

1/16TH SCALE 4WD ELECTRIC POWER RACE TRUCK

INSTRUCTION MANUAL



ITEM NO.: 16889/16889A

RAVAGE
BRUSHLESS

14+
YEARS



BRUSHLESS POWER

FAST-FUN-DURABLE

LENGTH	WIDTH	HEIGHT	WHEELBASE	WHEEL DIA.	WHEEL WIDTH	MOTOR	GEAR RATIO
270mm	215mm	130mm	175mm	78mm	41mm	RC 390	1:10.71

This data is subject to change without prior notification.

BATTERY SAFETY INFORMATION

Disconnect and take out the battery pack from the vehicle when not in use. This will prevent damage from a leaking rechargeable battery pack. To prolong battery life, do not enable the vehicle to be used to a standstill resulting in the battery being completely drained. Fully charge the battery pack before each use. Do not leave battery pack uncharged for a long period of time. Store the battery pack in a dry, clean and cool condition.

- This product is not a toy. It is not intended for operators under 14 years of age, unless closely supervised by adults.
- This manual is subject to change without prior notice. The image may vary from the actual product.

USB CABLE APPLICATION

Please be noted that this kind of USB charger is now applied to your vehicle. This refined USB charger is exclusively applied to charge 2S (7.4V) Li-ion or Li-Po-battery pack.

The specification is: (Input: DC 5V,2A, Output: 7.4V=Max. 1.3A)

Please observe and follow the instruction to charge your battery. Take out the battery pack from the model, connect the battery pack with USB charging cable, and then insert the USB cable into the USB slot on the electronic equipment.

Red LED (Power LED) is solid on as long as the charger is plugged on .
(Even when no battery is load).



Red LED (Power LED) is solid on.

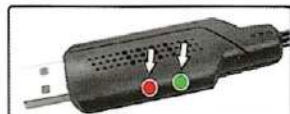
During charging, **Red LED** remains solid on , and **Green LED (Charging LED)** flashes slowly.



Charging: Green LED flashes slowly.
Malfunction: Red LED flashes rapidly.

Green LED (Charging LED) becomes solid on after the battery pack has been fully charged.

Alarm Indication : Red LED (Power LED) flashes rapidly which means the battery pack is damaged or over-discharged, which is not able to take to charge. If it is the case, please replace with the new battery pack.



Battery pack having been fully charged, both Red and Green LED are solid on.

Safety Precautions:

- Always leave a dry, clean and safe place for charging.
- Do not apply this USB cable to NON-rechargeable battery packs.
- Do not leave unattended whilst charging.
- Do not use a wet USB cable. Do not expose it to any source of heat and humidity.
- Kids are not allowed charge unless they are closely supervised by adults.
- Keep out of children's reach when charging.

Caution

- 1) Please read and understand the manual before using, assembling, and/or disassembling.
- 2) This product is not a toy, it is a high powered RC model, which is not intended for operators under 14 years of age.
- 3) Children less than 14 years old must not operate this product unless they are closely supervised by an adult.
- 4) Fully charge the battery pack before use. Be sure to disconnect and remove the batteries from both the transmitter and the car when not in use.
- 5) Do not attempt to run the product while low on battery power. Fully charge the battery pack before use. Stop driving immediately when slow running speed is observed. Failure to do such can over drain the pack and cause damage.

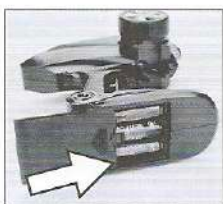
General Safety Information:

1. This manual is subject to change without prior notification.
2. This product is NOT a toy, and not intended for users under 14 years of age, unless closely supervised by an adult.
3. The specifications and images in the manual may vary from the actual product.
4. Operate this vehicle with due care and be always a good driver which is attentive to others.
5. Under no circumstances SHOULD the user operate the vehicle in crowds of people. Serious injury could result.
6. Never operate the vehicle on public streets or in public areas. This could cause traffic accidents, personal injury, and/or property damage. This vehicle is ONLY be driven on the open track which is for RC cars.
7. Do NOT use this vehicle to chase pets or other animals.
8. The receiver, steering servo and other electronics installed in this vehicle are merely splash water-resistant. Do not immerse this vehicle into water.
9. Regularly checking on the transmitter (radio controller) power is very important. Remove the batteries from the transmitter (radio controller) when not in use. Replace with fresh batteries if necessary. NEVER run this vehicle with low power from the transmitter.
10. When this vehicle becomes stuck, do NOT force on throttle. Failure to do so could cause abrupt damage to the motor and/or the ESC (Electronic Speed Controller). Check and clean the obstacles before running again.
11. Before running this vehicle check if the battery, wiring, and plugs are loose.
12. Be careful not to touch any moving parts when servicing or operating this vehicle.
13. To prevent excessive RPM from damaging the motor, and/or the drive-train components, we suggest reducing the throttle while performing in the air during jumps.
14. Never attempt to re-assemble motor, ESC, and receiver as these have been precisely calibrated at factory.
15. Always apply the factory optional/tooling parts to this vehicle.
16. To upgrade this vehicle requires the user to upgrade the entire radio/driving system (such as motor, ESC, receiver and so forth.) They should be strictly matched with factory components.
17. To run this vehicle, turn on the transmitter (radio controller) first and then the receiver.
18. To stop running this vehicle, turn off the receiver first, and then the transmitter.
19. Straighten the receiver antenna (if it comes with this vehicle) for best receiving performance. Never cut the receiver antenna, otherwise it could lose control of the vehicle.

2.4GHz Transmitter Introduction:



- 1) Steering Wheel
- 2) Throttle Trigger
- 3) Battery Compartment
- 4) Steering Trim
- 5) Steering Direction Reverse
- 6) Power Indicator (Red)
- 7) ON/OFF Power Switch
- 8) Steering D/R
- 9) Speed Selection
- 10) Throttle Forward /backward Reverse
- 11) Power Indicator (Green)
- 12) Bind/Mode Button



Slide and remove the battery cover from the transmitter, install three AA size batteries (1.5V, each), and replace the battery cover. Do not reverse the polarities when installing. Always use batteries of same brand and remove batteries when not in use. Make sure battery power is sufficient before use.

Power Indicators (Red/Green):

The lights indicate the current status of the transmitter batteries. When both power indicator lights are illuminated, the batteries have sufficient capacity to power the transmitter safely. If the green power indicator light begins to flash, the batteries are losing power and should be replaced soon. If both power indicator lights begin to flash, the batteries have only limited capacity to power the transmitter. In this case, the batteries should be replaced as soon as is safely possible.

Brushless ESC/Receiver



Power Switch

for 2S(7.4V) battery only



Power Switch:
Press and hold for 2-3 seconds to switch on or off.

- 1) Power Indicator
- 2) Servo Slot (3-pin) (for 3-wire Servo)
- 3) Aux. Slot (for LED light if it contains LED)
- 4) For Motor Plugs

Always straighten the antenna for the best performance.

DO NOT USE THE TRANSMITTER WITH LOW BATTERY POWER.

Starting Driving:

1) Switch on the Transmitter:

Slide the Power Switch to "ON" position. Make sure the transmitter has enough battery power. Please replace with the new batteries for transmitter if the LED on transmitter blinks slowly. **Do NOT** move the trigger and the steering wheel while the transmitter is waiting for binding.



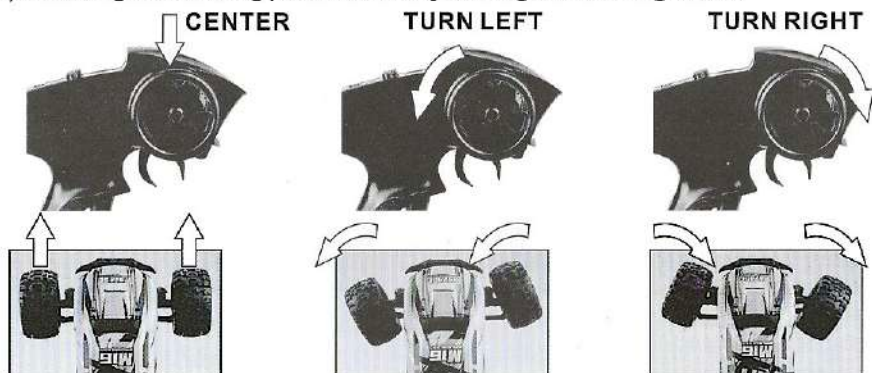
2) Switch on the ESC/Receiver:

Press and hold the Power Switch on ESC/Receiver for 2-3 seconds to turn on the car. It will take a few seconds before LEDs (on Transmitter and the ESC/Receiver) stop blinking and become solid on, which indicates that the car is bound with the transmitter. Binding operation may fail with low battery power. Please stop and charge the battery pack once the car jerks, cogs, or moves slowly. Under the circumstance of flat battery power, the car may have steering but not throttle. In case the car runs harshly or noisily, stop to check if there is something clogged in the drive train.



Press and hold for 2-3 seconds to switch on

3) Checking the steering performance by turning the steering wheel:



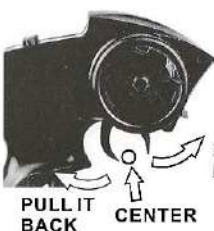
A) With the steering wheel centered, the vehicle runs in a straight line.

Slight adjustment by flipping the steering wheel is occasionally needed. It largely depends on the terrains that you drive.

B) Turn the steering wheel to the left, and the car turns left.

C) Turn the steering wheel to the right, and the car turns right.

4) Throttle Control:



Pull the trigger to accelerate, release it to slow the speed, and push to brake. Pull it to the Center Position and push it again to go reverse.

5) Steering Trim Knob:

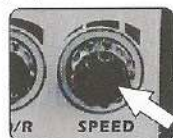


Steering Trim

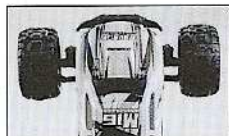


Left Knob. Used to set the steering neutral point on front wheels. If the front wheels on the vehicle veer in one direction while the steering wheel is centered, turn this knob in the opposite direction until the vehicle drives straight.

6) Speed Knob:



Speed Control



Right Knob. The Speed Switch is actually the throttle limiter. Turning down the knob all the way will reduce the maximum speed down to 40% of maximum speed. Turning up the knob will increase max speed up to 100%. It is advisable to operate the vehicle on the slower setting until you have had enough practice before operating at higher speeds.

7) Steering Direction Reverse Switch:



Steering Reverse



If the vehicle turns right when you steer left, flip "Steering Reverse" switch. If the vehicle turns left when you steer right, flip "Steering Reverse" switch.

8) Throttle Forward/backward Reverse Switch:

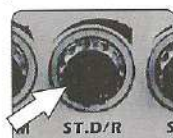


Throttle Reverse

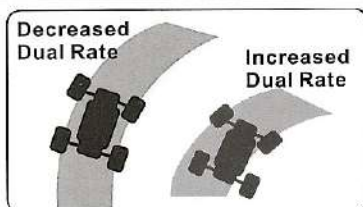


If the vehicle goes backwards when you pull the trigger, flip this switch.
If the vehicle goes forwards when you push the trigger, flip this switch

9) Steering Dual Rate (D/R)



Steering Dual Rate (D/R)



How to use the steering dual rate (Steering D/R) knob?

The steering dual rate knob allows you to change the amount of steering servo travel compared to the amount of physical movement of the steering wheel. The amount that you increase the steering dual rate is proportional with how much you move the steering dual rate knob.

In addition, adjustments can be made while you are driving. So you can fine-tune the steering during a race, etc. By increasing the steering dual rate (turn the knob clockwise), you can make the steering servo travel more which might prevent your vehicle from pushing during turns. By reducing the steering dual rate (turn the knob counter-clockwise), you can make the steering servo travel less which might reduce the amount of turn in in the corners.

Charging The Battery Pack:

Use only the provided charger to charge the battery pack.



WARNING!

- Never leave the battery pack charging unattended.
- Never use a damaged or wet charger.
- Children under 14 years old should NEVER charge the battery packs.
- Always remove the battery pack from the vehicle during charging.

1. Do not use batteries that appear swollen, deformed, damaged, or wet.
2. Connect the USB charger only to a power adapter with an output of 5V, 2A or 5V, 1A.
Using a higher output adapter can damage both the batteries and the USB charger.
3. Do not leave batteries idle for long periods; fully charge them before each use.
4. Never attempt to charge batteries that are wet.
5. Store batteries in a cool, dry place away from high temperatures.

Battery Care:

Charging Instructions:

- 1) Connect the Battery Pack: Attach the battery pack to the USB charger. Refer to Figure 1.
- 2) Power Source: Plug a compatible phone charger into a wall outlet. See Figure 2.
- 3) Connect USB Charger: Insert the USB charger into the phone charger. Refer to Figure 3.

***Note:** Phone charger is not supplied. Do not use a phone charger with an output greater than 5V.



Fig.1

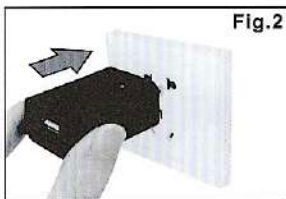


Fig.2

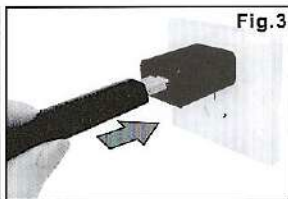
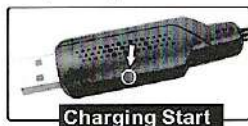


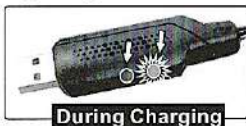
Fig.3

Charging Indicators:

1. **Charging Start:** A red light will appear on the USB charger when it is powered on.
2. **During Charging:** The red light stays on, and a green light will flash to indicate the battery is charging.
3. **Fully Charged:** Both the red and green lights will turn solid when the battery is fully charged.



Charging Start



During Charging



Fully Charged

Troubleshooting LEDs:

1. **Flashing Red LED:** Indicates a damaged or drained battery that cannot be recharged.
Replace the battery immediately.
2. **Both LEDs Off:** This suggests that the USB charger may be damaged.

Battery charging times when connected to a wall charging slot or extension socket:
It typically takes about 2.5-3 hours to fully charge the battery.

Note: Charging times may be longer when the USB is connected to a PC or laptop due to the lower power output compared to a wall outlet. You can use a compatible phone charger with an output of 5V, 2A to potentially reduce charging time. Do not use a phone charger with an output greater than 5V.

Stopping Driving:



Press and hold for 2-3 seconds to switch off

OFF ← ON

- 1) Switch off the ESC/Receiver: **Press and hold the button for 2-3 seconds to switch off.**
- 2) Switch off the Transmitter: **Slide the Power Switch to "OFF" position.**
- 3) Disconnect and remove the battery pack from the car when not in use. Fully charge the battery pack before storing it.
- 4) Make sure there are no damage parts before storing it. Check gears for wear, debris or broken/slipping teeth. Check for loose screws in the chassis. And make sure the wheels are firmly before use. Clean the car with a soft and dry cloth before storing it. Store the vehicle in a clean and dry place out of children's reach. Do NOT expose the vehicle to any source of heat and water.

Troubleshooting:

A. The vehicle does not work at all:

- 1) Check to ensure that radio controller and car are switched on.
- 2) Check if there are damaged parts/wires/connectors, repair or replace if necessary.
- 3) Car battery is flat. Charge the battery pack.

B. The vehicle runs slowly:

- 1) Car battery is flat. Charge the battery pack.
- 2) Check if the vehicle is properly geared and no dirty or stripped gears are found. Make sure there is a reliable gear mesh for motor pinion and the spur gear.
- 3) Check if there is something stopping the moving parts and clean them immediately.

C. The throttle works but not the steering:

- 1) Check if the servo feels jammed, and try centering it gently if it is the case.
- 2) Check if the servo link is loose or the servo breaks. Repair or replace if needed.

D. It steers, but throttle is uncontrollable:

- 1) Check if there are damaged parts in the overall drive train.
- 2) Check the battery power both for radio controller and the car.

E. The vehicle runs noisily:

- 1) Check gear mesh between spur gear and motor pinion.
- 2) Check if there are stripped and/or dirty gears.
- 3) Check if there are some parts getting damaged in the overall drive train.

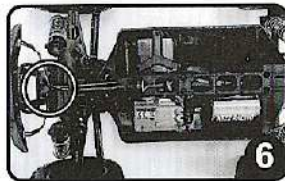
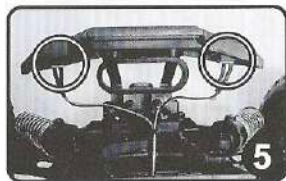
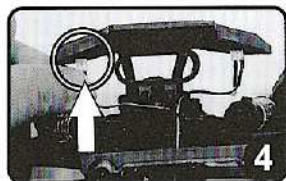
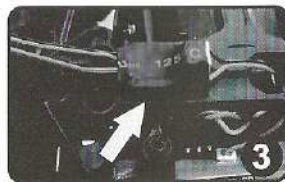
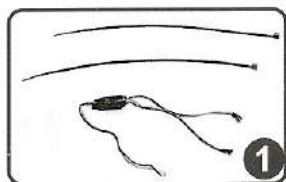
F. The vehicle is found one direction's steering travel is not same to the other.

Please tune the Steering Trim until Steering Center Point is fixed.

G. Not able to charge the batteries:

Check if either the charger or the batteries is damaged, or batteries are over-discharged.

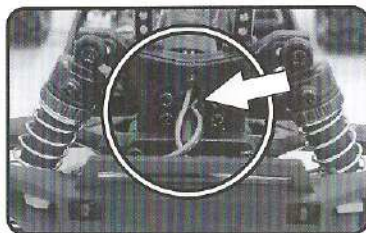
Headlight Installation



- 1) The headlight, which is provided as a gift in the box, is not installed on the car.
- 2) Please take out the headlight, the zip ties, and the adhesive tape from the box.
(See Photo 1)
- 3) Please plug the headlight plug into the slot on the ESC/Receiver. (See Photo 2).
Note: Do not force while plugging or unplugging.
- 4) Please apply the adhesive tape to the headlight board and stick it on the upper deck as shown in Photo 3.
- 5) Gently insert the headlights into the slots on the back of the front bumper. Make sure they are in place. (See Photo 4 and Photo 5)
- 6) Please keep the wires in order and bind them up with the aid of the zip ties. (See Photo 6)

Tip:

Enable the headlight wire to go through the slot on the front shock tower. Gently insert the headlights into the slots on the back of the front bumper. Make sure they are in place.

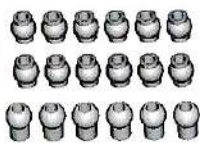


PART LIST-1

M16001	M16002	M16003	M16004
			
Chassis	Front Gear Box Top Housing	Rear Gear Box Top Housing	Front Bumper Assembly
M16005	M16006	M16007	M16008
			
Rear Bumper Assembly	Front Lower Suspension Arms(Left/Right)	Front Upper Suspension Arms(Left/Right)	Rear Lower Suspension Arms(Left/Right)
M16009	M16010	M16011	M16012
			
Rear Upper Links+Steering links+Servo Link	Shock Towers(Front and Rear)	Body Posts	Shock Absorbers(2P)
M16013	M16014	M16015	M16016
			
Steering Hubs	Rear Hubs	Front/Rear Drive Shafts	Diff. Outdrive Cups
M16017	M16018	M16019	M16020
			
Steering Bushes+Ackerman Plate	Diff. Complete (Front/rear)	Servo Top Plate+Motor Guard	Spur Gear+Drive Pinions

For continuous improvements , the images may vary from your received model.

PART LIST-2

M16021	M16022	M16023	M16024
 Servo Saver Assembly	 Centre Drive Shaft	 Front Upper Suspension Hinge Bolts	 Front/Rear Lower Suspension Hinge Pins
M16025	M16026	M16027	M16028
 Rear Hub Pins (4P)	 Wheel Hex. Pins (8P)	 Diff. Assembly	 Steering Posts (4P)
M16029	M16030	M16031	M16109
 Diff. Posts+Pins	 Steering Pivot Balls (8P)	 Plastic Pivot Balls Complete	 Servo (3-wire plug, for brushless Version)
M16110V2	M16111	M16035	M16036
 Brushless ESC/Receiver	 Brushless Motor	 Motor Pinions(14T)+ Ser Screw	 Motor Heatsink
M16120T	M16055	M16130	M16131
 Battery Pack(Li-ion 7.4V,1300mAH), W/Dean-Plug	 Wheels Complete	 Truck Body (Yellow)	 Truck Body (Blue)

For continuous improvements , the images may vary from your received model.

PART LIST-3

M16050	M16038	12010	P010
			
Battery Binding Strap	Wheels Complete	Wheel Hex.	Zip Ties (8P)
18859E-E001	793127	635953	M16060
	 8P	 8P	 8P
USB charger	Ball Bearings ($\phi 7.93 \times 12.7 \times 3.95 \text{mm}$)	Ball Bearings ($\phi 6.35 \times 9.53 \times 3.17 \text{mm}$)	Wheel Lock Blots
S007	S029	S058	S088
 12P	 12P	 12P	 12P
Pan head Self Tapping Screws PBHO2.8mm	Pan head Self Tapping Screws PBHO2.6*10mm	Countersunk Screws KM2.5*8	Countersunk Self Tapping KBHO2.6*12mm
S103	S128	S161	S204
 12P	 12P	 12P	 12P
Set Screw 2.5x2.5mm	Countersunk Self Tapping Screws KBHO2.3*6mm	Pan head Self Tapping Screws PBHO2.6*12mm	Pan head Self Tapping Screws PBHO2*12mm
S225	S226	S227	16014
 12P	 12P	 12P	 8P
Pan head Self Tapping Screws PBHO2.3*4mm	Countersunk Self Tapping Screws KBHO2.3*12mm	Flange Head Self Tapping Screws PWTBO2.6*12mm	Steering Hub Step Screws

For continuous improvements , the images may vary from your received model.

PART LIST - 4

H165	M16061	M16106	M16108
 Body Clips (6 pairs)	 Headlight LED	 Metal Rear Dogbones	 Wheelie Bar Assembly
M16100A	M16101	M16102	M16103
OPTIONAL  Aluminum Capped Oil Filled Shocks	OPTIONAL  Heavy Duty Center Drive Shaft + Outdrive Cups + Pins + Screws (suited for metal spur gear version)	OPTIONAL  Machined Metal Spur Gear	OPTIONAL  Machined Metal Diff. Gears + Diff. Pinions + Drive Gear
M16104	M16105	M16107	M16150
OPTIONAL  Machined Metal Diff. Outdrive Cups + Pins	OPTIONAL  Metal Front CVD Shafts + Pins + Lock Nut M4	OPTIONAL  Metal Rear Wheel Shafts + Pins + Lock Nut M4	OPTIONAL  Li-PO Soft Pack 7.4V, 1000mAh, 25C (Dean-Plug)
M16035T			
OPTIONAL  Motor Pinions (13T) + Set Screw			

For continuous improvements, the images may vary from your received model.

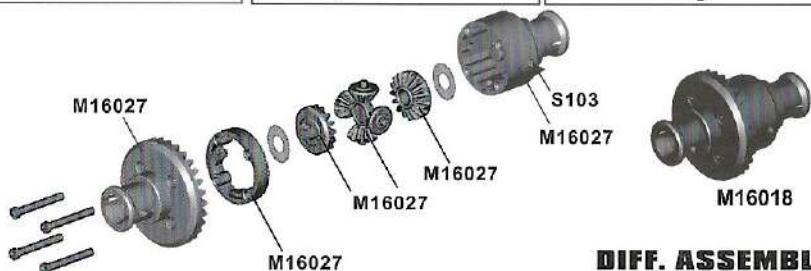
ASSEMBLY VIEW-1

SHOCK ASSEMBLY



Adjusted Ring: Rotate this ring to adjust spring tension for desired suspension travel.

M16012



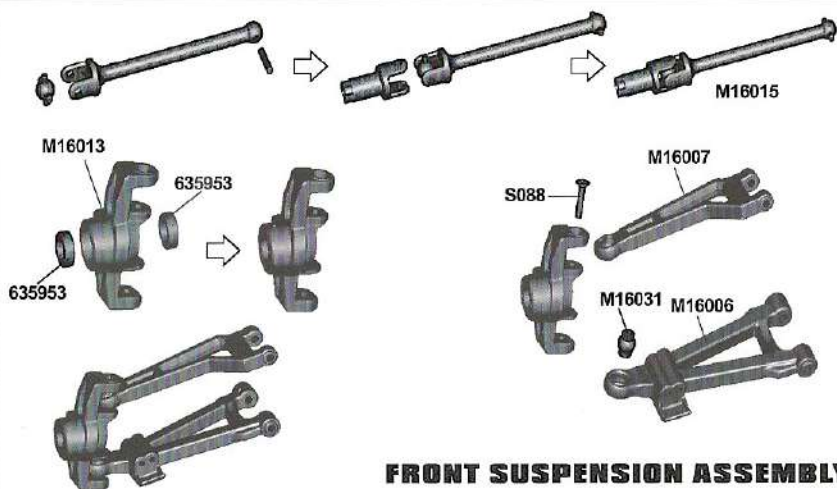
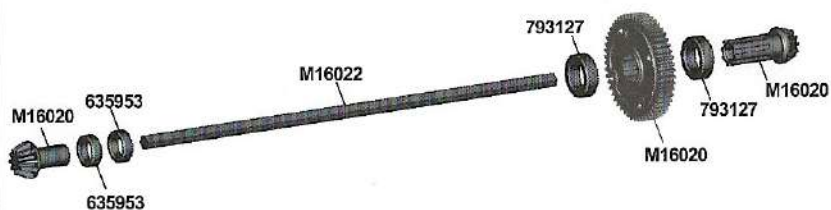
DIFF. ASSEMBLY



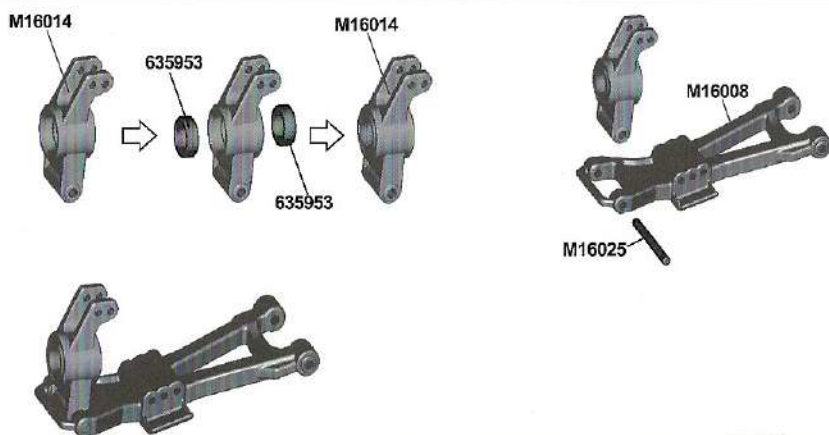
STEERING ASSEMBLY

ASSEMBLY VIEW-2

CENTER DRIVE ASSEMBLY



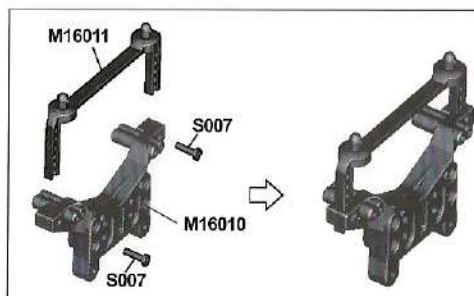
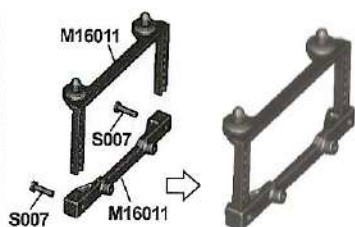
FRONT SUSPENSION ASSEMBLY



REAR SUSPENSION ASSEMBLY

ASSEMBLY VIEW-3

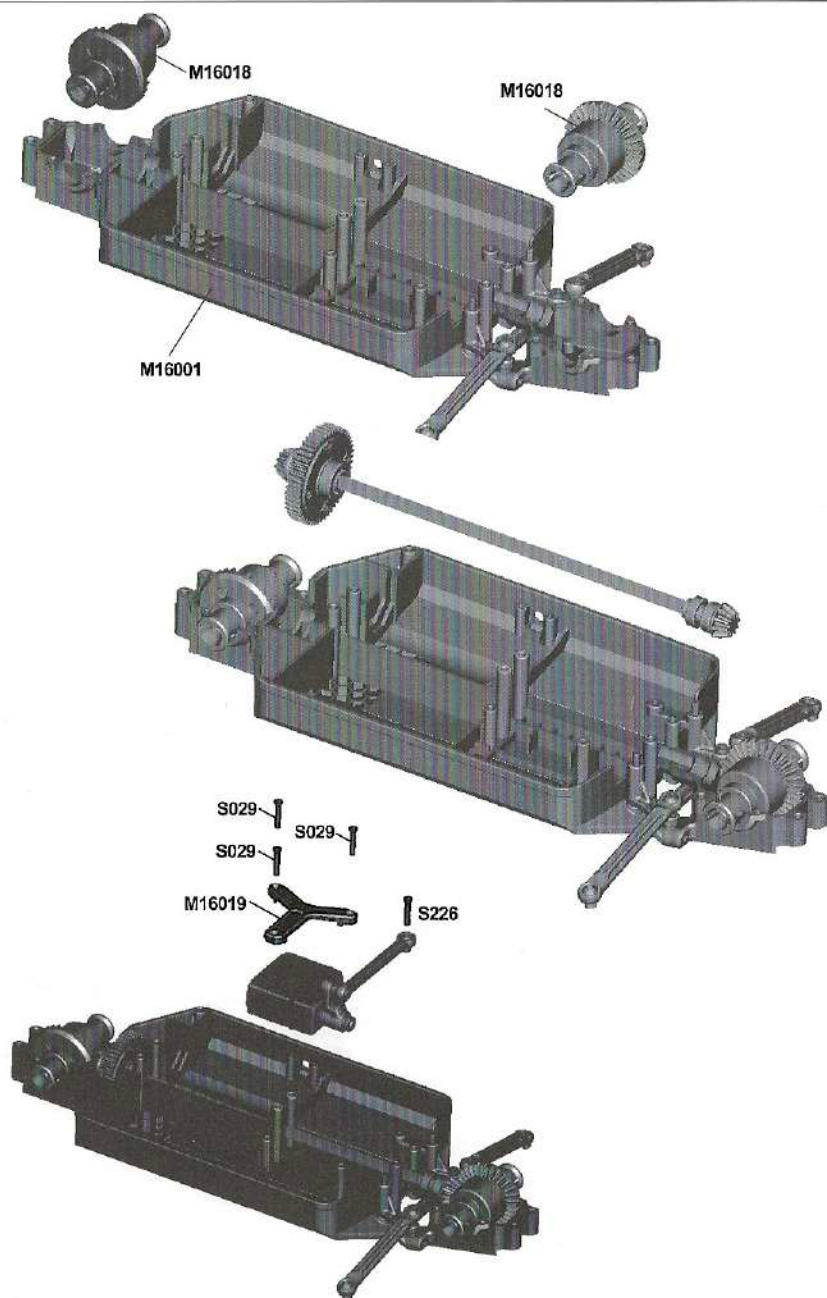
FRONT/REAR SHOCK TOWER BODY POST ASSEMBLY



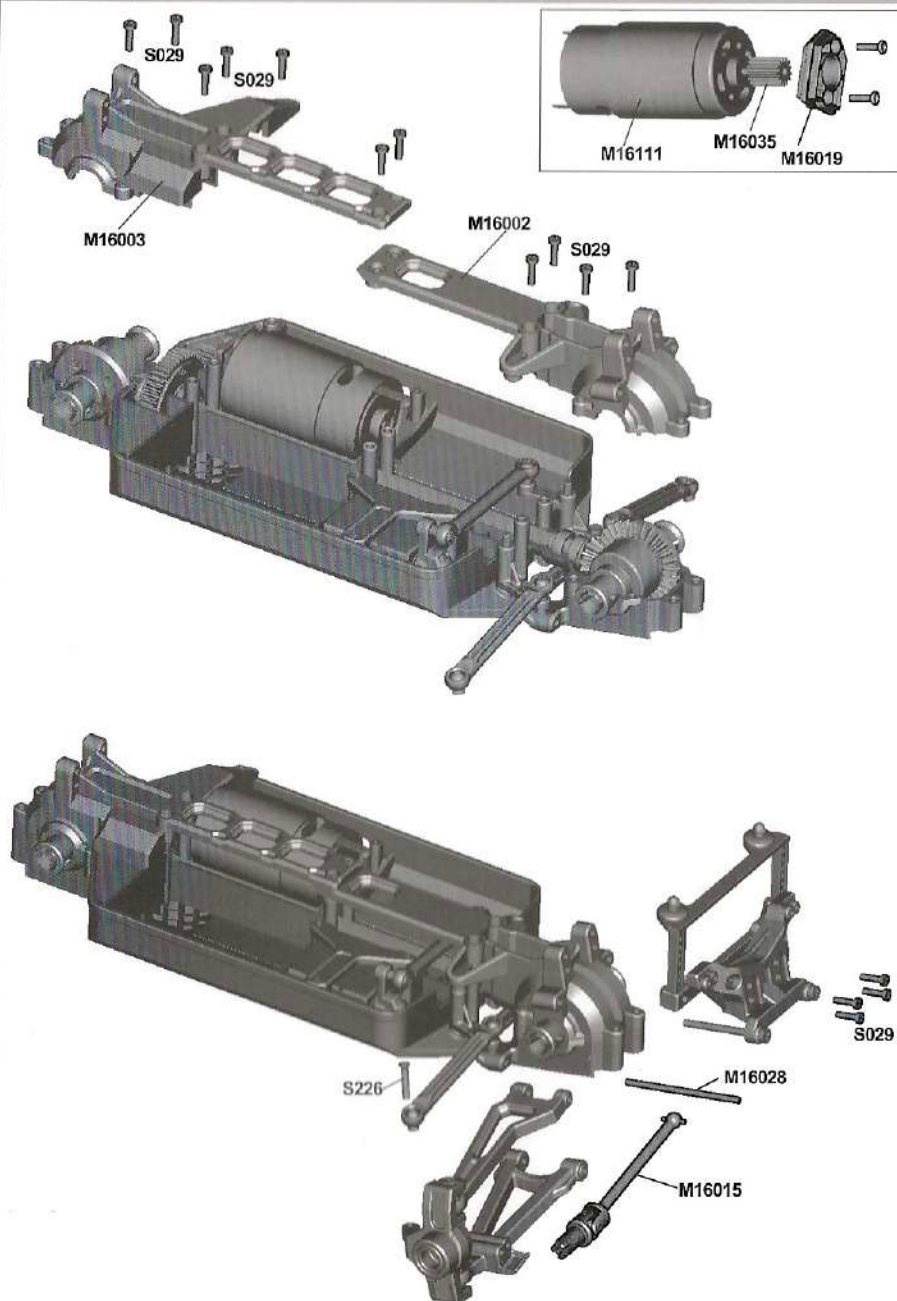
BUMPER ASSEMBLY



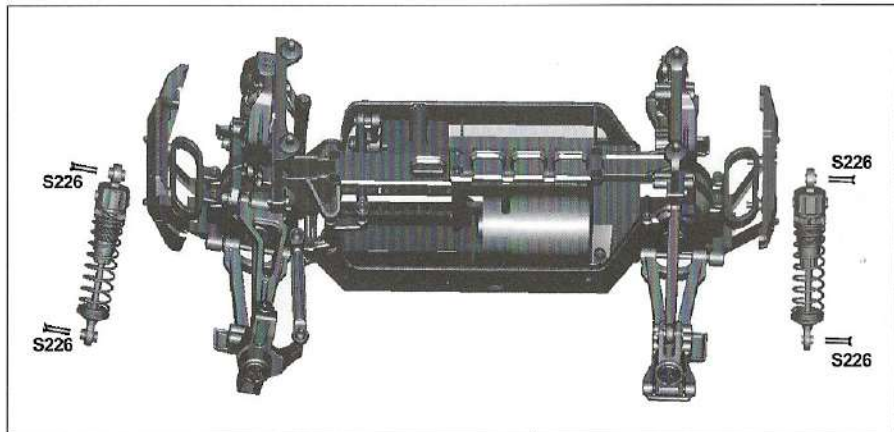
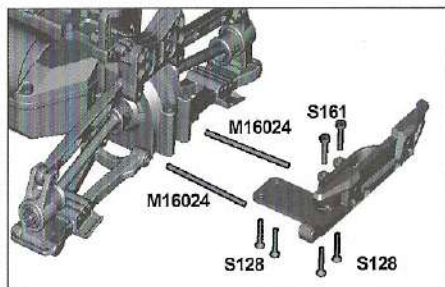
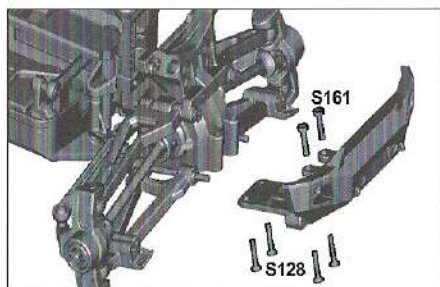
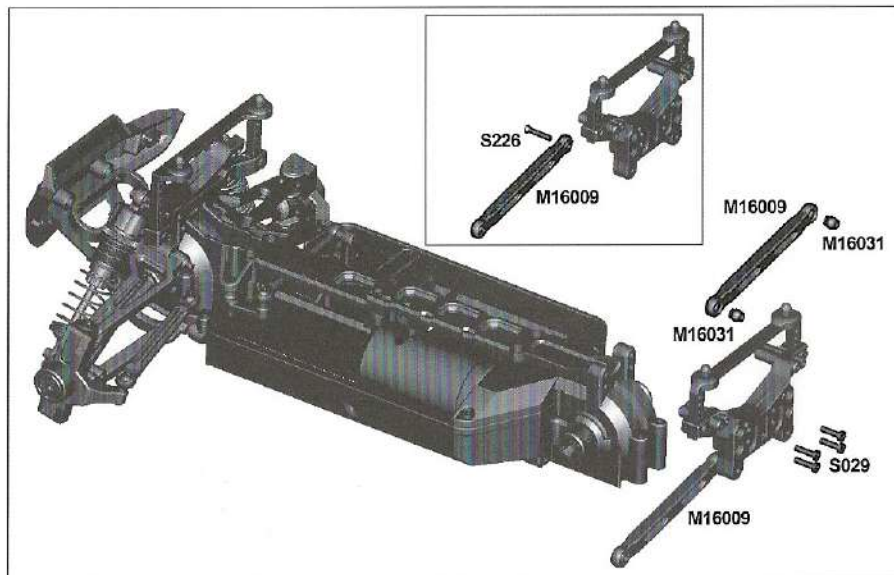
ASSEMBLY VIEW-4



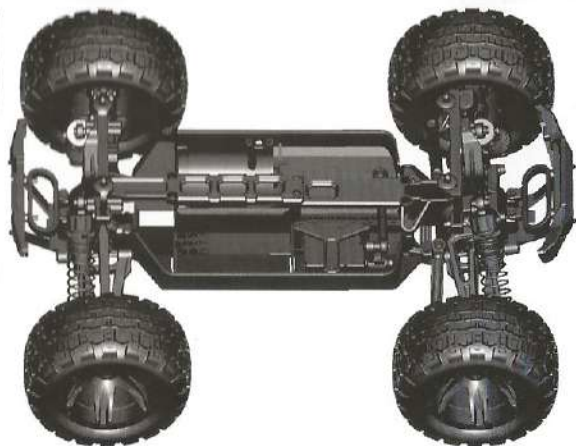
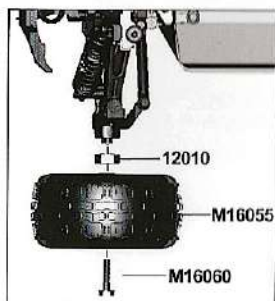
ASSEMBLY VIEW-5



ASSEMBLY VIEW-6



ASSEMBLY VIEW-7



Optional Wheelie Bar Installation

1/16TH SCALE 4WD ELECTRIC POWER RACE TRUCK

Thank you for purchasing our product.

If you are not familiar with radio controlled model, we **STRONGLY** recommend that you seek the experts for reliable advice. Wish you safe enjoyment.

This product **MUST** be handled with due care. We understand high speed is our long pursuit. However, safety is also is the regulation to observe.

Please operate your car in a spacious area and do not operate it where people are congested. Do not attempt to assemble or dissemble the electronic units, and when it is not in use, you **MUST** keep it out of children's reach.

This product is fully assembled at factory. Malfunction and damage that result from misuse and/or abuse will void the warranty. Contrived modification will also void the warranty.