

Arrow Shark
TS760-Hybrid Power Kit
Owner Manual



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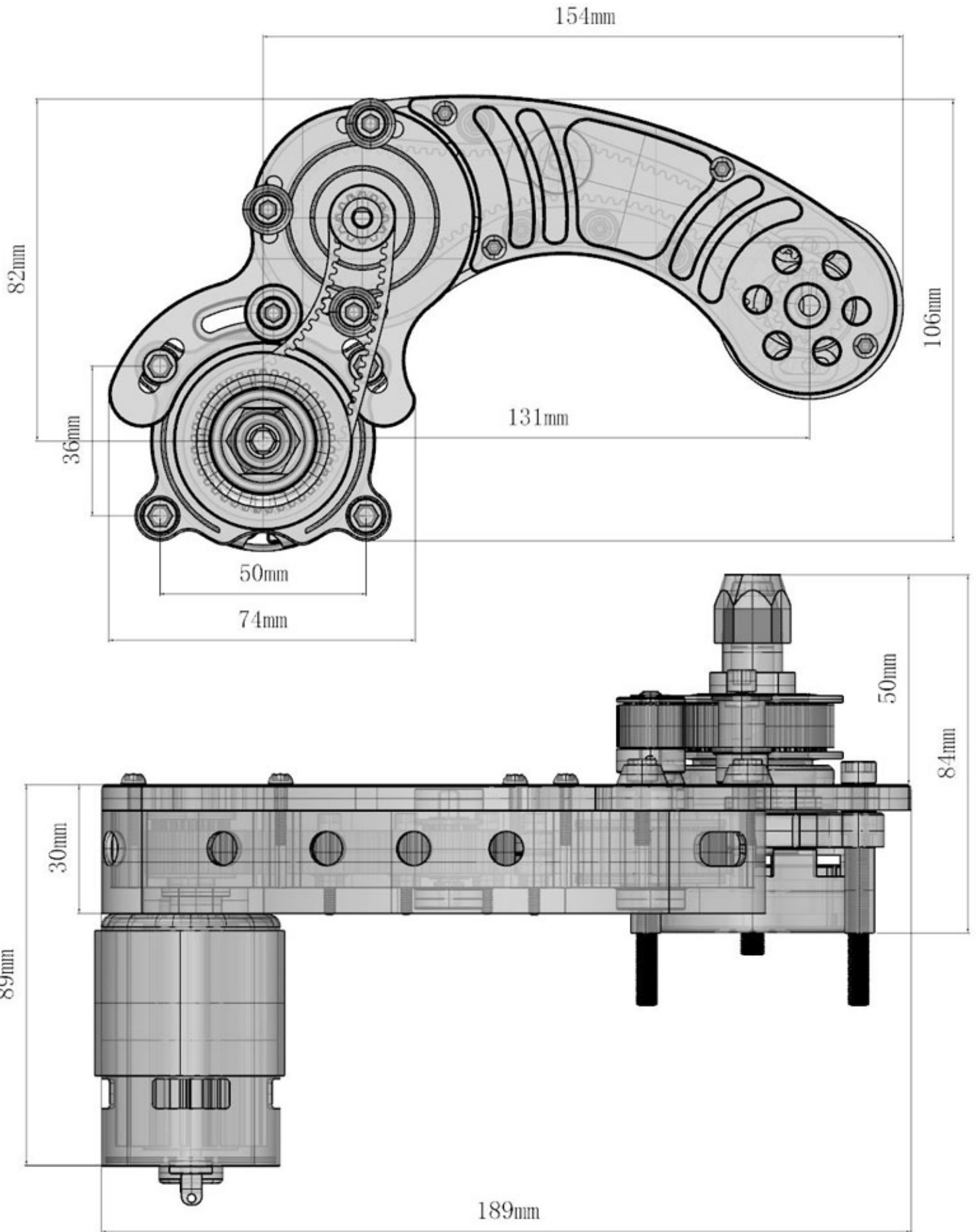
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Part List



Hybrid0001	CNC Belt Housing	Hybrid0011	M4x12 Bolt & Washerx3
Hybrid0002	Housing Cover Plate	Hybrid0012	One way bearing Wheel
Hybrid0003	CNC Front Drive Cover	Hybrid0013	3M15T Belt Wheel
Hybrid0004	R-One Device	Hybrid0014	3M15T Shaft Wheel
Hybrid0005	760 Series Motor	Hybrid0015	3M20T Belt Wheel
Hybrid0006	Main Drive Belt	Hybrid0016	Transfer Bearing Setx4
Hybrid0007	Front Drive Belt	Hybrid0017	M3x10 Boltsx4
Hybrid0008	One Way Bearing Shaft	Hybrid0018	M4x8 Boltsx2
Hybrid0009	Main Wheel Assembly	Hybrid0019	Receiver Extension Wire
Hybrid0010	Transfer Wheel Assembly	Hybrid0020	Power Extension Wire

Dimension Guide



Assembly Procedure

Note: All bolts in the following installation must be applied with loctite.



Install the transfer bearing sets into the CNC belt housing; make sure apply the loctite on the each bearing bolt end.



Install the 760 electric motor onto the CNC belt housing and not to tighten the bolts at this time.



Install the 3M20T belt wheel onto the electric motor shaft, and tighten the hex nut from the side hole of the CNC belt housing as shown from the picture above.



Apply the grease into the one way bearing wheel, make sure the grease is evenly distributing into the wall of the one way bearing.



Insert the one way bearing shaft into the bearing, and rotate it for few rounds in order to make the grease hiding between needles inside the one way bearing.



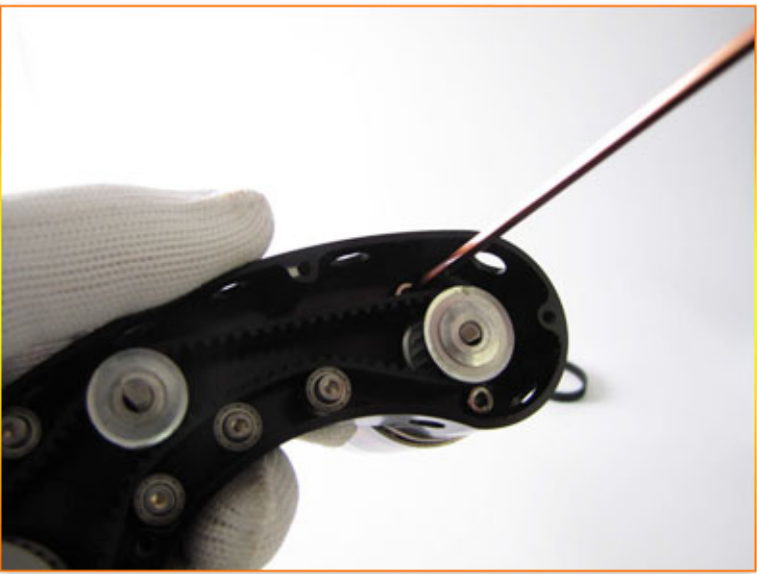
Install the one way bearing wheel into the CNC belt housing. (Please make sure the belt wheel has correct side up, when you turn the one way bearing shaft forward, the wheel must spin with the shaft.)



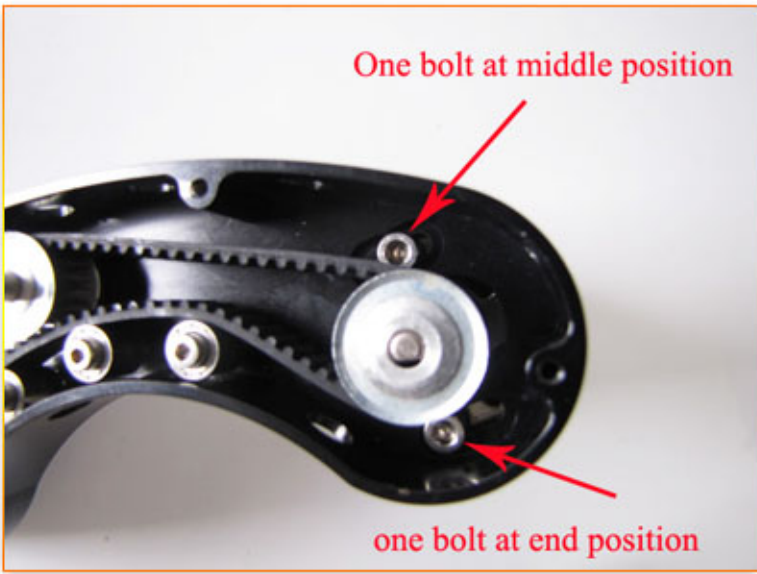
Install the shaft belt wheel into the CNC belt housing.



Install the main drive belt onto the wheels in the CNC belt housing and apply some grease on the back of the drive belt as shown in the picture above.



Adjust the belt tension, and tighten the bolts. Make sure the belt tension should not be too hard; otherwise, it will drag down the RPM and cause issue to electric motor.



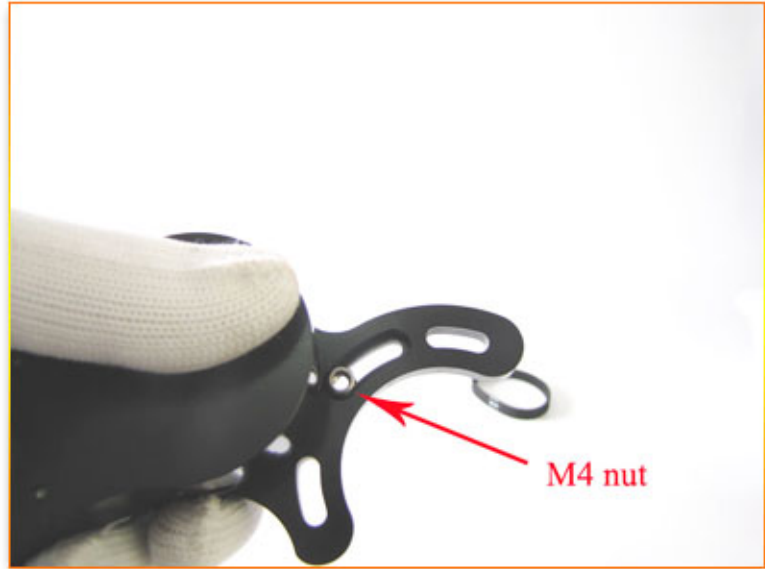
To have the proper belt tension, the electric motor bolts should be one at beginning top position, and one at middle position.



Install the plastic spacer onto the one way bearing shaft as picture shown above. Install the front drive cover onto the CNC belt housing and tighten it with M4x12 bolts and CNC washers.



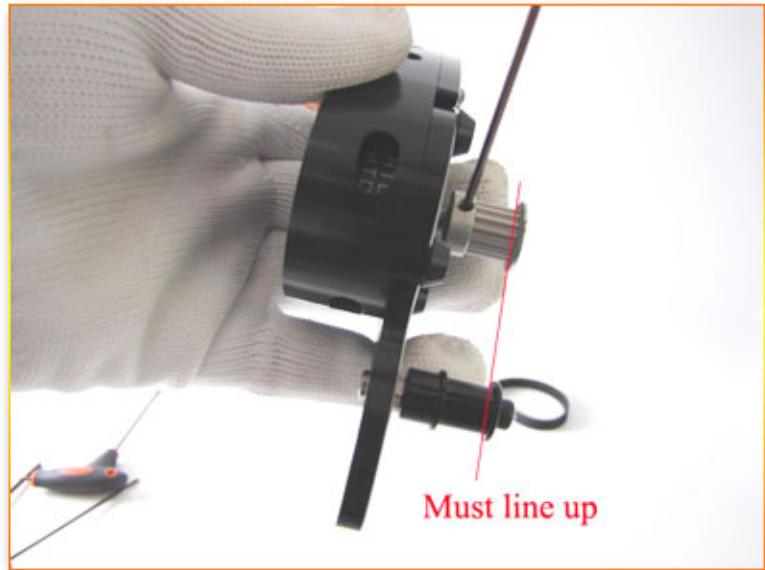
Install the belt housing cover and tighten it with M3x10 bolts.



Install a M4 nut onto the slot in the back of the front drive cover as shown in the picture above.



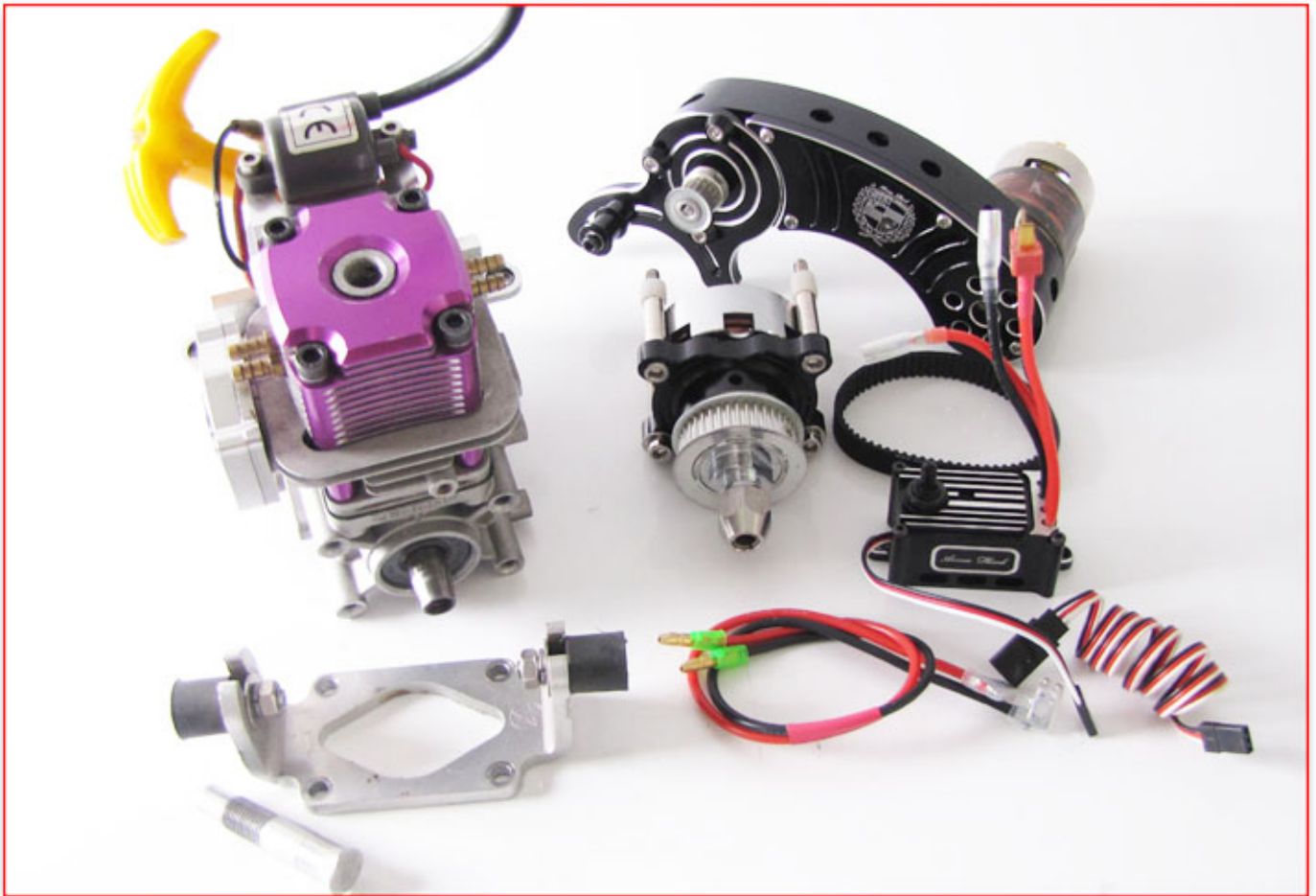
Screw the transfer wheel assembly into the M4 nut from front of the drive cover, but, not to tighten it at this moment.



Now, install the last 3M15T belt wheel onto the one way bearing shaft, and tighten the hex nut as show in the picture above.

(Make sure the belt wheel is line up with the transfer wheel assembly, so the belt could be able to run straight between these two wheels.)TS760-Hybrid Power Kit Assembly is now Completed!

Install the TS760-Hybrid Power Kit To Gas Engine



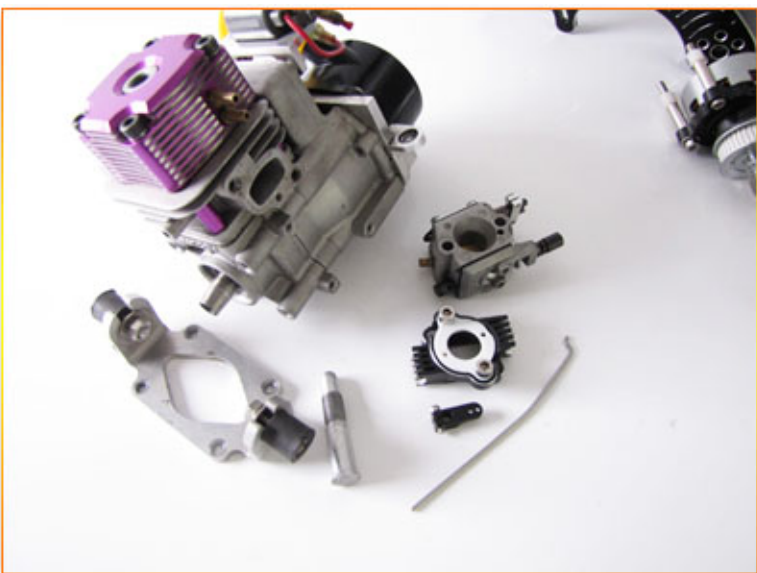
The TS760-Hybrid power kit will work with most brand of gas power marine engine available in the market, such as Arrow Shark, Zenoah, Clone Zenoah, CY, RCMK, QD etc from 23cc -30cc in both stock and modified versions, here, we take a standard Zenoah 26cc marine engine for the assembly demonstration.

Throttle Linkage Set Up

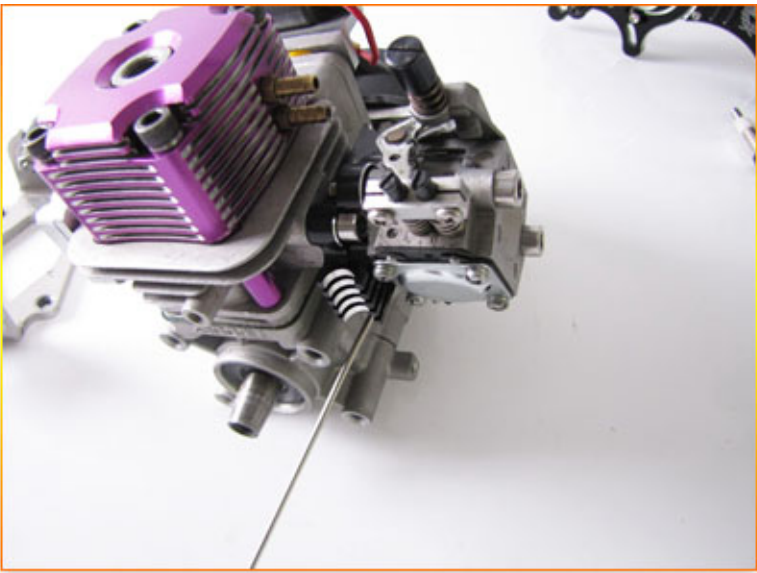
Arrow Shark Billet Rotated Carb Block



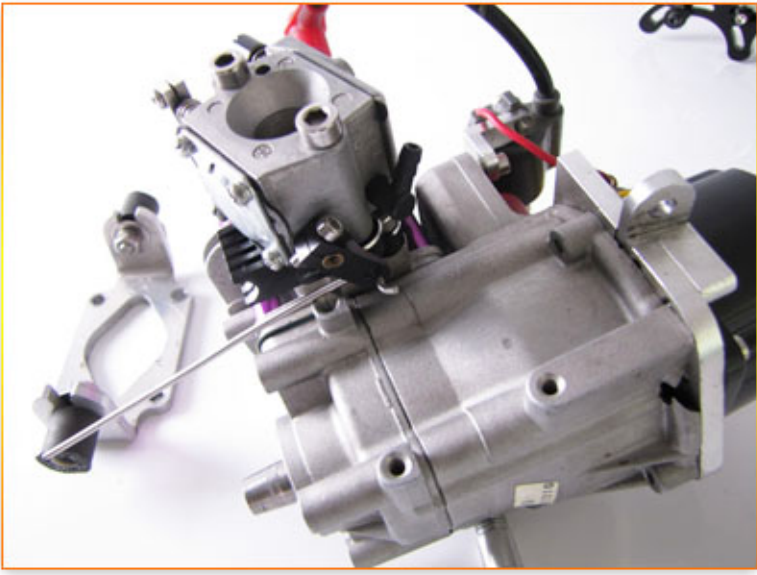
There are many difference of the throttle linkage set up for gas engines, however, we would recommend to use Arrow Shark latest rotated carburetor block for the easy linkage set up for the TS760-Hybrid power kit installation, you can order this product from our website.



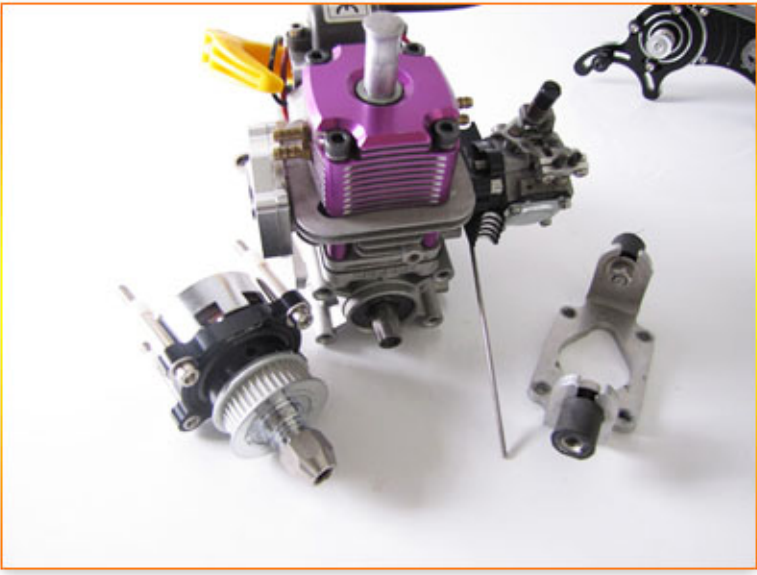
Prepare the carburetor with block for the installation.



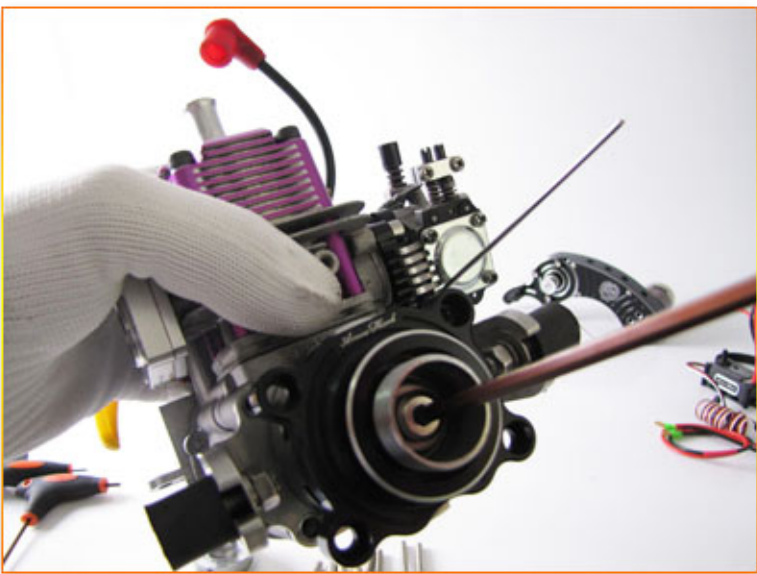
Install the carburetor and block to the engine as shown in the picture above.



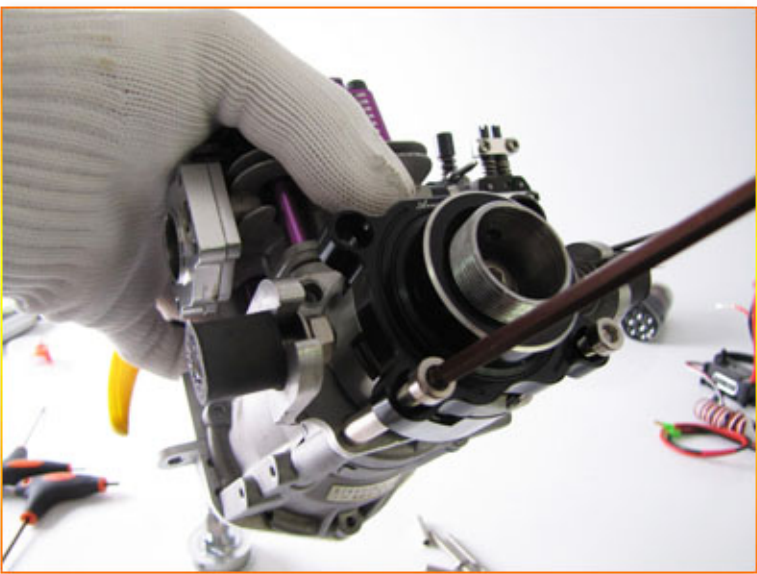
Attach the push rod to the CNC clamp and install it to the carburetor as shown in above picture.



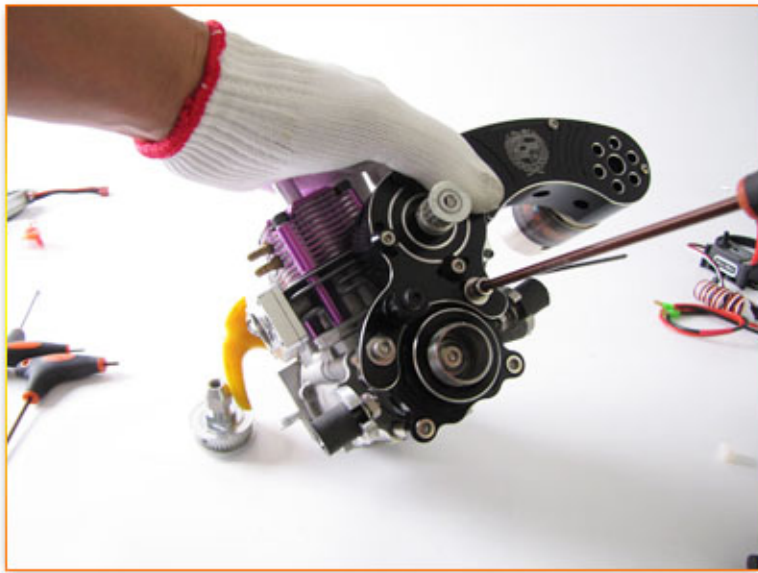
Prepare the clutch and engine mount for next installation.



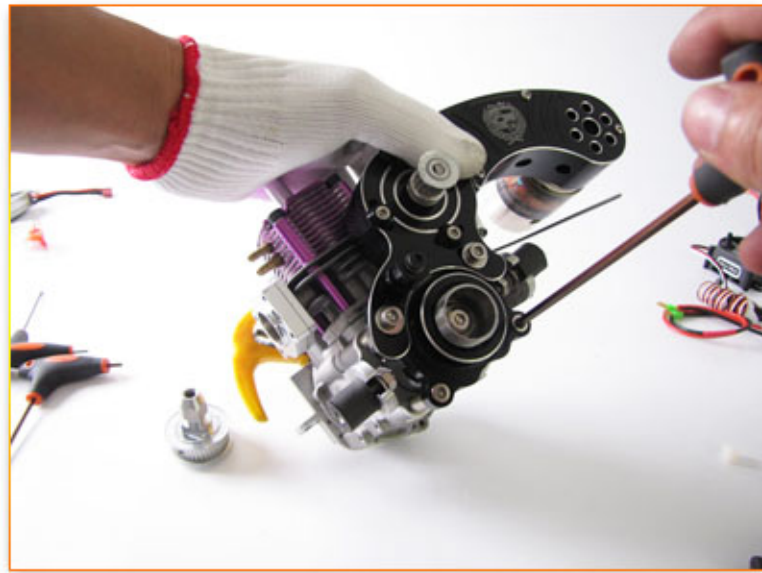
Install the engine mount to the engine, and attach the clutch V3 assembly kit on the crank shaft.



Install the bottom two clutch spacers and screw in the bottom two clutch bolts as picture shown above, but, not to tighten it at this time.



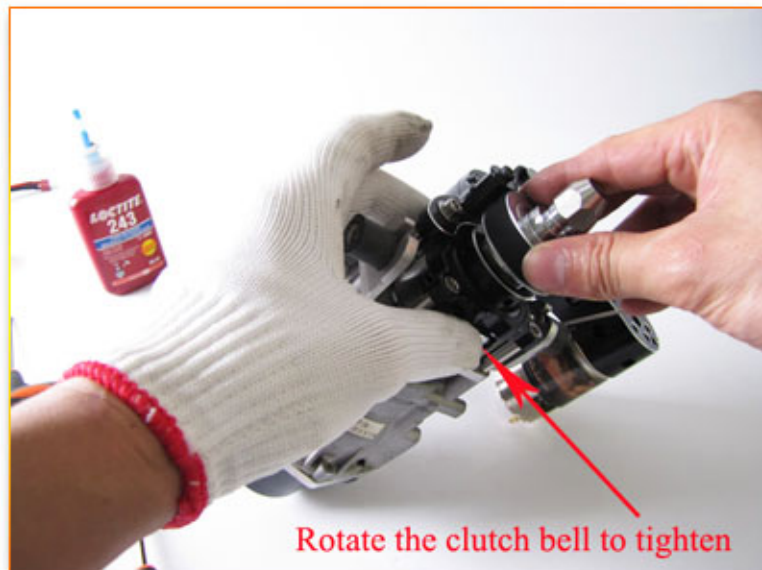
Install the upper two spacers between the clutch front plate and the engine mount, and bolt the TS760-Hybrid power kit together with clutch as picture shown above.



Adjust the TS760-Hybrid power kit to the center position, then, tighten the total four bolts for the clutch.



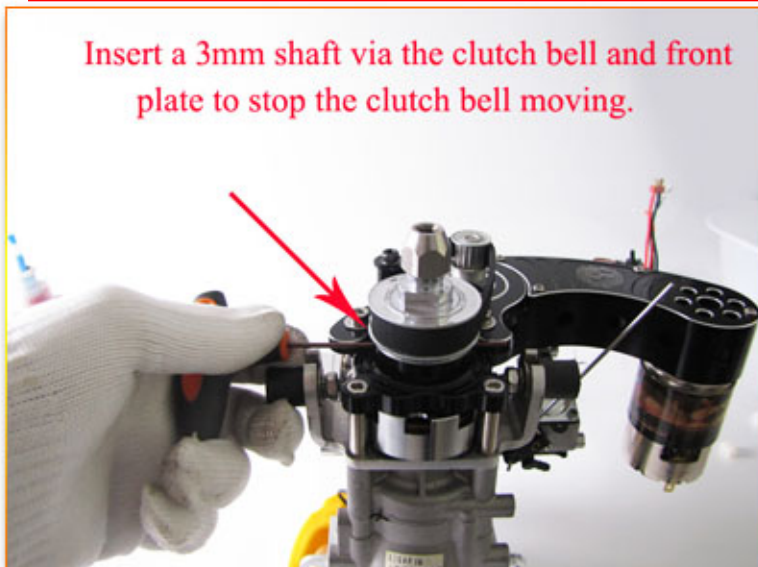
Apply loctite on the thread of clutch bell



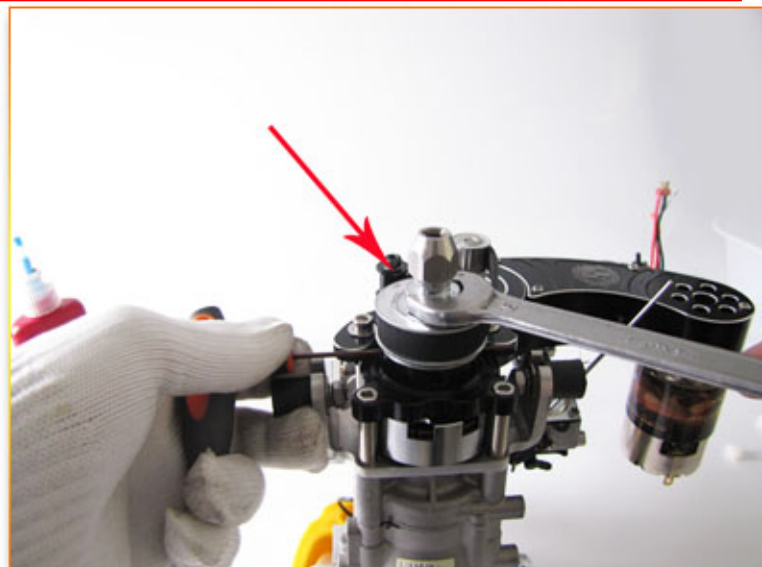
Rotate the clutch bell to tighten

Apply some loctite on the front thread of the clutch bell. (**Note:** this is very important, without the loctite, the main wheel assembly will get loose out when engine runs, when you try to unscrew the main wheel assembly out of the clutch, you have to heat the thread area first before screw it out)

Attaching the main wheel assembly with the drive belt to the clutch bell, and rotate the clutch bell in order to tighten it with main wheel assembly.



Insert a 3mm shaft via the clutch bell and front plate to stop the clutch bell moving.

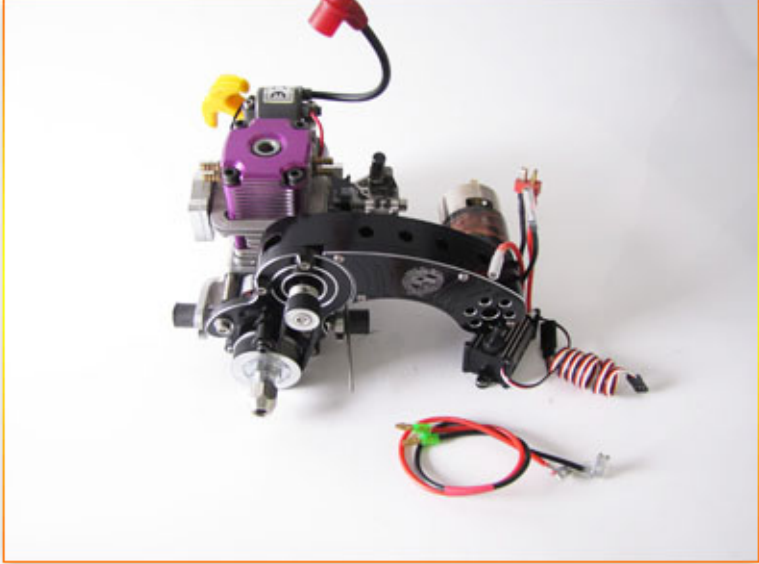


Using a 16mm wrench tighten the main wheel assembly as shown in picture above.

Insert a 3mm steel rod through out the line up holes between clutch bell the clutch front plate in order to stop the clutch bell moving.



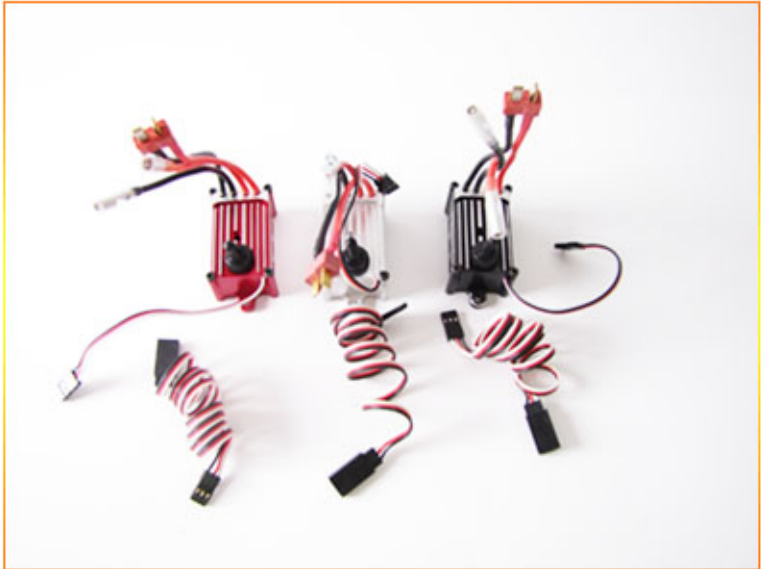
Adjusting the belt tension by push the transfer wheel assembly forward, then, tighten the bolt with the M4 nut behind.



Congratulations! The installation of the TS760-Hybrid power kit to a gas engine is now completed!

Power Connections

R-One Remote Device



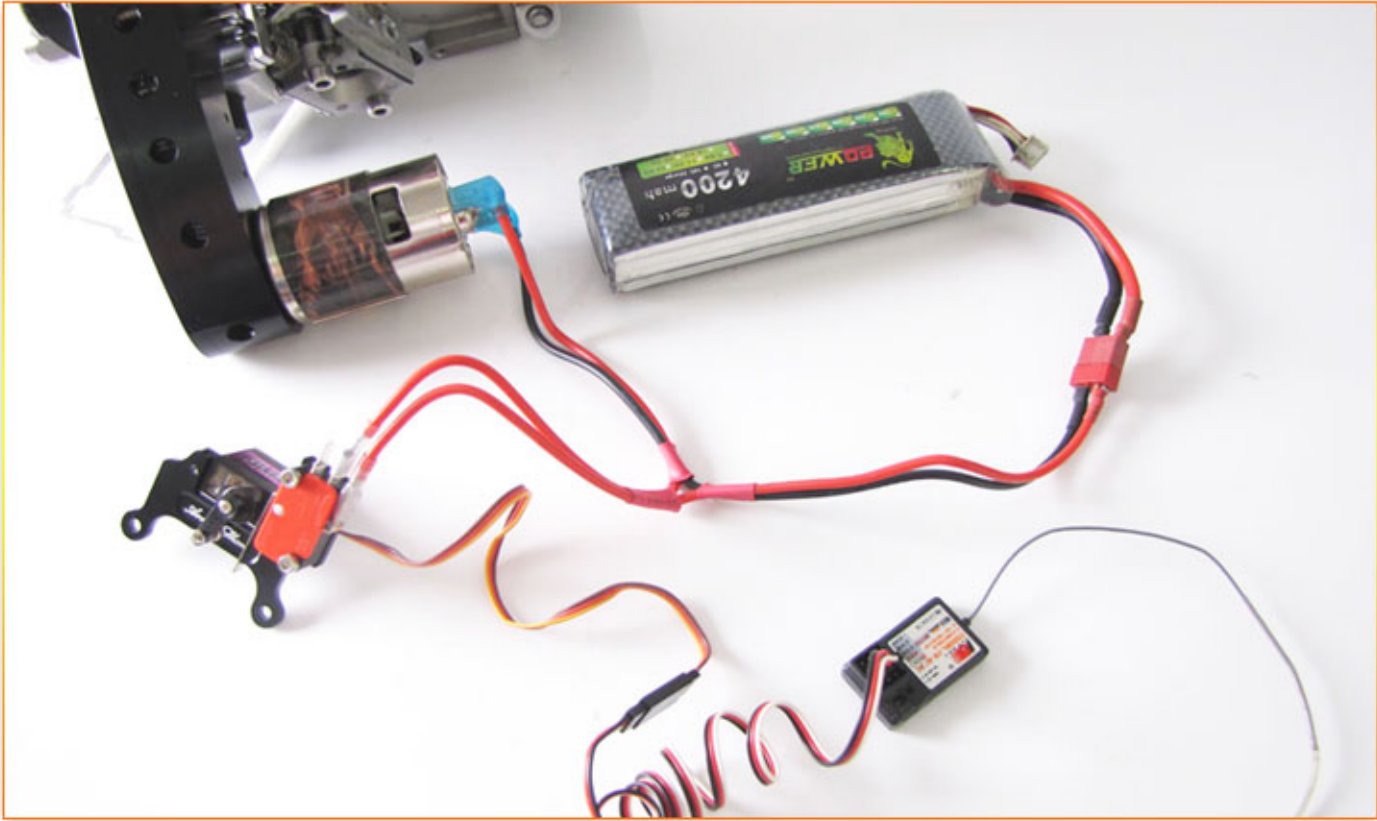
Servo Remote Control Switch



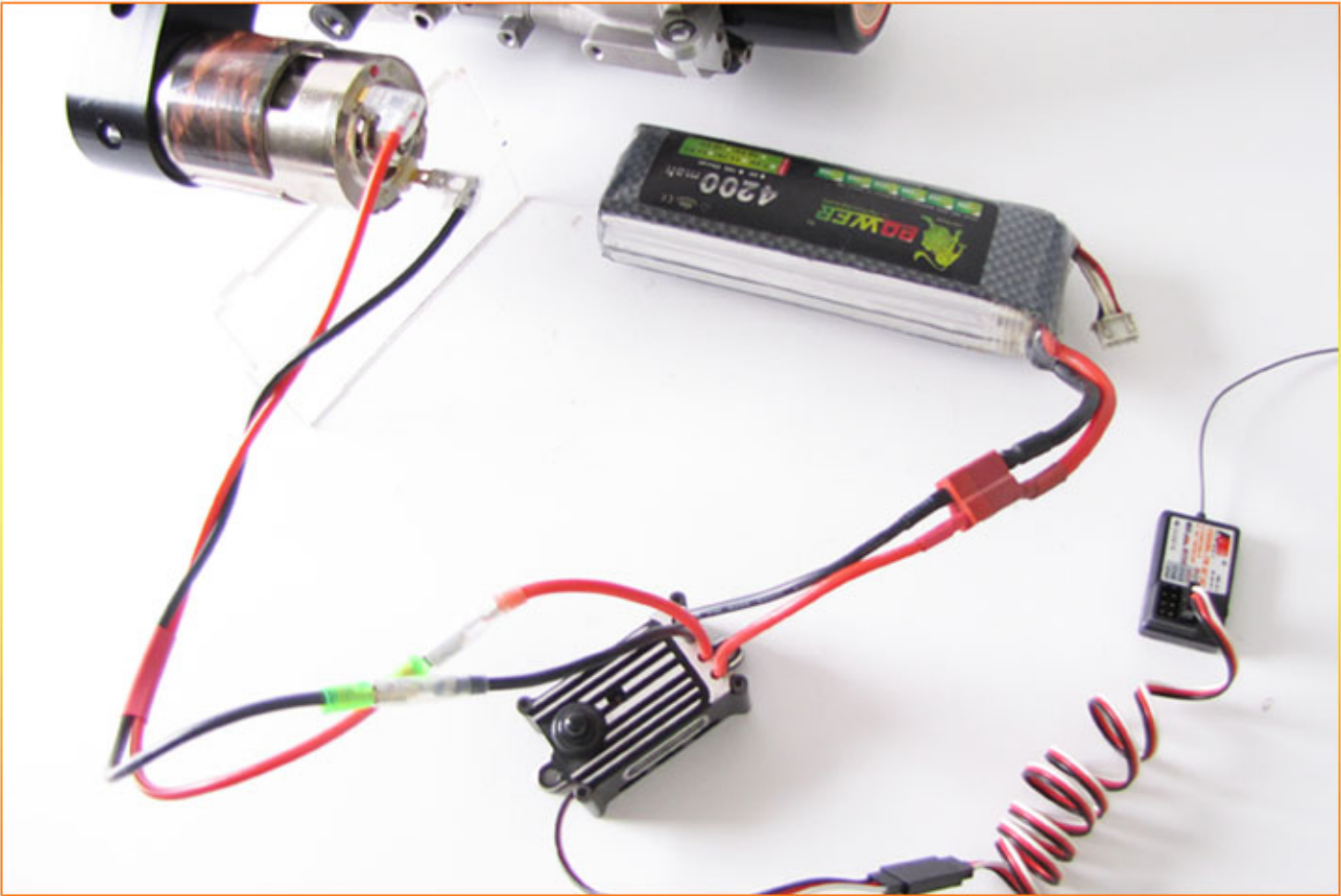
The TS760-Hybrid Power Kit comes with optional power switch of R-One control device or Servo remote switch which allows you to start your gas engine with a single click on the third channel of your transmitter. The R-One will supply 5.2V power from the E-Starter LIPO for your radio system. You do not 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, you will need to set up the transmitter for the properly operation which we will explain next.

For the servo switch set up, just simply plug the receiver wire from servo switch assembly into the third channel slot of your receiver and connect the 11.1V LIPO battery as picture shown above, then, turn on your transmitter, click on the third channel switch on your transmitter, the TS760-Hybrid power kit will start to run.

Power Connection With Servo Control Switch Diagram



Power Connection With R-One Control Device Diagram

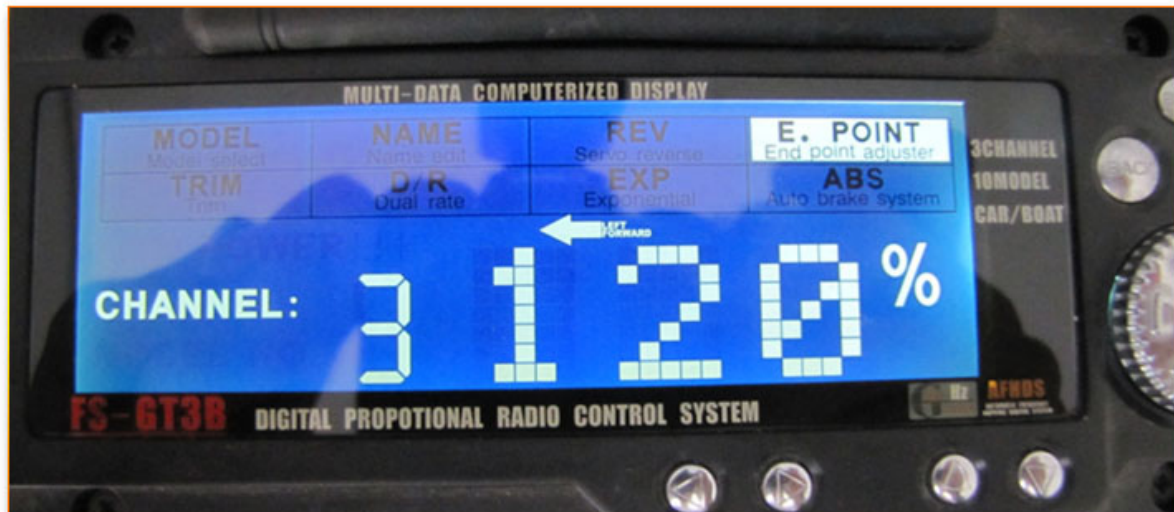


Transmitter Set Up

You need to provide a Three Channel Transmitter and a Three Channel Receiver for the R-One remote device; any FM or 2.4GHz radios will work. Connect the receiver wire from the R-One device extension cord into the third channel slot in your receiver as shown in above picture.

In order to use the R-One remote device correctly for your TS760-Hybrid Power 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 on the electric motor of the Hybrid Power 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 this application.

Important Tips

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 it at that moment.

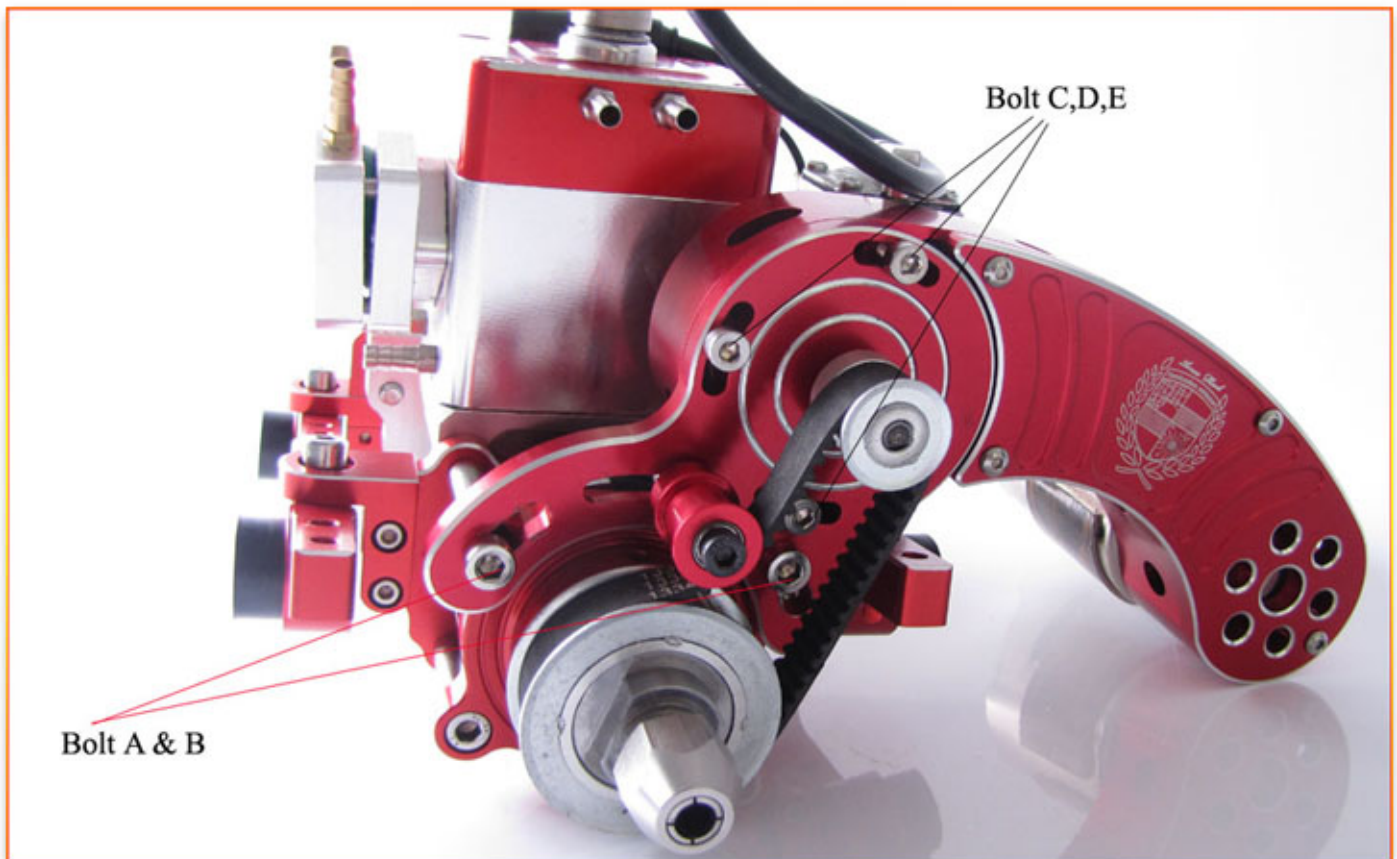
Please note that The R-One will divide 5.2V power from the 11.1V LIPO battery for your radio system and servos, therefore you do not need a separate battery for the servos. Simply turn on the power switch of the R-One and your receiver and servos will be powered from the LIPO battery.

NOTE: If you want to use a separate 6V battery for your receiver and servos, make sure you DO NOT turn on the power switch on the R-one device, if you do that, it might cause damage to the R-one device. Just simply keep the switch at “off” position, and connect the receiver wire from R-one device to the third channel slot in your receiver, and R-one device will use your 6V battery power to receive the signal from transmitter when you need to start the TS760-Hybrid power kit for your RC boat.

We recommended using the 11.1V LIPO up to 40C battery with Deans Plug Connector only, as other type connectors might cause plug-in in wrong polarity and burn the R-one device in a second.

Installation of TS760-Hybrid Power Kit Into Your Hull

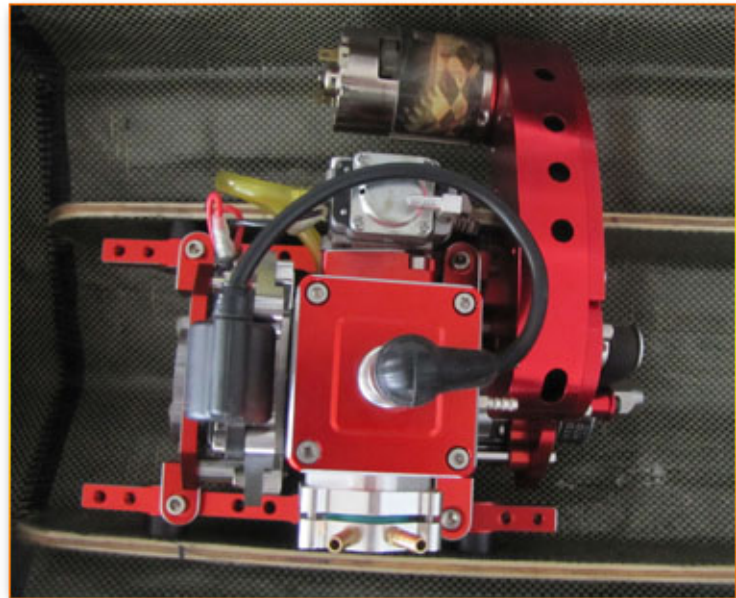
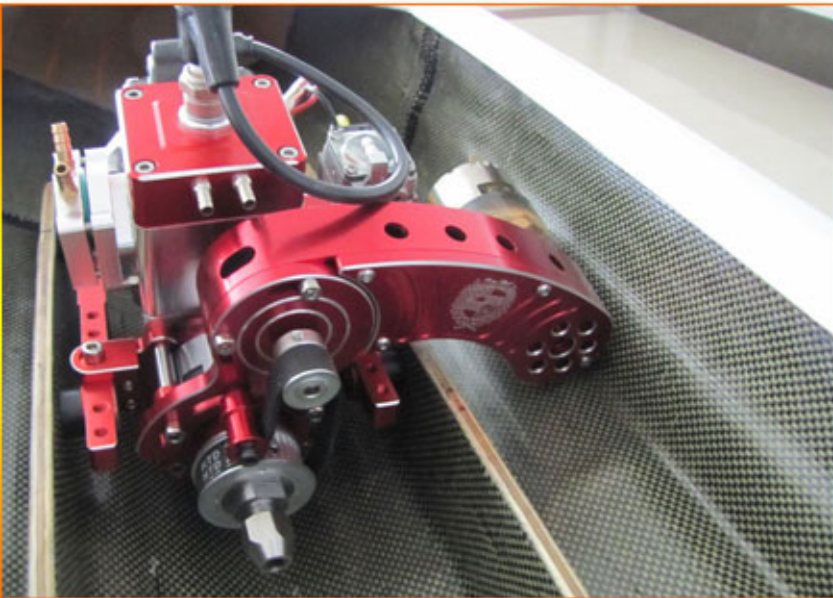
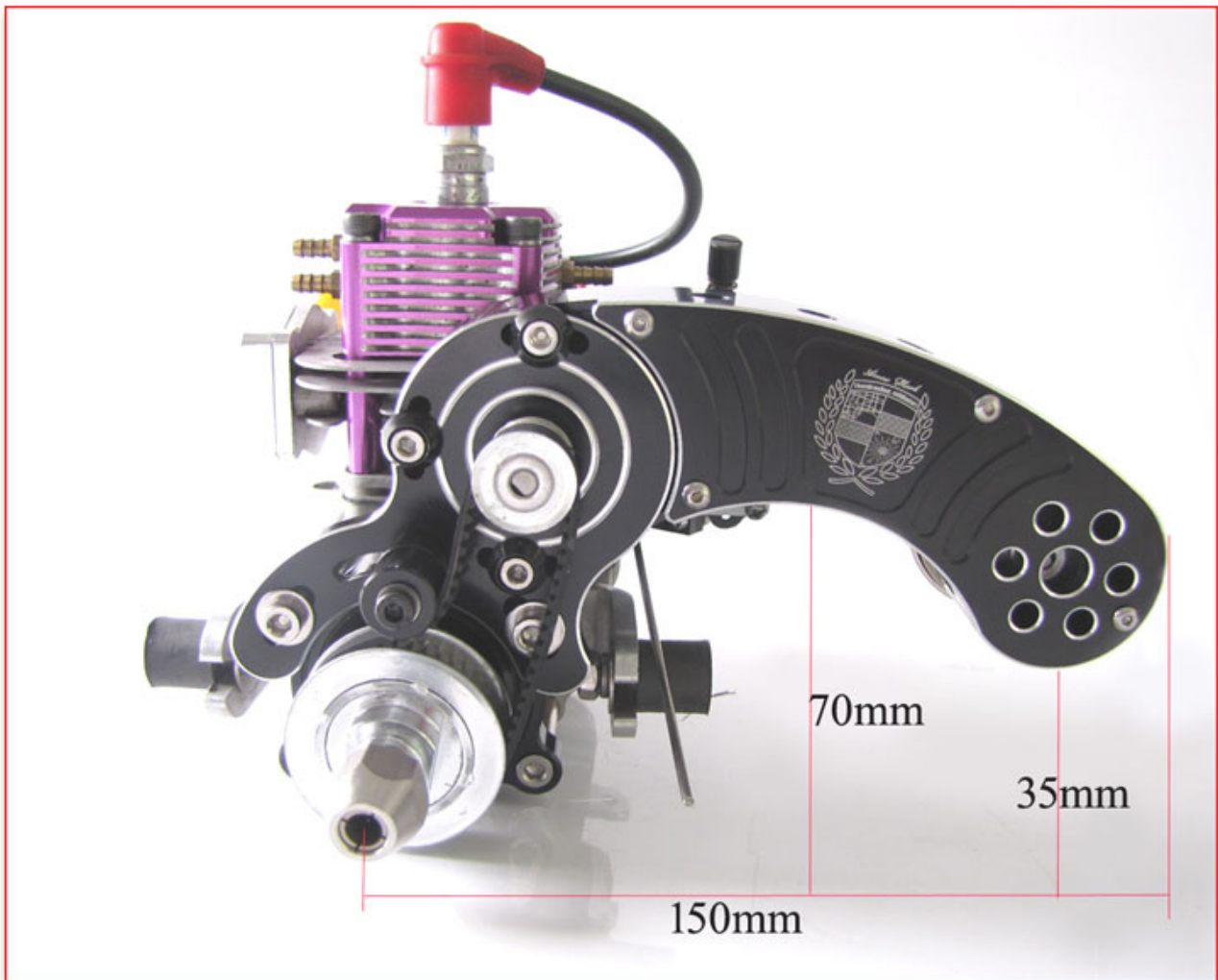
Electric Motor Angle Adjustment



#1: Loosening the bolt A&B, you can adjust the whole kit left and right.

#2: Loosening the bolt C,D,E, you can adjust the electric motor angle up and down.

Dimension for Installation Clearance



Arrow Shark TS760-Hybrid Power kit is designed to be fully adjustable for the electric motor position, it should fit into any hull with hull beam at 320mm or wider, therefore, with little patience for the adjustment, you should be able to fit this great kit into your hull without any problem.

We hope this TS760-Hybrid power kit will stop your worry for the RC boat rescue and bring your more enthusiasm to this great RC boat hobby and once again Thanks for using Arrow Shark products!



Arrow Shark
RC Marine

There is no Best, only Better!