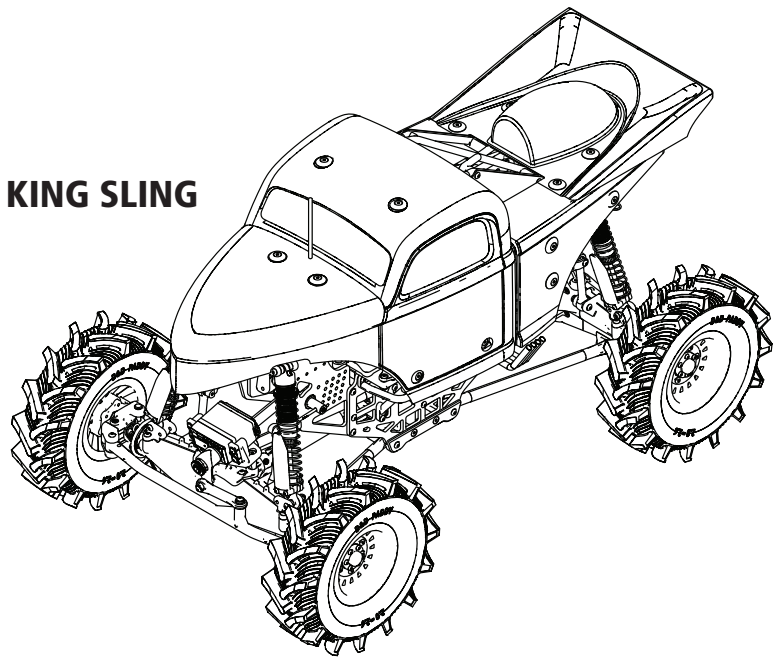




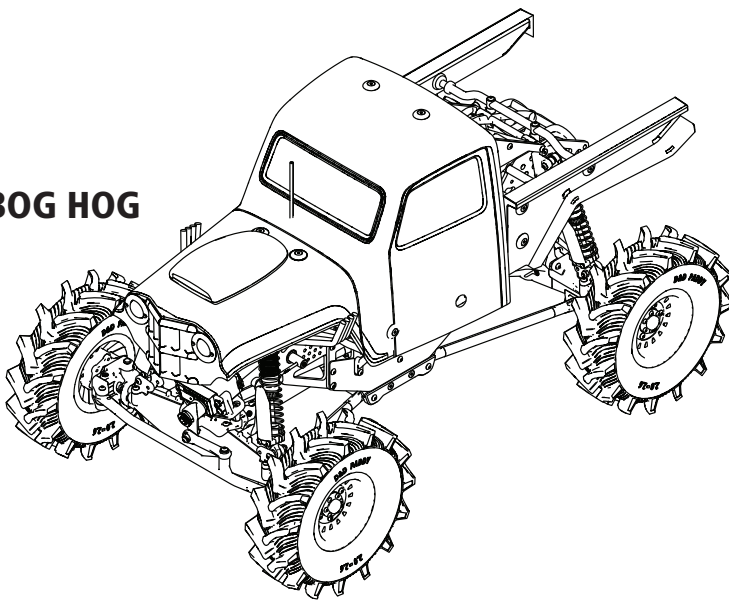
# BOG HOG KING SLING

BOG HOG / KING SLING 4WD MEGA TRUCK RTR

KING SLING



BOG HOG



BOG HOG  
LOS04024T2



KING SLING  
LOS04024T1

Scan the QR code and select the Manuals & Support tab from the product page for the most up-to-date information.

Scannen Sie den QR-Code und wählen Sie auf der Produktseite die Registerkarte Handbücher und Unterstützung, um die aktuellsten Informationen zu erhalten.

Scannez le code QR et sélectionnez l'onglet Manuals and Support sur la page du produit pour obtenir les informations les plus récentes.

Scannerizzare il codice QR e selezionare la scheda Manuali e Supporto dalla pagina del prodotto per le informazioni più aggiornate.

**INSTRUCTION MANUAL**  
**BEDIENUNGSANLEITUNG**  
**MANUEL D'UTILISATION**  
**MANUALE DI ISTRUZIONI**

Before operating this vehicle, please read all printed materials thoroughly. Horizon Hobby is not responsible for inadvertent errors in this manual.

**HORIZON**  
H O B B Y

## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit horizonhobby.com or towerhobbies.com and click on the support or resources tab for this product.


### MEANING OF SPECIAL LANGUAGE

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:


**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

**CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

 **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 cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

 **WARNING AGAINST COUNTERFEIT PRODUCTS** Always purchase from a Horizon Hobby, LLC authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum technology.

**Age Recommendation: Not for children under 14 years. This is not a toy.**

### SAFETY PRECAUTIONS AND WARNINGS

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or property of others.

This model is controlled by a radio signal subject to interference from many sources outside your control. This interference can cause momentary loss of control, so it is advisable to always keep a safe distance in all directions around your model as this margin will help avoid collisions or injury.

- Never operate your model with low transmitter batteries.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Never operate the model in the street or in populated areas for any reason.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) you use.
- Keep all chemicals, small parts and anything electrical out of the reach of children.

- Never lick or place any portion of the model in your mouth as it could cause serious injury or even death.
- Exercise caution when using tools and sharp instruments.
- Take care during maintenance as some parts may have sharp edges.
- Immediately after using your model, do NOT touch equipment such as the motor, electronic speed control and battery, because they generate high temperatures. You may burn yourself seriously touching them.
- Do not put fingers or any objects inside rotating and moving parts, as this may cause damage or serious injury.
- 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 when checking the operation of the radio equipment.

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BOX CONTENTS	INCLUDED COMPONENTS	REQUIRED, NOT INCLUDED	RECOMMENDED SKU
Losi® Bog Hog / King Sling Mega Truck RTR (LOS04024T1 LOS04024T2)	Spektrum™ DX3™ SMART Transmitter (SPMR2340)	50C or Higher 2S – 4S Hardcase LiPo with IC5	2S – 4S Smart Hardcase LiPo with IC5 2S: SPMX50002S50H5 3S: SPMX50003S50H5, 4S: SPMX50004S50H5
	Spektrum SR315 3 Channel Telemetry Surface Receiver (SPMSR315)		
	Spektrum S614S Waterproof Servo (SPMS614S)		
	Spektrum Firma™ SMART 130A Brushless ESC (SPMXSE1130)	2S-4S Lipo Charger	Good: Spektrum S150 AC/DC Smart Charger 1x50W (SPMXS1070. Requires SPMXCA507 IC3 Battery to IC5 Device adapter) Better: S1200 G2 AC 1x200@ Smart Charger (SPMXC2020)
	Spektrum Firma 3668 2800Kv 4-Pole Brushless Motor (SPMXSM3400)		
	4 AA batteries (for transmitter)		
King Sling Body (included with LOS04024T1) Bog Hog Body (included with LOS04024T2)			

## SPEKTRUM SMART TECHNOLOGY

The Bog Hog / King Sling Mega Truck includes Spektrum Smart Technology in the ESC and receiver, which can provide you with telemetry information like battery voltage from your vehicle. The included DX3 Smart transmitter features an LED display to show the battery level of your vehicle during operation.

For additional Smart functionality, consider upgrading to a more advanced Smart Technology compatible Spektrum transmitter like the DX5C (SPMR5100- transmitter only), or DX5 Pro (SPMR5010- transmitter only). Use Spektrum Smart batteries to power your Bog Hog / King Sling Mega Truck to take full advantage of Smart Technology, which can communicate detailed battery data through the system as well. Visit [www.SpektrumRC.com](http://www.SpektrumRC.com) for more information.

## WATER-RESISTANT VEHICLE WITH WATERPROOF ELECTRONICS

Your new Horizon Hobby vehicle has been designed and built with a combination of waterproof and water-resistant components to allow you to operate the product in many "wet conditions," including puddles, creeks, wet grass, snow and even rain.

While the entire vehicle is highly water-resistant, it is not completely waterproof and your vehicle should NOT be treated like a submarine. The various electronic components used in the vehicle, such as the Electronic Speed Control (ESC), servo(s) and receiver are waterproof, however, most of the mechanical components are water-resistant and should not be submerged.

Metal parts, including the bearings, hinge pins, screws and nuts, as well as the contacts in the electrical cables, will be susceptible to corrosion if additional maintenance is not performed after running in wet conditions. To maximize the long-term performance of your vehicle and to keep the warranty intact, the procedures described in the "Wet Conditions Maintenance" section below must be performed regularly if you choose to run in wet conditions. If you are not willing to perform the additional care and maintenance required, then you should not operate the vehicle in those conditions.



**CAUTION:** Failure to exercise caution while using this product and complying with the following precautions could result in product malfunction and/or void the warranty.

### GENERAL PRECAUTIONS

- Read through the wet conditions maintenance procedures and make sure that you have all the tools you will need to properly maintain your vehicle.
- Not all batteries can be used in wet conditions. Consult the battery manufacturer before use. Caution should be taken when using Li-Po batteries in wet conditions.
- Most transmitters are not water-resistant. Consult your transmitter's manual or the manufacturer before operation.
- Never operate your transmitter or vehicle where lightning may be present.
- Do not operate your vehicle where it could come in contact with salt water (ocean water or water on salt-covered roads), contaminated or polluted water. Salt water is very conductive and highly corrosive, so use caution.
- Even minimal water contact can reduce the life of your motor if it has not been certified as water-resistant or waterproof. If the motor becomes excessively wet, apply very light throttle until the water is mostly removed from the motor. Running a wet motor at high speeds may rapidly damage the motor.
- Driving in wet conditions can reduce the life of the motor. The additional resistance of operating in water causes excess strain. Alter the gear ratio by using a smaller pinion or larger spur gear. This will increase torque (and motor life) when running in mud, deeper puddles, or any wet conditions that will increase the load on the motor for an extended period of time.

## QUICK START

Please read the entire manual to gain a full understanding of the Bog Hog / King Sling Mega Truck RTR vehicle, fine-tuning the setup and performing maintenance.

1. Read the safety precautions found in this manual.
2. Charge a battery for the vehicle. Refer to the included charging warnings and instructions for battery charging information.
3. Install the AA batteries in the transmitter. Only use alkaline or rechargeable batteries.
4. Install the fully charged battery in the vehicle.
5. Power ON the transmitter and then the vehicle. Wait 5 seconds for the ESC to initialize. Always power the transmitter ON before the vehicle and power it OFF after the vehicle has been powered OFF.
6. Check the steering and throttle control directions. Verify that the servos are moving in the correct direction.
7. Drive your vehicle.
8. Perform any necessary maintenance.

## CHARGING THE BATTERY

The Bog Hog / King Sling Mega Truck requires a 2S, 3S or 4S hardcase LiPo Battery with IC5 plug (not included). The included Spektrum™ Firma™ SMART 130A Brushless ESC (SPMXSE1130) has an IC5™ battery connector. We recommend a Spektrum 5000mAh 2S 7.4V 100C SMART Lipo Battery (SPMX50002S100H5), Spektrum 5000mAh 3x 11.1V 100C Smart Lipo Battery (SPMX50003S100H5) or Spektrum 4S 14.4V 100C Smart Lipo Battery (SPMX50004S100H5). We recommend charging Spektrum SMART Batteries paired with Spektrum Smart Chargers because Smart chargers will automatically configure the charge

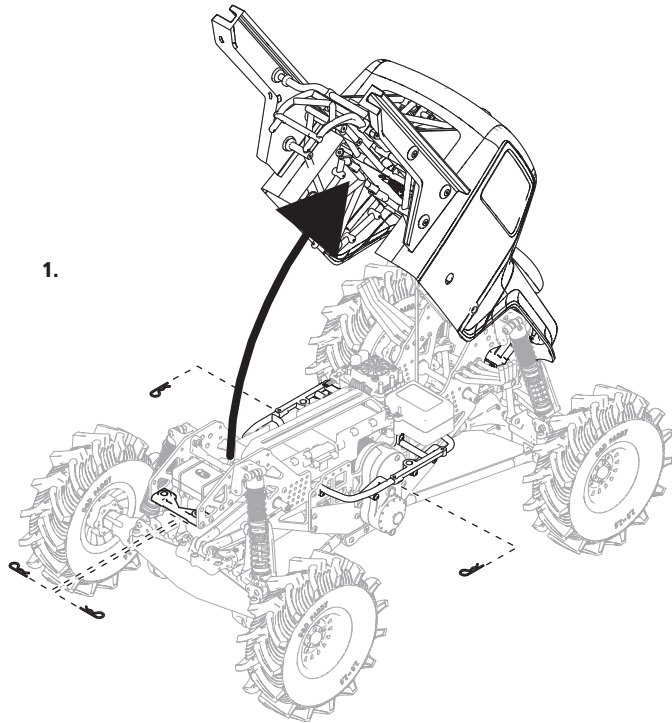
settings for Smart batteries. We recommend the Spektrum S1200 G2 AC 1x200W Smart Charger (SPMXC2020).

Refer to your battery and charger manuals for usage, safety, and charging information.

## INSTALLING THE BATTERY

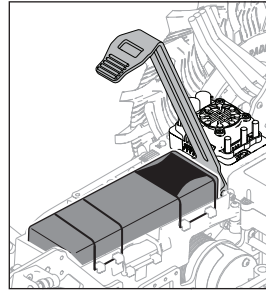
1. There are four body clips securing the body, hidden under the roll cage. Remove the two body clips from the front and the body clip from each side of the vehicle as shown.
2. Lift the body to access the chassis.
3. Install the fully charged batteries in the vehicle.
4. Secure the battery with the rubber elastomer strap.
5. Connect the battery to the ESC.

**IMPORTANT:** Secure the battery, motor and ESC wires so they do not interfere with the drivetrain or movement of the flip top cage.



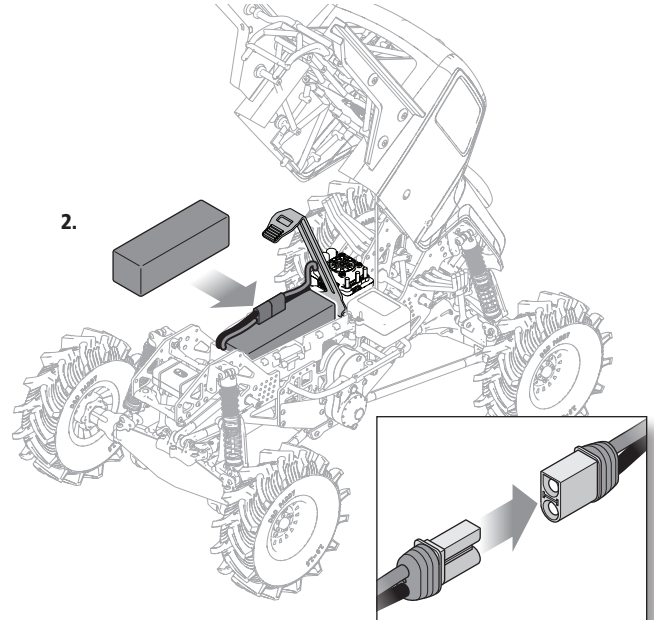
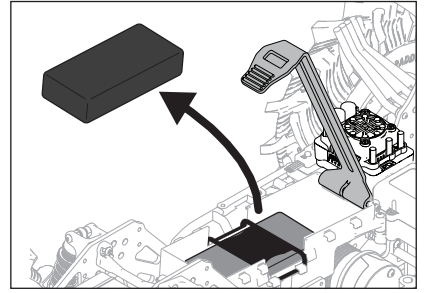
### Standard battery optional installation:

Standard length battery with additional cross battery straps.



### Short battery option installation:

Remove the foam block and place the short battery into low center of gravity location and secure with the Battery Strap.



## TRANSMITTER FUNCTIONS

### A/B. Channel 3 Button

### C. Throttle/Brake

### D. Steering Wheel

### E. Steering Rate

Adjusts the end point of the steering

### F. Brake Rate

Adjusts the braking end point.

### G. Steering Trim

Adjusts the steering center point. Normally, the steering trim is adjusted until the vehicle tracks straight.

### H. Throttle Trim

Adjusts the throttle neutral point

### I. SMART Battery Level Indicator

### J. Servo Reversing

To reverse the Throttle (TH) or Steering (ST) channel, switch the position of the correlating switch—"N" is for normal, "R" is for reverse.

### K. Throttle Limit

Limits throttle output to 50/75/100%

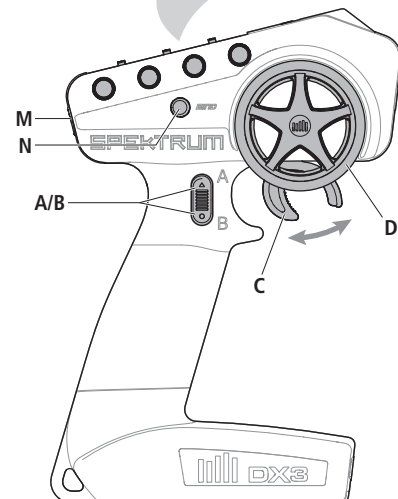
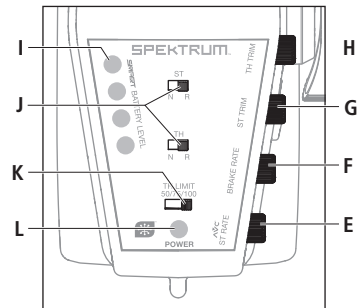
Select 50% or 75% for less experienced drivers or when you are driving the vehicle in a small area.

### L. Power LED

- **Solid red lights:** Indicates radio connectivity and adequate battery power
- **Flashing red lights:** Indicates the battery voltage is critically low. Replace batteries

### M. Power Button

### N. Bind Button



### TRANSMITTER BATTERY INSTALLATION

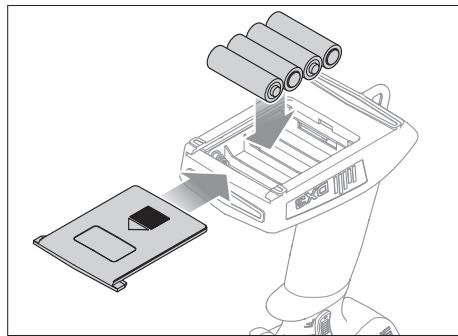
This transmitter requires 4 AA batteries

1. Remove the battery cover from the transmitter.
2. Install the batteries as shown.
3. Install the battery cover.

**CAUTION:** Never remove the transmitter batteries while the model is powered ON. Loss of model control, damage, or injury may occur.

**CAUTION:** If using rechargeable batteries, charge only rechargeable batteries. Charging non-rechargeable batteries may cause the batteries to burst, resulting in injury to persons and/or damage to property.

**CAUTION:** Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to national regulations.



### SR315 RECEIVER

#### Specifications

**Type:** Dual Protocol 3 Ch Receiver (SLT/DSMR)

**Dimensions (LxWxH):** 32.5 x 21.5 x 12.4mm

**Antenna Length:** 90mm

**Channels:** 3

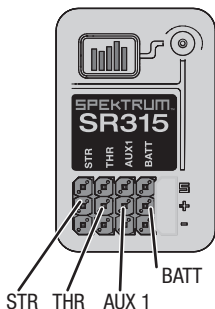
**Weight:** 6g

**Band:** 2.4GHz

**Voltage Range:** 3.5–9.6V

**Bind Type:** Bind Button

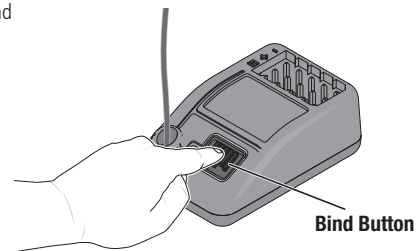
**Failsafe:** Hold the steering wheel and throttle trigger in the desired failsafe positions during binding



### BINDING THE RECEIVER

Binding is the process of programming the receiver to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. In the event of a loss of signal the receiver will default the servo outputs to the failsafe position. The failsafe positions are set during binding; Leave the throttle and steering at the neutral positions during binding.

1. Press and hold the bind button, and Power ON the receiver; the orange LED will begin to flash.
2. Set the trims and control positions at the desired failsafe settings, press and hold the bind button, and power ON the DX3 Smart transmitter.
3. When the orange LED on the DX3 Smart transmitter remains lit, it is connected to SR315 receiver.



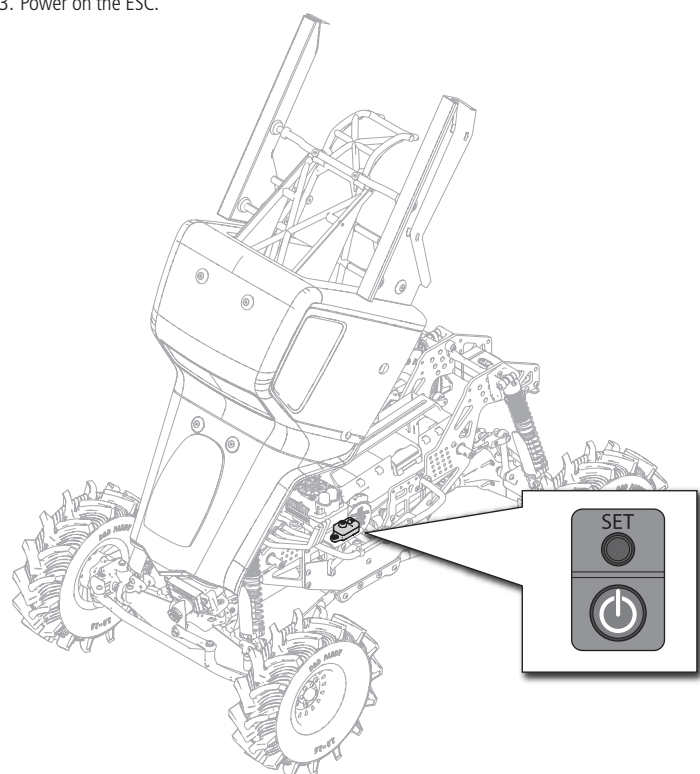
### RECEIVER ANTENNA

The SR315 receivers feature a coaxial antenna design for easy installation in almost any model. Think of the last 1 inch (32mm) on the tip of the antenna as the active portion of the antenna, the coaxial portion leading up to it is just an extension. Install the antenna so the active portion is positioned as high as possible in the vehicle, and not "in the shadow" of any carbon fiber or metal. The case of the receiver can accept an antenna tube directly, making optimal antenna placement easy (antenna tube not included).

**WARNING:** Do not kink, cut or damage the antenna wire. The antenna is made of a coaxial wire; if the outer sheath becomes damaged, the receiver will not work properly. If the antenna is damaged in any way, replace the antenna before attempting to use the receiver.

### POWERING ON THE VEHICLE

1. Center the ST TRIM and TH TRIM dials on the transmitter and turn it on.
2. Install a fully charged battery pack per the **Installing the Battery** section.
3. Power on the ESC.



### DRIVING PRECAUTIONS

- Maintain sight of the vehicle at all times.
- Routinely inspect the vehicle for loose wheel hardware.
- Routinely inspect the steering assembly for any loose hardware. Driving the vehicle off-road can cause fasteners to loosen over time.
- Do not drive the vehicle in tall grass. Doing so can damage the vehicle or electronics.

**CAUTION:** Do not discharge a Li-Po battery below 3V per cell. Batteries discharged to a voltage lower than the lowest approved voltage may become damaged, resulting in loss of performance and potential fire when batteries are charged.

- Do not apply forward or reverse throttle if the vehicle is stuck. Applying throttle in this instance can damage the motor or ESC.
- After driving the vehicle, allow the electronics to cool before driving the vehicle again.

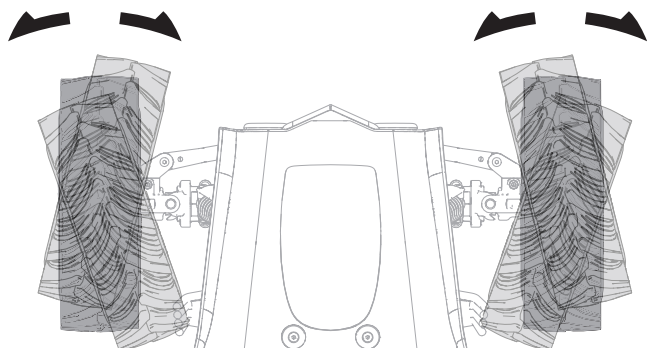
**IMPORTANT:** Keep wires away from all moving parts.

### BEFORE RUNNING YOUR VEHICLE

1. Check for free suspension movement. All suspension arms and steering components should move freely. Any binds will cause the vehicle to handle poorly.
 

**TIP:** To increase the ride height and ground clearance of your vehicle, screw down the shock collars to compress the springs.
2. Charge a battery pack. Always charge the battery pack as per the battery and/or charger manufacturers' instructions.
3. Set the transmitter steering trim. Follow the instructions to set the steering trim/subtrim so that the vehicle drives straight with no input to the steering.
4. Perform a Control Direction Test.

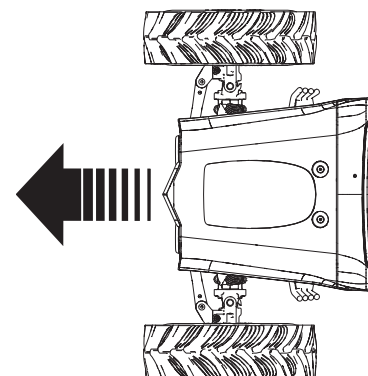
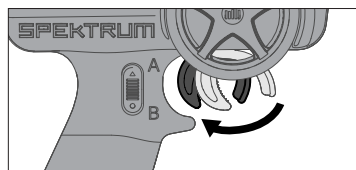
## CONTROL DIRECTION TEST



### STEERING

1. Move the steering wheel Left and Right and observe the direction the front wheels move.
2. If the wheels move the opposite direction, reverse the STR channel.

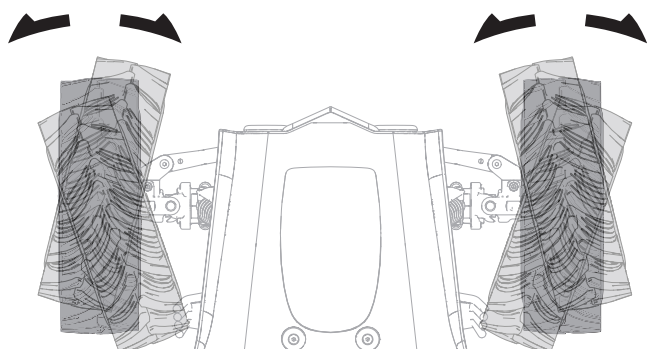
Place the vehicle on a stand supporting the chassis so the wheels are off the ground during the steering and throttle tests. Verify all the controls work correctly before turning it on with the wheels on the ground.



### THROTTLE

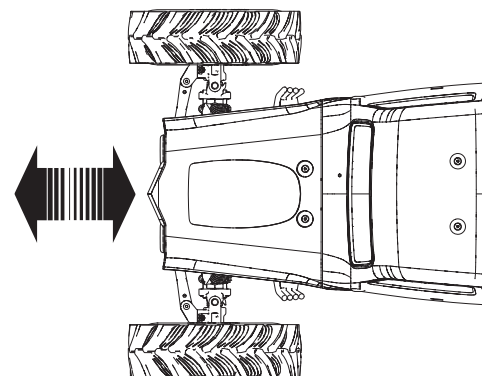
1. Pull the Throttle trigger to move the vehicle forward.
2. If the vehicle moves backward, reverse the THR channel.

## ADJUSTING STEERING AND THROTTLE TRIMS



### STEERING TRIM

The vehicle should maintain a straight line without any steering wheel input. If not, adjust the STR Trim knob so the wheels maintain a straight line without having to turn the steering wheel.



### THROTTLE TRIM

Trim the vehicle with the wheels off the ground. If the wheels rotate after the vehicle is powered ON, adjust the TH Trim knob until they stop.

## SPEKTRUM™ FIRMA™ SMART 130A BRUSHLESS ESC (SPMXSE1130)

### SPECIFICATIONS

Type	Sensorless, SMART Throttle Compatible
Output	130A/760A
Function	Forward/Brake–Forward/Brake Reverse
Input Voltage	7.4V–14.8V
BEC Output	6V/4A
Dimensions (LxWxH)	57.5mm x 46mm x 38mm
Weight	154 g

### ESC LED STATUS

- No ESC LEDs will glow when there is no throttle input from the transmitter.
- The red ESC LED glows when there is any throttle input from the transmitter.

### AUDIBLE WARNING TONES

1. **Input Voltage:** The ESC checks the input voltage when it is powered ON. If a voltage problem is detected, the ESC continuously sounds 2 beeps with a 1 second pause (xx-xx-xx). Power OFF the ESC and ensure the connections are secure and that the battery power is not too low for safe operation.
2. **Radio Connection:** The ESC checks radio signal input when it is powered ON. If a problem is detected, the ESC continuously sounds 1 beep with a 2 second pause (x--x--x). Power OFF the ESC and ensure the radio system is operating correctly.

**NOTICE:** Always disconnect the battery from the ESC after operating your vehicle. The ESC's switch only controls power to the receiver and servos. The ESC will continue to draw current when connected to the battery, resulting in possible damage to the battery through over discharge.

### ESC CALIBRATION PROCEDURE

Complete the transmitter/receiver binding procedure prior to calibrating the ESC.

1. Set the transmitter throttle channel to 100% travel and center the throttle trim.
2. Connect a battery to the ESC battery lead.
3. Power on the transmitter.
4. Press and hold the SET button while turning on the ESC. Release the SET button when the **red** LED begins to flash, indicating the ESC is in calibration mode. The ESC will enter programming mode if the button is held for more than three seconds.

**TIP:** The red LED should be flashing when the ESC enters calibration mode. If the green LED is flashing the ESC has entered programming mode. Power off the ESC and repeat step 4, releasing the SET button when the red LED begins to flash.

5. With the transmitter throttle trigger at the neutral position, press and release the ESC SET button. The red LED will stop flashing, the green LED will flash one time and the motor will make a tone to indicate the neutral position has been accepted.
6. While holding the throttle trigger at the full throttle position, press and release the ESC SET button. The green LED will flash twice and the motor will make two tones to indicate the full throttle position has been accepted.
7. While holding the throttle trigger at the full brake position, press and release the SET button. The green LED will flash three times and the motor will make three tones to indicate the full brake position has been accepted.

The motor will operate normally after calibration is completed.

## ESC FUNCTIONS AND MODES

The ESC includes programming options so you can adjust the way your vehicle performs. Refer to the included programming table to adjust the ESC for your driving conditions.

### PROGRAMMING TABLE

■ Default Settings

PROGRAMMING ITEMS	PROGRAMMING VALUE								
	1	2	3	4	5	6	7	8	9
<b>1. Running Mode</b>	Forward w/ brake	Forward/Reverse w/ brake	Forward/Reverse						
<b>2. Drag Brake Force</b>	0%	5%	10%	20%	40%	60%	80%	100%	
<b>3. Low Voltage Cutoff</b>	non-protection	2.6V/Cell	2.8V/Cell	3.0V/Cell	3.2V/Cell	3.4V/Cell			
<b>4. Start Mode</b>	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9
<b>5. Max Brake Force</b>	25%	50%	75%	100%	disable				
<b>6. Max Reverse Force</b>	25%	50%	75%	100%					
<b>7. Initial Brake Force</b>	= Drag Brake	0%	20%	40%					
<b>8. Neutral Range</b>	6% (Narrow)	9% (Normal)	12% (Wide)						
<b>9. Timing</b>	0.00°	3.75°	7.50°	11.25°	15.00°	18.75°	22.50°	26.25°	
<b>10. Motor Rotation</b>	Counterclockwise	Clockwise							
<b>11. Li-Po Cells</b>	Auto Calculate	2 Cells	3 Cells	4 Cells	5 Cells	6 Cells			

### ESC PROGRAMMING PROCEDURE

Programming is accomplished using the SET button on the ON/OFF switch\*.

1. Connect a fully charged battery to the ESC.
2. Power on the transmitter.
3. Power on the ESC.
4. Hold the SET button until the green LED flashes. Release the set button to enter programming mode.

**TIP:** To reset all programming items to the default values, press and hold the set button for five seconds

5. Press and release the set button as needed to cycle through the programming items. The number of times the green LED flashes equals the programming item number given in the programming table.
6. When at the desired programming item, press and hold the set button until the red LED flashes to select the item.
7. Press and release the SET button to cycle through the values available for the programming item based on the number of times the LED flashes. Refer to the programming table.
8. Save the setting by pressing and holding the SET button for 3 seconds.
9. Power off the ESC to exit programming mode or to change other programming items.

\* Other programming options include the Spektrum SMART Firma ESC Programming Box (SPMXCA200) and the SmartLink USB updating and programmer application. See SpektrumRC.com for more details about Spektrum SMART Firma ESCs.

### DESCRIPTIONS

#### 1. Running Mode

- *Forward Only with Brake*  
Intended for competition use, this mode allows only forward and brake controls.
- *Forward/Reverse with Brake*  
This mode is the basic all-around mode, allowing forward, reverse and brake controls. To engage reverse while moving forward, apply the brake until the vehicle has come to a complete stop, release brake, then apply the brake again. While braking or in reverse, engaging the throttle will result in the vehicle immediately accelerating forward.

#### 2. Drag Brake Force

Adjusts the amount of brake automatically applied when the throttle is returned to the neutral position. This simulates the engine braking effect of a full-scale vehicle, allowing improved turn-in and your vehicle's general response to controls.

#### 3. Low Voltage Cutoff

This function helps to prevent battery over-discharge. The ESC continuously monitors the battery's voltage. If the voltage falls below the voltage threshold for 2 seconds, the output power shuts off and the red LED flashes twice repeatedly.

The cutoff threshold calculation is based on individual Li-Po cell voltage. For Ni-MH batteries, if the voltage battery pack is higher than 9.0V, it will be treated as a 3-cell Li-Po battery pack; if it is lower than 9.0V, it will be treated as a 2-cell Li-Po battery pack. Example: for a 8.0V Ni-MH battery pack used with a 2.6V/cell threshold, it will be treated as a 2-cell Li-Po battery pack and the low-voltage cut-off threshold will be 5.2V (2.6x2=5.2).

#### 4. Start Mode (Punch)

Sets the initial throttle punch when the car accelerates. Level 1 gives a very soft initial acceleration and level 4 gives a stronger initial acceleration.

#### 5. Max Brake Force

Adjusts the maximum braking force. A higher value provides stronger braking, but can also cause the wheels to lock, resulting in loss of control of the car.

#### 6. Max Reverse Force

This parameter adjusts the maximum power when travelling in reverse.

#### 7. Initial Brake Force (minimum brake)

Adjusts the minimum amount of braking power when the brakes engage. The default value is equal to the drag brake value. A high value can lock the wheels when the brake is used.

#### 8. Neutral Range

Adjusts the throttle sensitivity around the neutral point. A higher value results in the throttle having to be moved more for the vehicle to move forward, backward or brake.

#### 9. Timing

Adjusts the motor drive current timing. More timing gives more performance, but can lower efficiency and cause damage to the motor and/or ESC by overload or overheating.

**NOTICE:** Always ensure the motor timing is set correctly. Failure to set the motor timing correctly can result in damage to the motor and ESC. Refer to the manufacturer instructions for recommended timing settings.

#### 10. Motor Rotation

Allows you to make this change in the ESC so no wires need to be changed between the ESC and the motor.

#### 11. Li-Po Cells

Allows the ESC to automatically detect or manually set the number of cells in your Li-Po battery pack.

# SPEKTRUM™ FIRMA™ 2800KV 4-POLE BRUSHLESS MOTOR

## PRECAUTIONS

- Never touch moving parts.
- Never disassemble while the batteries are installed.
- Always let parts cool before touching.
- Rated for up to 4S batteries.

## GEARING

Installing a pinion gear with fewer teeth will provide greater torque but will reduce top speed. Likewise, a pinion gear with more teeth will reduce torque and increase top speed. Care should be taken when installing larger pinion gears as this can "overgear" the vehicle, resulting in overheating of the motor and ESC. When testing different gearing options, pay close attention to the temperature of the motor and speed control to ensure you are operating within the temperature range of the components. The motor or ESC should never be so hot that it cannot be touched. If temperatures are too hot, a different gearing combination with a lower pinion gear and/or higher spur gear is suggested.

## CHANGING THE PINION GEAR/GEAR RATIO

1. Remove the screw holding the gear cover in place.
2. From the slot in the top of the gear box cover, loosen the pinion gear set screw and remove the pinion gear.
3. Remove the motor mounting screws to remove the motor, or adjust the motor to the location for the corresponding pinion gear.
4. Install the new pinion gear on your motor. Place the pinion gear on the end of the motor shaft so that it lines up flush with the spur gear and the set screw is located over the flat on the shaft.
5. Tighten the pinion gear on the motor shaft and reinstall the upper gear cover.

## RUN TIME

The largest factor in run time is the capacity of the battery pack. A larger mAh rating increases the amount of run time experienced.

The condition of a battery pack is also an important factor in both run time and speed. The battery connectors may become hot during driving. Batteries will lose performance and capacity over time.

Driving the vehicle from a stop to full speed repeatedly will damage the batteries and electronics over time. Sudden acceleration will also lead to shorter run times.

## TO IMPROVE RUN TIMES

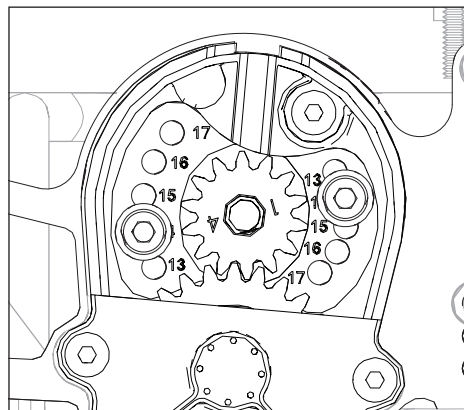
- Keep your vehicle clean and well maintained.
- Allow more airflow to the ESC and motor.
- Change the gearing to a lower ratio. A lower ratio decreases the operating temperature of the electronics. Use a smaller pinion gear or larger spur gear to lower the gear ratio.
- Use a battery pack with a higher mAh rating.
- Use the optimum charger to charge battery packs (Visit your local hobby dealer for more information).

LIST OF FLUIDS	
Diff Fluids	
Front and Rear	100k
Center	500k
Shock Oil	
Front and Rear	25wt

REQUIRED TOOLS
1.5mm Hex Driver
2.0mm Hex Driver
2.5mm Hex Driver
5.5mm Nut Driver
8.0mm Nut Driver

**NOTICE:** It is important you select the correct motor mounting holes for your pinion gear selection. The gear mesh is pre-set with each pair of motor mounting holes corresponding to the pinion gear. Selecting the wrong mounting holes is likely to cause damage to the spur gear on your Bog Hog / King Sling when you attempt to apply power.

The following drawing shows the correct motor mounting holes to use for the included 14 tooth pinion gear.



## TELEMETRY SETTINGS

If using the Spektrum Dashboard app or the optional speedometer module on your transmitter, set the motor pole count to 4 and the rollout distance to 1.10" (27.9mm).

STOCK PINION
14T MOD1, 5mm shaft



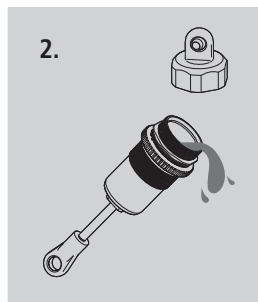
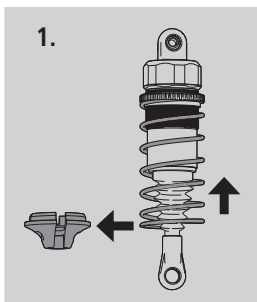
# VEHICLE MAINTENANCE

The following items require semi-frequent maintenance. Always clean screw threads and apply removeable thread locking compound when threading machine screws into metal parts.

## SHOCK DISASSEMBLY/CLEANING

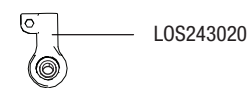
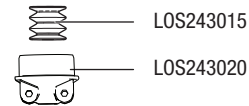
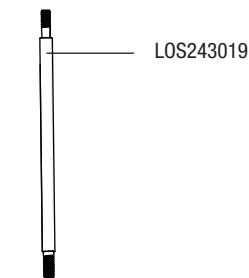
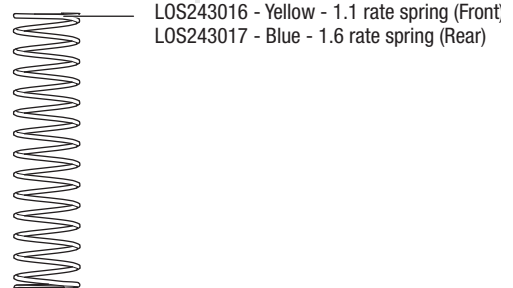
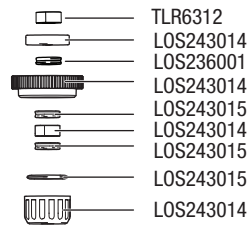
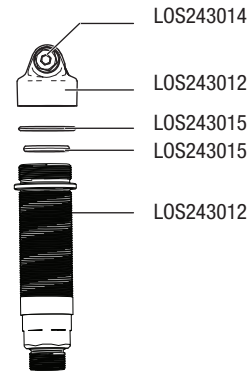
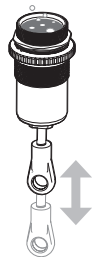
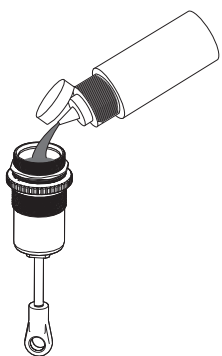
Remove the shocks and service as needed. Replace worn parts.

1. Pull the spring up and away from the lower cup. Slide the lower spring cup up and off of the shaft. Clean with a soft brush. Remove the shock boot.
2. Use the wheel wrench to hold the shock body and remove the top cap. Empty the fluid from out of the shock.
3. Hold the shaft with a multi-wrench and remove the shock end. Push the shaft into the shock body and remove through the top. Remove the lower shock cap, dust cover, O-rings and spacer. Clean the shock body. Install new O-rings, re-install the spacer, replace the O-ring and install the lower shock cap. DO NOT TIGHTEN. Install the shock shaft through the shock bottom and tighten the bottom cap. Re-install the boot and shock end on the shaft.



## REFILLING/BLEEDING SHOCKS

1. Fill the shock body 5mm (0.2 in) from the top with 25wt silicone shock oil (TLR74004 2oz, TLR74022 4oz).
2. Slowly move the piston up and down 5 times, allowing air to rise to the top. Let the shock sit for 5 minutes.
3. With the piston all the way down, fill the shock body 1mm (0.04 in) from the top. Replace the shock cap, spring and spring cup.

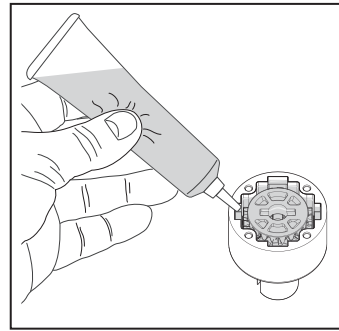


Stock Shock oil F/R: 25wt  
Piston F/R: 4x1.8mm

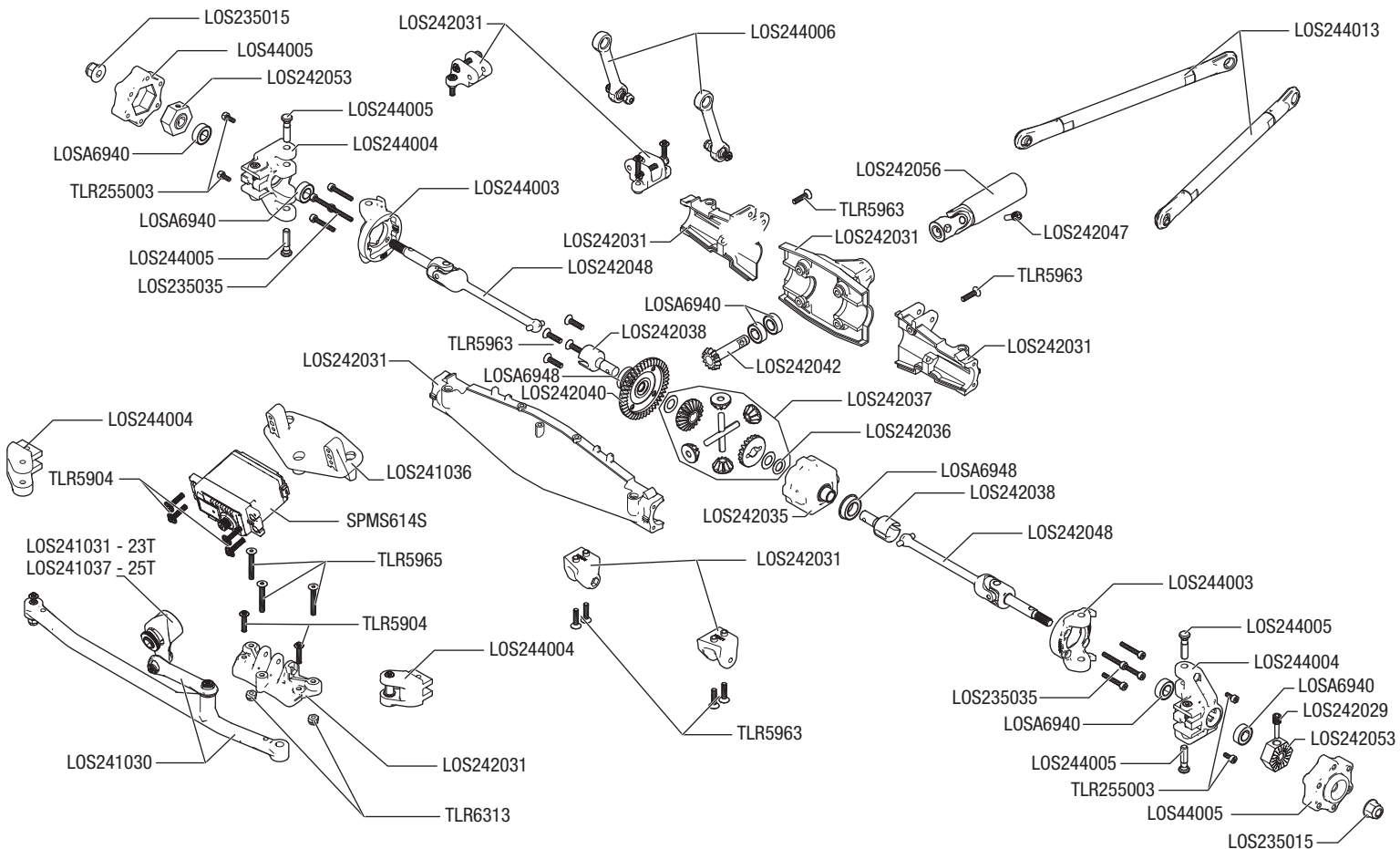
Differential	Light Weight Oil	Heavier Weight Oil
Front	Increases off-power steering. Oil that is too thin will make diff action inconsistent	Increases off-power stability and on-power steering
Center	Has less forward drive and can unload the drivetrain easier under acceleration, which can be good on rough and slick tracks	Has more acceleration and increases on-power steering, but decreases off-power steering. Thicker center diff oil is better on high traction/smooth tracks
Rear	Has more side traction and increased steering in the middle of a turn	Has less steering in the middle of the turn but more forward traction

## FRONT DIFFERENTIAL

- To Remove the front differential from the axial housing, start by removing the steering servo and servo mount from the axle.
- Remove the screw holding the upper 4-link bars to the mount
- Remove the Sway bar links, shocks and lower 4-link bars from the axle housing.
- With the axle free from the chassis, remove the third member and pinion gear.
- Remove the steering spindle and spindle carrier from one side of the axle with the front universal. This will provide enough clearance to remove the differential from the axle housing.
- Check the ring and pinion as well as the bevel gears in the differential. Replace as needed. If fluid is leaking, replace the outdrive o-rings and ring gear gasket. Be sure to grease the outdrives prior to sliding them through the o-rings. Apply more grease to the ring and pinion (LOSA99209).
- Check the differential fluid and refill or replace as needed with TLR75004 (100k) fluid. The fluid level should be about 0.12 in (3.0mm) from the top surface of the case. Do not overfill or the differential unit might leak.

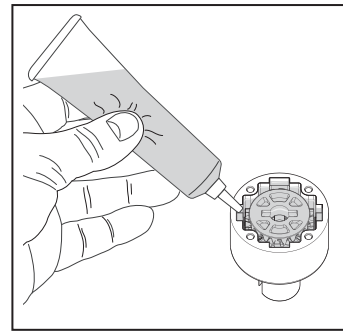


Front Differential Fluid : 100,000

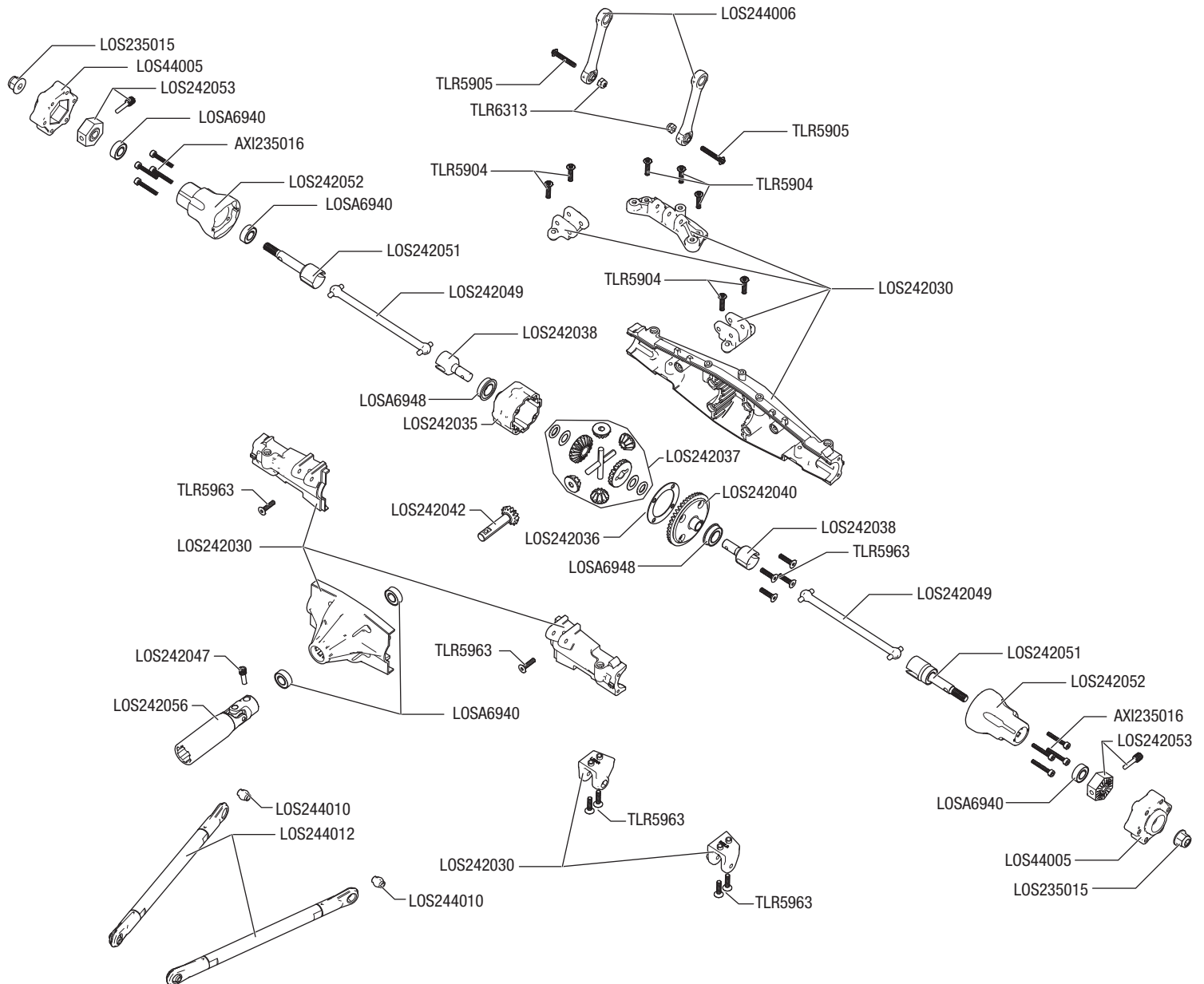


# REAR DIFFERENTIAL

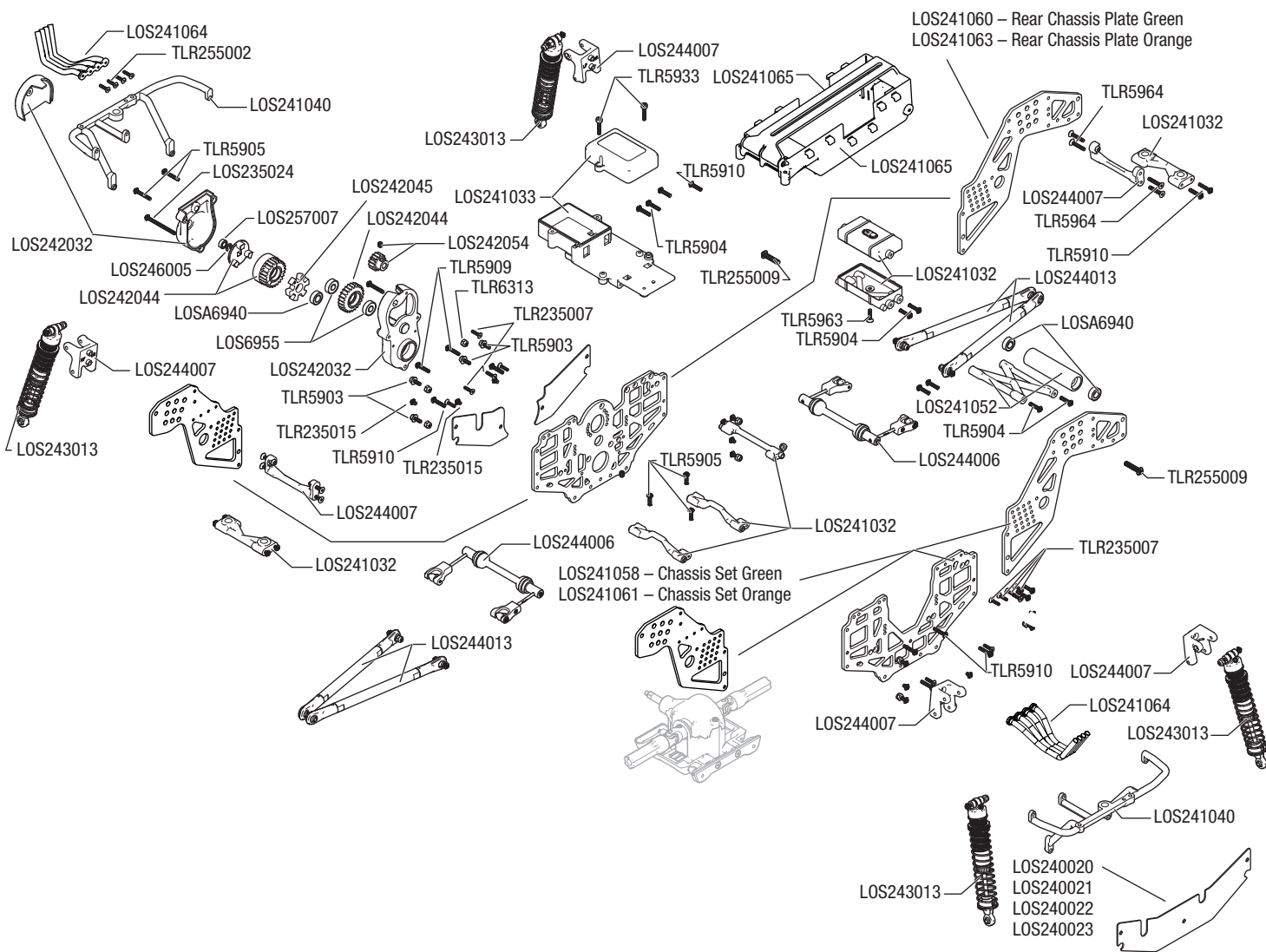
1. To remove the rear differential, start by removing the upper 4-link mount bolt.
2. Remove the Sway Bar Links and Shocks from the Axle.
3. Remove the lower 4-link bars from the axle housing.
4. The axle housing is now free. Remove the third member and pinion gear from the axle mount.
5. Remove one side of the axle housing with the axle and dogbone. This will provide enough clearance to remove the rear differential.
6. Check the ring and pinion as well as the bevel gears in the differential. Replace as needed. If fluid is leaking, replace the outdrive o-rings and ring gear gasket. Be sure to grease the outdrives prior to sliding them through the o-rings. Apply more grease to the ring and pinion (LOSA99209).
7. Check the differential fluid and refill or replace as needed with TLR75004 (100k) fluid. The fluid level should be about 0.12 in (3.0mm) from the top surface of the case. Do not overfill or the differential unit might leak.



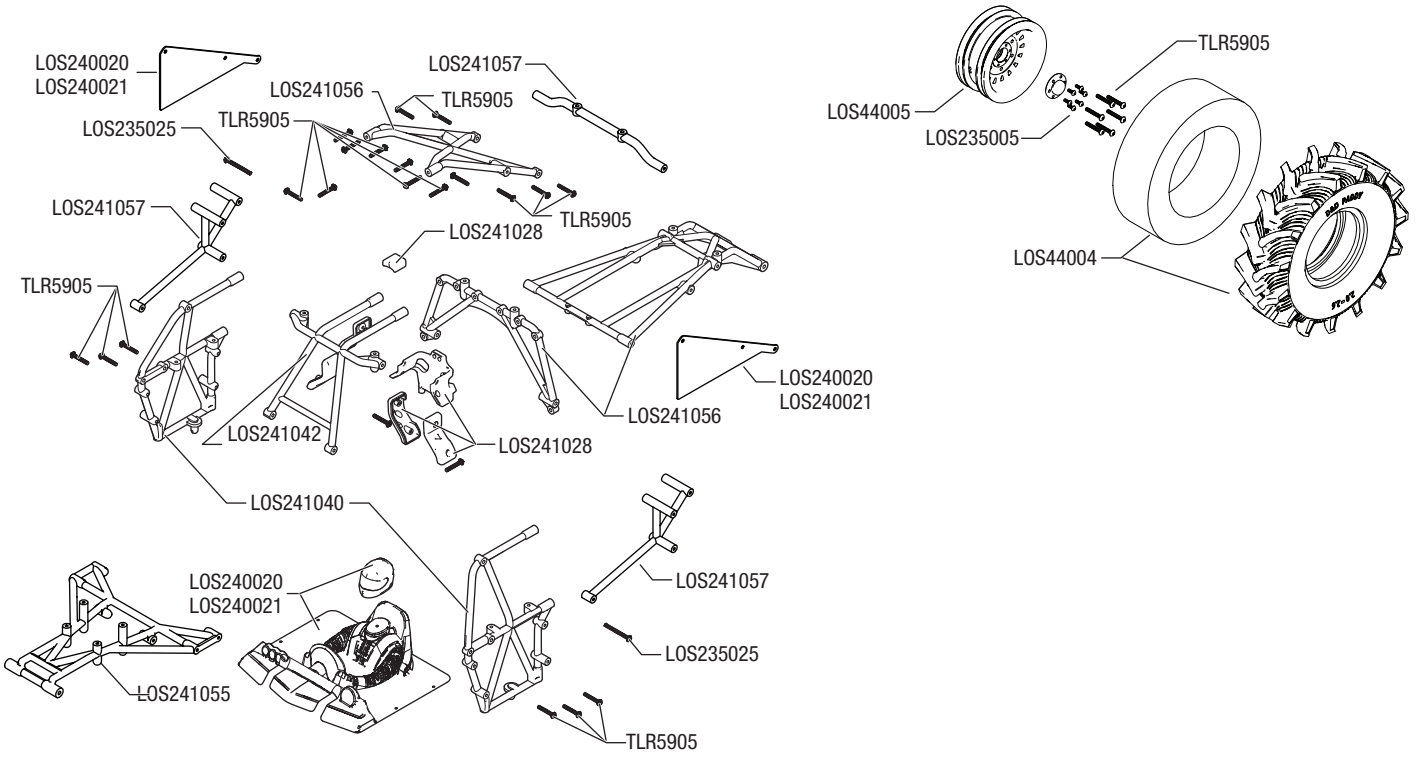
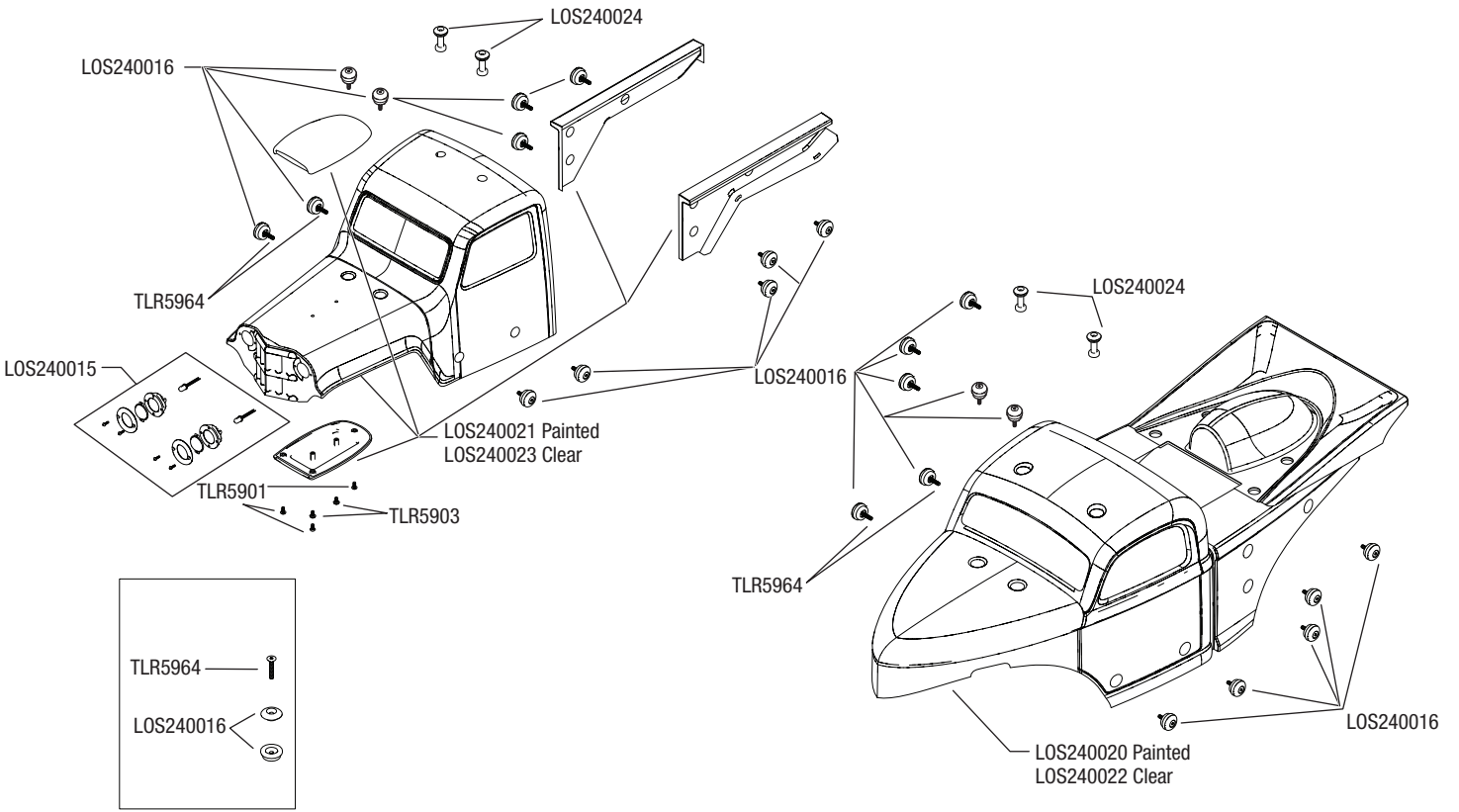
Rear Differential Fluid : 100,000



# CHASSIS

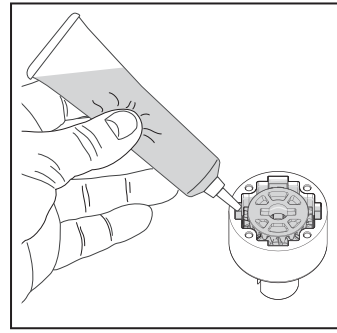


**BODY / CAGE**

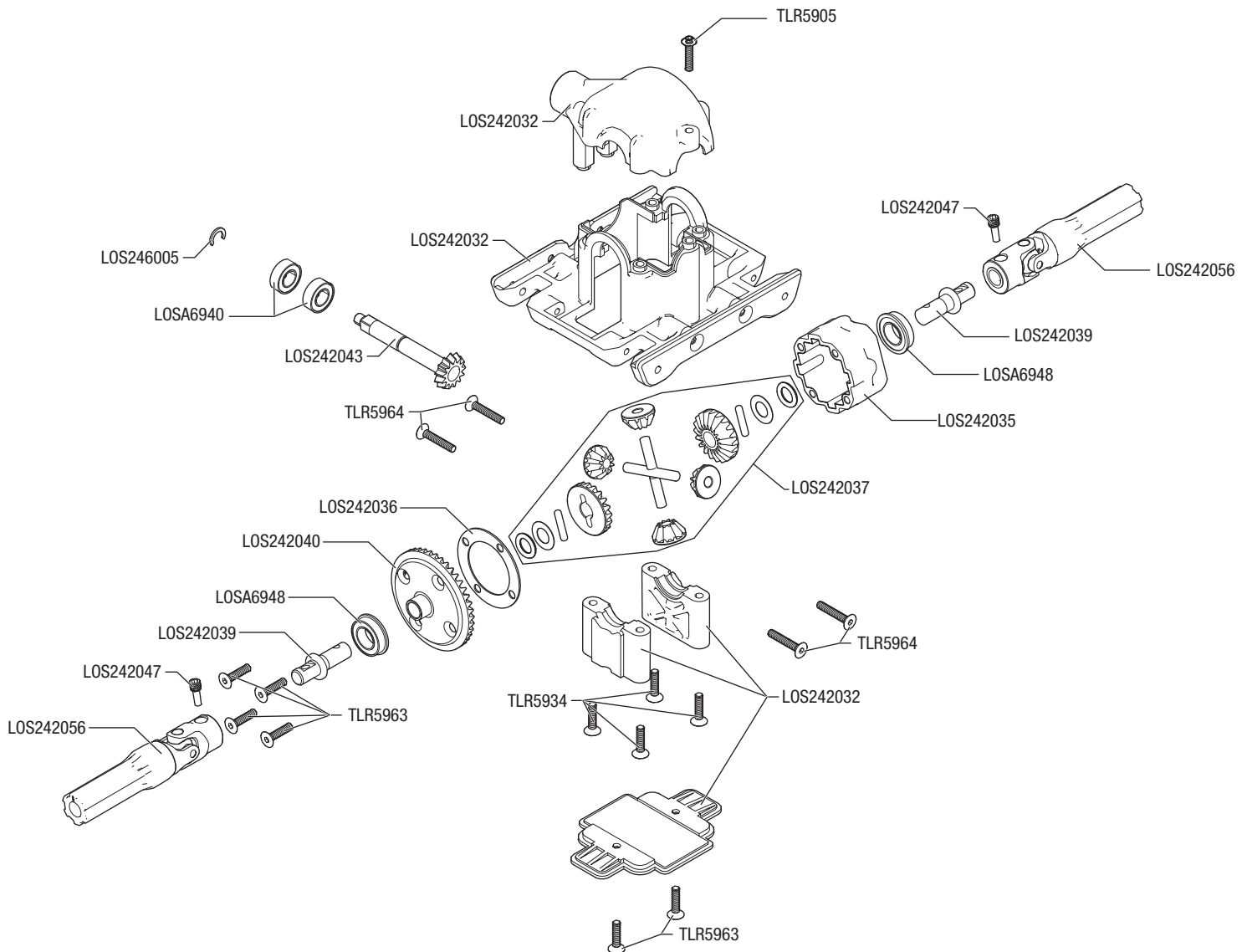


## CENTER DIFFERENTIAL

1. To remove the center differential from the vehicle, remove the two screws in the center cover to expose the center differential.
2. Remove the four screws holding the diff support blocks, and remove the diff support blocks.
3. Remove the two screwpins holding the front and rear drivelines, and remove the center halves of the driveline. This will provide enough clearance to remove the differential out of the bottom of the vehicle.
4. Check the ring and pinion as well as the bevel gears in the differential. Replace as needed. If fluid is leaking, replace the outdrive o-rings and ring gear gasket. Be sure to grease the outdrives prior to sliding them through the o-rings.. Apply more grease to the ring and pinion (LOSA99209).
5. Check the differential fluid and refill or replace as needed with TLR75009 (500k) fluid. The fluid level should be about 0.12 in (3.0mm) from the top surface of the case. Do not overfill or the differential unit might leak.



Center Differential Fluid : 500,000



## REPLACEMENT PARTS

SKU	English
AXI235016	M2.5 x 16mm, Cap Head Screw (10)
AXIC0088	AXA088 Cap Hd M3x20mm Blk Oxid
LOS235002	Cap Head Screws M2.5x10mm (10)
LOS235005	Button Head Screws M2.5x6mm (10)
LOS235008	Flat Head Screws M2.5x5mm (10)
LOS235012	Set Screws M4x4mm Cup Point (10)
LOS235015	Locknut Flanged M5 Serrated (10)
LOS235024	Button Head Screws M3x25mm (10)
LOS235025	Button Head Screws M3x30mm (10)
LOS235035	Button Head Screws M2.5x16mm (10)
LOS236001	3.2mm x 7mmx .5mm Washer (10)
LOS240016	Body Buttons,Top & Bottom (10)
LOS240020	Body Wing Painted King Sling
LOS240021	Body St Painted Bog Hog
LOS240022	BodyWing Clr KingSling
LOS240023	Body Set Clear Bog Hog
LOS240024	Body ButtonSpacers (10)
LOS240025	Fr LED Headlight St
LOS241028	Safety Seat Set
LOS241030	Steering Linkage Set
LOS241031	ServoSaverSet,Complete,23T
LOS241032	Cross Brace Set, Chassis
LOS241036	Steering Servo Mount Plate
LOS241040	Side Cage & Lower Bar, Black
LOS241054	Cage Set Complete Blck
LOS241055	Fr & Uppr Cage Bars, Blk
LOS241056	Rear Cage & Hoop, Blk
LOS241057	Rr Cage Body Support, Blk
LOS241058	Chassis Set, Green
LOS241059	Fr Chassis Plate,Gr (2): LMT Mega K
LOS241060	Rr Chassis Plate,Gr (2): LMT Mega K
LOS241064	Headers, Chrome
LOS241065	Low CG Battery Tray & Straps
LOS241066	Battery Straps, Low CG
LOS242029	Wheel Hex Screw Pin (10)
LOS242030	Axle Housing Set Complete, Rear
LOS242031	Axle Housing Set Complete, Front
LOS242032	Gearbox Housing Set w/covers
LOS242033	Complete Diff Front or Rear
LOS242034	Complete Diff Center
LOS242035	Diff Housing Set (1)
LOS242036	Diff O-rings & Gaskets (3)
LOS242037	Internal Diff Rebuild Kit(1)
LOS242038	F/R Diff Outdrive Set (2)
LOS242039	Center Diff Output Shafts(2)
LOS242040	F/R Diff Ring Gear: LMT
LOS242041	Diff Spool
LOS242042	Diff Pinion, 13T (1)
LOS242043	13T Cntr Trans Pinion Gear
LOS242044	Idle & Cush Drive Gear Set
LOS242045	Cush Drive Rubber Damper, Med (2)
LOS242047	Center Driveshaft Screw pin (10)
LOS242048	Fr Universal Driveshaft (2)
LOS242049	Dogbones, Rear (2)
LOS242051	Stub Axle, Rear (2): LMT
LOS242052	Rr Axle Mount set, 0 & 3 Deg
LOS242053	17mm Hex Adapter w/pin (4)
LOS242054	Pinion Gear,14T, 1.0M. 5mm shaf
LOS242055	Axle Housing Set,Center Section
LOS242056	Center Drive shaft St (1)
LOS242057	Center Slider Drive shft (2)
LOS243012	Shock Body and Cap, Al (2)
LOS243013	Shock Set Complete (2)
LOS243015	Shock Rebuild Hardware Set (4)
LOS243016	Spring, Soft, Yel, 1.1rate (4)
LOS243017	Spring, Soft, Blue, 1.6rate (4)
LOS243018	Spring, Soft, Red, 2.2rate (4)
LOS243019	Nut Shock Shaft F/R (2)

## REPLACEMENT PARTS

SKU	English
LOS243020	Shock Rod End & Guard (4)
LOS244003	Spindle Carrier Set (L/R)
LOS244004	Spindle Set Front (L/R)
LOS244005	Kingpin, Front (4)
LOS244006	Sway Bar Set (F/R)
LOS244007	Upper Shock Mount Set (4)
LOS244010	7mm Double Boss Pivot Balls (10)
LOS244011	Rod Ends, Sway & Drag Links
LOS244012	Lower 4 Link Bar St 15" "WB ( 4)
LOS244013	Upper 4 Link Bar St 15" "WB (4)
LOS246003	Body Clips, Black, Small (10)
LOS246004	Diff Shim, M8x13x0.4mm (10)
LOS246005	E-Clip & C-Clip Hardware (20)
LOS257007	4 x 8 x 3mm Ball Bearing (4)
LOS44003	Paddy Tire, Premount (2)
LOS44004	D&D Paddy Tire/Foam (2)
LOS44005	D&D Mga Trck WhlChrm (2)
LOSA6940	6x12x4mm Sealed Ball Bearing (4)
LOSA6948	8x14x4 Flanged Rubber Seal BB (4)
LOSA6955	5x13x4mm HD Clutch Bearings (2):8B/8T
SPM2340	DX3 SMART DSMR 3CH TX w/SR315
SPMS614S	S614S Steel Gear WP Servo,23T
SPMSR315	SR315 DSMR 3 CH Receiver
SPMXSE1130	Firma 130A Brushless Smart ESC 4S
SPMXSE3400	Spektrum Firma 3668 2800Kv 4-Pole Brushless Motor
TLR235007	Flat Head Screw M2.5 x 10mm (10)
TLR235008	Flat Head Screws, M3 x 6mm (10)
TLR235009	Flat Head Screws, M3 x 30mm (10)
TLR235015	Button Head Screws M3 x 4mm (10)
TLR245011	Button Head Screws, M2x6mm (10)
TLR245012	Button Head Screws, M2.5x4mm (10)
TLR255002	Button Head Screws,M2.5x10mm (10)
TLR255003	Cap Head Screws, M2.5x6mm (10)
TLR255008	Button Head Screws, M4x16mm (10)
TLR255015	Setscrew, Cup Point, M4x5mm (10)
TLR5901	Button Head Screws, M3 x 6mm (10)
TLR5902	Button Head Screws, M3 x 8mm (10)
TLR5903	Button Head Screws, M3 x 10mm (10)
TLR5904	Button Head Screws, M3 x 12mm (10)
TLR5905	Button Head Screws, M3 x 18mm (10)
TLR5906	Button Head Screws, M3 x 35mm (10)
TLR5909	Button Head Screws, M3x16mm (10)
TLR5910	Button Head Screws M3 x 14mm (10)
TLR5911	Button Head Screws,M3 x 20mm (10)
TLR5930	Cap Head Screws, M3 x 8mm (10)
TLR5932	Cap Head Screws, M3 x 10mm (10)
TLR5934	Cap Head Screws, M3 x 16mm (10)
TLR5963	Flathead Screw, M3 x 12mm (10)
TLR5964	Flathead Screw, M3 x 16mm (10)
TLR5965	Flathead Screw, M3 x 20mm (10)
TLR6312	Locknut, M2.5 x .45 x 5mm (6)
TLR6313	Locknut, M3 x .5 x 5.5mm (10)



## RECOMMENDED PARTS

Part #	English
DYNT2010	Machined Nut Driver Set (4) Metric
DYNT2030	Machined Hex Driver Set (4) Met
SPMX52S100H5	5000mAh 2S 7.4V SmartG2100C IC5
SPMX53S100H5	5000mAh 3S 11.1V G2 100C HC IC5
SPMX54S100H5	5000mAh 4S 14.8V SmartG2100C IC
SPMXC2040	Smart S1400 G2 AC Charger, 1x400
TLR74004	SIL SHOCK OIL, 25WT, 250CST, 2OZ
TLR75004	Silicone Diff Fluid, 100,000CS
TLR75009	Silicone Diff Fluid, 500000CS

\* SPMXCA507 required to charge batteries with IC5 connectors on the S2100 and S150 Chargers

## OPTIONAL PARTS

Part #	English
LOS241037	ServoSaverSet, 25T, Complete
LOS343200	12mm Machined Wheel Hex (4)
PRO1018100	Interco Black Mamba 2.6" Mud T
PRO278903	Vice CrushLock 2.6" Black/Black
SPMXCA507	Adapter: IC3 Battery/IC5 Device
TLR5286	Silicone Diff Fluid, 50,000CS
TLR5288	Silicone Diff Fluid, 125,000CS
TLR74001	*TOP SIL SHOCK OIL, 17.5WT, 150CST, 2O
TLR74002	SIL SHOCK OIL, 20WT, 195CST, 2OZ
TLR74003	SIL SHOCK OIL, 22.5WT, 223CST, 2OZ
TLR74005	SIL SHOCK OIL, 27.5WT, 294CST, 2OZ
TLR74006	SIL SHOCK OIL, 30WT, 338CST, 2OZ
TLR75008	Silicone Diff Fluid, 200000CS
SPMSS6250	S6250 U-T / H-S Digital HV WP Servo
SPMSS6280	S6280 U-T / H-S Digital HV WP Servo
SPMSS6290	S6290 U-T / H-S Digital HV WP Servo
SPMR5025	DX5 Pro 2021 DSMR TX Only
SPMR5115	DX5C SMART 5CH DSMR TX ONLY
SPMXC1010	Smart S2100 AC Charger, 2X100W
SPMXC1070	Smart S150 AC/DC Charger, 1x50W
SPMXC2010	Smart S2200 G2 AC Charger, 2x20
DYNB28453	14.8V 2800mAh 4S 50CLiPo: 96mmEC
DYNB37353	11.1V 3700mAh 3S 50CLiPo 96mmEC
SPMX50002S100H5	5000mAh 2S 7.4V Smart 100C; IC5
SPMX50002S50H5	5000mAh 2S 7.4V Smart 50C; IC5
SPMX50003S100H5	5000mAh 3S 11.1V Smart 100C; IC5
SPMX50003S50H5	5000mAh 3S 11.1V Smart 50C; IC5
SPMX50004S100H5	5000mAh 4S 14.8V Smart 100C; IC5
SPMX50004S50H5	5000mAh 4S 14.8V Smart 50C; IC5
SPMX52S50H5	5000mAh 2S 7.4V Smart G2 50C; I
SPMX53S50H5	5000mAh 3S 11.1V Smart G2 50C;
SPMX54S50H5	5000mAh 4S 14.8V Smart G2 50C;

## TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Vehicle does not operate	Battery not charged or plugged in	Charge battery/plug in
	ESC switch not "On"	Turn on ESC switch
	Transmitter not "On" or low battery	Turn on/replace batteries
Motor runs but wheels do not rotate	Pinion not meshing with spur gear	Adjust pinion/spur mesh
	Pinion spinning on motor shaft	Tighten pinion gear setscrew on motor shaft flat spot
	Transmission gears stripped	Replace transmission gears
	Drive pin broken	Check and replace drive pin
Steering does not work	Servo plug not in receiver properly	Make sure the steering servo plug is connected to the receiver steering channel, noting proper polarity
	Servo gears or motor damaged	Replace or repair servo
Will not turn one direction	Servo gears damaged	Replace or repair servo
Motor does not run	Motor wire solder joint is damaged	Resolder the motor wire with the proper equipment
	Motor wire broken	Repair or replace as needed
	ESC damaged	Contact Horizon Hobby Product Support
ESC gets hot	Motor over-gearred	Use smaller pinion or larger spur gear
	Driveline bound up	Check wheels and transmission for binding
Poor run time and/or sluggish acceleration	Battery pack not fully charged	Recharge battery
	Charger not allowing full charge	Try another charger
	Driveline bound up	Check wheels, transmission for binding
Poor range and/or glitching	Transmitter batteries low	Check and replace
	Vehicle battery low	Recharge battery
	Loose plugs or wires	Check all wire connections and plugs

## LIMITED WARRANTY

### What this Warranty Covers

Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship for a period of 2 years from the date of purchase.

### What is Not Covered

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations or (vii) use that violates any applicable laws, rules, or regulations. OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

### Purchaser's Remedy

Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

### Limitation of Liability

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

### Law

These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

### WARRANTY SERVICES

#### Questions, Assistance, and Services

Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at [www.horizonhobby.com](http://www.horizonhobby.com), submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

#### Inspection or Services

If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at [http://www.horizonhobby.com/content/service-center\\_render-service-center](http://www.horizonhobby.com/content/service-center_render-service-center). If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**NOTICE: Do not ship Li-Po batteries to Horizon. If you have any issue with a Li-Po battery, please contact the appropriate Horizon Product Support office.**

### Warranty Requirements

**For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date.** Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

### Non-Warranty Service

**Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.** By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website [http://www.horizonhobby.com/content/service-center\\_render-service-center](http://www.horizonhobby.com/content/service-center_render-service-center).

**ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.**

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## WARRANTY AND SERVICE CONTACT INFORMATION

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Rd. Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	
European Union	Horizon Technischer Service	service@horizonhobby.de	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	


## FCC INFORMATION


Contains FCC ID: BRWKATY1T

FCC ID: BRWSRIRVINGV1

### Supplier's Declaration of Conformity

LOS Bog Hog RTR (LOS04024T2) / LOS King Sling RTR (LOS04024T1)

 This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

 **CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this

equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC  
2904 Research Rd.,  
Champaign, IL 61822  
Email: [compliance@horizonhobby.com](mailto:compliance@horizonhobby.com)  
Web: [HorizonHobby.com](http://HorizonHobby.com)

## IC INFORMATION

CAN ICES-3 (B)/NMB-3(B)

Contains IC: 6157A-KATY1T

IC: 6157A-SRIRVINGV1

This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

## COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

 **EU Compliance Statement:**  
**Losi Bog Hog, RTR (LOS04024T2)**

Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive (RED) 2014/53/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

**Losi King Sling, RTR (LOS04024T1)**

Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive (RED) 2014/53/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

The full text of the EU declaration of conformity is available at the following internet address: <https://www.horizonhobby.com/content/support-render-compliance>.

**NOTE:** This product contains batteries that are covered under the 2006/66/EC European Directive, which cannot be disposed of with normal household waste. Please follow local regulations.

**Wireless Frequency Range and Wireless Output Power:**

**Transmitter:**  
2402–2478MHz  
17.7 dBm  
**Receiver:**  
2404–2476MHz  
-1.33dBm

**EU Manufacturer of Record:**

Horizon Hobby, LLC  
2904 Research Road  
Champaign, IL 61822 USA

**EU Importer of Record:**

Horizon Hobby, GmbH  
Hanskampring 9  
22885 Barsbüttel Germany

**WEEE NOTICE:**



This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.



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Other patents pending.

Updated 02/22

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