

NIGHT CRALER

1/10-SCALE ELECTRIC READY-TO-RUN ROCK CRAWLER



LOSB0104 1/10 NIGHT CRAWLER RTR ROCK CRAWLER

CONNECT - REGISTER - WIN

Register your product online so we can notify you about the latest option parts, product updates, tech tips, service bulletins and more. Visit WWW.LOSI.COM and follow the Product Registration link to stay connected.

For registering your Losi Product you will be automatically entered for a chance to win the Losi Pick Your Prize Sweepstakes. The winner will be allowed to select a total prize package of \$1,000 (retail value) based on their preference



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Introduction

Thank you for purchasing the Losi® 1/10 Night Crawler. We are confident you will be satisfied with the performance of this durable and resilient vehicle.

Understanding that you are anxiously wanting to get your 1/10 Night Crawler ready for the rocks, it will be to your long term benefit to make the effort and read through the entire manual. In the following pages you will find all the information you will need to set up as well as operate your new 1/10 Night Crawler to its full potential.

If you are an experienced RC hobbyist, or new to RC vehicles, it will benefit you to read all enclosed information.

From everyone at Losi we would like to thank you again for choosing the 1/10 Night Crawler. Our goal is helping people have fun and enjoy using our products.

Register your Losi Product Online

Register your 1/10 Night Crawler now and be the first to find out about the latest option parts, product updates and more. Log on to www.LOSI.com and follow the product registration link to stay connected.

Losi/Horizon Support

If you have any questions concerning setup or operation of your 1/10 Night Crawler please call Horizon Customer Support at 1-877-504-0233.

Hours:

Monday thru Friday from 8:00am CST to 5:00pm CST

In the United Kingdom please call Horizon Hobby UK Customer Support at +44 1279 641 097.

Getting Ready

Thoroughly read all the enclosed material, precautions and follow instructions to avoid damaging your new RC vehicle. If you choose to not follow these steps or instructions, it will be considered negligence.

If after review of this manual and prior to running your 1/10 Night Crawler, you determine this RC vehicle is not what you want—DO NOT proceed and DO NOT run the 1/10 Night Crawler. If the 1/10 Night Crawler has been run, your local hobby shop will not be able to process a return or accept it for exchange.

Caution:

THIS PRODUCT IS SUITABLE FOR CHILDREN 14 YEARS OR OVER. THIS PRODUCT IS NOT A TOY. This product is not intended for use by children without direct adult supervision. When driving the 1/10 Night Crawler it is important that you take measures to avoid someone being hit by the vehicle. You may cause serious injury to another person, or to personal property should you make contact while running the 1/10 Night Crawler.



Safety Precautions

We hope you operate this RC model in a safe, reasonable and cautious fashion in order to enjoy your vehicle. Should you operate this vehicle without a cautious and reasonable approach it may result in serious injury and/or property damage. Only you can control and make certain that safety precautions and instructions are followed.

General:

- The 1/10 Night Crawler is not a toy. This product is not intended for use by children without direct adult supervision.
- Avoid an area that has many pedestrians or crowds of people.
- Keep in mind that this vehicle is radio controlled and can experience moments of radio loss or interference, so provide for a margin of error at all times.
- Please be aware that the motor and batteries of this RC vehicle will get HOT during each use. Be careful not to burn yourself.

Electronic Speed Control (ESC):

- Read all safety precautions prior to each use.
- Never leave the vehicle/ESC unsupervised while it is switched on, in use or connected to a power source. If there is a short-circuit or product defect, it could result in fire.
- If there are exposed wires, do not use the ESC until you have installed shrink-wrap or replaced the wire.
- Disconnect the battery from the ESC after use.
- The ESC is water resistant, but should not be submerged or exposed to long periods of moisture.
- Do not attempt to use more than a 2S LiPo battery or more than a 7-cell NiMH battery; doing so will damage the ESC and could result in fire.
- Always turn on the transmitter first then the ESC to prevent an out-of-control vehicle.
- When setting your Electronic Speed Controller:
 - Please disconnect motor or remove the pinion gear during ESC setup or calibration functions.
 - Keep loose clothing, hair, gloves and fingers away from moving parts at all times.
 - Rubber tires can cause severe injury if there is a failure while running the vehicle while on a stand or when being held. Ensure rubber tires are securely mounted to the rims and if not, re-glue them and check them often for security.

Batteries and Charging:

The 1/10 Night Crawler uses rechargeable batteries such as NiMH or LiPo. These batteries require special handling to preserve performance and last a long time. Read all instructions and precautions that are provided with the batteries intended to be used in the 1/10 Night Crawler.

- Read all instructions provided by the manufacturer of the batteries
- Responsible adult supervision is necessary while charging batteries.
- Always check to ensure the polarity of battery connection is correct.
- Never leave batteries unattended while charging.
- Never charge a battery while it is installed in the 1/10 Night Crawler.
- Do not charge any battery that appears to have any damage.
- If there are exposed wires do not charge or use the battery until you have installed shrink-wrap or replaced the complete wire.

When charging NiMH batteries, select a charger to meet your requirements. Chargers can be of two primary types for their source of power; a 100-240V wall charger, or one which requires a 12V power supply. Follow the charger manufacturer's instructions and precautions during each use.



Supplied and Required Equipment

Supplied tools:



Four (4) Hex Wrenches (L shaped) 3/32, 5/64, 1/16 and .050 Bind Plug

Recommended Accessories:

- Hobby grade knife
- Needle nose pliers
- Side cutting pliers
- Double-sided tape (LOSA4004)
- Safety Goggles
- Soldering iron

Required Equipment:

A Six (6) cell NiMH or 2S LiPo battery pack.





- 2 Four (4) AA batteries
- 3 NiMH battery charger with automatic "peak detection" or LiPo compatible charger recommended.



Using Your Charger:

If you do not yet have a charger, a peak detecting charger will provide the performance required and take care of your expensive batteries.

A popular choice for a charger would be a peak detection charger that can be plugged into a household AC wall socket. The peak detection portion of the charger monitors the battery charging and will automatically shut off upon full charge.

Other peak detection chargers require a 12V power source to charge your batteries. You would need to use or purchase a hobby grade 12V power supply before charging.

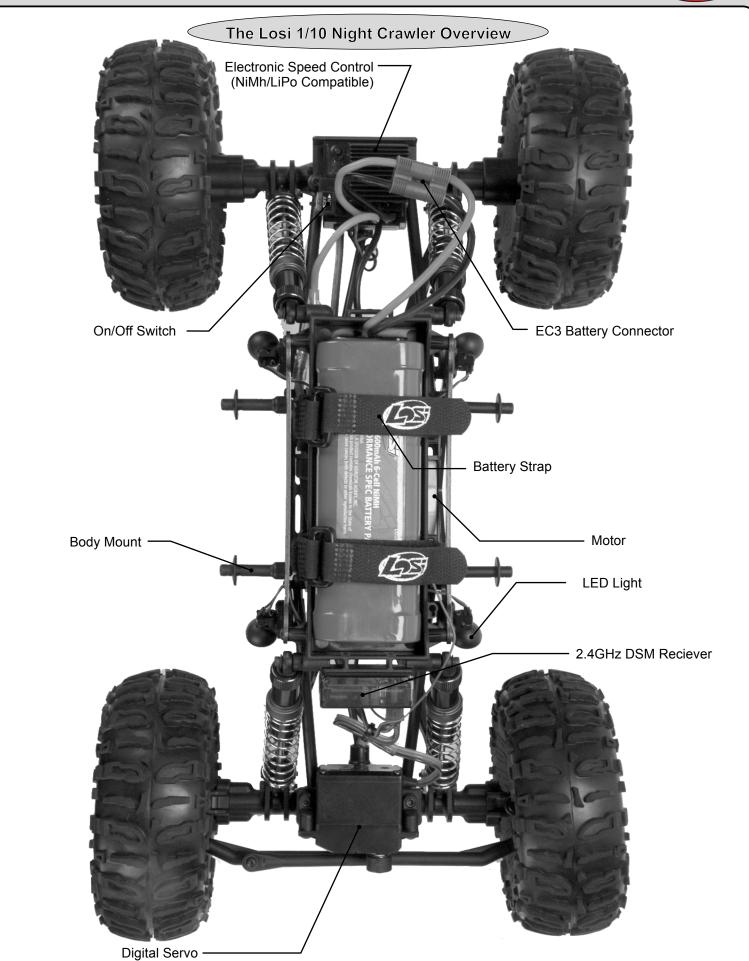
If you are going to be using a charger other than a peak detection charger it is important to have your battery fully discharged prior to recharging. Many of these have a timer that allows you to set the amount of charge time. If the battery was not fully discharged from prior use, you can potentially overcharge your battery pack.

If you are using a LiPo battery be sure to consult manufacturers suggestions for an appropriate LiPo compatible charger. Chargers designed for NiMH cells only should never be used to charge your LiPo batteries and could result in serious injury.

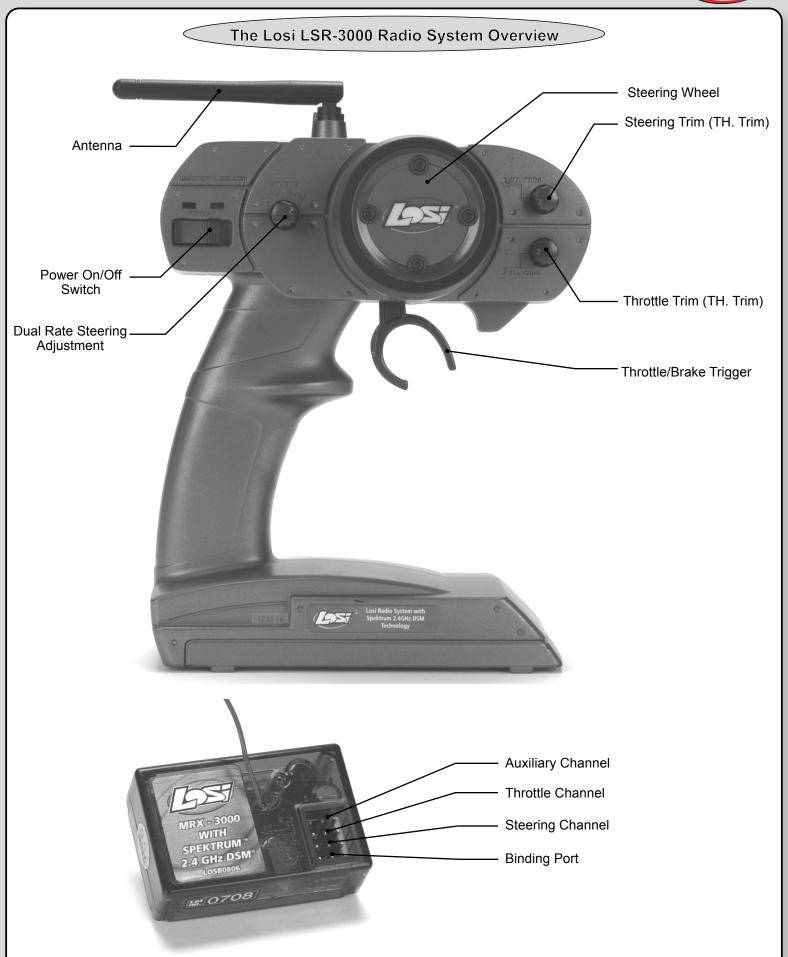
Do not charge any battery unattended, and monitor for heat build up. If the battery pack is more than warm to the touch immediately discontinue charging.

Read all safety precautions supplied by the charger manufacturer, and also any from the battery manufacturer.

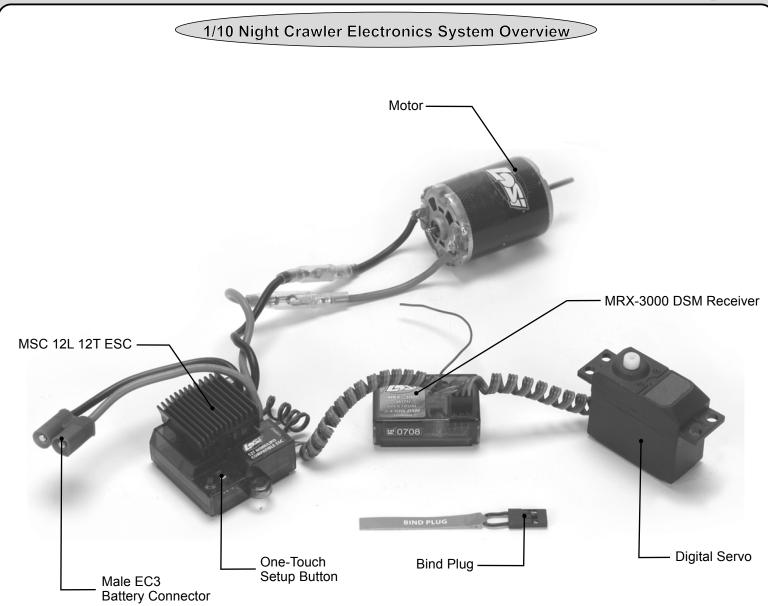














MSC-12L Fwd/Rev FSC

Features

- Lipo, NiMH/NiCd compatible
- 4 user selectable modes—Forward/reverse, Forward only race, Practice mode with slow acceleration, and Crawler.
- High power FET control with proportional forward and reverse.
- High frequency design delivers smooth speed transition.
- Thermal Overload Protection prevents damage due to over current conditions.
- Pre-wired with EC3 battery plug and bullet-style motor
- Designed to operate with stock motors (12 turns or higher).
- Push-button programming with one touch setup.
- Water Resistant

Specifications

•	
Operation	.Proportional forward, proportional
	reverse with braking delay
Input Voltage	4-cell (4.8 volts) to 6-cell (7.2 volts)
	DC NiMH/NiCd or 2S LiPo (7.4 volts)
Peak Current	1000A Forward and 350A Backwards
Continuous Current	250A Forward and 125A Backwards
Full-On Resistance	0.0014 Ohms Forward
	0.0028 Ohms Backwards
Frequency	1kHz
BEC output	5V DC, 1 amp max. at 7.2V
Overload Protection	.Thermal
Dimensions	.1.575in x 1.575in x 1.063in
	(40mm x 40mm x 27mm)
Weight	1.87 oz (53 g)

Connecting the Battery

The MSC-12L comes pre-wired with a EC3 connector. Use battery packs from 4-cell (4.8-volt) to 7-cell (8.4-volt) sub-C size battery packs or with 2S LiPo packs (7.4-volt).

- 1. Be sure the on/off switch is in the "off" position.
- 2. Connect a fully charged battery pack to the speed control's battery connector.

Adjusting the Transmitter

- 1. Set the "throttle reversing" switch to the NORMAL position.
- 2. Set the "throttle trim" to the CENTER position.

Speed Control Programming

NOTE: While in the programming mode, no power is applied to the motor.

Battery Selection: When the ESC is powered on, the LED will be flashing for 2 seconds to indicate the Selected Battery Type. During this time the user can press the key to toggle between LiPo and NiMH/NiCd modes. After the key has been pressed (battery type selected), the LED will flash for 2 more seconds.

- A. Turn on ESC and push button once within 2 seconds, push again to toggle between modes.
- B. Red light indicates LiPo mode (with 6 volt cut-off)
- C. Green light indicates NiMH/NiCd mode

One Touch Endpoint Setup

NOTE: Please be sure to set all throttle trim settings to neutral before performing an endpoint setup.

- A. Hold button and turn on ESC until the Red/Green light comes on. Once on, release button.
- B. Pull trigger to full throttle position until the green light goes from flashing to solid. Once solid, your forward endpoint is now set.
- C. To set reverse endpoint, push the trigger into the full reverse position until the flashing red light turns solid. At this point your reverse/brake endpoint is now set.
- D. Return trigger to neutral setting. The green light will now be solid and you are ready to go!

Selecting Speed Controller Modes

To change modes on your MSC-12L hold the set up key for over 5 seconds while in neutral. Once you find desired mode, simply release the key and you are ready for action.

Forward/Reverse mode—Solid Green LED Forward Only mode—Fast Flashing Green LED Practice mode—Slow Flashing Green LED Crawler mode*—Solid Green and Red LED

*NOTE: Crawler mode is for use in rock crawling vehicles only. Do not use this mode with other vehicles. Doing so may damage the vehicle.

	Troubleshooting Guide
Symptom	Solution
Steering servo operates but the motor does not run	Programming is not complete. Reprogram the ESC by following the programming instructions. Speed control connected to receiver incorrectly. Motor defective. Test motor independently, repair or replace as needed. Low batteries. Charge as needed. Overload Protection enabled. Check motor and connections.
Steering and motor do not function	Receiver wired incorrectly. Check polarity and orientation of controlplugs. Batteries discharged. Recharge or replace.
Full speed not attainable	Transmitter adjusted improperly. ESC programmed incorrectly. Reprogram.
Motor slows but will not stop	Throttle trim may be set improperly. ESC program does not match transmitter. Reprogram ESC.
Reduced radio range/Interference	Motor capacitors broken/missing. Repair or replace. Motor noise. Move receiver further away from ESC, motor and wiring Transmitter batteries low. Replace batteries.
	8



Installing Batteries:

Transmitter

Remove the battery cover from the bottom of the transmitter by sliding it away from the base of the handle. Install the four (4) AA-size batteries into the base, noting polarity when inserting each battery.





Reinstall the battery cover by sliding it back on the handle base.



"Stick" Type Battery Pack(s):

To install the battery pack loosen the hook & loop straps and slide the battery under the straps. Pull tight the straps and lay the strap on the exposed loop surface.



"Crawler" LiPo Type Battery Pack(s):



When installing optional Crawler LiPo packs, remove both hook and loop straps and install one strap through the base of teh battery tray as pictured above.



Quick Start

Note: Please read the entire manual to gain a full understanding of the 1/10 Night Crawler vehicle, fine-tuning the setup and performing maintenance.

<u> </u>	Read the safety precautions found on page 3. This is important for your safety and prevention of personal injury.
<u> </u>	Charge the battery pack you have chosen (NOT INCLUDED). Refer to the manufacturer's supplied instructions for battery charging information.
☐ 3.	Install the AA batteries into the Losi LSR-3000 transmitter (see page 9). Use alkaline or rechargeable batteries only.
4.	Install the battery pack (see previous page). The battery pack should be fully charged before installation.
<u> </u>	Turn on the transmitter and then the vehicle. It is a good practice to turn on the transmitter before the vehicle and turn it off after the vehicle has been turned of
☐ 6.	Check steering (see page 12). Verify that the servo is functioning properly.
7 .	Driving the 1/10 Night Crawler (see page 14).
8.	Performing maintenance of the 1/10 Night Crawler. Refer to Tuning, Adjusting and Maintenance of the 1/10 Night Crawler on page 15



The Losi LSR-3000 Radio System

The Losi LSR-3000 radio system with Spektrum™ 2.4GHz DSM® technology included with the 1/10 Night Crawler operates on 2.4GHz and provides 79 unique channels, which are automatically selected when the transmitter and vehicle are turned on. The communication between the transmitter and receiver begins in the few seconds after both are turned on.

They are bound from the factory to uniquely operate together.

The Losi LSR-3000 DSM radio system will not interfere with radio systems operating on legacy frequencies such as 27MHz or 75MHz, neither will you experience any overlapping interference from other 2.4GHz systems.



Transmitter

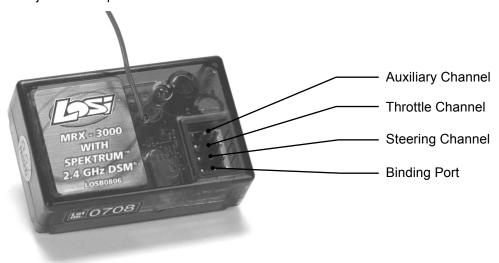
The Losi LSR-3000 transmitter has several adjustments available to increase your enjoyment of the 1/10 Night Crawler vehicle.

- 1. Power Switch Turns the transmitter on and off.
- 2. Dual Rate (ST.D/R) Adjusts how much the wheels can turn left/right in equal proportion.
- 3. Steering Trim (ST.TRIM) Adjusts the "Hands Off" direction of the 1/10 Slider.
- 4. Throttle Trim (TH.TRIM) Fine adjustment for the throttle and brake center.



Receiver

There is no adjustment required of the receiver. Please note the different slots for connection.



There are bind, channel one, channel two and auxiliary slots.

The bind slot is used to bind the transmitter to the receiver. The Losi LSR-3000 DSM® radio system uses a unique GUID ID to "bind" the transmitter to each receiver. This bind process has been performed during assembly and is described below should you replace the receiver or during a troubleshooting exercise you are requested to rebind your transmitter and receiver.

Although the transmitter and receiver are set "bound" at the factory, below are the steps required to rebind your transmitter and receiver should the need arise.

Rebind Process

- 1. Ensure that the transmitter and vehicle are both turned off.
- 2. Using the supplied Bind plug (which looks like a standard receiver plug with a short wire loop installed), insert the Bind plug into the receiver slot labeled BIND. When you look down on the receiver slots, it is the slot farthest from the LED, and nearest to the corner of the receiver.

Note: You do not need to remove any other plugs to rebind.

- 3. With the bind plug installed, turn on the vehicle. Notice the LED is now blinking.
- 4. You are now ready to turn on the transmitter. You should notice on the back of the transmitter a similar blinking LED under a translucent cover.
- 5. Both the receiver and transmitter LEDs will stop blinking and be on solid, indicating that they have bound themselves together.
- 6. Turn off the vehicle and then the transmitter.
- 7. Remove the bind plug from the receiver.
- 8. Turn on the transmitter and then the vehicle to ensure operation. If the transmitter does not control the vehicle, please repeat steps 1-7 above. If after several attempts you are unsuccessful, please call Horizon product support.
- 9. The bind process is complete. Your vehicle's radio system is now ready for use.

Receiver Antenna

Using your fingers, gently straighten the antenna wire to be close to vertical from the chassis for the best radio reception.

Factory Settings of Radio/ESC

The Electronic Speed Control was calibrated together with the radio system at the factory. When you turn on and run the 1/10 Night Crawler for the first time, you may be required to slightly adjust the Throttle Trim. If the vehicle creeps in reverse or in forward, just make a fine adjustment to the Throttle Trim knob on the transmitter. Sometimes during transportation the settings can be slightly altered.



Driving the 1/10 Night Crawler

Please note the following precautions before running your 1/10 Night Crawler:

- The Electronics in this vehicle are not waterproof and you must avoid running the vehicle in or through standing water, wet grass, mud or snow.
- Perform a check of the vehicle before going out to run it.
 - o Ensure the tires are not coming off the rims.
 - Generally check the vehicle for items such as a loose wheel nut, or anything loose on the steering assembly.
 The vibrations of running off-road tend to loosen screws and nuts.
- Be careful driving when the battery is nearly discharged or the car is running slowly. You could lose enough power for the receiver to shutdown and you may lose control.
- When driving the 1/10 Night Crawler be cautious and use common sense.
- If your vehicle gets into a stall under or against a rock, if
 after a three seconds it does not climb the obsticle, do not
 continue to pull the throttle. This will overload the ESC
 and/or motor, resulting in damage to one or possibly both,
 and is not covered by your warranty. Reverse and try
 a different approach
- After running a battery pack, allow the electronics several minutes to cool, before running the next battery pack.

Run Time Consideration For The 1/10 Night Crawler Vehicle.

The single largest factor in run time is the capacity mAh of your battery pack. The larger the mAh rating, the more run time you will experience. On the same note, the longer you run, the hotter the battery plugs can get. Please check the standard plugs periodically.

For example: if you have a 4600mAh battery pack, you can expect close to twice the run time of a 2000mAh battery pack.

The condition of a battery pack is also an important factor in both run time and speed. As batteries see more use, they will degrade in performance and capacity. How you drive your 1/10 Night Crawler will also affect your run times. Hard acceleration draws a lot of current from any battery and will lead to shortened run time.

If the bearings are dirty they will cause significant drag leading to reduced run times and speed.

To improve run times consider the following:

- Keep your vehicle clean and maintained.
- Change the gearing to a lower ratio, making the electronics run cooler. This can be accomplished by using a smaller pinion gear than those originally supplied. The 1/10 Night Crawler comes with a 20-tooth pinion.
- Change to battery packs of higher mAh ratings.
- Is the charger you're using the best at charging your batteries? Check with your local hobby dealer.



Tuning, Adjusting & Maintaining the 1/10 Night Crawler

Periodically examine your 1/10 Night Crawler for the following:

- Keep your vehicle clean using a brush to remove dirt and dust.
- Look for cracks in the suspension arms and other molded parts.
- Check that the tires are still secure to the wheels.
- Check that all the wheel bearings are clean and lubricated.
- Using your tools, attempt to tighten all the screws and nuts.
- Transmission gears
 - o Check the compound gear for wear.
 - o Check the spur gear for wear.
 - o Check the pinion gear.
- Take the shocks off the vehicle and check, especially if they appear to be leaking, as it is time to rebuild them.
- Look over all the wiring and connections for bare wire or any place which could lead to a short circuit.
- Verify that the ESC is securely mounted to the chassis.
- Verify the receiver is still securely mounted to the chassis.
- Turn on the radio. If the Green LED is off or dim, replace the 4 AA batteries in the transmitter.

After you become familiar with driving your 1/10 Night Crawler, you may need to reset or make adjustments for better driving performance.

Tuning the 1/10 Night Crawler

Shock Location:

The 1/10 Night Crawler has two mounting locations. The position can be easily adjusted by simply moving the top of the shock to another hole. The standard location (lower hole) works best on jagged rocks or rougher terrain by raising the chassis providing more "belly" clearance. Moving the top of the shock to the upper hole will reduce the amount of droop and lower your chassis. This works better on smooth, steep rocks and "sidehilling" and increases stability.

Upper Track Rods:

Raising or lower the upper track rods will change how the 1/10 Night Crawler reacts under power when climbing and descending. The links have been placed in the middle position for a more neutral setting. Generally on high traction rock we suggest mounting the links in the upper holes while on loose or slippery rock use the bottom holes. Both front and rear link adjustments will change the handling of your 1/10 Night Crawler, experiment with the settings and see what suits your driving style.

Adjusting Gear Mesh:

Incorrect gear mesh is the most common cause of stripped spur gears. To set the gear mesh, one method is to cut a narrow strip of notebook paper and thread it in between the gears. Loosen the motor screws and slide the motor and pinion gear into the spur gear. Retighten the motor screws and then remove the strip of paper. Or you can loosen the motor and carefully slide the motor leaving a small amount of backlash (play) between the spur and pinion gears. It should not be tight and if you look up-close there should be slight movement of the spur before contacting the teeth on the pinion gear.

Gear Ratio:

When using higher gear ratios (bigger pinion), it is extremely important to monitor the temperatures of the battery and motor. If the battery is extremely hot, and/or the motor is so hot that you cannot touch it, most likely you are over geared and drawing a lot of current. The pinion gear installed on the 1/10 NIght Crawler is a 20-tooth pinion provides the power for most crawling situations.

Gear Ratio Chart

Pinion	ion Ratio Pinion		Ratio	
12	104.19	19	65.80	
13	96.18	20	62.51	
14	89.31	21	59.54	
15	83.55	22	56.83	
16	78.14	23	54.36	
17	73.55	24	52.09	
18	69.46	25	50.01	



Tuning the Chassis of the 1/10 Night Crawler (CONT'D)

Battery Position:

The 1/10 Night Crawler accepts mulitple battery configurations as shown on page 10. By using a Losi Crawler specific LiPo battery, the weight can be moved towards the front helping to provide better overall traction and reducing the overall weight and center of gravity.

Wheels and Tires:

The tires come pre-mounted with the vehicle and should be checked to make certain the beads have not pulled out from the wheels. The rough edges of rocks can eventually pull a bead from the wheel.

If this happens, remove the wheel from the vehicle and loosen all six 2-56 flat head screws so that the Beadlock ring is slighly pulled away from the wheel. Carefully "tuck" the bead back in place and using a "star" pattern, tightned the screws evenly.

Storage:

When you are through running the model for the day,

- Blow it off with compressed air or use a soft bristled paint brush to dust off the vehicle.
- Always disconnect and remove the battery from the model whenever the model is stored. If the model will be stored for a long time, then also remove the batteries from the transmitter.

Troubleshooting Your 1/10 Night Crawler

Many questions are the result of simple user errors or minor adjustments which are easily addressed. If after reading below you cannot resolve your problem, then please call the Horizon Support Team at 1-877-504-0233.

Radio system does not work properly:

If the power light on the transmitter is not turning on, first ensure the batteries are installed correctly. You should also check that the batteries are good and/or if rechargeable are fully charged. Replace them if needed. If the power light is blinking, then the transmitter batteries are weak and should be replaced.

Short radio range:

If the radio range appears short, make sure the batteries are all fully charged and/or are in good condition. Another tip is to make sure that your receiver's antenna is free from cuts, abrasions or kinks.

Steering works but the motor will not run:

The speed control may have gotten too hot and thermally shut down. Allow time for the speed control to cool. If this is the problem and has happened a few times, consider using a smaller pinion or a larger spur gear.

Check that a motor wire has not come loose.

Verify that the electronic speed control is plugged into the throttle channel of the receiver.

Check using another battery. Contact the Horizon Support Team at 1-877-504-0233 for service instructions.

Steering servo does not work:

Check all wires, radio system, battery connectors and the battery pack. Contact Horizon Support Team at 1-877-504-0233 for service instructions.

Motor runs backwards:

The black wire lead from the motor should be connected to the black wire lead from the ESC and the same for the red wires. If not, please correct by swapping the wires. If you are still experiencing problems please contact the Horizon Support Team at 1-877-504-0233.

Motor starts running immediately after the battery has been connected:

There may be internal ESC damage. Contact the Horizon Support Team at 1-877-504-0233.

Vehicle will not reverse:

Make sure the throttle trim is at neutral.

Recalibrate/Set up the ESC (see page 8).

Check to see if the ESC is in forward only mode that does not have reverse active



Warranty Information

Age Recommendation

14 years or over. This is not a toy. This product is not intended for use by children without direct adult supervision.

Warranty Period

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

- (a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACE-MENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.
- (b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.
- (c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. 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.

Damage Limits (CONT'D)

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this 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).

Safety Precautions

This is a sophisticated hobby Product and not a toy. 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. The Product 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 injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact 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 direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). 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. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.



Warranty Information (CONT'D)

Non-Warranty Repairs

Should your repair not be covered by warranty the repair 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 repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of 1/2 hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

Electronics requiring inspection or repair should be shipped to the following address:

> Horizon Service Center 4105 Fieldstone Road Champaign, Illinois 61822 USA

All other Products requiring warranty inspection or repair should be shipped to the following address:

> Horizon Product Support 4105 Fieldstone Road Champaign, Illinois 61822 USA

Please call 877-504-0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

United Kingdom

Electronics and engines requiring inspection or repair should be shipped to the following address:

> Horizon Hobby UK Units 1-4 Ployters Rd Staple Tye, Harlow Essex **CM18 7NS** United Kingdom

Please call +44 1279 641 097 or email us at sales@horizonhobby.co.uk with any questions or concerns regarding this product or warranty.

Germany

Electronics and engines requiring inspection or repair should be shipped to the following address:

> Horizon Technischer Service Hamburger Str. 10 25335 Elmshorn, Germany

Please call +49 4121 46199 66 or email us at anservice@horizonhobby.de with any questions or concerns regarding this product or warranty.

CE Compliance Information for the European Union

Instructions for Disposal of WEEE by Users in the **European Union**

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.







UK	DE	DK	BG	SE
FI	EE	LV	П	PL
CZ	SK	HU	RO	SI
AT	IT	ES	PT	ΙE
NL	LU	MT	CY	GR



Horizon Hobby, Inc. 4105 Fieldstone Road Champaign, IL 61822 USA

Declaration of Conformity

(in accordance with ISO/IEC 17050-1)

No. HH20090814

Product(s): LOS 1/10 Night Crawler RTR

Item Number(s): LOSB0104

Equipment class: 2

The object of declaration described above is in conformity with the requirements of the specifications listed below, followin the provisions of the European R&TTE directive 199/5/EC:

DE a Hall

EN 300-328 Technical requirements for Radio equipment.

EN 301 489-1, 301 489-17 General EMC requirements

Signed for and on behalf of: Horizon Hobby, Inc. Champaign, IL USA Aug 14, 2009

Steven A. Hall

Vice President

International Operations and Risk Management

Horizon Hobby, Inc.





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1.0044000	Spindle & Carrier Set	e 0 00	I OCDANA	Contar Transmission Coor Set	ØF 00
LOSA1030	Spindle & Carrier Set		LOSB3013	Center Transmission Gear Set	
LOSA1033	Upper Suspension Link Mount		LOSB3014	Center Transmission Shaft/Pin Set	
LOSA1034	Lower Suspension Link Mounts & Pins		LOSB3015	Motor Plate	
LOSA1517	Steering King Pins & Hardware		LOSB3525	Molded 12mm Hex Set	
LOSA2030	Rear Outer Hub, Cap & Hardware		LOSB3580	Center CV Drive Shaft	
LOSA3174	Worm Gear (Spool)		LOSB3581	Center Drive Shaft Cup Adaptor	
LOSA3175	Worm Pinion Drive Gear	\$17.99	LOSB3582	Center Drive Shaft CV Yoke & Coupler	\$11.99
LOSA3184	Rear Axle	\$8.99	LOSB3583	Cetner CV Drive Shaft Set	\$19.99
LOSA3185	Rear Axle Spacer Set, Alum	\$4.99	LOSB7002	Molded Bead Lock Rings: Blue Chrome	\$9.99
LOSA3194	Front & Center CV Rebuild Kit		LOSB8050	Night Crawler Painted Body: White	
LOSA3196	Front CV Drive Shaft Set HD		LOSB8051	Night Crawler Painted Body: Black	
LOSA3197	Front CV Axle HD		LOSB8212	Night Crawler Sticker Sheet	
LOSA3198	Front CV Drive Shaft HD		LOSB9499	Night Crawler 55T Motor	
LOSA3199	CV Pin Retainer Clip & 11mm Pins HD		LOSB9996	LED Light Set	
LOSA4009	Battery Strap (2)		LOODSSSO	LED Light Oct	ψ2 1.33
LOSA4009 LOSA4012			.		
	Axle Case Set		Option P		
LOSA4037	Servo Mounts, Plate & Hardware		LOSA1029	Lower Suspension Pivot Pins, TiNi (2)	
LOSA4039	Transmission Skid Plate		LOSA1031	Lower Track Rod, 7x83mm (2)	\$9.99
LOSA5012	Upper Shock Bushings & Lower Shock pivots(4)		LOSA1032	Upper Track Rod, 7x70.55mm (2)	\$9.99
LOSA5015	Double O-Ring Shock Cartridge		LOSA1035	Aluminum Front Spindle Set	
LOSA5046	Shock Pistons #56 (4)		LOSA1040	Aluminum Front Carrier Set	\$39.99
LOSA5079	Shock Ends & Cups (4)	\$4.99	LOSA1041	Aluminum Lower Suspension Link Mounts	
LOSA5156	2.5" Spring 3.4 Rate, Silver	\$3.99	LOSA1520	Steering Drag Link Assembly	
LOSA5224	Silicone Shock Oil, 30 Wt, 2 oz		LOSA1521	Steering Linkage Assembly	
LOSA6109	5mm E-Clips (12)		LOSA1321		
LOSA6204	4-40 x 1/2 Socket Head Screws			Aluminum Rear Hub Set	
LOSA6205	4-40 x 3/4 Socket Head Screws		LOSA3186	12mm Aluminum Hex (5.7mm wide)(4)	
LOSA6206	4-40 x 3/8" Socket Head Screws (10)		LOSA4035	Body Post Set	
LOSA6210	4-40 x 3/8" Flat Head Socket Screws		LOSA4040	Aluminum Servo Mounts	
LOSA6210	4-40 x 1/4" Flat Head Socket Screws		LOSA1513	Bushing Steering Knuckle, TiNi (2)	
			LOSA1518	Steering King Pins, TiNi (4)	
LOSA6221	4-40 x 5/8" Cap Screws		LOSA5043	Shock Pistons #60, Natural (4)	\$3.99
LOSA6227	Hardened Setscrews, 4-40		LOSA5045	Shock Piston #57, Black (4)	\$3.99
LOSA6228	Hardened Setscrews, 5-40		LOSA5046	Shock Pistons #56, Red (4)	\$3.99
LOSA6229	4-40 x 3/8" Button Head Screws		LOSA5047	Shock Pistons #55, Orange (4)	\$3.99
LOSA6232	2-56 x 1/4" Socket Head Screws		LOSA5048	Shock Pistons #54, Blue (4)	
LOSA6245	4-40 x 5/16" Button Head Screws	\$2.49	LOSA5056	Threaded Shock Body Set 1.2"	
LOSA6248	4-40 Setscrew Assortment (11)		LOSA5062	Shock Shaft, 1.2" Ti-Nitride	
LOSA6256	4-40 x 1/2" Button Head Screws (6)	\$1.99	LOSA5144	2.75" Spring 1.4 Rate, Gold	
LOSA6258	2-56 x 5/16" Flat Head Screws	\$4.99	LOSA5146	2.75" Spring 1.6 Rate, Gray	
LOSA6268	4-40 x 1 1/4" Flat Head Screws	\$3.99	LOSA5147	2.75" Spring 1.8 Rate, White	
LOSA6269	4-40 x 5/16" Flat Head Screws			2.73 Spring 1.6 Rate, Writte	
LOSA6283	4-40 x 5/8" Button Head Screws				
LOSA6294	2-56 x 5/16" Cap Head Screws			2.5" Spring 2.6 Rate, Red	
LOSA6306	4-40 Aluminum Mini-Nuts (10)			2.5" Spring 2.9 Rate, Orange	
LOSA6308	4-40 Steel Locking 1/2 Nuts (10)			2.5" Spring 3.4 Rate, Silver	
LOSA6350	#4 and 1/8" Hardened Washers			2.5" Spring 3.7 Rate, Green	
	Shim Set for Comp Crawler			2.5" Spring 4.1 Rate, Blue	
LOSA6358				Grappler Pro Body, Clear w/Stickers & Mask	
LOSA6937	5x10mm Shielded Ball Bearing (2)		LOSA99037	Crawler Servo Arm, Alum, 23T:JR, Air, KO	\$9.99
LOSA6940	6x12mm Sealed Ball Bearing (2)		LOSA99038	Crawler Servo Arm, Alum, 24T: Hitec	\$9.99
LOSA6943	10x15mm Sealed Ball Bearing (2)		LOSA99039	Crawler Servo Arm, Alum, 25T: Fut	\$9.99
LOSA6946	6x10x3mm Sealed Bearing			Fr/R Comp Claws 2.2 Tires w/Mem Foam, BI	
LOSA6947	5x11x4 Rubber Sealed Ball Bearing (4)			VFr/R Rock Carvers 2.2 Tires w/Mem Foam W	
LOSA6956	12x8x4mm Bearing (2)			Memory Foam Insert(2) Rock Crawler Tires	
LOSA7020	2.2 Beadlock Wheels, Chrome w/Rings(2)	\$25.99		MSX12 Digital Mini Servo	
LOSA8200	Body Clips	\$1.49		1/10 Xcelorin Rock Crawling Brushless Syste	
LOSB2034	Lower Track Rods:				
LOSB2036	Steering Track Rod & Bushings			Losi RC Pit Roller Bag	
LOSB2037	Upper Track Rods			Team Losi Cargo Bag	
LOSB2290	Chassis Plate Set, Blue			Losi RC Duffle Bag	
LOSB2290	Battery Tray			Losi RC Backpack	
LOSB2291	Servo Arm & Metal Insert			Losi Pit Mat, Large	
			LOSP071	Losi Heavy-Duty Camp Chair	
LOSB2460	Body Post Set			Losi Race Wrench Set (US 4pc.)	
LOSB2827	3pc Alum Shock Body (2)			Losi Nut Driver Set (US 4pc.)	
LOSB2828	Shock Cap O-Ring		LOSA99162	Losi Nut Driver 7mm	\$14.99
LOSB3012	Center Transmission Case & Supports	\$6.99		Shock Matching Tool	
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