

Additional Items Needed

- 12- to 18-inch aileron extension (EXPERT part numbers EXTRA115 & EXTRA120)
- For non-programmable transmitters, a Y-harness (EXTRA310)

Features

- One-touch setup
- Lightweight and compact
- No soldering required
- Reverse polarity protection
- Compatible with all brands of AM, FM and PCM systems
- Glow plug output short circuit protection
- Automatically turns On/Off via the receiver switch
- On/Off position can be programmed to any throttle setting
- Battery packs of 1 (1.2V), 4 (4.8V) or 5 (6V) cells can be used
- Universal connector fits JR, Futaba, Airtronics (Z) and HiTec
- Adaptable to twin cylinders
- Provides lower idle rpm
- Reduced risk of engine failure during takeoff and landing
- Improves idling on inverted mounted engines



On-Board Digital Glow Driver Instructions

EXTRA550

Important Information

- While the Glow Driver is reverse polarity protected, reversing the polarity (+ and -) connection of the battery pack will burn out the glow plug when using 4.8V and 6V battery packs.
- The gauge size and length of the wires chosen will effect the performance of the glow plug. For most applications, 18-gauge wire works well. If longer than normal leads are needed, it may be necessary to use a larger gauge wire.
- Do not install the Glow Driver where it will be exposed to extreme heat, as doing so will reduce the life of the Glow Driver.
- Never leave the receiver pack on unattended. Doing so could leave the glow plug ignited, making it possible for the engine to be started automatically.
- Although glow engines will idle slower and more reliably while the glow driver is ignited, the Glow Driver should not be continuously left on throughout the flight. Doing so will reduce the life of the glow plug and drain the battery at a much faster rate. For most applications, setting the Glow Driver at 1/4 stick position and below is sufficient.

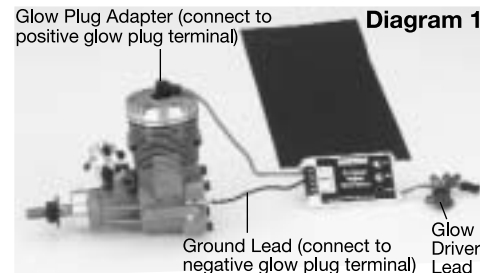
The Glow Driver will monitor the throttle position and will only turn on the glow plug below the preprogrammed throttle setting.

Pre-installation & Connections

Before the Glow Driver is installed in the model, it will first be necessary to determine its location in the fuselage so that the proper lengths of the wires can be determined. When selecting the location, please take into account the effect that the weight of the Glow Driver and its battery will have on the model's center of gravity.

The Glow Driver should be installed after the engine and Rx system have been installed.

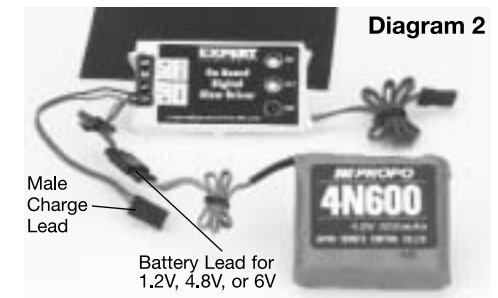
1. Determine the location of the Glow Driver and the Glow Driver battery in the fuselage. Place the Glow Driver in a location away from other electrical components. Once the locations have been determined, measure the lengths of the glow plug and ground leads. It is suggested that these leads be cut as short as possible to the Glow Driver to ensure that the glow plug functions as efficiently as possible. When satisfied with the Glow Driver position, strip approximately one-quarter of an inch from the lead ends. Screw the leads into place in the glow plug terminals.



2. Due to varying installation positions, it will be necessary to purchase the extension required based on the length needed to connect the Glow Driver to the battery. Determine the distance between the Glow Driver and its

battery, also keeping in mind the length required for the charge lead. Combine these measurements when determining the length of the aileron extension needed. Keep in mind that the male end of the extension will be used for charging. A minimum 12" aileron extension will be required.

Note: It is recommended to use a separate charging lead for the Glow Driver. This method requires two separate connectors—one female connector to plug into the battery pack and one male connector, which would hang free to be used when charging. Both leads would be secured together to their respective polarities (+ and -) into the battery terminals of the Glow Driver. An aileron extension divided into two separate pieces works well for this application. EXPERT part numbers EXTRA115 (12" extension) and EXTRA120 (18" extension) work well.



3. Be sure to use the positive and negative wires of the aileron extension.

Note: For JR® extensions, the red wire is positive and the brown wire is negative. For all other brands, (Futaba, Airtronics Z and HiTec), the red wire is positive and the black wire is negative. The remaining wire is the signal wire, which is not used in this operation.

4. Once the correct lengths have been determined for the battery and charge leads, cut the extension at that point. Strip approximately 1/4" from the male and female lead wires and twist the same

color wires together. Insert the wire ends into the battery terminals and screw them into position.

Note: Be sure to connect the positive lead to the positive battery terminal of the Glow Driver.

5. At this time, plug the chosen battery into the female battery lead.

Note: If using a single cell to operate the Glow Driver, it will be necessary to solder the proper male connector to the cell to ensure that it fits the female connector.

Twin Cylinder Engines

Note: For both glow plugs to function properly, a 5-cell 6V battery pack should be used. Connect the negative (-) glow plug terminal to the engine case. Connect the positive (+) glow plug terminal to both cylinders' glow plugs. To do this it will be necessary to use two separate glow plug wires for both cylinder heads. McDaniels "Remote Plug Adaptor" (MCD444) is a good choice for this application. Both glow plug wires can be inserted into the positive terminal and screwed tight.

6. All connections should be complete. Do not permanently install the Glow Driver at this time. Move on to the set-up procedure.

Setup with Non-Programmable Transmitters

If the transmitter system being used does not have programmable mixing, it will be necessary to use a Y-harness (EXRA310) to operate the Glow Driver.

1. Plug the Glow Driver lead into one of the female ends of the Y-harness; the throttle servo lead will plug into the remaining female end. Plug the male end of the Y-harness into the throttle channel of the receiver.

2. Turn on the transmitter and receiver.
3. Set the throttle at 1/4 above idle. This will be the set-point at which the Glow Driver ignites.

4. Press the *Set* button. The Glow Driver has now memorized the set-point position.

5. Move the throttle stick up and down. The red LED should come on when the throttle stick goes below the set-point (low throttle). If the LED is on when the throttle stick is above the set-point, then press the *Reverse* button.

6. The set-point can be adjusted any time at any point on the throttle curve by repeating the previous steps.

7. After the Glow Driver has been tested, isolate the Glow Driver from vibration with foam and mount it in its predetermined location.

8. Perform a range check of the transmitter/receiver systems.

Setup with Programmable Transmitters

If the transmitter being used has programmable mixing, the Glow Driver can be electronically mixed to the throttle channel.

1. Connect the Glow Driver lead to an unused channel. Turn on the transmitter and receiver. Mix the throttle channel to the auxiliary Glow Driver channel. The Glow Driver can now be controlled through the throttle channel.

2. Set the throttle at 1/4 above idle. This will be the set-point at which the Glow Driver ignites.

3. Press the *Set* button. The Glow Driver has now memorized the set-point position.

4. Move the throttle stick up and down; the red LED should come on when the throttle stick goes below the set-point (low throttle). If the LED is on when the throttle stick is above the set-point, then press the *Reverse* button.

5. The set-point can be adjusted any

time, at any point on the throttle curve, by repeating the previous steps.

6. After the Glow Driver has been tested, isolate the Glow Driver from

vibration with foam and mount it in its predetermined location.

7. Perform a range check of the transmitter/receiver systems.

Warranty Information

Warranty Period:

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied. (b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE. (c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or determined repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits:

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. 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 this Product, you are advised to return this 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).

Safety Precautions:

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. The Product 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 injury.

Questions, Assistance, and Repairs:

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact 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 direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). 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**. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty the repair 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 repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of 1/2 hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. **Please note: non-warranty repair is only available on electronics and model engines.**

Electronics and engines requiring inspection or repair should be shipped to the following address:
**Horizon Service Center 4105 Fieldstone Road
Champaign, Illinois 61822**

All other Products requiring warranty inspection or repair should be shipped to the following address:
**Horizon Product Support 4105 Fieldstone Road
Champaign, Illinois 61822**

Please call 877-504-0233 or email us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.