



If you need any help, please contact with the nearest Stinger Engine Distributor or Service Center. You can find the distributor or service center information in our website.



www.rcgfservice.com
ZHEJIANG RCGF MODEL CO.,LTD

STINGER ENGINES BY RCGF OPERATION MANUAL

Introduction to Stinger Engines

Congratulations to your purchase of this new Stinger engines which are the high-end engines produced by ZHEJIANG RCGF MODEL CO.,LTD. You have in your possession one of the strongest and most powerful engines in its class today.

Our line up of engines are designed and engineered for RC giant scale aircraft. All our engines are modeler tested across the world. Real world results shape the engines. Performance is your reward.

The Stinger engines are built to a higher level of quality, and are engineered to provide years of trouble free service. To give you the best engine possible, we have completely redesigned everything in our Stinger Engines. We are using a more robust metallurgy for the cast parts and the stronger crank system with high quality bearings, to provide more power per cc, plus an all-around better-looking engine. Higher standard Aluminum Alloy material are used in the Stinger Engines which make them much stronger and more stable. So, check it out for yourself at www.rcgfservice.com.

It is important for you to go through the manual to familiarize yourself with the engine and how its operations. Contact us via email or telephone if you have any question. We are here to help you enjoy your engine.

Notice

All instructions, warranties and other collateral documents are subject to change at the sole discretion of ZHEJIANG RCGF MODEL CO.,LTD. For up to date product literature, visit rcgfservice.com and click on the support tab for this product.

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operation. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product and NOT a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision.

Do not attempt disassembly, use with incompatible components or augment product in any way without the approval of ZHEJIANG RCGF MODEL CO.,LTD.

CAUTION: This product can become extremely hot when in use, which could lead to burns.

Age Recommendation : Not for children under 14 years . This is not a toy .

Safety Tips and Warnings

IMPORTANT SAFETY INFORMATION FOR THE USE OF STINGER ENGINES
WARNING: This motor can cause severe harm to you and or others, if misused or if these safety precautions and instructions are not observed. We're not responsible for any loss, injury or damage resulting from the use of its products.

• This engine is not a toy. Please place your safety and the safety of others paramount while operating. Zhejiang RCGF Model Co.,Ltd will not be responsible for any safety issues or accidents involving this engine.

- Operate the engine in a properly ventilated area.
- Before starting the engine, please make sure all components including the propeller and the engine mount are secure and tight. It is strongly recommended that a good quality screw sealant is used during engine installation.
- During the break-in period, it is recommended that the engine be installed on the aircraft or a test stand with an appropriate shock absorber. Otherwise it is probable that vibration could rebound back to the engine and serious damages may occur during the break-in period.
- For your safety and the safety of others, please do not stand in front or in line with the propeller when the engine is running. Keep onlookers away from the running engine, especially small children.
- Always use a balanced spinner and a balanced propeller. An unbalanced spinner and propeller combination will cause high levels of vibration and may cause the propeller shaft to break. Always use a lightweight spinner on your engine. Lightweight spinners are considered to be those with a cone wall of 1mm or less. Heavy spinners could cause the propeller shaft to break. Securely tighten the spinner and propeller on the engine to prevent it from being thrown off the engine while running.
- Never use a propeller that has hit the ground. Even though it may look good from the outside, it may be cracked on the inside which may cause it to disintegrate while in use. Do not use a nicked, cracked or split propeller.
- Keep foreign objects away from the propeller. Make sure that nothing can be "sucked in" by the propeller.
- Never start the engine on loose gravel or sand.
- Do not attempt to stop the engine by throwing anything into the path of the propeller.
- Make sure the fuel line is well-secured to the engine and to the fuel tank so that it won't come off in flight.
- Do not use silicone fuel line because it will be dissolved by the fuel. Use gasoline approved vinyl or neoprene rubber fuel line. Always secure the fuel line away from the cylinder. The engine's heat can damage the fuel line.
- Never touch the engine immediately after a run. The engine will be hot.
- Before transporting your model, remove all the fuel from the fuel tank and fuel lines.
- Always use high-quality oil intended for 2-stroke (2-cycle) engines. It's a good idea to use a petroleum based 2-cycle motor oil like Lawn Boy All Season – Ashless, Generation II oil for the break-in period. Break-in should be considered about the first 3-5 gallons you run the engine. A high quality synthetic 2-cycle oil is recommended for optimum performance and a longer engine life. Synthetic 2-cycle oils leave fewer combustion by products than natural oil which can foul the engine and exhaust ports, resulting in reduced performance. Synthetic oils also reduce friction and provide more fluidity at low temperatures.
- Do not install your throttle servo or kill switch servo inside the engine compartment. Doing so could cause radio interference. Install all electronic radio devices as far away from the engine as possible.
- The throttle and choke pushrods should be non-metallic.
- If the engine is not to be used for more than a month, drain the fuel tank and remove any fuel from inside the carburetor. Do this by running the engine at idle until it quits by running out of fuel. Keeping gasoline inside the carburetor over an extended period of time will damage the diaphragm valve and clog passages inside the carburetor. Due to the carburetor being more complicated than those used in glow engines, keep the fuel clean by using a fuel filter. Use a filter intended to be used with gasoline engines. Metal filters intended for glow engine are too coarse and will not screen out finer particles.

Make sure that the cowl openings on your plane provide enough airflow for proper cooling. Ideally all of the cooling fins of cylinder should be exposed directly to unobstructed flow of cooling air and there should be 3 times as much air exit area as intake area. Many planes have cowl openings that actually inhibit proper appearance of the full size planes they are patterned after. Along with the openings described above, blocking the scale opening either partially or wholly can significantly help promote cooling airflow over the cylinder fins.

Many types of fueling device (fuel dots, filler valves, etc.) are available for your use. Our experience has shown that.

Often the simplest is the best. Regardless of which device you decide to use, be very wary of air leaks, as they can be detrimental to the proper operation of your engine.

Note: Always use Loctite on engine mounting hardware and make sure your models firewall and engine box are adequately reinforced (pinned soaked in thin CA, etc.)

Engine Break in

Break in running should be done with regular 90 octane gas mixed with a high quality petroleum based 2 cycle oil at ratio of 30:1. The engine should be run installed in the airframe with wings attached, on the ground for at least 20 minutes at 2500 rpm. Ground running should be done with a slightly smaller prop and with the cowl off to promote good cooling. It is recommended that you run the engine in a test stand, as they do not allow vibration energy to be properly dissipated. Plus, it is not needed. Your engine is ready to go.

During the break-in process (a couple of gallons of gas) the carburetor may need to be adjusted and the engine should be flown at light load and varying speed for enough time to have the oil/gas run through it.

After you have run a couple of gallons of fuel through, you can switch to a good quality full synthetic 2 cycle oil mixed at a ratio of 40:1. Note that when you switch to synthetic 2-cycle oil, it is likely that the carburetor mixture and idle speed will need to be adjusted.

We recommend high quality fully synthetic 2 cycle oil such as Motul 800 2T 100% Synthetic racing motor oil, Red Line Two-stroke racing motor oil, STIHL Ultra High Performance 2 Cycle fully synthetic Engine Oil, DELUXE Materials R/C Specific full synthetic 2 stroke oil etc. Never use outboard motor 2 cycle oil. (Unsuitable lubricating oil will cause the engine damage).

Note: Make sure that there is no air in the fuel pipe and fuel tank. If there is air, it will cause the engine unstable work.

Carburetor Adjustment



1. Choke Control (the choke control should be used when the engine is cold)
2. Throttle

3. Idle Adjustment Screw (adjust the idle speed)

Usually we don't suggest you to adjust the idle screw, for the idle screw is with default setting. Because of safety reasons we also recommend that you do not adjust the idle screw.

4. (L) Low-speed Needle (adjusts the fuel/air mixture at low speeds)

Turning the Low-speed Needle clockwise will lean the fuel/air mixture at low speeds. Turning the Low-speed Needle counter-clockwise will richen the fuel/air mixture at low speeds.

5. (H) High-speed Needle (adjusts the fuel/air mixture at high speeds)

Turning the High-speed Needle clockwise will lean the fuel/air mixture at high speeds. Turning the low-speed Needle counter-clockwise will richen the fuel/air mixture at high speeds.

Every engine has been adjusted to average mixture settings, which will mostly allow the engine to start and run in most locations.

However, as altitudes and barometric pressures vary by location and even by day, it is very likely that the carburetor mixture settings will need to be adjusted to obtain optimum performance.

NOTE: Never made adjustments to the carburetor while it is running. Always use a tachometer to aid in making adjustment to your carburetor.

Do not remove the carburetor spring (2) as the spring helps keep the carburetor butterfly aligned properly. Merely release the ends of the spring so that it no longer holds the butterfly closed.

Carburetor mixture adjustment starts with the low speed circuit. The low speed should be set such that transition from idle to full throttle is smooth, even if the throttle is snapped to full. This will likely result in a slightly rich idle mixture but you're better off with that than a rough transition. If the engine dies when the throttle is advanced, the mixture is likely too lean. If the engine stumbles when the throttle is advanced, the mixture is likely too rich. Since the low speed mixture has some effect on high-speed mixture, always adjust the high speed after adjusting the low. (Please check the carburetor default or factory setting for each engine in the electronic manual on rcgfservice.com)

The high-speed circuit is properly adjusted when the engine can reach maximum rpm while in the air, which is usually slightly richer than when it is on the ground. A general rule of thumb is to richen from the maximum in the ground rpm by about 200rpm. If ever the engine slows or dies while at full throttle, the high speed mixture is likely too lean and you should adjust it as soon as possible or damage can result.

NOTE: Be careful not to run the mixture screws in too far as damage to the screw and/or carburetor body may result. Also, don't be tempted to run an overly rich mixture. Gas engine lubrication comes from the oil concentration in the gas, not from a rich fuel/air mixture. If you want more lubrication, you can vary the oil mix ratio. A too rich mixture will only result in poor engine performance and a fouled plug and combustion chamber.

Needle Setting

Turning the needle clockwise LEANS the fuel mixture. Turning the needle counter-clockwise RICHENS the fuel mixture. The general factory setting of the carburetor needle are as follows:

Engine	Low Needle	High Needle
10cc SE	1.6 circles	1.5 circles
10cc RE	1.6 circles	1.5 circles
15cc SE	1.5 circles	1.6 circles
15cc RE	1.5 circles	1.5 circles
20cc SE	1.5 circles	1.5 circles
20cc RE	1.5 circles	1.5 circles
35cc SE	1.4 circles	1.5 circles
35cc RE	1.4 circles	1.5 circles
20cc Twin	1.6 circles	1.5 circles
30cc Twin	1.4 circles	1.75 circles
40cc Twin	1.7 circles	1.75 circles
70cc Twin	1.2 circles	2.2 circles

Needle setting will vary according to different conditions, such as altitude, atmospheric pressure, temperature, humidity and so on. So that you can adjust a little according to your actual situation.

Caution: The adjusting needle must not be tightened with too much strength as this can cause damage to the needles. If the needles are damaged, it will no longer be possible to make adjustments to the carburetor and a new one must be obtained.

Carburetor Adjustments Troubleshooting

Problem:

If the engine hesitates when accelerated rapidly, or the rpm increases at idling, or the engine stops when the throttle is moved from high to low.

Solution:

The low-speed needle "L" is too lean. Open it up about 1/8 of a turn and try again.

Problem:

If the idle is not steady.

Solution:

The low-speed needle "L" valve is too rich. Close it 1/8 of a turn and try again.

Problem:

If engine stops at full throttle. Or the engine hesitates when accelerated rapidly. Or the engine will not come up to full rpm at full throttle.

Solution:

The high-speed needle valve "H" is too lean. Open it up 1/8 of a turn and try again.

Problem:

If your engine does not reach full rpm. Or carbon build-ups appear consistently on your spark plug.

Solution:

The high-speed needle valve "H" is too rich. Close it up 1/8 turn and try again.

If the fuel pipe can't connect to the carb firmly, please use iron wire to connect firmly.

Starting the Engine

Starting Procedures

The new stile carburetors that we are using require you to get the carb "wet" before trying to start it. When starting the engine the first time and during break-in it's recommended that you run the engine without the cowl. Also, for safety reasons do not adjust the carburetor while the engine is running. There are two recommended ways to start the engine:

A. Manual Starting

Note: When hand starting the engine, use a thick glove or heavy duty starter stick to protect your hand.

1. The propeller should be installed on the drive washer at the one o'clock position and at the beginning of the compression stroke so that it's comfortable to flip it through compression.
2. Have someone help you hold the airplane while you start the engine.
3. The new type carbs can be a little different when you first try to start your new engine. You will need to force the carb to intake fuel for the first time. To do this first switch the ignition to "OFF", close the choke on the carburetor and open the throttle slightly from the idle position. Block off the hole in the choke butterfly with your finger. This will cause the crank case vacuum to draw fuel from the gas tank.



4. Flip the propeller counter clockwise several times briskly, until a your finger is a little damp from the fuel. Now turn your ignition switch to the "ON" position. Flip the propeller counter clockwise several times briskly until you hear your engine make a popping sound. This indicates that the engine is firing.
5. Move the choke lever to the OPEN position.
6. Set the throttle to a high idle. Set the propeller so that it is at the beginning of the compression stroke.
7. Flip the propeller through compression rapidly. If this is done properly, the engine will start after several brisk flips of the propeller.

8. After starting, let the engine idle for 30 to 45 seconds. Open and close the throttle slowly until the engine runs smoothly at idle and at full throttle. Acceleration should also be smooth. If acceleration is not smooth, adjustments to the carburetor may be necessary (see Adjustment of the Engine.)
9. If your engine does not start, repeat steps 2-8.

B. Electric Starter Starting

A 12-24V electric starter is recommended to start the Stinger Engines.
1. Make sure you use a good quality, lightweight aluminum spinner.
2. Have someone help you hold the airplane while you start it.
3. Switch the ignition to ON, close the choke plate on the carburetor and open the throttle slightly from the idle position.
4. Use your electric starter to turn the engine over for several seconds, until a popping sound is heard. This indicates that the engine is firing.
5. Move the choke lever to the open position.
6. Set the throttle to high idle and use your electric starter to turn over the engine until it starts.
7. After starting, let the engine idle for 30 to 45 seconds. Open and close the throttle slowly until the engine runs smoothly at idle and at full throttle. Acceleration should also be smooth. If acceleration is not smooth, adjustments to the carburetor may be necessary (see Adjustment of the Engine.)
8. If your engine does not start, repeat steps 2-7.

Engine Maintenance :

Fuel tubing through out the fuel system should be changed periodically and should never allow any air to enter the system, If your gas line starts to get hard ,soft or changes colour, there is a good chance it needs to be replaced. Keep in mind that the tubing inside your tank deteriorates more quickly than anywhere else in the system.

The exterior of the engine should be kept clean and inspected regularly. Tucked away inside the cowling, it would be easy to miss loose nuts and bolts without carburetor. It should be kept clean and free of dirt build up.

The carburetor fuel screen should be cleaned periodically also. Carefully remove the pump cover (inlet side of the carburetor), gasket and pump membrane. The screen will be visible and can be cleaned after careful removal. If ever the carburetor seems to need frequent mixture adjustment or acts like it's starving for fuel, a dirty screen is a likely candidate for a cause. The carburetor should be inspected ,cleaned or reconditioned with every flying season or after being stored for a long period of time.

The spark plug should be inspected ,cleaned and gapped periodically and replaced if it is fouled or worn. A new plug with every new season is a worth while maintenance step.

Please clean the fuel filter in the Carburetor periodically. Failure to do so may result in miss-calibration of the needle adjustments. In order to do this it is necessary to remove the Phillips head screw which secures the carburetor filter cover and the carburetor filter gasket. Use only carburetor cleaner to clean the opening around the filter

5. Ignition Timing Adjustment

The ignition timing is preset at 28-30° before Top Dead Center (TDC).

The ignition timing can be advanced or retarded by loosening the ignition sensor Phillips head screws and sliding the sensor to the full extent clockwise (32° advancing the ignition) or counter clockwise (26° retarding the ignition). Be sure to retighten the Phillips head screws after adjusting the ignition timing. It is best to attach the sensor with the screws centered in the slot as a starting point.

Advancing the timing causes combustion to occur earlier resulting in higher performance of the engine. However, advancing the timing also causes higher engine temperatures and can cause premature wear of internal engine components

6. Safety Precautions

Never power the ignition with the plug in the head when you're working on your engine, it could fire off ! Always wear a glove when starting your engine ! After turning off your ignition , be aware that the ignitions still have a charge and fire the motor. Always range check your model !

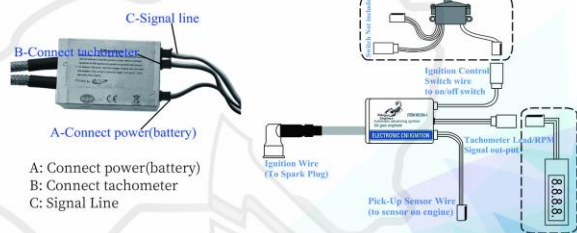
Engine Troubleshooting

If your engine fails to start after the preceding starting procedures please check the following.

Symptom	Diagnosis	Fix
Engine does not fire	Ignition battery voltage low	Charge or replace battery
	Battery wires faulty or loose	Replace wires or Re-connect/check connections
	Faulty spark plug or not firing	Replace spark plug or check for spark
Engine starts, then rpm increases till engine cuts out	Engine flooded	Remove plug, disconnect fuel line, rotate prop to remove fuel
	Fuel not reaching engine	Check for: a) fuel in tank b) fuel tubing cut, blocked, kinked or whether any air in the fuel tubing c) carburetor clogged d) fuel tank whether is too far away from engine

This can be done by removing the spark plug from the cylinder and attaching the plug on the outside of the crankcase. Have an assistant turn the engine over while checking this and be sure to have the spark plug firmly plugged into the ignition wire.
Warning: The high voltage from the ignition can cause bodily harm, especially when checking for spark in this manner.

Ignition System



1. Specifications
(1), **WARNING:** Our CDI Ignition were designed for use in model aircraft and should never be used in a Human Carrying Vehicle !!

2. Selecting a Power Source
(1), Our CDI Ignition is rated 6 to 14 volts.
Note: Please connect the battery line correctly. Wrong connecting will cause the Ignition burned and will not be covered by the free warranty.

+ : red line - : black line

3. Installation

(1) **Spiral Wrapping**
Use the supplied Spiral Wrapping included with your ignition to protect the wires from heat and chafing. Wrap the braided Spark Plug lead, Hall Sensor Harnesses and Battery Harnessed.

(2) **Mounting :**
Mount your ignition on the engine box if possible. Reduce the effects of engine vibration on the circuitry. You can use the mounting tabs on the ignition but we recommend using zip ties or Velcro ties to secure it. Do not install your ignition in the fuselage. Keep the ignition as far away from you receiver as possible and never use the same power source to run your ignition and receiver jointly.

(3) **Connecting the Battery:**
Our CDI ignition utilizes the Futaba style plug ends and comes with an additional pigtail to add to your ignition switch if necessary . Be sure to follow the color coding.

Note : There are no serviceable parts in the ignition system. Opening the case will void the engine warranty.

4. Trouble shooting your Ignition

(1), **Battery** Check the voltage on your battery and make sure it's healthy and fully charged. Insure that voltage is 14V or less to the ignition.

(2), **Connections :** Check that all connections are correct from the battery, to the switch , to the ignition . Use a volt meter on the switch to ensure the ignition is getting power and the polarity is correct.

(3), **Hall Effects Sensor:** Ensure that the orientation of the hall sensor is correct with the orientation of your hub magnet.

If the engine stops soon after starting even when the starting procedure has been followed , it is probably because the low needle is too lean . Turn the low needle counterclockwise a little .

If the engine does not reach a normal RPM at full throttle , shift back the muffler to the original needle setting . If the problem remains , it may result from a low battery ; the wrong needle setting ; the diameter of the propeller is larger than recommended ; the gasoline and oil mixture may not be correct ; the muffler system affecting the RPM ; or bad ignition timing .

If the engine is running roughly or vibrating strongly : Make sure the low needle setting is not too rich . Check the balance of the propeller and spinner . Ensure the engine's mount bolts are secure , check the ignition timing . , Check the structure of the engine box and firewall on your plane.

Optional Digital Tachometer (not included)

An optional Digital Tachometer is available that can be directly connected to the ignition and display the RPM of the engine. The Futaba® DSC Charge Adapter can be mounted in the fuselage and allows easy external plug-in of the Digital Tachometer.

Many of the Ignition modules have an additional lead to plug into the Digital Tachometer. If your ignition module does not have this additional lead, the Digital Tachometer can still be used. Simply use the Y-harness (included with the Digital Tachometer) to connect to the pick-up lead from the engine. Be sure to secure all connections and to secure the Digital Tachometer or leads on the aircraft used.

Propeller Choosing

Propellers of same dimensions produced by different manufacturers tend to vary . Even propellers of the same dimensions made by the same manufacturer can vary . Environmental factors , such temperature and atmospheric pressure , the weight of plane, the exhaust system etc. , will have an effect on the propeller load . Carbon fiber propellers usually produce higher RPM than a wood propeller of the same diameter and pitch.

Warranty & Service

WARRANTY POLICY

All new Stinger Engines carry a One Year Limited Warranty on materials and workmanship at the time of sale.

This Warranty only applies to engines purchased through ZHEJIANG RCGF MODEL CO.,LTD or its authorized distributors.

Since we don't provide worldwide warranty service for our engines. The warranty service will be a little different in different areas. Please contact your local Stinger Engine service center or authorized distributors for the detail warranty information.

If there is no authorized distributors or service centers in your country, ZHEJIANG RCGF MODEL CO.,LTD will provide the warranty service (The warranty doesn't cover the shipping cost and expenses to and from service centers or its authorized distributors for warranty service.). Engines purchased from China mainland, Hongkong or Taiwan will be covered by One Year Limited Warranty at the time of sale , and the warranty service will also be provided by ZHEJIANG RCGF MODEL CO.,LTD in China

(Consumers afford the shipping cost themselves). Stinger Engine authorized distributors don't offer free service for these engines. If consumers want to get service from local service center, they will need to pay for the reasonable labor cost to local service center.

The Warranty is void of the engine is disassembled without express authorization from ZHEJIANG RCGF MODEL CO. LTD or authorized distributors. RCGF Products or its Authorized Sales, Parts and Service Center will not accept returns sent freight forward to COD.

Please review our website : www.rcgfservice.com for detail information of Stinger Engine distributors, service centers and warranty policy.

This Warranty does not cover the following items:

- Propellers , spark plugs , mufflers.
 - Crash damage , This includes propeller strikes of any type.
 - Damage caused by using improper additives or fuel.
 - Damage to an engine that has been modified or altered from its original design.
 - Damage caused by improper handling, operation or maintenance. This includes the ignition system where damage is caused by excessive input voltage, vibrations damage or use without a spark plug installed and connected to the engine.
 - Damage caused when the engine is shipped to the Stinger Engine service centers or its authorized distributors. Please Pack carefully.
 - Shipping cost and expenses to and from Stinger Engine service centers or its authorized distributors for warranty service.
- Note :** We can not ship replacement parts until we inspect the suspect items and they are deemed defective by our service centers or its authorized distributors.

- Customer Procedures for Warranty Work
- When your engines is hurt ,and you want your problem fixed. The engine is still under warranty . So what do you need to do ,to get things done and your engine fixed.
1. Contact our Service Center. Please by contacting us first we might be able to help you with your issue before sending the engine back to us. We might be able to resolve your problem or even ship you the replacement parts ,depending on your claim.
 2. If it is determined that you need to ship your engine to our service center or our RCGF authorized distributors. You will need to pack your engine . Here are some items to think about:
 - (A) Protruding items like mufflers , spark plugs , and prop adapter should be removed from the engine and carefully wrapped separately if they are being included .
 - (B) Make a list of needs to be checked out or repaired . Be as specific as you can .
 - (C) Include your name ,address ,telephone number and email address.
 - (D) Please do not use Styrofoam peanuts or pellet to pack your engine.
 - (E) Wrap the engine in bubble wrap-use the large bubbles ones. Go about 4 or 5 times around the engine and tape it down.
 - (G) Once the wrapped engine is in the box, put the other items in next. The other items should also be packaged with bubble wrap.
 - (H) When all item are in the box , use crushed paper to stuff into any gaps around the engine and box.
 - (I) Put your note into the box and seal the box.

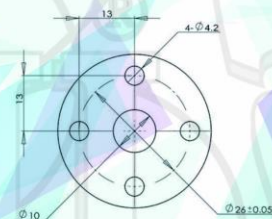
Stinger Engine data

1.Engine prop hub center screw data

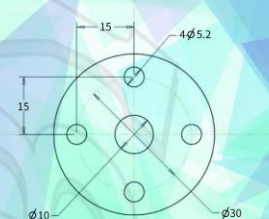
ENGINE ITEM	Diameter and screw thread
10cc SE ,10cc RE	1/4-28
15cc SE, 15cc RE , 26cc SE ,26cc RE	M8x1
20cc SE , 20cc RE , 20cc Twin , 30cc Twin	M8x1
35cc SE, 35cc RE	M5X0.8
40cc Twin , 60cc Twin ,70cc Twin	M5X0.8

2.Engine Prop Drill Guide:

Stinger 35cc SE , 35cc RE



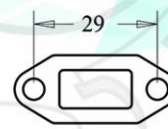
Stinger 40cc twin , 50cc twin , 70cc twin



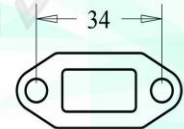
prop drill guide

3, Stinger Engines Dimension Photo:

Muffler bolt pattern

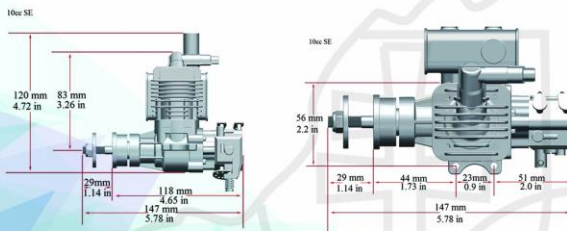


10cc/15cc/20cc/26cc
20cc-Twin/30cc-Twin
40cc-Twin/50cc-Twin

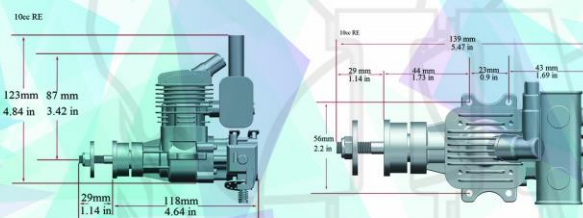


35cc/70cc-Twin

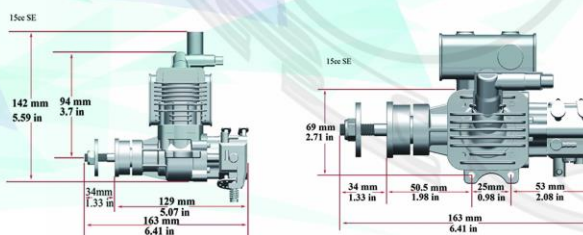
Stinger 10cc SE Dimension Photo



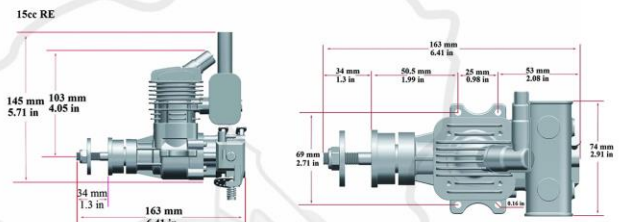
Stinger 10cc RE Dimension Photo



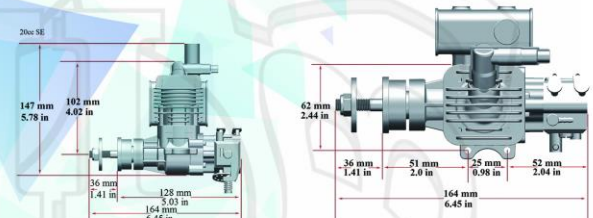
Stinger 15cc SE Dimension Photo



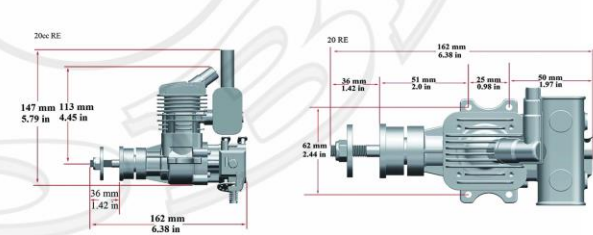
Stinger 15cc RE Dimension Photo



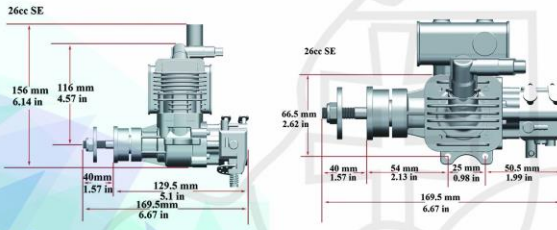
Stinger 20cc SE Dimension Photo



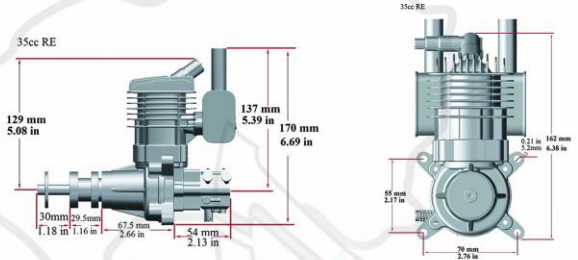
Stinger 20cc RE Dimension Photo



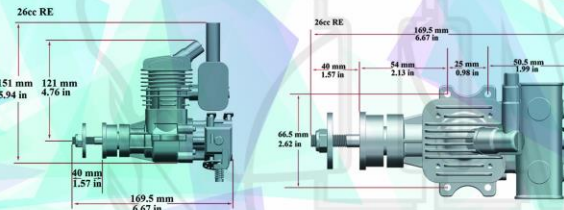
Stinger 26cc SE Dimension Photo



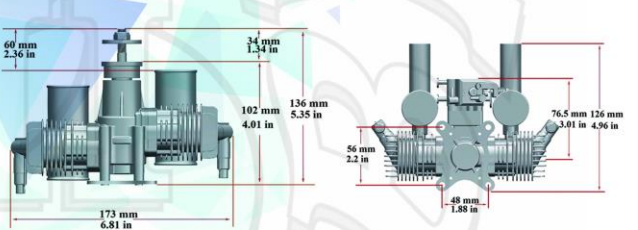
Stinger 35cc RE Dimension Photo



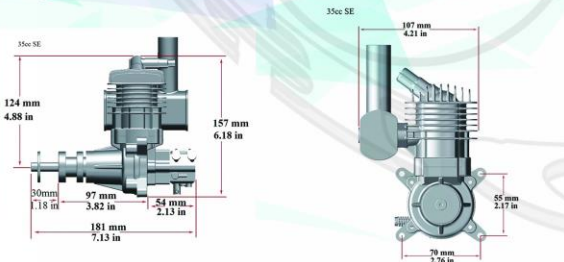
Stinger 26cc RE Dimension Photo



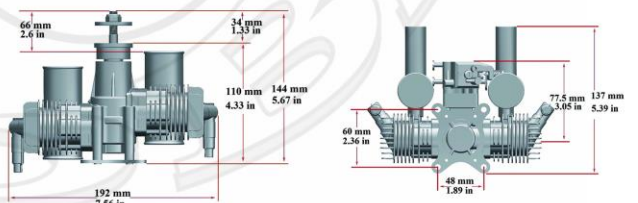
Stinger 20cc twin Dimension Photo



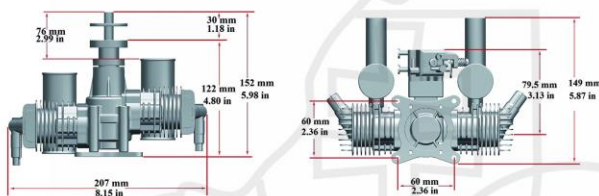
Stinger 35cc SE Dimension Photo



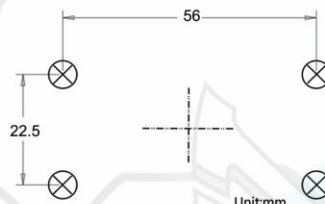
Stinger 30cc twin Dimension Photo



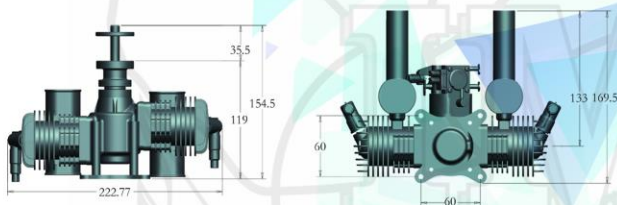
Stinger 40cc twin Dimension Photo



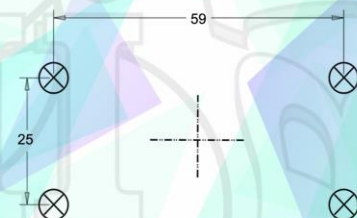
**Stinger Engines Mount Pattern
Stinger 10cc SE , Stinger 10cc RE**



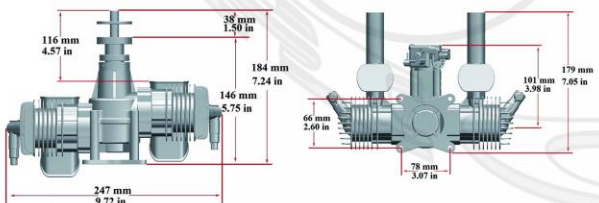
Stinger 50cc twin Dimension Photo



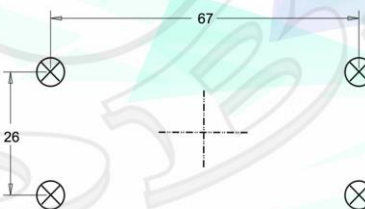
Stinger 15cc SE , Stinger 15cc RE , Stinger 20cc SE , Stinger 20cc RE



Stinger 70cc twin Dimension Photo



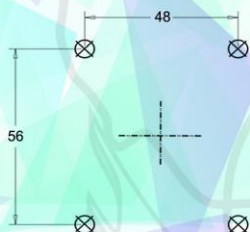
Stinger 26cc SE , Stinger 26cc RE



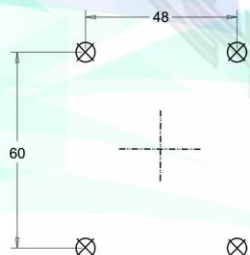
Stinger 35cc SE , Stinger 35cc RE



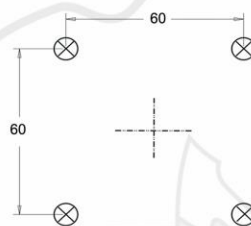
Stinger 20cc Twin



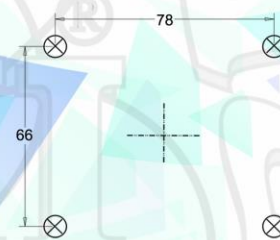
Stinger 30cc Twin



Stinger 40cc Twin , Stinger 50cc twin



Stinger 70cc Twin



All the above data unit is mm .

You can review our website www.rcgfservice.com for more information.



ServiceCenter

RCGF Service Center EU
www.rcservis.sk
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Slovak Republic

RCGF Official Service Center :
(for customers from all over the world)
Email : rcgfservice@zjrcgf.com
Add: No 6 Qinglong Road , Longyou , Quzhou ,Zhejiang Province, China

RCGF US Service Center
(for customers from US or Canada)
Email : service@rcgfusa.com
Add : 4126 La Linda Way , Sierra Vista , AZ . 85635 ,USA



Vysoko kvalitný Benzínový motor s elektronickým zapalovaním

Návod na obsluhu

Užívateľská príručka

Úvod pre RCGF motory.

Blahoželáme vám k zakúpeniu tohto RCGF motora. Máte vo svojom vlastníctve jeden z najsilnejších a najvýkonnejších motorov vo svojej triede.

RCGF Spoločnosť je profesionálny výrobca, spaľovacích motorov pre RC lietadlá. Teraz máme RCGF motory Stinger vysokej kvality od 15ccm do 120ccm, ktoré môžu splniť vaše rôzne požiadavky. Naše zostavy motorov sú navrhnuté a konštruované pre RC lietadlá. Všetky naše motory sú modelármi testované po celom svete. RCGF motory sú postavené na vysokej úrovni kvality a sú navrhnuté tak, aby Vám poskytli roky bezproblémovej prevádzky . Je pre vás dôležité prejsť manuál, aby ste sa zoznámili s motorom a jeho funkciami.

Bezpečnostné pokyny:

DÔLEŽITÉ BEZPEČNOSTNÉ INFORMÁCIE PRE POUŽITIE RCGF MOTOROV.

VAROVANIE! Tento motor môže spôsobiť vážne škody na osobách alebo majetku. RCGF firma nie je zodpovedná za akúkoľvek ujmu, zranenie alebo škody vyplývajúce z používania jeho výrobkov.

- Prečítajte si všetky inštrukcie pred použitím motora .
- Ak máte akékoľvek otázky týkajúce sa akéhokoľvek aspektu prevádzky motora, nepokúšajte sa ho spustiť alebo prevádzkovať v žiadnom prípade .
- Len vy ste zodpovední za bezpečnú prevádzku vášho motora .
- Neprevádzkujte motor, ak nechcete prijať plnú zodpovednosť za akékoľvek zranenia alebo škody spôsobené alebo vzniknuté v priebehu jeho prevádzky .
- Skontrolujte správne zapalovanie, prijímač a vysielateľ, napätia batérií, a vykonať kontrolu dosahu pred každým letom.
- Neprevádzkujte motor alebo lietanie s modelom lietadla sám.
- Vypnite motor pred vykonaním akýchkoľvek úprav.
- Pred prevádzkou motora skontrolujte motorové upevňovacie skrutky a integritu motorového koša.
- Ochrana očí by mali byť použitá pre všetky osoby v bezprostrednej blízkosti motora, keď je motor v chode .
- Uistite sa, že lietadlo je správne zaistené pri štarte alebo prevádzkovaný motor, lebo zariadenie môže vyvinúť obrovský ťah .
- Prevádzkujte motor v otvorenom priestore. Nikdy nepracujte v interiéri.
- Pri prevádzke motora vždy stojte za vrtulou . Nikdy nestojte v osi otáčania vrtule.
- Použite Heavy Duty štartovaciu tyč, alebo správne dimenzovaný elektrický štartér. Keď krútite s vrtulou použite ťažké kožené pracovné rukavice.
- Drž sa ďalej od vrtule pri prevádzke motora. Nenoste voľné oblečenie v blízkosti motora alebo vrtule. Nedovoľte, aby ľudia stáli pred alebo vedľa vrtule, keď je motor naštartovaný.
- Nespúšťajte motor u sypkých materiálov, ako je špina, piesok, štrk, laná, šnúry, atď. Každé uvoľnené kusy materiálu môže byť vtiahnuté do vrtule čo môže spôsobiť zranenie alebo poškodenie.
- Pri prevádzke motora udržiavajte ľudí a zvieratá najmenej 50 metrov od motora.
- Vždy používajte správnu veľkosť vrtule. Nikdy nepoužívajte poškodené, upravené alebo opravené vrtule.
- Vždy používajte správny typ a dĺžku spojovacích skrutiek. Nikdy nepoužívajte veľmi dlhé, ktoré môže zachytiť vrtuľa.
- Kužel a ani čapíky sa nesmú dotýkať vrtule ..
- Skontrolujte , či vrtuľové skrutky sú pevne dotiahnuté pred každým letom .
- Vždy inštalovať k zapalovaniu el. vypínač zhasnutia motora (kill switch) .
- Karburátorová klapka by mala byť nastavená tak, aby sa motor zastavil, keď karburátor je úplne uzavretý.
- Benzín je extrémne horľavý. Nefajčite v oblasti svojej nádrže motora. Tiež iskry môžu pochádzať z elektrických kontaktov na palivových čerpadlách, nabíjačky batérií, a iné podporné vybavenie. Vždy majte plne naplnený hasiaci prístroj v blízkosti a pripravený.
- Palivo tankujte pre svoje lietadlo, keď je motor chladný na dotyk.
- Nikdy neotáčajte motorom bez zaistenia systému zapalovania že je vypnuté .
- Zapalovací systém vyvíja vysoké napätie . Nikdy sa ho nedotýkajte počas prevádzky .
- Vždy lietajte v súlade s bezpečnostnými predpismi a odporúčaniami.

Montáž motora:

Ak používate držiaky-distančné stĺpiky, mali by byť inštalované s rozšíreným koncom na motorovej prepážke a užším otvoreným koncom na motore. Matice skrutiek vždy poisťujte a zalepte. Skontrolujte, či karburátor má dostatočný priestor (minimálne 25 mm) od prepažky pre správne nasávanie. Ak tomu tak nie je, vykonajte príslušné úpravy. Uistite sa, že vaše lietadlá majú palivové nádrže a hadičky vyrobené pre použitie benzínu, že nádrž je riadne odvetraná a že sacie bimbátko sa môže voľne pohybovať vo všetkých smeroch a **nikde nezapiera**. Odporúčame použiť filter medzi motorom a palivovou nádržou. Ak používate palivový filter medzi nádržou lietadla a karburátora, uistite sa, že je primeraný prietok paliva do karburátora motora. Ak nie motor bude zhasínať.

Uistite sa, že otvory krytu motora na vašom lietadle majú dostatok vzduchu pre správne chladenie. V ideálnom prípade by všetky chladiace rebrá na valci mali byť vystavené priamo bez prekážok prúdeniu chladiaceho vzduchu. Snažte sa otvor pre vstup vzduchu nerobyť veľmi veľký najlepšie vo veľkosti motora. Na výstupe čiže odvode vzduchu by mala byť veľkosť otvoru, alebo otvorov 2-3 násobná, kvôli zahriatemu vzduchu.

Mnoho lietadiel má motorové otvory malé a na výstupe žiadne čo vážne bráni dostatočnému chladeniu valcov motora.

Poznámka: Vždy používajte Loctite na motore montážnych skrutiek a uistite sa, že vaše modely majú motorovú prepážku ako aj koš motora sú dostatočne vystužené.

Zábeh motora:

Zábeh by mal byť vykonaný s 90 až 100 oktánovou zmesou benzín olej v pomere 25:1 . Motor by mal byť spustený a nainštalovaný v draku lietadla s krídlami, na zemi 20 minút pri 2500 otáčkach/min. Po čase sa môžu otáčky zvyšovať a znižovať. Pozemný chod by mal byť vykonaný s trochu menšou vrtulou (**najmenšia doporučená k motoru**) a bez krytu motora na podporu dobrého chladenia. Neodporúča sa, že motor by mal bežať v skúšobnom stojane, pretože neumožňuje vstrebávanie vibračnej energie. Toto nie je potrebné, Váš motor je pripravený ísť. Pre zábeh je dobré **vybehnúť 4-5 litrov benzínovej zmesi**. Zábeh by mal byť vykonaný pri malom zaťažení aby sa mal čas valec a piest s krúžkom zalapovať a ložiská nasýtiť olejom.

Doporučený olej: Olej MOTUL 800 ester 2-takt alebo MOTUL KART GP 2-takt. Tieto oleje sú schopné udržať olejový film na valci až do 24000 otáčok/min.

Po zabehu a vylietaní cca 10 litrov benzínovej zmesi môžete prejsť na režim miešania paliva v pomere 30-35:1 (Doporučujem 30:1). Dajte pozor pri tomto pomere miešania je pravdepodobné že budete musieť nastaviť na karburátory volnobežné otáčky.

Karburátor nastavenie:

Každý motor bol nastavený na ideálnu zmes, ktorá s najväčšou pravdepodobnosťou umožní motoru naštartovať a bežať vo väčšine lokalít. (tlak, nadmorská výška atď.)

Avšak, nadmorská výška a barometrický tlak sa líšia podľa miesta a dokonca aj cez deň, je veľmi pravdepodobné, že nastavenie karburátor bude potrebovať pre dosiahnutie optimálneho výkonu.

Poznámka:

- Nikdy nevykonávajte úpravy karburátora, keď je v chode** . Vždy používajte tachometer na pomoc pri úpravách karburátora .
- Nevyberajte karburátorovú pružinu (2)** pomáha udržať klapku karburátora správne zarovnanú. Samotné uvoľnenie tiahla pružiny pôsobí tak, že je klapka zatvorená.



1 2



3 4 5



6

1. Páčka sýtiča
2. Plynová páka
- 3 Voľnobežné otáčky Skrutka
- 4 Nízko rýchlostná-Zmes Skrutka
- 5 Vysoko rýchlostná-Zmes Skrutka
- 6 Sensor zapalovania

Priemerné nastavenie zmesi je v základe 1,2 až 1,7 otáčky nízko rýchlostnej skrutky a 1,5 až 2,2 otáčky vysoko rýchlostnej skrutky.

Tabuľka nastavenia ihiel karburátora:

Engine	Low Needle	High Needle
10cc SE	1.6 circles	1.5 circles
10cc RE	1.6 circles	1.5 circles
15cc SE	1.5 circles	1.6 circles
15cc RE	1.5 circles	1.5 circles
20cc SE	1.5 circles	1.5 circles
20cc RE	1.5 circles	1.5 circles
35cc SE	1.4 circles	1.5 circles
35cc RE	1.4 circles	1.5 circles
20cc Twin	1.6 circles	1.5 circles
30cc Twin	1.4 circles	1.75 circles
40cc Twin	1.7 circles	1.75 circles
70cc Twin	1.2 circles	2.2 circles

Nastavenie karburátora: Zmes začína s nízko rýchlostným okruhom. Nízka rýchlosť by mala byť nastavená tak, aby prechod z voľnobehu na plný plyn bol hladký, dokonca aj v prípade, že plyn sa prudko zvýši. Ak to takto nefunguje a motor sa ťažko rozbieha bude to mať pravdepodobne za následok mierne bohatá zmes voľnobehu. Treba nízko rýchlostnej tryske ubrať. Ak pridáte plyn a motor zdochne, zmes je pravdepodobne príliš chudobná. Ak zakašle alebo kašle motor, keď plyn je väčší, zmes je pravdepodobne príliš bohatá. Vzhľadom k tomu, nízko rýchlostný okruh má vplyv na vysoko rýchlostný okruh, vždy nastavte vysokú rýchlosť po nastavení nízkej. Vysoko rýchlostný okruh je správne nastavený, keď motor môže dosiahnuť maximálne otáčky, zatiaľ čo vo vzduchu musí byť o niečo bohatší, než

keď je na zemi. Všeobecné pravidlo je obohatiť vysoko rýchlostný okruh z maxima na zemi. Dostaví sa pokles asi o 200 otáčok/min. Ak niekedy motor spomalí alebo zdochne, zatiaľ čo pracuje na plný plyn, vysoko rýchlostný okruh (zmes) je pravdepodobne príliš chudobná a mali by ste to nastaviť čo najskôr lebo môže dôjsť poškodeniu motora.

Poznámka: Dávajte pozor, aby ste nezaskrutkovali skrutky príliš hlboko a nedošlo k poškodeniu skrutky, alebo tela karburátora. Tiež môžete byť v pokušení spustiť príliš bohatú zmes. Mazanie benzínového motora pochádza z koncentrácie oleja v benzíne, a nie sú z bohatej zmesi. Ak budete chcieť viac mazania, môžete meniť pomer oleja v benzene. Príliš bohatá zmes bude mať za následok zníženie výkonu motora a znečistenie sviečky a spaľovacej komory.

Spustenie motora za studena:

Krok 1) Zatvorte sýtič, posuňte páčku plynu do veľmi mierne nad minimálnu polohu, zapnúť zapaľovanie a rýchlo otočiť vrtuľu cez kompresiu, kým motor neodpáli a potom zdochne. Ak je palivové potrubie suché, môže to trvať 20 alebo viac otáčok.

Krok 2) Otvorte sýtič a rýchlo otočte vrtuľu cez kompresiu. Motor by mal začať v priebehu niekoľkých otáčok pracovať. Ak sa chová tak, ako že chce začať pracovať, ale len odpaluje a nerozbieha sa, budete možno musieť trochu pridať plyn.

Poznámka: Je možné že sa zaplavil motor a zhasne. V tomto prípade musí byť zapaľovacia sviečka odstránená a pretočením sa vysuší zvyšné palivo. Uistite sa, že máte vypnuté zapaľovanie pri demontáži zapaľovacej sviečky.

Údržba motora:

Palivové potrubie po celom palivovom systéme musí byť pravidelne zaplavené a nemali by vznikať žiadne bubliny. Ak váš palivový systém začína byť tvrdý, mäkký alebo zmení farbu, je tu pravdepodobnosť, že je treba vedenie vymeniť. Majte na pamäti, že potrubie vo vnútri nádrže sa **zhoršuje rýchlejšie**, než nikde inde v systéme.

Exteriér motora by mal byť udržiavaný v čistote a pravidelne kontrolovaný. Zastrčený vo vnútri krytu, by bolo možné ľahko prehliadnúť uvoľnené matice a skrutky bez častých kontrol. Nečistoty vo vnútri kapoty si môžu ľahko nájsť svoju cestu do karburátora. Aj vnútro kapoty by malo byť udržiavané v čistote.

Sitko paliva karburátora by malo byť pravidelne čistené tiež:

Opatrne odstráňte kryt čerpadla (na vstupnej strane karburátora), tesnenia a membránu čerpadla . Sitko bude viditeľné a možno ho čistiť po starostlivom odstránení. Karburátor je potrebné kontrolovať, čistiť po niekoľkých lietaniach, alebo po leteckej sezóne, alebo ak sa ukladajú na dlhú dobu. Zapaľovacia sviečka by mala byť skontrolovaná, vyčistená a pravidelne vymenená, ak je znečistená alebo opotrebovaná. Každú novú sezónu je dobré lietať na novej sviečke.

- a)** Pred použitím motora, skontrolujte vrtuľu lietadla a rám motora atď. Opatrne sa ubezpečte či sú skrutky a matice pevné.
- b)** Použite čistý benzín. Karburátor bude do značnej miery zašpinený, ak motorový olej používate od rôznych výrobcov a značiek .
- c)** Ak motor beží vo voľnobežných otáčkach príliš dlho, zapaľovacia sviečka by mohla byť vážne zakarbonovaná.
- d)** Vždy skontrolujte a zaistite hadičku medzi palivovou nádržou a karburátorom, uistite sa , že nie je tam žiadny vzduch alebo hadička netesní .
- e)** Udržujte povrch motora čistý. Uistite sa, že od motora je dobre odvádzanie tepla .
- f) UPOZORNENIE:** Prosím, vyčistiť palivový filter v karburátore pravidelne, inak zlyhá s nastavením ihly a motor môže pracovať neisto atď.

- g)** Rozobrať skrutku a otvorte vrchný kryt karburátora **Umyte filter (sitko)**



System zapalovania

RCGF zapalovanie Ver 2.0

1) . Špecifikácia

I.) POZOR - RCGF zapalovania bolo navrhnuté pre motory použité v modeloch lietadiel.

II.) BPMR6F 14mm a BMR6A zapalovania

III.) CM6 10mm

Vstupné napätie 4,8 - 12V

Výstupné napätie 12-16 kV

Odber pri otáčkach: 6000 ot./min - 500 mA ± 5 %

Puzdro - ABS s Nickel plate

Veľkosť kľúča - 14 mm (BPMR6F)

Sviečka - 10mm NGK (CM - 6)

2) . Voľba zdroja napájania RCGF zapalovania ver 2.0 je vyrobená na 4,8 až 12 Voltov .

I.) 4,8 a 6V napätie NiCd / NiMH :

4 články 4.8V pack a 5 článkov 6V balenie s minimálnou kapacitou 800 mAh vytvára horúcu iskru . RCGF zapalovanie ver.2.0 beží čo najefektívnejšie na 4 až 5 článok. **Nepoužívajte starý pack !** Ak používate 4.8V pack motor nemusí dosiahnuť jeho najvyššie menovité otáčky . Ak je to možné používajte **5-článok 6V pack.**

II.) 6,6 Volt Li-Fe Pack :

2cell Li - Fe (A123) - Max napätie 7,2 voltov . Nominálna hodnota 6,6 voltov.

III.) 7.4 Volt Li-Pol Pack :

Najefektívnejšie je použitie 2S LiPo 7,4 V. s kapacitou od 1300 mAh a viac.

3) . Inštalácia

I.) Špirálová ochrana :

Použite dodané špirálové bužírky, sú súčasťou vašeho zapalovania na ochranu vodičov. Zabalte pletené zapalovacie káble, Hallov snímač vedenie a vedenie batérie. **Pozor: Nikdy tieto kable nezáväzujte dohromady spolu !**

II.) Montáž :

Pripevnite svoje zapalovanie na koš motora, ak je to možné . Podlepte zapalovanie penou pre zníženie účinkov vibrácií motora. Môžete použiť montážne výstupky na zapalovanie , ale odporúčame používať zips väzby alebo väzby na suchý zips a zaistite ho . Neinštalujte zapalovanie v trupe. Namontujte zapalovanie čo najďalej od prijímača, ako je to možné a **nikdy nepoužívať rovnaký zdroj energie pre spustenie zapalovanie a prijímač spoločne, ani výstup s PowerBoxu.**

III.) Pripojenie batérie :

RCGF zapalovanie využíva konektory Futaba štýlu zásuvné koncovky. Sledujte farebné kódovanie vodičov (červená + , čierna -) pri pripájaní k zdroju napájania a vypínaču.

Podlepte batérie s penou aby nevybrovali tak ďaleko od prijímača , ako je to možné , pokiaľ možno tesne pri motore .

Poznámka: K dispozícii nie sú žiadne opraviteľné dielce systému zapalovania. Zásah do zapalovania povedie k zrušeniu záruky na motor.

4) . Riešenie problémov zapalovania.

I.) Batérie: Skontrolujte napätie na batérii a uistite sa , že je to zdravá a plne nabitá . Uistite sa , že napätie je 6 a viac Voltov.

II.) Pripojenie: Skontrolujte , či sú všetky pripojenia správne z batérie , k prepínaču , so zapalovaním . Použite volt meter a zistite či má batéria napätie,aby zabezpečila dostatok energie pre zapalovanie a má správnu polaritu .

III.) Hall Senzor: Uistite sa, že orientácia snímacieho senzora je správna, s orientáciou polarity svojho náboja magnet.

Ak budete potrebovať pomoc, obráťte sa na najbližšieho RCGF autorizovaného distribútora alebo dealera.



RCGF záručné podmienky

Táto záruka sa nevzťahuje na nasledujúce:

- Škody spôsobené nesprávnou manipuláciou, prevádzkou, úpravy alebo údržbu.
- Svojpomnou opravou a zásahom inou osobou do motora
- Škodu spôsobenú haváriu.
- Škody spôsobené použitím nesprávneho paliva alebo prísad.
- Škody vzniknuté počas prepravy do servisného strediska

Záručný a registračný list RCGF engine

Typ motora: RCGF: _____

Výrobné číslo motora: _____

Názov kupujúceho: _____

Adresa kupujúceho: _____

Telefón kupujúceho: _____

e-mail kupujúceho: _____

Oficiálny importer RCGF engine pre Slovenskú, Madarskú a Českú republiku

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