



VATERRA®

SLICKROCK™

OWNER'S MANUAL

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MANUEL DE L'UTILISATEUR
MANUALE DELL'UTENTE



NOTICE

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

MEANING OF SPECIAL LANGUAGE

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

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

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

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



WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product 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. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

AGE RECOMMENDATION: Not for children under 14 years. This is not a toy.

REGISTER YOUR VATERRA PRODUCT ONLINE

Register your vehicle now and be the first to find out about the latest option parts, product updates and more. Click on the Support tab at WWW.VATERRARC.COM and follow the product registration link to stay connected.

SAFETY PRECAUTIONS AND GUIDELINES

- » Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- » Always operate your model in open spaces away from full-size vehicles, traffic and people.
- » Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- » Always keep all chemicals, small parts and anything electrical out of the reach of children.
- » Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- » Never place any portion of the model in your mouth as it could cause serious injury or even death.
- » Never operate your model with low transmitter batteries.

WATER-RESISTANT VEHICLE WITH WATERPROOF ELECTRONICS //////////////////////////////////////

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

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

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



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

GENERAL PRECAUTIONS

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

WET CONDITIONS MAINTENANCE

- » Drain any water that has collected in the tires by spinning them at high speed. With the body removed, place the vehicle upside down and pull full throttle for a few short bursts until the water has been removed.



CAUTION: Always keep hands, fingers, tools and any loose or hanging objects away from rotating parts when performing the above drying technique.

- » Remove the battery pack(s) and dry the contacts. If you have an air compressor or a can of compressed air, blow out any water that may be inside the recessed connector housing.
- » Remove the tires/wheels from the vehicle and gently rinse the mud and dirt off with a garden hose. Avoid rinsing the bearings and transmission.

NOTICE: Never use a pressure washer to clean your vehicle.

- » Use an air compressor or a can of compressed air to dry the vehicle and help remove any water that may have gotten into small crevices or corners.
- » Spray the bearings, drive train, fasteners and other metal parts with a water-displacing light oil. Do not spray the motor.
- » Let the vehicle air dry before you store it. Water (and oil) may continue to drip for a few hours.
- » Increase the frequency of disassembly, inspection and lubrication of the following:
 - Front and rear axle hub assembly bearings.
 - All transmission cases, gears and differentials.
 - Motor—clean with an aerosol motor cleaner and re-oil the bearings with lightweight motor oil.

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INTRODUCTION

Thank you for purchasing the Vatterra® Slickrock™ 1/18th 4WD Desert Buggy RTR. This guide contains the basic instructions for operating your new vehicle. It is critical that you read all of the instructions in order to operate your model correctly and avoid unnecessary damage.



WARNING AGAINST COUNTERFEIT PRODUCTS:

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

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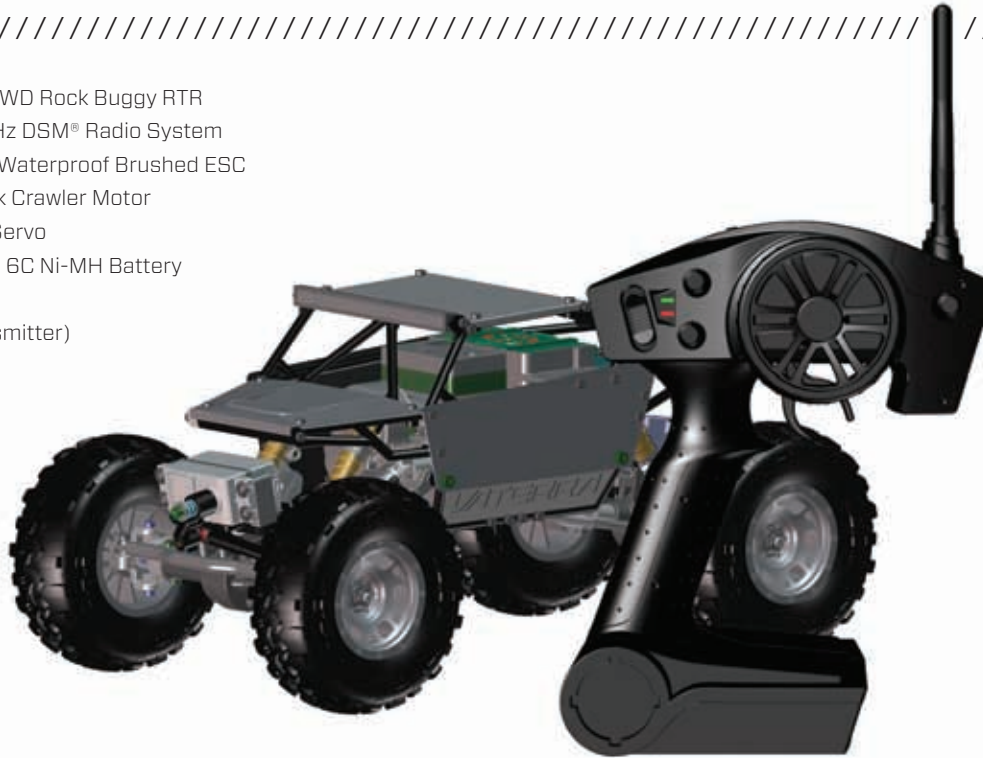
QUICK START //

Please read the entire manual to gain a full understanding of the Vatterra Slickrock 1/18th 4WD Rock Buggy RTR vehicle, fine-tuning the setup, and performing maintenance.

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

COMPONENTS

- » 1/18-Scale Slickrock™ 4WD Rock Buggy RTR
- » Spektrum™ DX2E 2.4GHz DSM® Radio System
- » Dynamite® Tazer™ Mini Waterproof Brushed ESC
- » Dynamite 280 Mini Rock Crawler Motor
- » SPMS602 Waterproof Servo
- » Dynamite 7.2V 1100mAh 6C Ni-MH Battery
- » 100 milliAmp Charger
- » 4 AA Batteries (for transmitter)



REQUIRED TOOLS

- » Soft bristle cleaning brush
- » #0 or #1 Phillips screwdriver

OPTIONAL TOOLS

- » Nut driver: 5.5mm - DYN2803
- » Hex driver: .050 - DYN2820

** Use only Dynamite tools or other high-quality tools. Use of inexpensive tools can cause damage to the small screws and parts used on this type of model.*

SUPPLIED TOOLS




- » "L" shaped hex wrench
 - 1.5mm




- » 4-way wrench
 - 7mm, 5.5mm, 5mm, 4.5mm

THE VEHICLE BATTERY //////////////////////////////////////

Refer to the charging warnings. It is recommended you charge the battery while you inspect the vehicle. The battery will be required to confirm proper operation in future steps.

 **WARNING:** Failure to exercise caution while using this product and comply with the following warnings could result in product malfunction, electrical issues, excessive heat, FIRE, and ultimately injury and property damage.

 **CAUTION:** If at any time during the charging process the battery becomes hot to the touch, disconnect the battery immediately and discontinue the charging process.

Charge only batteries that are cool to the touch and are not damaged. Inspect the battery to make sure it is not damaged, e.g., swollen, bent, broken or punctured.

CHARGING WARNINGS

» **NEVER LEAVE THE POWER SUPPLY, CHARGER AND BATTERY UNATTENDED DURING USE.**

» **NEVER CHARGE BATTERIES OVERNIGHT.**

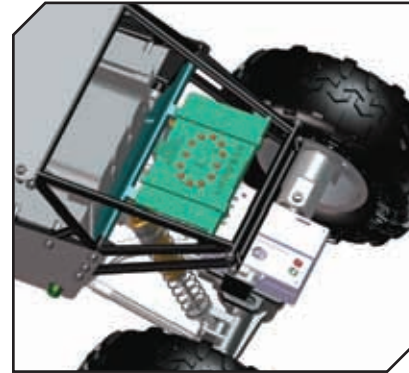
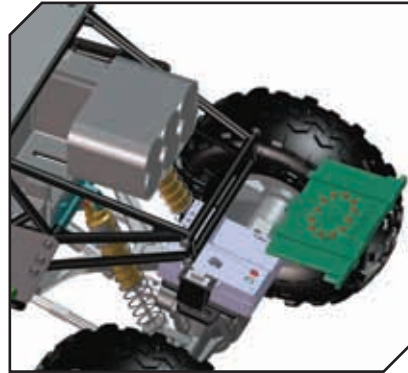
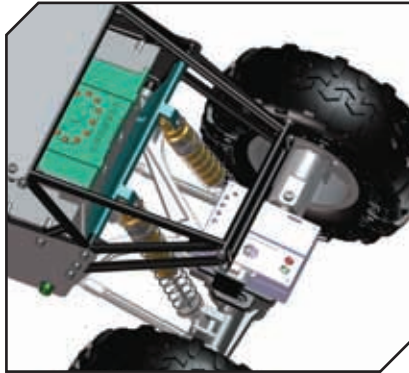
- » Read all safety precautions and literature prior to use of this product.
- » Never leave the battery and charger unattended during use.
- » Never allow children under 14 years of age to charge batteries.
- » Never attempt to charge dead or damaged batteries.
- » Never charge a battery if the cable has been pinched or shorted.

- » Never allow the batteries or charger to come into contact with moisture at any time.
- » Never charge batteries in extremely hot or cold places (recommended between 50-80°F (10-26°C)) or place in direct sunlight.
- » Always use only Ni-MH rechargeable batteries. This charger cannot charge batteries such as “heavy duty”, “alkaline”, “mercury” or “lithium” batteries.
- » Always connect to the charger correctly.
- » Always disconnect the battery and charger after charging and let them cool between charges.

- » Always inspect the battery before charging.
- » Always terminate all processes and contact Horizon Hobby if the product malfunctions.
- » Always make sure you know the specifications of the battery to be charged or discharged to ensure it meets the requirements of this charger.
- » Always constantly monitor the temperature of the battery while charging.
- » Always end the charging process if the charger or battery becomes hot to the touch or starts to change form during the charge process.

- 1 Connect the charger to an AC power source.
- 2 Connect the battery connector to the charger connector.
- 3 Allow the battery to charge for 11 hours.
- 4 After 11 hours, disconnect the battery from the charger.
- 5 Disconnect the charger from the AC power source.

INSTALLING THE VEHICLE BATTERY



- 1 Ensure the ESC is powered OFF.
- 2 Remove the door from the battery box.
- 3 Install the fully charged battery into the battery box as shown.
- 4 Connect the battery to the ESC.
- 5 Reinstall the door on the battery box.
- 6 Power ON the transmitter, then the vehicle.

CAUTION: NEVER remove the transmitter batteries while the vehicle is powered ON, as loss of control, property damage or injury may result.

THE TRANSMITTER

INSTALLING THE TRANSMITTER BATTERIES

- 1 Push in the battery cover a small amount to release the retaining tab, then remove the cover.
- 2 Install 4 AA batteries, taking care to align the battery polarity to the diagram in the transmitter's battery case.
- 3 Carefully reinstall the battery cover by aligning the tabs with the slots on the transmitter.



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

For more information on the transmitter, go to www.horizonhobby.com and click on the support tab for the Spektrum DX2E to download the instruction manual.

SPEKTRUM DX2E RADIO SYSTEM

- 1 Steering Wheel** controls direction (left/right) of the model
- 2 Throttle Trigger** controls speed and direction (forward/brake/reverse) of the model
- 3 Antenna** transmits the signal to the model
- 4 ON/OFF Switch** turns the power ON/OFF for the transmitter
- 5 Indicator Lights**
 - *Solid green light* indicates adequate battery power
 - *Flashing green light* indicates the battery voltage is critically low. Replace batteries.
- 6 ST. Trim** adjusts the “hands off” direction of the model
- 7 TH. Trim** adjusts the motor speed to stop at neutral
- 8 Steering Dual Rate** adjusts the amount the front wheels move when the steering wheel is turned left and right
- 9 BIND Button** puts the transmitter into Bind Mode
- 10 ST. REV** reverses the function of the steering when the wheel is turned left or right
- 11 TH. REV** reverses the function of the speed control when pulled back or pushed forward



BEFORE RUNNING YOUR VEHICLE

- 1 Check for free suspension movement. All suspension arms and steering components should move freely. Any binds will cause the vehicle to handle poorly.
- 2 Charge the battery.
- 3 Check the calibration of the ESC. If recalibration is required, follow the setup instructions.
- 4 Adjust the transmitter settings to your desired configuration.

DRIVING PRECAUTIONS

- » Maintain sight of the vehicle at all times.
- » Routinely inspect the vehicle for loose wheel hardware.
- » Routinely inspect the steering assembly for any loose hardware. Driving the vehicle off-road can cause fasteners to loosen over time.
- » Do not drive the vehicle in tall grass. Doing so can damage the vehicle or electronics.
- » Stop driving the vehicle when you notice a lack of power. Driving the vehicle when the battery is discharged can cause the receiver to power off. If the receiver loses power, you will lose control of the vehicle. Damage due to an over-discharged battery is not covered under warranty.
- » Do not apply forward or reverse throttle if the vehicle is stuck. Applying throttle in this instance can damage the motor or ESC.
- » After driving the vehicle, allow the electronics to cool before driving the vehicle again. Remove the body of the vehicle to reduce cooling time.

RUN TIME

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

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

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

TO IMPROVE RUN TIMES

- » Clean and oil bearings often. If bearings are dirty, they will increase friction and cause reduced performance.
- » Keep your vehicle clean and maintained.
- » Allow more airflow to the ESC and motor.
- » Change the gearing to a lower ratio. A lower ratio decreases the operating temperature of the electronics. Use a smaller pinion gear or larger spur gear to lower the gear ratio.
- » Use a battery pack with a higher mAh rating.

TUNING, ADJUSTING & MAINTAINING YOUR VEHICLE //////////////////////////////////////

- » Examine your vehicle on a regular basis.
- » Use a brush to remove dirt and dust.
- » Look for damage to the suspension arms and other molded parts.
- » Re-glue the tires to the wheels, if necessary.
- » Clean and oil all wheel bearings.
- » Use suitable tools to tighten fasteners.
- » Make sure the camber and steering linkages are not bent. Replace any bent linkages.
- » Adjust the Toe and Camber settings, if necessary.
- » Remove the shocks and inspect them for damage. Rebuild the shocks if oil is leaking.
- » Inspect electronics and batteries for exposed wires. Repair exposed wires with shrink-wrap, or replace the wire.
- » Make sure the ESC and receiver are secure on the chassis. Replace the double-sided tape, if necessary.
- » Power ON the transmitter. If the green LED is dim or off, replace the AA batteries in your transmitter.
- » Check the spur gear and pinion gear for wear.

SERVICE/REPAIR

If any problems other than those covered in this manual arise, please call the appropriate electronics service department. Refer to the Warranty and Service Information section for the appropriate department to contact.

CLEANING

Performance can be hindered if dirt gets in any of the moving suspension parts. Use compressed air, a soft paintbrush, or a toothbrush to remove dust or dirt. Avoid using solvents or chemicals, as they can actually wash dirt into the bearings or moving parts, as well as cause damage to the electronics.

DYNAMITE TAZER MINI WATERPROOF BRUSHED ESC //////////////////////////////////////

TECHNICAL SPECIFICATIONS

Constant/Peak
20A/200A

Full-On Resistance
0.004 Ohm

Operation
Forward/Reverse with Smart Brake;
Forward Only with Brake

Input Voltage
4-7 cell (4.8-8.4V) DC

Minimum Motor Limit
370 motor, 20 turn; 380 motor, 22 turn

BEC Output
5.6V DC; 1 amp max.

Overload Protection
Thermal, Stall, Over-Voltage

Dimensions (LxWxH)
1.61 in x 1.34 in x 0.55 in
(46mm x 33mm x 20mm)

Weight
36 g (1.27 oz)

LED INDICATOR

OPERATION		LED COLOR	LED STATUS	SOUND	
Ni-MH at Power ON		Flashing Green	ON		
Li-Po at Power ON		Flashing Red	ON		
NORMAL	Stop	Forward/Reverse with Smart Brake	Solid Green		ON
		Forward Only with Brake	Flashing Green		
		Crawler Mode	Solid Red & Green		
	Forward	Both	OFF		
	Forward (full speed)	Red	ON		
	Reverse	Both	OFF		
Reverse (full speed)	Green	ON			
Brake	Both Solid	ON			
ABNORMAL	Overheat	Both	LEDs alternately flashing		1 beep per second
	Motor Stalled	Red	Flashing quickly 3 times, stopping, then repeating		1 beep per second
	Battery Over Voltage (over 10V)	Both	Red LED flashing once per second Green LED flashing once per second		1 beep per second
	Battery Voltage Low/Discharged	Red	Flashing once per second		1 beep per second

TRANSMITTER CONTROLLED PROGRAMMING

- 1 Power ON the transmitter and set the transmitter's throttle endpoint travel to maximum and the throttle trim to the center position.
- 2 Hold the throttle trigger at full throttle, then power ON the ESC.
- 3 Continue holding the throttle trigger at full throttle until a beep sounds and both red and green LEDs flash, then release the throttle to neutral.
- 4 The ESC is now in programming mode. The ESC will cycle through its programmable features in this order:
 - a **Green LED only** Change Battery Chemistry Type: Ni-MH or Li-Po
 - b **Red LED only** Transmitter/ESC Endpoint Calibration
 - c **Red + Green LED** Change ESC Running Mode: Forward/Reverse with Smart Brake, Forward Only with Brake or Crawler Mode
- 5 Move the throttle trigger to full throttle and back to neutral at A, B or C in order to execute the setting task.

a Change Battery Chemistry Type: Ni-MH or Li-Po

- The respective LED will indicate the current battery type for 4 seconds:
 - **Solid Green LED** Ni-MH
 - **Solid Red LED** Li-Po
- Move the throttle trigger to full throttle and return to neutral within the 4 seconds. A beep will sound and the respective LED will indicate the updated battery type.

- To change back to the previous battery type, repeat the step above within 4 seconds of the beep.
- Both the red and green LEDs will flash 3 times with 3 beeps.
- Power OFF the ESC and then power ON the ESC to return to normal operation.

b Transmitter/ESC Endpoint Calibration

- After executing the setting task, the green LED will flash as you release the throttle trigger to neutral. Once neutral is reached, a beep will sound and the green LED will glow solid for 1 second. The red LED will begin to flash.

- Move the throttle trigger to full throttle and hold it until a beep sounds and the red LED glows solid for 1 second. Release the throttle trigger to neutral and the red LED will glow solid while the green LED will begin to flash.
- Move the throttle trigger to full brake/reverse and hold until a beep sounds and the green LED glows solid.
- Release the throttle trigger to neutral. Both red and green LEDs will flash 3 times with 3 beeps.
- Power OFF the ESC and then power ON the ESC to return to normal operation.

OPERATION	LED STATUS	
	WAITING FOR THROTTLE POSITION	POSITION SET
Neutral	Flashing Green	Solid Green (1 second)
Forward	Flashing Red	Solid Red (1 second)
Full Brake/Reverse	Solid Red / Flashing Green	Solid Green (1 second) followed by Red and Green flashing 3x

c Change ESC Running Mode: Forward/Reverse with Smart Brake, Forward Only with Brake or Crawler Mode

- The respective LEDs will indicate the currently selected ESC running mode for 4 seconds:
 - **Green LED Solid** Forward/Reverse with Smart Brake
 - **Green LED Flashing** Forward Only with Brake
 - **Red + Green LED Solid** Crawler Mode
- Move the throttle trigger to full throttle within the 4 seconds to select the next ESC mode. A beep will sound and the respective LED will indicate the new ESC running mode.
- To select the next mode, repeat the step above within 4 seconds of the beep.
- Both red and green LEDs will flash 3 times with 3 beeps.
- Power OFF the ESC and then power ON the ESC to return to normal operation.

SMART BRAKE

When the throttle is changed from Forward to Reverse or Reverse to Forward, the ESC will brake instead of reversing the motor immediately. The ESC will remain in brake mode unless the throttle is returned to the neutral/stop position for a short time.

DYNAMITE 60T MINI ROCK CRAWLER MOTOR //////////////////////////////////////

GEARING

Your vehicle has been equipped with the optimal gearing for the stock platform. It offers an ideal balance between speed, power and efficiency. Should you decide to customize your vehicle with optional batteries or motors, it may be necessary for you to change the pinion or spur gear.

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

PRECAUTIONS

- » Never touch moving parts.
- » Never disassemble while the batteries are installed.
- » Always let parts cool before touching.

ADJUSTING THE SLIPPER

Turn the 3mm adjustment nut clockwise (to the right) to reduce the slip or counterclockwise (to the left) to increase the slip.

CHANGING THE PINION GEAR/GEAR RATIO

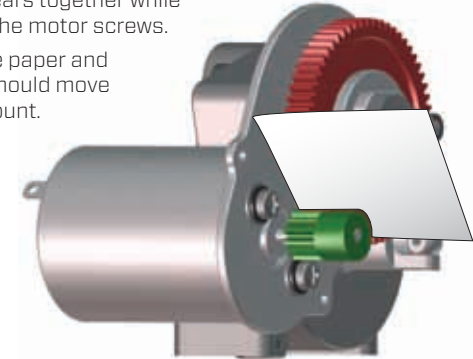
- 1 Loosen the motor screws and slide the motor back.
- 2 Loosen the set screw and remove the installed pinion gear.
- 3 Place the new pinion on the end of the motor shaft so the set screw is located over the flat on the shaft.
- 4 Position it so the teeth line up with the spur gear and secure by tightening the set screw.

SETTING THE GEAR MESH

The gear mesh has already been set at the factory, and setting it is only necessary when changing motors or gears.

Proper gear mesh (how gear teeth meet) is important to the performance of the vehicle. When the gear mesh is too loose, the spur gear could be damaged by the pinion gear of the motor. If the mesh is too tight, speed could be limited and the motor and ESC will overheat.

- 1 Loosen the motor screws.
- 2 Put a small piece of paper between the pinion and spur gears.
- 3 Push the gears together while tightening the motor screws.
- 4 Remove the paper and the gears should move a small amount.



CHANGING THE TRAVEL ADJUST SETTINGS //////////////////////////////////////

The minimum Travel is 75%, and the Maximum travel is 150%.

- 1 Hold the trigger in the full brake position while powering on the transmitter. The LED flashes rapidly, indicating the programming mode is active.
- 2 **Throttle End Point** Continue holding full throttle. Turn the TH TRIM knob to adjust the full throttle end point.
- 3 **Brake End Point** Hold the trigger in the full brake position. Turn the TH TRIM knob to adjust the full brake end point. Return the trigger to the center position.
- 4 **Left Steering End Point** Hold the steering wheel in the full left position. Turn the ST TRIM knob to adjust the left end point.
- 5 **Right Steering End Point** Hold the steering wheel in the full right position. Turn the ST TRIM knob to adjust the right end point. Return the steering wheel to the center position.
- 6 Power off the transmitter to save the travel adjust settings.

TROUBLESHOOTING GUIDE //////////////////////////////////////

PROBLEM	POSSIBLE CAUSE	SOLUTION
Vehicle does not operate	<ul style="list-style-type: none"> » Battery not charged or connected » ESC switch not ON » Transmitter not ON or low battery 	<ul style="list-style-type: none"> » Charge battery/connect » Turn ON ESC switch » Turn ON/replace batteries
Motor runs but rear wheels don't move	<ul style="list-style-type: none"> » Pinion not meshing with spur gear » Pinion spinning on motor shaft » Slipper too loose » Transmission gears stripped » Drive pin broken 	<ul style="list-style-type: none"> » Adjust pinion/spur mesh » Replace pinion gear on motor » Check and adjust slipper » Replace transmission gears » Check and replace drive pin
Steering does not work	<ul style="list-style-type: none"> » Servo plug not in receiver properly » Servo gears or motor damaged 	<ul style="list-style-type: none"> » Check if connected/all the way » Replace or repair servo
Won't turn in one direction	<ul style="list-style-type: none"> » Servo gears damaged 	<ul style="list-style-type: none"> » Replace servo
Motor does not run	<ul style="list-style-type: none"> » Motor plugs loose » Motor wire broken » ESC damaged 	<ul style="list-style-type: none"> » Plug in completely » Repair or replace as needed » Contact Horizon Hobby Product Support
ESC gets hot	<ul style="list-style-type: none"> » Motor over-geared » Driveline bound up 	<ul style="list-style-type: none"> » Use smaller pinion or larger spur gear on motor » Check wheels, suspension and transmission for binding
Poor run time and/or sluggish acceleration	<ul style="list-style-type: none"> » Ni-MH pack not fully charged » Charger not allowing full charge » Slipper slipping too much » Motor worn out » Driveline bound up 	<ul style="list-style-type: none"> » Recharge battery » Try another charger » Check/adjust slipper » Replace motor » Check wheels, transmission for binding
Poor range and/or glitching	<ul style="list-style-type: none"> » Transmitter batteries low » Vehicle battery low » Loose plugs or wires 	<ul style="list-style-type: none"> » Check and replace » Recharge or replace » Check all wire connections and plugs
Slipper won't adjust	<ul style="list-style-type: none"> » Drive pin missing in shaft » Spur gear face worn out 	<ul style="list-style-type: none"> » Replace drive pin » Replace spur gear and adjust slipper

LIMITED WARRANTY //////////////////////////////////////

WHAT THIS WARRANTY COVERS

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

WHAT IS NOT COVERED

This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

PURCHASER'S REMEDY

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

LIMITATION OF LIABILITY

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

LAW

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

WARRANTY SERVICES

QUESTIONS, ASSISTANCE, AND SERVICES

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

INSPECTION OR SERVICES

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

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

WARRANTY REQUIREMENTS

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

NON-WARRANTY SERVICE

Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.

By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service.

Non-warranty service estimates will be billed a minimum of 1/2 hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/_service-center_render-service-center.

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

WARRANTY AND SERVICE CONTACT INFORMATION

COUNTRY OF PURCHASE	HORIZON HOBBY	CONTACT INFORMATION	ADDRESS
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	4105 Fieldstone Rd Champaign, Illinois 61822 USA
	Horizon Product Support (Product Technical Assistance)	www.quickbase.com/db/bghj7ey8c?a=GenNewRecord 888-959-2306	
	Sales	sales@horizonhobby.com 888-959-2306	
United Kingdom	Service/Parts/Sales: Horizon Hobby Limited	sales@horizonhobby.co.uk +44 (0) 1279 641 097	Units 1-4 Ployters Rd Staple Tye Harlow, Essex CM18 7NS United Kingdom
Germany	Horizon Technischer Service	service@horizonhobby.de +49 (0) 4121 2655 100	Christian-Junge-Straße 1 25337 Elmshorn, Germany
	Sales: Horizon Hobby GmbH		
France	Horizon Hobby SAS	infofrance@horizonhobby.com +33 (0) 1 60 18 34 90	11 Rue Georges Charpak 77127 Lieusaint, France
China	Service/Parts/Sales: Horizon Hobby - China	info@horizonhobby.com.cn +86 (021) 5180 9868	Room 506 No. 97 Changshou Rd. Shanghai, China 200060

FCC INFORMATION //

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

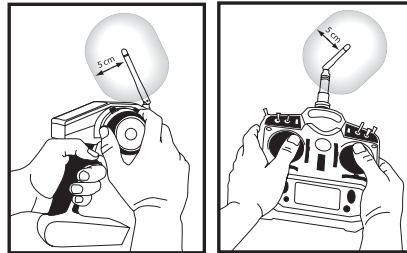
CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

ANTENNA SEPARATION DISTANCE

When operating your Spektrum transmitter, please be sure to maintain a separation distance of at least 5 cm between your body (excluding fingers, hands, wrists, ankles and feet) and the antenna to meet RF exposure safety requirements as determined by FCC regulations.

The following illustrations show the approximate 5 cm RF exposure area and typical hand placement when operating your Spektrum transmitter.

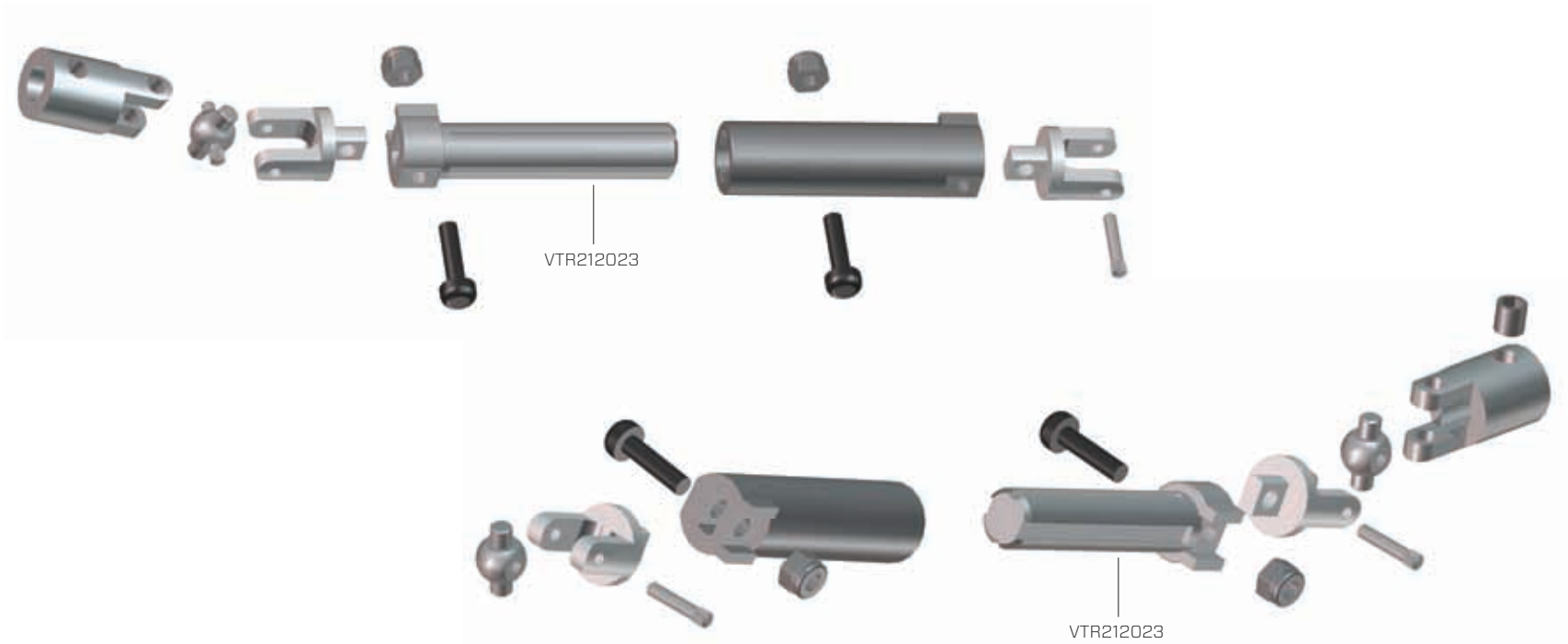


IC INFORMATION //

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

DRIVESHAFT // WELLEN // CARDAN // TRASMISSIONE //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR212023	Universal Joints/Slider Shafts, Assembled (2): SLK	Kardangelenke / Teleskopantriebswelle montiert (2): SLK	Cardans universels télescopiques assemblés (2): SLK	Giunti universali/alberi scorrevoli assemblati (2): SLK

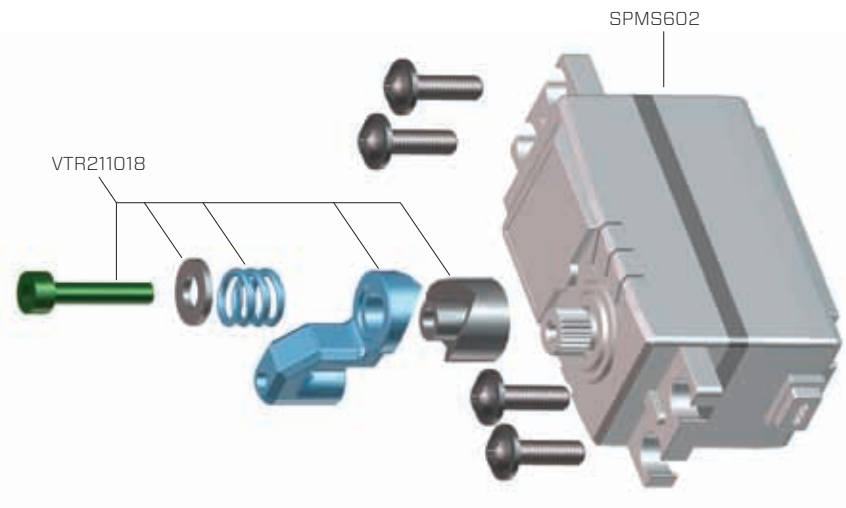
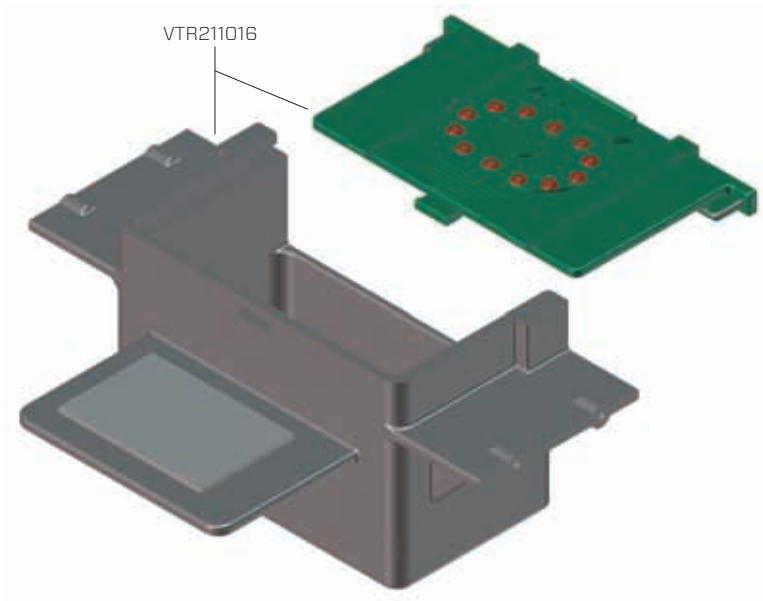


BATTERY BOX // AKKUBOX // COMPARTIMENT À BATTERIE // SCATOLA BATTERIA //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR211016	Battery Box: SLK	Akkubox: SLK	Compartment à batterie: SLK	Scatola batteria: SLK

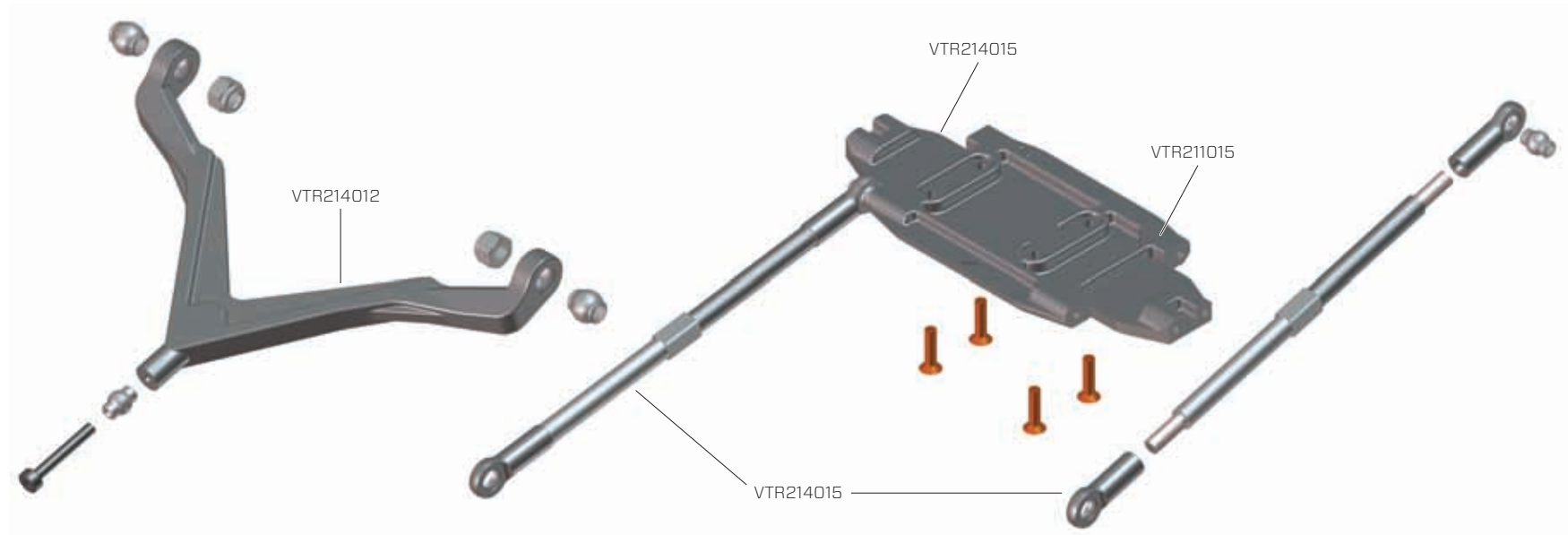
SERVO SAVER // SERVOSAVER // SAUVE SERVO // SALVA SERVO //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR211018	Servo Saver Set: SLK	Servosaver: SLK	Sauve servo: SLK	Set salva servo: SLK
SPMS602	S602 Digital Servo	S602 Digital Servo	Servo digital S602	Servo digitale S602



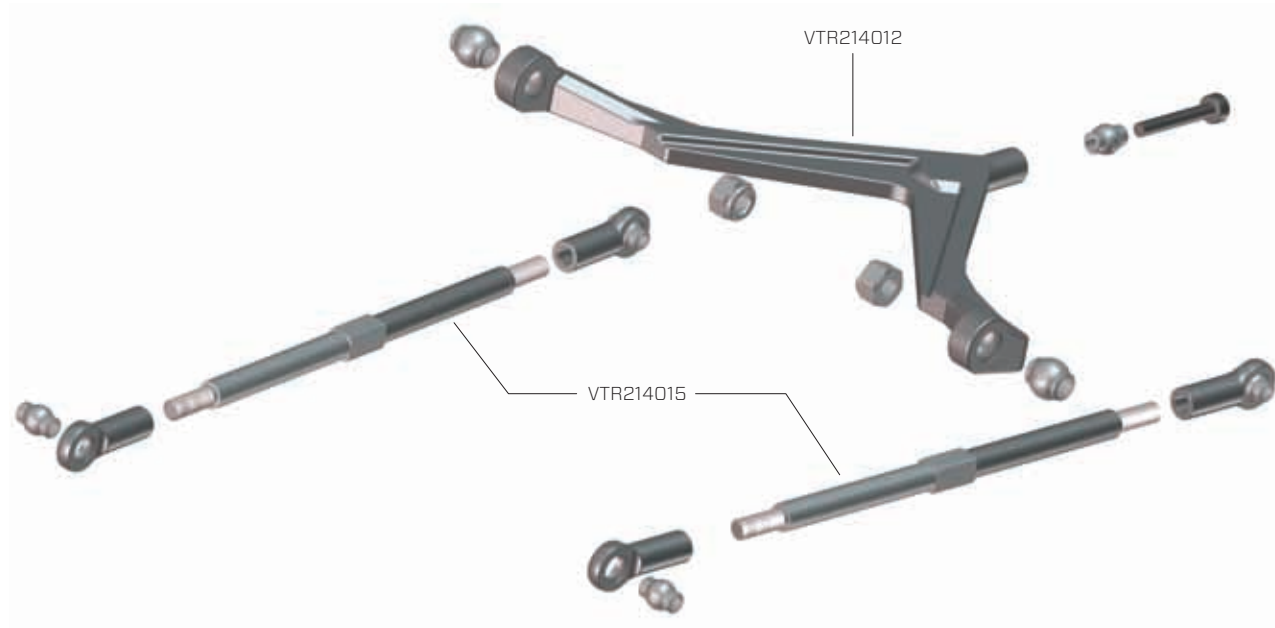
FRONT SUSPENSION // FRONT AUFHÄNGUNG // SUSPENSION AVANT // SOSPENSIONE ANTERIORE ///

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR211015	Transmission Skid Plate: SLK	Antriebsschutz: SLK	Plaque de protection: SLK	Piastra pattino trasmissione: SLK
VTR214012	3 Link Connector Set: SLK	3 Wege Verbinderset: SLK	Set de biellette à 3 points: SLK	Set connettore 3 link: SLK
VTR214015	Lower Suspension Link Set (4): SLK	Unteres Fahrwerksset (4): SLK	Set de tirants inférieurs (4): SLK	Set collegamento inferiore sospensione (4): SLK



REAR SUSPENSION // HECK AUFHÄNGUNG // SUSPENSION ARRIÈRE // SOSPENSIONE POSTERIORE ///

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR214015	Lower Suspension Link Set (4): SLK	Unteres Fahrwerksset (4): SLK	Set de tirants inférieurs (4): SLK	Set collegamento inferiore sospensione (4): SLK
VTR214012	3 Link Connector Set: SLK	3 Wege Verbinderset: SLK	Set de biellette à 3 points: SLK	Set connettore 3 link: SLK

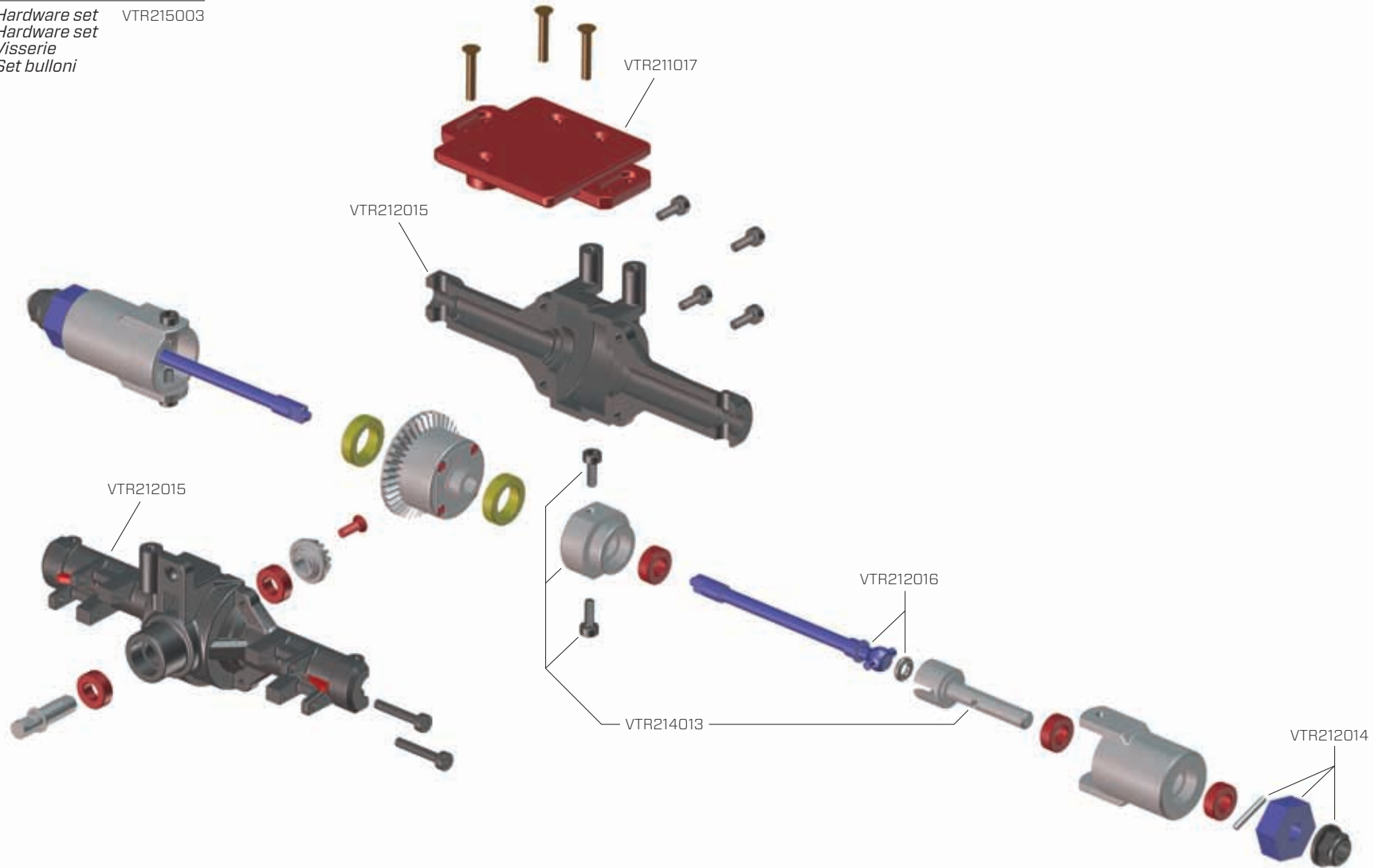


REAR AXLE // HINTEN ACHSEN // AXES ARRIÈRE // ASSE POSTERIORE //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR211017	Servo Plate & Mount Set: SLK	Servoplatte und Montageset: SLK	Platine et support de servo: SLK	Set piastra servo e supporto: SLK
VTR212014	12mm Wheel Hex Set: SLK	12mm Radmitnehmerset: SLK	Set d'hexagones de roues 12mm: SLK	Set esagoni ruota 12mm: SLK
VTR212015	Axle Housings with Hardware(2): SLK	Achsgehäuse mit Zubehör (2) SLK	Carters de pont avec visserie (2): SLK	Sede albero con viteria (2): SLK
VTR212016	Axle Shafts (2): SLK	Buggy Radachse (2): SLK	Arbres de transmission (2): SLK	Alberi asse (2): SLK
VTR214013	Rear Hub Set with Hardware (2): SLK	Radträgerset mit Zubehör (2): SLK	Fusées arrière avec visserie (2): SLK	Set mozzo posteriore con viteria (2): SLK
VTR215003	Hardware Set Axle Housing: SLK	Zylinderkopfschraube M2x18mm (10): SLK	Set de visserie pour pont: SLK	Set viteria sede asse: SLK



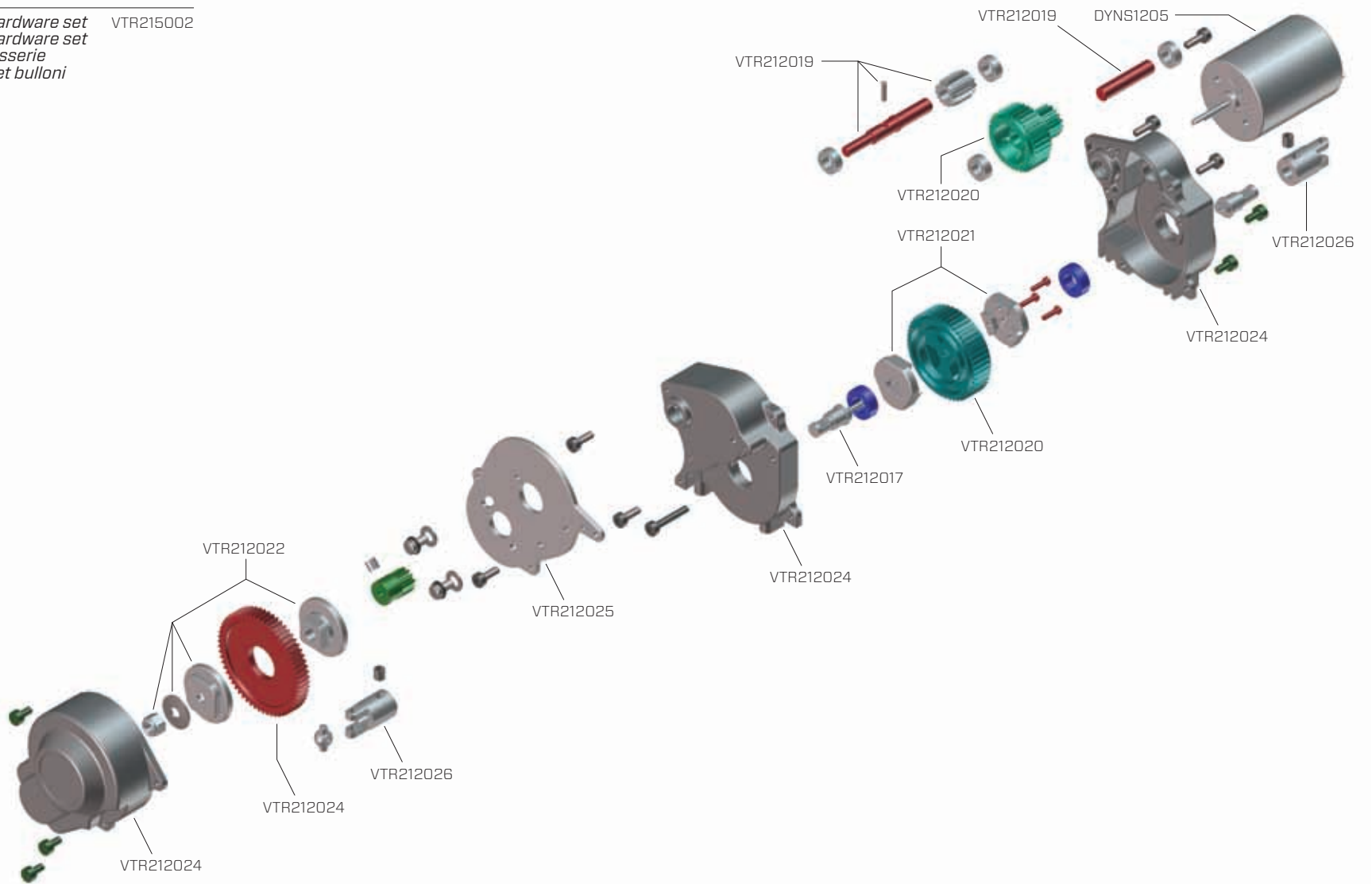
Hardware set VTR215003
Hardware set
Visserie
Set bulloni



TRANSMISSION // GETRIEBE // TRANSMISSION // TRANSMISSIONE //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
DYNS1205	1/18 Mini-Rock Crawler Motor	1/18 Mini-Rock Crawler Motor	Moteur pour Mini Rock Crawler 1/18	Motore 1/18 Mini-Rock Crawler
VTR212017	Output Shaft Set, Axles & Center Diff (2): SLK	Antriebsklauen / Wellen und Mittel Diff (2): SLK	Axes de sortie de diff central (2): SLK	Set uscita albero, assi e differenziale centrale (2): SLK
VTR212019	Top Shaft & Idler Shaft: SLK	Slipperwelle und Idler Gear Stift: SLK	Axe supérieur et axe intermédiaire: SLK	Albero superiore e albero tenditore: SLK
VTR212020	Center Transmission Gear Set: SLK	Getriebeset mittlerer Antriebsstrang: SLK	Set de pignons de transmission centrale: SLK	Set ingranaggi trasmissione centrale: SLK
VTR212021	Center Diff Locker: SLK	Sperrdiff mitte: SLK	Verrou de diff central: SLK	Bloccaggio differenziale centrale: SLK
VTR212022	Slipper Hardware Set: SLK	Slipper Set: SLK	Set d'accessoires de slipper: SLK	Set viteria slipper: SLK
VTR212024	Center Transmission Case Set: SLK	Antriebsgehäuseset Mitte: SLK	Carter de transmission centrale: SLK	Set carter trasmissione centrale: SLK
VTR212025	Motor Plate: SLK	Buggy Motorplatte: SLK	Support moteur: SLK	Piastra motore: SLK
VTR212026	Outdrive: SLK	Antriebsklaue: SLK	Noix de cardan: SLK	Bicchierino: SLK
VTR215002	Hardware Set Differential: SLK	Zylinderkopfschraube M2 x 14mm (10): SLK	Set de visserie de transmission centrale: SLK	Set viteria differenziale: SLK

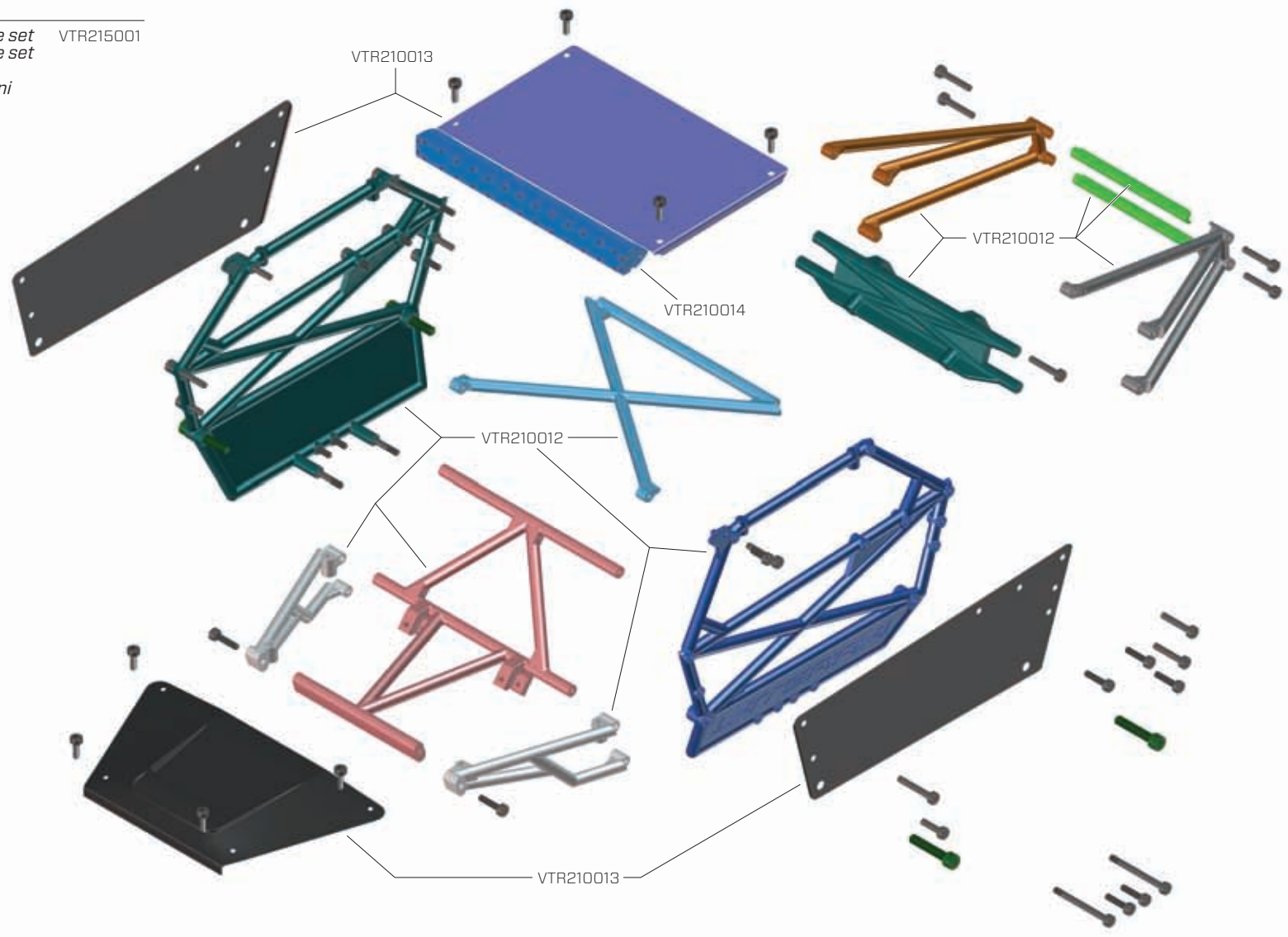
Hardware set VTR215002
Hardware set
Visserie
Set bulloni



ROLLBAR ASSEMBLY // ÜBERROLLBÜGEL // ASSEMBLAGE DE L'ARCEAU // GRUPPO ROLLBAR //////////////////////////////////////

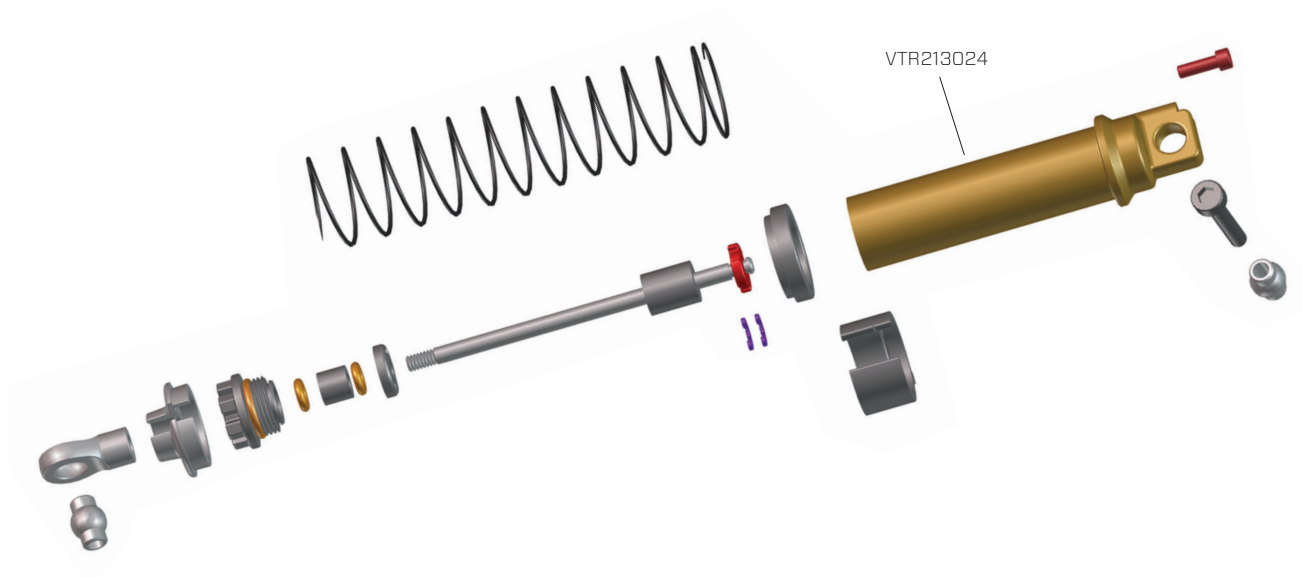
Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR210012	Roll Cage Set: SLK	Buggy Überrollkäfig: SLK	Arceau Cage: SLK	Set gabbia protezione: SLK
VTR210013	Body Panel Set: SLK	Karosserieverkleidung: SLK	Set de panneaux de carrosserie: SLK	Set pannello carrozzeria: SLK
VTR210014	Light Bar Housing: SLK	Scheinwerfergehäuse SLK	Boîtier de rampe lumineuse: SLK	Sede barra luci: SLK
VTR215001	Hardware Set Cage: SLK	Überrollkäfig: SLK	Visserie de l'arceau cage: SLK	Set viteria gabbia: SLK

Hardware set VTR215001
Hardware set
Visserie
Set bulloni



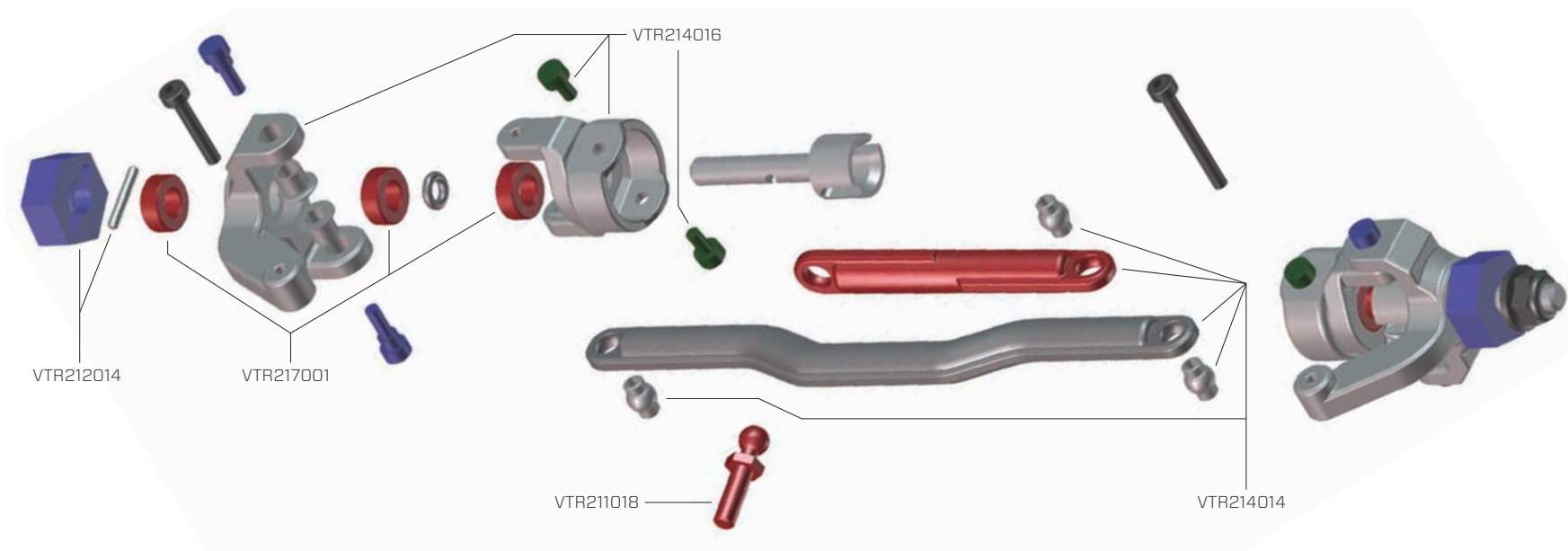
SHOCK ASSEMBLY // STOSSDÄMPFER // ASSEMBLAGE DES AMORTISSEURS // GRUPPO AMMORTIZZATORI //

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR213024	Assembled Shock (2): SLK	Stoßdämpfer vormontiert (2): SLK	Amortisseur assemblé (2): SLK	Ammortizzatore assemblato (2): SLK



// **STEERING // LENKUNG // DIRECTION // STERZO** //////////////////////////////////////

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR211018	Servo Saver Set: SLK	Servosaver: SLK	Sauve servo: SLK	Set salva servo: SLK
VTR212014	12mm Wheel Hex Set: SLK	12mm Radmitnehmerset: SLK	Set d'hexagones de roues 12mm: SLK	Set esagoni ruota 12mm: SLK
VTR214014	Steering Links, Long & Short: SLK	Lenkgestänge Kurz u. Lang: SLK	Biellettes de direction, courte et longue: SLK	Rinvii sterzo lunghi e corti: SLK
VTR214016	Front Spindles & Carriers with Hardware: SLK	Lenkhebel und Trägerset mit Zubehör: SLK	Fusées et étriers porte-fusées av avec visserie: SLK	Supporti semiassi anter. con viteria: SLK
VTR217001	Ball Bearing Set: SLK	Buggy Kugellagerset: SLK	Set de roulements: SLK	Set cuscinetti a sfere: SLK



OPTIONAL PARTS // DIVERSE TEILE // PIÈCES OPTIONNELLES // COMPONENTI OPZIONALI // // // // //

Part # Nummer Numéro Codice	Description	Beschreibung	Description	Descrizione
VTR212027	Front/Rear Metal Differential Locker (1): SLK	Sperdiff. v/h (1): SLK	Verrou de différentiel en métal AV/arr (1): SLK	Blocco differenziale metallico anter/poster (1): SLK
VTR212028	Center Metal Diff Locker (1): SLK	Mitteldiff. (1): SLK	Verrou de différentiel central en métal (1): SLK	Blocco diff. centrale metallo (1): SLK
VTR310000	LED Light Bar Kit: SLK	LED Lichtleiste Kit: SLK	Rampe lumineuse à DELs: SLK	Kit barra luminosa a LED: SLK
VTR312010	12mm Wheels Hex Set, Aluminum: SLK	12mm Radmutterset: SLK	Set d'hexagones de roues en aluminium 12mm: SLK	Set esagoni ruote 12mm, alluminio: SLK
VTR312011	Front Carrier Set: SLK	Radträgerset vorne: SLK	Porte-fusées avant en aluminium: SLK	Set supporto anteriore: SLK
VTR313000	Rebuild Kit Aluminum Shock Set: SLK	Alu Stoßdämpferreparaturset: SLK	Kit de réparation pour amortisseur en aluminium: SLK	Kit ricostruzione set ammortizzatori alluminio: SLK
VTR313001	Threaded Shock Set, Aluminum w/ Ti-Ni Shaft: SLK	Stoßdämpferset geh. Alu m. Ti-Ni Kolben: SLK	Set d'amortisseurs filetés en aluminium avec tiges Ti-Ni: SLK	Set ammort. filettato, alluminio c/ albero Ti-Ni: SLK
VTR314005	Lower 30 Deg High-Clearance Suspension Links Alum: SLK	30° High Clearance Querlenker Alu: SLK	Tirants inférieurs en aluminium Coudés 30°: SLK	Rinvii sospensione inferiore 30° distanza elevata, alluminio: SLK



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