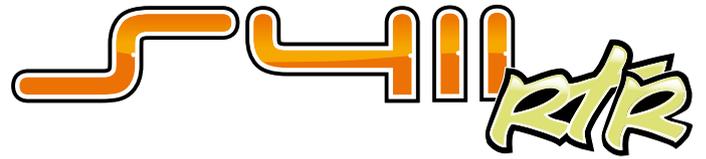




1/10 scale Ready To Race touring car

INSTRUCTION MANUAL
& REFERENCE GUIDE



Introduction

Thank you very much for buying this Serpent rc car. You are now member of a large following of Serpent fans worldwide. This Serpent car will bring you many hours and weekends of racing excitement. Serpent started as rc racing company in 1980, and has developed many modelcars since. This wealth of experience and know how is used in our todays cars and that shows!

This manual contains a number of steps you need to follow to operate the Serpent cars in the right way. This manual also contains a quick-start section, a partslist and exploded views, and a FAQ section. A full assembly manual can be found online in the **Serpent.com** website.

So read this manual with great attention before racing this car. For your own safety as well as for others, and to ensure you can enjoy your Serpent car a long time, even if you are an experienced user.

Serpent is not only about the car itself. Serpent as company, and the worldwide network or distributors and dealers are here to help you out. The Serpent website, social media and forum are available for assistance and additional information as well.

Enjoy your Serpent, the racing experience!

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Read this first

- This is a highly technical hobby product, intended to be used in a safe racing environment. This car is capable of speeds in excess of 80 km/h or 50mph. Please follow these guidelines when building and operating this model.
- Parental guidance is required when the builder/user of this car is under 16.
- Follow the building instructions. If in doubt, contact your dealer or importer.
- Be sure to use the proper tools when assembling the car. Always exercise caution when using electric tools, knives and other sharp objects.
- Be careful when using liquids like lubrication oil or glue. Do not swallow.
- Follow the manufacturer's instruction in case you experience irritation after using the product.
- Be careful when operating the car. Stay away from any rotating parts such as wheels, gears and transmission. Stay away from speedo during and immediately after use, as these parts may be very hot. We advise to use protective handgloves.
- Only operate this car in a safe environment, like a special racing track or a closed parking lot. Avoid using this car on public roads, crowded places or near infants.
- Before operating this car, always check the mechanical status of the car. Check that the batteries of the transmitter and receiver are fully charged.
- After use, always check all the mechanics of the car. We advise to clean the car immediately after use, and inspect the parts for wear or fractures. Replace when necessary. Do not use water, methanol, thinner or other solvents to clean the car.
- Store the car in a dry and heated place to avoid corrosion of metal parts.
- Avoid using this car in wet conditions as the water will cause corrosion on the metal parts and bearings and these parts will cease to function properly. If driven in the wet, ensure that all the electric equipment is waterproofed and after use, that all moving parts are dried immediately.

Safety matters

All instructions in this manual must be followed to ensure safe use of the car. This model is not intended for use by children under 14 years .

Important pre-cautions

- Only run the car in designated areas or areas with very few people, so no-one can get hurt.
- The car has a lot of power and the turning parts on the car can cause damage, also some parts of the car like transmission and motorparts can become very hot. So wear protective clothing both as driver and helper and be careful when picking up the car.
- Do not operate the car under dark conditions, as both you and others may not see the car properly and can get hurt, due to lack of car control.
- Use good common sense while operating the car so you can fully enjoy your car.

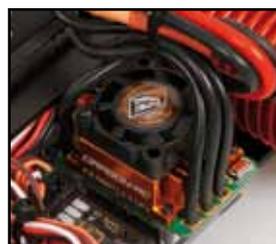
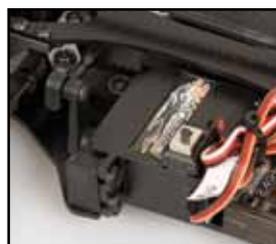
Battery and battery-charging

- The battery and battery-charger are not included with this model. We advise to use good quality NiMH or Lipo rechargeable battery-packs with 4000 mA or more. Check carefully to buy batteries with the correct connector for the speedcontroller, or also purchase and mount other fitting ones.
- Use proper battery-charger specifically designed for that type batteries and follow the instructions of the battery supplier and the charger correctly. Keep the battery and charger always in dry places only and never leave un-attended during charging.
- When the batteries are at their end of life, dispose them at a recycling-place, check www.call2recycle.org for more info.

Equipment

Included with your model

- Serpent modelcar, factory assembled and set-up
- Dragon-RC DTS-1 transmitter
- Dragon-RC DESC-1 speedcontroller
- Dragon-RC brushless motor
- Dragon-RC racing tyres, pre-mounts
- Dragon-RC digital servo
- Dragon-RC repainted and pre-cut bodyshell



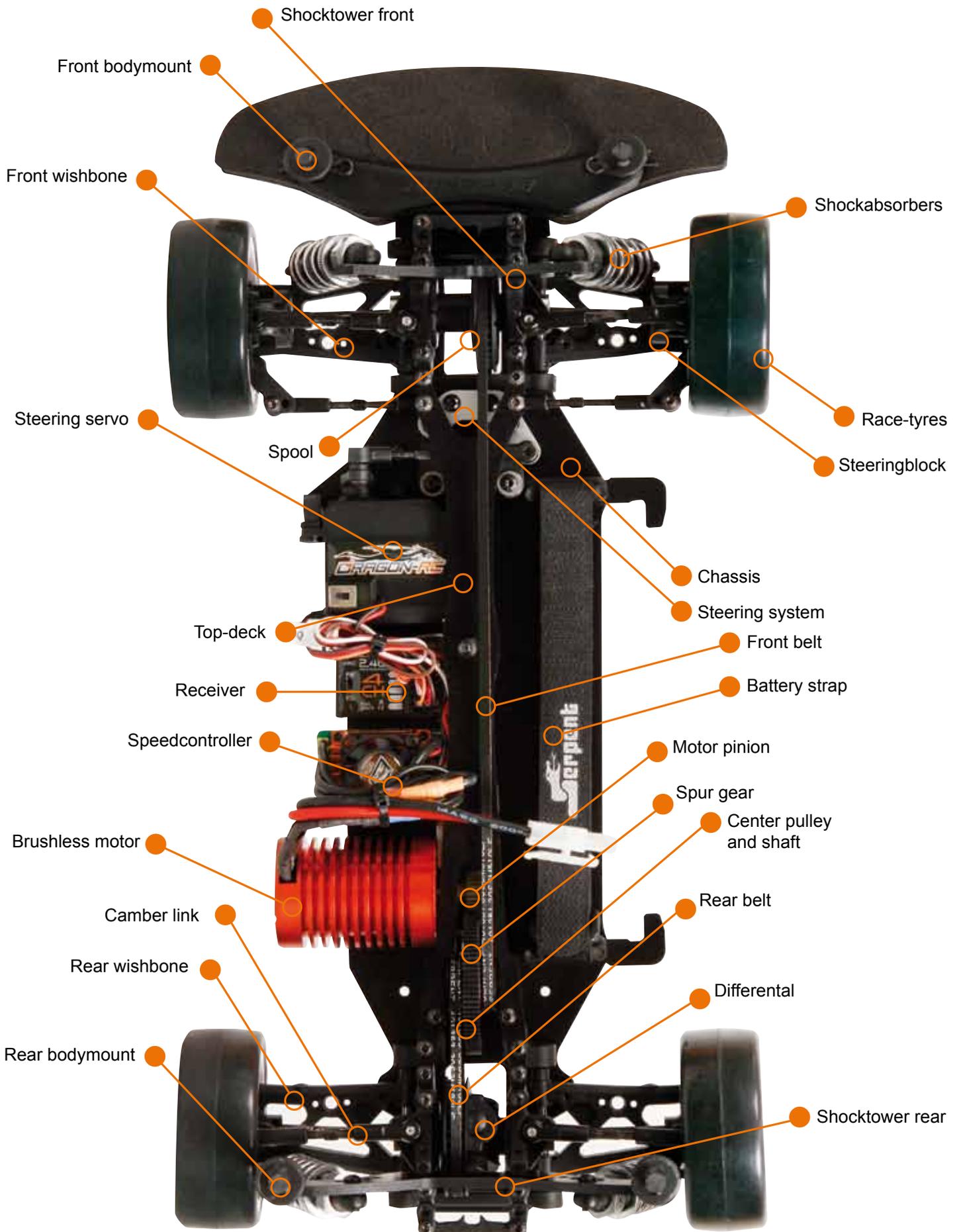
Required for your model

- Multi Charger; to charge transmitter battery and car battery
- Battery pack NimH 6-cell or 2-S Lipo
- Battery AA x 4 to operate the transmitter
- Tools: selection of allen tools and screw- drivers

Recommended materials

- Hobby knife
- Camber gauge
- Safety glasses and gloves
- Side cutter and nose plier
- Cleaning brush and towel
- Cleaning gum
- Thin bearing oil
- Transmission grease
- CA glue
- Degreaser

Model specs/overview



Transmitter system

The car comes complete with the Digital Proportional Dragon-RC DTS-1 2.4 GHz transmitter (#210000).

The Dragon DTS-1 transmitter is an advanced 2.4 GHz radio-system with LCD screen, and clear settings which are easy to tune through the menu and screen.

The transmitter is pre-tested, checked for proper functioning, and pre-set with default, to operate the car.

In case you want to change any setting then follow the manual as per below.

Read very carefully before making changes. Its always possible to restore default settings if needed.



Remove the battery cover and put in 4 AA size batteries.



Charge connector



Th rate adjuster



Receiver functions

- Switch
- Fail Safe Set

Connectors

- 1: Steering servo CH1
- 2: Throttle servo CH2
- 3: CH3 servo CH3
- 4: CH4 servo CH4

B/C: Power connector

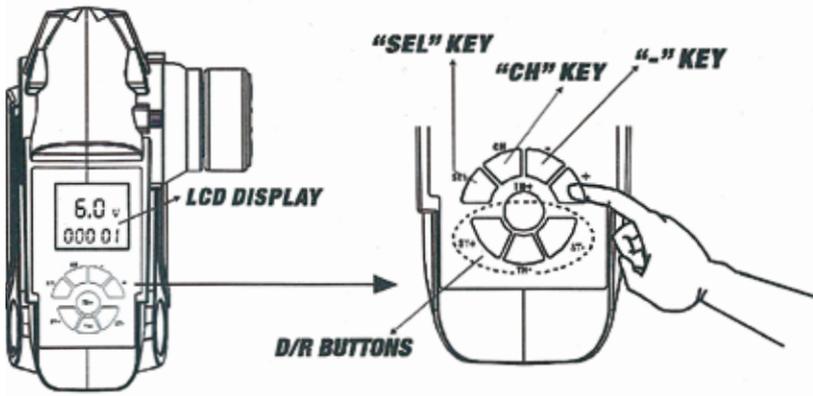
ABS = anti lock breaking system
 CH = channel
 D/R = dual rate
 EPA = end point adjustment
 EXP = exponential

F/S = fail safe
 REV = reverse
 ST = steering
 TH = throttle
 more info: check www.easyrc.com

LCD Transmitter operation

The transmitter is powered by 4 cells AA 1.5V. As soon as you turn on the power switch, it starts to run. ST controls the steering. TH controls throttle. After turning on the transmitter, the LCD display shows Battery Voltage and the model number which you have selected last time. SEL +/- are used for setting model parameters and operation steps.

1. Pres +/- to operate model number, value range from 01-15, model name and number will be shown on the display.
2. Press SET to set the parameters, such as REV, EPA, ABS, EXP, MODEL NAME.
 - A. Set REV, press CH key then enter ST/TH/3C and press +/- then enter ON/OFF.
 - B. Set EPA: press CH then enter ST/TH, steering control L/R, throttle control F/B, LFU/RBU in LCD select choice, +/- set the number value, range 0-120%.
 - C. Set ABS: press CH then enter ST/TH, press +/- then enter ON/OFF.
 - D. Set EXP: press CH then enter ST/FORWARD/BACK, press +/- to set value range -100% -- +100%
 - E. Set MODEL NAME: press CH to move the setting characters position, press +/- to set value range 0-9, A-Z.
3. Press SEL key to exit setting state, parameters are auto saved.
4. Set TRIM-ST: press TRIM-ST+, TRIM-ST- to change TRIM-ST value, range 0-100%R, 0-100%L.
5. Set D/R-ST: press D/R-ST+, D/R-ST- to change D/R-ST value, range 0-100%L, 0-100%R.
6. Set D/R-ST: press D/R-TH- to change D/R-TH value range 0-100%F, 0-100%B.
7. Press SET key to exit the setting of TRIM, D/R, without operation after one minute it will save.

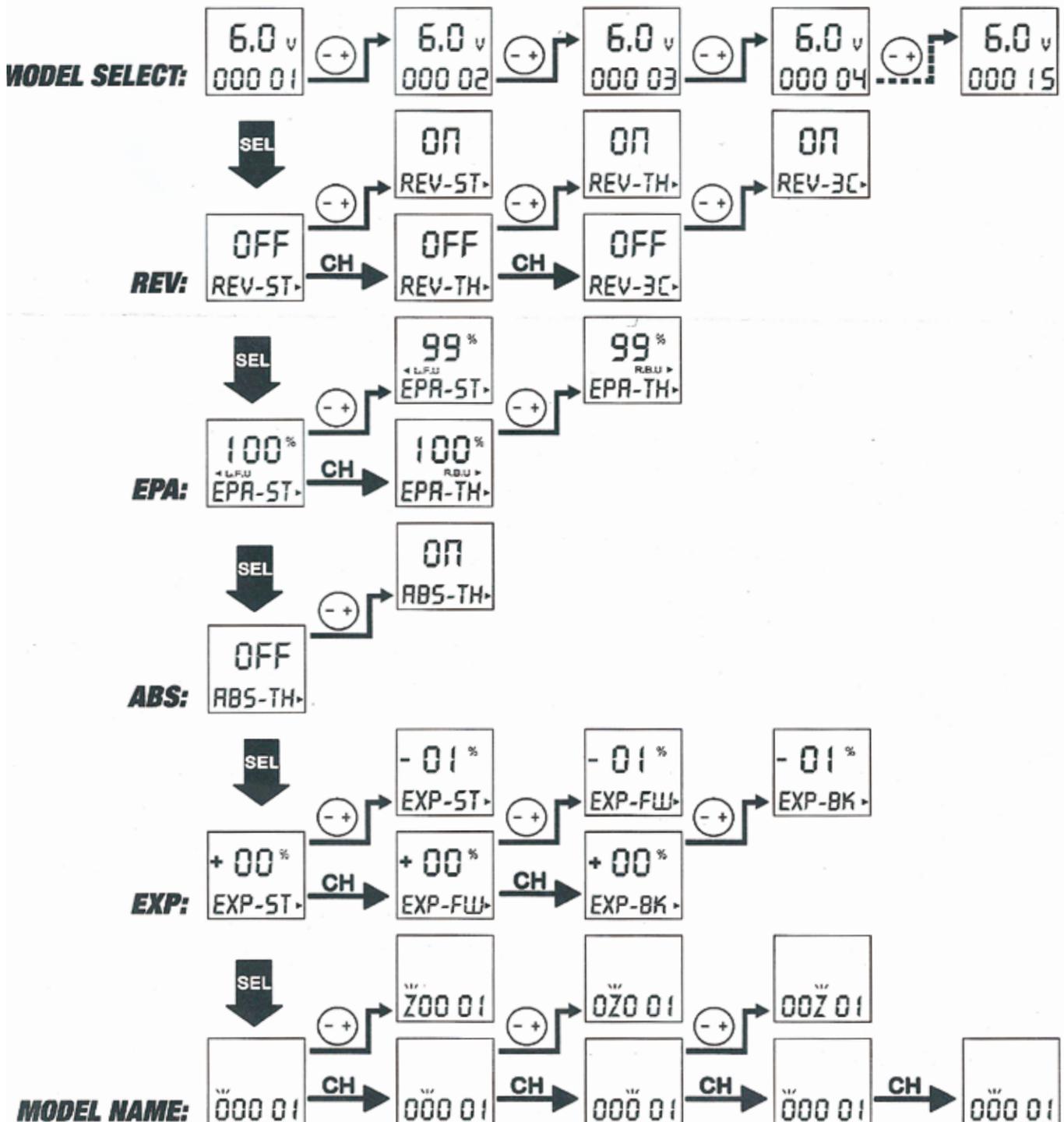


means press "+" key or "-" key.

means press "SEL" key.

means press "CH" key.

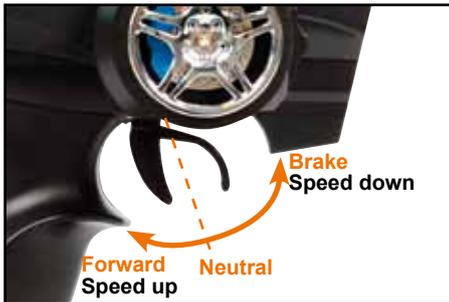
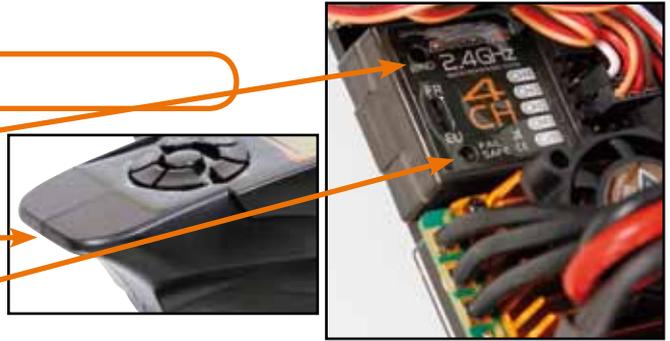
LCD Display Function Map



- NOTE:**
- Keep the transmitter and receiver 40cm apart when operating
 - Do not operate the radio system when the battery power is low

Binding the transmitter and receiver

1. Turn on the receiver power. Press the Bind switch. The receiver's LED should start flashing.
2. Turn on the transmitter.
3. When the LED on the receiver becomes solid, the binding process is completed.
- 4: Press the SEL button to conclude the settings. The newly entered values are saved automatically.



1. Pull trigger backward to accelerate.
2. Push the trigger forward to slow down or brake.



Throttle Trim:

Trim the throttle servo slightly when the trigger is at the neutral position.



Turn the steering wheel to the left or right to let the car turn left or right.

Steering Trim:

If the front wheels don't align straight, use the steering trim to adjust.

Fail Safe function setting

1. Set the TH, ST switches to the normal position.
2. Turn on the transmitter and receiver.
3. Press the F/S SET button, the LED on the receiver should start flashing rapidly.
4. Put the throttle trigger at the brake position, press the F/S SET button, the LED should become solid.
5. For electric model, put the throttle trigger at the stop position when you are making the setting.

Trouble shooting

If your system fails to operate or you experience a short range problem or else, check the table below for possible causes. If after you have followed the listed suggestions, the problem has not been corrected, return the system to your re-seller for inspection and/or repair.

1. TRANSMITTER

Battery: Dead battery- Change the battery or charge the battery.

Battery inserted incorrectly- reload the battery according the polarity markings.

Faulty contact: Check if the contacts are bent and not making good contact.

Dirty contacts - clean the contacts and check for corrosion.

2. RECEIVER

Battery: Dead battery- Replace the battery or recharge. Wrong polarity- check connections.

Antenna: Near other wiring- move away from wiring.

If antenna was cut, please request repair.

If antenna is bundled or coiled- keep antenna as straight as possible.

3. CONNECTOR CONNECTIONS

Wiring incorrect- insert all connectors firmly.

4. LINKAGE

Binding or loose- adjust the linkage in the model.

5. MOTOR

Noise problem- install capacitors on motor.

Speed controller: ESC

The car comes pre-assembled with the Dragon-RC electronic speed-controller.

The Dragon-RC DESC-1 is a very stable and reliable 35A type electronics speedcontroller, that works very well with proper 6 cell NiMH or better 2-S Lipo packs.

The speedo is pre-tested, checked for proper functioning and pre-set with safe default values to operate the car. In case you want to change any setting then follow the manual as per below.

Read very carefully before making changes. Its always possible to restore default settings if needed.

FEATURES

1. Specially designed for RC car RTR (Ready to Run) application.
2. Excellent start-up, acceleration and linearity features.
3. Compatible with sensorless brushless motor.
4. Running modes: Forward mode (single direction) and Forward/Backward mode (dual directions)
5. Proportional ABS brake function, with 4 steps of maximum brake force adjustment, 8 steps of drag-brake force adjustment.
6. Different options of start modes (Also called 'Punch') from 'soft' to 'aggressive'.
7. Multiple protection features: Low voltage cut-off protection for lithium or nickel battery / Over-heat protection / Throttle signal loss protection / Motor blocked protection.
8. Splash proof and dustproof.

SPECIFICATIONS

Suitable car: 1/10 On-Road (#400007)

Battery: 6 cells NiMH or 2 S Lipo

Suitable Brushless Motor :

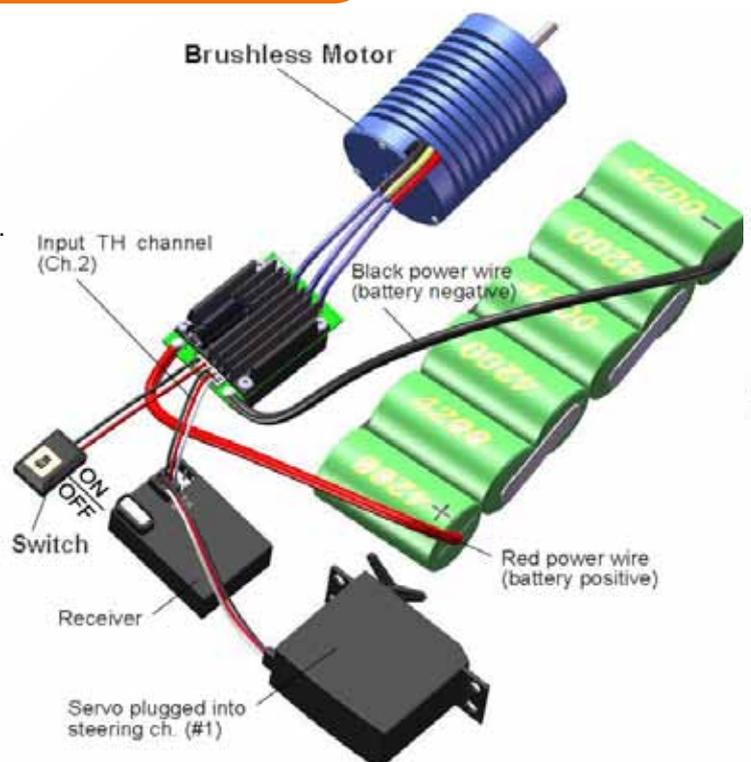
2S Lipo On-road: ≥9T 3650 size motor (#211004)



BEGIN TO USE THE NEW ESC

1. Connect the ESC, motor, receiver, battery and servo according to the following diagrams

'+' and '-' wires of the ESC are connected with the battery pack, and #A, #B and #C are connected with the motor wires. The control cable of the ESC (trio wires with black, red and white color) is connected with the throttle channel of the receiver (Usually CH2). The #A, #B, #C wires of the ESC can be connected with the motor wires freely (without any order). If the motor runs in the opposite direction, please swap any two wire connections. The 'SET' button is used for programming the ESC.



2. Throttle Range Setting (Throttle Range Calibration)

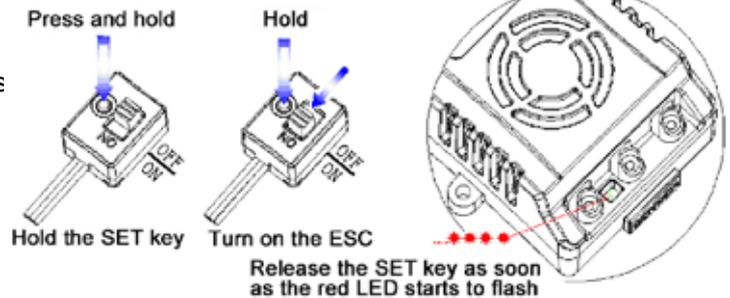
In order to make the ESC fit the throttle range of your transmitter, you must calibrate it for the following cases; otherwise the ESC cannot work properly.

1. Begin to use a new ESC;
2. Begin to use a new transmitter;
3. Change the settings of neutral position of the throttle stick, ATV or EPA parameters, etc.

There are **3 points** need to be set, they are the end point of 'forward', the end point of 'backward' and the neutral point. The following pictures show how to set the throttle range.

A. Switch off the ESC, turn on the transmitter, set the direction of throttle channel to 'REV', set the 'EPA/ATV' value of throttle channel to '100%', and disable the ABS function of your trans

B. Hold the 'SET' key (Note1) and then switch on the ESC, and release the 'SET' key as soon as the red LED begins to flash. (Note2)



Note 1: The 'SET' key of S18 is beside the main switch of the controller.

Note 2: If you don't release the 'SET' key as soon as the red LED begins to flash, the ESC will enter the program mode, in such a case, please switch off the ESC and re-calibrate the throttle range again from step A to step D.

C. Set the 3 points according to the steps shown in the pictures on the right side.

1) The neutral point

Move the throttle stick at the neutral point, and then click the SET key, the green LED flashes 1 time.

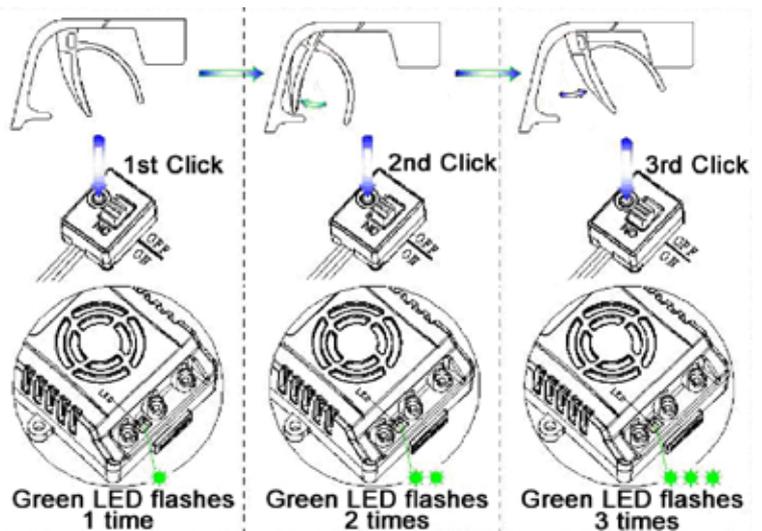
2) The end point of forward direction

Move the throttle stick at the end point of forward direction, and then click the SET key, the green LED flashes 2 times.

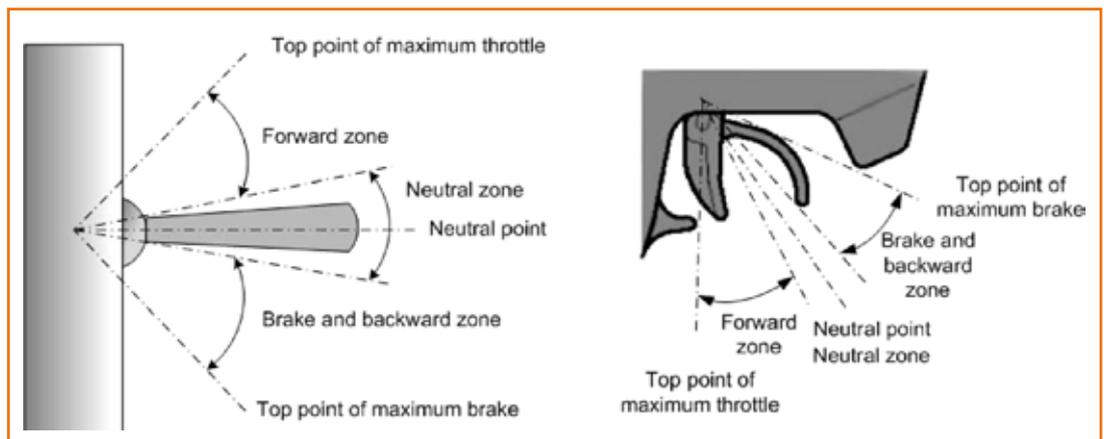
3) The end point of backward direction

Move the throttle stick at the end point of backward direction, and then click the SET key, the green LED flashes 3 times.

D) Throttle range is calibrated; motor can be started after 3 seconds.



3. Throttle Range Explanation



LED STATUS IN NORMAL RUNNING

1. In normal use, if the throttle stick is in the neutral range, neither the red LED nor the green LED lights.
2. The red LED lights when the car is running forward or backward and it will flash quickly when the car is braking.
3. The green LED lights when the throttle stick is moved to the top point of the forward zone.

ALERT TONES

1. **Input voltage abnormal alert tone:** The ESC begins to check the input voltage when power on, if it is out of the normal range, such an alert tone will be emitted: 'beep-beep-, beep-beep-, beep-beep-' (There is 1 second time interval between every 'beep-beep-' tone).
2. **Throttle signal abnormal alert tone:** When the ESC can't detect the normal throttle signal, such an alert tone will be emitted: 'beep-, beep-, beep-' (There is 2 seconds time interval between every 'beep-' tone).

PROTECTION FUNCTION

1. Low voltage cut-off protection:

- A:** Lipo. If the voltage of a lithium battery pack is lower than the threshold for 2 seconds, the ESC will cut off the output power. Please note that the ESC cannot be restarted if the voltage of each lithium cell is lower than 3.5V.
- B:** For NiMH battery packs, if the voltage of the whole NiMH battery pack is higher than 9.0V but lower than 12V, it will be considered as a 3S lithium battery pack; If it is lower than 9.0V, it will be considered as a 2S lithium battery pack. For example, if the NiMH battery pack is 8.0V, and the threshold is set to 2.6V/Cell, so it will be considered as a 2S lithium battery pack, and the low-voltage cut-off threshold for this NiMH battery pack is $2.6 \times 2 = 5.2V$.
2. **Over-heat protection:** When the temperature of the ESC is over a factory preset threshold for 5 seconds, the ESC will cut off the output power. When the over-heat protection happens, the Green LED will flash in such a style: '●, ●, ●' (Single flash).
 3. **Throttle signal loss protection:** The ESC will cut off the output power if the throttle signal is lost for 0.2 second.

PROGRAM THE ESC

1. **Programmable Items List** (The white texts in the form are the default settings)

Programmable Items For S411 RTR ESC								
Programmable Items	Programmable Value							
	1	2	3	4	5	6	7	8
1. Running Mode	Forward with Brake	Forward/Reverse with Brake						
2. Drag Brake Force	0%	5%	10%	15%	20%	25%	30%	40%
3. Low Voltage Cut-Off Threshold	Non-Protection	2.6V/Cell	2.8V/Cell	3.0V Cell	3.2V Cell	3.4V Cell		
4. Start Mode(Punch)	Level1	Level2	Level3	Level4				
5. Maximum Brake Force	25%	50%	75%	100%				

2. Explanation For Each Programmable Item.

2.1. Running Mode: With 'Forward with Brake' mode, the car can go forward and brake, but cannot go backward, this mode is suitable for competition; 'Forward/Reverse with Brake' mode provides backward function, which is suitable for daily training.

Note: 'Forward/Reverse with Brake' mode uses 'Double-click' method to make the car go backward. When you move the throttle stick from forward zone to backward zone for the 1st time (The 1st 'click'), the ESC begins to brake the motor, the motor speeds down but it is still running, not completely stopped, so the backward action is NOT applied immediately. When the throttle stick is moved to the backward zone for the 2nd time (The 2nd 'click'), if the motor speed is slowed down to zero (i.e. stopped), the backward action applied. The 'Double-Click' method prevents mistaken reversing action when the brake function is frequently used in steering.

By the way, in the process of brake or reverse, if the throttle stick is moved to forward zone, the motor will run forward at once.

'Forward/Reverse' mode uses 'Single-click' method to make the car go backward. When you move the throttle stick from forward zone to backward zone, the car will go backward immediately.

2.2. Drag Brake Force: Set the amount of drag brake applied at neutral throttle to simulate the slight braking effect of a neutral brushed motor while coasting.

2.3. Low Voltage Cut-Off: The function prevents the lithium battery pack from over discharging. The ESC detects the battery's voltage at any time, if the voltage is lower than the threshold for 2 seconds, the output power will be reduced 70%, 10 seconds later the output will be completely stopped, and the red LED flashes in such a style: '●, ●, ●' (Double flashes).

2.4. Start Mode (Also called 'Punch'):

Select from 'Level1' to 'Level4'. Higher number means more aggressive start effect.

2.5. Maximum Brake Force: The ESC provides proportional brake function. The brake force is related to the position of the throttle stick. Maximum brake force refers to the force when the throttle stick is located at the end point of the backward zone. A very large brake force can shorten the brake time, but it may damage the gears.

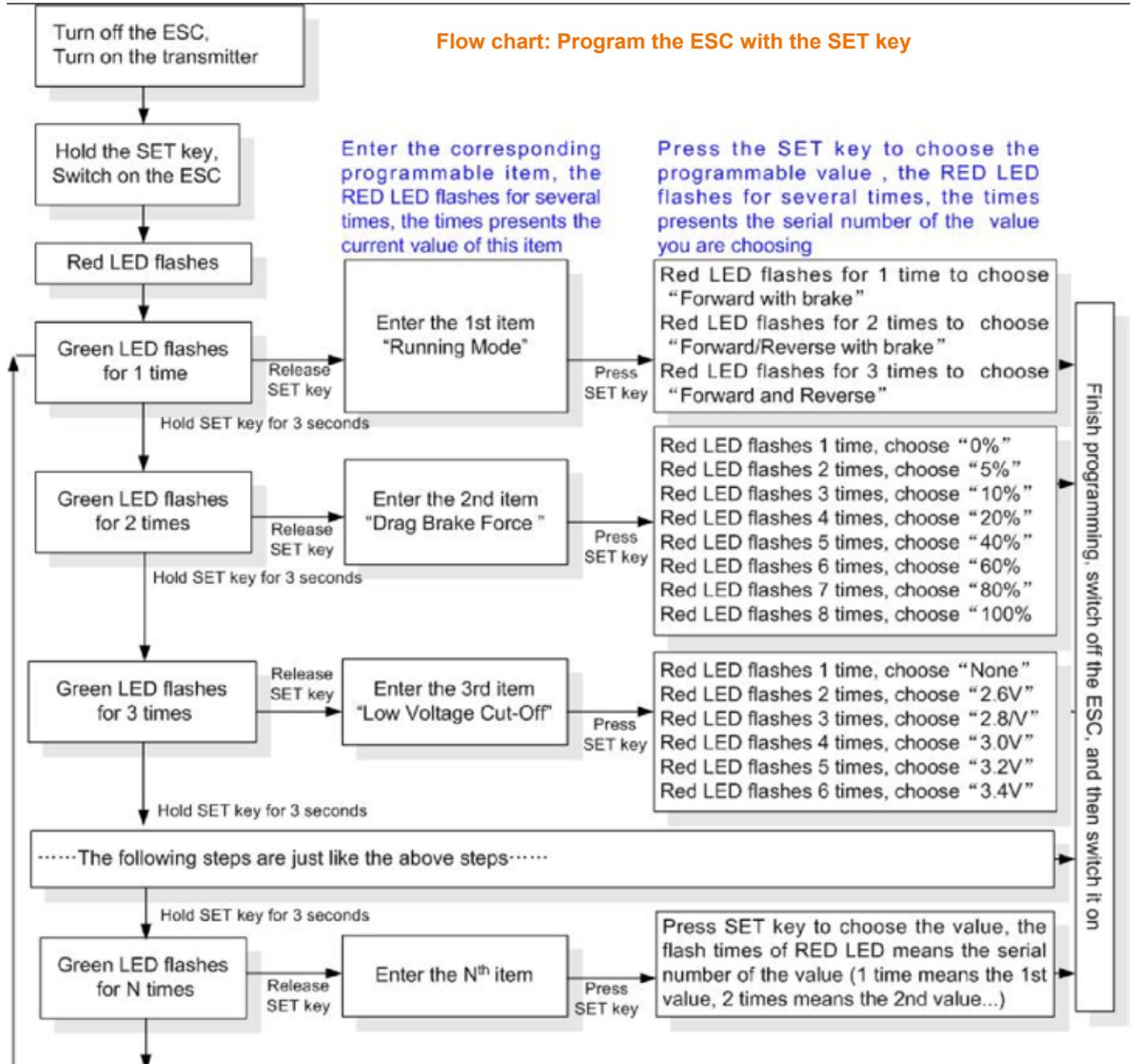
3. Program The ESC With SET Button
Please check the instructions below.

4. Reset All Items To Default Values

At any time when the throttle is located in neutral zone (except in the throttle calibration process or ESC program mode), hold the 'SET' key for over 3 seconds, the red LED and green LED will flash at the same time, which means each programmable item has be reset to its default value.

PROGRAM THE ESC WITH SET BUTTON

The following is a flow chart sample for programming the ESC.



Note:

- In the program process, the motor will emit 'Beep' tone at the same time when the LED is flashing.
- If the 'N' is bigger than the number '5', we use a long time flash and long 'Beep---' tone to represent '5', so it is easy to identify the items of the big number.

For example, if the LED flashes as the following:

'A long time flash + a short time flash' (Motor sounds 'Beep---Beep') = the No. 6 item

'A long time flash + 2 short time flash' (Motor sounds 'Beep---BeepBeep') = the No. 7 item

'A long time flash + 3 short time flash' (Motor sounds 'Beep---BeepBeepBeep') = the No. 8 item

And so on.

Quick-start

The quick-start section is not a replacement for the full instructions. To be able to use the model to its best take the time to read the full manual.

1. Read the manual and safety pre-cautions (page 3)
2. Buy and charge the battery packs: read both battery manual and charger manual carefull before !
3. Buy and install the batteries in the transmitter (page 6)
4. Install battery pack in the model, make sure the speedo is switched off, connect the cables (avoid reversed polarity) and securely fasten the battery-pack.
5. Turn on the transmitter (page 6).
Always turn on the transmitter first before to switch on the car and only turn off the transmitter after you switched off the car.
6. Check servo operation.
Check that the servo works correctly and check that the car runs straight in neutral position, trim as needed.
7. Perform a range test with the radio system
8. Personalise the body of your car by applying more decals if required.
9. Drive your modelcar.
10. Maintain your modelcar (page 18)



Questions and Answers

Question/Issue	Possible Reason	Answer
After power on, motor doesn't work, and the cooling fan doesn't work	The connections between battery pack and ESC are not correct	Check the power connections Replace the connectors
After power on, motor can't work, but emits 'beep-beep-, beep-beep' alert tone. (Every group of 'beep-beep' has a time interval of 1 second)	Input voltage is abnormal, too high or too low	Check the voltage of the battery pack
After power on, red LED always lights, the motor doesn't work	Throttle signal is abnormal	Plug the control wire into the throttle channel of the receiver correctly.
The motor runs in the opposite direction when it is accelerated	The wire connections between ESC and the motor are not correct	Swap any two wire connections between the ESC and the motor.
The motor suddenly stops running	The throttle signal is lost	Check the transmitter and the receiver. Check the signal wire from the throttle channel of your receiver
	The ESC has entered the Low Voltage Protection Mode or Over-heat	Red LED flashing means Low voltage protection. Please replace battery pack. or recharge
	Protection Mode	Green LED flashing means Over-heat protection, please stop running to cool the ESC.
When accelerating quickly, the motor stops or trembles	<ol style="list-style-type: none"> 1. The battery has a bad discharge performance 2. The gear rate is too small 3. The 'Start Mode (Punch)' of the ESC is too aggressive 	<ol style="list-style-type: none"> 1. Use a better battery 2. Use lower KV motor or change the gear rate, choose smaller pinion 3. Select a softer option for the 'Start Mode (Punch)'
The rear of the car breaks out when entering a corner		Harder rear diff. Softer front spring, softer front anti-roll bar (optional). More rear toe-in.
The front of the car pushes to the outside of the corner		Softer rear diff. harder front spring, harder front anti-roll bar (optional). Less rear toe-in.
The rear of the car spins out under acceleration		Softer rear diff. Softer rear spring, softer rear anti-roll bar (optional). More rear toe-in.
The car lacks topspeed		Gear ratio too short. Speedo adjustment
The car lacks bottom speed		Gear ratio too long. Speedo adjustment

For more help:

- Ask fellow drivers • Ask your rc dealer • Refer to the www.serpent.com website
- Refer to online Serpent forums or other forums • Use social media to connect to fellow drivers
- Refer to www.easyrc.com

Basic Tuning

- **Springs:** by using a softer spring you will have more sag, more chassis roll/lean, more dive and a less responsive car this might be better on low-grip surfaces; by using a harder spring you have less sag, less body lean, less dive and a more responsive car. What to apply depends on driving style and grip-level surface. This is more suitable on high-grip surfaces.
- **Shock-angle:** the angle at which the shocks are mounted create a different suspension feel; the more vertical, the harder it feels, the more horizontal, the softer it feels.
- **Oil:** the viscosity of the shock-oil defines the dampening of the shockabsorber. Thinner oil will be softer, with slower response, thicker oil will be harder dampening with faster reponse. The dampening can also be fine-tuned by fitting other pistons with more or less holes, which is an optional.
- **Differential:** you can make the gear differential harder or softer by using a different oil viscosity. Lighter oil will create a looser diff which increases rear traction on acceleration, but also more understeer, and a harder differential will decrease rear traction on acceleration, but also more on-throttle steering
- **Front anti-roll bar (optional):** by using a softer anti-roll bar you will have more sag, more chassis roll/lean, more dive and a less responsive car. But you will have more steering once you have entered the corner
- **Rear anti-roll bar (optional):** by using a softer anti-roll bar you will have more sag, more chassis roll/lean, more dive and a less responsive car. But you will have more rear traction and a more stable car
- **Toe adjustment: Front:** adjusted with the track-rods, make longer or shorter. More toe-in will create more steering, but less stability; toe-out will create a more stable car, with less steering.
- **Toe adjustment: Rear:** adjusted with suspension blocks. More toe-in will create more traction, more stability, but less speed. Less toe in will create a less stable car, with less traction but higher speed.
- **Ackermann:** use the inner holes on the steering blocks for more ackermann, will create less direct steering response, or use outer ackermann holes for more direct steering response.
- **Front camber:** using more negative camber in the front will give you more steering but also increases possible traction roll.
- **Rear camber:** using more negative camber in the rear will create more grip in the rear meaning also creating more understeer.
- **Front caster:** use optional caster blocks to change caster, more caster will create more steering but also increases possible traction roll. And less caster will create less steering but also decreases possible traction roll.
- **Wheel-base length:** a longer car will be more stable and react slower, a shorter car will be more nervous and more direct.
- **Gear-ratio:** spur and pinion: for correct gearmesh keep a pieces of notebook paper at hand, to put between the spur and pinion for correct mesh.
- **Ride-height:** you can change the ride-height of the car, by applying more or less pre-load on the springs, turn the pre-load adjusters to set the desired height and keep left and right the same the regular ride-height should be at 5-6mm.



Springs



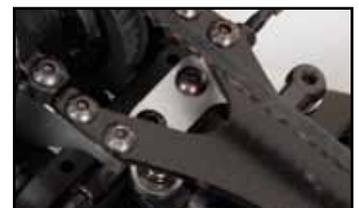
Shock-angle



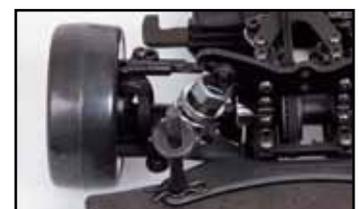
Front roll-center



Rear roll-center



Ackermann



Front camber



Rear camber



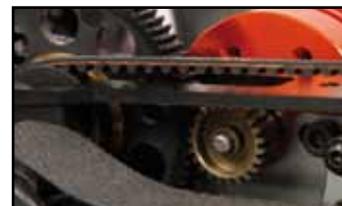
Ride-height



Rear caster



Front caster



Gear-ratio

SET-UP SHEET DEFAULT

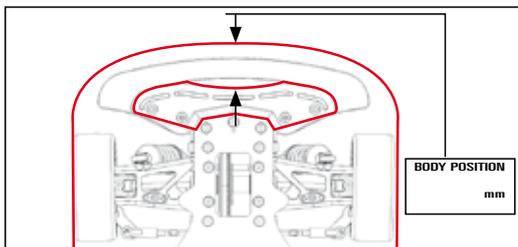
RACE _____
 TRACK _____
 NAME _____
 CITY/COUNTRY _____
 DATE _____

TEMPERATURE	AIR 0	TRACK 0
QUALIFYING POSITION	BEST LAP TIME	FINAL POSITION
TRACK CONDITION	SEC	RACE LENGTH
	MIN	
	<input type="checkbox"/> CARPET	<input type="checkbox"/> ASPHALT
	<input type="checkbox"/> MIXED	<input type="checkbox"/> FAST
TRACTION	<input type="checkbox"/> LOW	<input type="checkbox"/> MEDIUM
	<input type="checkbox"/> HIGH	

FRONT		REAR	
TRANSMISSION			
GEAR DIFF		GEAR DIFF	
<input type="checkbox"/> CST	<input checked="" type="checkbox"/> 1200	CST	
ONE WAY		SOLID	
<input checked="" type="checkbox"/> SPOOL	<input type="checkbox"/>		
BALL DIFF		BALL DIFF	
<input type="checkbox"/> LOOSE	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> LOOSE	<input type="checkbox"/> MEDIUM
<input type="checkbox"/> TIGHT	<input type="checkbox"/> TIGHT	<input type="checkbox"/> TIGHT	<input type="checkbox"/> TIGHT
MIDDLE SHAFT		FIXED <input checked="" type="checkbox"/> ONE WAY <input type="checkbox"/>	
PINION 24 T	SPUR GEAR 78 T		
FINAL DRIVE RATIO	ROLLOUT	mm	
MOTOR DragonRC 3600-KV-9T	TIMING		
ROTOR	ARMATURE		
ESC DragonRC RTR	BATTERIES		
BRUSHLESS	PROGRAM	PUNCH	INITIAL BRAKE
			AUTO BRAKE

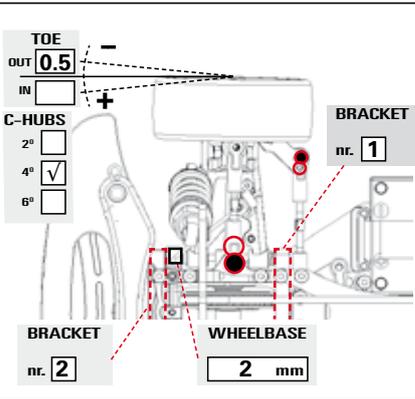
BODY Lex-is WING Lex-is

SHOCK ABSORBERS	
FRONT OIL 500 CST	REAR OIL 500 CST
SPRING orange	SPRING yellow
<input type="radio"/> OPEN	<input type="radio"/> CLOSED
TIRES	
DIAMETER mm	mm
INSERTS	
ADDITIVE	

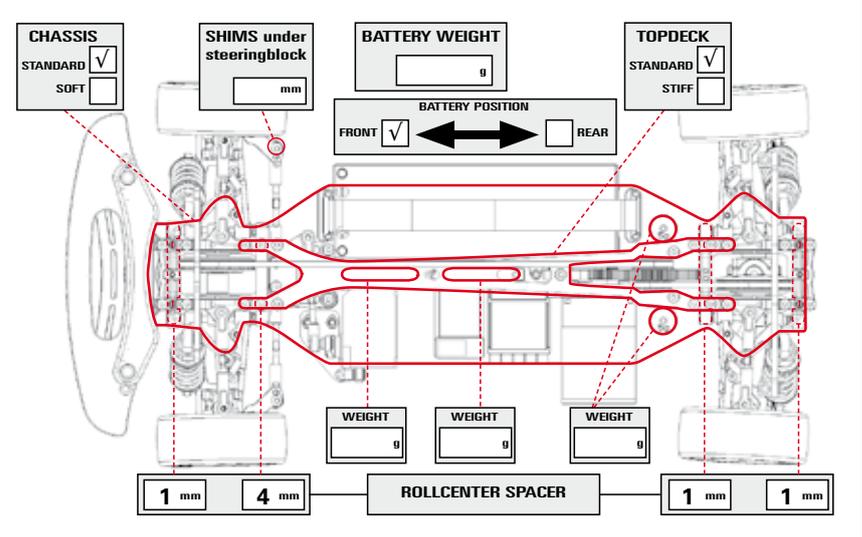
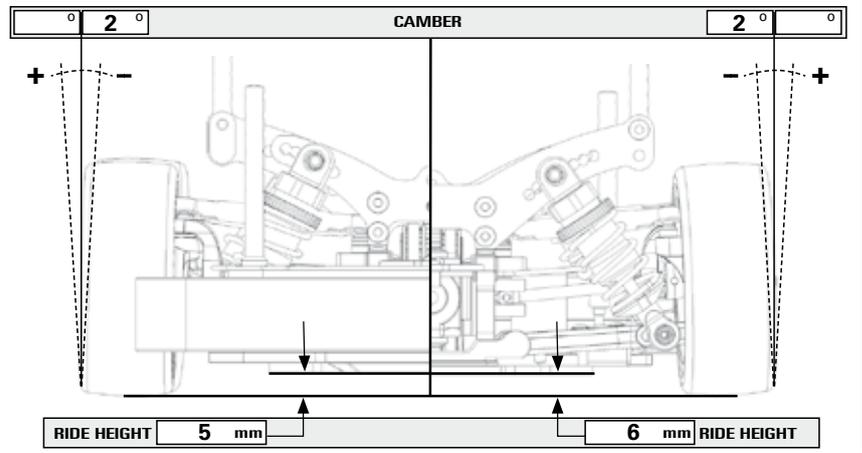
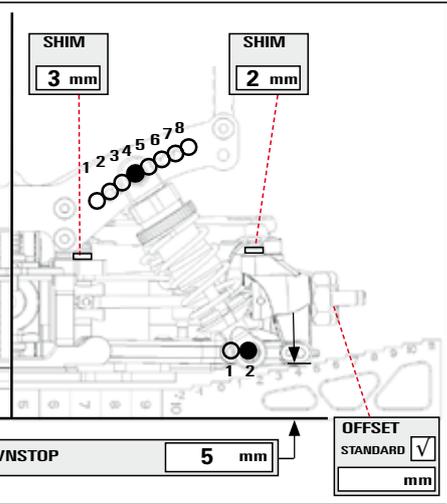
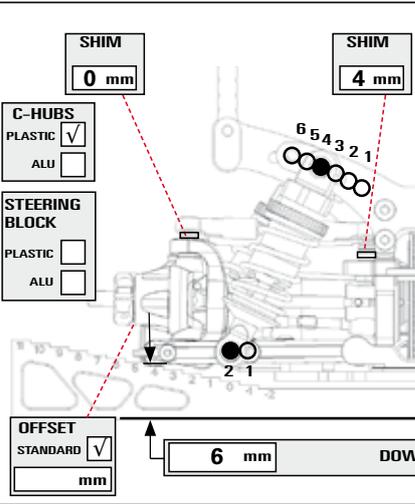
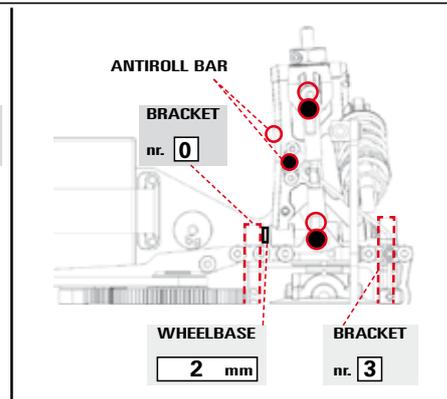


REMARKS

FRONT



REAR



Maintenance

Belt and pulleys

- Check the belts after every run, for wear and if all teeth are still in place, replace the belt in case teeth are missing. Check the pulleys for wear, dirt and clean as needed.



Belt and pulleys

Shockabsorbers

- Check for smooth operation of the shockabsorbers, and check for airbubbles by pushing the shock up and down fast after removal of the spring. Clean the shockabsorbers as needed and refill with fresh 100% pure silicone oil as needed.



Shockabsorbers

Tyres

- Replace tyres if case worn or damaged, and clean the surface in case dirty to obtain better grip.



Tyres

Wheel-axles and driveshaft front

- Remove the wheels, and check the wheel-axles, driveshafts and adaptors for dirt, play and pins. Clean thoroughly as needed and lubricate the touching parts with a small amount of grease.



Wheel-axles and driveshaft front

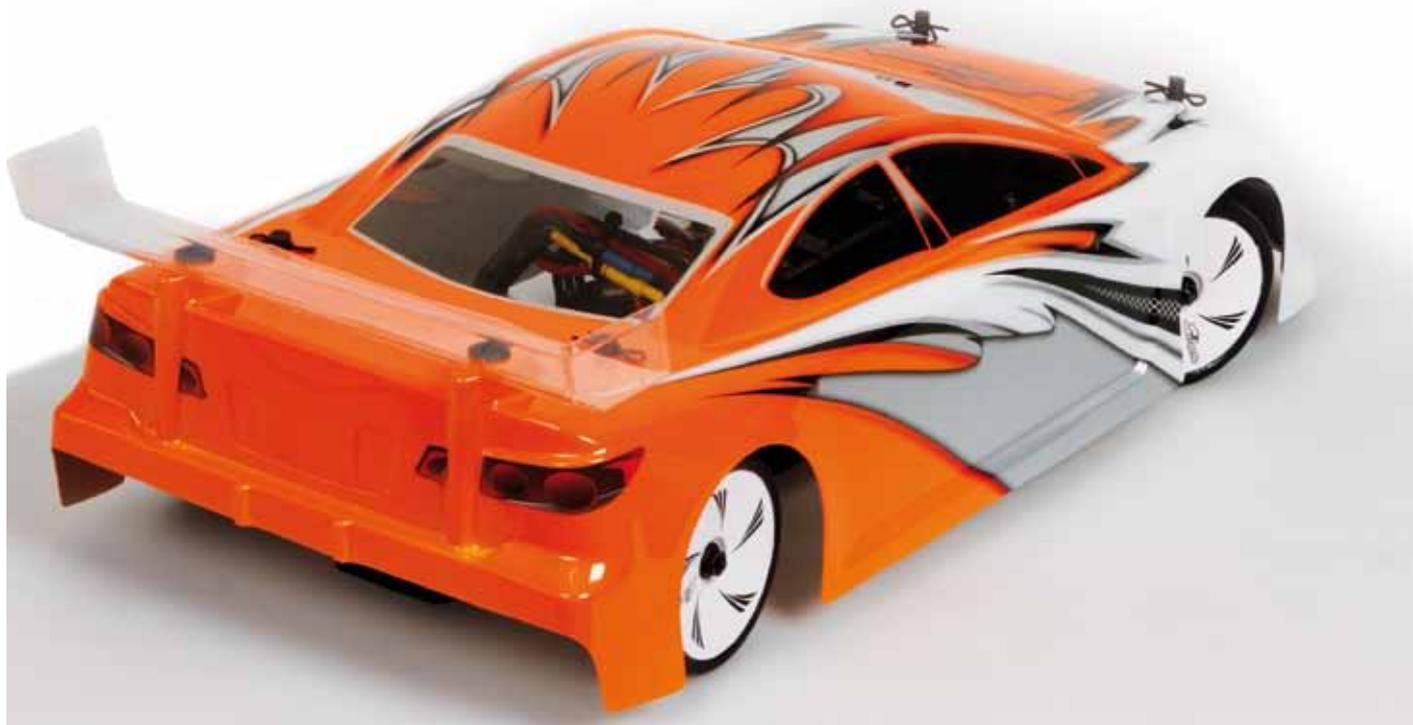
Differential

- Check the differential pulley for wear and dirt and clean as needed. Check the functioning of the diff by turning the wheels in opposite direction and feel if still smooth or 'gritty'. In case of gritty feel, the silicone oil maybe needs replacement.



Differential

The full assembly manual of this model is available online; check on www.serpent.com and type your modelnumber, partnumber, or select your car from the car-page; go to the download section in the menu and download the full manual.



Partslist and Optionals list

Part no Description

400007 Serpent S411 1/10 RTR

MANUAL, DECALS

401435 Decalsheet S411 black-white (2)

401456 Decalsheet S411 chrome (2)

RADIO INSTALLATION

1652 Steel balls 5.8mm long (4)

401372 Servo-lever (4)

401548 Servomount 411-S

401554 Bushing set 411-S (13)

401555 Servo holder l+r 411-S

Optionals

401369 Servomount plate carbon

401370 Servomount L+R

401388 Bushing alu 3x5x1 (10)

SERVO SAVER AND STEERING

1652 Steel balls 5.8mm long (4)

401025 Pivotball-uni-4-5mm (20)

401400 Steering shaft (2)

401536 Trackrod M3x38 411-S (2)

401540 Steeringshaft 411-S (2)

401541 Bushing steeringrack 411-S (2)

401542 Steeringrack 411-S

401556 Steering lever 411-S (2)

401565 Bushing Steeringrack V1 (2)

411206 Balljoint 4.5 (4)

Optionals

401355 Trackrod M3x38mm (2)

401401 Steering lever (2)

401465 Steeringrack V2

401429 Trackrod alu (2)

401466 Steering shaft alu (2)

SHOCK ABSORBERS

6442 O-ring adj.nut (10)

160102 Shock RCM shaft short (2)

160105 Shock RCM bottom (2)

160106 Shock RCM top nut (2)

160107 Shock RCM membrane (4)

160108 Shock RCM bushings (8)

160110 Shock RCM bottom O-ring (8)

160111 Shock RCM parts frame nylon short (14)

160113 Shock RCM body plastic (2)

160114 Shockset RCM on-road plastic short (2)

909405 Shock adj nut alu +o-ring (4)

Optionals

160115 Shock RCM shaft short TiN coated (2)

903232 Springwasher alu light (4)

160100 Shockset RCM on-road short (2)

160104 Shock RCM body alu (2)

160109 Shock RCM bushing machined (8)

SHOCK SPRINGS

160297 Spring grey short (2.6/14.8) TC (2)

160298 Spring black short (2.9/16.5) TC (2)

160299 Spring green short (3.5/19.9) TC (2)

160300 Spring white L23 (2.3/13) (2)

160301 Spring yellow L23 (2.8/16) (2)

160302 Spring oranje L23 (3.4/19.5) (2)

160303 Spring red L23 (4.1/23.5) (2)

CHASSIS

401547 Chassis 411-S

401549 Topplate 411-S

401552 Battery mount 411-S (2)

Optionals

401354 Chassis carbon 2.5mm

401374 Topdeck carbon 2mm

401431 Topdeck carbon 2.5mm

401432 Chassis carbon 2mm

401444 Chassis carbon 2.25mm

401464 Battery mount carbon F/R

401495 Topdeck carbon 411 2mm flex

401563 Topdeck carbon 1.75mm

BODYMOUNTS FR and RR

802211 Bodymount adjustable front (3)

802361 Bodymount adjustable rear (2)

FRONT SECTION

1652 Steel balls 5.8mm long (4)

401024 Ball 5mm (10)

401025 Pivotball uni 4.5mm (20)

401351 Belt Kevlar 30S3M510 low friction

401357 Foam bumper

401359 Pully solid axle 38T

401361 Bumper upper/ lower

401362 C-hub 4 L+R

401363 Steeringblock L+R

401381 CVD insert (2)

401386 Pivot pin front inner (2)

401392 Bearing excenter (4)

401410 Bushing steeringblock (4)

401533 Spool nylon 1/10 EP

401534 Driveshaft cvd 411-S (2)

401537 Trackrod M3x26 411-S (2)

401538 Bearingblock fr/rr 411-S (2)

401543 Cvd wheelaxle 411-S (2)

401546 Pivotball with shaft 411-S (2)

401550 Shocktower fr 411-S

401553 Wheel hex 411-S (2)

401554 Bushing set 411-S (13)

401557 Antiroll bar mount fr/rr (2)

401559 Suspension bracket 1 411-S

401560 Suspension bracket 2 411-S

401562 Shocktower mount L+R 411-S

411206 Balljoint 4.5 (4)

802211 Bodymount adjustable front (3)

Optionals

401350 Belt Kevlar 30S3M510

401356 Camber link M3x26mm

401358 Stabi collar (2)

401365 Bearingblock alu

401373 CVD axle set steel (2)

401375 Suspension bracket alu 0

401376 Suspension bracket alu 1

401377 Suspension bracket alu 2

401378 Suspension bracket alu 3

401379 Antirollbar 1.4mm

401380 Solid axle/spool

401382 Shocktower mount alu L+R

401387 Wheelhexagon 1mm offset (2)

401388 Bushing alu 3x5x1 (10)

401389 Bushing alu 3x5x2 (10)

401390 Bushing alu 3x5x4 (2)

401391 Antirollbar ball (2)

401394 CVD driveshaft (2)

401397 Wishbone front lower (2)

401402 Antirollbar mount alu

401404 Suspension spacer 1mm (2)

401406 CVD wheelaxle (2)

401411 Antirollbar bushing (16)

401415 Antirollbar 1.2mm

401416 Antirollbar 1.6mm
 401417 Antirollbar 1.8mm
 401418 Suspension bracket alu 1.5
 401419 Suspension bracket alu 2.5
 401420 Suspension bracket alu 3.5
 401422 Steeringblock alu L+R
 401423 C-hub 2 alu L+R
 401424 C-hub 4 alu L+R
 401425 C-hub 6 alu L+R
 401426 Spacer suspension 0.5mm (2)
 401428 Driveshaft adaptor delrin (2)
 401430 Camberlink alu (2)
 401433 Weight set brass 5gr - 12gr - 20gr (2+1+1)
 401434 Bushing smaller bearing (4)
 401445 Driveshaft double cardan joint DCJ (2)
 401446 Driveshaft DCJ (2)
 401447 Wheelaxle DCJ (2)
 401448 Coupler DCJ (2)
 401449 Insert DCJ (4)
 401450 Pin revision set DCJ (4)
 401452 Wishbone Fr Lw hard (2)
 401455 C-hub 4 L+R hard
 401462 C-hub 4 L+R medium
 401467 Pivot pin front inner TiNi (2)
 401558 Suspension bracket rr-fr 0
 401561 Suspension bracket 3 411-S
 411063 Pivot ball threaded upper arm (2)
 411187 Pivotball with shaft (2)
 411207 Balljoint 4.5 short (2)

MIDDLE SECTION

1606 Antenna rod black (2)
 401360 Pully middle 19T + spacer (3)
 401366 Middle shaft alu
 401413 Battery mount (4)
 401539 Bracket motormount 411-S
 401547 Chassis 411-S
 401549 Topplate 411-S
 401552 Battery mount 411-S (2)

Optionals

401354 Chassis carbon 2.5mm
 401367 Motormount bracket alu
 401368 Motormount alu
 401374 Topdeck carbon 2mm
 401398 Bracket middleshaft alu
 401399 Bearingmount middleshaft alu
 401427 Pully 19T alu
 401431 Topdeck carbon 2.5mm
 401432 Chassis carbon 2mm
 401433 Weight set brass 5gr - 12gr - 20gr (2+1+1)
 401451 Motormount set V2
 401463 Belt tensioner set
 401464 Battery mount carbon F/R

REAR SECTION

1651 Steel balls 5.8mm long (20)
 401024 Ball 5mm (10)
 401353 Belt Kevlar 30S3M186 low friction
 401392 Bearing excenter (4)
 401403 Pivot pin rear-inner (2)
 401407 Pivot pin rear-outer (2)
 401460 Wishbone Rr Lw medium (2)
 401461 Upright medium (2)
 401526 Geardiff revision set V2
 401532 Geardiff uni 1/10 EP
 401535 Driveshaft 411-S (2)
 401537 Trackrod M3x26 411-S (2)
 401538 Bearingblock fr/rr 411-S (2)
 401544 Wheelaxle 411-S
 401546 Pivotball with shaft 411-S (2)
 401551 Shocktower rr 411-S

401553 Wheel hex 411-S (2)
 401554 Bushing set 411-S (13)
 401557 Antiroll bar mount fr/rr (2)
 401558 Suspension bracket rr-fr 0
 401561 Suspension bracket 3 411-S
 401562 Shocktower mount L+R 411-S
 411206 Balljoint 4.5 (4)
 802361 Bodymount adjustable rear (2)
 903333 X-ring RCCX shock (10)

Optionals

401352 Belt Kevlar 30S3M186
 401353 Belt Kevlar 30S3M186 low friction
 401356 Camber link M3x26mm (2)
 401358 Stabi collar (2)
 401365 Bearingblock alu
 401373 CVD axle set steel (2)
 401375 Suspension bracket alu 0
 401376 Suspension bracket alu 1
 401377 Suspension bracket alu 2
 401378 Suspension bracket alu 3
 401381 CVD insert (2)
 401382 Shocktower mount alu L+R
 401385 Shocktower carbon rear
 401387 Wheelhexagon 1mm offset (2)
 401388 Bushing alu 3x5x1 (10)
 401389 Bushing alu 3x5x2 (10)
 401391 Antirollbar ball (2)
 401393 Wishbone rear lower (2)
 401394 CVD driveshaft (2)
 401396 Upright (2)
 401402 Antirollbar mount alu
 401404 Suspension spacer 1mm (2)
 401406 CVD wheelaxle (2)
 401409 Blade (16)
 401411 Antirollbar bushing (16)
 401415 Antirollbar 1.2mm
 401416 Antirollbar 1.6mm
 401417 Antirollbar 1.8mm
 401421 Upright alu (2)
 401426 Spacer suspension 0.5mm (2)
 401430 Camberlink alu (2)
 401433 Weight set brass 5gr - 12gr - 20gr (2+1+1)
 401434 Bushing smaller bearing (4)
 401436 Balldiff set
 401445 Driveshaft double cardan joint DCJ (2)
 401446 Driveshaft DCJ (2)
 401447 Wheelaxle DCJ (2)
 401448 Coupler DCJ (2)
 401449 Insert DCJ (4)
 401450 Pin revision set DCJ (4)
 401453 Wishbone Rr Lw hard (2)
 401454 Upright hard (2)
 401468 Pivot pin rear inner TiNi (2)
 401497 Antirollbar 1.4mm rear
 401534 Driveshaft cvd 411-S (2)
 401543 Cvd wheelaxle 411-S (2)
 401559 Suspension bracket 1 411-S
 401560 Suspension bracket 2 411-S
 411063 Pivot ball threaded upper arm (2)
 411187 Pivotball with shaft (2)
 411207 Balljoint 4.5 short (2)

TRANSMISION

401351 Belt Kevlar 30S3M510 low friction
 401353 Belt Kevlar 30S3M186 low friction
 401359 Pully solid axle 38T
 401360 Pully middle 19T + spacer (3)
 401380 Solid axle/spool
 401408 Driveshaft solidaxle (2)
 401412 Geardiff housing
 401526 Geardiff revision set V2

401532 Geardiff uni 1/10 EP
 401533 Spool nylon 1/10 EP
 401545 Geardiff outdrive 411-S (2)
 804176 Geardiff x-ring (4)
 804176 Geardiff x-ring (4)
 804200 Diffcase O-ring 22.5x1 (10)
 903333 X-ring RCCX shock (10)

OPTIONALS

401350 Belt Kevlar 30S3M510
 401352 Belt Kevlar 30S3M186
 401408 Driveshaft solidaxle (2)
 401412 Geardiff housing
 401414 Geardiff outdrive (2)
 401414 Geardiff outdrive (2)
 401427 Pully 19T alu
 401428 Driveshaft adaptor delrin (2)
 401436 Balldiff set
 401437 Balldiff shaft female
 401438 Balldiff shaft male
 401439 Balldiff nut (2)
 401440 Balldiff pully 38T
 401441 Balldiff spring (4)
 401442 Balldiff screw (2)
 401457 Slipper Spool pad S411 (2)
 401527 Diff gear 10T + diff axle for geardiff (2+1) V2

SPUR GEARS

120015 Spur gear 48P / 69T
 120016 Spur gear 48P / 72T
 120017 Spur gear 48P / 75T
 120018 Spur gear 48P / 78T
 120019 Spur gear 48P / 81T
 120020 Spur gear 48P / 84T
 120021 Spur gear 48P / 87T
 120022 Spur gear 48P / 86T

PINIONS

120158 Motor-pinion alu hard 48P / 20T
 120159 Motor-pinion alu hard 48P / 21T
 120160 Motor-pinion alu hard 48P / 22T
 120161 Motor-pinion alu hard 48P / 23T
 120162 Motor-pinion alu hard 48P / 24T
 120163 Motor-pinion alu hard 48P / 25T
 120164 Motor-pinion alu hard 48P / 26T
 120165 Motor-pinion alu hard 48P / 27T
 120166 Motor-pinion alu hard 48P / 28T
 120167 Motor-pinion alu hard 48P / 29T
 120168 Motor-pinion alu hard 48P / 30T

BALL-BEARINGS

1314 Ballbearing 6x12 (2)
 1315 Ballbearing 5x10x4 (2)
 1344 Ballbearing 10x15x4 (2)
 401131 Ballbearing 5x10x3 (2)

HARDWARE

110104 Screw allen countersunk M3x8 (10)
 110108 Screw allen roundhead m3x6 (10)
 110109 Screw allen roundhead m3x10 (10)
 110112 Screw allen roundhead m3x12 (10)
 110114 Setscrew allen m3x8 (10)
 110116 Setscrew allen m3x3 (10)
 110117 Setscrew allen m3x12 (10)
 110122 Screw allen countersunk m3x6 (10)
 110124 Screw allen roundhead m3x8 (10)
 110127 Screw allen countersunk m3x12 (10)
 110128 Screw allen roundhead m3x5 (10)
 110133 Screw philipshead countersunk 2.5x8 wide (10)
 110136 Screw allen countersunk M2.5x8 (10)
 110147 Screw ph roundhead widethread 2.5x5 (10)
 110152 Screw allen cilinderhead M3x8 (10)
 110153 Screw allen roundhead M2.3x6 (10)

110158 Screw allen countersunk M3x15 (10)
 110162 Setscrew allen M3x2.5 (10)
 110164 Screw allen roundhead M3x4 (10)
 110172 Screw allen roundhead flanged M3X6 (10)
 110206 Pin 2.5x22 (10)
 110208 Pin nra 2x9.8 (4)
 110215 Pin 2x12 (10)
 110302 E-clip 4.0 (10)
 110402 Nut nylock M3 (10)
 110405 Nut nylock M4 flanged (10)
 110422 Shim 4x10x0.3 (10)
 110427 Shim 5x15x0.3 (10)
 110442 Shim 4x8x0.6 (10)

BODIES

401578 Body Lex-IS Orange S411 pre cut EFRA 4030
 401579 Body Lex-IS Red S411 pre cut EFRA 4030
 401580 Body Lex-IS Blue S411 pre cut EFRA 4030
 401581 Body Lex-IS Green S411 pre cut EFRA 4030

MERCHANDISING / DECALS

401435 Decalsheet S411 black-white (2)
 401456 Decalsheet S411 chrome (2)
 1886 Decal Serpent black/white 1/10 (2)
 1887 Decal Serpent black/white 1/8 (2)
 1888 Decal Serpent chrome 1/10 (2)
 1896 Cap Serpent orange-black
 1897 Towel Serpent large 120x64cm
 1898 Lanyard Serpent orange
 1899 Towel Serpent orange/yellow large
 190501 Tool-bag
 190110 Sweater hooded serpent black (s)
 190111 Sweater hooded serpent black (m)
 190112 Sweater hooded serpent black (l)
 190113 Sweater hooded serpent black (xl)
 190114 Sweater hooded serpent black (xxl)
 190121 T-shirt Serpent LTS white (S)
 190122 T-shirt Serpent LTS white (M)
 190123 T-shirt Serpent LTS white (L)
 190124 T-shirt Serpent LTS white (xL)
 190125 T-shirt Serpent LTS white (xxL)
 190127 T-shirt Serpent DTR orange (S)
 190128 T-shirt Serpent DTR orange (M)
 190129 T-shirt Serpent DTR orange (L)
 190130 T-shirt Serpent DTR orange (xL)
 190131 T-shirt Serpent DTR orange (xxL)
 190132 T-shirt Serpent DTR black (S)
 190133 T-shirt Serpent DTR black (M)
 190134 T-shirt Serpent DTR black (L)
 190135 T-shirt Serpent DTR black (xL)
 190136 T-shirt Serpent DTR black (xxL)
 190177 T-shirt Serpent LTS orange (S)
 190178 T-shirt Serpent LTS orange (M)
 190179 T-shirt Serpent LTS orange (L)
 190180 T-shirt Serpent LTS orange (xL)
 190181 T-shirt Serpent LTS orange (xxL)
 190167 T-shirt Serpent LTS black (S)
 190168 T-shirt Serpent LTS black (M)
 190169 T-shirt Serpent LTS black (L)
 190170 T-shirt Serpent LTS black (xL)
 190171 T-shirt Serpent LTS black (xxL)
 190156 Polo shirt Serpent black-orange (S)
 190157 Polo shirt Serpent black-orange (M)
 190158 Polo shirt Serpent black-orange (L)
 190159 Polo shirt Serpent black-orange (XL)
 190160 Polo shirt Serpent black-orange (XXL)
 190161 Polo shirt Serpent black-orange (XXXL)
 190172 Winter jacket Serpent (S)
 190173 Winter jacket Serpent (M)
 190174 Winter jacket Serpent (L)
 190175 Winter jacket Serpent (xL)
 190176 Winter jacket Serpent (xxL)



TRANSMITTER, SERVO AND PARTS

- 210000 Transmitter set DTS-1 with display 2.4 Ghz
- 210001 Transmitter DTS-1 with display 2.4Ghz
- 210002 Receiver DRS-1 on 2.4Ghz
- 210004 Servo digital 0.13s/6.5kg
- 210006 Servo case for #210004
- 210008 Servo gear set for #210004

SPEEDO AND PARTS

- 211000 Speed controller DS-10
- 211002 Set speed controller DS-10 - BL 9T 3650 motor
- 211004 Motor brushless DL10 9T 3650

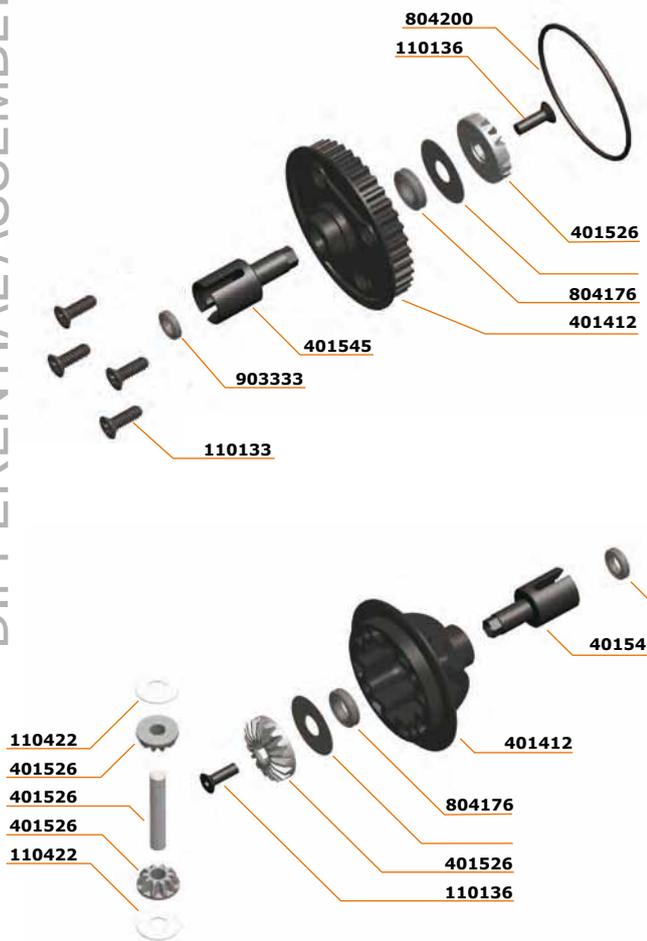
BODIES AND PARTS

- 213000 Body 1/10 Lex-is 190mm clear
- 213001 Body 1/10 Lex-is 190mm clear light
- 213002 Body 1/10 Lex-is 190mm semi painted
- 213003 Body 1/10 Lex-is 190mm painted white-orange
- 213004 Body 1/10 Lex-is 190mm painted white-red
- 213005 Body 1/10 Lex-is 190mm painted white-blue
- 213006 Body 1/10 Lex-is 190mm painted white-green

ONROAD TYRES AND WHEELS

- 215000 Tyre EP 1/10 24R premounts white rim (4)
- 215001 Tyre EP 1/10 28R premounts white rim (4)
- 215002 Tyre EP 1/10 32R premounts white rim (4)
- 215003 Tyre EP 1/10 36R premounts white rim (4)
- 215004 Insert EP 1/10 moulded type-A (4)
- 215005 Insert EP 1/10 moulded type-B (4)
- 215006 Insert EP 1/10 moulded type-C (4)
- 215007 Insert EP 1/10 moulded type-D (4)
- 215008 Tyre rubber 1/10 EP 24R (4)
- 215009 Tyre rubber 1/10 EP 28R (4)
- 215010 Tyre rubber 1/10 EP 32R (4)
- 215011 Tyre rubber 1/10 EP 36R (4)
- 215012 Rim EP 1/10 white (4)
- 215013 Rim EP 1/10 black (4)
- 215014 Rim EP 1/10 orange (4)
- 215015 Rim EP 1/10 yellow (4)

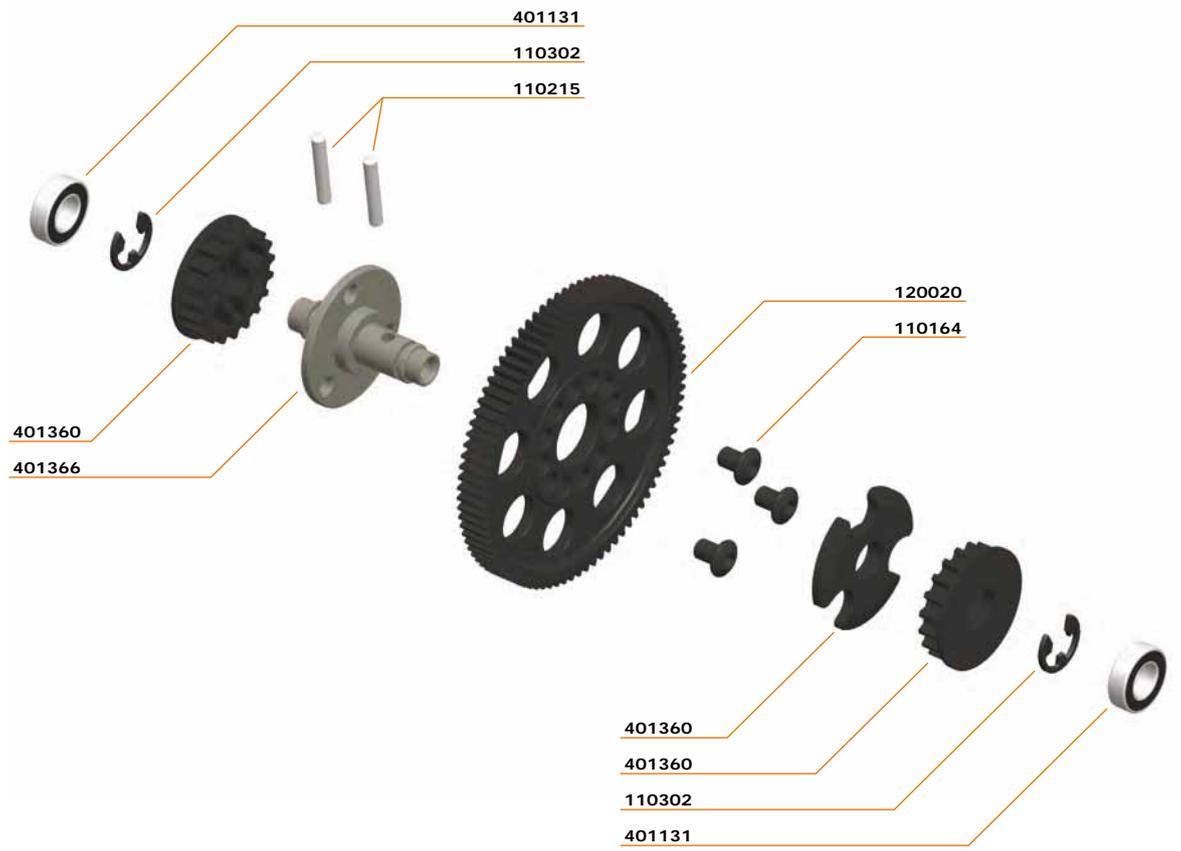
DIFFERENTIAL ASSEMBLY



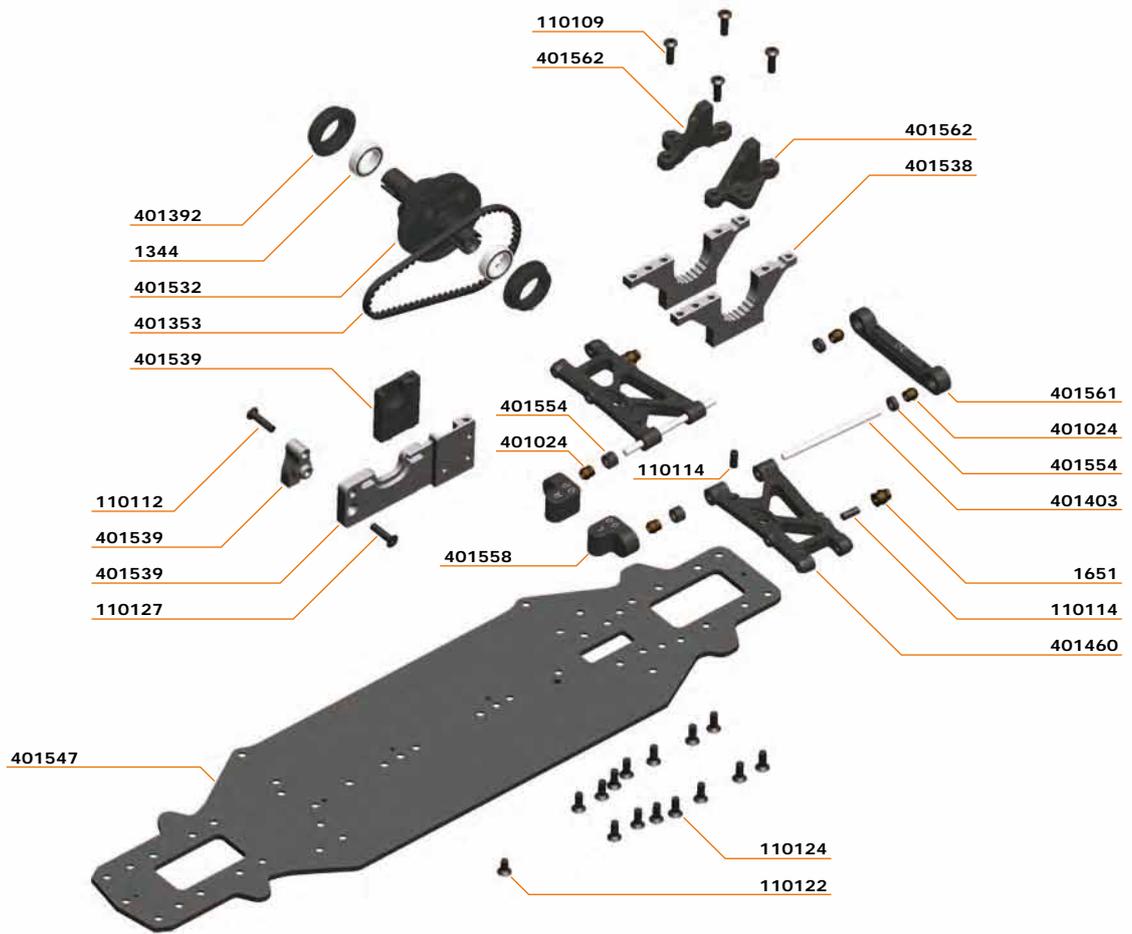
SOLID FRONT AXLE ASSEMBLY



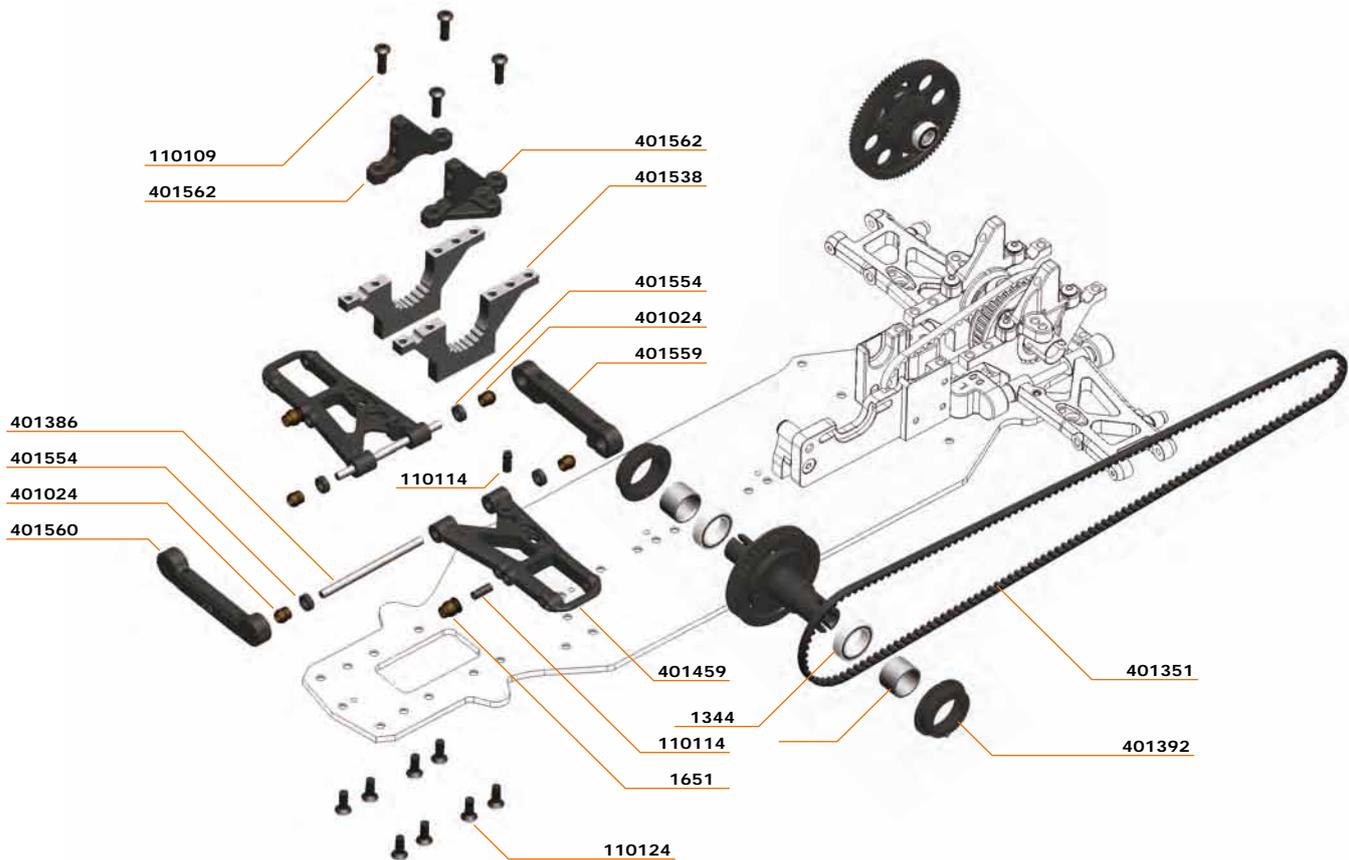
SOLID FRONT AXLE ASSEMBLY



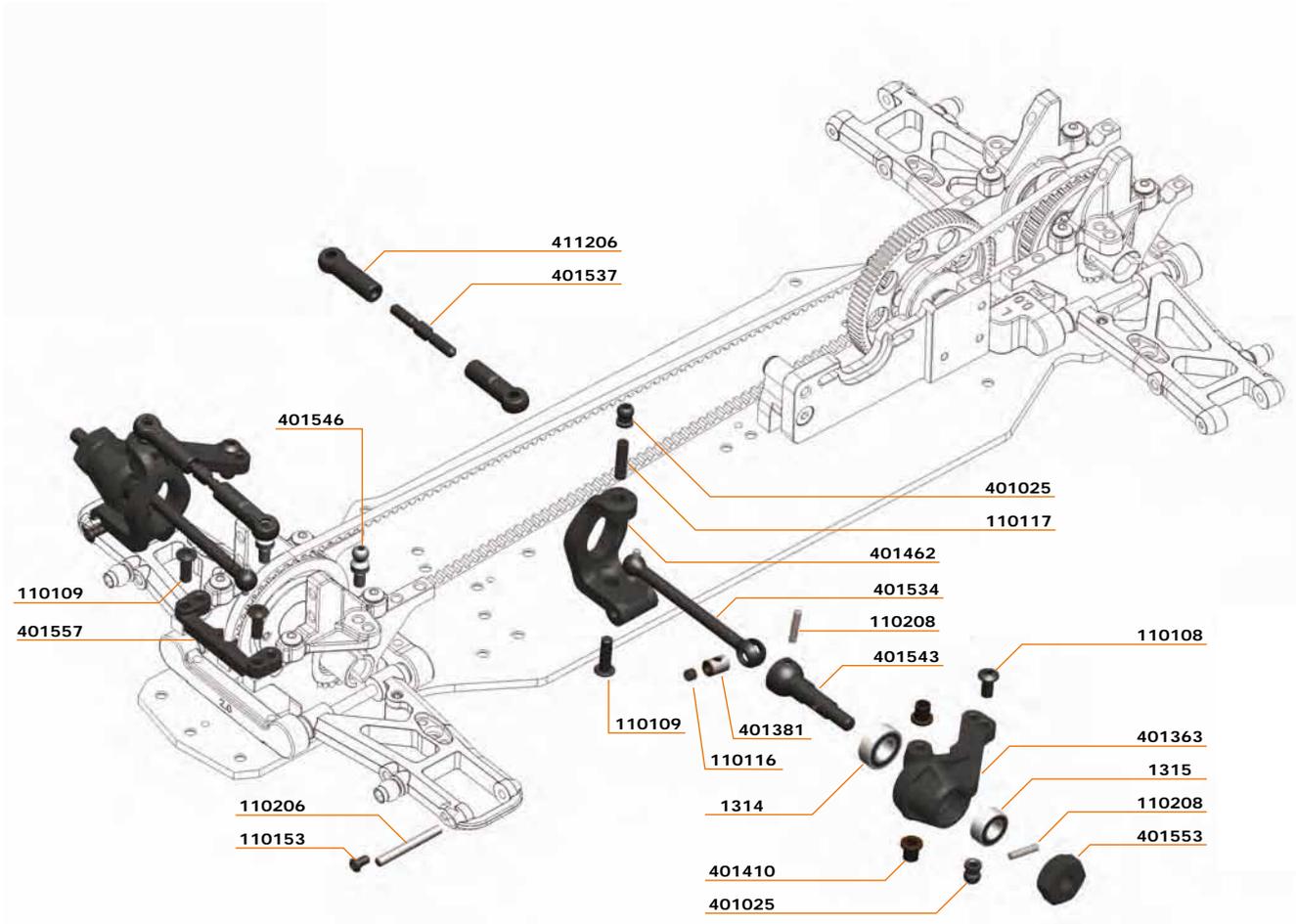
REAR ASSEMBLY



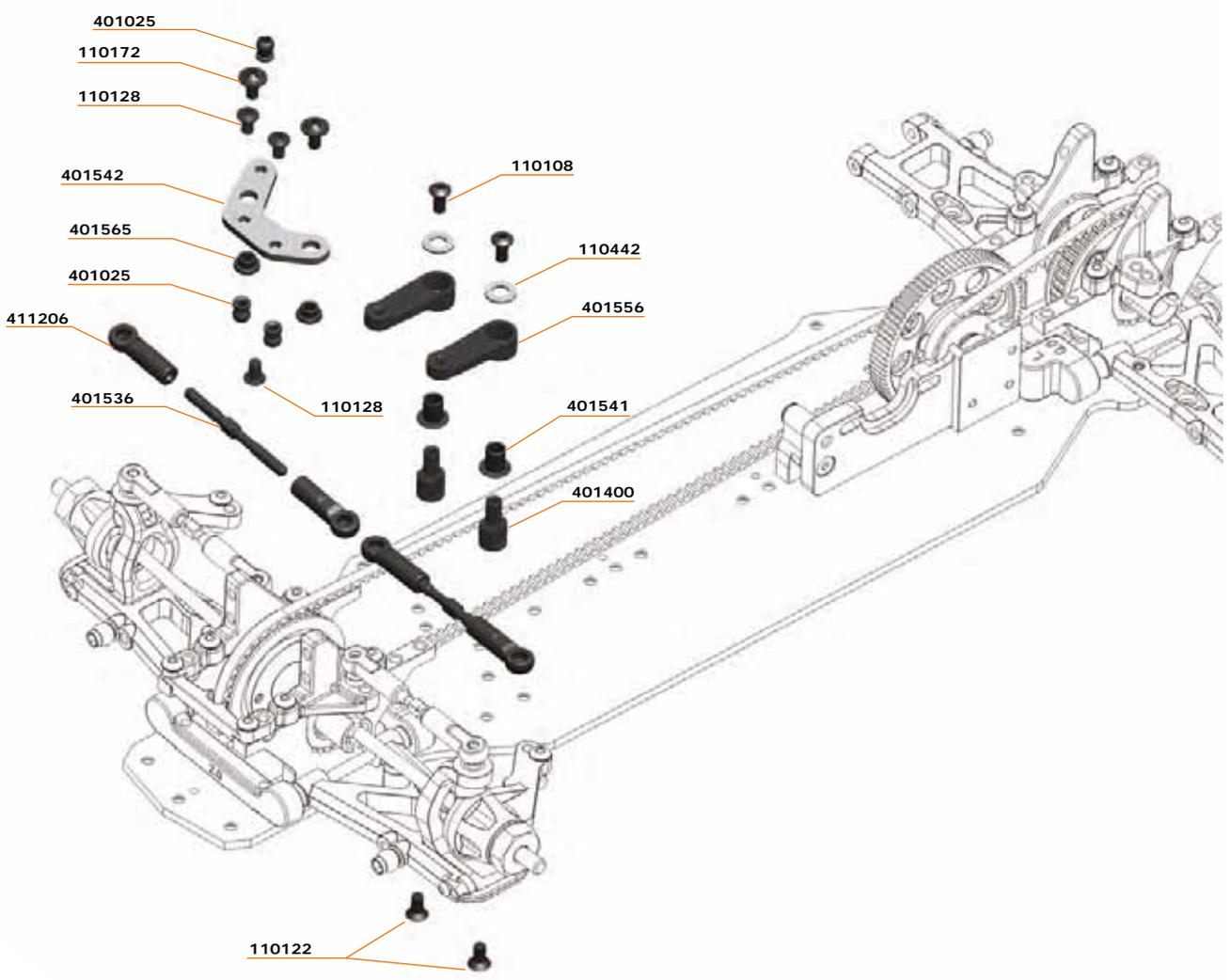
FRONT ASSEMBLY



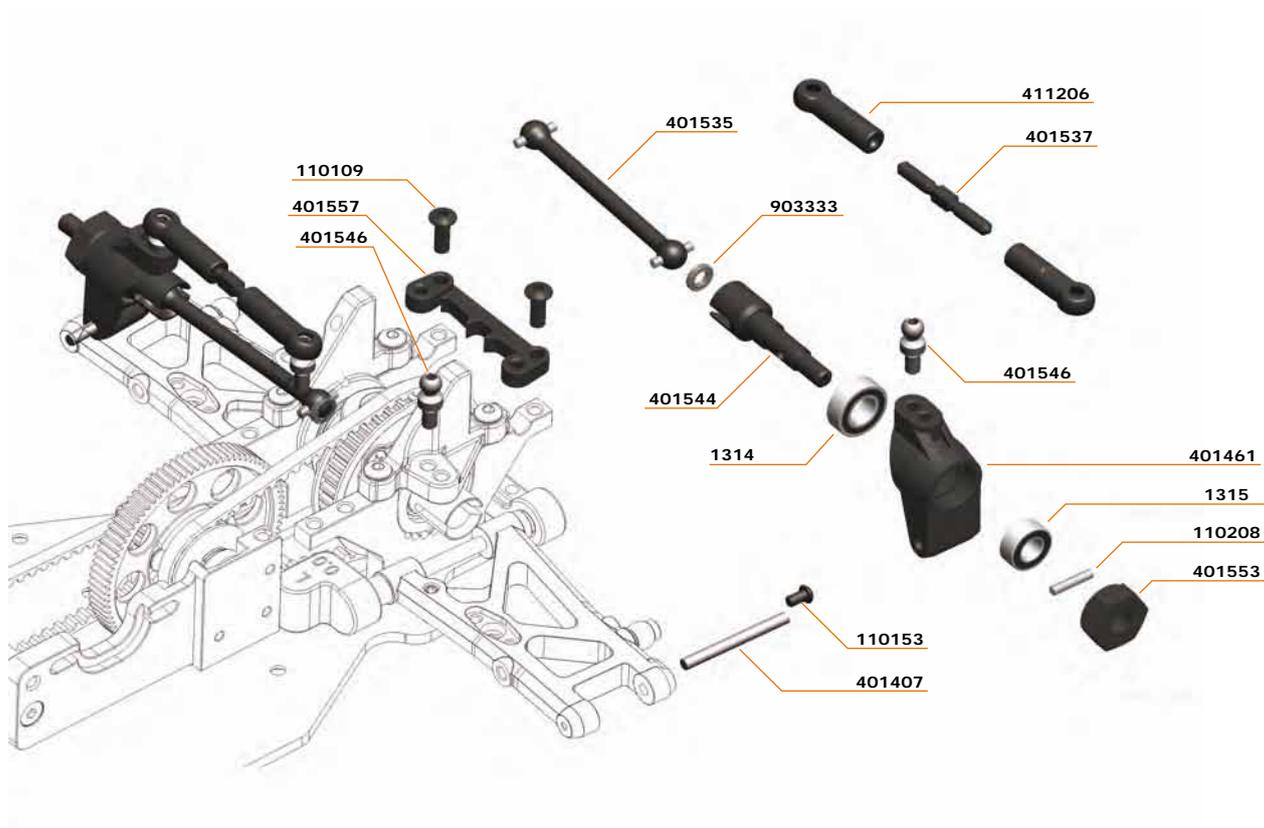
FRONT SUSPENSION ASSEMBLY



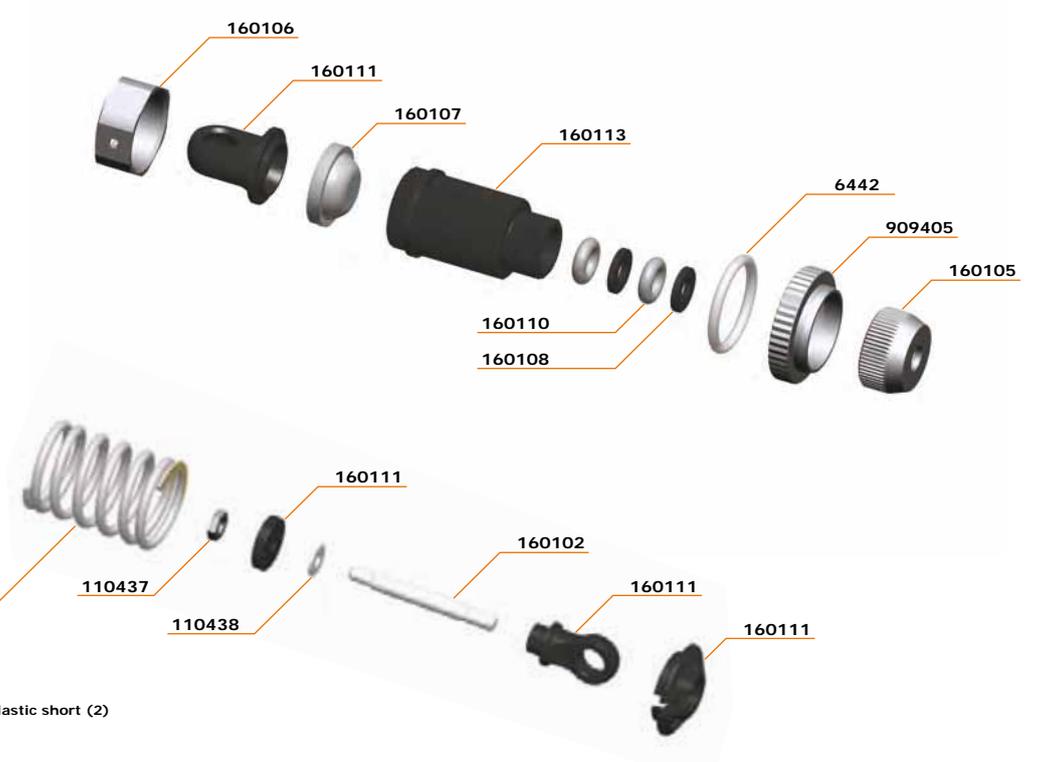
FRONT SUSPENSION ASSEMBLY



REAR SUSPENSION ASSEMBLY



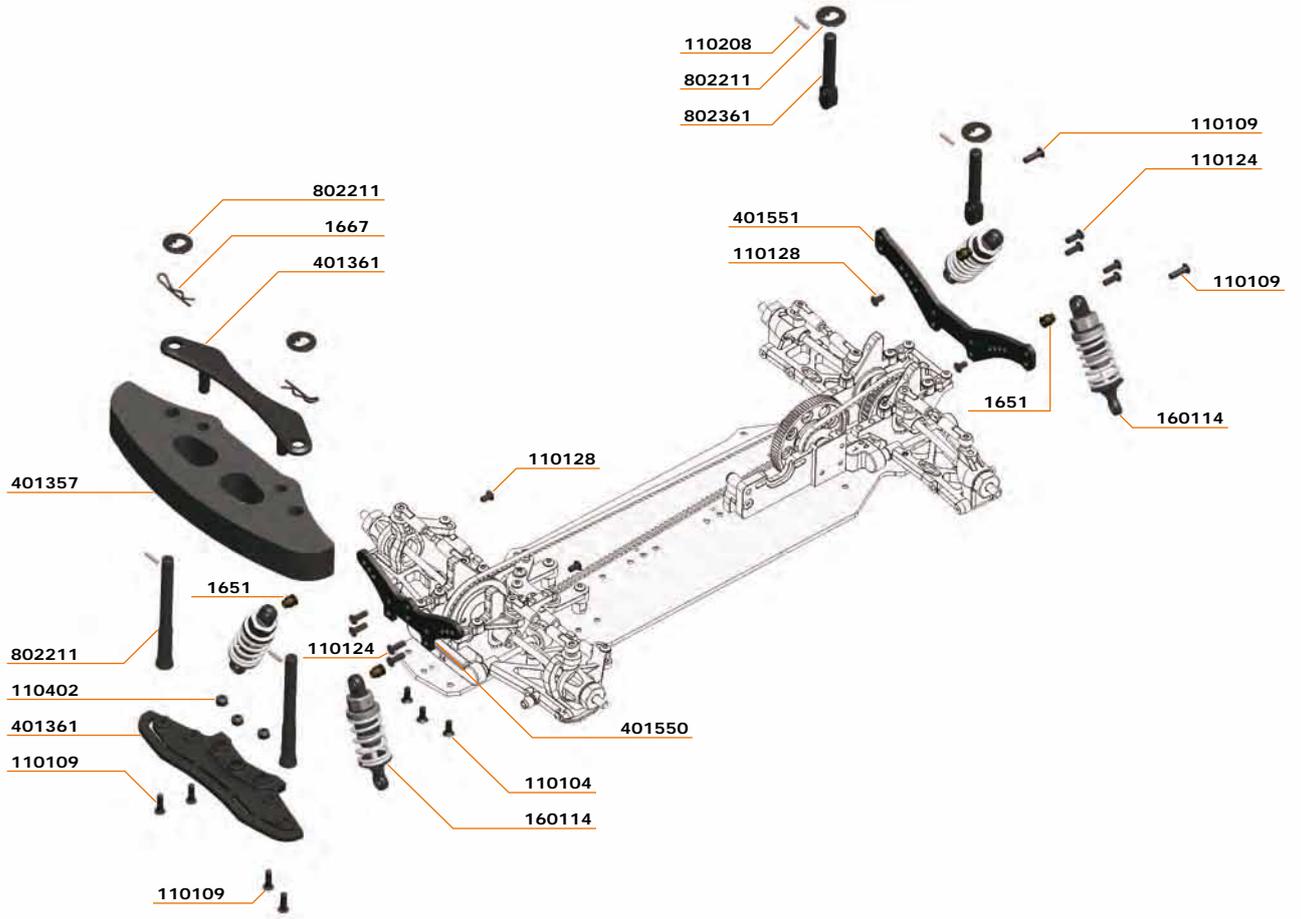
SHOCK ASSEMBLY



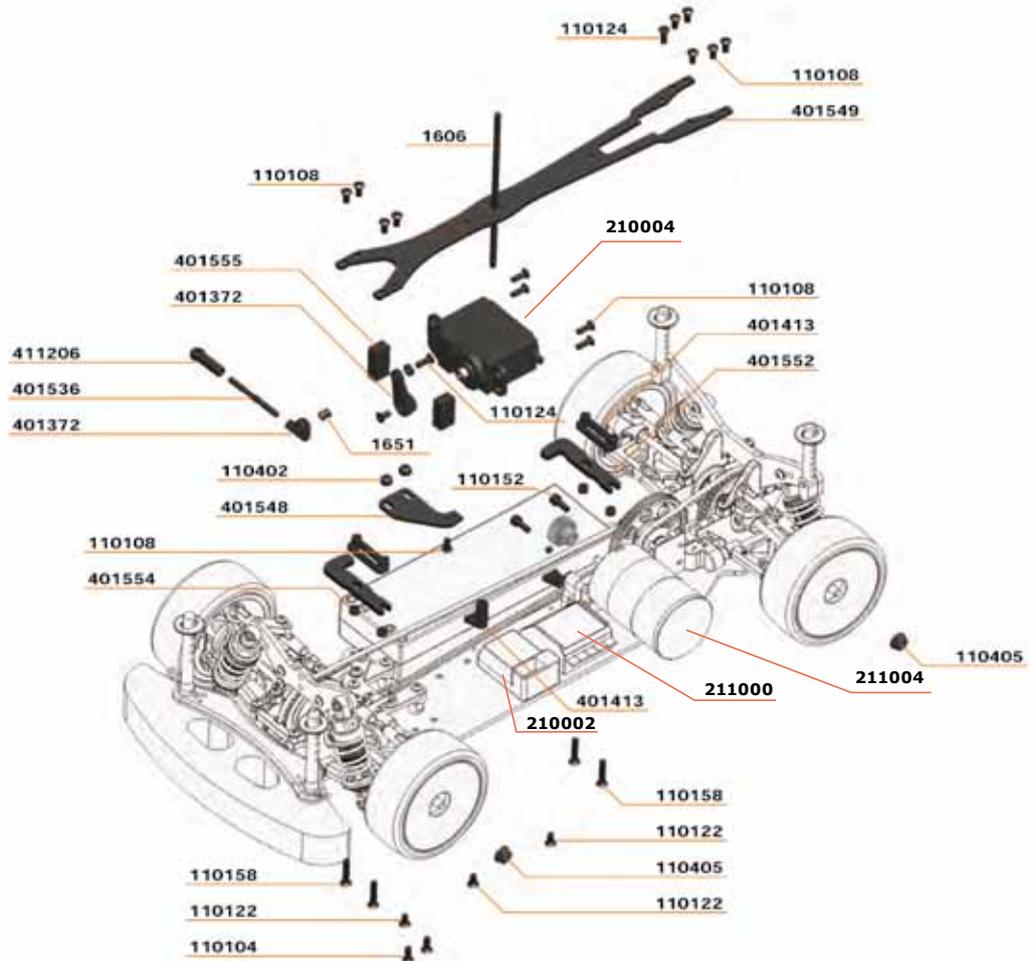
- 160297 Spring grey TC
- 160298 Spring black TC
- 160299 Spring green TC
- 160300 Spring white
- 160301 Spring yellow (std)
- 160302 Spring orange (std)
- 160303 Spring red

#160114 - Shockset RCM on-road plastic short (2)

TOWER / BUMPER MOUNTING



FINAL ASSEMBLY



س٤١١١ RTR



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