

# Evolution® High-Performance Muffler (.40-.60 NX, 10GX) Instructions



## NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit 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:

**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.

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

**NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of 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 alter product in any way without the approval of Horizon Hobby, LLC. 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.

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

**WARNING:** Do not touch this product while in use or within 10 minutes after use. It becomes extremely hot during normal use, which could lead to burns.

## Introduction

This muffler has been developed and tested for use with the Evolution® 60NX, 52NX, 46NX glow engines and the 10GX, and 10GX2 Gas engines. This muffler will also fit on other engines in the .40-.60 size range with standard 37mm through-bolt muffler mounting dimensions (muffler screws through the engine).

This muffler is tuned for the 15,000 to 17,000 RPM range. Propellers should be selected to put the engine into that RPM range for maximum performance.

## Installation

Determine if a muffler extension or modifications to the airframe is necessary before installing the muffler. The muffler should not touch any part of the airframe.

1. Remove the existing muffler and screws from the engine.
2. Apply a thin layer of high temp RTV (available from auto parts stores) on the face of the muffler port.

3. Insert the muffler screws into the muffler mounting holes and apply a small amount of thread lock to the screws. PAAPT42 (blue) is recommended for easier removal later. PAAPT71 (red) may be used for the higher temperatures on Gasoline engines, but only a small amount is required. A dab of red thread lock on the last few threads is sufficient.
4. Tighten the mounting screws using a 2.5mm Allen wrench. Tighten both screws evenly to prevent distorting the engine case.
5. For engines using muffler pressure, connect the muffler pressure fitting to the fuel tank so the tubing is not bent or kinked.  
For pumped engines, connect a short length of fuel tubing to the muffler pressure fitting and plug the line with a stopper.
6. The low-speed and high-speed needle valves may need adjustment after installation of this muffler. Refer to the engine manual for tuning instructions.

## TIPS:

1. Paper gaskets are not recommended because of the high performance nature of this product.
2. Due to increased RPM produced by this muffler, glow engines may require a slightly warmer glow plug than stock. The HAN3011 glow plug is recommended for Evolution engines when using this muffler.
3. This High Performance Evolution muffler is longer than stock mufflers. The specific length is what makes the muffler tuned to increase performance, and it cannot be shortened.
4. Exhaust deflectors or extensions may be installed if needed to help direct exhaust gases away from the airframe.
5. The propeller may need to be changed to ensure the engine reaches the speeds needed to "come on the pipe," which is 15,000–17,000 rpm. Look for the RPM to increase approximately 1,500 RPM or more above the stock muffler. Using this muffler on engines spinning less than 15,000 RPM will not yield performance gains over the stock muffler. Refer to the engine manual for propeller recommendations to match the engine.

Engine size	Propeller ranges for common engines
.40-.46 c.i.	9x7, 9x8, 10x5, 10x6
.52-.60 c.i. (10cc)	10x6, 10x7, 10x8, 10x9, 11x6, 11x7

**WARNING:** Only use propellers rated to exceed 15,000 RPM on the ground. Do not use propellers for electric aircraft on fuel powered engines. Selecting the wrong propeller may result in propeller failure and could result in personal injury or property damage.

## Option Parts

PAAPT42	Blue Thread Lock
PAAPT71	Red Thread Lock
EVO100E46A	Muffler Mounting Screws, (the included paper gasket is not recommended for this muffler)
EVO0466101	8mm Muffler Extension with Extended Screws
EVO0466102	13mm Muffler Extension with Extended Screws
EVOA104	Exhaust Deflector Kit

## LIMITED WARRANTY

**Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at 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, (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations.

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### 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.

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### 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 horizonhobby.com, submit an inquiry to productsupport@horizonhobby.com or call the toll-free telephone number referenced in the Warranty and Service Contact Information section to speak with 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. 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.

**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.**

### 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.**

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## Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	4105 Fieldstone Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	

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