# **Instruction Manual**

1/8 SCALE

# 4WD BRUSHLESS READY TO RUN BUGGY





## ( € F© 😂 🕅 🚯

#### Note:

- ► This radio controlled racing model is not a toy. It is suited for experienced operators.
- ► Read and understand the instructions carefully before operating or assembling your racing model.
- ► Specifications are subject to change without prior notice, and actual received model may vary from the images and/or descriptions in this manual.

#### RH812 VRX-2E Features:

- ➤ One-piece ESC/battery tray for 7.4V/11.1V/14.8V Lipo battery fastened by hook-and-loop straps.
- ➤ Durable machined 14T pinion gear and 46T spur gear.
- > Rigid motor mounts securing the motor to chassis tightenly
- ➤ 80A brushless speed control with cooling fan designed for 7.4V-14.8V Lipo
- ➤ Light Solid 6061/T6 anodized alum. chassis
- > Three differentials and four wheel drive system
- ➤ Blacked universal joint, dogbones and fully ball bearings
- > Front/rear metal sway bar system
- > Good quality wheel rims & cube-nailed tread tyres providing a long period of service
- > Oil filled shock absorber
- ➤ High impact durable lexan body
- > Brushless motor & speed control included
- > 11.1V 2700mAh Lipo battery one pack included

#### RH812 VRX-2E Technical Data:

Overall Length505mm	Weight
Overall Width305mm	Gear Ratio1:11.35
Height175mm	Wheel Diameter115mm
Wheelbase330mm	Wheel Width42mm
Front Wheel Track258mm	Ground Clearance35mm
Rear Wheel Track261mm	Pinion gear14T
ESC80A	Motor2230KV
Motor Shaft5.0 mm	Battery11.1V Lipo

These data are subject to change without prior notice as a result of our Product continual improvement.

# **Important Safety Precautions**

This is a high performance radio controlled model which needs to be operated with caution and common sense. Failure to follow the safety instructions could result in personal injuries and//or property damage.

- Always run your vehicle after the body shell is mounted.
- ➤ Do not abruptly alter the speed during running.
- Do not run your vehicle around crowded people.
- Carefully check whether all screws or nuts are loose or not after running.
- >Do not put your finger or any object into the rotating or moving parts.

- > To avoid damage of burn, do not touch the motor as soon as they are stopped running.
- ➤ Always check battery power. You may lose of control of your model due to low battery power.
- ➤ In the event that the model behaves abnormally, stop running it and check. The model is not allowed to be used until all problems have been settled.
- > Use the neutral cleaner and soft clothes to clean the model surface.

#### Lipo Battery Warnings

Stop using or charging the battery immediately whenever a battery damages, gives off an odor, becomes discolored or deformed, starts to balloon or swell up, leaks, its temperature reaches over 160°F (71°C) or anything else abnormal occurs. Disconnect the battery and observe it in a safe place. This abnormal problem may cause the battery to leak, and the reaction with air may cause the chemical materials inside to ignite and even result in fire. Since delayed chemical reaction may occur—a battery can still ignite even after 10 minutes, you should keep observing the battery for at least 15 minutes as a safety precaution. Battery observation should be taken in a safe area outside of any building or vehicle and away from any combustible material.

Do charge Li-Po battery only with qualified charger specifically designed for Li-Po battery. Do not use a Ni-MH or Ni-Cd charger. Failure to do so may cause a fire which may result in personal injury and property damage. Some Li-Po chargers in the market may have technical deficiencies, which may cause to charge the Li-Po batteries incorrectly or at an improper rate. It is your responsibility solely to assure that the charger you purchased works properly. Always charge batteries through balancer or use the charger with balance function. Overcharge may occur to the unbalance cell in the pack if you use the series charger, that may lead to shorten the battery life, and may even cause a fire which may result in personal injury and property damage.

Never charge batteries unattended. During the whole charging Li-Po batteries process, you should always remain in constant observation to monitor the charging process and react to any problems occurring to assure that batteries are being charged properly all the time. Do not discharge the batteries with the current exceeding the max. continuous discharge current specified for them, otherwise, it will cause the batteries overheat and result in battery deterioration, burst, balloon or may even cause fire or explosion.

Never store or charge battery pack inside your car or in extreme temperature, since extreme temperature might ignite the battery and cause fire.

Store the battery at a place where infants/kids can not reach. Make sure children not to take the battery from the charger or equipment.

## Handling and Caring for Battery

Never disassemble, modify, puncture, mechanical shock, crash and/or short the battery, it may cause leakage, smoke emission, ignition, explosion and even fire, which may result in personal injury and property damage.

Short circuit may cause fire and injury! If you need to cut the terminal wires of the battery, it is necessary to cut each wire separately, ensuring the wires not to touch each other,

otherwise, a short may occur and potentially cause a fire. To solder a connector, remove insulating tape of Red wire and solder to positive terminal of a connector, then remove insulating tape of Black wire and solder to the negative terminal of the connector. Be careful not to short the wire lead. If you accidentally cause the battery to short, place it in a safe open space and observe the battery for at least 15 minutes. A battery may swell or even possibly catch fire after a short time. Additionally, if a short occurs and contact is made with metal (such as rings on your hand), severe injuries may occur due to the conductibility of strong electric current.

Dispose the used or damaged Li-Po batteries at your local Hazardous Waste Facility or return them to the place of purchase.

#### Charging Process and Precautions

Never charge batteries unattended. Use specific qualified Lithium Polymer charger only. Do not let the temperature exceed the range from 32 to 113°F (0°C to 45°C).

Always charge the batteries in an isolated safe area away from any flammable/combustible materials. Never charge a Li-Po battery on a wooden workbench, inside an automobile, or on any flammable surface. We recommends charging Li-Po batteries on a concrete surface where there are no flammable objects within 10 feet (3 meters) of the charging area.

Always remove your Li-Po battery from your equipment using Li-Po battery and cool down the battery to ambient temperature before charging.

Check the voltage of the pack or cells before charging. Do not attempt to charge any pack if the open voltage is lower than the Lowest Open Voltage (Please refer to Chart 1). We recommends checking the voltage of each cell before charging with the balance connector. If the open voltage of any cell is less than 3.0V/cell, stop charging the battery, remove the battery from service and dispose it properly.

Reverse Charging is prohibited! You must check the polarity before connecting the battery to the charger. Do not reverse the positive (+) and negative (-) terminals when charging. Otherwise, the battery pack will be reverse-charged, abnormal chemical reactions will occur, and the excessively high current will cause damage, overheating, smoke emission, bursting and/or fire.

When selecting the cell count or voltage for charging purposes, select the cell count and voltage as it appears on the battery label. As a safety precaution, please confirm that the information printed on the battery or label is correct. (Please refer to Chart 1). Selecting a wrong cell count or charging voltage may cause fire.

Never charge the battery with the current exceeding 1C (one times the capacity of the battery). A higher setting may cause fire. (Please refer to Chart 2)

If charging operation fails to complete even when a specified recharging time has elapsed, immediately stop further recharging.

#### Usage and Discharge Warnings

Please check cell voltage after the first charge to make sure the voltage not to exceed the range specified in Chart 1. We recommend to check the voltage of each cell with the balance

connector to make sure the voltage of each cell keeps within 4.15-4.22V.

The range of discharge temperature is between 32 to 113°F (0 to 45°C). For optimum performance of our R/C batteries, 68 to 86°F (20 to 30°C) is recommended.

During discharging and handling the batteries, keep the temperature not to exceed 160°F (71°C), otherwise, the battery may be damaged and may even result in fire.

For the first discharge, use low discharging current and keep the discharging time into every 6-minute session with 15-minute breaks.

Do not discharge the battery with the current over the designed maximum continuous discharging current specified in Chart 2. A higher discharging current may cause overheat which will lead to balloon and swell up or even result in fire. For example, a 1000mAh battery with a designed max. 25C discharge current must not have a maximum discharge rate or load of more than 25 Amps. The maximum discharge rate or load must never be exceeded. For longer cycle life, a continuous discharging current of 70%-80% of the designed maximum discharging current is acceptable and recommended.

Never discharge Li-Po battery below the Lowest Discharge Voltage (Please refer to Chart 1), as it may cause irreversible damage which will deteriorate the battery performance and cycle life. Caution must be taken so that your Li-Po batteries do not discharge lower than the Lowest Discharge Voltage when using Electronic Speed Controls (ESCs that use a set battery elimination circuit (BEC) cut-off value created for use with Ni-Cd or Mi-MH batteries). When using ESCs with BEC designed for use with Ni-Cd or Ni-MH batteries where the cut-off voltage would be lower than the Lowest Discharge Voltage, you should stop flying and land immediately after you notice any drop of power.

#### Chart 1

Battery packing	1SxP (single cell)	2SxP (2 cells connected in series)	3SxP (3 cells connected in series)	4SxP (4 cells connected in series)	5SxP (5 cells connected in series)	6SxP (6 cells connected in series)
Nominal Voltage (V)	3. 7	7. 4	11. 1	14. 8	18. 5	22. 2
Lowest Open Voltage (V)	3	6. 2	9. 3	12. 8	16. 5	19. 8
Max Charging Vonage (V)	4. 2	8. 4	12. 6	16. 8	21	25. 2
Voltage after Charging(V)	4. 15-4. 22	8. 32-8. 44	12. 48-12. 66	16. 64-16. 88	20. 80-21. 10	24. 90-25. 50
Lowest Discharging Voltage(V)	2. 75	6	9	12	15	18

#### Chart 2

Battery Series	XT series	XT series	XT series	XT series	XT series	XT series	XT series	Pacing Car Packs
Capacity (mAh)	800	1200	1700	2200	2500	3700	4500	3700
Max. Charging Current(mA)	1600	2400	3400	4400	5000	7400	9000	7400
Max. Conti Dìscharging Current	35C (28A)	35C (42A)	36C (60A)	35C (77A)	35C (88A)	35C (130A)	35C (158A)	25C (92. 5A)
Burst Current	60C (16A)	60C (72A)	60C (119A)	60C (154A)	60C (175A)	60C (259A)	60C (315A)	50C (185A)
Battery Series	Pacing Car Packs	XT series	XT series	RX series	RX series	XP series	XP series	XP series
Capacity (mAh)	5400	3000	3050	3000	5000	450	600	850
Max. Charging Current(mA)	10800	3000	3050	3000	5000	900	1200	1700
Max. Conti Discharging Current	25C (108A)	1C (3A)	1C(3.05A)	10A	10A	25C (11. 3A)	25C (15A)	25C (21. 3A)
Burst Current	40C (216A)	2C (6A)	2C (6. 1A)	15A	15A	50C (22. 5A)	50C (30A)	50C (42. 5A)

Battery Series	XP series	XP series	XP series	XP series	XP series	XP series	XP series	XP series
Capacity(mAh)	1000	1300	1800	2200	2500	3300	3700	4500
Max. Charging Current(mA)	2000	2600	3600	4400	5000	6600	5400	9000
Max.Conti Discharging Current	25C (25A)	25C (32. 5A)	25C (45A)	25C (55A)	25C (62. 5A)	25C (82. 5A)	25C (92. 5A)	25C (112A)
Burst Current	50C (50A)	50C (65A)	50C (90A)	50C (110A)	50C (125A)	50C (165A)	50C (185A)	50C (225A)
Battery Series	XP series	HP series	HP series	HP series	HP series	HP series	HP series	HP series
Capacity(mAh)	5300	450	600	850	1000	1200	1300	1500
Max. Charging Current(mA)	10600	900	1200	1700	2000	2400	2600	3000
Max.Conti Discharging Current	25C (132. 5A)	25C (9A)	20C (12A)	20C (17A)	20C (20A)	20C (24A)	20C (26A)	20C (30A)
Burst Current	50C (265A)	40C (18A)	40C (24A)	40C (34A)	40C (40A)	40C (48A)	40C (52A)	40C (60A)

#### In the case of Li-Po Battery powered model crash

Whenever a Li-Po battery pack is subjected to a crash, immediately do the following:

- 1) Remove the Li-Po battery pack from the model in which it is used.
- 2) Place the Li-Po battery pack in a safe open area away from any flammable/combustible materials and monitor the pack for at least 30minutes. Watch for swelling of the pack and/or unnatural heat build-up. These are signs of internal damage.
- 3) Damage of your Li-Po battery pack may not be readily apparent upon visual inspection. Check the battery to find if any shorts and other damages occur carefully. You should inspect them thoroughly for damage before attempting to use them again.

#### Storage & Transportation

- 1) Never leave your Li-Po batteries installed in your model when not in use. Do store your Li-Po batteries in an airtight and flame resistant container when not in use.
- 2) Do store battery at a place with low humidity and free from corrosive gas & combustible materials within the temperature range from 14°F to 104°F (-10°C to 40°C). Storage at temperature from 41°F to 77°F (5°C to 25°C) is recommended for best results.
- 3) Do not expose Li-Po batteries to direct sunlight for extended period of time or leave it at any heat place such as in a car in hot weather.
- 4) When batteries are transported or temporarily stored in a vehicle, temperature should be higher than 14°F (-10°C) but not over 140°F(60°C).
- 5) Storing battery at temperatures higher than 170 °F(76°C) for more than 2 hours may cause damage to battery and may even cause fire.
- 6) A higher cell voltage during storage will accelerate the self-discharge of the battery which may lead to over-discharge and deteriorate the battery performance, it is recommended to keep the cell at a lower voltage (about 3.8V/cell) throughout the period of storage. If the battery is to be storied for longer than one year, the user should charge the battery at least once a year to about 3.8V/cell so as to prevent over-discharge.

#### Battery Life

Batteries that lose 20% of their capacity must be removed from service. Discharge the battery to 3.0V/cell and make sure the output wires are insulated, and then wrap the battery in a bag for proper disposal.

## Before Starting Your Vehicle

- Verify that all retainers are well fastened (screws, nuts, bolts and clips)
- Verify proper function of steering, drive-line and motor/braking control.
- Lubricate appropriately all bearings, bushings and maintain proper shock performance.
- Operate radio system with fully charged io frequency/range check.
- Inspect terrain for hard/non-movable objects that may become a hazard for your vehicle.
- Provide adequate clearance between your vehicle and your observers.
- Do not operate in the presence of domestic animals (dogs and/or cats)
- Do not operate vehicle on public roads, or obtain adequate authorisation to permit usage.

## Before assemblying or operating your model...

Carefully read and understand all instructions before operating the vehicle.

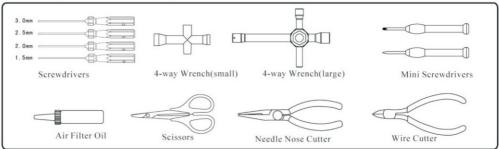
Check the items from your package:

- 1. Buggy chassis fully assembled with printed lexan body
- 2. 1pc 2000KV motor assembled
- 3. 1pc 120A brushless ESC included
- 4. 1set of 2.4GHz 2CH radio system with 9kg steering servo

Items that you will need for your vehicle:

- 1. 8pcs "AA" size batteries for transmitter
- 2. A balance charger can be used for 3cell Lipo battery

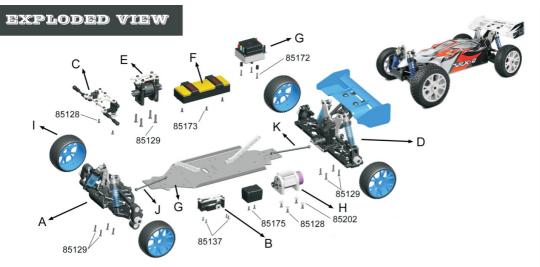
#### Tools Required for Assemblying Your Model

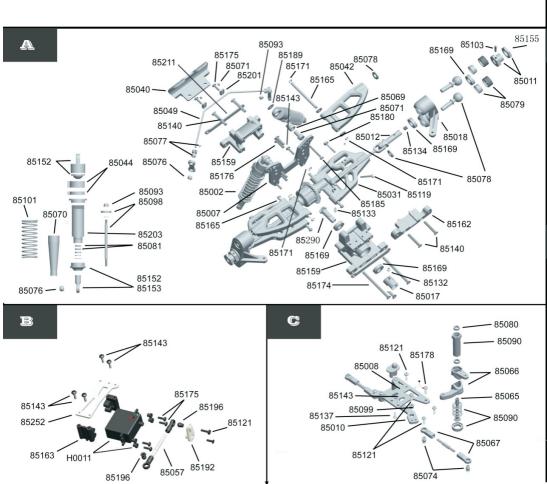


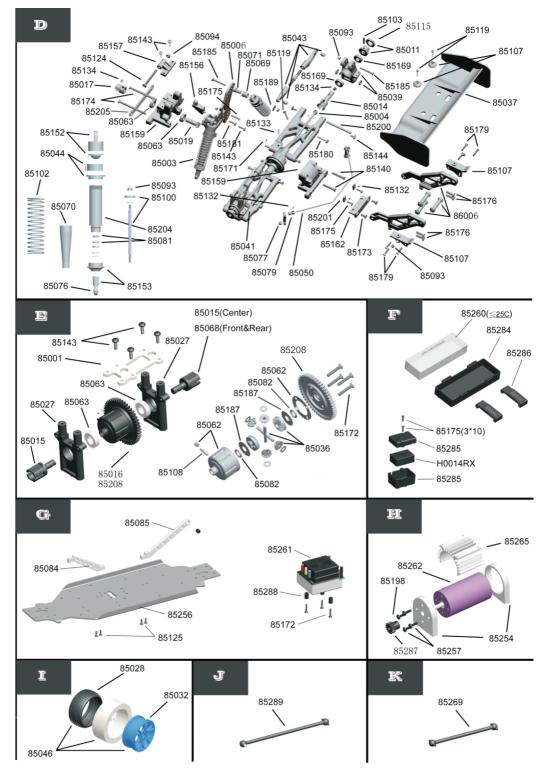
The above accessaries available from your model dealer are for optional purchase to faciliate your operations.

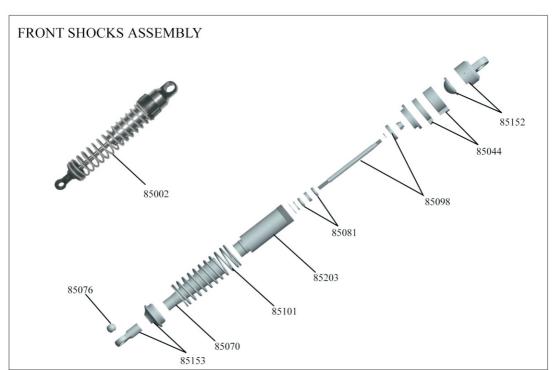
#### Radio/Motor/ESC Instructions

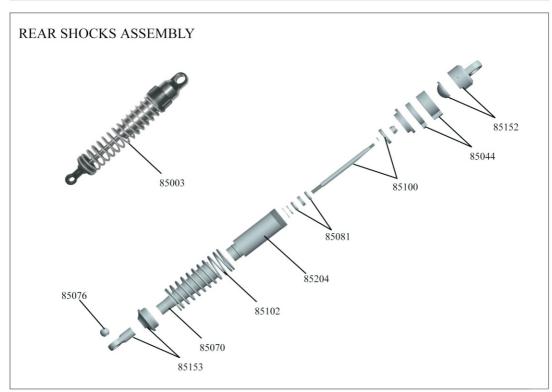
Please read the Radio/ESC/Motor Manual attachment before you operating the vehicle to make sure fully understanding the proper operation.

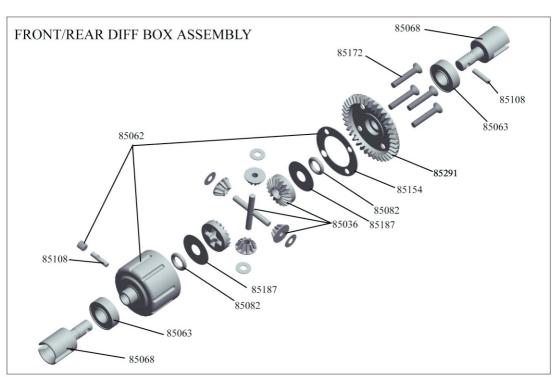


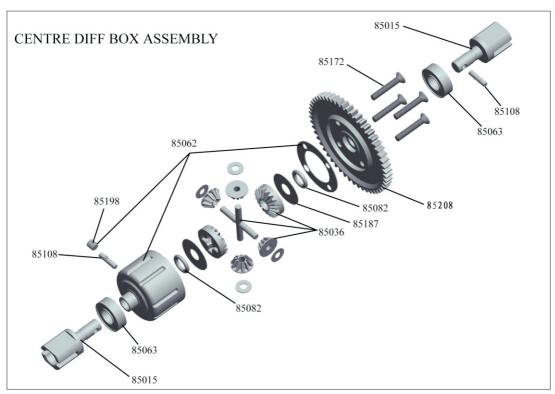


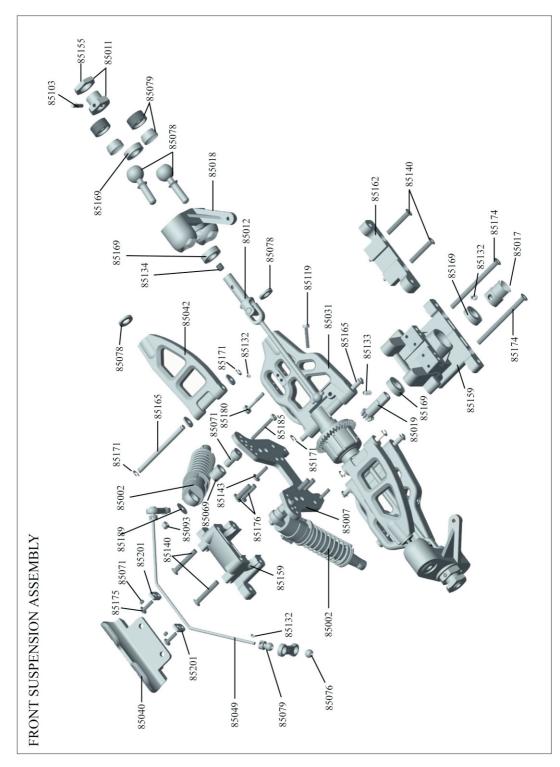


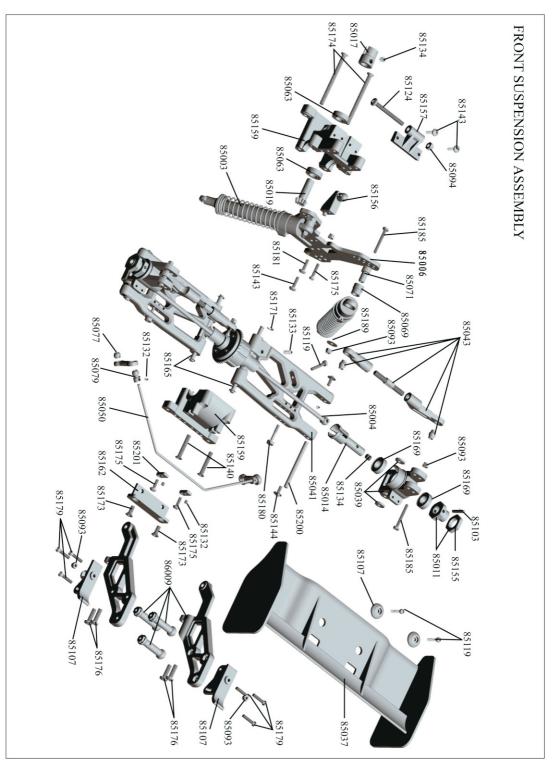












	T		
85076-Shock End/Sway Bar Ball 6pcs	85077-Sway Sar Mount Ball Stud 6sets	85078-Pivot Ball Set 4P	85079-Pivot Ball Nut Set 4P
000		On o On o	000
000		One of the	0000
85080-Steering Bellcrank Bushing 4P	85081-Shock O-Ring Set 8P	85082-Diff Case O-Ring Set 6P	85084-Front Chassis Brace
00	0000	000	M
00	0000	000	
85085-Rear Chassis Brace	85090-Servo Saver Assembly	85091-Antenna Tube 4P	85093-3mm Locknut set 6P
			000
85094-4mm Locknut set 8P	85096-Ball End Set	85098-Front Shock Shaft and Piston Set 2P	85099-Steering Plate Bushing 2P
0000	9991		
85100-Rear Shock Shaft and Piston Set 2P	85101-Front Shock Spring Set 2P	85102-Rear Shock Spring Set 2P	85103-Wheelhub Pin Set 2P
	MAMAN		
85107-Upper Wing Mount Set	85108-Diff bevel gear pin 3P	85118-Cap head screw set 3*14mm 8P	85119-Cap head scre set 3*16mm 6P
20		1111	111
		TTTT	

	VRA-2 (L) G(		
85121-Button Head Scw sdt 3*12mm (10)	85124-Button head screw set 4*40mm 4P	85125-Flat head screw set 3*10mm 5P	85128-Flat head screw set 4*10mm 4P
85129-Flat Head Self Tapping Screw Set 4*18mm 12P	85132-Set screws 3*3mm 12P	85133-Set screws 4*10mm 4P	85134-Set screw s 5*4mm 6P
	0000		000
85137-Flat Head Self Tapping Screw Set 3*10mm 12P	85140-Flat Head Screw Set 4*26mm 4P	85143-Button Head Self Tapping screw set 3*12mm 4P	85144-Ring Self Tapping Screw Set 3*8mm 4P
			TTTT
85152-Front/rear Shock Cap with Bladder Set	85153-Shock Ball End, Ball, Cup set	85154-Diff. Gasket sets 3P	85155-Wheel Nut Set 2P
9 9	.4	000	00
85156-Buggy body mount 2P	85157-Chassis Brace Mount	85159-Gearbox Housing Set	85162-Suspension Holders
- 48			٠
85163-Radio Tray Post	85165-Front Upper Outside Pins 2pcs+ Front/rear Lower Outside Pins 2sets	85166-Spacers for Rear Lower Outside Pins 8P	85167-Spacers for Front Upper/lower Outside Pins 8P

	V KA-2 (L) C	ommon Parts	
85001-Centre Diff. Top Plate	85002-Front Shock Set 2P	85003-Rear Shock Set 2P	85004-Rear Drive Shafts 2P
85010-Ackerman Plate	85006-Rear Shock Tower	85007-Front Shock Tower	85008-Upper Steering Plate
85014-Rear Wheel Axles 2P	85015-Centre Diff. Outdrives 2P	85011-Wheel Hub Set 2P	85012-Front Universal Joint Shafts 2P
		0505	
85017-Drive Joints 2P	85018-Steering Knuckles (L/R)	<b>85290</b> -Diff. Pinion Gear 11T 2P	85016-Center SpurGear 46T 1p 85208-Center SpurGear 46T 1p Powder Metallurgy
	36		
85291-Crown Gear 38T	85027-Centre Diff. Mount 2P	85028-Tyres 2P	85029-Battery/receiver Case Clips(Small) 6P
	44	00	JJJ J
85031-Front Lower Suspension Arms 2P	85032-Wheel Rims 2P	85034-Body Clips(Middle Size) 6P	85036-Diff. Bevel Gear Set
		222 222	0000

VRX-2 (E) Common Parts						
85037- Buggy Tail Wing	85039-Rear Hub Carrier Set 2P	85040-Front Bumper	85041-Rear Lower Suspension Arms 2P			
85042-Front Upper Suspension Arms 2P	85043-Rear Upper arm set	85044-Shock Tension Shims	85046-Pre-Mounted Tires 2pcs			
AND INTO		Thick: 4mm*4pes  ÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖÖ				
85049-Front Sway Bar	85050-Rear Sway Bar	85057-Steering Servo Linkage	85058-Wing mounts 2P			
			AA			
85059-Wing Mounts Posts	85062-Differential Case +Set Scew	85063-Bearings 16*8*5 8P	85065-Servo Saver Shaft 2P			
	<b>5</b> 0	0000				
85066-Bellcrank Set	85067-Steering Link Set 2P	85068-F/R Diff. Outdrive 2P	85069-Fuel Tank Mount Grommets			
268		CITE CITE				
85070-Shock Boot 2P	85071-Shock Mount Studs 4P	85073-Rear Upper Arm Outer Ball 6pcs	85074-Steering Linkage Ball Studs 6pcs			
	<b>翻翻</b>	000	<b>a</b> aaa			

VRX-2 (E) Common Parts						
85169-ball bearings 8pcs 16*8*5 6pcs 10*5*4 2pcs	85170-E-clips 2.0 10P	85171-E-Clip 3.0 10P	85172-Flat Head Hex. Tapping Screws 3*16 8P			
000	6000	e e e				
85173-Flat Head Hex. Tapping Screws 4*11 8P	85174-Flat Head Hex. Tapping Screws 4*55 4P	85175-Button Head Hex. Tapping Screws 3*10 8P	85176-Button Head Hex. Tapping Screws 4*14 8P			
85177-Cap Head Hex. Mechanical Screws 4*10 8P	85178-Button Head Self Mechanical screw set 4*10mm 8P	85179-Button Head Hex. Tapping Screws 3*15 8P	85180-Cap Head Hex. Mechanical Screws 3*18 6P			
	4*10mm 8P		III			
85181-Cap Head Hex. Mechanical Screws 3*18 6P	85184-Cap Head Hex. Mechanical Screws 3*12 6P	85185-Cap Head Hex. Mechanical Screws 3*25 6P	85187-Washer 17*6.1*0.3 6P			
111	1111		000			
			000			
85188-Washer 7.8*3.0*0.3 6P	85189-Washer 11*3.1*0.5 6P	85192-Steering Servo Horns	H0067-6kg/cm Throttle Servo Unit			
000	000					
85195-Zip Ties	85196-Steering Linkage Ball Studs 6pcs	85198-Set screws 4*4mm 6P	85200-Rear Outer Susp. Pin 2P			
000		000				

## VRX-2E Buggy Parts

	VRX-2E Buggy Parts					
85252-Upper plate 1P	85254 -Motor mounts 1P	85287-Pinion Gear 13T	85257-Button head screw set 3*8 6P			
85284-Battery tray 1P	85265-Motor heatsink 1P	85256-Chassis plate IP	85269-Front center drive shaft IP			
85289-Front center drive shaft 1pc	85285-Receiver box 1set	85262-Brushless motor1P	85260-11.1V3250mAH lipo battery pack			
85286-Hoop and loop 2P	85261-ZTW Brushless Speed control 80A 1pc	85288-ESC Post 3P	85038-Side Guard Set			
D 10						



VRX-2(E) Common Parts					
85201-Sway bar fix plate 4P	85203-Front Shock body 2P	85204-Rear Shock body 2P	R0027-VRX-2 Printed body (Blue)		
R0028-VRX-2 Printed body (Black)	R0029-VRX-2 Printed body (Yellow)	R0031-VRX-2 Printed body (Flame Blue)	R0032-VRX-2 Clear body		
85205-Reinforce Plate 1set	85211-Reinforce Plate 1set	85202-Engine screw spacer 4P			
		0000			
B-20					