur to vehicles components if you do so.

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## After Run.

Switch off the receiver power, switch off the transmitter. Disconnect the battery and remove it from the vehicle, allow it to cool before recharging. If you have a second charged battery all ready to use, still allow the vehicle to cool slightly before continuing.

## Regular maintenance.

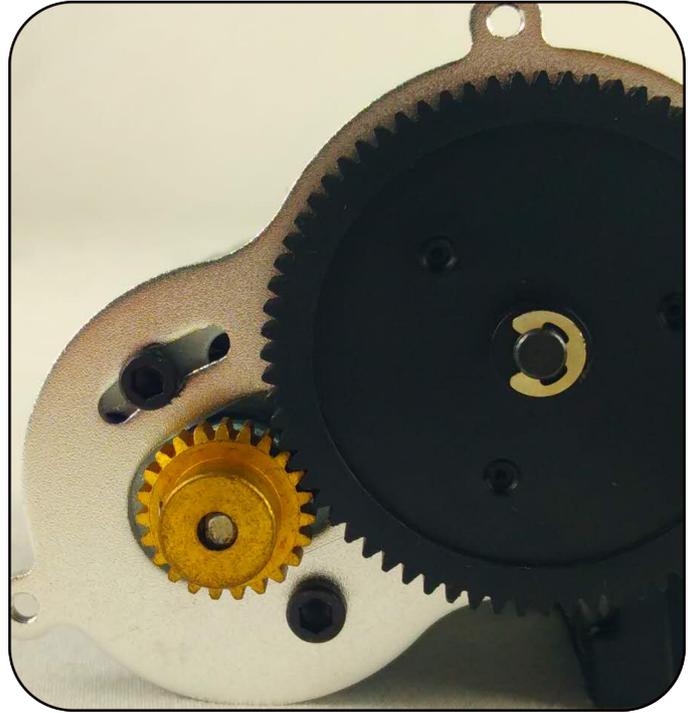
**Frequently check the whole vehicle for loose or missing fixings. Use thread lock on any replacement screws into metal threads.**

Frequently check rotating parts are free from grass, string etc. that might bind their motion and over stress the motor or speed controller. Remove the wheels occasionally and check behind the mounting hex for obstructions or anything that might have been wrapped around the axle and caused extra drag.

Check the gear mesh frequently and remove any stones or grit from gear teeth to prevent premature wear and damage.

If the motor moves, or is removed for maintenance/exchange, the gear mesh will need to be set. Simply slacken the motor retaining screws and adjust the motor until there is just discernable backlash between pinion and spur teeth. If the gear is too tight or too loose the gears will be noisy and could be damaged.

Shock absorbers will wear prematurely if used in dirty dusty conditions. Replace oil and seals as required to keep a smooth dampening action.



## Trouble shooting guide.

Short Runtime: Battery damaged/not charged. Motor dirty or brushes worn. Drivetrain binding.	Sluggish Action: Motor damaged. Bind in drive train. Battery running low on power.	Motor/ESC overheat: Over-gearred Binding transmission. Seized axle bearing. Motor binding.	Motor spins but vehicle refuses to move: Gears damaged. Gears loose on shaft. Magnets debonded from motor armature. Slipper clutch too loose. Drive shaft broken or missing.	Poor Range or fails to operate: Transmitter batteries low. Vehicle Battery Low. Transmitter switched off. Transmitter/receiver aerial not extended. ESC switched off or battery not connected. Loose connectors/wires. 2.4ghz binding with -receiver lost
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## LIPO BATTERY-USER SAFETY AND HANDLING INSTRUCTIONS.

Read all safety instructions before charging or using your batteries for the first time.

Lipo batteries require completely different charging and care than Nicd and NIMH batteries. Misuse can result in fire, personal injury and/or damage to property. The buyer assumes all Liability and risk associated with the use of Lithium-Polymer (Li-Po) batteries. Immediately return the battery, unused, if you do not agree with these terms.

## **General guidelines and warnings:**

1. Use a Lithium Polymer specific chargers only! Do not use a NiCd or NiMH charger.
2. NEVER charge unattended. Always charge in safety sack or metal tin with lid and away from other flammable materials.
3. During the charge process watch for swollen or ballooning cells. If this happens immediately disconnect the charger and move the battery to a fire proof place for 15 minutes. Do not attempt to charge again.
4. A short circuit can cause a rapid discharge of high currents. Avoid short circuits, and be aware of short circuits on jewelery.
5. Any Lithium Polymer battery involved in a crash should be removed and observed in a fireproof space for 15 minutes before continuing to use or charge the battery.
6. If rewiring the battery pack, rewire the leads one at a time. Do not cut both leads. Do not short circuit on tools.
7. Do not expose battery packs to direct sunlight for extended periods.
8. Do not attempt to tamper with or open the LiPo Hardcase. The case is protection against possible battery swelling.

### **Before charging:**

Visually inspect the pack checking for damaged leads, connectors, cracked heat shrink covering, swelling or other abnormalities. Do not charge if the pack is damaged.

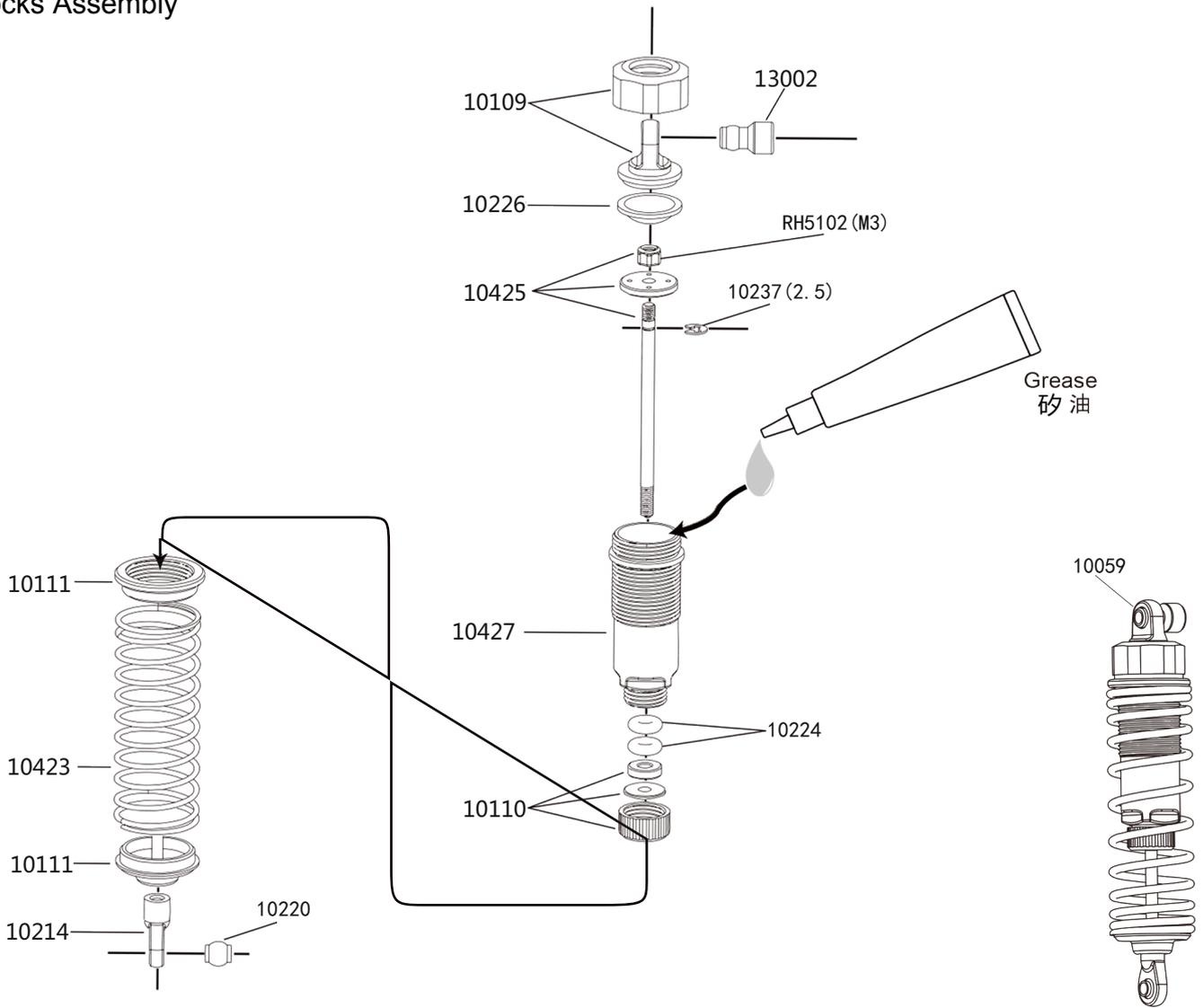
## **Charging process:**

1. NEVER charge unattended.
2. Charge away from flammable materials and inside a Lipo safe sack or metal tin with lid.
3. Allow battery to cool before charging.
4. Use the battery label for setting charger cell count and voltage.
5. Do not exceed 5C MAX charge rate. (Example, charge a 1000mAH pack at 5A MAX)

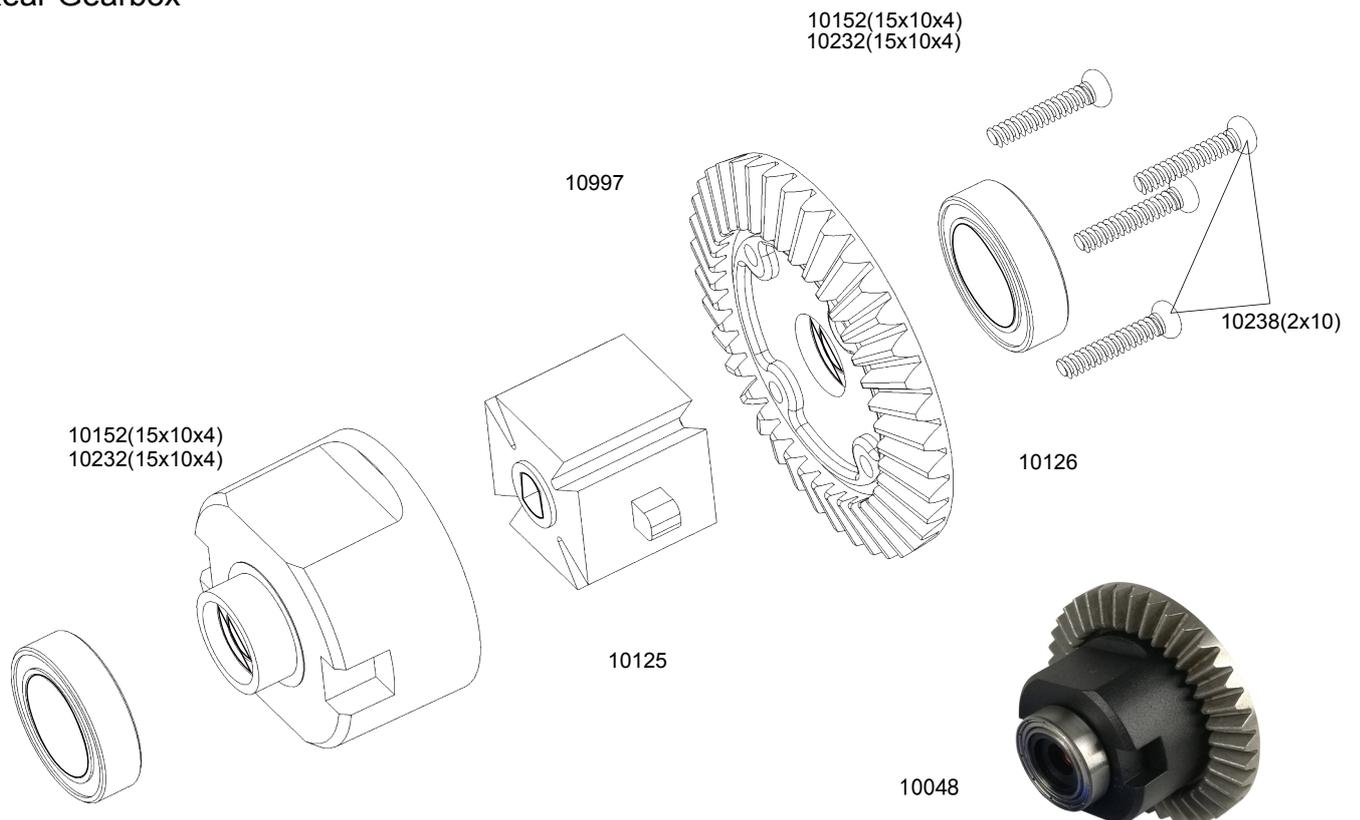
If disposing of a Lipo battery proceed as follows:

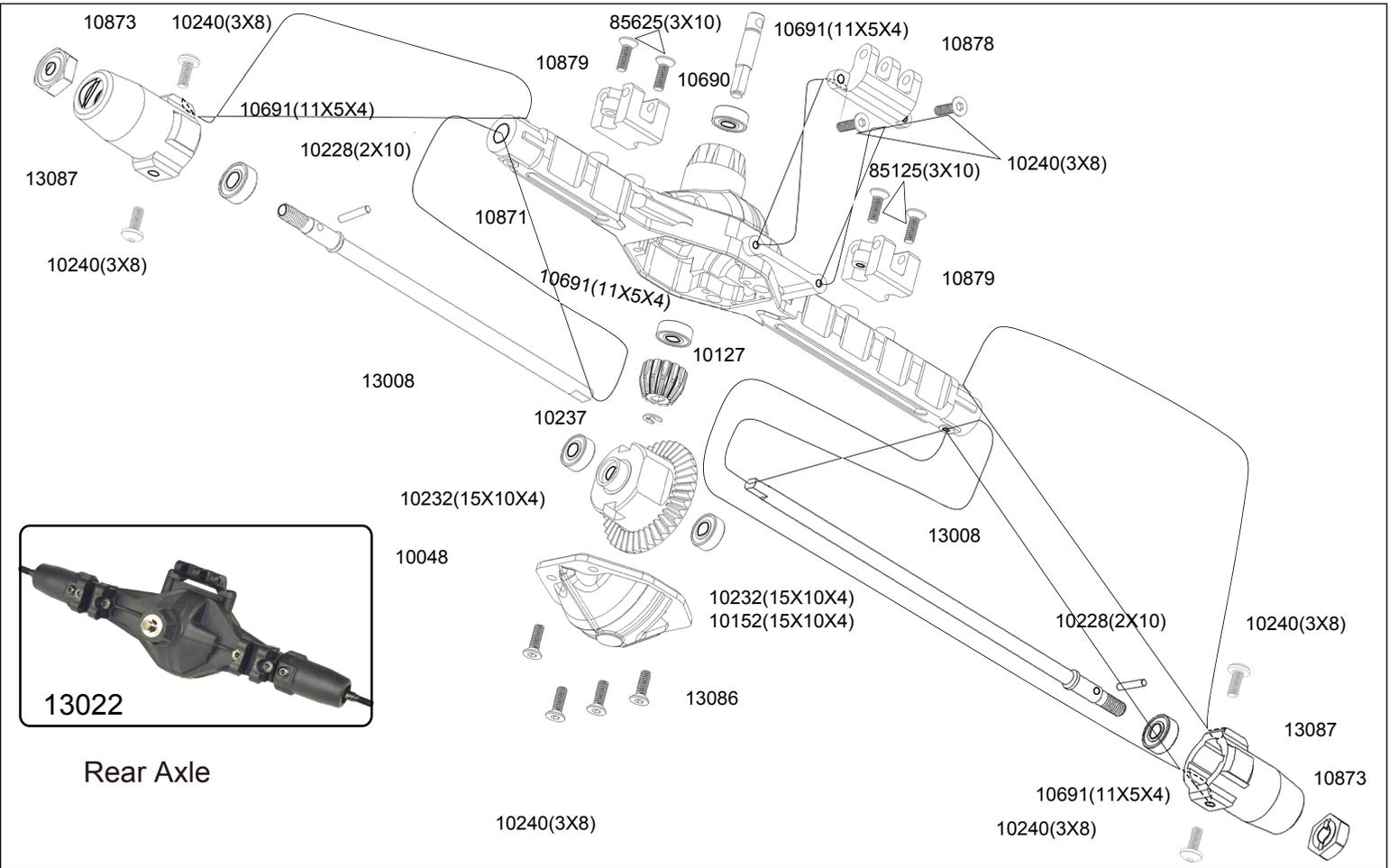
Submerge the battery into a container filled with about 10 litres of salt water (one cup of salt in 10L). Leave the battery submerged for 2 weeks, this will slowly and safely discharge the battery until the voltage has dropped to zero volts which eliminates the risk of any chemical reaction. It can then be disposed off in the general waste collection.

# Oil Shocks Assembly



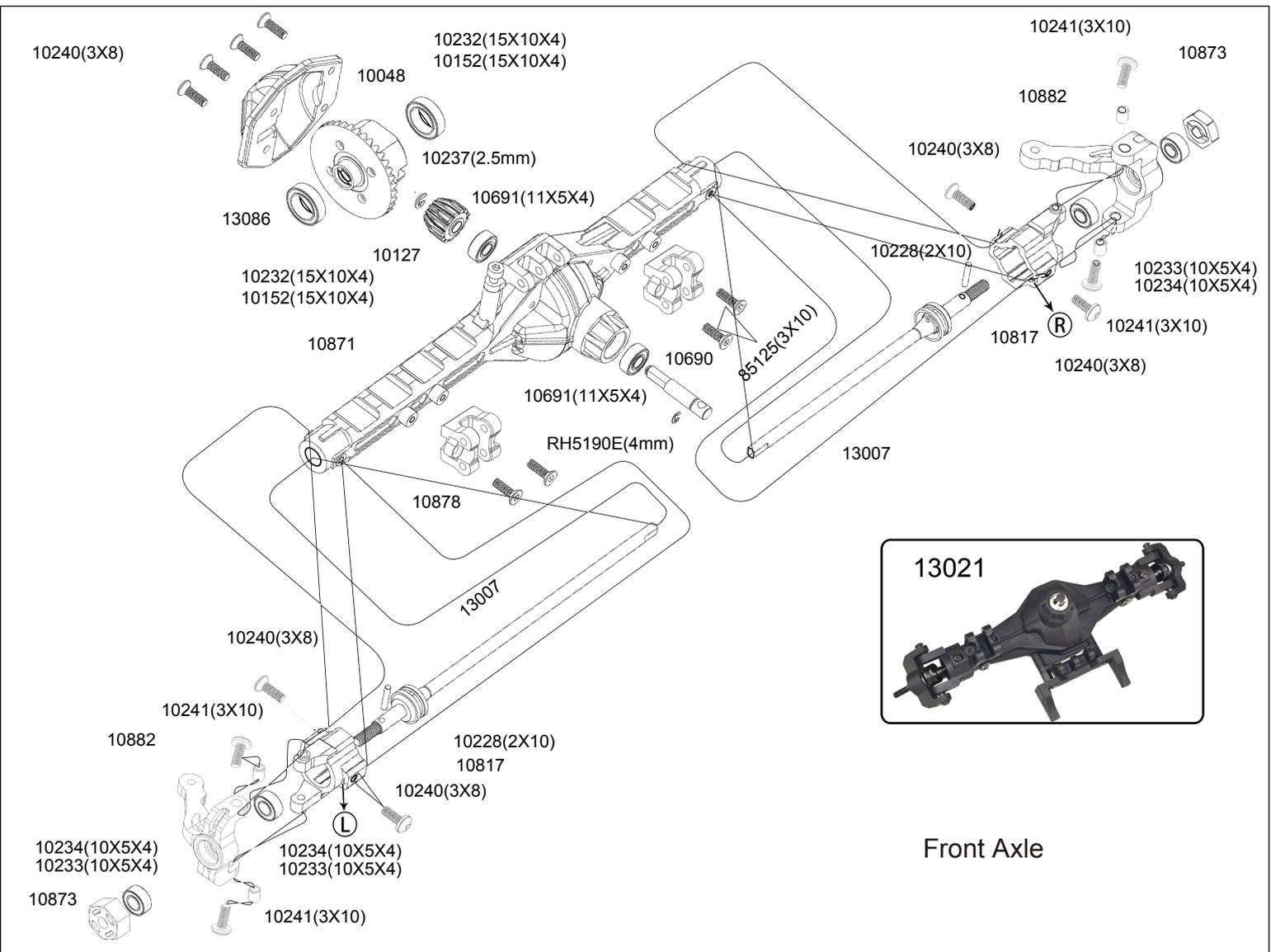
# Front/Rear Gearbox





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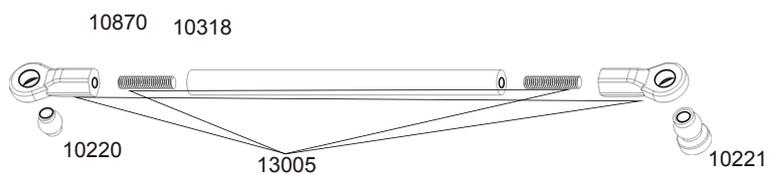
Rear Axle



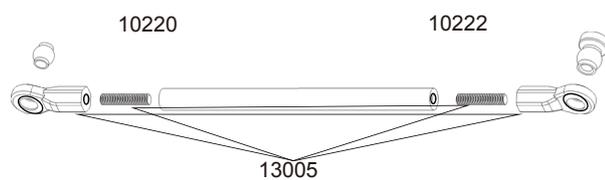
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Front Axle

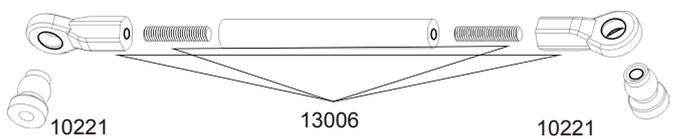
# Linkages



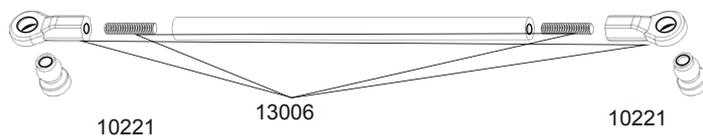
Lower Linkage Rods



Upper Linkage Rods

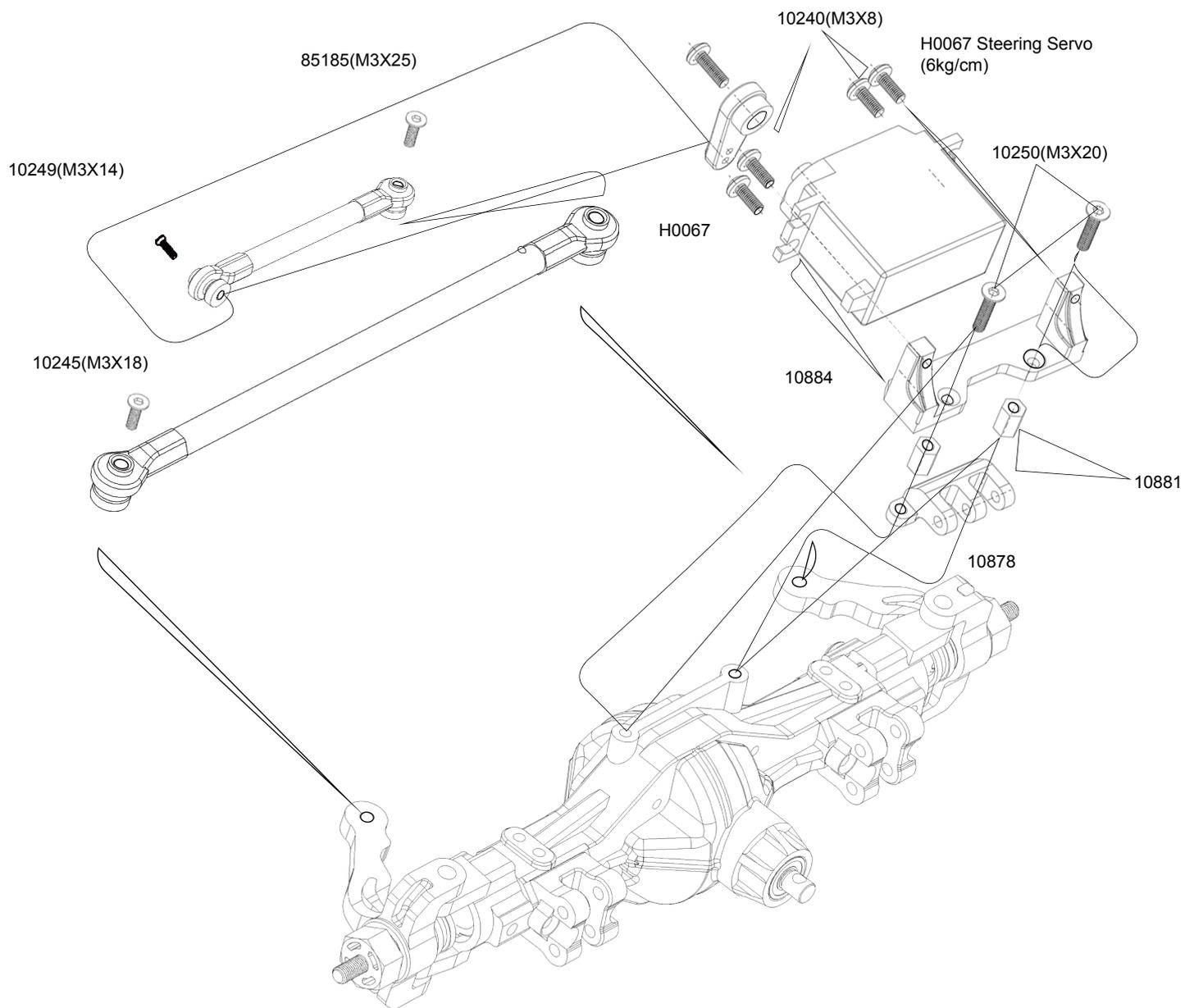


Steering Linkage Rods S.

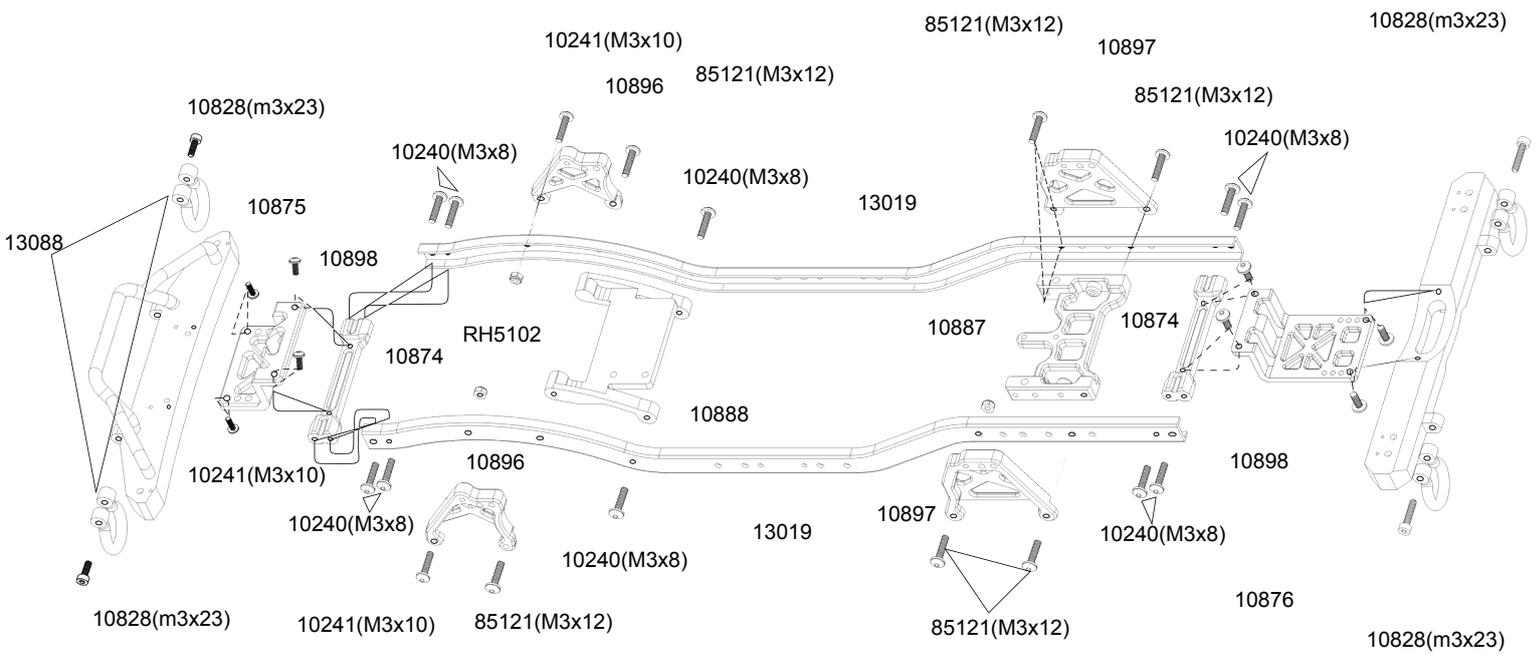


Steering Linkage Rods L.

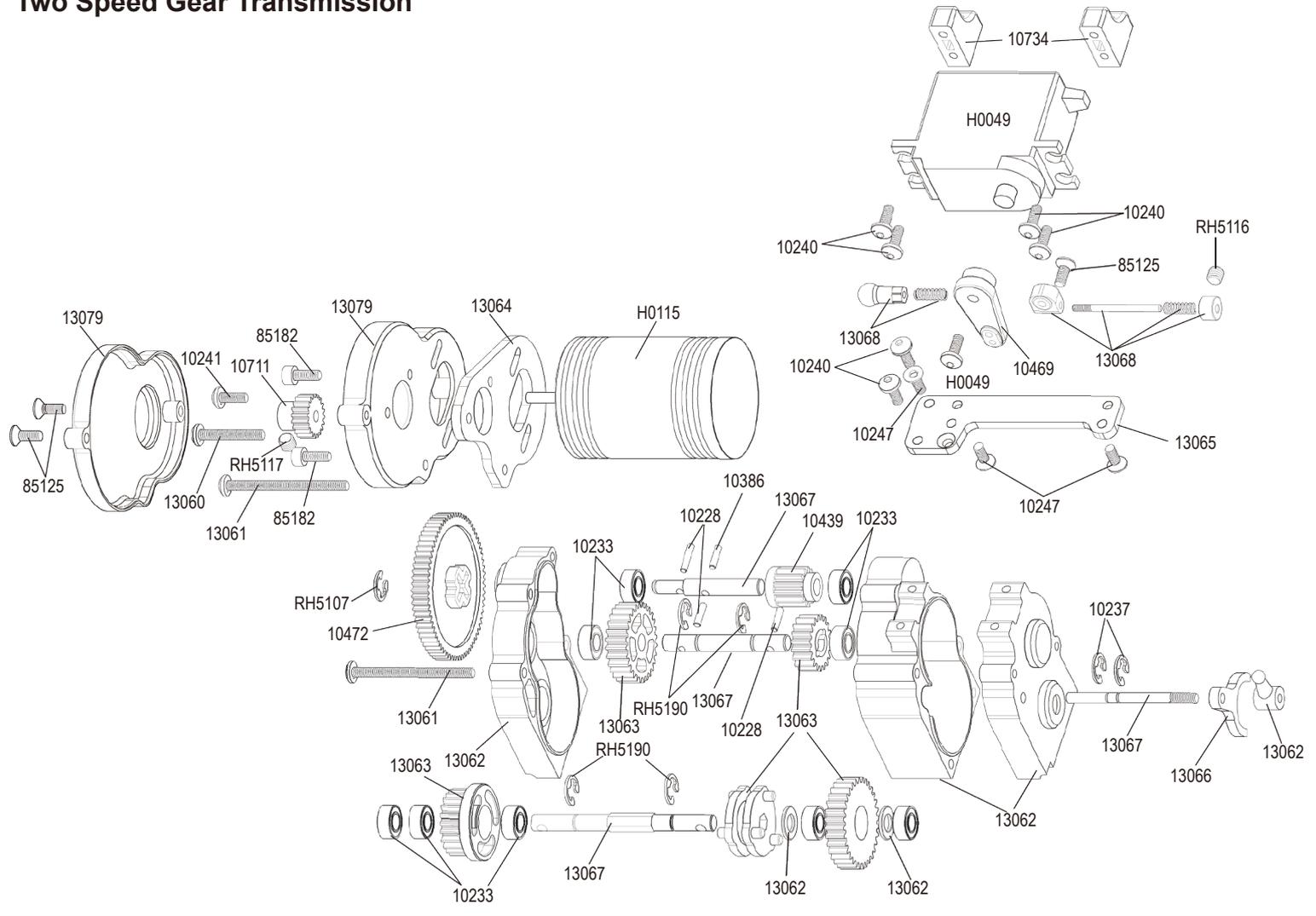
# Steering Servo



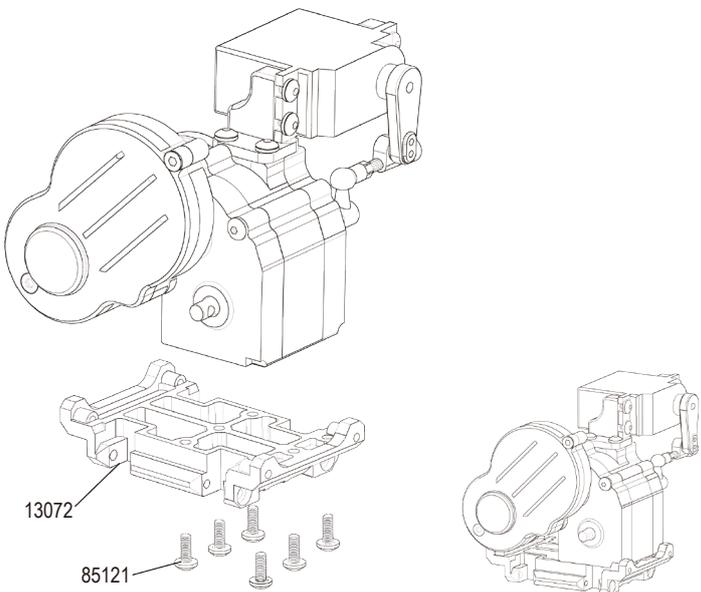
# Chassis/Bumpers Assembly



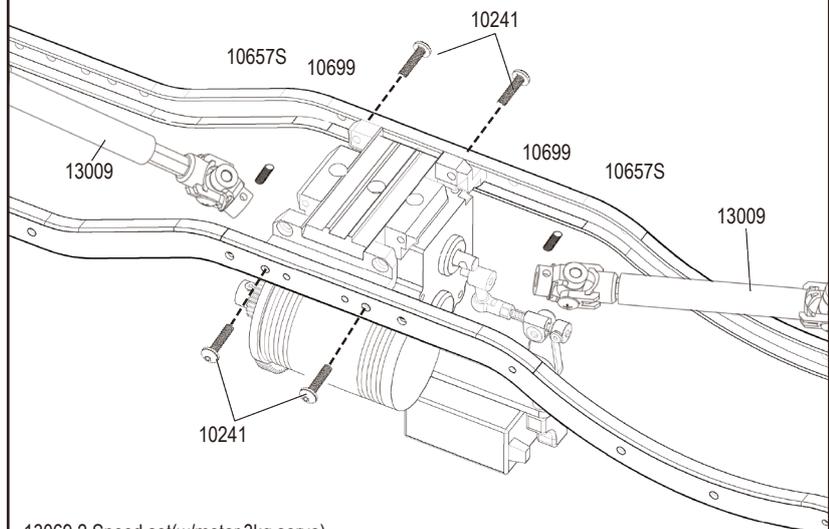
## Two Speed Gear Transmission



## 2 Speed Set Assembled with Chassis Plate

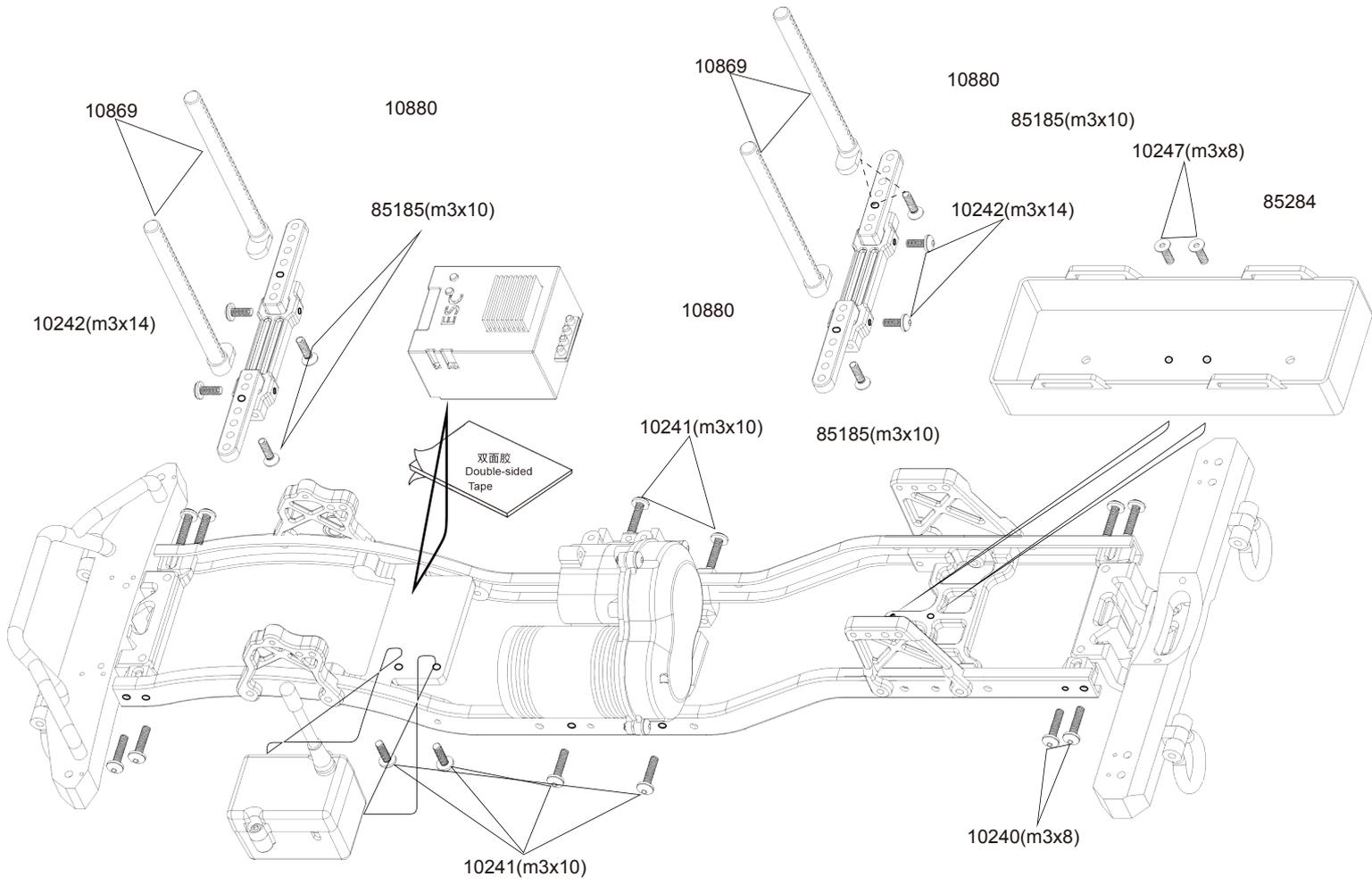


## 2 Speed Set on Main frame with Drive Shafts

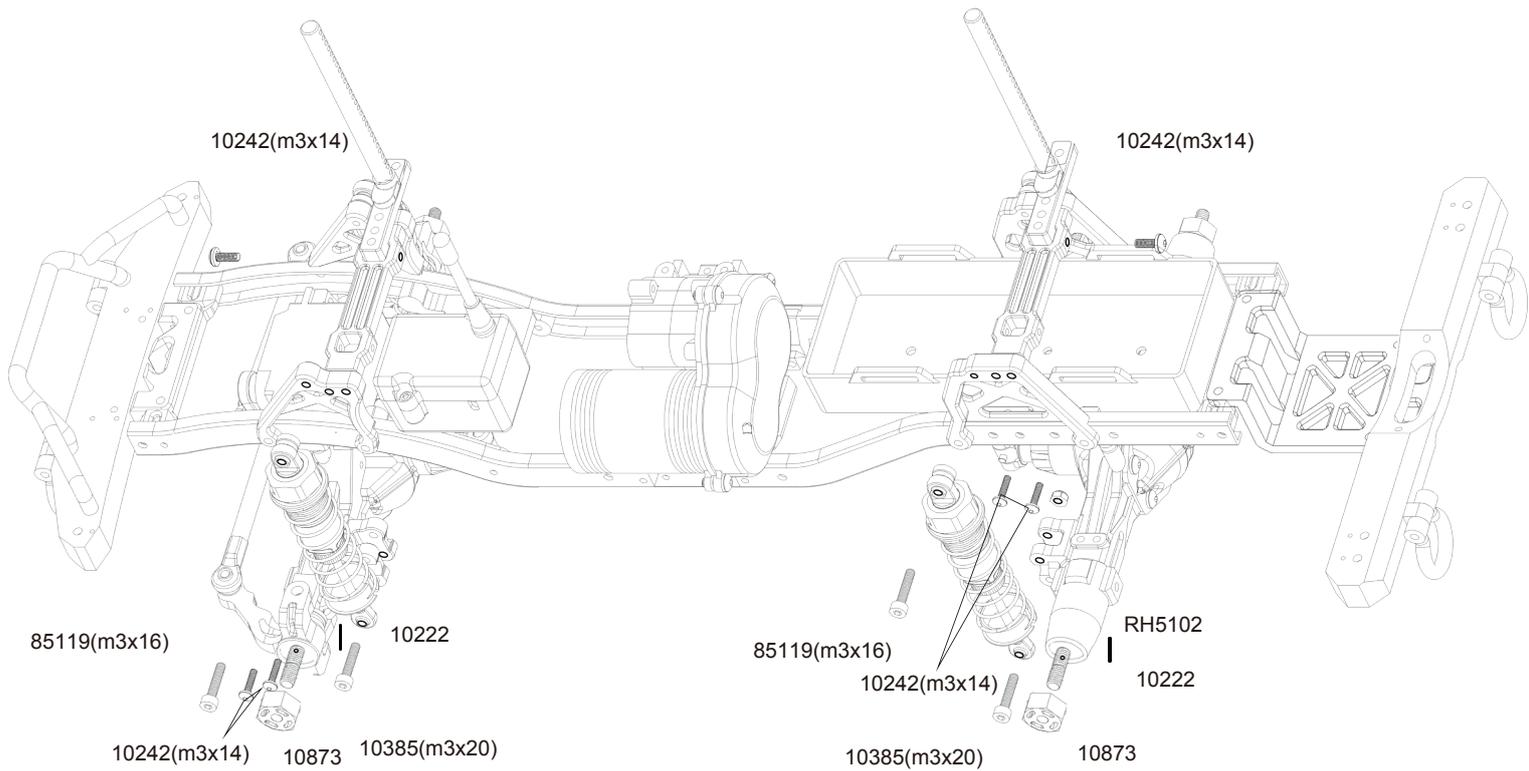


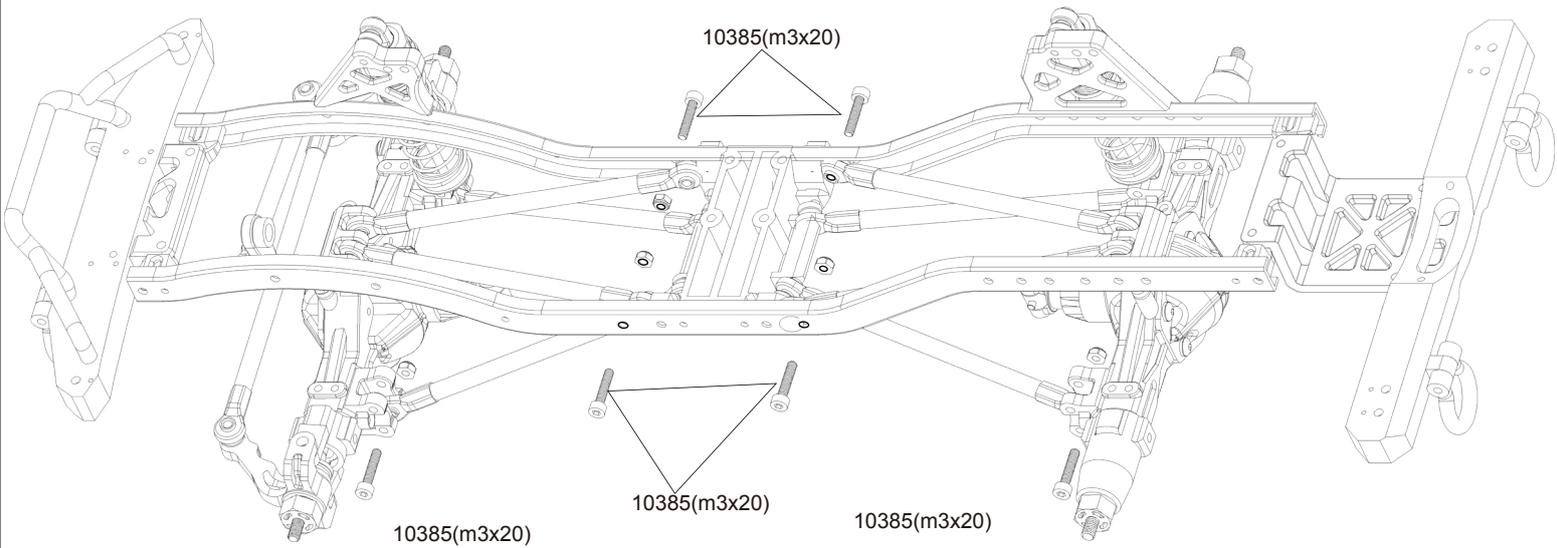
- 13069 2 Speed set(w/motor,3kg servo)
- 13070 2 Speed set(no electronics)
- 13071 2 Speed set(w/motor, w/o servo)

# Battery Case, RX, Body Posts Assembly

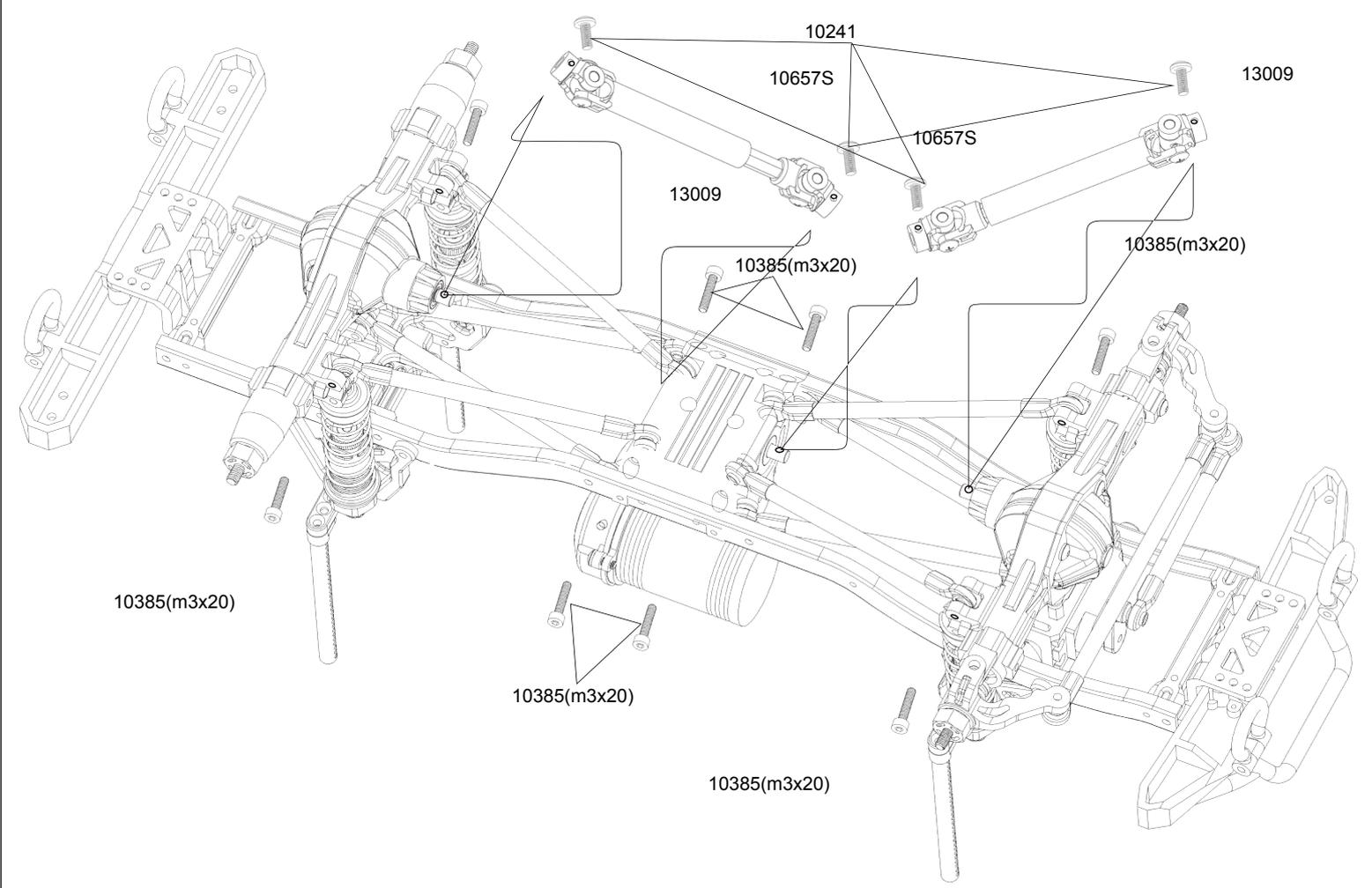


# Oil Shocks Assembly



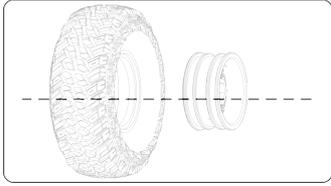


Upper Linkages Assembly



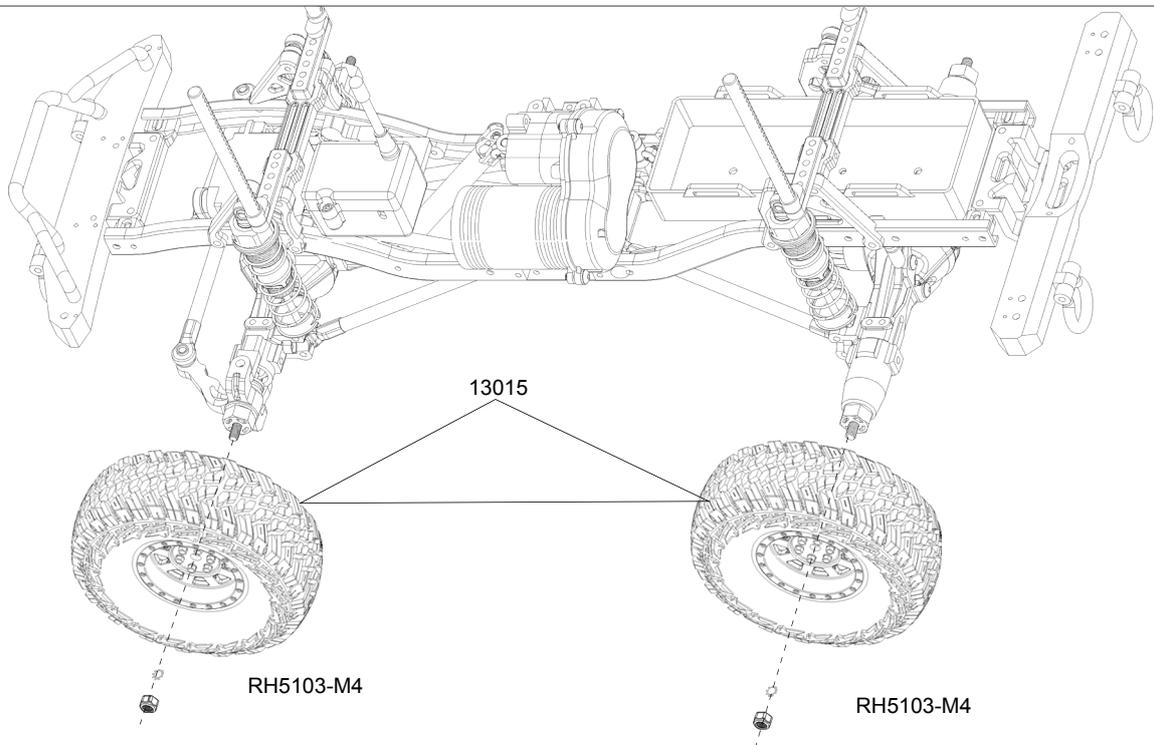
Lower Linkages Assembly II Central Drive Shafts

**Wheels Assembly  
(Bag M)**  
轮胎组装



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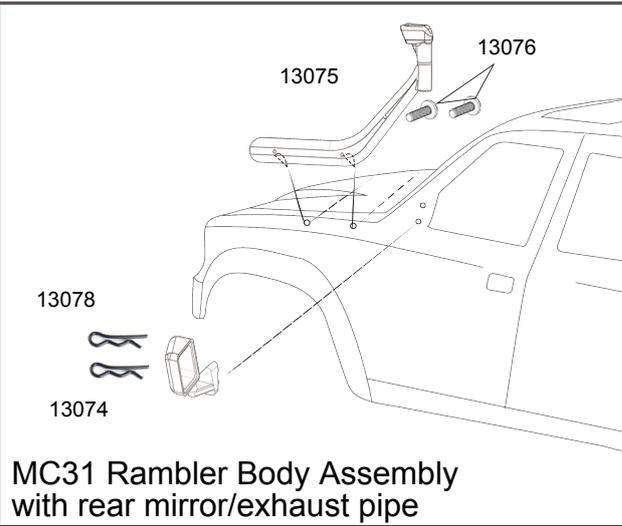
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RH5103-M4

RH5103-M4



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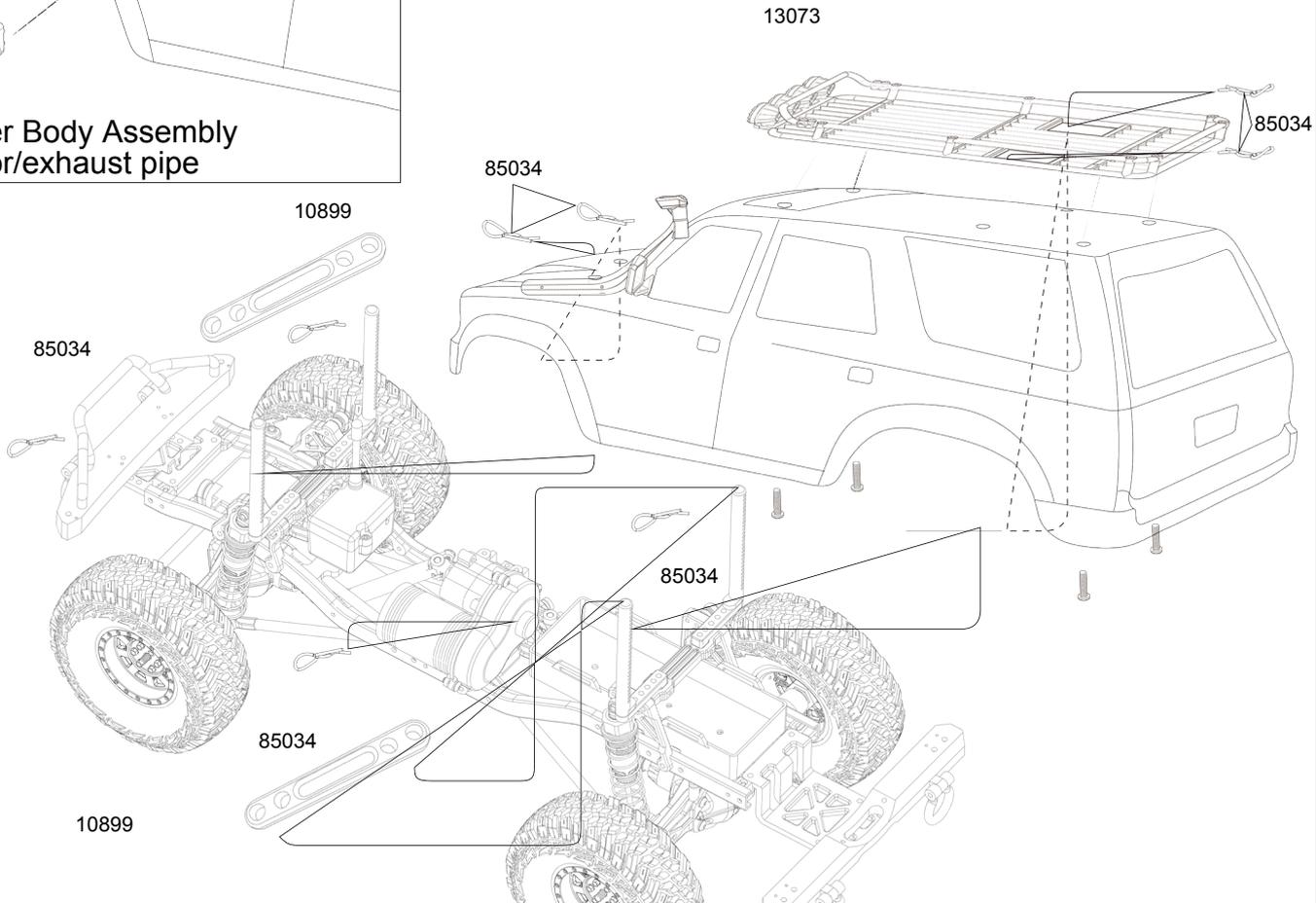
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**MC31 Rambler Body Assembly  
with Rollcage/rear mirror**

**MC31 Rambler Body Assembly  
with rear mirror/exhaust pipe**



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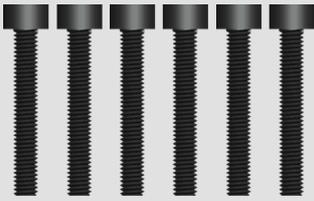
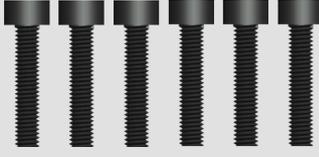
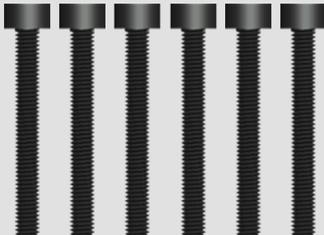
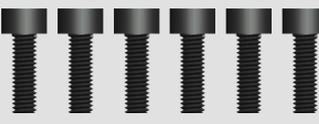
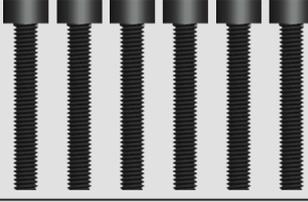
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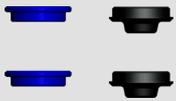
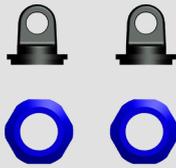
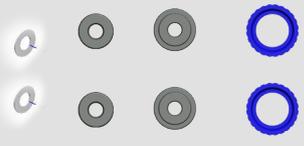
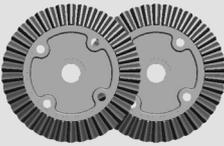
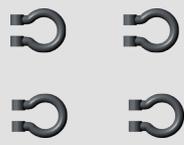
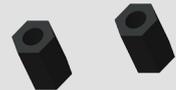
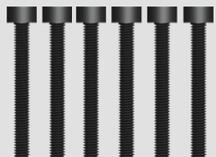
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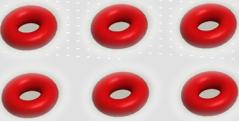
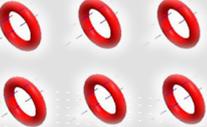
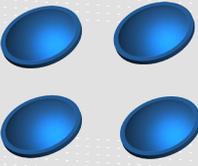
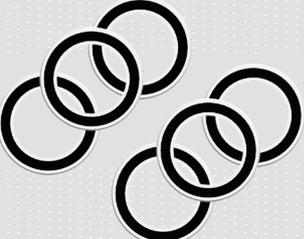
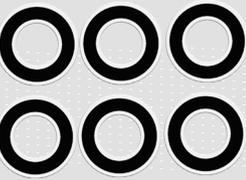
# Part List

<p>10238-Round Head Self Tapping Hex Screw 2*10 6pc</p> 	<p>85125-Flat Head Hex Screw M3*10 8pc</p> 	<p>10240-Button Head Hex Screw M3*8 6pc</p> 	<p>10241-Button Head Hex Screw M3*10 6pc</p> 
<p>10242-Button Head Hex Screw M3*14 6pc</p> 	<p>10699-Set Screw M3*10 6pc</p> 	<p>10245-Cap Head Hex Screw M3*18 6pc</p> 	<p>10247-Flat Head Hex M3*8 6pc</p> 
<p>10249-Flat Head Hex Screw M3*14 6pc</p> 	<p>10250-Flat Head Hex Screw M3*20 6pc</p> 	<p>10385-Cap Head Hex Screw M3*20 6pc</p> 	<p>85185-Cap Head Hex Screw M3*25 6pc</p> 
<p>85182-Cap Head Hex Screw M3*10 6pc</p> 	<p>85184-Button Head Hex Screw M3*12 6pc</p> 	<p>10246-Cap Head Hex Screw M3*28 6pc</p> 	<p>RH5562-Cap Head Hex Screw M3*8 6pc</p> 
<p>RH5117-Set Screw M4*4 6pc</p> 	<p>10828-Cap Head Hex Screw M3*23 6pc</p> 	<p>10657S-Central CVD Inner half With steel coupler 1set</p> 	<p>10871-Rearaxle housing</p> 
<p>13086-Rear axle cover</p> 	<p>13087-Axle adaptor 2pcs</p> 	<p>85034-Body Clip (Medium Size) 6pcs</p> 	<p>10870-Ball end 10pcs</p> 

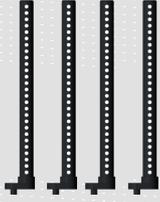
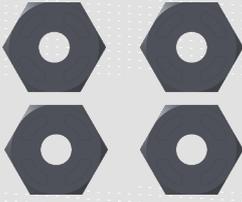
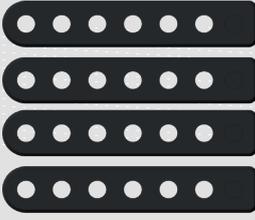
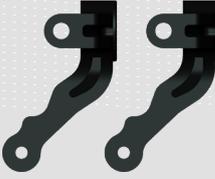
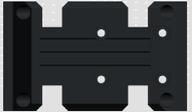
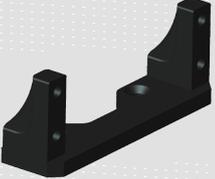
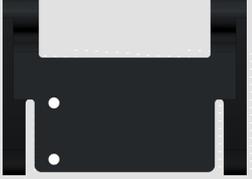
# Part List

<p>10690-Rear diff shaft 1pc</p> 	<p>10111-Shock Lower holder &amp; Adjust Ring 2sets</p> 	<p>10109-Shock Upper Cap 2sets</p> 	<p>10110-Shock Lower Caps 2sets</p> 
<p>10125-Diff Case 2pcs</p> 	<p>10126-Diff Drive Spur Gear 2pcs</p> 	<p>10127-Diff Drive Gear 2pcs</p> 	<p>13088-Recue rings 4pcs</p> 
<p>RH5107-E clip-3mm 6pcs</p> 	<p>10472-70T Spur Gear 1pc</p> 		<p>10881-Servo mount 2pcs</p> 
<p>13018-Set screw M3*14mm 10pcs</p> 	<p>85119-Cap head scre set 3*16mm 6P</p> 	<p>10997-Upgrade Diff locker 1pc</p> 	<p>10691 Ball bearing (11*5*4mm) 6pc</p> 
<p>10695-Servo horn 1pc</p> 	<p>10214-Shock Ball End 6pcs</p> 	<p>RH5102-Nylon Lock Nut M3 6pc</p> 	<p>RH5103-Nylon Lock Nut-M4 6pc</p> 
<p>85284 Battery case</p> 	<p>85286 Velco Tape 2pcs</p> 	<p>10694-Pin <math>\phi</math> 2*14 6pcs</p> 	<p>13001-Central diff shaft 2pcs</p> 

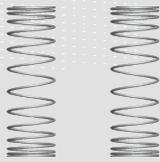
# Part List

<p>13002-Ball E 6pcs</p> 	<p>13006-Steering linkage rod L/S</p> 	<p>13007-Front CVD shaft 2pcs</p> 	<p>13008-Rear drive shaft 2pcs</p> 
<p>13019-Chassis steel frame rail set L/R</p> 	<p>H0115-550 Brushed Motor 1pc 36T</p> 	<p>RH5190-E clip-4mm 6pc</p> 	<p>10237-E clip-2.5mm 6pc</p> 
<p>10220-Ball A 6pcs</p> 	<p>10221-Ball B 6pcs</p> 	<p>10222-Ball C 6pcs</p> 	<p>10224-Shock O-ring (Lower) 6pcs</p> 
<p>10225-Diff O-ring Seal 6pcs</p> 	<p>10226-Shock seal cover 4pcs</p> 	<p>10228-Pin <math>\phi</math> 2*10 6pcs</p> 	<p>10232-Ball Bearing 15*10*4 6pcs</p> 
<p>10233-Ball Bearing 10*5*4 6pcs</p> 	<p>10253 - 1/10 Charger CE 1pc 10254 - 1/10 Charger UL 1pc 10255 - 1/10 Charger BS 1pc</p> 	<p>85175-Button Head Hex. Tapping Screws 3*10 8pcs</p> 	<p>85285-RX case 1set</p> 
<p>H0010 - 9kg/cm Servo 1pc</p> 	<p>H0030-Ni-MH 7.2V 1800mAh 1pc H0031-Ni-MH 7.2V 3000mAh 1pc</p> 	<p>H0123-60A brushed ESC 1pc</p> 	<p>H0067 - 6kg/cm Servo 1pc</p> 

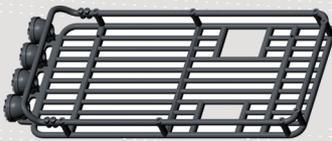
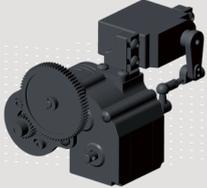
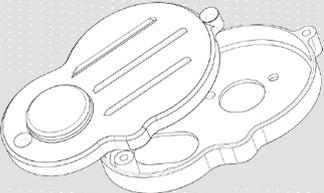
# Part List

<p>10817-Steering knuckle 2pcs</p> 	<p>10869-Body post 4pcs</p> 	<p>10873-Wheel Hub 4pcs</p> 	<p>10874-Steel frame rail link</p> 
<p>10875-Front bumper 1pc</p> 	<p>10876-Rear bumper 1pc</p> 	<p>10877-Body mount 2pcs</p> 	<p>10878-Upper linkage holder 2pcs</p> 
<p>10879-Lower linkage holder 2pcs</p> 	<p>10880-Body post adjusting plate 4pcs</p> 	<p>10882-Steering arm 2pcs</p> 	<p>10883-Central transmission bracket</p> 
<p>10884-Servo mount 1pc</p> 	<p>10885-Plastic ring 2pcs</p> 	<p>10886-Gear cover 1pc</p> 	<p>10887-Battery case support 1pc</p> 
<p>10888-RX box/ESC support 1pc</p> 	<p>10896-front shock mount L/R</p> 	<p>10897-rear shock mount L/R</p> 	<p>10898-bumper bracket F/R</p> 
<p>10899-body post fix plate 2pcs</p> 	<p>13005-lower linkage rod 2pcs</p> 	<p>13009-Central CVD outer half set</p> 	<p>13013-Soft crawler tyre/foam 2pcs</p> 

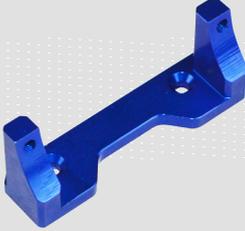
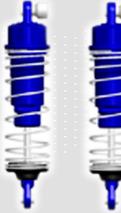
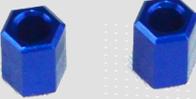
# Part List

<p>13014-Crawler rim 2pcs</p> 	<p>13015-Complete wheel 2pcs</p> 	<p>10059-Rear Shock Tower 2pc (Al)</p> 	<p>10423- Rear Shock Spring 2pcs</p> 
<p>10425-Rear Shock Shaft &amp; Piston Set 2sets</p> 	<p>10427-Rear Shock body 2pc (Al)</p> 	<p>13021-Front Axle set</p> 	<p>13022-Rear Axle Set</p> 
<p>R0277-Varanus Painted body 1pc (Red)</p> 	<p>R0278-Varanus Painted body 1pc (Orange)</p> 	<p>R0279-Varanus Painted body 1pc (Blue)</p> 	<p>R0285-Rambler clear body 1pc</p> 

# Additional Part List

<p>RH5190-E-clip 4mm 4pcs</p> 	<p>10711-Pinion gear 20T 1pc</p> 	<p>10734-Servo mount 2pcs</p> 	<p>13060-Button head Hex screws M3*20 6pcs</p> 
<p>13061-Button head Hex screws M3*40 6pcs</p> 	<p>13062-2speed transmission housing set</p> 	<p>13063-2speed transmission gear set</p> 	<p>13064-2speed motor mount 1pc</p> 
<p>13065-2 speed servo mount 1pc</p> 	<p>13066-2 speed shift plate 1pc</p> 	<p>13067-2 speed shaft set</p> 	<p>13068-2 speed servo saver set</p> 
<p>13072-2 speed set chassis plate</p> 	<p>13073-Rambler body roll cage set</p> 	<p>13074-Rambler body rear mirror set</p> 	<p>13075-Rambler body exhaust pipe</p> 
<p>13069-2 speed set(w/motor/3kg servo) 13070-2 speed set(w/o motor,servo) 13071-2 speed set(w/motor, w/o servo)</p> 	<p>13078-Body clips S. 6pcs</p> 	<p>H0121 -4CH TX+RX H0121TX -4CH TX H0121RX -4CH RX</p> 	<p>H0122 -5CH TX+RX+EC H0122TX -5CH TX H0122RX -5CH RX H0122EC -5CH Electronic controller</p> 
<p>13079-Gear cover 2pcs</p> 			

# Upgrade Part List

<p>10850-Bungee Cord 2pcs</p> 	<p>10986-Axle adaptor (Al)</p> 	<p>10989-Alum rear Axle</p> 	<p>11009-Steering knuckles Al. 2pcs</p> 
<p>11016-Central CVD coupler 2pcs (steel)</p> 	<p>11029-Rear Axle housing (Al) 1pc</p> 	<p>11030-Rear Link holder (Al) 1pc</p> 	<p>11031-Rear holder for rear shock support (Al)</p> 
<p>11032-Alum steering arm 2pcs</p>  <p>RH1001/RH1002/RH1011/RH1013</p>	<p>11033-Servo mount Alum. 1pc</p> 	<p>11035-MC31 Alum Shock 2pcs</p> 	<p>11037-Alum Rear Bumper</p> 
<p>11039-Alum RX Box/ESC Support 1pc</p> 	<p>11040-Alum Battery Case Support 1pc</p> 	<p>11042-Alum Steel Frame Rail Link 2pcs</p> 	<p>11043-Alum Body post 4pcs</p> 
<p>11044-Alum Servo mount 2pcs</p> 	<p>11048-MC31 Alum front shock mount L/R</p> 	<p>11049-MC31 Alum rear shock mount F/R</p> 	<p>11050-MC31 Alum bumper bracket F/R</p> 
<p>11052-Alum Steel frame rail link</p> 	<p>11053-Carbon Chassis frame rail set L/R</p> 	<p>H0128-Winches (Plastic case) 1set</p> 	