

Arrow Shark

TS760A Gas Car Starter

Owner Manual

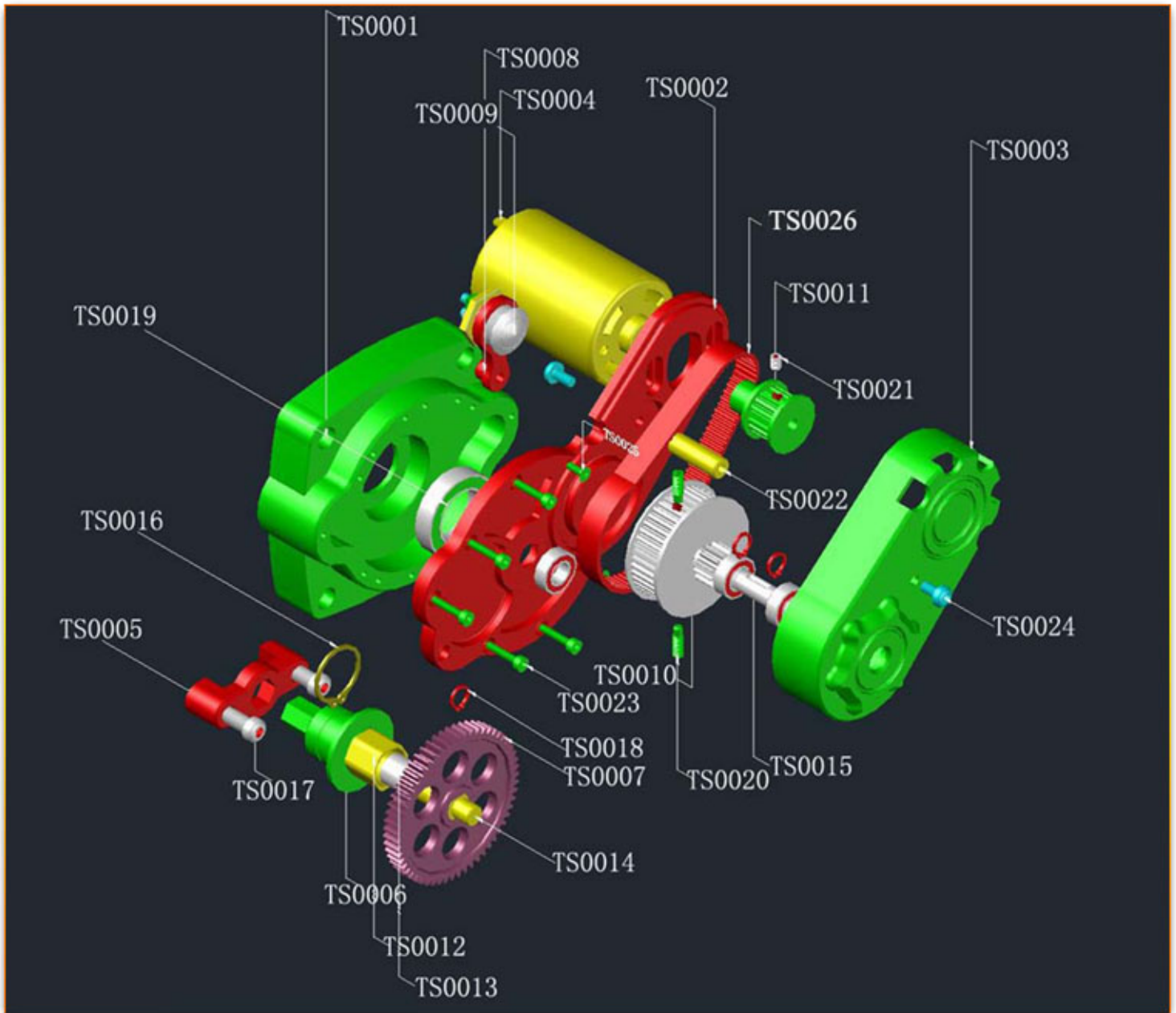


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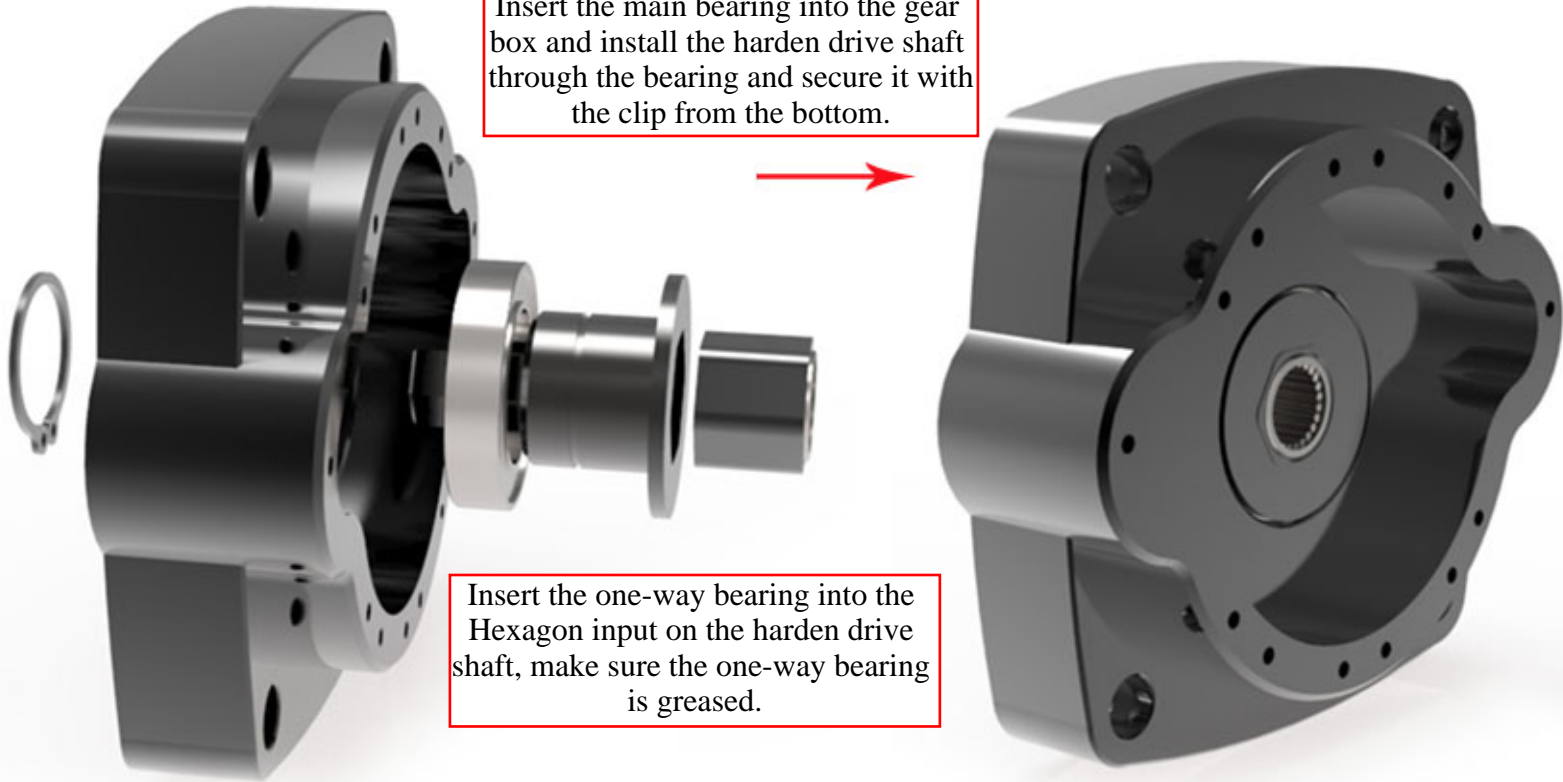
Part List



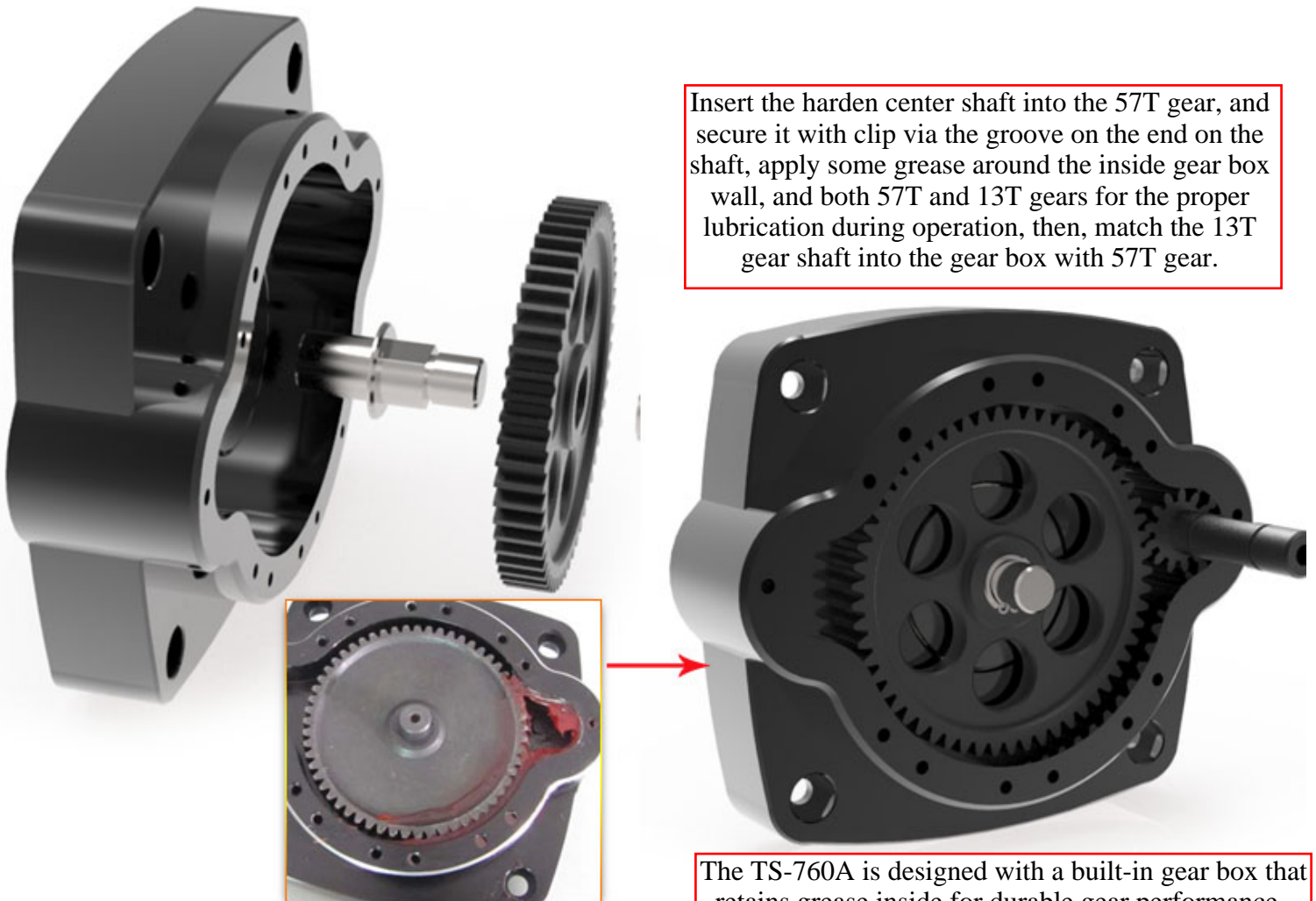
Part List	Description	Part List	Description
TS0001	CNC Main Body	TS0014	Main Gear Center Shaft
TS0002	CNC Main Body Cover	TS0015	13T Shaft Gear
TS0003	CNC Belt Wheel Cover	TS0016	Main Shaft Clip
TS0004	760 Series High Torque Motor	TS0017	Flywheel Adaptor Bolts x 2
TS0005	Hardened Flywheel Adaptor	TS0018	Shaft clip x 3
TS0006	Hardened Drive Shaft	TS0019	Center Main Bearing
TS0007	57T Main Gear	TS0020	M4x12 Hex Nut x 2
TS0008	CNC Switch Adaptor	TS0021	M4x5 Hex Nut
TS0009	Alloy Polish Power Switch	TS0022	Belt Wheels Cover Spacer
TS0010	Main Belt Wheel	TS0023	M3x10 Bolts x 5
TS0011	Motor Side Belt Wheel	TS0024	Belt Wheel Cover Holding Bolt x 2
TS0012	Harden One-Way Bearing Adaptor	TS0025	M3x6 Slot Bolt x 2
TS0013	Heavy Duty One-Way Bearing	TS0026	Drive Belt

Assembly Steps of TS760A

Insert the main bearing into the gear box and install the harden drive shaft through the bearing and secure it with the clip from the bottom.



Insert the one-way bearing into the Hexagon input on the harden drive shaft, make sure the one-way bearing is greased.

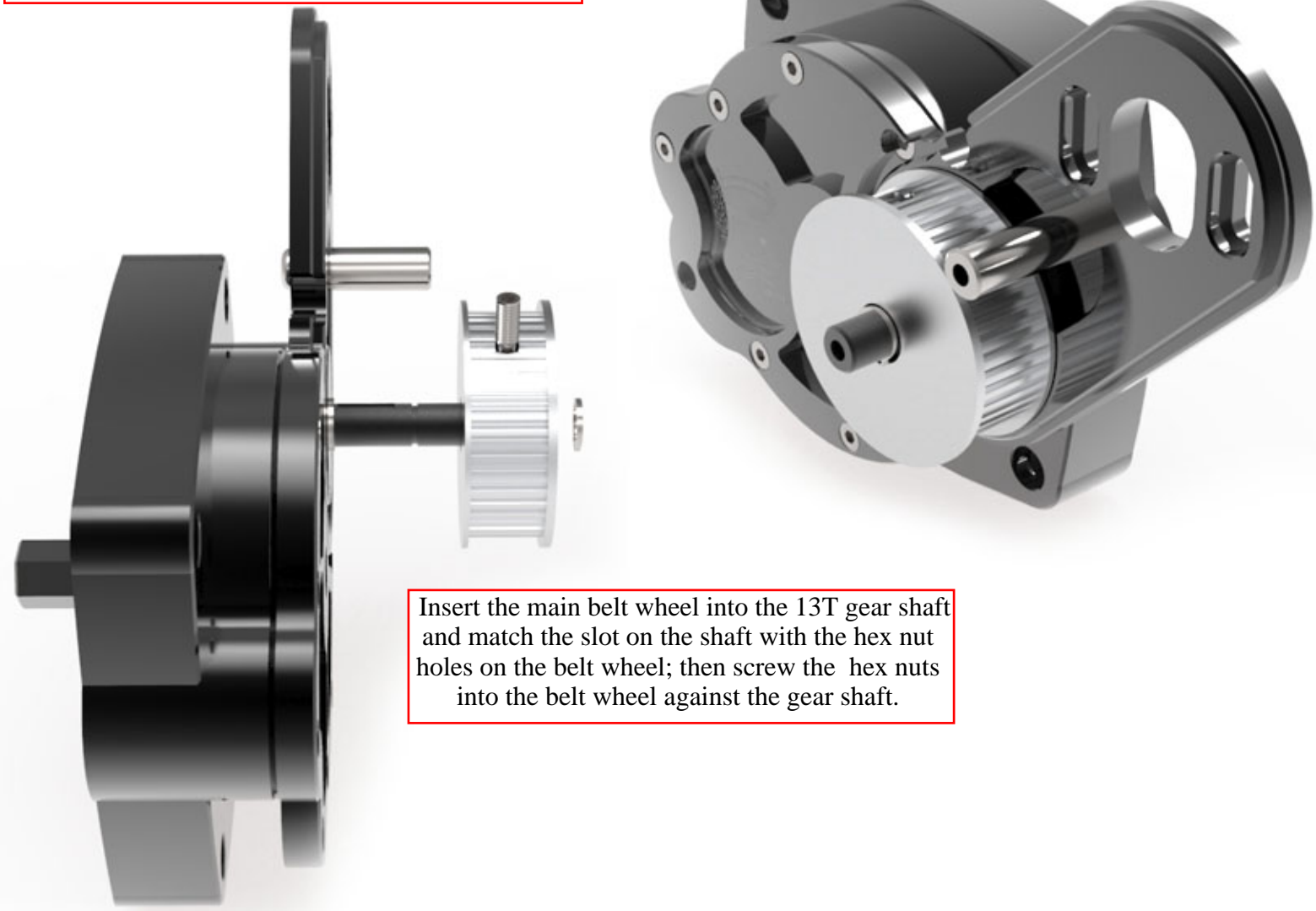


Insert the harden center shaft into the 57T gear, and secure it with clip via the groove on the end on the shaft, apply some grease around the inside gear box wall, and both 57T and 13T gears for the proper lubrication during operation, then, match the 13T gear shaft into the gear box with 57T gear.

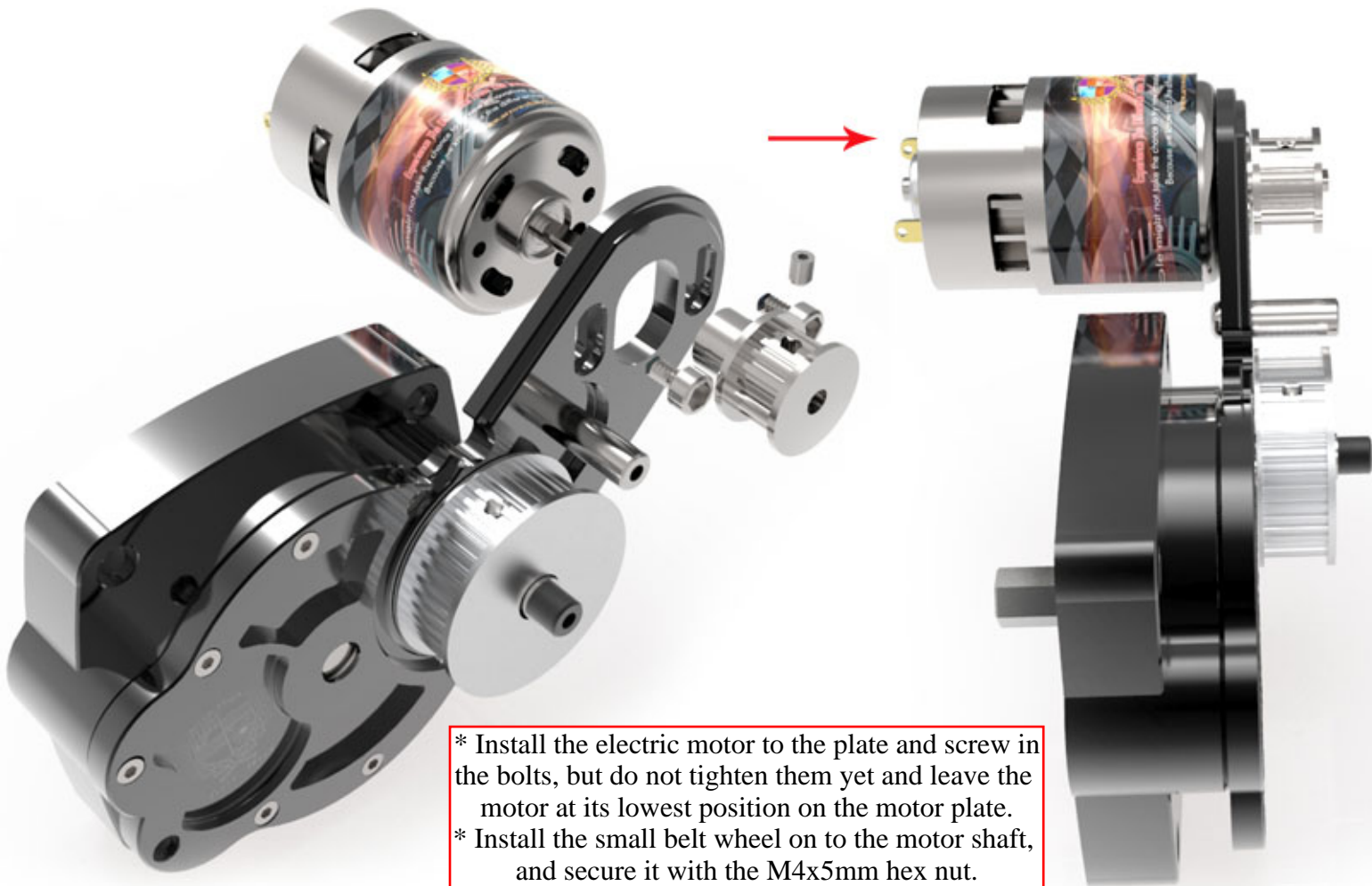
The TS-760A is designed with a built-in gear box that retains grease inside for durable gear performance. Please re-grease the main gears and the one-way bearing every 15-20 hours of TS-760A operation.



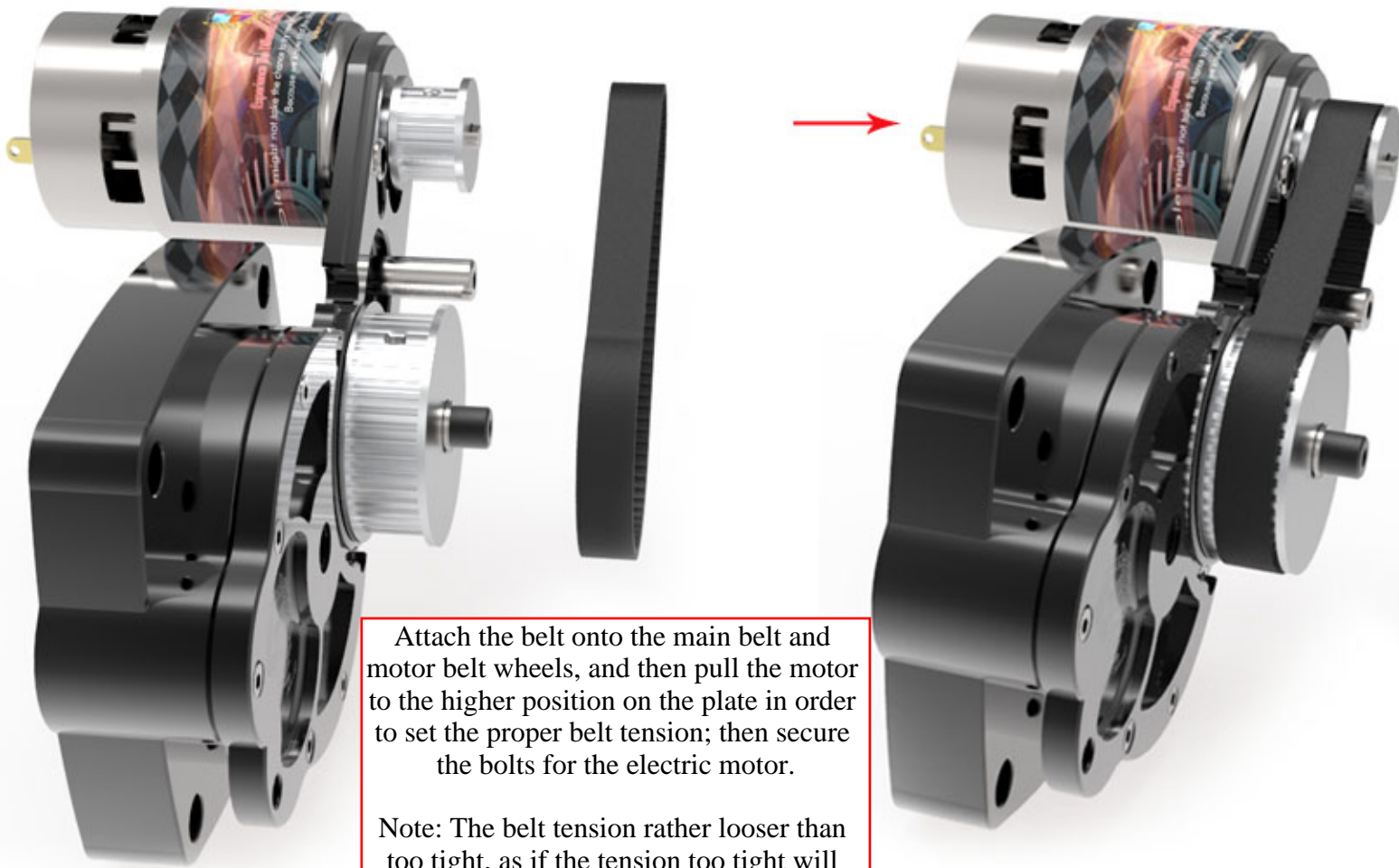
- * There are two ball bearings to be installed under the billet motor plate to support the both 13T gear shaft and center drive shaft.
- * Install the stainless steel belt cover support stand and secure it with the M4 bolt under the plate.
- * Tighten the seven M3 bolts to firmly hold the electric motor plate and gear box together.
- * Install the clip to the lower slot of 13T gear shaft.



Insert the main belt wheel into the 13T gear shaft and match the slot on the shaft with the hex nut holes on the belt wheel; then screw the hex nuts into the belt wheel against the gear shaft.

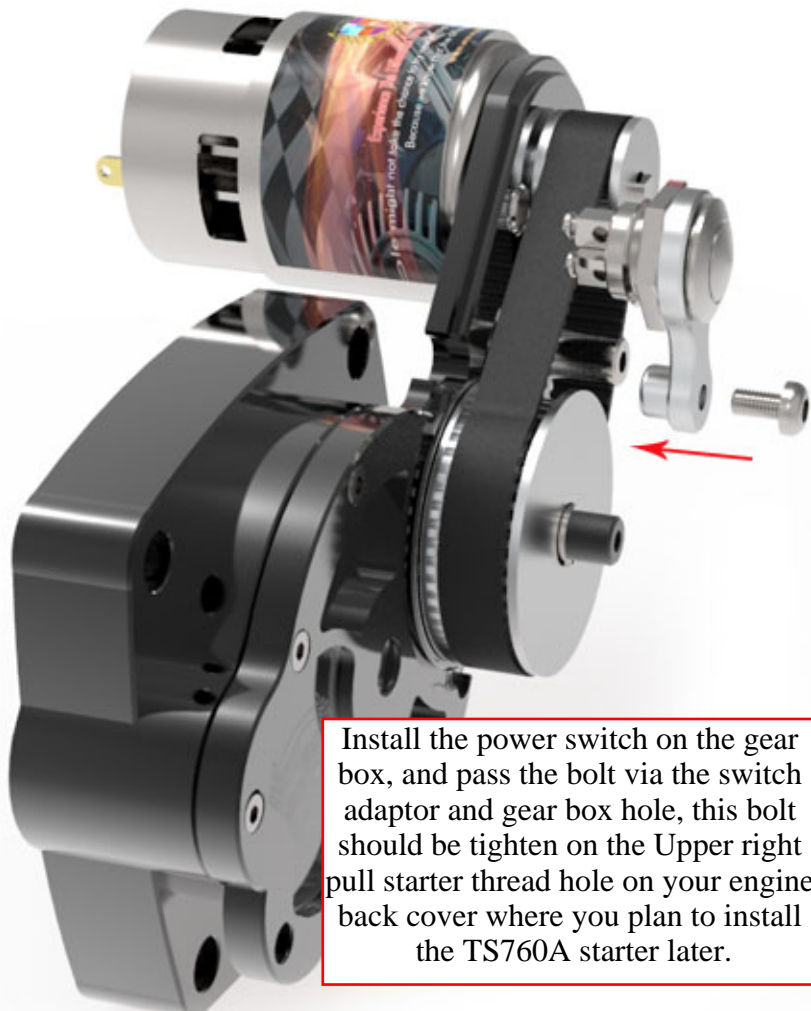


* Install the electric motor to the plate and screw in the bolts, but do not tighten them yet and leave the motor at its lowest position on the motor plate.
 * Install the small belt wheel on to the motor shaft, and secure it with the M4x5mm hex nut.

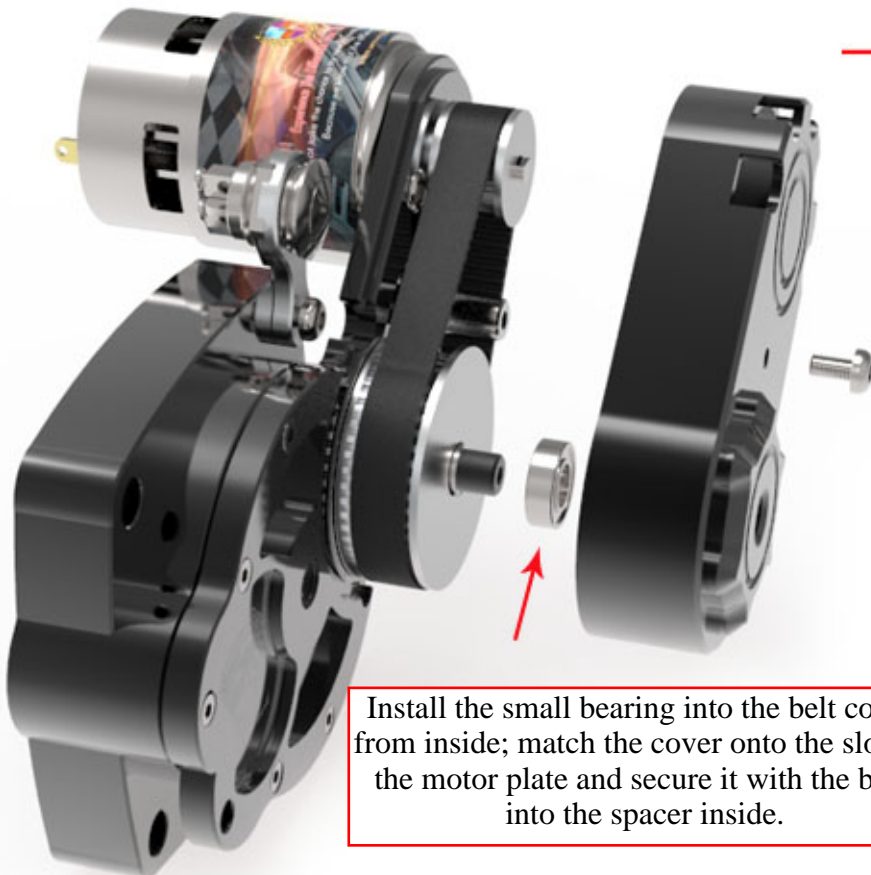
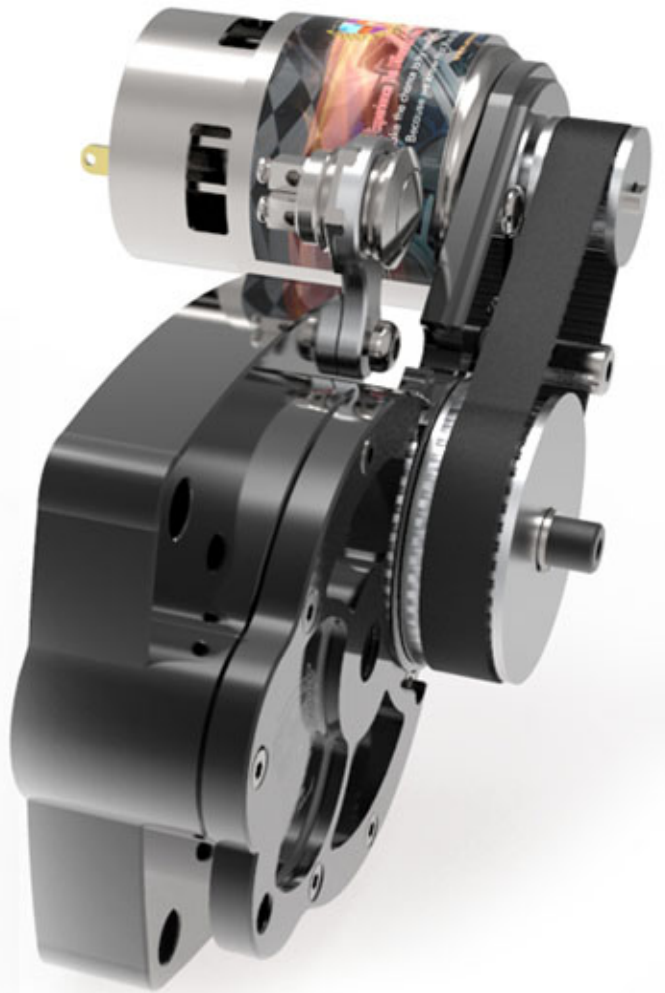


Attach the belt onto the main belt and motor belt wheels, and then pull the motor to the higher position on the plate in order to set the proper belt tension; then secure the bolts for the electric motor.

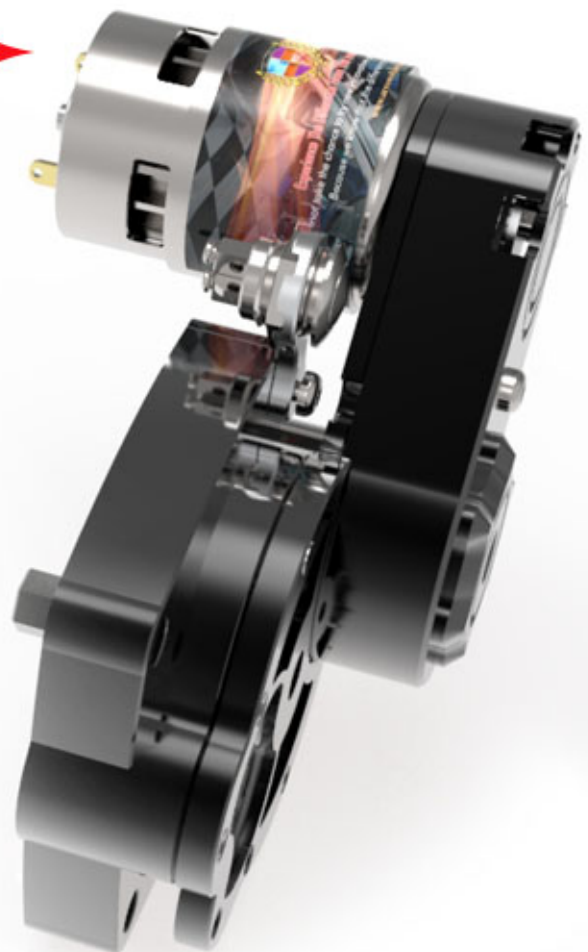
Note: The belt tension rather looser than too tight, as if the tension too tight will drag the RPM from electric motor and make the starter harder to start your engine.



Install the power switch on the gear box, and pass the bolt via the switch adaptor and gear box hole, this bolt should be tighten on the Upper right pull starter thread hole on your engine back cover where you plan to install the TS760A starter later.



Install the small bearing into the belt cover from inside; match the cover onto the slot on the motor plate and secure it with the bolt into the spacer inside.



Congratulations! You have now completed the assembly of the TS-760A which you can directly bolt onto your gas car engine.

Fitting the TS-760A to Baja 5B

The TS-760A E-Starter can be directly bolted on to HPI, Rovani, KM 5B, 5CS and 5T without any modification. It is easier to fit it on a 5B without a body cover, although it can still be installed with a small modification cut on the cover - please see the pictures below for comparisons of installation with and without a body cover.



Note: We suggest covering the holes on the cooling fan area of the electric motor if you fit the TS-760A on a 5B type Baja. This is because, on the 5B, the electric motor is exposed outside the vehicle without any body-cover on it, and so it might get stone chips into the electric motor via the fan area holes which could damage the motor. Covering the holes would better protect the motor. The motor is operated for only a few seconds at a time so even with the fan holes covered the motor will not overheat.



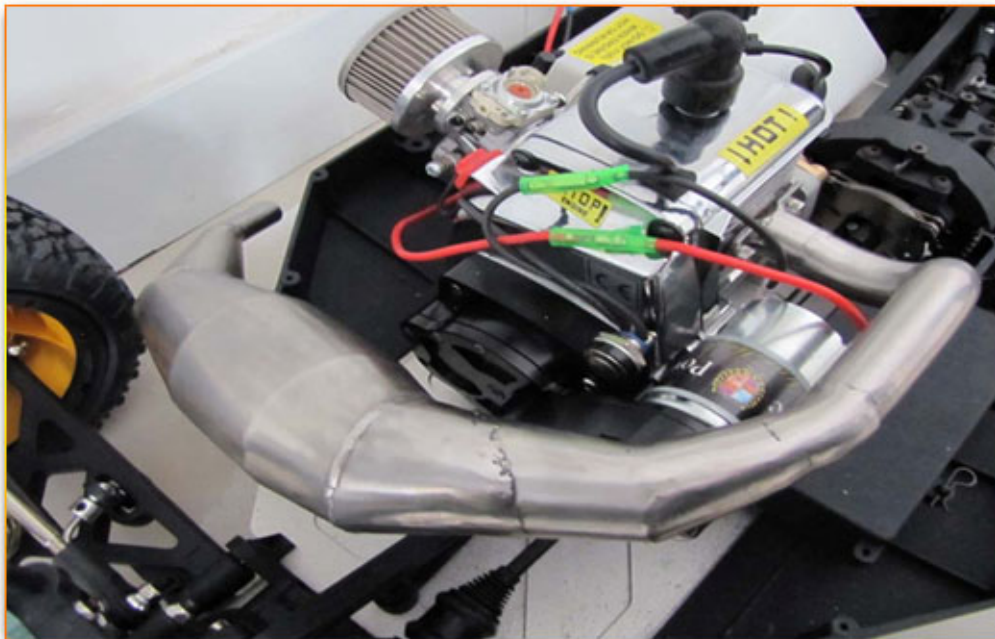
Fitting TS-760A to Losi 5IVE-T

Fitting with stock muffler

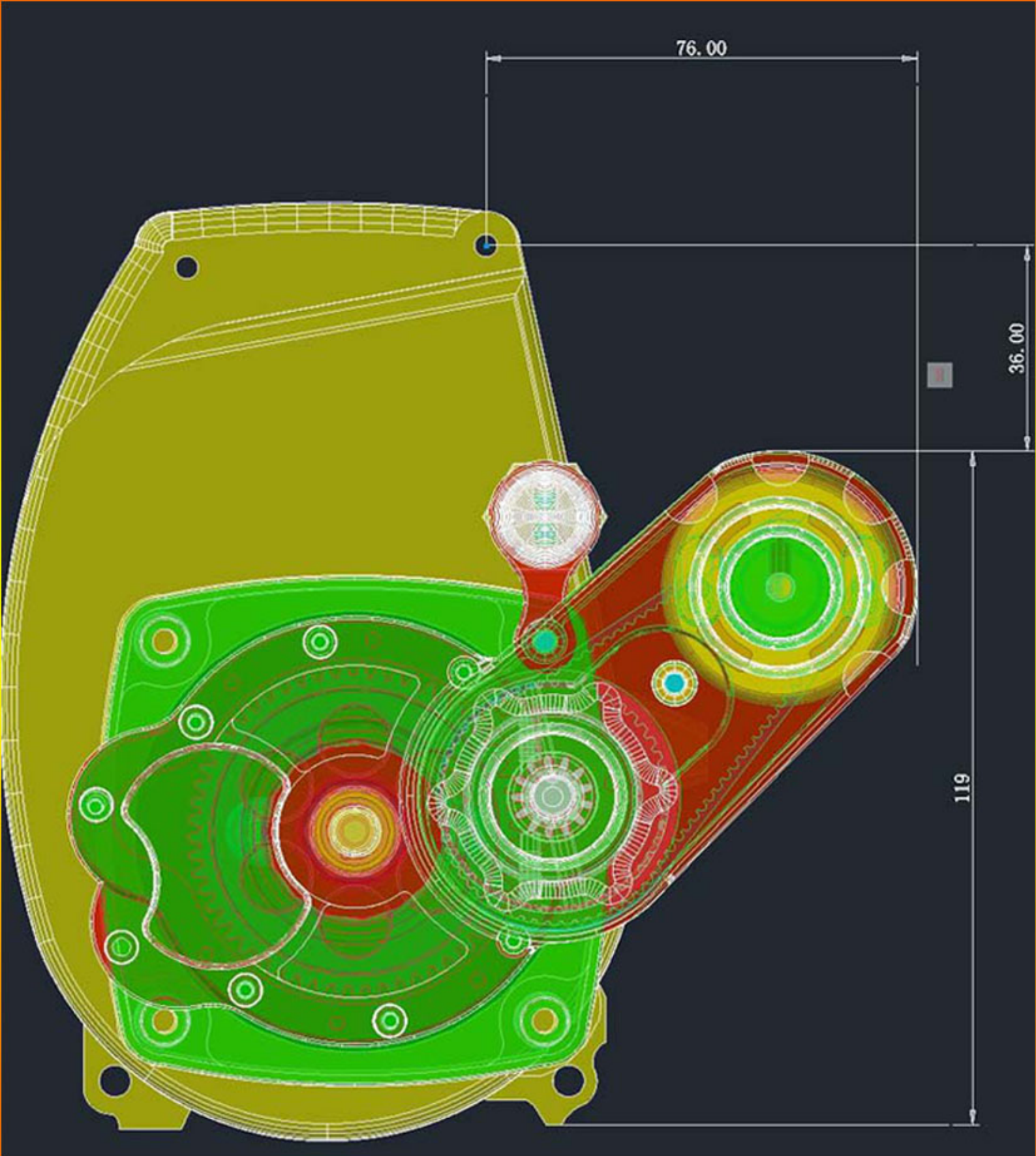


If you install a TS-760A E-Starter to a Losi 5IVE-T off-road truck fitted with a stock muffler, you will need to bend one of the wire connections on the electric motor at a 90 degree angle to avoid contact with the muffler - as shown in the picture above.

Fitting with modified power tuned pipe

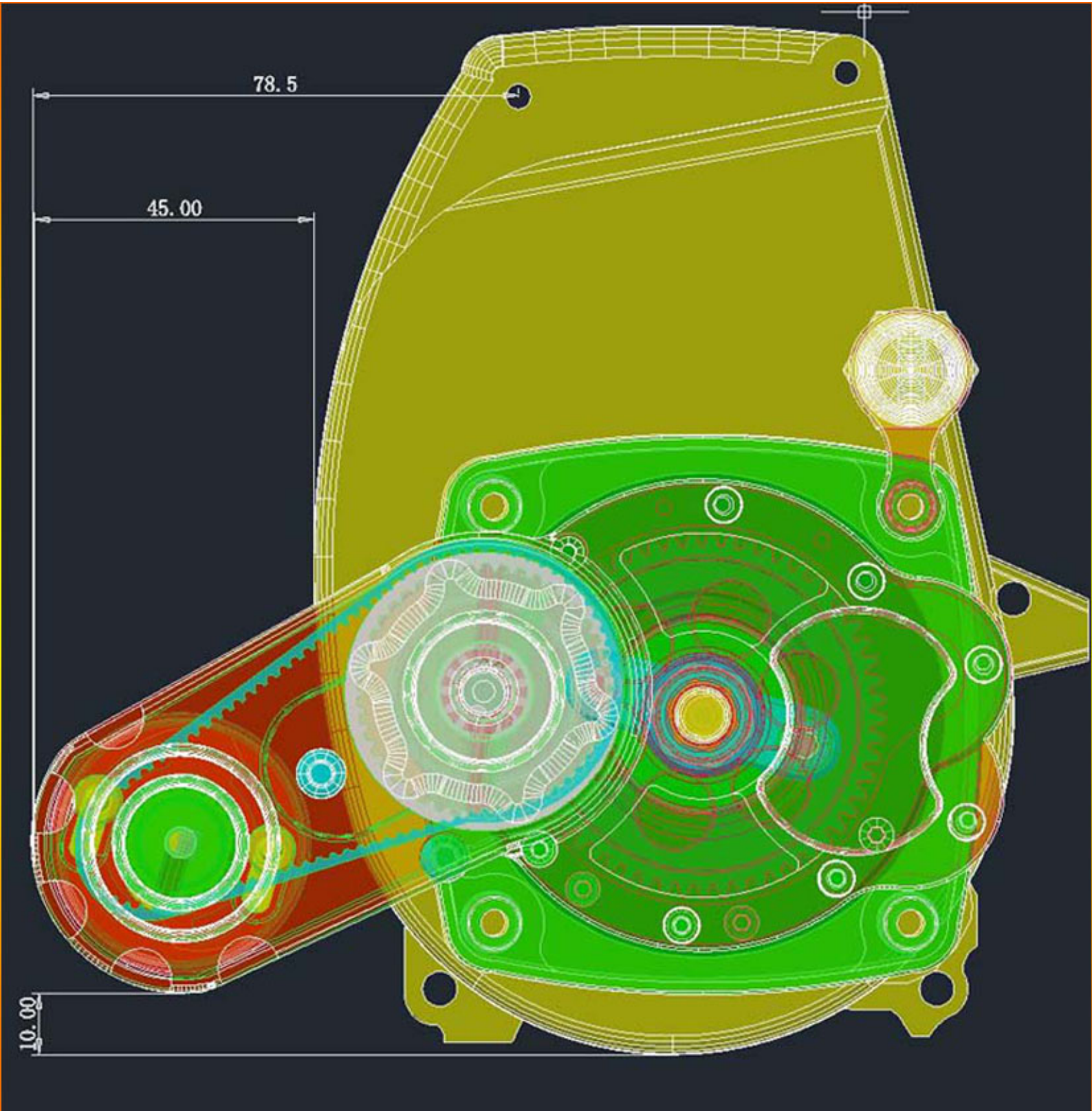


If you plan to fit the TS-760A to a Losi 5IVE-T modified with a power tuned pipe, please check the dimensions below. Make sure that you have sufficient clearance space between the tuned pipe and the TS-760. (The measurements in the picture below are in mm; 1mm=0.039 inch.)



Motor Down Installation Guide

The TS-760A is designed to be installed in either an electric motor up or down version. In most cases, you will use the “motor up” version which we have set up as the stock version. This will fit most of the gas cars that are currently available in the market. However, you can also install it in the “motor down” version if required by your application. The following dimensions guide will assist you to determine which is best for your car.

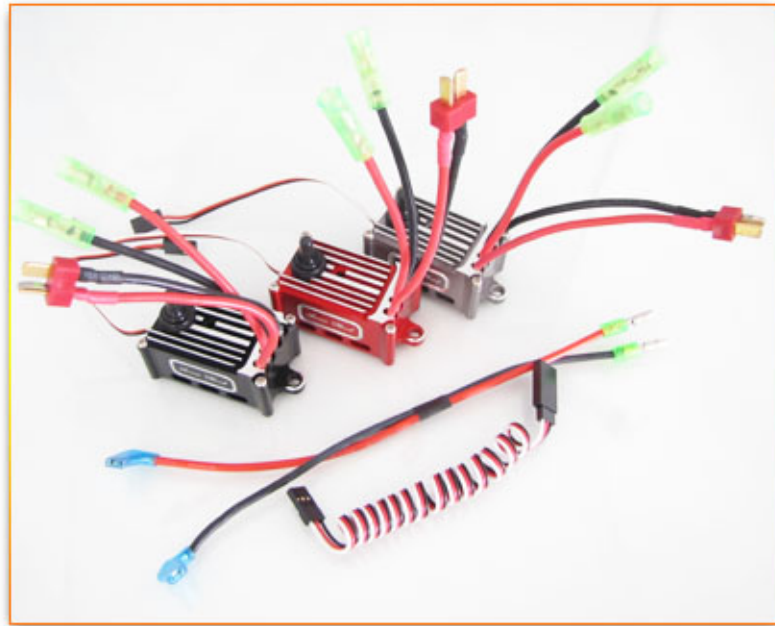


Power Connections

Button Power Switch



R-One Control Device



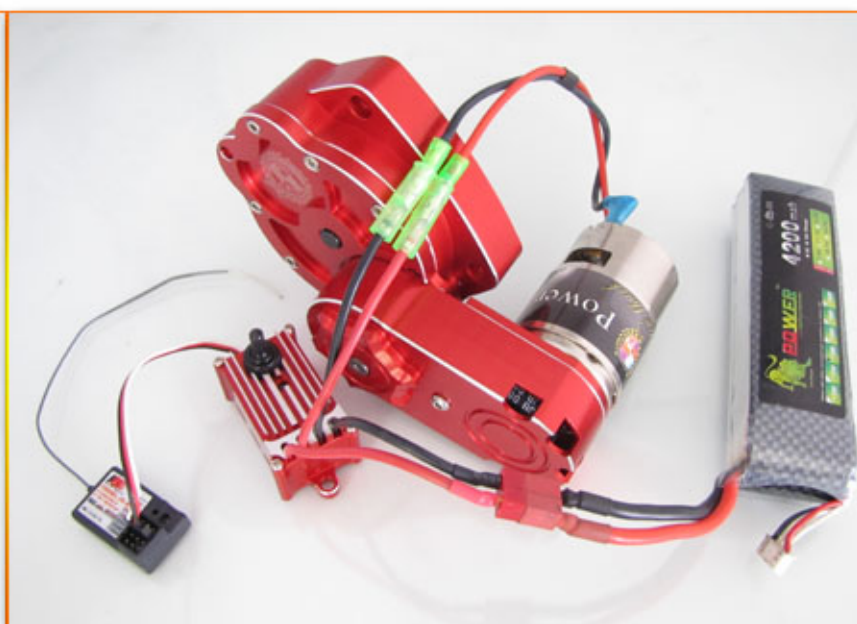
The TS760A comes with optional of R-One control device and “Press-On” power switch, The R-One device is designed to be fully water-proof and will continue to function even when sinking underwater, so there is no worry that the device will be damaged when running your gas car wet by any splashes of water. Also the R-One will supply 5.2V power divide from the LIPO battery for your radio system. You do not need a separate battery for that. Simply turn on the power switch of the R-One and your receiver and servos will be powered from the LIPO battery. The R-One device will accept the LIPO battery up to 3S (11.1V).

The ‘Press-On’ switch that comes with the TS-760A kit is of polished alloy and is complete with pre-welded wires. A single press is all you need to start your engine. This one-press switch approach has the big advantage of not requiring a three channel RC system as it does when equips with R-one device. Our long established E-Starter for boats necessarily uses third-channel operation to re-start boats that have stopped out on the water. Cars can usually be retrieved and re-started no matter where they might stop.

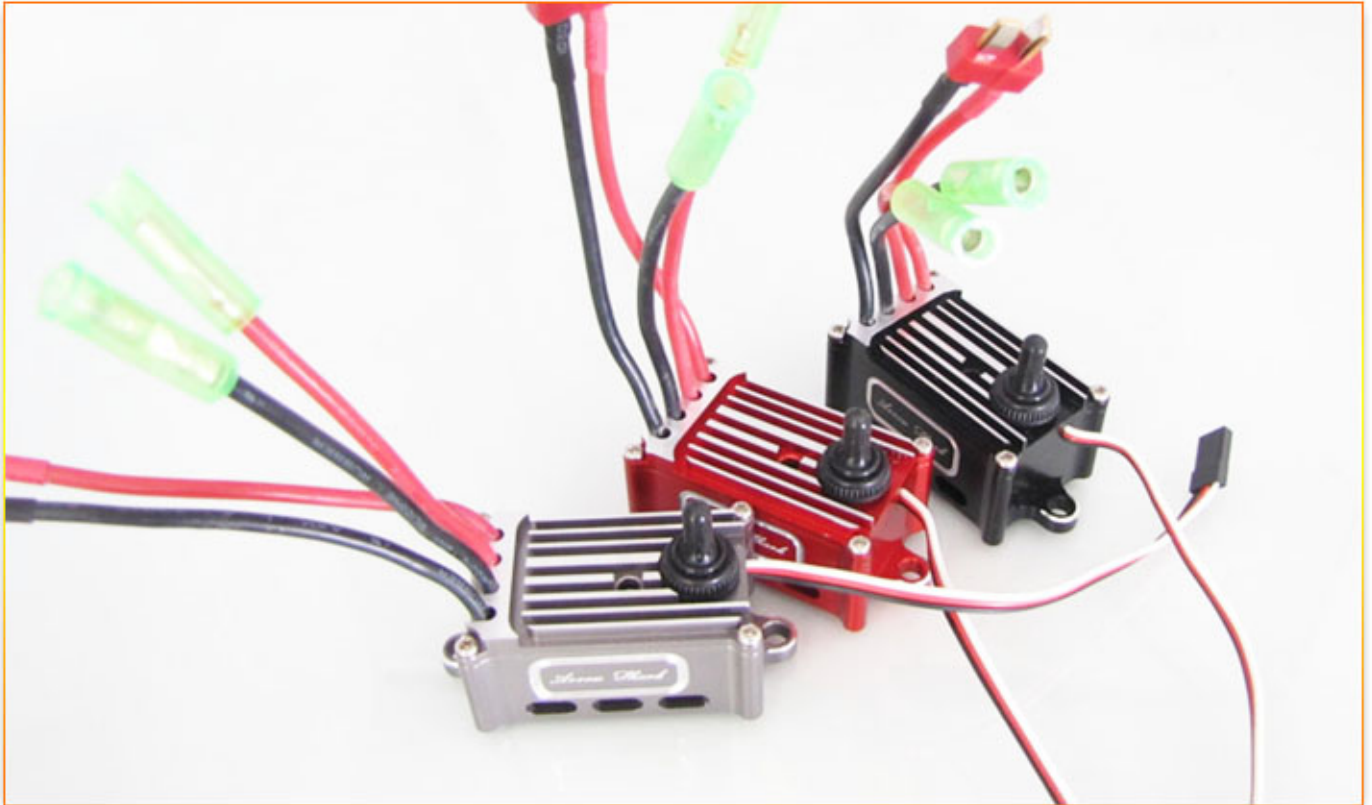
Button Switch Wire Connection Guide



R-One Control Device Wire Connection Guide

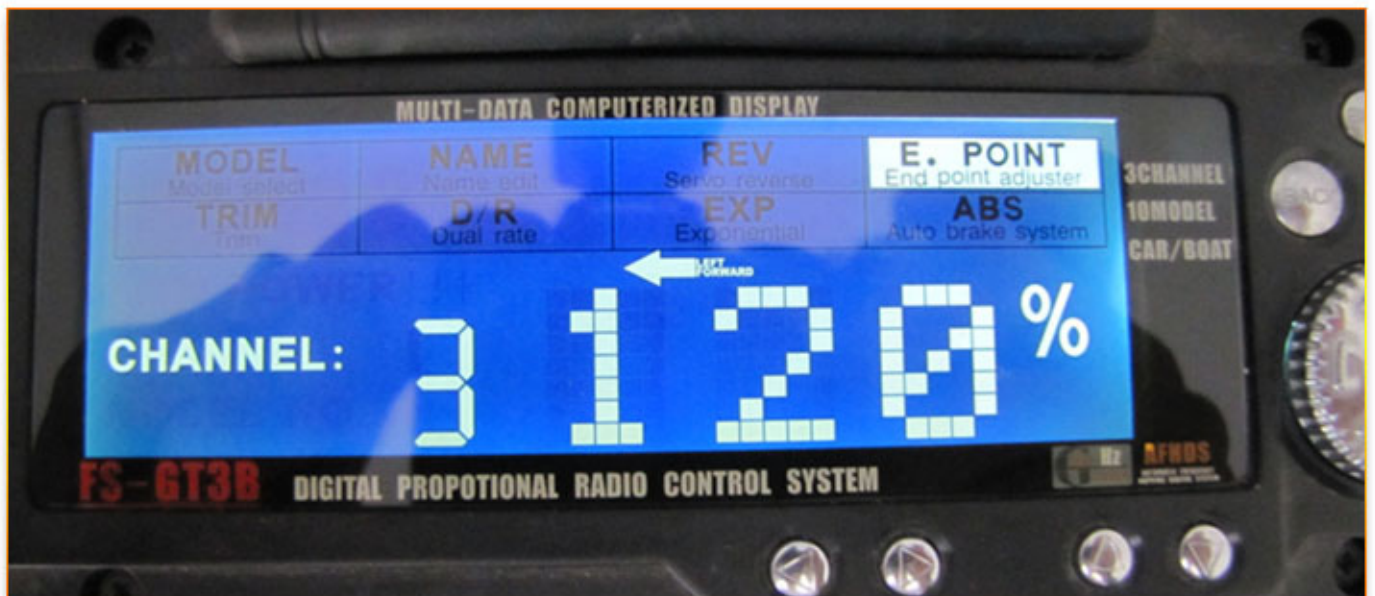


Transmitter Set Up



In order to use the R-One remote device correctly for your TS760A kit, you will first need to set up the third channel on your transmitter correctly. Please follow the instructions below for the correct setting.

“Left Forward” Setting



Go to the “End Point Adjustment” (EPA) in your transmitter, and select the Third Channel. Adjust the “Left Forward” to the top percentage available in your transmitter - usually 100% or 120%. This will determine the RPM for the electric motor in the E-Starter kit when you click on the third channel switch to start your engine. If you feel the RPM is too high, you can set it at lower percentage such as 80% or 90% to obtain the optimum RPM to start your engine.

“Right Forward” Setting

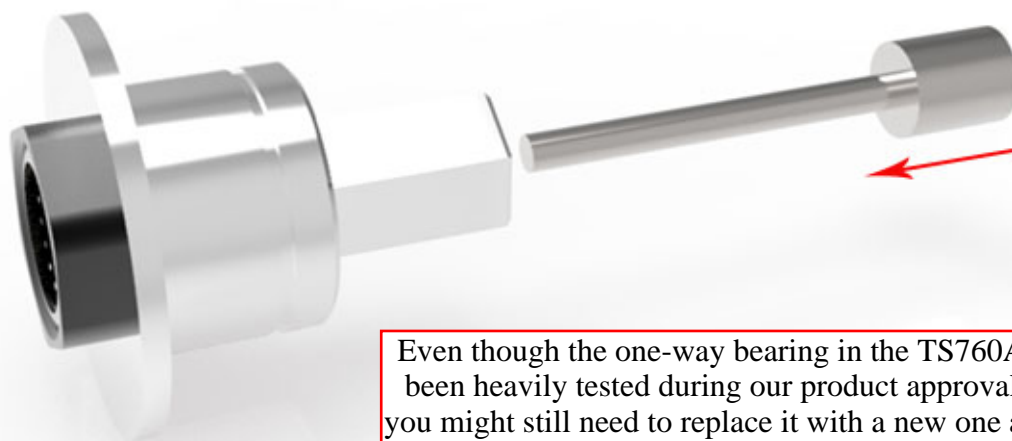


After you set the “Left Forward” correctly for the Third Channel on the “End Point Adjustment”, then click on the third channel switch to move the radio to the “Right Forward” setting. Adjust that to 0% which will enable you to turn off the R-One device when your gas engine is started. If this rate is set at any higher than 0%, when you turn off the third channel switch the electric motor will spin counter-rotation which is not needed for your starter system.

Attention

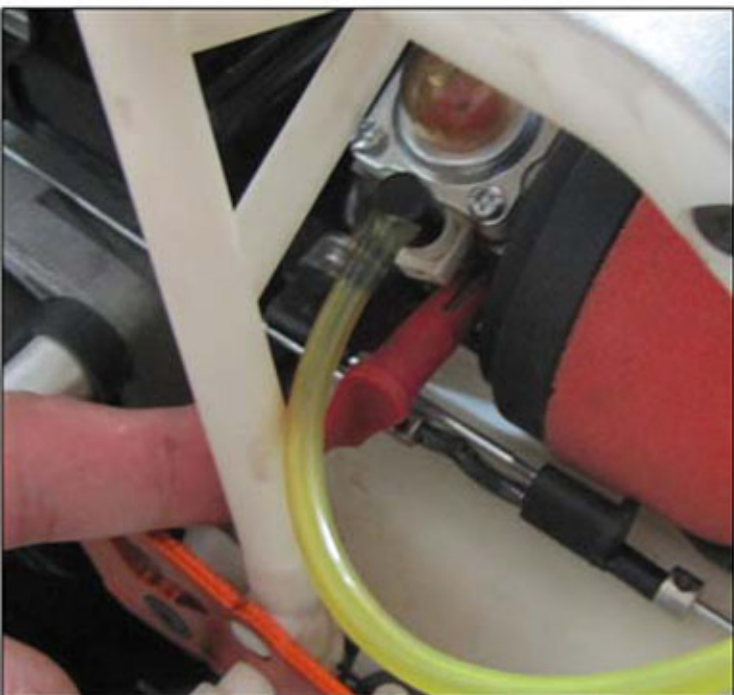
Before you connect the LIPO battery to the R-One device, make sure the Third Channel setting is at the “Turn Off” position which should be at 0% of the “Right Forward” EPA setting. Otherwise, when you turn on the power switch of the R-One device, the electric motor will start running and you might not be ready for engine starting at that moment.

Changing the One-Way Bearing



Even though the one-way bearing in the TS760A Starter has been heavily tested during our product approval procedure, you might still need to replace it with a new one after extended use. To do this, you need to insert a 3 - 3.5mm diameter steel rod into the center drive shaft as shown in the above picture. Then gently use a hammer to hit on the steel rod until the one-way bearing adaptor comes out. Install a new bearing;

Starting a Cold Engine



After all the wire connections have been correctly set up, you are ready to start your engine. Before doing so, ensure the low and high speed mixture needles are adjusted to the factory recommendation from your engine manufacturer. Then you will need to close the choke on your carburetor and press the primer bulb to pump the gas up from the tank. Once you see the gas flowing into the carburetor, press on the power switch for no more than 3 seconds. If you then hear the engine starting to fire, open the choke and press the power switch one more time – your engine should start.

When starting a warm engine, you don't need to close the choke; just simply press on the power switch for less than 3 seconds and the engine will start.

Why operate the starter for no more than 3 seconds each time?

This is because the peak electric current from the battery to the motor is achieved in those first few seconds; after that the peak power of the motor reduces. If the engine has not started in this time (it usually does if properly tuned), pause for a few seconds before trying again – for up to another three seconds. That pause allows the battery to again deliver its maximum current for the motor to achieve its highest performance. If the engine is warm, you will need only one second to start it.

Trouble Shooting

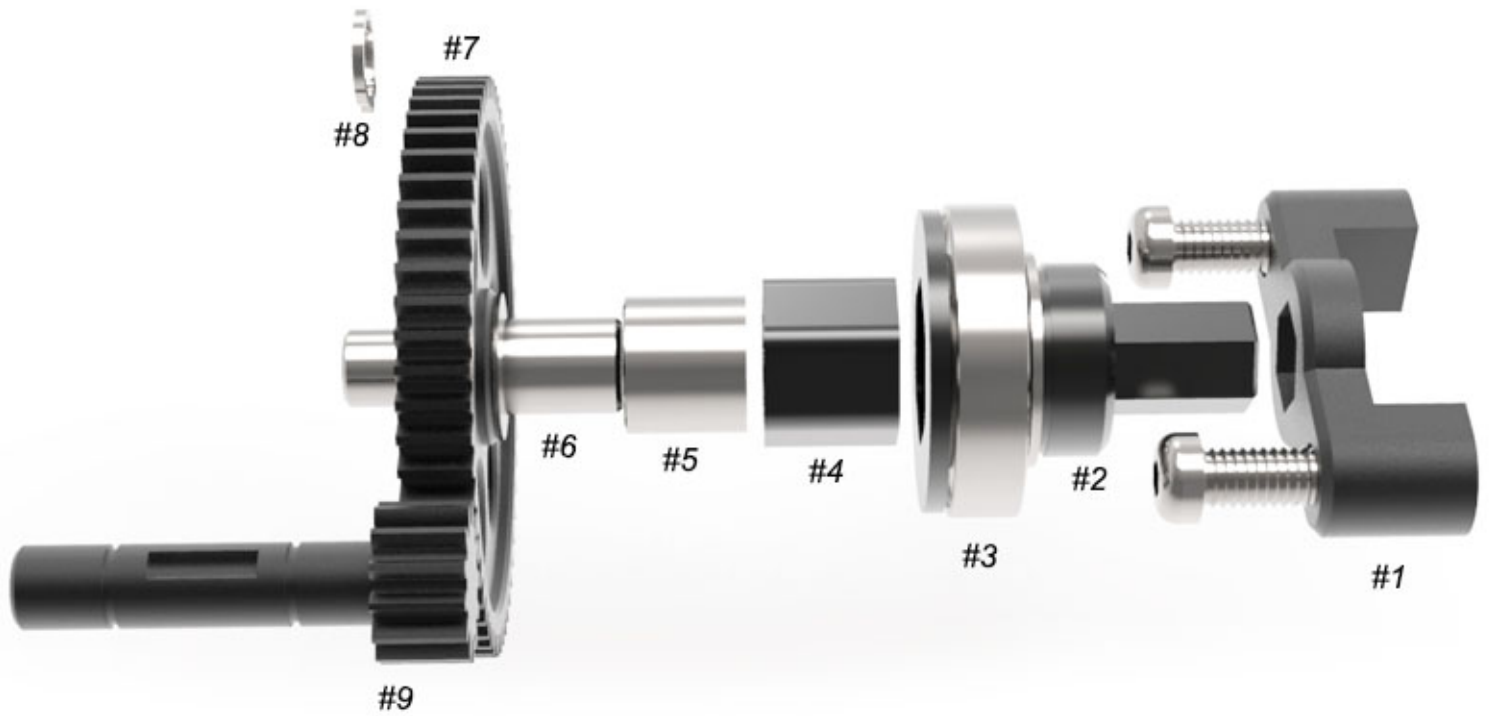
* If gas has been flowing into the engine yet it does not start, it might have flooded with too much gas inside. If this happens, remove the spark plug and hold a rag over the spark plug hole. Turn on the starter for 5 to 10 seconds to pump out the extra gas from inside of the cylinder. Then re-install the spark plug and try again.

* Sometime when you connect the battery to R-One device and turn on the switch on R-One, the TS760A starter will start to run right away, even though you haven't ready to turn on the switch on third channel of the transmitter.

This happening is because every time when you turn on your transmitter, the third channel switch is always on "left forward" position which is the "on" position for your starter kit, that is why, as soon as you connect the battery to R-One, the electric motor starts to run.

Solution: Before you connect the LIPO battery to R-one, turn on your transmitter first, and press on the third channel switch once that will switch it to "right forward" which is "off" position for the starter kit, then, connect the LIPO battery to R-One, this will solve the issue.

Gears & Drive Shafts Assembly Guide



#1: Flywheel Adaptor & Bolts: This must be bolted to the flywheel on your gas engine as shown in the picture above; apply a small amount of Loctite on the bolts.

#2: Center Main Shaft: This is the hardened drive shaft; the front hexagon shaft part should insert into the flywheel adaptor when in operation.

#3: Main Center Bearing: This helps the center main shaft performance and reduces torque on one-way bearing.

#4: Hardened One-Way Bearing Adaptor: This holds the one-way bearing in place, and inserts it into the center drive shaft for operation.

#5: Heavy Duty One Way Bearing: This is a high-quality one-way bearing which has been tested up to 100 times without failure; the one-way bearing requires re-greasing every 15 hours of usage.

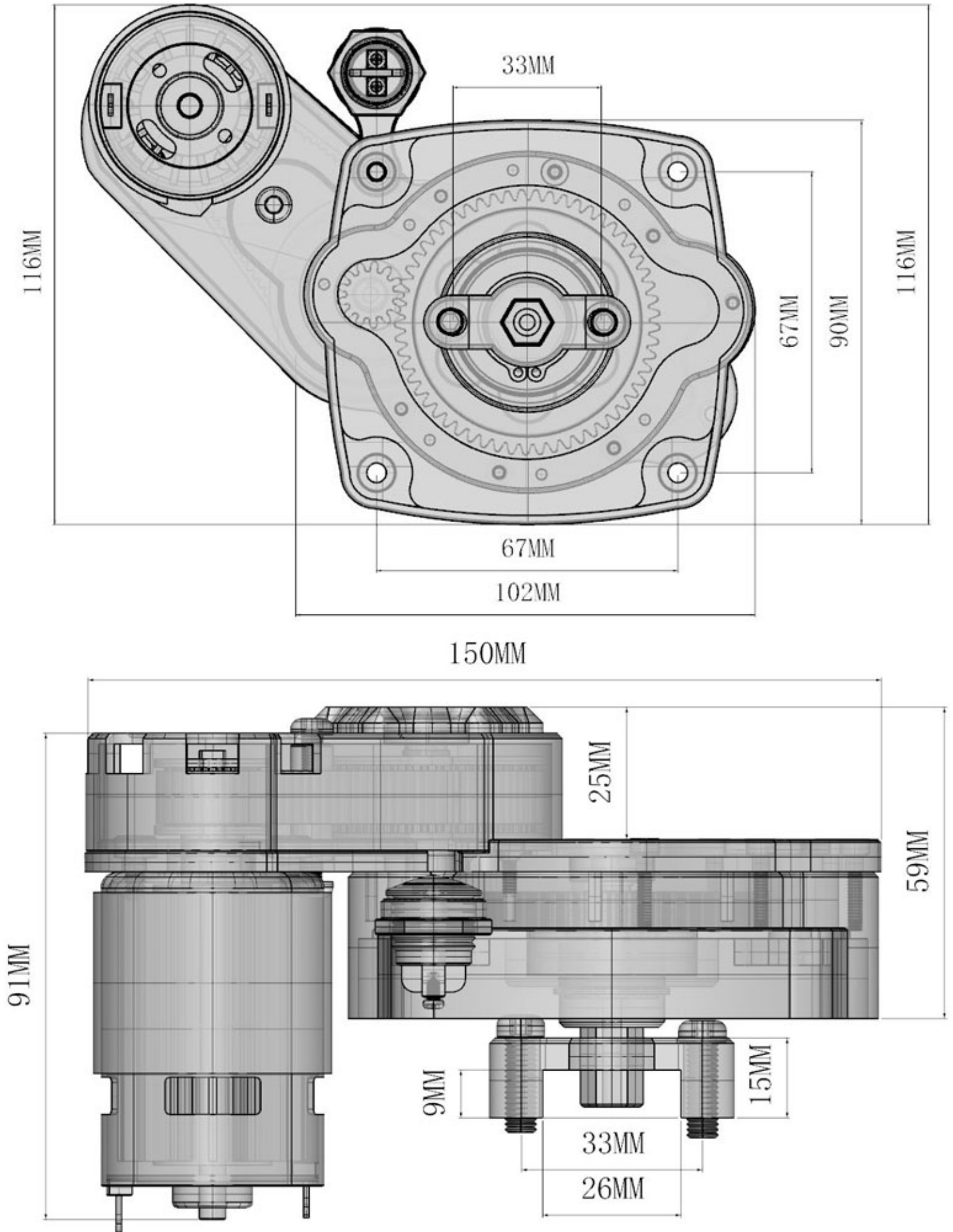
#6: Center Gear Shaft: This is the hardened drive shaft that holds the main gear, and goes into the one-way bearing for operation,

#7: Harden 57T Main Gear: This requires re-greasing every 15 hours of usage.

#8: M8 Clip: This holds the main gear in place.

#9: 13T gear shaft: This hardened shaft gear works with the 57T main gear.

Dimension Guide





Arrow Shark
RC Marine

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ENJOY THE HIGH-END ELEGANT LIFE, FALL IN LOVE WITH THE TRUE SELF



There is no Best, only Better!