



HELION

CONQUEST **10ST^{XB}**

Owner's Manual & Technical Information



HLNA0762

Conquest 10ST XB (US)

HLNA0772

Conquest 10ST XB (UK-EU)

HLNA0782

Conquest 10ST XB (AU)

Legal

Entire contents ©2016 Helion RC

Before using your product, review all documentation and inspect the product carefully. If for some reason you decide it is not what you wanted, then do not continue with unpacking, setup or operation of your product. Your local hobby dealer cannot accept a product for return or exchange after partaking in actions that produce wear and tear.

Read, understand and follow all instructions and accompanying material carefully before operating or assembling your product to prevent serious damage. Failure to complete these tasks properly or intentional aversion to the content will be considered abuse and/or neglect.

Product specifications are subject to change without notice. Due to ongoing development, the actual product may vary from images shown.

This product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

This product is not a toy! (14+) Recommended for ages 14 and up. Adult supervision required for ages under 18 years old. Contains small parts, keep out of reach of children 3 years of age and younger.

Important Information

Throughout this manual you will see different notes, cautions and warnings to help alert you to important information about the section you are reading. Please see below for the descriptions and what to look for to identify each type.

 **WARNING: THIS INFORMATION IS IMPERATIVE FOR YOU TO UNDERSTAND AND FOLLOW AS LACK OF COMPLIANCE WITH THE CONTENTS OF THE WARNING COULD CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.**

 **CAUTION: THIS INFORMATION IS IMPORTANT FOR YOU TO UNDERSTAND AND FOLLOW AS LACK OF COMPLIANCE WITH THE CONTENTS OF THE CAUTION COULD CAUSE DAMAGE TO YOUR PRODUCT THAT IS NOT COVERED UNDER WARRANTY.**

Note/Tip: This information is important for you to keep in mind, most commonly used to recall previously given information or to direct you to or provide you with additional information on a subject.

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Notice

Your product is calibrated and tested at the factory prior to final packaging, some issues may arise during shipping and handling that can be easily resolved at home. For other adjustments it should be known that hobby grade radio controlled products such as this differ from toy grade, in that they are intended to be user-serviceable products where the user can program, disassemble and maintain their own product. We try our best to ensure the information you need to introduce you to this form of product ownership is available to you through this manual. Please see the troubleshooting guide at the back of this manual for assistance in resolving issues, either as they are experienced out of the box or as found after regular use.

Note: Assuming your product functions properly as intended out of the box, the best thing you can do is pay close attention to how it feels, sounds and functions. This will help you identify problems later since you will have a reference of how the product is supposed to perform.

If you require further information or assistance resolving a possible issue, please consult the warranty card included with your product.

Precautions

Although great for first time users, Helion RC products are indeed advanced radio controlled vehicles with sensitive electronics and moving parts capable of causing injury if used improperly. Always use caution and common sense as failure to operate your product in a safe and responsible manner can result in damage to the product or other properties. Therefore this product is not intended for use or maintenance by children without direct adult supervision. Helion RC and your hobby dealer shall not be liable for any loss or damages, whether direct, indirect, special, incidental, or consequential, arising from the use, misuse, or abuse of this product or any product required to operate or maintain it.



WARNING: ALWAYS KEEP LOOSE CLOTHING, HAIR, TOOLS OR OTHER MOVABLE OBJECTS AWAY FROM MOVING PARTS OF YOUR VEHICLE DURING SETUP AND CONFIGURATION. SPINNING TIRES CAN EXPAND AND MAKE CONTACT WITH SMALL TOOLS, OR HARDWARE AND SEND THEM FLYING AT HIGH SPEEDS RISKING INJURY TO YOU OR OTHERS AROUND YOU.

- Your model can cause serious damage or injury so please use caution and courtesy when operating your model.
- As a safety precaution, perform all transmitter and receiver adjustments with all parts of the vehicle off the ground. This ensures the complete control over the vehicle at all times during adjustments.
- Do not operate your model near traffic, bystanders, parking areas, or any other area that could result in injury to people or damage to property.
- If at any time during the operation of your model you observe any erratic or abnormal behavior of your model, immediately stop operation and bring the mode to a safe stop in a safe location to diagnose the problem.
- Always power on your transmitter before turning your vehicle on.

- If you have little or no experience operating R/C models, we strongly recommend you seek the assistance of your local hobby dealer.
- Do not expose the transmitter to water or excessive moisture.
- Do not operate radio controlled products in a lightning or thunder storm.
- Ensure your batteries (both Tx and vehicle) are charged before each use.
- Check all servos and electrical connections prior to each use.
- Use caution when handling your vehicle after use as electronics may get HOT and could cause a burn if handled carelessly.
- Always allow the motor in your vehicle to cool completely before using it again.

R/C models are an extremely fun hobby, but safety should never be ignored or taken lightly. Always take caution when operating your model as damage to property and injury can result from careless operation. Please consult your local hobby dealer with any questions or troubleshooting issues. And of course don't forget to have fun, you deserve it after reading through all of these safety tips!

Package Contents

- 1 x Conquest 10ST XB
- 1 x IKONNIK ET3 Krypton 2.4GHz 3-channel transmitter
- 1 x Rechargeable Helion 6-cell 7.2V 2000mAh NiMH battery
- 1 x Mains charger

Items Needed to Complete and Enjoy

- 4 x AA alkaline batteries for the transmitter

Introduction

Complexity and sophistication is common in the RC world, but sometimes all you really want is a vehicle that offers core Monster Truck qualities. A sturdy RC off-roader that provides the speed and excitement you desire, the durability to take the rough with the smooth and the handling to keep you in control over all manner of uncompromising terrain. If you're new to RC bashing, you might also want something that's easy to maintain and upgrade as your skills increase. The Conquest 10ST XB is just such a truck. It is, in short, a 2WD, all-weather, all-terrain, all-rounder that's as happy backyard bashing as it is leaping off ramps, scorching through gravel, or performing rubber-burning wheelies. Not until you take a closer look will you appreciate the finer points of the rigid, workmanlike, composite chassis, the robust independent suspension and oil-filled, coil-over shocks, the fully enclosed spur gear housing that hides an adjustable slipper clutch, the authentic high-grip, long-wear, V-tread tires and the durable high-torque servo. But there's more! Easy to access electronic components make maintenance simple and keep upgrade options varied, while a Helion 2000mAh 7.2V rechargeable NiMH battery offers sensible run times. It's what you might call a 'total' solution, not least because it's supported by a high performance 550 brushed motor, Helion 40 amp ESC and IKONNIK's ET-3 radio, with rock-solid Krypton 2.4GHz protocol. That's quite a package and at a price you can't afford to ignore.

Features

- 100% factory assembled and ready to run.
- All-weather electronics.
- High performance 550 class brushed motor and Helion 40 amp ESC.
- 2S LiPo compatible.
- Fully enclosed and protected spur gear and slipper clutch.
- Impressive top speed of 20+ mph right out of the box.
- Reaches speeds of 25+ mph with an optional 2S LiPo.
- Four wheel independent suspension.
- Adjustable, oil filled, coil-over shock absorbers.
- Impact resistant composite construction is strong, durable, and lightweight.
- Metal dog bone style drive shafts.
- Toolless battery strap for easy battery installation and removal.
- Non integrated electronic components.

Getting Started

Below are some steps to help get you going right away and most applicable to those who have used RC products before. If you are new to the hobby or it has been a while since you've worked with the latest technology, please read through the manual to acquaint yourself with the latest procedures, Warnings, Cautions and Tips.

Charging

Although this information should be included with your batteries and charger, we have included it here again to ensure you have seen it and are aware of the most common things to be aware of with regard to charging our batteries.

- Never leave the battery unattended while charging and never operate the charger without adult supervision.
- Never charge a warm battery, always allow the battery to cool to room temperature before charging.
- Always use a fire-proof charge bag when charging/discharging LiPo batteries
- Never drop the charger or battery and do not attempt to charge a damaged battery.
- Inspect the battery and charger before use. Never use a battery or charger if the wire or connector has been damaged or if the battery has experienced a short.
- Incorrect use of the battery, connections, or charging equipment can cause personal injury or property damage.
- Never allow batteries or charger to come in contact with moisture at any time.
- Stop charging immediately if the battery or charger becomes hot or changes form during use.



WARNING: WHEN USING LIPO BATTERIES, ONLY USE CHARGERS DESIGNED FOR USE WITH LIPO BATTERIES FOR THE RC INDUSTRY THAT ENABLE BALANCE CHARGING AND USE THE SUPPLIED CONNECTOR. USE OF OTHER (NON-RC SPECIFIC) CHARGERS OR CONNECTORS CAN CAUSE CATASTROPHIC FAILURES AND CAN PERMANENTLY DAMAGE YOUR BATTERY AND/OR CONNECTED EQUIPMENT. THIS PRODUCT IS NOT A TOY AND SHOULD NOT BE CHARGED, OPERATED, OR MAINTAINED WITHOUT SUPERVISION OF AN ADULT.

Fully balance charge your chosen 2S LiPo battery in accordance with charging and safety guidelines supplied with the battery. LiPo batteries are sensitive to the charge current and, as such, it should be chosen with care.

- The battery pack must have a compatible HCT plug, or use an adapter that includes high current connectors.
- You can use a suitable LiPo battery pack, however you must change the LVC (Low Voltage Cut-off) on the ESC (see page 17 of this manual for ESC settings)

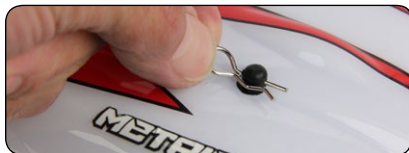
Quick Start Guide

1. Remove the components from the box and ensure the contents are correct:

- 1 x Conquest 2WD Stadium Truck
- 1 x 2000mAh 6-cell NiMH battery pack
- 1 x IKONNIK ET3 2.4GHz 3-channel transmitter
- 1 x 6-cell wall charger
- 1 x Quick-Start Guide



2. Remove the four body clips from the car and lift the body clear.



3. Locate the battery cradle in the center of the car, release the hook and loop tape and withdraw the battery pack.



4. Plug the charger into a wall socket, connect the battery to the charger and place the battery on a non-flammable surface. Switch the wall socket ON noting that a fully discharged battery will be charged in approximately 3 hours. Periodically monitor the temperature of the battery when charging and disconnect if it exceeds 120 °F (49 °C). Unplug the battery when charged.



5. Re-insert the fully charged battery pack into the cradle and tightly secure it with the hook and loop straps.



6. Remove the battery cover from the underside of the ET3 transmitter and insert four AA alkaline cells. Take care to ensure that the correct polarity is observed.



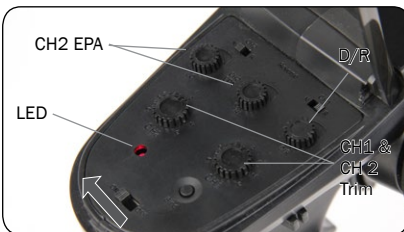
7. Ensure the radio switch is in the OFF position, then connect the battery to the ESC.



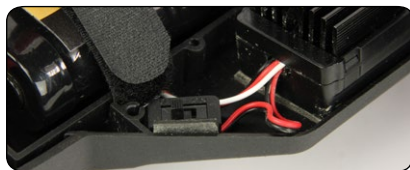
8. Replace the body and secure it with the four body clips.



9. Switch ON your IKONNIK ET3 transmitter and ensure the LED is lit solid red and that no alarms are audible. Ensure that the CH2 EPA dials are turned fully clockwise and that the D/R (steering rate) dial is centered. Ensure, also, that the CH1 and CH2 (trim) dials are centered at zero.



10. Slide your finger under the dust cover, locate the switch and turn ON your Conquest. In the unlikely event that the car does not operate, see the PAIRING / BINDING instructions on page 11.



11. Check the operation of the throttle and steering. Pulling the throttle trigger back will drive the car forward, pushing the trigger forward once will apply the brakes while pushing the trigger forward twice will drive the car in reverse. Turning the wheel to the right will cause the car to turn right and vice versa.



12. Use the throttle and steering trim dials to fine-tune the controls of your car. In doing so, ensure that your Conquest tracks in a straight line. Also that it doesn't creep forwards or backwards at zero throttle.



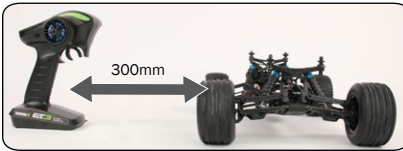
Binding/Pairing the Transmitter

Having followed steps 1 to 12, in the unlikely event that your car does not operate please follow the 5 stage pairing process detailed here.

1. Remove the body and locate the ET3 Krypton receiver.



2. Place your Conquest and ET3 transmitter in close proximity but not less than 12" (300mm) apart.



3. Press and hold the PAIR / BIND button on the receiver then switch the receiver on. The receiver's LED will flash to indicate that it is in PAIR / BIND mode.



4. Press and hold the PAIR / BIND button on the transmitter then switch the transmitter on. Release the PAIR / BIND button only when the transmitter's LED begins flashing.



5. When the LED on the receiver lights solid red your ET3 transmitter and Conquest will be bound. You will now have full control of throttle and steering. Return to Step 13 of this guide to complete the set-up of your car.



The IKONNIK ET3 Radio System

Offering a class-leading feature set, the advanced IKONNIK ET3 2.4GHz 3-channel sport transmitter offers style, comfort and an interference-free performance, courtesy of IKONNIK's rock-solid Krypton (Kr) protocol. Functions include servo reversing on both primary channels, steering dual rate, throttle trim, steering trim and, perfect for beginners, throttle end point adjustment. Add a low voltage warning, an ultra-bright LED status light, optional charge socket and a switched third channel and the ET3 will quickly become your favorite grab 'n' go radio.

Features

- A simple to operate single model memory transmitter and receiver
- 2.4GHz operation avoids conflicts with other users
- Easily pairs with vehicles pre-equipped with IKONNIK Krypton technology
- Proportional steering and throttle control
- Rotary steering and throttle trims
- End point adjust on channel 2
- Handy, switched third channel for ancilliary controls
- Adjustable steering rate - perfect for reducing the steering sensitivity for younger or new drivers

Specifications

Pairs With	IKONNIK Krypton Protocol
Channels	3
Memory	Single model memory
Tx Batteries	4 x AA
Tx Length	165mm (5.8in)
Tx Height	215mm (11.07in)
Tx Width	90mm (5.05in)
Tx Weight	282g (0.62lb) without batteries

Helion 40A Brushed System Overview

We've included some great features in your Helion Brushed ESC to help keep your system running in top shape while keeping your battery upgrade path open since it is compatible with LiPo batteries.

Technical Specification

Continuous current: ..40A (forward) 20A (reverse)
Burst current:180A (forward) 90A (reverse)
Resistance:.....0.0020 ohm (forward) 0.0040 ohm (reverse)
Motor type:.....Brushed
Motor limit:540 - 550 size 12T
Battery:5 – 6 cells NiMH 2S LiPo
BEC:.....6V/2A (linear mode)
Dimensions (mm):.....46.5 x 34 x 28.5
Weight:65g



WARNING: ALWAYS ALLOW YOUR MOTOR TO COOL BETWEEN RUNS. EXCESSIVE ACCELERATION AND AGGRESSIVE DRIVING WILL CAUSE YOUR SYSTEM TO GET HOT. EXERCISE GREAT CARE WHEN HANDLING YOUR VEHICLE AFTER RUNNING TO AVOID GETTING BURNED.

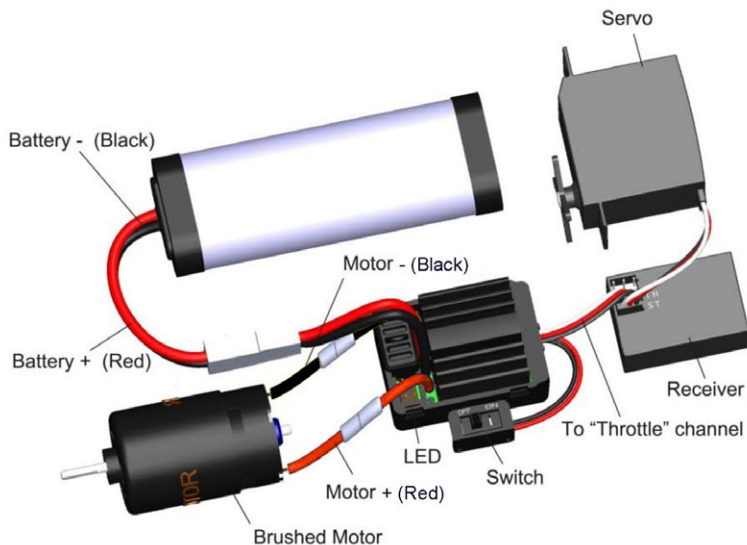
Features of your ESC

- Waterproof and dustproof. The ESC can work underwater for a short time.
- Specially designed for RC cars and trucks, with excellent start-up, acceleration and linearity features.
- Automatic throttle range calibration - easy to use!
- Low Voltage Cut-off (LVC) protection for LiPo or NiMH battery.
- Overheat protection.
- Throttle signal loss protection.
- Motor blocked protection.
- Easily programmed with jumpers.

Your ESC has been pre-installed at the factory but before using your vehicle each time it is good to double check the wiring for damage or loose connections to ensure everything is in working order before. Refer to the diagram below to check the connections of your electronics system.

Throttle Range Calibration

Unlike other systems that require manual setup, your Helion Brushed ESC features automatic calibration. However, for this feature to function properly you need to ensure the throttle channel of the transmitter (CH.2) is set to N (normal). Please also set the transmitter's throttle channel D/R, EPA and ATL to 100% and set the throttle trim to 0. For non computer transmitters, turn the D/R, EPA and ATL dials to their maximum travel and the trim to its neutral position.



1. Connect a fully charged battery.
2. Turn the transmitter ON first the ESC, noting that the transmitter should always be ON if the ESC is ON.
3. Keep the throttle stick at its neutral position, wait for 3 seconds to let the ESC perform its self test and automatic throttle calibration.
4. When the ESC is ready to run, a long beep will sound.
5. This calibration will be performed every time the ESC is powered on. If you are touching the trigger during this process the ESC will not calibrate or function, simply release the trigger and wait for the audible chime.
6. Check the ESC operation to ensure you have full throttle and brake before driving the vehicle.

Note that you'll need to calibrate the throttle range again when using a new transmitter or when changing the settings of the neutral position of the throttle channel, D/R, ATV, ATL or EPA. If this is not carried out the ESC may not work properly.

Understanding the LED Status Light and Alert Tones

Your Helion 40A ESC is programmed to communicate with you to let you know its status.

LED in normal use

- If the throttle trigger is in the neutral range the LED will be off.
- The red LED blinks when the car is running forward, backward or braking.
- The red LED lights solid when the throttle trigger is moved to the full throttle or full reverse position.

Alert tones

1 Short Beep: The battery type is set to NiMH / NiCd.

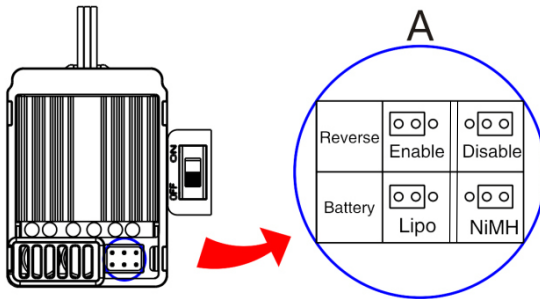
2 Short Beeps: The battery type is set to 2S LiPo.

3 Short Beeps: The battery type is set to 3S LiPo.

1 Long Beep: Self test and throttle calibration is complete / the ESC is ready to run.

Programming your ESC

Your Helion 40A brushed ESC is a programmable unit whose direction and battery type can be adjusted by altering the position of the jumper plugs. The plugs are best repositioned using tweezers in conjunction with the following diagram.



Low Voltage Cut-off (LVC) Protection

Please note the following with regard to the pre-programmed LVC settings.

- 5 - 9 NiMH cells** Output reduces to 50% at 4.5V
 Output cuts off at 4.0V (no recovery)
- 2S LiPo** Output reduces to 50% at 6.5V
 Output cuts off at 6.0V (no recovery)
- 3S LiPo** Output reduces to 50% at 9.75V
 Output cuts off at 12V (no recovery)

Overheat Protection

When the internal temperature of the ESC is higher than 100°C or 212°F for a period of 5 seconds the ESC will first reduce and then cut off the output power. When the car stops the red LED blinks to indicate that the overheat protection has been activated. When the ESC cools to 80°C or 176°F the output power will recover and normal control will resume.

Signal Loss Protection

If the throttle signal is lost for 0.1 seconds the ESC will cut the output power and the car will stop.

Helion Brushed ESC Troubleshooting

Trouble	Possible Reason	Solution
After power on, motor can't work, no sound is emitted, and LED is off.	The ESC doesn't get its working voltage; Connections between battery pack and ESC are broken.	Check the battery wires connection or replace the defective connectors.
	Switch is damaged.	Replace the switch.
After power on, motor can't work; red LED blinks.	Throttle signal is abnormal.	Check the throttle wire connection; make sure it is plugged into the throttle channel of the receiver.
	Automatic throttle range calibration has failed.	Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position.
The car runs backward while giving throttle. (The motor runs in the opposite direction)	The wire connections between ESC and the motor need to be changed.	Swap two wire connections between the ESC and the motor.
The car can't go backward.	The jumper position is wrong.	Check the jumper and plug it to the correct position.
	The neutral point of throttle channel is changed or drifted.	Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position.
The car can't go forward, but can go backward.	The direction of throttle channel is not correct.	Reset the direction of throttle channel from original "NOR" to "REV", or from original "REV" to "NOR".
The motor doesn't work, but the LED in the ESC works normally.	The connections between motor and ESC are broken.	Check the connections and replace the defective connectors.
	Motor is damaged.	Replace the motor.
The motor suddenly stops running while in working state	The throttle signal is lost.	Check the transmitter and the receiver. Check the throttle wire connection.
	Low voltage cut-off protection or Over-heat cut-off protection has been activated.	Replace the battery pack, or cool down the ESC.
The car cannot get top speed and the red LED doesn't solid on at full throttle	Some settings in the transmitter are incorrect.	Check the settings. Set D/R, EPA, ATL to 100% or turn the knobs to maximum value. Set TRIM to 0 or turn the knob to its neutral position.
Motor is cogging when accelerated quickly.	The battery has limited discharge ability.	Use battery with better discharge ability.
	Motor RPM is too high, the gear ratio is too aggressive.	Use motor with lower RPM, or use smaller pinion to get softer gear ratio.
	Problem with components in the drive train.	Check the driving system of the car.

Adjusting and Tuning Your Vehicle

The Conquest 10ST XB has been engineered with some available tuning options listed here for reference. The default configuration has been chosen to provide what we feel is the most enjoyable experience for most operating conditions. However we do encourage experimentation and testing as that's where the real fun begins!

Ride Height Adjustment

It is ideal to have the drive shafts above level but still allow the shocks to extend when you lift the vehicle while the vehicle is sitting on a flat surface with the body installed. Use the threaded adjustment collars to achieve the desired ride height.

- Lowering the collar will raise the ride height of the vehicle and if done excessively may decrease stability.
- Raising the collar will lower the ride height and may cause the chassis to drag on the ground.

Upper Shock Position

There are multiple shock installation locations for the top mounting location of the shock towers. The default positions have been chosen as a good starting point. Moving the shock mounting location inward will result in a slightly less responsive feel on the front or rear of the vehicle but it will be a little more stable. Moving the shock mounting location outward will make the truck more responsive but less stable in some conditions.

Lower Shock Position

There are multiple shock installation locations for the lower mounting location of the shocks in the suspension arm. The default location is ideal for the included shock length. However you can play a little.

- Moving the shocks to the inside location will result in a slightly more responsive feel on the front or rear of the vehicle but become a little less stable. This change will also increase the vehicle's articulation and you will notice more body roll. Always check and adjust, if necessary, the ride height of your vehicle after moving the shock mounting locations.

Battery Mounting

Your vehicle comes equipped with a default mount setting for a 6-Cell NiMH battery. It is also possible to fit a 2S LiPo battery (we highly recommend hard cased batteries that resist wear). Ensure the pack is firmly secured with the hook and loop tape to keep it from changing position in the battery tray.

General Care

- Always use clean, dry cloth or soft bristle brush to clean your equipment.
- Never use chemical cleansers to avoid damage to the sensitive electronics and plastics.

Maintenance

We want you to enjoy your product to its fullest potential. For this to happen it is important to keep your product clean and properly maintained. Lack of cleaning and maintenance can cause component failure. For best and continued performance from your product it is recommended to briefly inspect your product for damage every few uses. Typically, a good time to do this is when changing the battery in your vehicle or while it is charging. If a problem is discovered, stop use immediately and perform repairs or seek assistance. Continued use of failed components can cause more unnecessary damage to your product.

ESC and Servo

The ESC and servo included in your vehicle are rated for all weather use. It is recommended that you avoid submersion of the vehicle however running in puddles, rain and snow should not cause damage. Always remove excess water/snow from your vehicle after running to help prevent corrosion. Using an air compressor is effective but please use eye protection.

Transmitter

Although the receiver included with your radio system is rated for all weather use, the transmitter is not. The transmitter should not be used in the rain or other wet environment to avoid damage to the sensitive electronics.

- Clean dirt and debris off of your transmitter regularly to avoid the consequences of these getting into the sensitive electronics where they can cause short circuits and/or restrict motion of the internal steering and throttle mechanisms.
- Ensure the antenna is kept in proper working order. The transmitter is not safe to use with a broken or missing antenna.

Receiver

Although the receiver included with your radio system is rated for all weather use, it is recommended that you avoid submersion of the receiver, however running in puddles, rain, and snow is okay.

To achieve full operating range with your radio system, it is critical that the receiver antenna be installed properly and undamaged.

- Inspect any exposed antenna for cuts or abrasions.
- Ensure there are no kinks in the antenna or antenna tube.

- Never fold the end of the antenna over the tube, this will reduce the range and damage the antenna.
- Ensure the antenna is not being pinched by the set screw that holds the antenna tube in place.

Gears

Periodically remove the gear cover to clearly inspect the gears and ensure there is no debris in the gear compartment.

Proper gear mesh setting is crucial for proper operation and life of gears in your product. It is important to have the pinion gear (attached to motor) as close to the spur gear (attached to drive shaft) as possible yet while providing a minimal amount of backlash. Backlash is the rotation one gear has to make before contacting the other. Having the gear mesh set too tight will cause excess load on the electrical components and may cause premature failure. Having gear mesh set too loose will cause excess wear and possible skipping of teeth during operation thus causing excess wear and premature failure.

Checking the gear mesh and setting proper backlash.

1. Remove the spur gear cover.
2. Check how much movement is allowed (backlash) of the spur gear before the pinion gear moves (this is mostly feel, not visual). Check this movement in multiple places by rotating the spur gear approximately 1/6 rotation and rechecking.
3. If the spur gear is allowed to move more than a very small amount, or if it there is no backlash, the gear mesh must be adjusted. If there is a lot of movement, it is recommended to attempt to tighten the mesh. Attempted adjustment should only improve the situation; if the mesh was correct to begin with, you will know what that feels like, and if it wasn't correct, it will be when you are done after following these procedures.

Setting the Gear Mesh

1. Loosen the clamping screw securing the motor plate's rotation in the motor mount, only enough to allow the motor to rotate in the mount. Check and ensure there is no debris in the gears affecting the mesh.
2. Rotate the top of the motor away from the center of the chassis, insert a strip of notebook paper between the pinion and spur gear, then rotate the motor plate back until there is no backlash. You will have to push/twist relatively hard to ensure the paper is pressed all the way into the teeth.
3. Hold the motor snugly in position while retightening the screw. Only tighten the screw until the motor won't move. There should be a slight gap between the coils of the spring.
4. Rotate the spur gear (turn the tires) to feed the paper out of the mesh, re-check the gear mesh and adjust again if necessary.
5. Re-install the spur gear cover when the mesh is properly set.



WARNING: NEVER OPERATE YOUR VEHICLE WITH THE SPUR GEAR COVER REMOVED. SEVERE INJURY, DAMAGE TO ELECTRICAL COMPONENTS, AND EXCESSIVE WEAR AND TEAR ON DRIVETRAIN MAY RESULT.

Shocks

Periodically inspect the shocks for smooth motion, leaking oil and dirt residue build up around the shaft or caps. Do not allow dirt to build up around the shock shaft and bottom of the shock. Doing so will reduce the life of the shock and cause a shock to leak oil. Be sure to clean the shocks regularly with a clean and dry soft bristle brush and/or rag.



CAUTION: NEVER USE SPRAY CLEANERS TO CLEAN YOUR SHOCKS, DOING SO CAN CAUSE DAMAGE TO THE SEALS, CAUSING THEM TO LEAK MORE AND REDUCE THE LIFE AND PERFORMANCE OF YOUR SHOCKS.

Signs to look out for determining if your shock needs to be maintained or rebuilt.

- Oil around the shaft means the oil leaked from inside and needs to be replaced.
- Persistent oil around the shock shaft or lower portion of the shock typically points to damaged O-rings which will need replacing. See your local hobby dealer for replacement parts.

Refilling your shocks:

1. Remove shock from vehicle, remove spring and top cap. Remove the bleed screw from the cap.
2. With shock shaft extended, add oil to top of body (use only 100% silicone oil) and reinstall the shock cap. Be sure the o-ring stays "seated" and does not squeeze out.
3. Slowly compress the shock shaft 100% of travel using a towel or paper napkin to clean up overflowed oil, then reinstall the bleed screw. Do not over-tighten.
4. Check for free motion of shock. If the shock feels like it gets stiffer at the end of compression, there is too much oil or air. Compress the shaft and remove the bleed screw slowly to allow excess air/oil to come out, then reinstall the screw.
5. It is normal for the shock to rebound (with the spring removed) after full compression and release.

Replacing the O-rings:

- Disassemble shock and remove shock end and shaft from the body.
- Carefully remove lower cap by unscrewing from the shock body.
- Remove the O-ring and spacer and replace with genuine replacement parts.
- Re-assemble the shock following the refilling instructions above.

Tires and Wheels

Inspect the tires to ensure they have adequate tread and they are properly glued to the wheels. The tires on your vehicle come pre-glued from the factory; however after running your vehicle it is possible for the glue to come loose in some areas.

- To reattach the tire to the wheel, use hobby grade Cyanoacrylate (CA) glue and apply small amounts (one drop at a time) between the tire and wheel. Allow the glue to fully dry before operating your vehicle.
- When reinstalling tires, use caution when tightening the nuts that secure the wheels to the vehicle. Ensure the wheels rotate freely but don't wobble excessively. Over tightening the wheels may cause excess strain on the electrical and mechanical components of your vehicle. Operating your vehicle under these conditions will void your warranty.
- Taking the above into consideration, leaving wheels too loose can cause them to strip. It is recommended to check that the wheel nuts are tight every time you run your vehicle.
- Consequently running your vehicle will cause the tires to eventually wear out. Be sure to obtain and use genuine replacement parts from your local hobby dealer when necessary.

General Wear and Tear

Using your vehicle will cause general wear and tear which is not covered under warranty yet may necessitate replacement of components. Continued operation of your product with worn components may cause continued damage to other components.

Be sure to regularly inspect your vehicle and accessories for excess wear and damaged components.

Storage and Disposal

Storage

- Always store all equipment in a cool dry place when not in use.
- Always disconnect the batteries before storage.
- Never store the transmitter or receiver in direct sunlight for extended periods of time.
- Never store the transmitter with batteries installed for extended periods of time. Doing so may allow the batteries to leak and cause permanent damage to the transmitter.
- Always disconnect electrical connections after use in wet environments. Allowing the contacts to dry will reduce corrosion.

Disposal

Your product is considered electronic waste and should never be discarded in standard garbage containers. Please visit your local hobby dealer (and some home improvement centers) and use the FREE battery disposal center for proper disposal/recycling. Consult your local city hall for information on recycling other electronic waste.

Troubleshooting Problems

Before contacting customer support, recall that this is a hobby grade product intended to be user serviceable. Please take the time to fully inspect your product for any obvious causes to the issues you are experiencing. Below are some of the most common issues experienced. Ensure you refer to the product support content on our website.

- Many control issues can be resolved by simply re-pairing the transmitter and receiver, always start here.
- Dead transmitter or vehicle batteries will cause the product to malfunction and not work properly. As with TV remote controls in your home, if the batteries are dead, they don't work. Start power related troubleshooting with fresh batteries in the transmitter and recharged batteries in the vehicle.
- Power connections between the Battery, ESC and receiver are critical to the performance of the product. Running in various debris may cause foreign objects to snag on wires, causing connections to come loose. It is a good idea to unplug and reconnect motor and battery connections when beginning power related troubleshooting. Also inspect for any damage caused to the antenna.
- Drivetrain issues can mask themselves as power related. Fully inspect the wheels, driveshafts, and motor for foreign objects that may have become tangled or wrapped around the spinning parts of the drivetrain. Small objects like fishing line for example, can wrap around a drive shaft, overheat and melt due to the friction and cause the entire drivetrain to lock up. Although a big problem, it can be difficult to see when inspecting. Always remove the wheels from your vehicle when troubleshooting drivetrain related issues.
- The drivetrain in your vehicle has a covered shaft to protect from debris. We encourage you to remove it and inspect under the cover to ensure that items have not been entangled around the shaft causing drag and possible failure. Inspect around the steering components to ensure no debris are preventing normal steering operation.
- Steering can become sluggish once components get dirty or "take a set" after running. Inspect the rod ends of the turnbuckles to ensure they are properly aligned and not binding. You should be able to grab a turnbuckle with your fingers and rotate it easily.

- Healthy gears are crucial to a properly functioning vehicle. If you hear your vehicle making very loud noises, you should immediately stop and check the gears for foreign debris. Even a small pebble can get lodged into the teeth of the pinion gear, which would practically destroy the spur gear in a very short period of time.

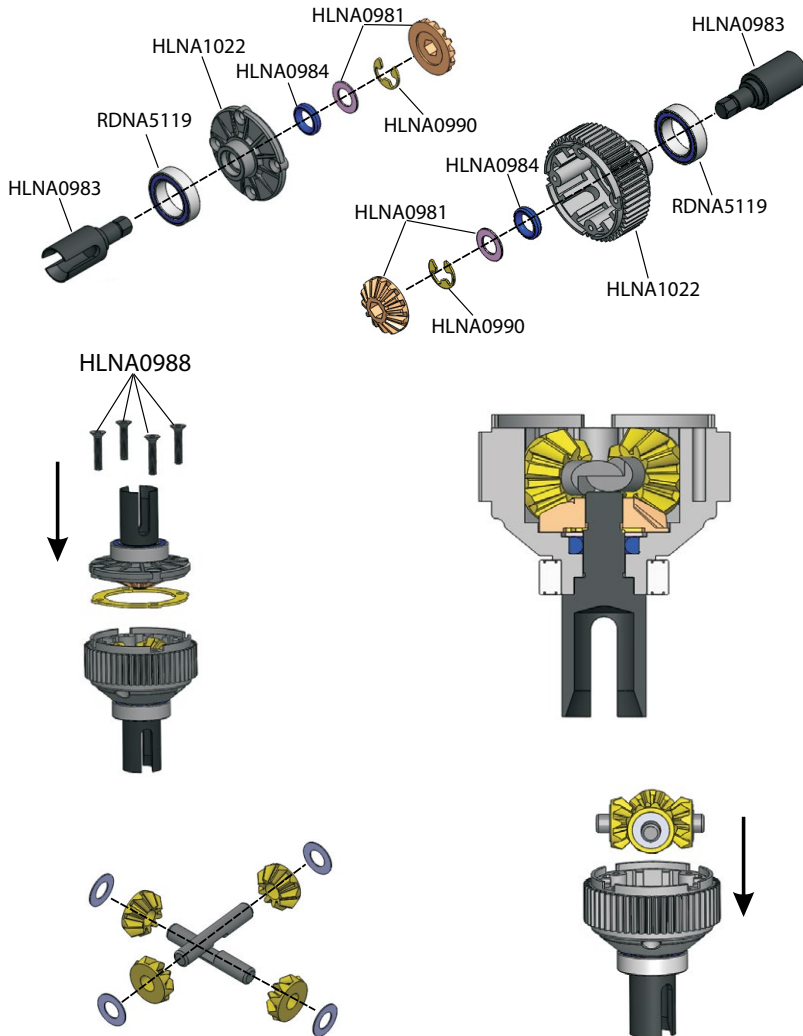
Troubleshooting Tables

Problem / Symptom	Possible Cause	Possible Solution
ESC will not set to transmitter	Receiver and transmitter not bound	Try re-binding
	Throttle Channel not set to Reverse	Unless using Futaba radio, set Th channel to Reverse
	Batteries dead in car or transmitter	Replace batteries
	Transmitter Trims and EPAs are too far out of range for the ESC	Ensure throttle/brake trim is centered and adjust throttle and brake EPAs to maximum
	Transmitter is too close to vehicle	Hold transmitter farther away from vehicle
Car slowed down drastically during run	Battery voltage too low, LVC active	Charge or change batteries
	ESC over-temp protection active	Turn off ESC and allow ESC and motor to cool before running again
	ESC Over current protection active	Change operating conditions to ones that are not as hard on the electronics, ie move from grass to asphalt Reduce pinion gear size on the motor to reduce load on the ESC
Car doesn't accelerate	Ensure the proper running mode is used	Change running mode based on battery you are using
Reverse not working	Reverse mode has been disabled in ESC	Follow setup instructions to run back on
	ESC was improperly set to transmitter	Re-set to transmitter, ensure Th channel is set to Reverse for non Futaba transmitters
	EPA on transmitter has been turned down for reverse	Adjust EPAs to 100% and reset ESC to transmitter
Motor only goes in reverse or goes in reverse when I pull trigger to go forward	Throttle Channel not set to Reverse	Unless using Futaba radio, set Th channel to Reverse and reset ESC to transmitter
	Motor connected to ESC improperly	Switch any two motor wires
	EPA on transmitter has been turned down for reverse	Adjust EPAs to 100% and reset ESC to transmitter
LED is flashing on ESC	1 flash per second	Low voltage cut-off protection active
	2 flashers per second	ESC over-temp protection active
	3 flashes per second	ESC over-current protection active
	Any combination of above	Multiple errors have occurred. Turn ESC off, change battery and allow system to cool before using again. Ensure your ESC is in the correct running mode for the type of battery you are using

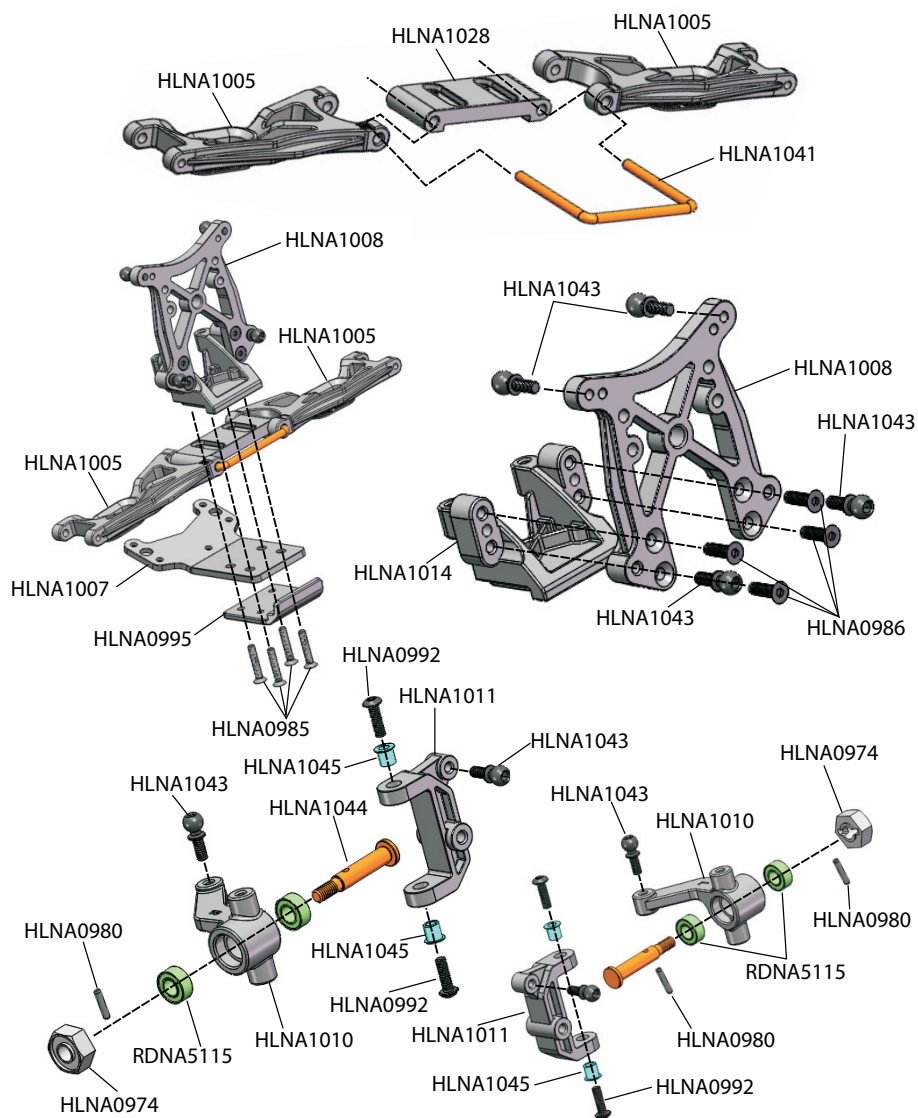
Problem / Symptom	Possible Cause	Possible Solution
Vehicle will not turn on	Battery voltage too low	Charge battery
	Battery not connected	Re/connect battery
	Damaged battery	Replace battery
Transmitter will not turn on	Battery voltage too low	Charge or change batteries
	Battery/ies installed improperly	Correct installation
Short radio range (Vehicle stops responding to transmitter at short distances)	Damaged or improperly installed receiver and antenna	Check receiver antenna for damage. Ensure antenna is properly installed in tube and mount, extending perpendicular from the ground. Ensure all connections are secure
	Receiver is malfunctioning	Replace receiver
	Battery voltage too low	Replace or recharge batteries in transmitter and vehicle
Steering not responding as expected	Trim not set properly	Adjust steering trim
	Screws too tight on steering parts	Adjust screws to allow for free motion
	Fasteners have become loose	Check and tighten all fasteners to as-new condition, be careful not to over tighten
Vehicle not responding as expected to transmitter	Trims not set properly	Adjust throttle and/or steering trim
	Radio system lost bind	Re-bind radio system
	Bad electrical connections	Check motor and battery plugs to ensure they are fully connected
Wheels twitch while vehicle is idle (controls at neutral)	Transmitter too close to receiver (<1m)	Increase distance between the units
	Receiver wire damaged	Inspect antenna for damage and replace if necessary
	Receiver antenna not installed in vertical position	Install in mount with care to not damage antenna wire
Steering will not trim straight, always has right or left bias	Binding in steering system	Inspect and correct any binding components or loosen screws if over tight
	Front wheels too tight	Check and adjust wheel nuts to ensure the wheels are not too tight
Vehicle top speed and acceleration is slow	Battery voltage too low	Charge battery
	Drivetrain has too much friction	Check for debris/excessive wear on gears, inspect bearings
	Gear mesh too tight	Loosen gear mesh
	Pinion gear is loose	Check and tighten set screw on motor pinion
	Broken Differential	Check differential and ensure the outriggers are secured and gears intact. You should not be able to pull them out
	Drive pin missing	Check for missing wheel pins (behind wheel hexes), or dogbone pins
Wheels not spinning freely	ESC not set to transmitter	Follow ESC instructions to set to transmitter
Battery charge stops lasting as long as it used to	Wheels too tight	Check and adjust wheel nuts
	Differentials stripped	Check differentials and replace/repair if necessary
	The battery has become old	Replace battery
	Battery not charged completely due to insufficient charge time	Charge for longer period of time or try a peak detection charger. We recommend the Radiant Primal RDNA0041
Shocks and/or arms covered in oil	Gear mesh too tight	Check and reset gear mesh setting
	Charger, battery, wires, or plug has malfunctioned	Check all connections and wires for damage or excessive wear and replace if necessary
	Shock O-ring seals are worn	Replace O-rings and refill shock with oil
	Top shock cap too loose or over tightened	Check tightness (finger tight), refill shock oil
Spur gears stripping	Bottom shock cap dislodged	Check installation, refill shock oil
	Gear mesh too loose	Tighten gear mesh for proper backlash
	Fasteners loose or missing	Check for loose fasteners and bad bearings.
	Pinion gear too worn out	Replace pinion gear

Exploded Views

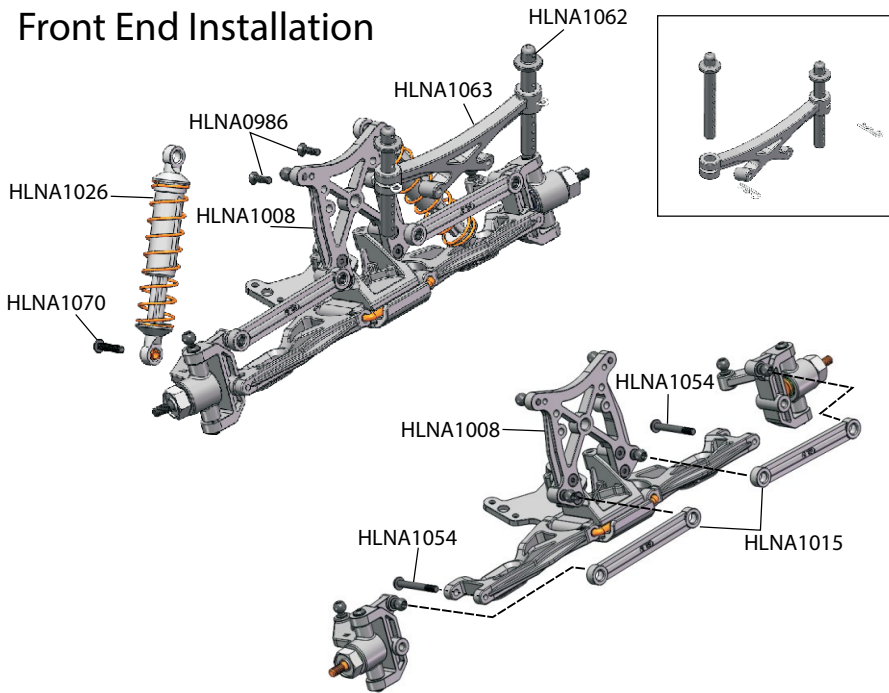
Diff. Gear Assembly



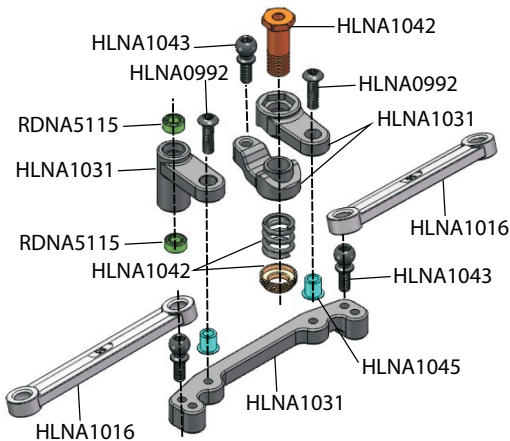
Front End Installation



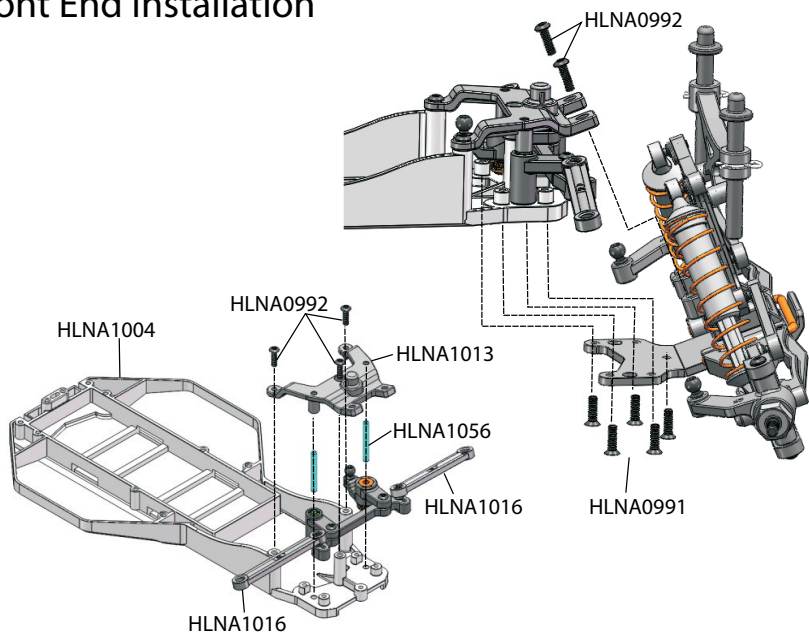
Front End Installation



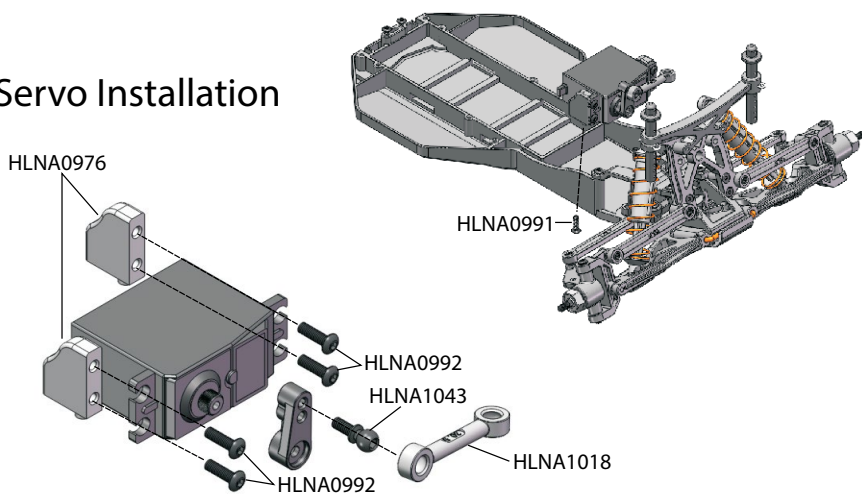
Steering Sway Arm Assembly



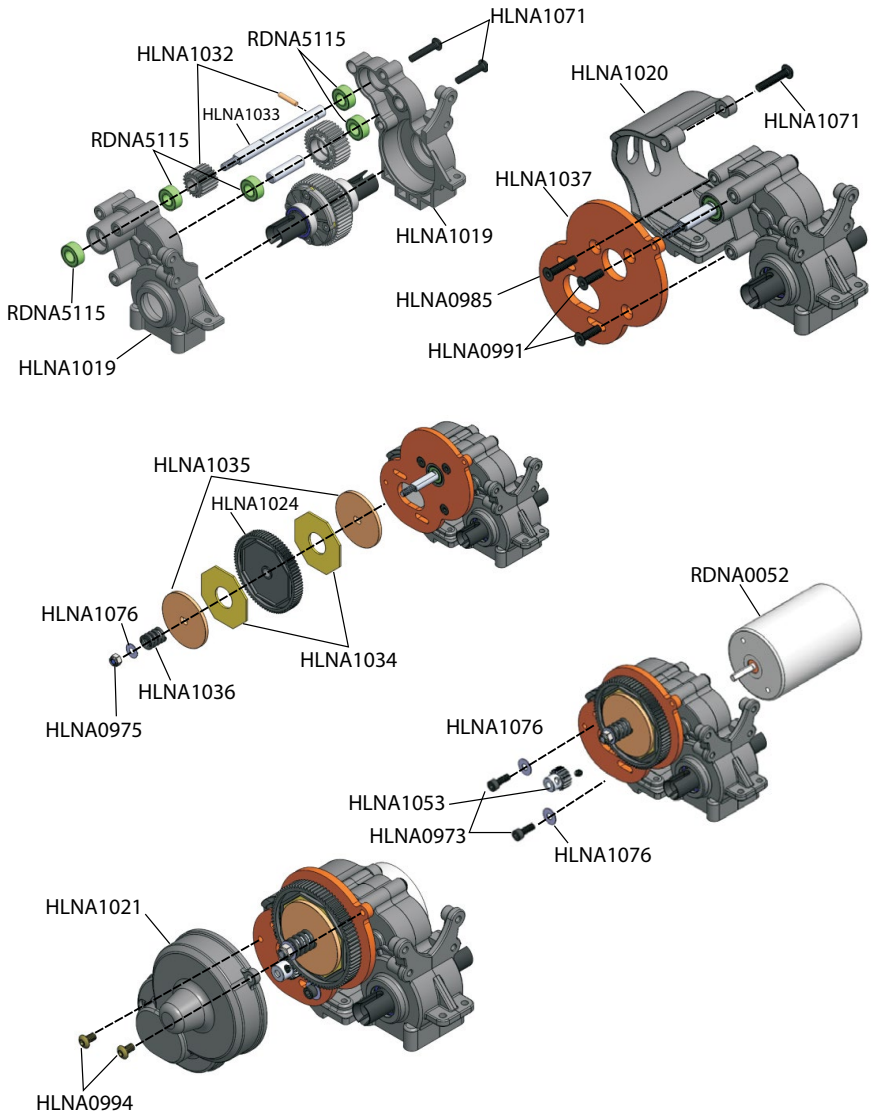
Front End Installation



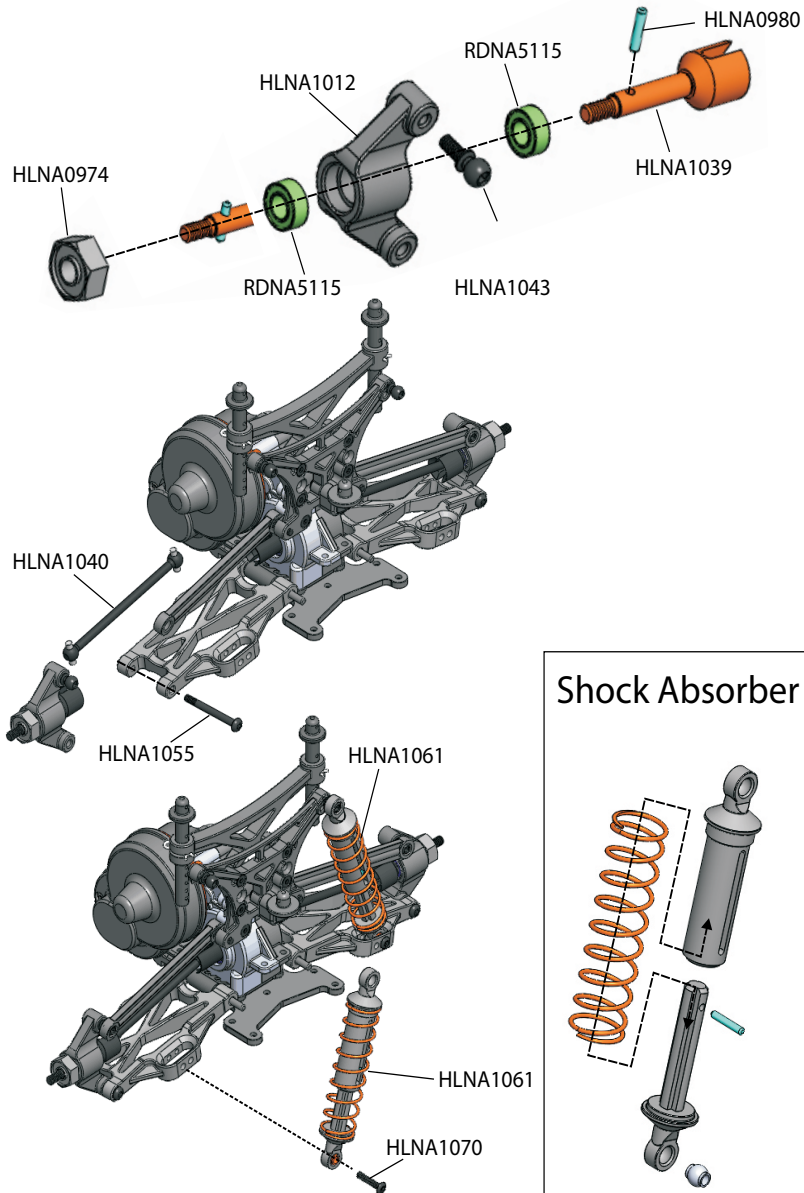
Servo Installation



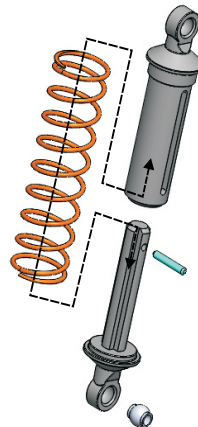
Diff. Gear/ Motor Assembly



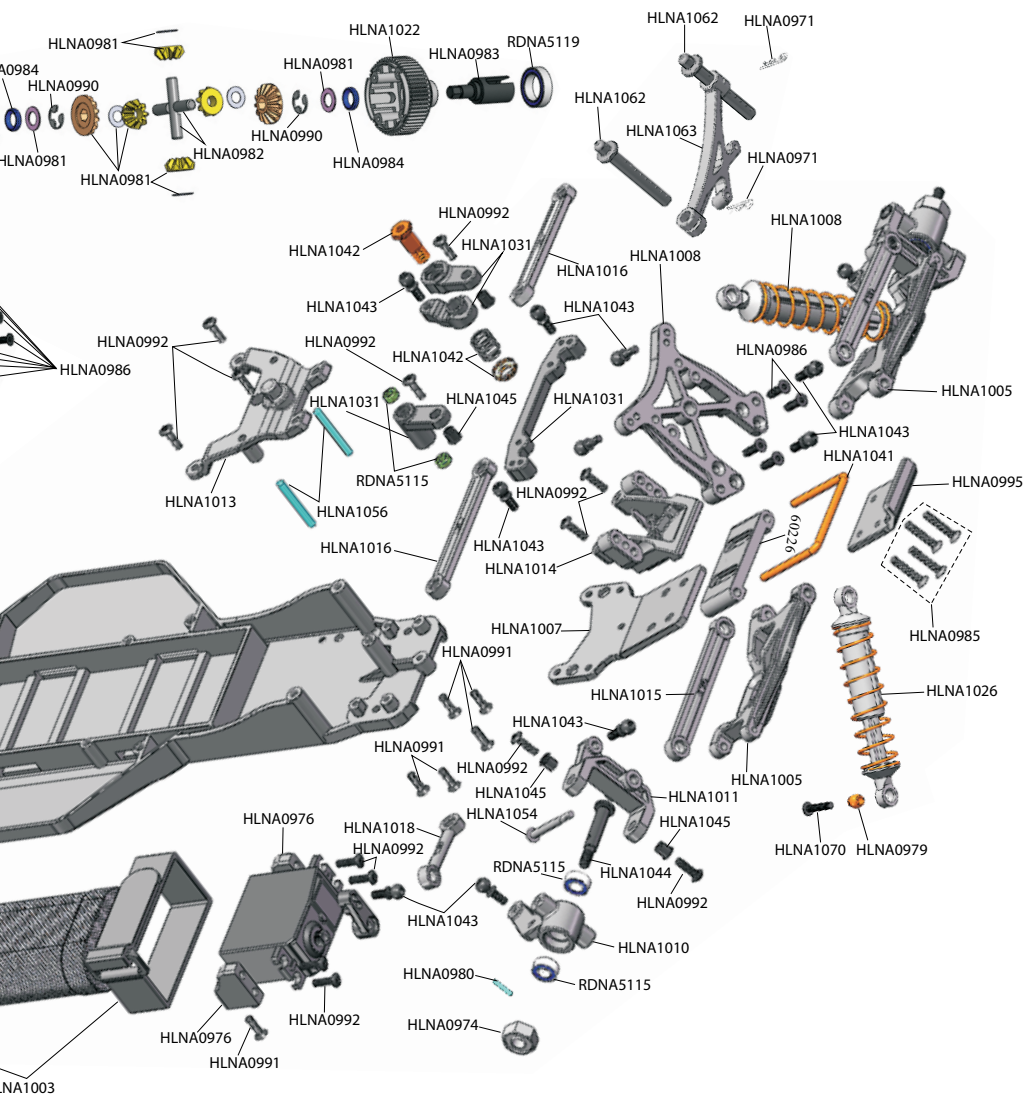
Rear End Installation



Shock Absorber



Note: Friction shock shown - oil filled shocks supplied with the vehicle.



Spare Parts List

HLNA0970	Rear Chassis Plate, B, ST, MT
HLNA0971	R-Clip, B, ST, MT
HLNA0972	Nuts(M4)
HLNA0973	M3*8 Column Head Hex Screw
HLNA0974.....	Wheel Hex
HLNA0975	Nuts(M3)
HLNA0976	Radio Tray Mount
HLNA0978	Back Shock
HLNA0979	Shock Ball Head C
HLNA0980	Pin 2*10
HLNA0981	Diff Planetary Gear
HLNA0982	Diff Shaft
HLNA0983	Differential Outdrive
HLNA0984	Diff O-Ring
HLNA0985	Flat Head Hex Machine Screw M3*14
HLNA0986	Flat Head Hex Machine Screw M3*12
HLNA0987	Flat Head Hex Machine Screw 3*8
HLNA0988	Flat Head Hex Machine Screw 2*10
HLNA0990	Sus. Arm E-Clips 0.6mm
HLNA0991	Flat Head Hex Mechanical Screw 3*10
HLNA0992	Cap Head Hex. Mechanical Screw (3*10)
HLNA0993	Cap Head Hex. Mechanical Screw (3*12)
HLNA0994	Cap Head Hex. Mechanical Screw (3*5)
HLNA0995	Front Bumper, B, ST
HLNA0999	Motor Guard With Wheelie Wheel, ST, MT
HLNA1003	Battery Strap
HLNA1004	Chassis, B, ST, MT
HLNA1005	Front Lower Suspension Arm B, ST, MT
HLNA1006	Rear Lower Suspension Arm B, ST, MT
HLNA1007	Front Chassis Plate B, ST, MT
HLNA1008	Front Shock Tower B, ST, MT
HLNA1009	Rear Shock Tower B, ST, MT
HLNA1010	Steering Hub Carrier (L/R)
HLNA1011	Front Hub Carrier (L/R)
HLNA1012	Rear Upright

HLNA1013	Front Bulk Head Brace
HLNA1014	Front Shock Mount
HLNA1015	Front Upper Link 58.5mm
HLNA1016	Steering Link 55mm
HLNA1017	Rear Upper Link 73mm
HLNA1018	Servo Link 30.5mm
HLNA1019	Gear Box
HLNA1020	Motor Guard, B, ST
HLNA1021	Main Gear Cover
HLNA1022	Differential Case(48P)
HLNA1023	Gear (34T-48P)
HLNA1024	Gear (81T-48P)
HLNA1025	Wing Mount, B
HLNA1026	Front Shock Absorber
HLNA1027	Rear Arm Bulkhead
HLNA1028	Front Arm Bulkhead
HLNA1031	Steering Sway Arm Assembly
HLNA1032	Gear (20T-48P)
HLNA1033	Slipper Shaft
HLNA1034	Slipper Pad
HLNA1035	Slipper Hub
HLNA1036	Slipper Tensioner Spring
HLNA1037	Motor Mount
HLNA1039	Rear Wheel Axle
HLNA1040	Dogbone
HLNA1041	Front/Rear Suspension Pin
HLNA1042	Servo Saver Assembly
HLNA1043	Ball Head Screws 5.8mm
HLNA1044	Front Wheel Axle
HLNA1045	Steering Shaft Bush
HLNA1053	Gear (23T)48P
HLNA1054	Front Lower Suspension Arm Screws 3*25mm
HLNA1055	Rear Lower Suspension Arm Screws 3*29mm
HLNA1056	Pin 3*26
HLNA1057	Pin 5*18
HLNA1059	Powder Steel Gear(20T-48P)

HLNA1061	Rear Shock Absorber
HLNA1062	Body Post, ST, MT
HLNA1063	Post Mount, ST, MT
HLNA1064	Wheel, ST
HLNA1065	Front Tire, ST
HLNA1066	Rear Tire, ST
HLNA1067	Front Wheel Complete, ST
HLNA1068	Rear Wheel Complete, ST
HLNA1070	Cap Head Hex. Mechanical Screw 3*14
HLNA1071.....	Cap Head Hex. Mechanical Screw 3*16
HLNA1072	M3*3 Grub Hex Screws
HLNA1079B.....	Replacement Body, ST Blue
HLNA1079R.....	Replacement Body, ST Red
HLNA1079Y	Replacement Body, ST Yellow
HLNA1079G.....	Replacement Body, ST Green
HLNA1080	Clear Body, ST
HLNA1086	Conquest Battery 2000 mAh
HLNA1088	Front Steering Turnbuckle (55mm)
HLNA1089	Front Arm Turnbuckle
HLNA1090	Front Steering Turnbuckle (74mm)
HLNA1091	Machine Serrated Axle Nuts
HLNA1092	Aluminum Axle Drive Hexes
HLNA1093	Front Aluminum Pivot
HLNA1094	Rear Aluminum Pivot Block
HLNA1095	Front Aluminum Chassis Brace
HLNA1096	Front Aluminum Pivot Plate
HLNA1097	Rear Aluminum Pivot Plate
HLNA1098	Front and Rear Shock
RDNA0086	Metric 12 550 HT Brushed Motor
HLNA0059	ESC, Brushed, 30-15 WP with Reverse
KNNS0024	ET3 3-Channel 2.4GHz (Krypton) - Transmitter and All Weather Receiver
KNNS0025	ET3 3-Channel 2.4GHz (Krypton) - Transmitter Only

Optional Parts

RDNA0096	Superpax Battery, SC 7.2V 6-Cell 3000mAh NiMH, Stick, HCT
RDNA0052	Reaktor BL Combo, NS 50A-3000kV 4P
RDNA0048	Reaktor Brushless ESC NS-50A WP-P
RDNA0049	Reaktor BL Motor NS 3000kV 4-Pole
KNNS0026	3Ch 2.4GHz receiver, waterproof

HobbyTown Warranty Information

30 DAY LIMITED WARRANTY

General Disclaimer: This item is to be free of manufacture defects at time of purchase. This warranty does not cover breakage due to abuse, improper break-in, improper setup, or improper operation.

We at Helion RC have made every effort in component design, material selection and assembly to make our products as durable as possible. Helion products are covered under warranty only against manufacturer's defect in materials, workmanship or assembly when it is new (before being used).

If you believe a defect in materials, workmanship or assembly was not apparent when the product was new and only became evident after the product was used, then please contact your local HobbyTown® to apply for warranty service. You must provide your original sales receipt verifying the proof-of purchase and date thereof.

Provided warranty conditions have been met, the components that are found to be defective, incorrectly made, or incorrectly assembled within the warranty coverage time period may be repaired or replaced under the sole discretion of HobbyTown®. In the event that your product needs a repair or a replacement part that is not covered by this warranty, your local HobbyTown® dealer can assist you with obtaining the genuine replacement parts and/or accessories to service your Helion RC product.

If you purchased your Helion RC product from a HobbyTown® internet site not affiliated with a local store, please consult that site for its service policies.

JPerkins Distribution Warranty Information

Guarantee

This product is covered by the current statutory guarantee regulations. If you wish to make a warranty claim, please contact the model shop where you originally purchased the product from. You should also present your proof of purchase.

- The guarantee does not cover faults or damage caused by:
- Incorrect handling or operation
- The use of incompatible accessories
- Modification or unauthorised repairs
- Accidental or deliberate damage
- Normal wear and tear
- Using the product outside of its stated specification

Firelands Group LLC accepts no liability for loss, damage or costs which are incurred due to the incorrect or incompetent use of the product.

Model Engines Warranty Information

HELION RC 60 DAY WARRANTY

Model Engines (Aust.) Pty. Ltd. warrants this product to be free from defects in materials or workmanship for 60 days from the date of purchase and will repair, replace or refund the purchase should the product prove to be defective.

This warranty does not apply to any unit or system or component which has been dropped, damaged in a crash, improperly installed, assembled, handled or abused.

Model Engines (Aust.) Pty. Ltd. reserves the right to void the warranty if the product has been altered or modified, has had a foreign part added, has been misused or not used for the purpose for which it was designed, has been used near or in salt water, has been water damaged, or if the damage has been caused by the customer's use of the product.

Under no circumstances does Model Engines (Aust.) Pty. Ltd. warrant nor will the consumer be entitled to consequential or incidental damages. Model Engines (Aust.) Pty. Ltd. assumes no responsibility for any other damage, inconvenience or other claims whatsoever.

LODGING A CLAIM

To lodge a claim, present the goods to your place of purchase (retailer where you bought the product) with your original purchase receipt and a written explanation of the defect.

The place of purchase (retailer where you bought the product) will then contact Model Engines (Aust.) Pty. Ltd. for a Return Authority number and will return the item for warranty assessment to Model Engines (Aust.) Pty. Ltd.. Items delivered to Model Engines (Aust.) Pty. Ltd. for warranty assessment without a Return Authority number will be returned to sender.

The warranty process may take up to 14 business days from the date of receipt. Model Engines (Aust.) Pty. Ltd. must assess each item and if warranty applies must repair or replace the item at its discretion and return it to the place of purchase (retailer where you bought the product).

Goods presented for warranty may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.

If the product is proved to be defective the cost and expenses relating to the delivery of the goods to Model Engines (Aust.) Pty. Ltd., will be borne by Model Engines (Aust.) Pty. Ltd..

The benefits of this warranty are in addition to other rights and remedies of the customer under any law to which this warranty relates.

Our goods come with guarantees that cannot be excluded under the Australian consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Model Engines (Aust) Pty.Ltd
P.O. Box 828
Noble Park
Victoria
3174

www.modelengines.com.au

www.modelengines.com.au Ph (03) 8793 5555 warranties@modelengines.com.au

This warranty information relates to goods supplied on a wholesale basis by Model Engines (Aust.) Pty. Ltd. to Australian Retailers. The warranty complies with Australian regulatory requirements and supersedes all warranty information from the original manufacturer.

Declaration of Conformity



CE Conformity Declaration

This device has been tested in accordance with the relevant harmonised European directives. This product's design fulfils the protective aims of the European Community relating to the safe operation of this equipment.

For a copy of the Declaration of Conformity, please visit:

www.hellon-rc.com/support



Disposal

Electrical equipment marked with the crossed out wheeled bin symbol must not be disposed of in household waste, but must be taken to a specialist disposal or recycling system. In EU member countries, electrical equipment must not be discarded via the normal domestic refuse channels (WEEE - Waste Electrical and Electronic Equipment Directive 2002/96/EG). You should take unwanted electrical equipment to your nearest local authority waste collection point or recycling centre.

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