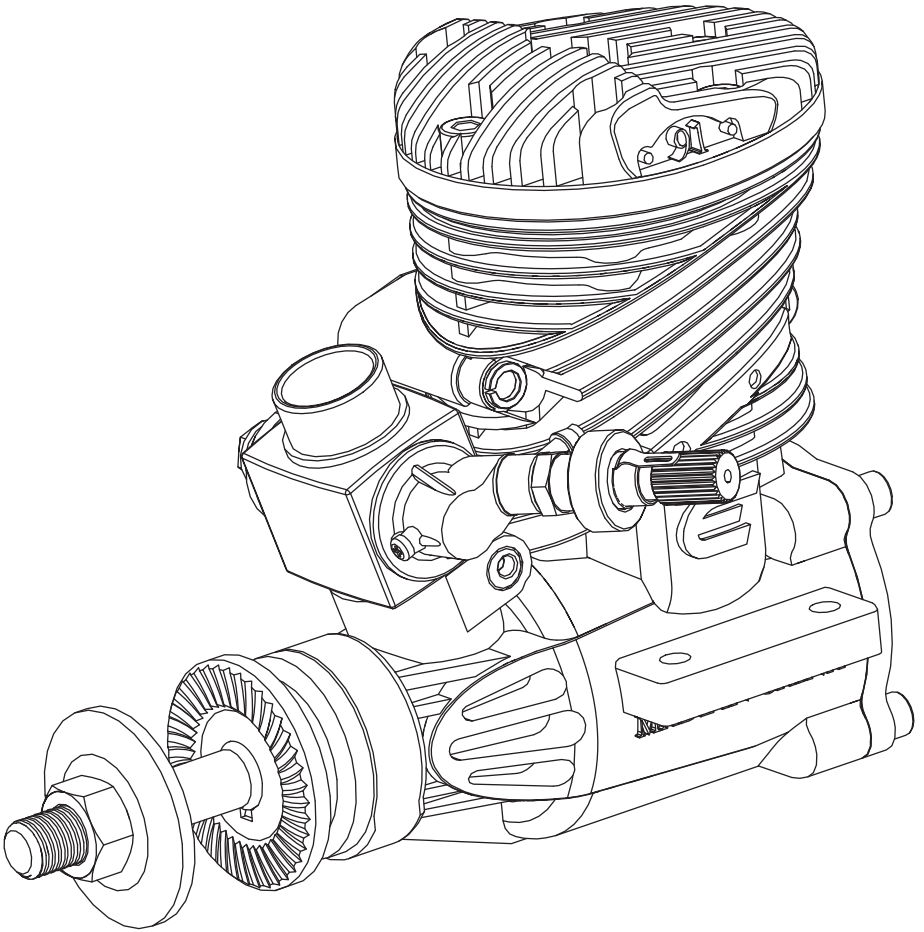




GLOW

.91 c.i.

Evolution® Glow Engines



## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, Inc. For up-to-date product literature, visit [horizonhobby.com](http://horizonhobby.com) and click on the support tab for this product.

## Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.

**CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

**WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, serious injury or death OR create a high probability of superficial injury.



**WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. 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 Horizon Hobby, Inc. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.



**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 Warnings

Model engines produce a substantial amount of power, which can create unsafe situations if not used correctly. Always use common sense and observe all safety precautions when operating, handling or performing any procedure involving your engine. Failure to follow safety precautions could result in serious injury and property damage.

- Always ensure spectators, especially children, are at least 30 feet away when running the engine.
- Always ensure that the propeller is securely attached to the engine shaft and all retaining fasteners are tightened properly before EACH flight. Use of blue threadlock to tighten nuts is advisable.
- Always keep small parts out of the reach of children as they can be choking hazards.
- Always secure the airplane before powering the engine.
- Always keep your face and body away from the path of the propeller blades when starting or running your engine.
- Always stand behind the propeller when making carburetor adjustments.
- Always wear safety glasses or goggles when starting and running your engine.
- Always keep your fuel in a safe place away from sparks, heat or anything that can ignite.
- Always ensure the aircraft is secure and will not move once the engine is started.
- Always rebind your transmitter to your receiver(s) after setup and before first flight.

- Always ensure the throttle failsafe is set to low throttle in your transmitter.
- Always perform a range check prior to flight.
- Always cut off the fuel supply (pinch or disconnect the fuel line to the carburetor) or use the throttle linkage to shut off the air in order to stop the engine.
- Never use hands, fingers, or any other body part to stop the propeller.
- Never throw any object into a propeller to stop it.
- Never run the engine in the vicinity of loose small objects, such as gravel or sand, to avoid the propeller uncontrollably throwing such materials.
- Never wear loose clothing or a loose neckstrap when operating your model engine as these items could become entangled in the propeller.
- Never have loose objects such as screwdrivers, pencils, etc. in your pockets when operating your model engine. These could fall into the propeller.
- Never allow fuel to come into contact with eyes or mouth. Gasoline and other fuels used in model engines are poisonous.
- Always ensure gasoline and fuel are stored in a clearly marked container away from the reach of children.

## Precautionary Guidelines

- Always mount the engine securely on a bench mount or high-quality engine mount.
- Always use the correct size and pitch of propeller for your engine. Refer to the Propeller Chart in this manual.
- Always confirm proper balance of your propeller prior to installation of the engine. Failure to do so could result in damage to the engine and/or airframe.
- Always utilize an electric starter to start your engine.
- Always discard any propeller that is nicked, scratched, cracked or damaged in any way.
- Always run your model engine in a well-ventilated area. Model engines can produce possibly harmful carbon monoxide fumes.
- Always store your fuel safely in a sealed, water-resistant container.
- Always store fuel in a cool, dry location. Do not allow fuel containers to come in direct contact with concrete, as the fuel may absorb moisture.
- Always responsibly discard fuel if there is condensation and/or water inside the fuel container.
- Never return unused fuel from the fuel tank back into the fuel container.
- Never attempt to repair or modify a propeller beyond its intended use.
- Never handle model engines, mufflers and/or tuned pipes until they have had time to cool. They can become extremely hot when in use.

## Introduction

Congratulations on your purchase of the newest and one of the most technically advanced 2-stroke model airplane engines in the world. Whether you are new to the sport of model aviation or are an experienced flier, you will enjoy the features of the new Evolution® .91 Engine.

The Evolution .91 engine is designed to be the most powerful in its class, extremely easy to start and operate, and provide years of enjoyable service. It incorporates many unique design features, such as our SetRight™ needle valve assemblies. We've incorporated an angled needle valve to keep your fingers further from the propeller, and a new ringed piston, dual crankshaft ball bearing and keyed prop driver. Every feature is designed to ensure success with your new engine. The Evolution .91 fits a standard .61-sized engine mount and after-market mufflers, making it easy to squeeze more power into your .61-sized airframe.

This user guide is intended to provide the basic information needed to operate and maintain your Evolution .91 Engine. Every Evolution engine has been baseline adjusted at the factory and is ready to fly.

While this Evolution engine is extremely easy to operate, if this is your first experience flying a model airplane, it is highly recommended that you have the help of an experienced modeler during the first few flights. Your local hobby store or flying club can put you in touch with an experienced pilot in your area.

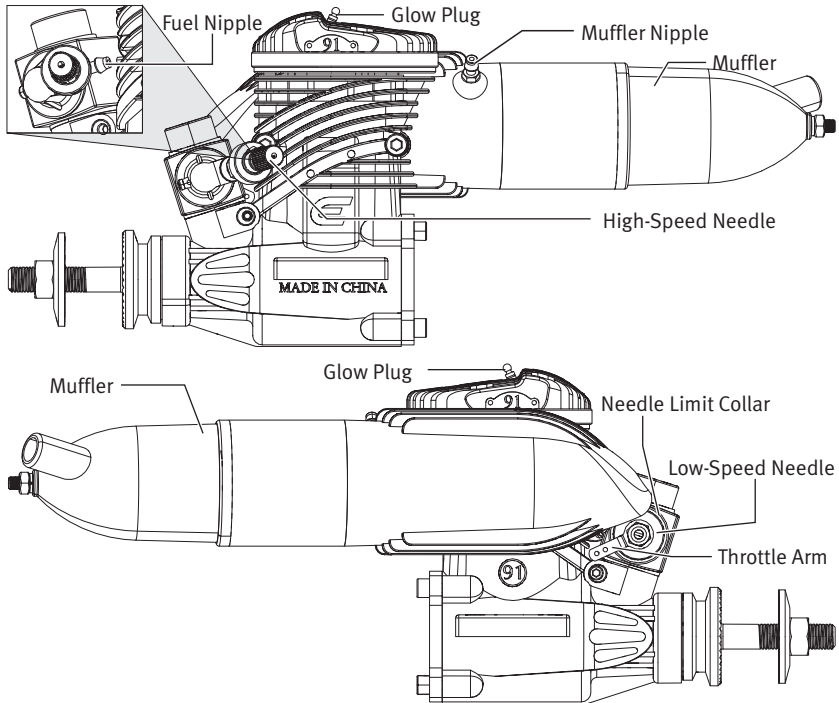
## Included Content

### ENGINE

- Muffler
- Muffler Screws & Gasket
- Glow Plug (EVOGP1)
- In Line Fuel Filter (EVOA105)
- In Line Fuel Filter/Clunk (EVOA106)
- Instruction manual
- Decal sheet

### OPTIONAL ITEMS

- Startup Field Pack (HANSTART)
- Tachometer (HAN156)
- Blue Block After Run Engine Oil Applicator (EVOX1001)
- Blue Block After Run Engine Oil Refill (EVOX1002)
- #9 Performance Glow Plug (HAN3015)
- PowerPro 12V Starter (HAN161)

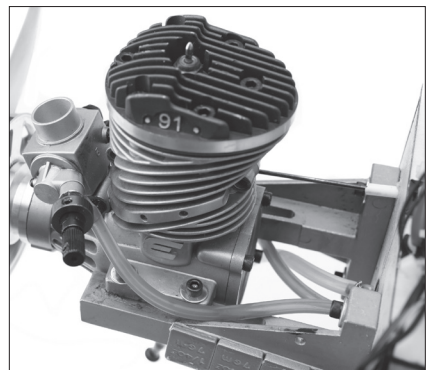


## Installing the Engine

1. Secure the engine mount on the airplane firewall. Tighten the engine mount screws in the firewall.
2. Install the engine on the engine mount according to the airplane manufacturer's instructions.



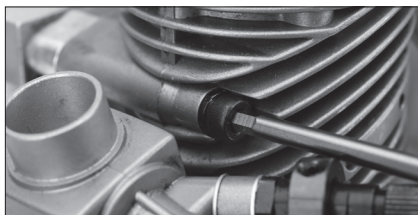
**WARNING:** Tighten all engine mounting screws before each flight. If you do not tighten the engine mounting screws, the screws may vibrate loose and cause the engine to separate from the fuselage.



## Installing the Muffler



The muffler mounting accessory package includes mounting screws (2), lock washers (2), muffler gaskets (2) and L-wrenches (2).



1. Put a lock washer on each of the muffler screws. Push the muffler screws through the cylinder head.
2. Place the muffler gasket over the engine mounting screws.
3. Align the muffler gasket with the exhaust opening and the muffler mounting screws.
4. Tighten the muffler screws.

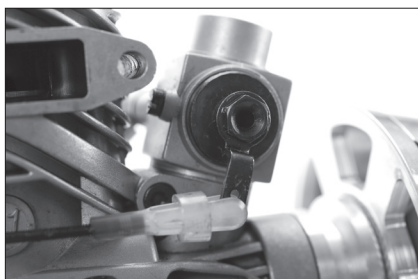
**IMPORTANT:** Tighten the muffler screws after five tanks of fuel. The muffler screws may loosen from heat and vibration.

It is important that you tighten the muffler through-bolt after each use of the first three full tank engine runs. The heat will cause expansion of the through-bolt and muffler body parts. After the third tightening, no further muffler loosening should occur.

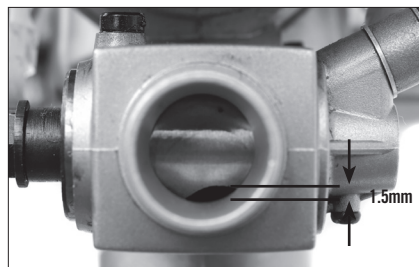
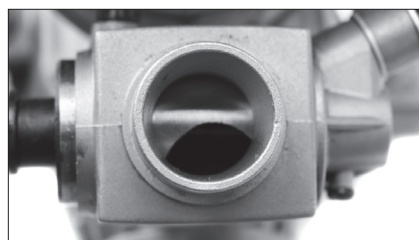
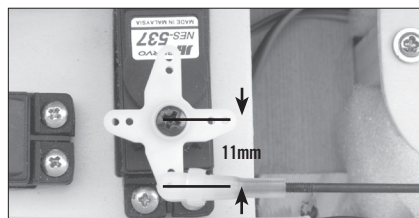
### To tighten the muffler through-bolt:

1. Loosen the muffler lock nut.
2. Tighten the muffler through-bolt screw.
3. Tighten the muffler lock nut.

## Connecting the Throttle Linkage



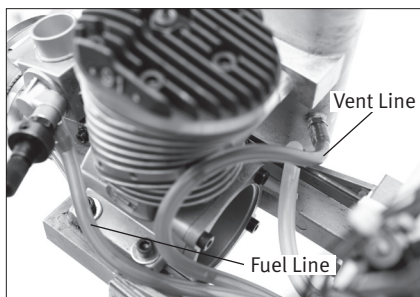
1. Use a secure method to attach the throttle linkage to the throttle arm on the carburetor.
2. Power on the transmitter and receiver.
3. Move the throttle stick to the middle stick position.
4. Adjust the throttle arm so the arm is 90 degrees to the throttle pushrod.
5. Center the throttle servo. Install a servo with a hole 11mm (7/16 in) from the center of the arm.
6. Use a clevis to attach the throttle linkage to the servo arm.



## Adjusting the Throttle Opening

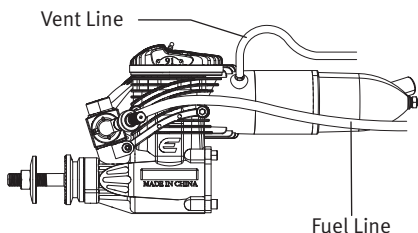
1. Lower the throttle and center the throttle trim.
2. Adjust the length of the throttle linkage until the throttle is open 1.5mm.
3. Move the throttle stick up to confirm the throttle opens. If the throttle does not open, reverse the throttle channel in your transmitter.
4. Move the throttle stick and throttle trim down to confirm the throttle closes.
5. If you reversed the throttle channel in your transmitter and you are using a 2.4GHz radio system, you must re-bind your radio system to set the correct failsafe position.

## Attaching the Fuel Lines



The muffer used here is an after market option for in-cowl installations (Pitts Muffer BISO4091).

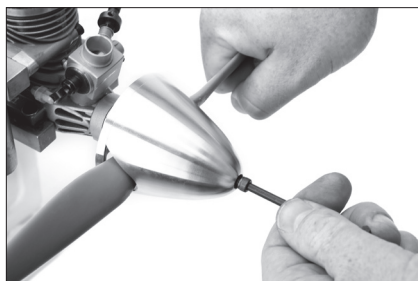
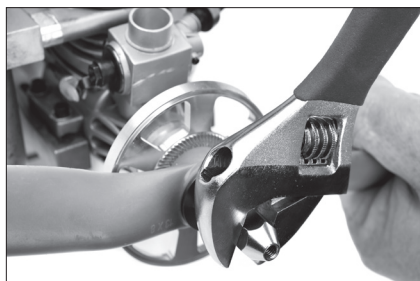
1. Connect medium diameter silicone fuel tubing to the carburetor and the fuel tank supply line.
2. Connect medium diameter silicone fuel tubing to the muffer pressure nipple and the fuel tank vent line.



### RECOMMENDED PROPELLERS

13 x 7–15 x 6 (14 x 7 has tested to be the best performer with this engine although the performance is very good throughout the recommended range)

## Attaching the Propeller and Spinner



1. Remove the prop nut and prop washer from the crankshaft.
2. Install the spinner backplate, followed by the propeller, prop washer and prop nut.
3. Cover the propeller with a cloth and use an adjustable wrench to tighten the prop nut.
4. Install the spinner cone. Make sure the spinner cone is not touching the propeller. Trim the propeller opening if necessary.
5. Tighten the spinner screw(s) to secure the spinner cone.

## Fuel

We recommend using high-quality Cool Power, Omega, or Power Master fuels containing 10 to 15% nitro. The Evolution Engine has been test-run using these fuels. If another brand of fuel is used, it may be necessary to slightly adjust the needle valves to compensate for the differences in fuel.

## Glow Plug

The Evolution engine comes with a specially designed “Super Plug” that prevents idle and transition flameouts. The plug’s unique shape directs the incoming fuel/air mixture away from the plug element. When replacing the plug, be sure to replace it with another Evolution 2- or 4-cycle Super Plug (EVOGP1).

## Starting the Engine

1. Fill the tank with the above-mentioned 10 or 15% fuel.
2. Reattach the fuel lines, making sure the vent and clunk line are attached to the fuel nipple and the muffler pressure nipple. **Do not attach the glow driver yet.**
3. The high-speed needle valve should be turned open 2-turns from closed for the initial first start.
4. With the throttle fully open, place your thumb over the carburetor or the exhaust outlet of the muffler and flip the prop clockwise through 6 complete revolutions, thus priming the engine.
5. Close the throttle to the idle position and have a helper hold your airplane.

If you are planning to use a tuned exhaust system, we highly recommend the use of either of the following Hangar 9® glow plugs.

- HAN3015 #9 Performance Plug
- HAN3020 #3 Performance Plug



*The Hangar 9 START KIT (HANSTART) includes everything needed, except fuel and starter, to get the Evolution engine running.*

6. Attach the glow driver.
7. Turn the engine over using an electric starter. The engine should fire within seconds of applying the starter.
8. Allow the engine to idle for 30 seconds. Adjust the throttle trim if necessary to achieve a constant slow idle.
9. With the glow driver still attached and a helper securely holding the airplane, advance the throttle smoothly to full throttle. The engine will transition to full rpm.
10. Reduce the throttle to idle and remove the glow driver.



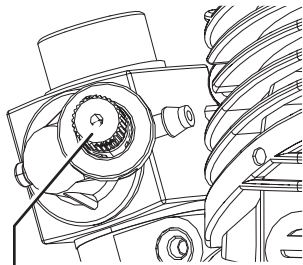
## Setting the Needle Valves

The low-speed needle has a limiter that prevents over-adjustment. If your engine starts from the above procedure, but won't reliably continue to run with the glow driver removed, follow the steps below.



### High-Speed Needle Adjustment

With the engine running, advance the throttle to full throttle while a helper securely holds your airplane. Carefully pinch and release the fuel line to temporarily restrict the fuel flow.



High-Speed Needle Adjustment



**CAUTION:** Do not reach over the propeller while the engine is running.

**Correct:** If the high-speed needle adjustment is correct, the engine will increase rpm slightly (about 300 rpm) and then resume normal operation.

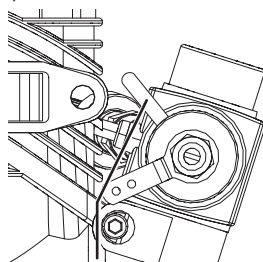
**Too Rich:** If the engine increases a lot (1,000 rpm or greater), the high-speed needle is too rich and must be leaned or turned clockwise.

**Too Lean:** If the engine doesn't increase rpm and simply dies, the high-speed needle is lean and must be richened or turned counterclockwise.

### Low-Speed Needle Adjustment

The low-speed or idle needle valve, included with the SetRight™ assembly, is preadjusted at the factory for best performance at close to sea level conditions. It may be necessary to fine-tune the low-speed adjustment using the following procedure:

1. Start the engine and let it warm up, prior to attempting any adjustments. Make sure that the high-speed adjustment process is complete before attempting to adjust the low-speed needle valve.



Low-Speed Needle Adjustment

*The low-speed needle adjustment range is limited, preventing adjustment beyond the practical range.*

2. Close the throttle slowly. You will adjust the low-speed needle setting by rotating the SetRight adjustment bar clockwise to lean the engine and counterclockwise to richen the engine.



**CAUTION:** Do not attempt to adjust the low-speed needle valve while the engine is running.

3. The fuel mixture should be adjusted as follows: The low-speed fuel mixture is too rich if, when opening the throttle rapidly, the engine emits smoke and “stutters” or “stumbles.” Correct this by rotating the SetRight adjustment bar clockwise in small increments. Continue this process until the engine transitions smoothly from low rpm idle to high rpm without hesitation upon opening the throttle rapidly.
4. The low-speed fuel mixture may be too lean if the engine stops at the lowest idle position or it stops when the throttle is rapidly opened from the idle position. Correct this by rotating the SetRight adjustment bar counterclockwise in small increments until the engine transitions smoothly without hesitation upon opening the throttle rapidly from idle.



## Low-Speed SetRight Needle Valves

The design of the SetRight needle valve system is such that, during normal operating conditions, the typical user will find that the range of adjustment allowed by the system is more than adequate for most situations. As a matter of fact, we intended this to be used as a tool to identify operating problems. If you find that the range of adjustment allowed by the SetRight needle is inadequate after your initial period of running, then a problem in your engine system has occurred. This might be a bad glow plug, dirty or old fuel, an air leak in the fuel system somewhere or any number of other reasons. Do not make any permanent adjustment range changes to the SetRight needle system if it was once working correctly for you and now does not. Investigate other problems first.

However, occasionally due to atmospheric, altitudinal or fuel conditions, you may find that the range of adjustment built into the SetRight needle valve system is inadequate for your needs. These conditions are rare and easy to fix.

## Maintenance

### After each flying session:

1. Fully drain the fuel from the tank.
2. Start the engine and run it until the fuel is completely run out of the engine.
3. Try starting the engine three more times or until it will no longer fire. This gets all the fuel out of the engine.

Now add several drops (about 10) of after-run oil (EVOX1001 Evolution Engine's Blue Block After Run Oil) into the carburetor and the engine should turn over for a few seconds with the starter. This will prevent rust and corrosion.

### Why would fuel go "bad"?

The largest portion of the fuel is methanol (alcohol). Methanol is hygroscopic; it attracts moisture. This can cause your fuel to be contaminated with water, which will cause poor engine performance. Additionally, the UV rays in sunlight will eventually break down the nitromethane if the fuel jug is stored in sunlight for long periods of time.

### Low-Speed SetRight Needle Valve Correction

Should the low-speed SetRight needle valve need to be adjusted outside the factory-established parameters, follow these steps:

- A. Loosen the setscrew found on the ring of the SetRight assembly to which the adjustment bar is attached.
- B. Rotate the needle valve itself (small slot-headed screw inside the blue ring of the SetRight assembly) clockwise to lean the mixture or counterclockwise to richen the mixture as desired.
- C. Retighten the setscrew on the ring of the SetRight assembly and you have re-established a new range of motion.

### How can you tell when your fuel has gone "bad"?

The first indication will generally be the inability to start the engine at previously run needle-valve settings. Another clue might be that the engine has very poor idle runs, but bogs down tremendously during run up and/or will not attain the same rpms that you are used to.

### How do I keep my fuel fresh?

If you have the opportunity, look for someone at a flying field on a sunny day who has a jug of fuel that is only 1/4 full. What you may notice is that there are droplets attached to the top and sides of the container. This is the moisture in the air that is condensing inside the jug because of the greenhouse effect in a semi-translucent plastic jug. This will also occur within a metal fuel can if the sun warms the contents.

You can combat the effects of the moisture in the air by squeezing all the extra air from your fuel container at the end of the day or transferring your fuel into smaller containers. Many pilots will invest in 1/2 gallon or quart-size containers and only bring that amount of

fuel to the field on any given day. This allows their main supply of fuel to stay at home in a controlled storage environment, virtually ensuring problem-free fuel.

**Tip:** Do not store plastic fuel jugs on metal or concrete surfaces, this can also cause moisture contamination.

### How to Tell If Your Glow Plug Is Bad

The glow plugs on the market today are designed to provide good service to the user and may last a long time or a short time, all dependent upon the way you choose to operate your engine.

Physical indications that you might need to change the glow plug are:

1. Twisted or mangled glow plug elements (usually caused by too high a compression ratio).
2. Small “bumps” are attached to the glow plug element. This will generally be most noticeable during the break-in process. These are actually tiny pieces of aluminum that have attached to the element and will severely hinder the operation of the glow plug.
3. The glow plug element is no longer shiny but is a dull, almost a white powder color (this just comes with age and is a by-product of the catalytic reaction). The shinier the wire, the better the catalytic reaction can be.

Operating indications that you need to change your glow plug are:

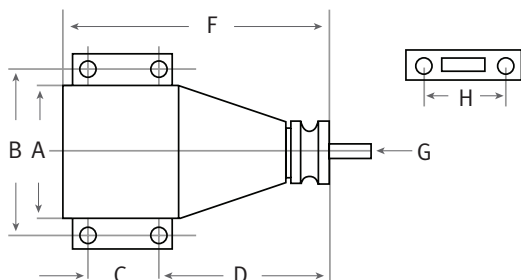
1. The glow element will not light with a charged glow igniter. This indicates that there is a physical short or breakage in the element wire itself.
2. The glow plug lights but the engine will not continue running once the battery is disconnected (this is usually an indication of the microscopic particles discussed earlier).
3. Glow plug lights, the engine runs, but there is a perceptible loss of rpm at full throttle when the battery is disconnected. This is a typical indication that the white powder residue is building to the point that the catalytic reaction of the glow plug is no longer anywhere close to being optimum.

## Troubleshooting Guide

Issue	Possible Cause	Possible Solution
Engine Won't Fire	Glow starter not charged	Charge glow starter
	Glow plug burnt out	Replace glow plug
	No fuel is getting to the carburetor	Check tank, fuel lines reversed Clogged fuel filter, clean or replace
	Clunk wedged at front of fuel tank, clunk line kinked	Hold airplane nose up and give a quick downward jolt to dislodge clunk
	The starter is reversed	Reverse the polarity on the starter cables
Engine Quits Repeatedly	Needles need adjusting	See adjustment procedure
	Bad or old fuel	Replace with fresh fuel
	Worn out glow plug	Replace with new EVOGP1 glow plug
Engine Runs Inconsistently	Hole in fuel line	Replace fuel line
	Bad or old fuel	Replace with fresh fuel

## .91 Evolution Engines Specifications

Item	Disp (c.i.)	Bore (mm)	Stroke (mm)	Weight (oz)	Crank K (ISO)	Cylinder	Propeller
EVOE0910	.91	27.8	24.9	15.3	5/16 x 24	Ringed	14 x 7 @ 10,400 rpm



E = height\*

F = length

G = crankshaft thread size

H = muffler bolt spacing

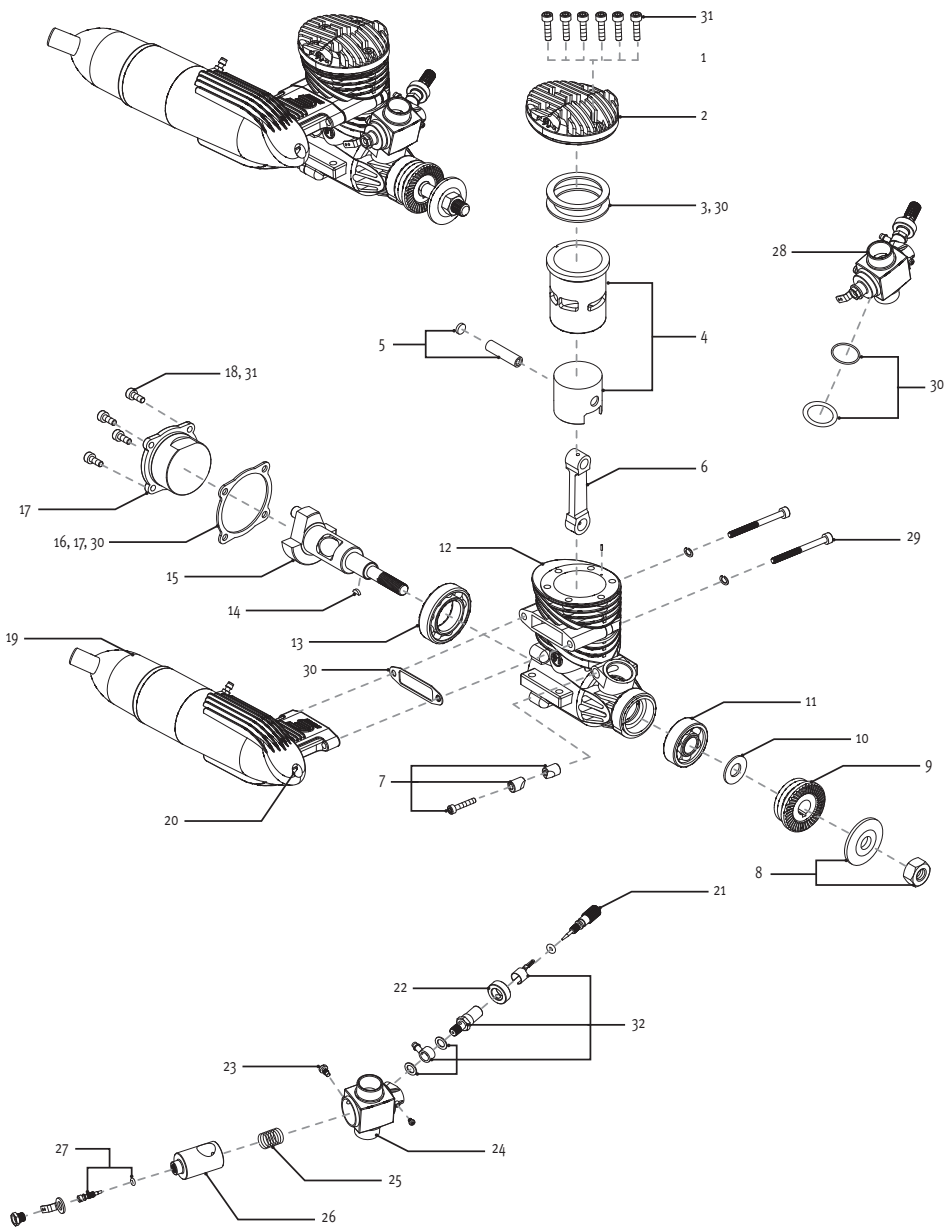
Dimensions	A	B	C	D	E*	F	G	H
EVOE0910	42	52	25	64.2	86	92	5/16 x 24	42

\* Height is from engine C/L to top of cylinder head.

## Parts List

#	Description	Part	#	Description	Part
1	Cylinder Head Screws	EVO46408	18	Back Cover Screws	EVO40134
2	Cylinder Head	EVO91103	19	Muffler Assembly	EVO91601
3	Cylinder Head Gasket	EVO91112	20	Muffler Body Long Screw	EVO91616
4	Cylinder Liner & Piston Set	EVO91203E	21	High-Speed Needle	EVO91829
5	Wrist Pin with Clips	EVO91213	22	Collar w/3mm set screw	EVO046834a
6	Connecting Rod	EVO91204	23	Idle Stop Screw	EVO046825
7	Carburetor retainer	EVO61119	24	Carburetor Body & Spray Bar	EVO91863
8	Prop Washer & Nut	EVO100228	25	Throttle Rotor Spring	EVO46814A
9	Prop Driver	EVO100219	26	Carburetor Barrel	EVO91813
10	Spacer Washer	EVO91225	27	Low Speed Needle Valve	EVO91844F
11	Front Bearing	EVO91109	28	Carburetor Complete	EVO91801
12	Crankcase	EVO91101	29	Muffler Mounting Screw Set	EVO9191A
13	Rear Bearing	EVO400110	30	Engine Gasket Set	EVO91416
14	Woodruff key	EVO91218	31	Engine Screw Set	EVO91901
15	Crankshaft	EVO91210E	32	Needle Valve Holder and clip	EVO91830
16	Back Cover Gasket	EVO91111			
17	Back Cover Set	EVO91102			

## Exploded View



## 2-YEAR LIMITED WARRANTY

**What this Warranty Covers** - Horizon Hobby, Inc., (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship for a period of 2 years from the date of purchase.

**What is Not Covered** - This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations. OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

**Purchaser's Remedy** - Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

**Limitation of Liability** - HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

**Law** - These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

### WARRANTY SERVICES

**Questions, Assistance, and Services** - Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at [www.horizonhobby.com](http://www.horizonhobby.com), submit a Product Support Inquiry, or call 877.504.0233 toll free to speak to a Product Support representative.

**Inspection or Services** - If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at [http://www.horizonhobby.com/content/\\_service-center\\_render-service-center](http://www.horizonhobby.com/content/_service-center_render-service-center). If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**NOTICE: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please**

contact the appropriate Horizon Product Support office.

**Warranty Requirements - For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date.** Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

**Non-Warranty Service - Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost.** By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates

will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website [http://www.horizonhobby.com/content/\\_service-center-render-service-center](http://www.horizonhobby.com/content/_service-center-render-service-center).

**ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.**

## WARRANTY AND SERVICE CONTACT INFORMATION

Horizon Hobby		Address	Phone Number/Email Address
United States of America	Horizon Service Center (Electronics and engines)	4105 Fieldstone Rd Champaign, Illinois, 61822 USA	877-504-0233 Online Repair Request: visit <a href="http://www.horizonhobby.com/service">www.horizonhobby.com/service</a>
	Horizon Product Support (All other products)		877-504-0233 <a href="mailto:productsupport@horizonhobby.com">productsupport@horizonhobby.com</a>
United Kingdom	Horizon Hobby Limited	Units 1-4 , Ployters Rd, Staple Tye, Harlow, Essex, CM18 7NS, United Kingdom	+44 (0) 1279 641 097 <a href="mailto:sales@horizonhobby.co.uk">sales@horizonhobby.co.uk</a>
Germany	Horizon Technischer Service	Christian-Junge-Straße 1 25337 Elmshom, Germany	+49 (0) 4121 2655 100 <a href="mailto:service@horizonhobby.de">service@horizonhobby.de</a>
France	Horizon Hobby SAS	11 Rue Georges Charpak 77127 Lieusaint, France	+33 (0) 1 60 18 34 90 <a href="mailto:infofrance@horizonhobby.com">infofrance@horizonhobby.com</a>

## COMPLIANCE INFORMATION FOR THE EUROPEAN UNION



### Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.



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