

KAROO



VETTA
RACING



To download the full Owner's Manual & Technical Information Guide, please visit www.vettaracing.com

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.

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Legal

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.

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Important Information

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 factory calibrated and tested prior to final packaging, some issues may arise during shipping and handling that can be easily be 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 though 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, this products is a advanced radio controlled vehicle 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. Vetta Racing 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 model 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 Vetta Karoo Desert Truck
- 1 x Planet TSW 2.4GHz 3-channel transmitter
- 1 x Rechargeable 7-cell 8.4V 1800mAh NiMH battery
- 1 x Mains charger

Items Needed to Complete and Enjoy

- 4 x AA alkaline batteries for the transmitter



Introduction

The Vetta Karoo has been based on the Desert racing trucks of the modern world. You've only got to look and you can see the efforts put into the details of making this as scale as possible, from the open windows and the internal roll cage, to the 6 point rear axle and LED bumper light rail. At the heart of this desert racer is a high capacity rechargeable 1800 mah 8.4 volt NiMH battery pack coupled to a 40A ESC, this drives the premium heavy duty 21T 550 brushed motor giving you a well controlled positive power transfer to the 4WD system. Designed with the toughest terrain in mind the independent suspension, fully adjustable oil-filled threaded shocks and all-terrain high traction tires just soak up the punishment. The Karoo is guided by our high resolution Planet T3W 3-channel transmitter. Whether you're mud slogging, desert racing, or high jumping, the Karoo just keeps you wanting more.

Features

- 100% factory assembled and ready to run.
- All-weather electronics.
- Heavy duty 550 brushed 21T motor and 40 amp ESC.
- 2S LiPo compatible.
- 6 link rear axle
- Adjustable, oil filled, coil-over shock absorbers.
- Impact resistant composite construction is strong, durable, and lightweight.
- Scale appearance bumper and visible LED light rail.
- Toolless battery strap for easy battery installation and removal.
- Non integrated electronic components.

Getting Started

Below are some steps to help get started right away and most applicable to those who have used RC products before. Please read through the manual to acquaint yourself with the latest procedures, Warnings and Cautions.

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



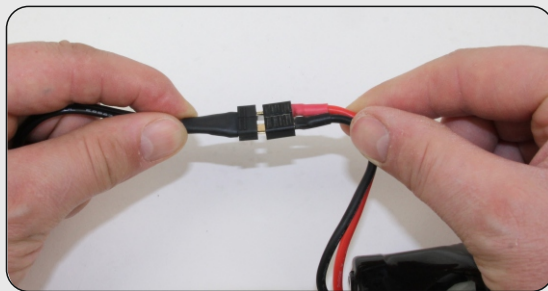
Locate the battery cradle at the back of the car, release the hook and loop tape and withdraw the battery pack.



Charging

- 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 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.

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.



LiPo compatibility

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.

If you have chosen to upgrade to a 2S LiPo battery please use and charge in accordance with the 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

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



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



Familiarize yourself with your Planet T3W radio system

Functions include servo reversing on both primary channels, steering dual rate, throttle trim, steering trim, throttle end point adjustment. It also has a low voltage warning, LED status light, optional charge socket and a switched third channel.

Features

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

Specifications

Memory Single model memory

Tx Batteries 4 x AA

Tx Length 165mm (5.8in)

Tx Height 215mm (11.07in)

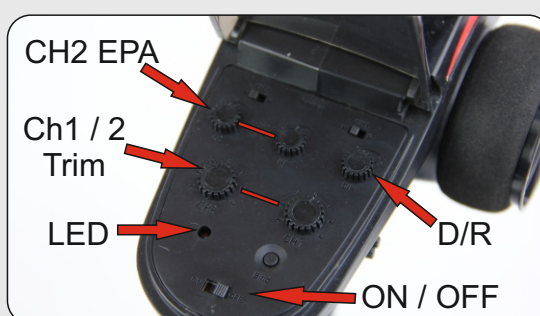
Tx Width 90mm (5.05in)

Tx Weight 282g (0.62lb) without batteries

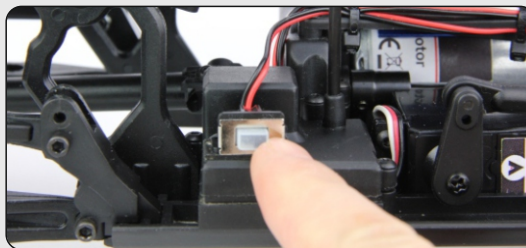
Remove the battery cover from the underside of the T3W transmitter. Insert four AA alkaline cells - ensuring correct polarity - then replace the battery cover.



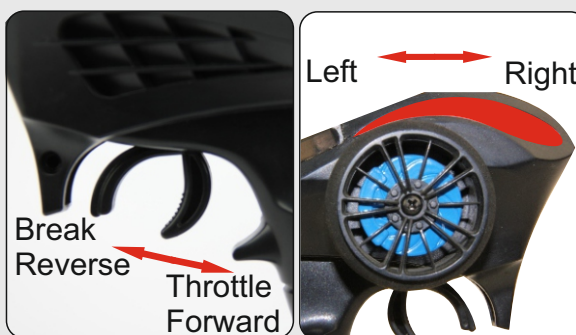
Switch ON your Planet T3W transmitter and ensure the LED is lit solid red and that no alarms are audible. Ensure that the CH2 EPA dials are turned fully clockwise and that the D/R (steering rate) dial is centered. Ensure, also, that the CH1 and CH2 (trim) dials are centered at zero.



Locate the switch and turn ON your Karoo Desert Truck. In the unlikely event that the car does not operate, see the PAIRING / BINDING instructions at the back of this guide.



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.



Use the throttle CH1 and steering trim Ch2 dials to fine-tune the controls of your car. In doing so, ensure that your Karoo Desert Truck tracks in a straight line. Also that it doesn't creep forwards or backwards at zero throttle.



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



IMPORTANT: When running your Karoo Desert Truck vehicle with the supplied NiMH battery, the run time should be in excess of 5 minutes. If your run time is significantly shorter than this (and no physical damage has been incurred – say in a crash or impact – that may be causing components to bind) then it is worth checking that the ESC has the correct NiMH battery LVC setting.

Confirm that the LVC (Low Voltage Cutoff) point has been correctly set for NiMH and not for LiPo or other lithium chemistry battery. The procedure for checking or setting the LVC for NiMH batteries is covered in the ESC settings.

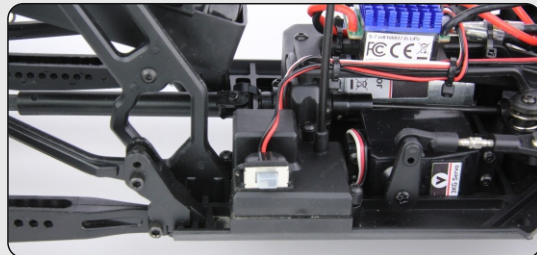
Pairing The Transmitter

If you are experiencing difficulty in getting the radio to talk to the car and have checked the trouble shooting table you may need to Pair the radio. Please follow the steps below.

- 1** Remove the body, install a fully charged battery into the car, then connect it to the ESC. Ensure that the car is powered OFF.



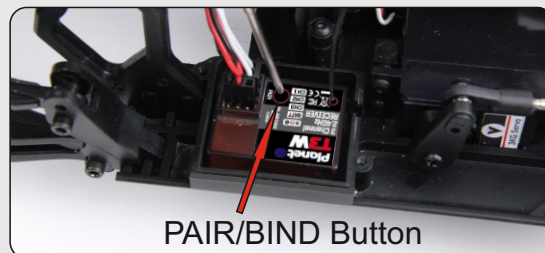
- 2** Locate the receiver box and, using a 2mm hex driver, remove the protective cover.



- 3** Place your Karoo Desert Truck and T3W transmitter in close proximity but not less than 12" (300mm) apart.



- 4** 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.



- 5** 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.



When the LED on the receiver lights solid red your Planet T3W transmitter and Karoo will be bound. You will now have full control of throttle and steering.



Vetta 40A ESC Programming and Calibration

Input voltage: 5 - 6 cell NiMH / NiCd; 2S LiPo

Current: 40A

BEC Output: 5.6V / 2A

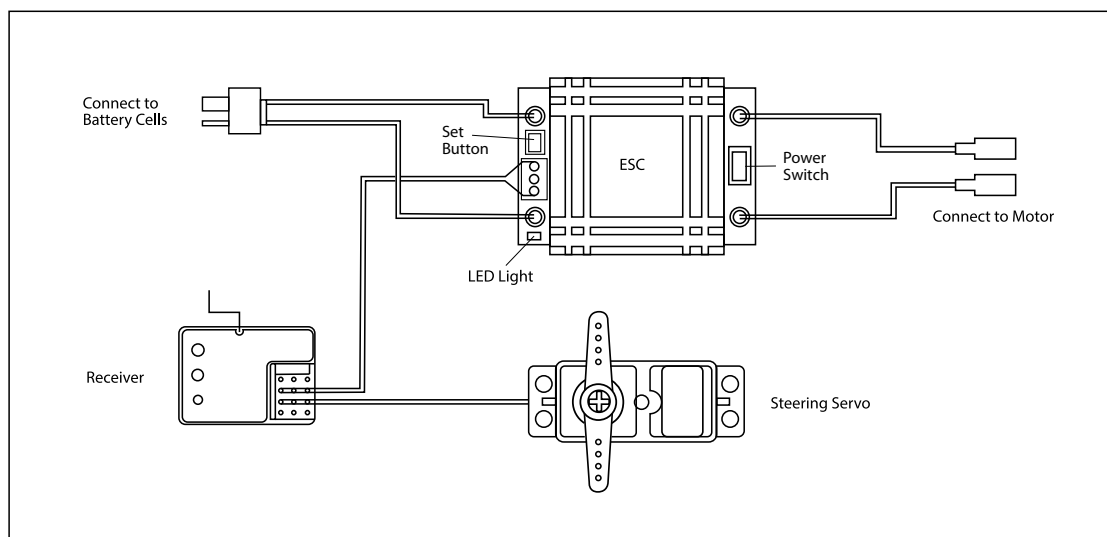
Size: 30 x 28 x 22mm

Weight: 38g

Product Features

1. Low voltage protection
2. Overheat protection
3. Crawler Mode
4. Beginner Mode

Wiring Schematic



Before configuring / programming your ESC use the following guide to check the LVC / Overheat Protection settings and the Crawler / Practice Mode settings: Check the settings for LVC / Overheat Protection

1. Power ON the T3W transmitter then power ON the ESC and listen to the beeps / notes that are emitted.
2. If LVC / Overheat Protection is already set to OFF (unprotected) the ESC will beep once then play three notes, This setting is for NiMh.

3. If LVC / Overheat Protection is already set to ON (protected) the ESC will beep twice then play three notes. This setting is for LiPo.

4. Power OFF the ESC then power OFF the T3W transmitter.

Check the settings for Crawler Mode and Practice Mode

1. Power ON the T3W transmitter then power ON the ESC and listen to the beeps / notes that are emitted and pay attention to the LED light.

2. If Practice Mode is already set to ON the ESC will beep twice, play three notes and the LED will flash slowly.

3. If Crawler Mode is already set to ON the ESC will beep twice, play three notes and the LED will glow solid.

4. Power OFF the ESC then power OFF the T3W transmitter

Having established the presets use the following guide to make the changes you require:

Resetting the LVC / Overheat Protection

When changing settings note that each time you press the SET button to make an alteration the ESC will switch between the two, i.e. LVC / Overheat Protection ON to LVC / Overheat Protection OFF, then back to ON again.

1. Power ON the T3W transmitter then press the ESC SET button and power ON the ESC. Listen to the beeps / notes that are emitted.

2. If the ESC beeps once LVC / Overheat Protection will be set to OFF (unprotected). You can now release the SET button.

3. If the ESC beeps twice LVC / Overheat Protected will be set to ON (protected). You can now release the SET button.

Resetting Crawler Mode and Practice Mode

1 Power ON the T3W transmitter then power ON the ESC. Press and hold the ESC SET button for 2 seconds.

2. The ESC will beep once before releasing the button to confirm that Practice Mode is active.

3. The ESC will beep twice before releasing the button to confirm that Crawler Mode is active.

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.

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

1. Remove the gear cover

2. The gear mesh is not adjustable on the Karoo as it has a fixed motor mount. However the motor sometimes can be installed un centred. We recommend when removing and installing the motor you make sure it runs parallel with the centre drive shaft.

Warning - The Karoo runs a 17T pinion so when installing the motor it is imperative it is not pushed up against the centre drive shaft.

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 Guide

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. 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.
- Inspect around the steering components to ensure no debris is 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
Vehicle will not turn on	Battery voltage too low	Charge battery
	Battery not connected	Re/connect battery
	Batteries dead in car or transmitter	Replace batteries
	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 distanced)	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 to not 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

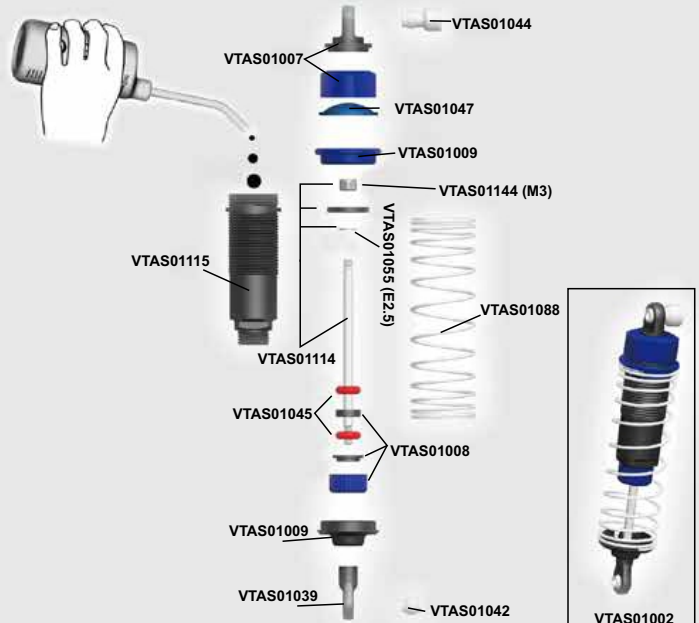
Problem / Symptom	Possible Cause	Possible Solution
Steering will not trim straight, always has right bias	Binding in steering system	Inspect and correct any binding components or loosen screws if over tight
	Side wheels too tight	Check and adjust wheel nuts on the right side of the vehicle to ensure 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
	Differential broken	Check differential and ensure the outdrives 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	Wheels too tight	Check and adjust wheel nuts
	Differentials stripped	Check differentials and replace/repair if necessary
Battery charge stops lasting as long as it used to	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.
	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
Shocks and/or arms covered in oil	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
	Bottom shock cap dislodged	Check installation, refill shock oil
Spur gears stripping	Gear mesh too loose	Tighten gear mesh for proper backlash
	Fasteners loose or missing	Check for loose fasteners on spur gear mount and ensure all E-clips are in place

Front Shocks



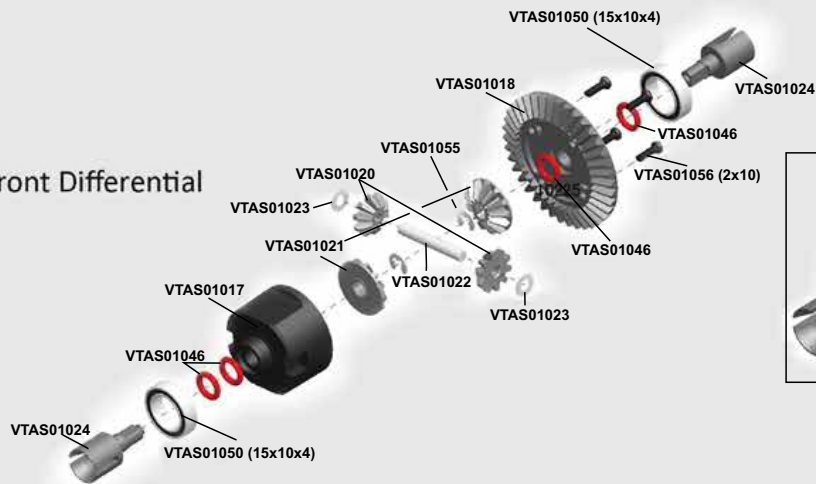
(Dia. 1-1)

Rear Shocks



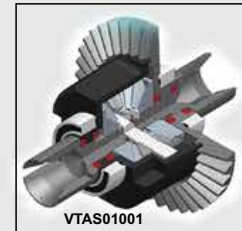
(Dia. 1-2)

Front Differential



(Dia. 2-3)

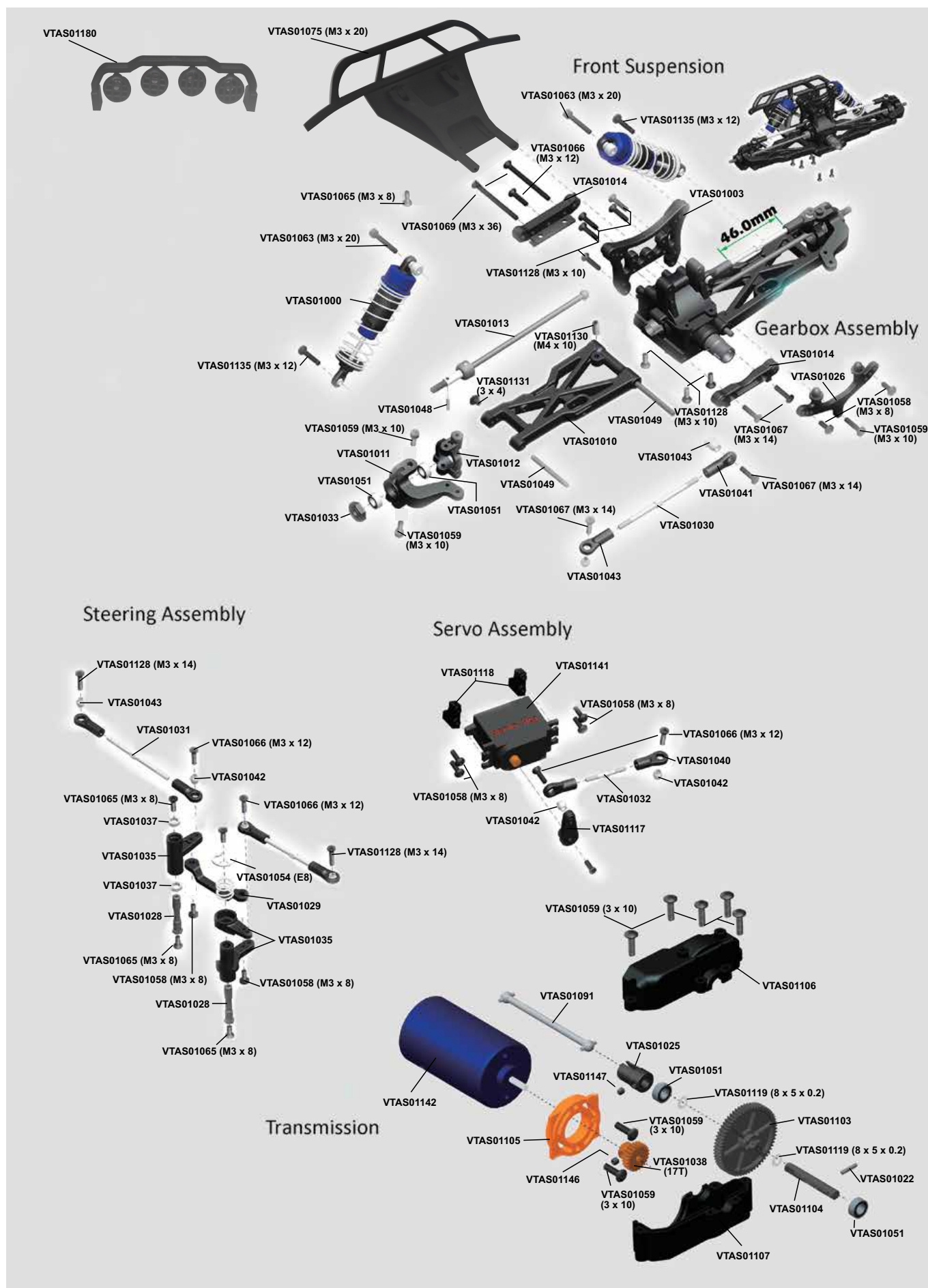
Diff. Box



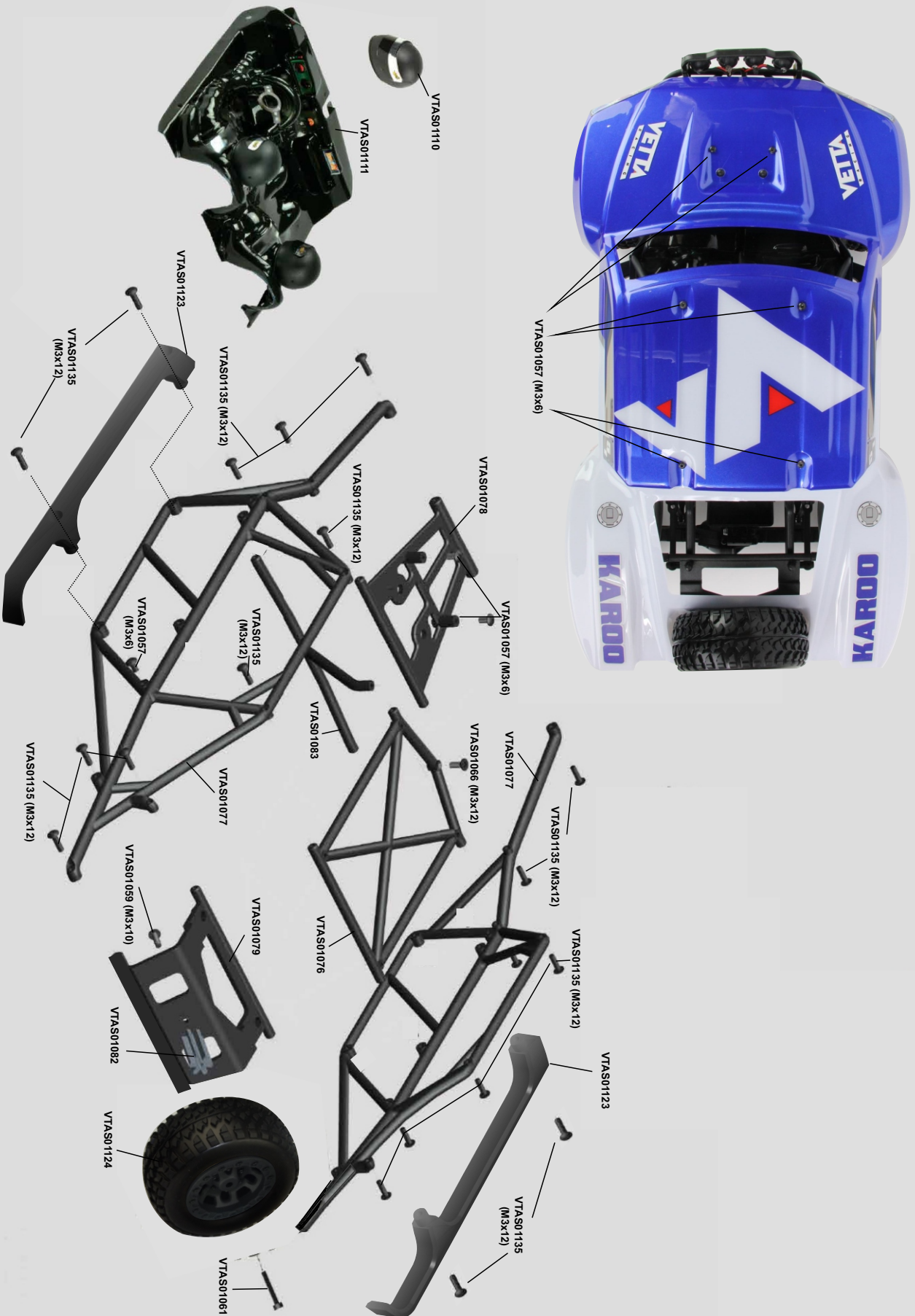
Front Gearbox Assembly



Diff Box

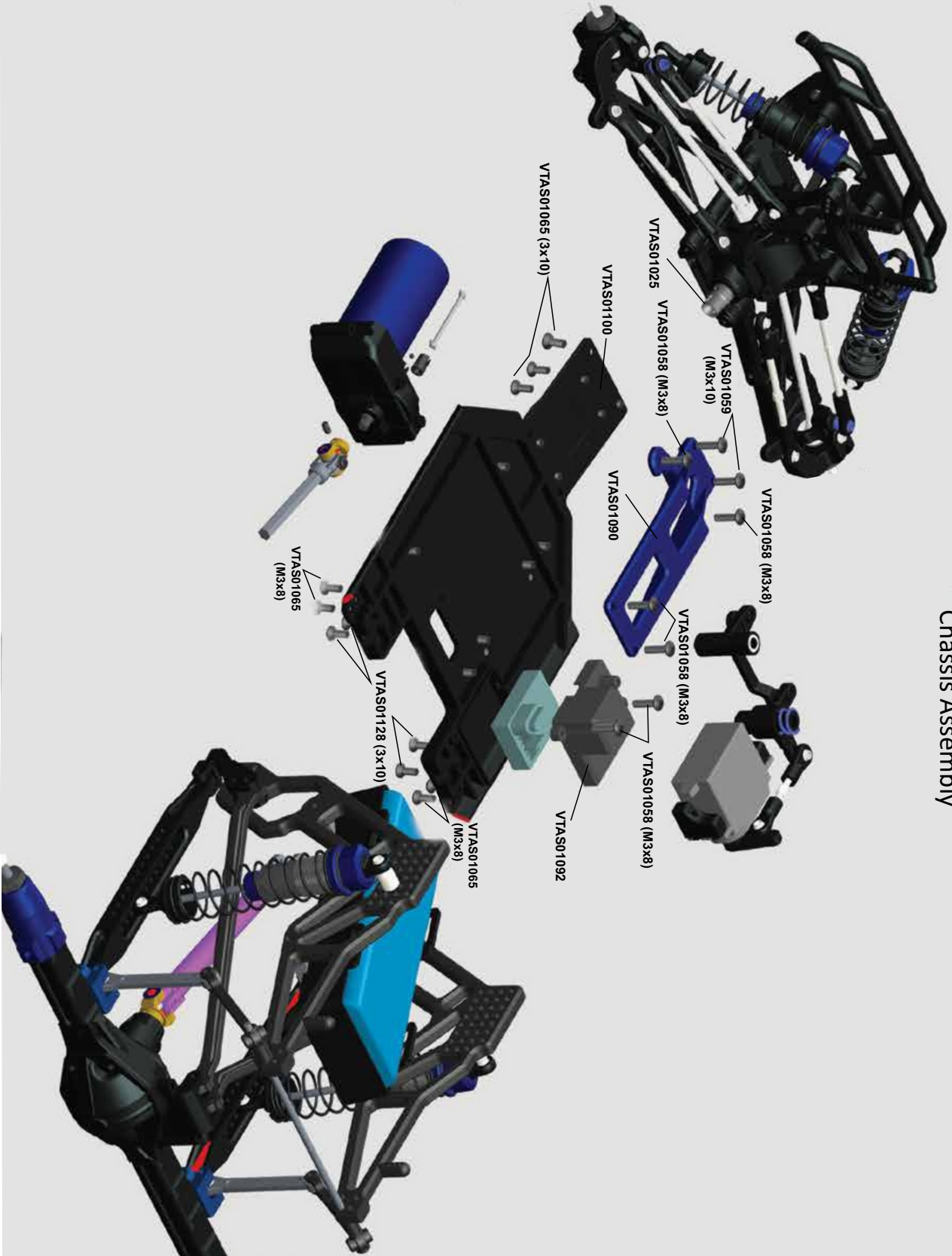


Roll Cage & Body





Chassis Assembly



VTAS01000	Front Shock Complete (2pcs) (Karoo)
VTAS01001	Differential Gearbox (1 set) (Karoo)
VTAS01002	Rear Shock Tower (2pcs) (Aluminium) (Karoo)
VTAS01003	Front Shock Tower (Karoo)
VTAS01004	Front shock Spring (2pcs) (Karoo)
VTAS01005	Front Shock Shaft and Piston Set (2 sets) (Karoo)
VTAS01006	Front Shock Body (2pcs) (Karoo)
VTAS01007	Shock Upper Cap (2 sets) (Karoo)
VTAS01008	Shock Lower Caps (2 sets) (Karoo)
VTAS01009	Shock Lower Holder and Adjustment Ring (2 sets) (Karoo)
VTAS01010	Front Lower Suspension Arm (2pcs) (Karoo)
VTAS01011	Steering Knuckle Arm (2 sets) (Karoo)
VTAS01012	Uprights (2pcs) (Karoo)
VTAS01013	Front CVD (2pcs) (Karoo)
VTAS01014	Front Suspension, Holder (2pcs) (Karoo)
VTAS01015	Gearbox Housing Set (2pcs) (Karoo)
VTAS01016	Differential Drive Gear with pin (2 sets) (Karoo)
VTAS01017	Differential Case (2pcs) (Karoo)
VTAS01018	Differential Drive Spur Gear (2pcs) (Karoo)
VTAS01019	Differential Drive Gear (2pcs) (Karoo)
VTAS01020	Differential Bevel Gear S. (4pcs) (Karoo)
VTAS01021	Differential Bevel Gear B. (4pcs) (Karoo)
VTAS01022	Differential Pin (2pcs) (Karoo)
VTAS01023	Washer (6pcs) (Karoo)
VTAS01024	Differential Drive Cup (4pcs) (Karoo)
VTAS01025	Center Coupler 3pcs (Karoo)
VTAS01026	Body Post (2pcs) (Karoo)
VTAS01027	Servo Saver (1 set) (Karoo)
VTAS01028	Servo Saver Post (2pcs) (Karoo)
VTAS01029	Steering Ackerman (Karoo)
VTAS01030	Front Upper Suspension Arm (2 sets) (Karoo)
VTAS01031	Steering Arm (2 sets) (Karoo)
VTAS01032	Servo Linkage (Karoo)
VTAS01033	Wheel Hub (4pcs) (Karoo)
VTAS01034	Antenna Pipe Set (2 sets) (Karoo)
VTAS01035	Servo Saver (EP) (1 set) (Karoo)
VTAS01036	Metal Bushing 15x10x4 (6pcs) (Karoo)
VTAS01037	Metal Bushing 8x5x2.5 (6pcs) (Karoo)
VTAS01038	M0.6 Pinion Gear 17T (EP) (Karoo)
VTAS01039	Shock Ball End (6pcs) (Karoo)

VTAS01040	Servo Link Ball End (6pcs) (Karoo)
VTAS01041	Steering Linkage Ball End (6pcs) (Karoo)
VTAS01043	Ball B (6pcs) (Karoo)
VTAS01042	Ball A (6pcs) (Karoo)
VTAS01044	Ball C (6pcs) (Karoo)
VTAS01045	Shock O-Ring (Lower)(6pcs) (Karoo)
VTAS01046	Differential O-Ring Seal (6pcs) (Karoo)
VTAS01047	Shock Seal Cover (4pcs) (Karoo)
VTAS01048	Pin 10x2mm (6pcs) (Karoo)
VTAS01049	Hinge Pins (Long and Short)(2 sets) (Karoo)
VTAS01050	Ball Bearing 15x10x4mm (6pcs) (Karoo)
VTAS01051	Ball Bearing 10x5x4mm (6pcs) (Karoo)
VTAS01052	Metal Bushing 10x5x4mm (6pcs) (Karoo)
VTAS01053	Metal Bushing 8x5x2.5mm (6pcs) (Karoo)
VTAS01054	E-Clip 8mm (Outer Diameter) (4pcs) (Karoo)
VTAS01055	E-Clip 2.5mm (Outer Diameter) (6pcs) (Karoo)
VTAS01056	Round Head Self Tapping Hex Screw 2x10 (6pcs) (Karoo)
VTAS01057	Round Head Self Tapping Hex Screw M3x6 (6pcs) (Karoo)
VTAS01058	Button Head Hex Screw M3x8 (6pcs) (Karoo)
VTAS01059	Button Head Hex Screw M3x10 (6pcs) (Karoo)
VTAS01060	Button Head Hex Screw M3x14 (6pcs) (Karoo)
VTAS01061	Cap Head Hex Screw M3x10 (6pcs) (Karoo)
VTAS01062	Cap Head Hex Screw M3x14 (6pcs) (Karoo)
VTAS01063	Cap Head Hex Screw M3x18 (6pcs) (Karoo)
VTAS01064	Cap Head Hex Screw M3x28 (6pcs) (Karoo)
VTAS01065	Flat Head Hex M3x8 (6pcs) (Karoo)
VTAS01066	Flat Head Hex M3x12 (6pcs) (Karoo)
VTAS01067	Flat Head Hex M3x14 (6pcs) (Karoo)
VTAS01068	Flat Head Hex M3x20 (6pcs) (Karoo)
VTAS01069	Flat Head Hex M3x36 (6pcs) (Karoo)
VTAS01070	1:10 Charger (EU) (Karoo)
VTAS01071	1:10 Charger (US) (Karoo)
VTAS01072	1:10 Charger (UK) (Karoo)
VTAS01073	Ring Self Tapping Screw 3x6 (6pcs) (Karoo)
VTAS01074	Pinion Gear 23T (Karoo)
VTAS01076	Roll Cage Top Frame (Karoo)
VTAS01077	Roll Cage Side Frame (2pcs) (Karoo)
VTAS01078	Roll Cage Front (Karoo)
VTAS01079	Roll Cage Rear Plate (Karoo)
VTAS01080	Rear Link Holder (Karoo)
VTAS01081	Rear Central CVD Rear Half (Karoo)
VTAS01082	Spare Wheel Support (Karoo)
VTAS01083	Roll Cage Window Frame (Karoo)
VTAS01084	Rear Axle Housing (Karoo)

VTAS01085	Rear Axle Cover (Karoo)
VTAS01086	Axle Adaptor (2pcs) (Karoo)
VTAS01087	Rear Holder for Rear Shock Support Rod (2pcs) (Karoo)
VTAS01088	Rear Shock Spring (2pcs) (Karoo)
VTAS01089	Rear Link Set (2pcs) (Karoo)
VTAS01090	Upper Plate (Karoo)
VTAS01091	Front Central Drive Shaft (Karoo)
VTAS01092	Receiver (Rx) Cover (Karoo)
VTAS01093	Rear Drive Shaft Short (Karoo)
VTAS01094	Rear Drive Shaft Long (Karoo)
VTAS01095	Front Holder for Rear Shock Support Rod (2pcs) (Karoo)
VTAS01096	Swaybar (Karoo)
VTAS01097	Battery Case Holder (2pcs) (Karoo)
VTAS01098	Main frame (2pcs) (Karoo)
VTAS01099	Rear shocks lower Support Rod (2pcs) (Karoo)
VTAS01100	Chassis Plate (Karoo)
VTAS01101	Swaybar Pull Rod Upper (Karoo)
VTAS01102	Swaybar Pull Rod Lower (Karoo)
VTAS01103	Main Gear 62T (Karoo)
VTAS01104	Central Drive Shaft (Karoo)
VTAS01105	Motor Mount (for 17T) (Karoo)
VTAS01106	Central Transmission Cover Upper (Karoo)
VTAS01107	Central Transmission Cover Lower (Karoo)
VTAS01108	Motor Mount (For 23T) (Karoo)
VTAS01109	Rear Central CVD front half (Karoo)
VTAS01110	Driver Helmet (2pcs) (Karoo)
VTAS01111	Driver Blister set with decal (Karoo)
VTAS01112	Rear Differential shaft (Karoo)
VTAS01113	Ball Bearing (11x5x4) (6pcs) (Karoo)
VTAS01114	Rear Shock Shaft and Piston (2 sets) (Karoo)
VTAS01115	Rear Shock Body (2pcs) (Aluminium) (Karoo)
VTAS01116	Pin 2x13mm (6pcs) (Karoo)
VTAS01117	Servo Horns (Karoo)
VTAS01118	Servo Post (2 sets) (Karoo)
VTAS01119	Washer (8x5x0.2mm) (6pcs) (Karoo)
VTAS01120	Flat Head Hex (M3x6) (6pcs) (Karoo)
VTAS01121	Set Screw M3x10 (6pcs) (Karoo)
VTAS01122	Ring Self Tapping Screw 2.5x3mm (4pcs) (Karoo)
VTAS01144	Nylon Lock Nut M3 (6pcs) (Karoo)
VTAS01145	Nylon Lock Nut M4 (6pcs) (Karoo)
VTAS01146	Set Screw M3x3 (6pcs) (Karoo)
VTAS01147	Set Screw M4x4 (6pcs) (Karoo)
VTAS01148	E-Clip 4mm (6pcs) (Karoo)
VTAS01149	Differential 16T Gear Washer (6pcs) (Karoo)

VTAS01150	Cap Head Hex Screw M3x8 (6pcs) (Karoo)
VTAS01125	Body Clip (Small Size) (6pcs) (Karoo)
VTAS01126	Body Clip (Medium Size) (6pcs) (Karoo)
VTAS01127	Cap Head Hex Screw M3x5 (6pcs) (Karoo)
VTAS01128	Flat Head Hex M3x10 8p (Karoo)
VTAS01129	Flat Head Hex Screw M3x18 (3pcs) (Karoo)
VTAS01130	Button Head Hex Screw M4x10 (6pcs) (Karoo)
VTAS01131	Ring Self Tapping Screw 3x4 (4pcs) (Karoo)
VTAS01132	Round Head Self Tapping Hex Screw 2x6 (4pcs) (Karoo)
VTAS01133	Round Head Self Tapping Hex Screw 3x15 8pcs (Karoo)
VTAS01134	Cap Head Hex Screw M3x10 (6pcs) (Karoo)
VTAS01135	Button Head Hex Screw M3x12 (6pcs) (Karoo)
VTAS01136	Cap Head Hex Screw M3x25 (6pcs) (Karoo)
VTAS01137	Battery Case (Karoo)
VTAS01138	Velcro Tape (2pcs) (Karoo)
VTAS01075	Front Bumper Set (1 set) (Karoo)
VTAS01179	Heatsink (Karoo)
VTAS01180	Headlights (Plastic Frame) (Karoo)
VTAS01140	Wheel Rims (2pcs) (Karoo)
VTAS01139	Tyre Set (2pcs) (Karoo)
VTAS01124	Wheel Set (2pcs) (Karoo)
VTAS01151	Body Shell (Blue) (Karoo)
VTAS01152	Body Shell (Grey) (Karoo)
VTAS01181	Clear Body Shell optional (Clear) (Karoo)
VTAS01123	Side Impact Bars (Karoo)
VTAS01142	Brushed 550 23T Motor (Karoo)
VTAS01143	Brushed ESC 40A (Karoo)
VTAS01141	Standard 3kg Servo (Karoo)
VTAS01182	NiMH Battery 1800mAh 8.4V HCT Hump 6-1 (Karoo)
PLAT1000	Planet T3W 3-Channel Transmitter
PLAR1000	Planet T3S 3-Channel Receiver

Optional Parts

VTAS01153	Carbon Front Shock Tower (1 set) (Karoo)
VTAS01154	Front Shock (Aluminium) (2pcs) (Karoo)
VTAS01155	Front Lower Suspension Arm (Aluminium) (2pcs) (Karoo)
VTAS01156	Steering Ackerman (Aluminium) (Karoo)
VTAS01157	Front Suspension Holders (Aluminium) (1 set) (Karoo)
VTAS01158	Steering/Knuckle Arm (Aluminium) (2pcs) (Karoo)
VTAS01159	Wheel Hub (Aluminium) (4pcs) (Karoo)
VTAS01160	Steering Arm (Aluminium) (2pcs) (Karoo)
VTAS01161	Knuckle Arm (Aluminium) (2pcs) (Karoo)
VTAS01162	Motor Mount (Aluminium) (for 17T) (Karoo)
VTAS01163	Chassis Plate with Rx case (Aluminium) Karoo

Optional Parts Continued

VTAS01164	Swaybar Pull Rod Upper (Aluminium) (Karoo)
VTAS01165	Swaybar Pull Rod Lower (Aluminium) (Karoo)
VTAS01166	Rear Central CVD (Steel) (1 set) (Karoo)
VTAS01167	Front Holder for Rear Shock Support Rod (Aluminium) (2pcs) (Karoo)
VTAS01168	Rear Shock Lower Support Rod (Aluminium) (Karoo)
VTAS01169	Main Frame (Aluminium) (2pcs) (Karoo)
VTAS01170	Rear Link Holder (Aluminium) (Karoo)
VTAS01171	Rear Link Set (Aluminium)(Karoo)
VTAS01172	Axle adaptor (Aluminium) (Karoo)
VTAS01173	Upper Plate (Aluminium) (Karoo)
VTAS01174	Rear Axle Housing (Aluminium) (Karoo)
VTAS01175	Rear Axle (Aluminium) (Karoo)
VTAS01176	Rear Holder for Rear Shock Support Rod (Aluminium) (Karoo)
VTAS01177	Chassis Plate (Carbon and Aluminium) with RX case (Karoo)
VTAS01178	Battery Case Holder (2pcs) (Aluminium) (Karoo)

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.vettaracing.com



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.

Distributed in the UK by:

J Perkins Distribution Ltd,
Lenham,
Kent,
UK
ME17 2DL
www.jperkins.com

J Perkins Distribution Warranty Information

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

J Perkins Distribution accepts no liability or loss, damage or costs which are incurred due to the incorrect or incompetent use of the product.

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 Vetta have made every effort in component design, material selection and assembly to make our products as durable as possible. Vetta 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 Vetta product.

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



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