

# *ASW 28 2.0m PNP*



**INSTRUCTION MANUAL**

## 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 or towerhobbies.com and click on the support or resources 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, and serious injury 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 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. 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 use with incompatible components or alter this product in any way outside of the instructions provided by 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.**

## Safety Precautions and Warnings

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- Never place any portion of the model in your mouth as it could cause serious injury or even death.
- Never operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- Always ensure failsafe is properly set before flying.
- Never operate aircraft with damaged wiring.
- Never touch moving parts.

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## Specifications

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- Wingspan: 2020mm (with wingtips attached)  
2000mm (without wingtips attached)
- Length: 1165mm
- Flying Weight: 1800g
- Flight Time: 10-15 minutes

## Components

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- Motor: 3542, 850kV
- ESC: 40A Brushless
- Servos: 9g, Metal Gear (6)
- Propeller: 11 x 6
- Transmitter: 6+ Channel (not included)
- Receiver: Spektrum™ AR631 recommended (not included)
- Battery: 4S 2200mAh 30C (not included)

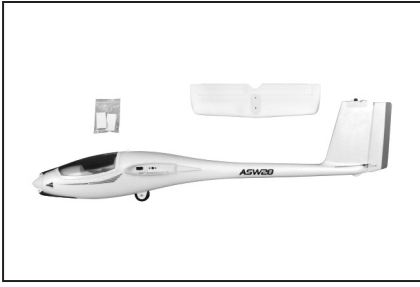
## Box Contents

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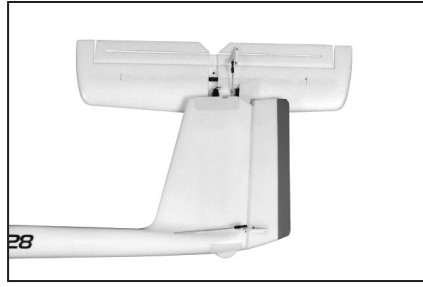
- Fuselage
- Left and right wing panels
- Horizontal stabilizer
- Winglets
- Wing tubes
- Screw Set and Servo Arms



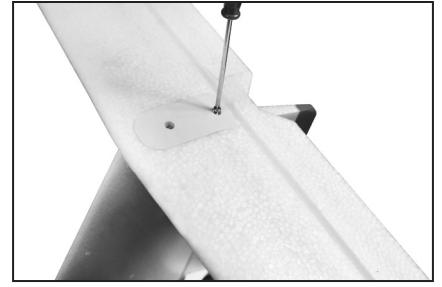
# Assembly



1. Take out the fuselage, horizontal stabilizer and accessory bag.



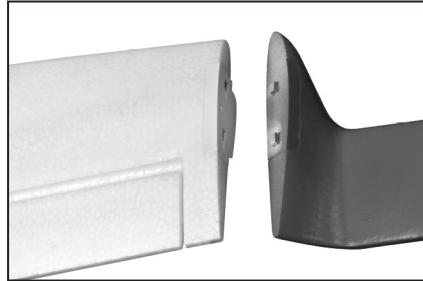
2. Connect the servo plug on the horizontal stabilizer to the servo cable socket in the vertical stabilizer.



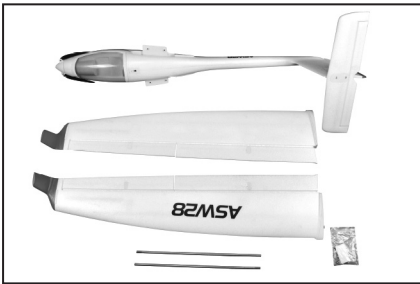
3. Attach the horizontal stabilizer to the vertical stabilizer with two M3 x 17mm screws.



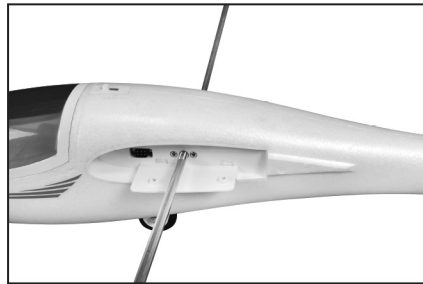
4. To attach the optional wingtips, take out the wing panels and wingtips.



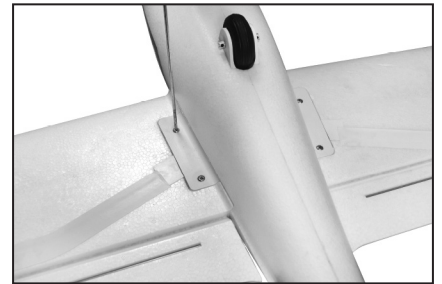
5. Attach the wingtips to the mounting slots on the ends of the wing panels.



6. Take out the fuselage, assembled wing panels, wing spar joiners and accessory bag.



7. Screw the wing spar joiners into the mounting hole of the fuselage.



8. Slide the wing panels onto the joiners and secure the panels to the fuselage with four M4 x 10mm screws.

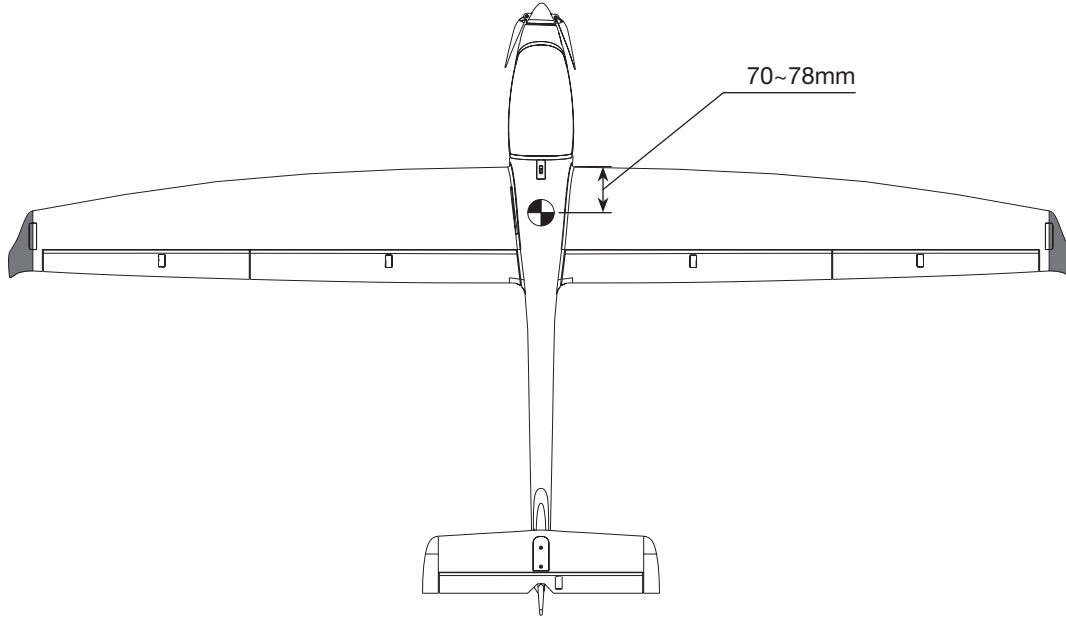




## Center of Gravity

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Check the position of the center of gravity (CG) as shown in the diagram, 70-78mm back from the leading edge of the wing at the fuselage. Setting the correct CG is essential for successful flight.



## Before Every Flight

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To help avoid flight accidents, ground inspections should be performed prior to every flight.

- Ensure all screws are secure, the servo arms and horns are properly connected and the wing is properly secured.
- Install the recommended battery (not included), adjusting the placement to ensure the center of gravity is correct, as recommended in the manual.
- Ensure both the flight battery and the transmitter battery are undamaged and fully charged.
- Ensure the transmitter throttle stick is at the lowest position prior to powering on the aircraft.
- After the aircraft is powered on, perform a control surface check to ensure both proper travel and the surfaces return to neutral when the transmitter sticks are returned to neutral.
- With all body parts and loose items away from the propeller and the aircraft securely held, gently push the throttle up to check for correct rotation of the propeller.
- For inexperienced pilots, always seek assistance from an experienced pilot.

## Flight Time

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Based on the specifications of the recommended battery (not included), we suggest setting a flight timer to 4 minutes of powered flight. The actual flight time will vary depending on the battery used, aircraft weight, flight conditions and the flying style of the pilot. When the timer expires, do not fly too far downwind to prevent not being able to return safely. Land the aircraft and recharge the battery.

## Flying Tips

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- We suggest you practice your flying skills on an RC flight simulator before attempting to fly this model.
- The first flights should be made at an altitude above 50 meters at approximately half throttle, until you become familiar with the flight characteristics of the aircraft.
- Always take off and land into the wind.
- Always fly the aircraft in front of you. Do not fly the aircraft directly above your head or behind yourself.

# Troubleshooting

Problem	Possible Cause	Solution
Aircraft will not respond to the throttle but responds to other controls	ESC is not armed	Lower throttle stick and throttle trim to lowest settings
	Throttle channel is reversed	Reverse throttle channel on the transmitter
Extra propeller noise or vibration	Damaged spinner, propeller, motor or mount	Replace damaged parts
	Loose propeller and spinner parts	Tighten parts for propeller adapter, propeller and spinner
	Propeller installed backwards	Remove and install the propeller correctly
Reduced flight time or aircraft is underpowered	Flight battery charge is low	Completely recharge flight battery
	Propeller installed backwards	Remove and install the propeller correctly
	Flight battery damaged	Replace the flight battery and follow flight battery instructions
Control surface does not move, or is slow to respond to control inputs	Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire damaged or connections loose	Do a check of connections for loose wiring
Controls reversed	Channels are reversed in the transmitter	Do the control direction test and adjust controls for aircraft and transmitter
Motor loses power or pulses then loses power	Damage to motor or battery	Do a check of batteries, transmitter, receiver, ESC, motor and wiring for damage and replace as needed
	ESC uses default soft Low Voltage Cutoff (LVC)	Land aircraft immediately and recharge the flight battery
LED on receiver flashes slowly	Power loss to the receiver	Check connection from the ESC to the receiver
		Check servos for damage
		Check linkages for binding

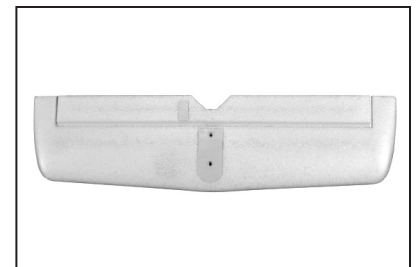
# Replacement Parts



TOWA127501  
Fuselage



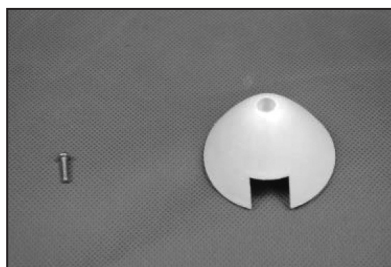
TOWA127502  
Wing Set



TOWA127504  
Horizontal Stabilizer



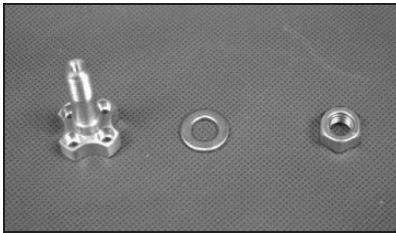
TOWA127503  
Canopy Hatch



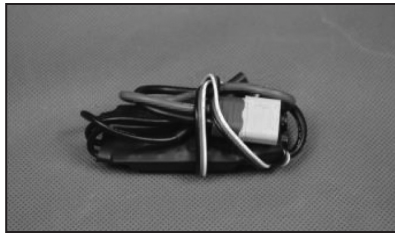
TOWA127506  
Spinner



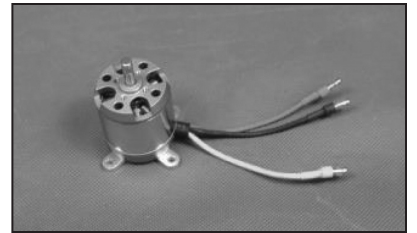
TOWA127507  
Propeller; 11x6



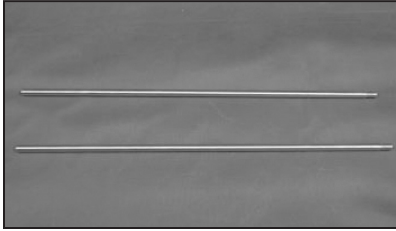
TOWA127515  
Propeller Adapter



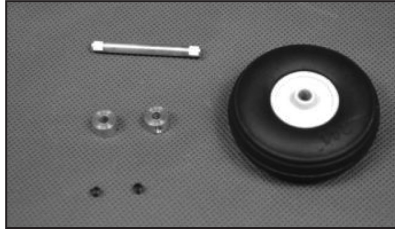
TOWA127512  
40A ESC (XT60 Connector)



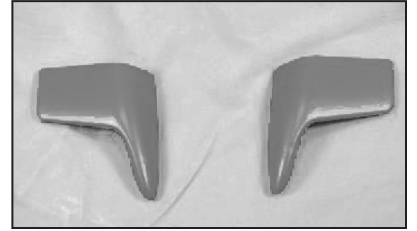
TOWA127511  
3542-850Kv Outrunner Motor



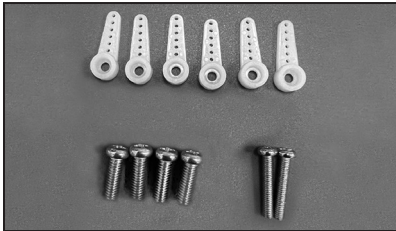
TOWA127514  
Wing Tubes



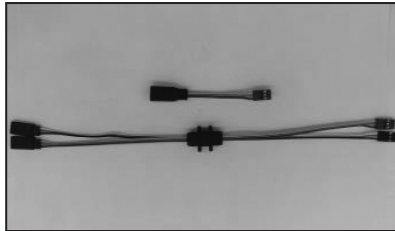
TOWA127509  
Main Wheel, 44mm



TOWA127505  
Winglet Set



TOWA127508  
Screws and Servo Arms



TOWA127510  
Wing Wiring Set



TOWA127516  
9g Sub-Micro MG Servo, 80mm Lead  
All servos are the same, however replacing various servos may require an additional servo extension lead. Use the table below to find the correct servo extension for each servo:



TOWA127513  
Decal Set

Servo Position	Extension required
Elevator	no extension
Rudder	70mm
Ailerons	570mm
Left Flap	130mm
Right Flap	220mm

# Limited Warranty

## What this Warranty Covers

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.

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 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.

**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.**

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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)	<a href="http://servicecenter.horizonhobby.com/RequestForm/">servicecenter.horizonhobby.com/RequestForm/</a>	2904 Research Rd Champaign, IL 61822
	Horizon Product Support (Product Technical Assistance)	<a href="mailto:productsupport@horizonhobby.com">productsupport@horizonhobby.com</a> 877-504-0233	
	Sales	<a href="mailto:websales@horizonhobby.com">websales@horizonhobby.com</a> 800-338-4639	
European Union	Horizon Technischer Service	<a href="mailto:service@horizonhobby.eu">service@horizonhobby.eu</a>	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	







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