ARES Advantage

Optim 80 CP

Instruction Manual

Specifications

Length:	**8.5 in (215.9mm)**
Height:	**3 in (76.2mm)**
Main Rotor Diameter:	**8 in (203.2mm)**
Weight with Battery:	**1.3 oz (36g)**
Main Motor:	**Coreless (installed)**
Tail Motor:	**Micro-Coreless (installed)**
Battery:	**180mAh 1S 3.7V 25C LiPo (included)**
Transmitter:	**6-shift 2.4GHz (included)**
On-Board Electronics:	**3-in-1 control unit with High Speed Linear Servos**

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Introduction

The Ares (air-eez) Advantage Optim 80 CP is the ideal RC helicopter for learning how to take the big step from sport flying to 3D. If you're new to CP flight, your first step is to fly using the advanced 6-axis stabilization system on the Optim 80 CP that allows you to fly basic sport maneuvers. All you have to do if you happen to get into trouble is let go of the sticks and the 80 CP will right itself, return to a level hover and avoid a potential crash. When you're ready to give 3D flying a try, just the flip of a switch puts you into 3-axis control mode and you're able to try just about any 3D move you can imagine. If you get out of control, just flipping the switch back to 6-axis control automatically stabilizes the heli – helping to make the Optim 80 CP the best product on the market to help you advance from sport flying to 3D flight!

The Ares Advantage Optim 80 CP airframe is powered by a coreless motor and comes 100% factory-assembled as a RTF (Ready-to-Fly) heli, so you get a 6-shift 2.4Ghz transmitter, a 180mAh 1S 3.7V 25c LiPo battery and even the AA batteries to power your transmitter. A 500mA DC Dual Port Charger and 5V 1S USB Power Cord are also included so you can charge 2 batteries at once to maximize your flying time. With nothing extra to buy, you'll be flying your Ares Advantage Optim 80 CP either indoors, or outside in light winds within minutes of opening the box!

Safety Precautions

Failure to use this product in the intended manner as described in the following instruction can result in damage and/or personal injury. A Radio Controlled (RC) airplane/helicopter/quadcopter is not a toy! If misused it can cause serious bodily harm and damage to property.

Keep items that could become entangled in the rotor blades away from the rotor blades, including loose clothing, tools, etc. Be especially sure to keep your hands, face and other parts of your body away from the rotor blades. As the user of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

This model is controlled by a radio signal that is subject to possible interference from a variety of sources outside your control. This interference can cause momentary loss of control so it is advisable to always keep a safe distance from objects and people in all directions around your model as this will help to avoid collisions and/or injury.

General Precautions

- Never operate your model if the voltage of the batteries in the transmitter is too low.
- Always operate your model in an open area away from obstacles, people, vehicles, buildings, etc.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable batteries, etc.).
- Keep all chemicals, small parts and all electronic components out of the reach of children.
- Moisture causes damage to electronic components. Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water.
- Never lick or place any portion of the model in your mouth as it could cause serious injury or even death.

FCC Information

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.405GHz to 2.462GHz frequency range.
The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use: USA

Optim 80 CP Contents

Item	Description
Not Available Separately	Optim 80 CP RTF Airframe
AZSZ2405	6-shift Helicopter Transmitter, 2.4GHz, Mode 2
Not Available Separately	AA Batteries (4pcs)
AZSZ2473	180mAh 1-Cell/1S 3.7V 25C LiPo Battery (2pcs)
AZSZ2484	500mA DC USB Dual Port Charger
AZSZ2449	Main Rotor Blade Set
AZSZ2439	Tail Rotor

Needed to Complete

The Optim 80 CP RTF includes everything needed to fly right out of the box. There's nothing extra to buy or provide!

LiPo Battery Warnings

IMPORTANT NOTE: Lithium Polymer batteries are significantly more volatile than the alkaline, NiCd or NiMH batteries also used in RC applications. All instructions and warnings must be followed exactly to prevent property damage and/or personal injury as mishandling of LiPo batteries can result in fire. By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.

- You ***MUST*** charge the LiPo battery in a safe area away from flammable materials.

- ***NEVER*** charge the LiPo battery unattended at any time. When charging the battery you should ***ALWAYS*** remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.

- After flying/discharging the battery you must allow it to cool to ambient/room temperature before recharging.

- To charge the LiPo battery you ***MUST*** use only the included dual port USB charger. Failure to do so may result in a fire causing property damage and/or personal injury. **DO NOT use a NiCd or NiMH charger.**

- If at any time during the charge or discharge process the battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery**,** then place it in a safe, open area away from flammable materials to observe for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.

- Store the battery at room temperature, approximately 68–77° Fahrenheit (F), and in a dry area for best results.

- When transporting or temporarily storing the battery, the temperature range should be from approximately 40–100°F. Do not store the battery or model in a hot garage, car or direct sunlight whenever possible. **If stored in a hot garage or car the battery can be damaged or even catch fire!**

- Do not over-discharge the LiPo battery. Discharging the LiPo battery too low can cause damage to the battery resulting in reduced power, flight duration or failure of the battery entirely.

- LiPo cells should not be discharged to below 3.0V each under load. In the case of the 1-Cell/1S 3.7V LiPo battery used to power the Optim 80 CP, you will not want to allow the battery to fall below 3.0V during flight.
- The 3-in-1 control unit has low voltage cutoff (LVC) protection. When the flight battery voltage drops below a set point the LED will begin to blink rapidly and the throttle gradually is reduced. At this point the battery is at about 3.4V and should be recharged.

Charging LiPo Battery

You **MUST** charge the included 180mAh 1-Cell/1S 3.7V 25C LiPo Battery (AZSZ2473) using the included 500mA DC USB Dual Port Charger (AZSZ2484) or a suitably compatible LiPo battery charger. Charging the LiPo battery using a non-LiPo battery compatible charger (such as a NiCd or NiMH battery charger), or even a different LiPo battery charger with the incorrect settings, may result in damage to the battery or even fire resulting in property damage and/or personal injury.

To charge the flight battery, first plug the Mini-USB charge cord into the 500mA DC USB Dual Port Charger. Then plug the standard USB end into your computer or other suitable 5V USB outlet. The LED will start GREEN and when you plug the flight battery into the charger the LED change to RED. When the charge is complete the LED returns to GREEN.

Natural Flight Progression

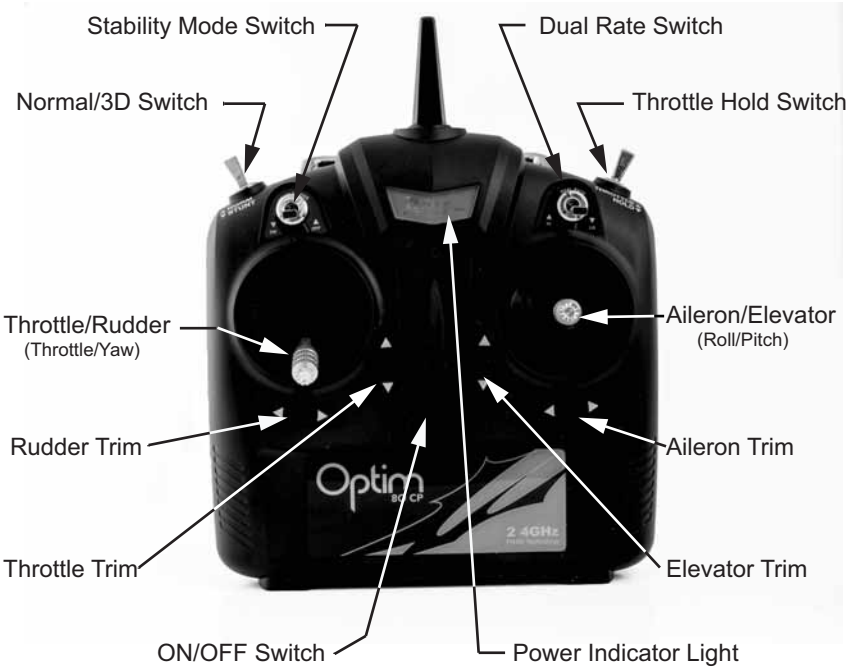
The Optim 80 CP offers two flight modes that enable pilots with varying degrees of experience to enjoy CP helicotper flight. The first mode is Stable Mode, which the pilot can turn on by setting the switch labeled “Stable Mode” to the “ON” position.

In Stable Mode, the helicopter flies like a high performance traditional CP helicopter, except that there is a stabilizing force which pulls it toward a neutral hover. As the helicopter moves further from neutral, this restoring or stabilizing force increases. Thus the helicopter can not become inverted when Stable Mode is active. When the cyclic stick is released, the helicopter quickly returns to neutral, making stable mode excellent for low-time pilots who are not entirely comfortable with traditional CP flight. The helicopter flies and feels like a CP, but it returns to a stable configuration when no inputs are applied, thus making it easier to avoid crashes.

Stable Mode functions in both normal and inverted flight. It is turned off by moving the switch to the up, or “OFF” position. When in “OFF”, the stabilization software is disabled and the helicopter responds quickly and nimbly to the pilot’s input. In this mode the helicopter does NOT return to neutral when the cyclic stick is released. If the pilot loses control in this mode, they can simply flip the Stable Mode switch back to the “ON” position, to help regain control of the helicopter.

If stability mode is activated when the helicopter is inverted, the helicopter will stabilize in an inverted configuration. The helicopter responds to cyclic inputs like a CP helicopter, but when the cyclic stick is released the helicopter automatically returns to neutral inverted flight. This is a very useful tool for pilots looking to progress into and master inverted flight.

Transmitter Details



Stability Control Switch

The Ares Optim 80 is equipped with NFP (Natural Flight Progression) technology that allows the user to start with stabilized CP flight, then move into normal CP flight. It's recommended that pilots new to CP flight start by flying in stable mode before attempting normal CP flight. To put the helicopter into stable mode, locate the stable switch located on the front left of the transmitter (see photo) and flip it to the on position. In this mode, the pilot will experience stable yet agile flight accomplished by the helicopter returning to level flight when the cyclic stick is returned to neutral.

Dual Rate Switch

The DUAL RATE switch adjusts the control sensitivity of the aileron/elevator channels. We recommend that you start in low rates for your initial flights in stabilized mode and progress to high rates for 3D stunt flying.

Idle Up Switch (Stunt)

The Idle Up switch (Stunt/Normal) is used to set the throttle to full power independent of the position of the throttle stick. When in idle up any throttle stick movement above mid point engages positive pitch on the main rotor, any stick movement below mid stick produces negative pitch on the main rotor allowing you to fly inverted. For 3D flight, Idle Up should be engaged once you have taken off in Normal mode and established a stable hover. Use caution, engaging Idle Up brings the main rotor to full power.

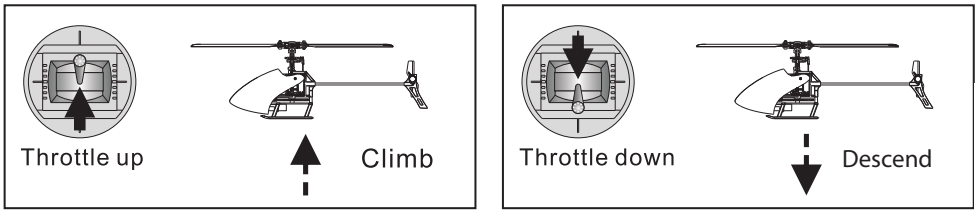
Throttle Hold Switch

The Throttle Hold switch will shut the motor off in either normal or idle up mode and should be engaged if a crash is anticipated to minimize damage. It can also be used if you are working on the helicopter while it is powered up to prevent possible injury from the rotor.

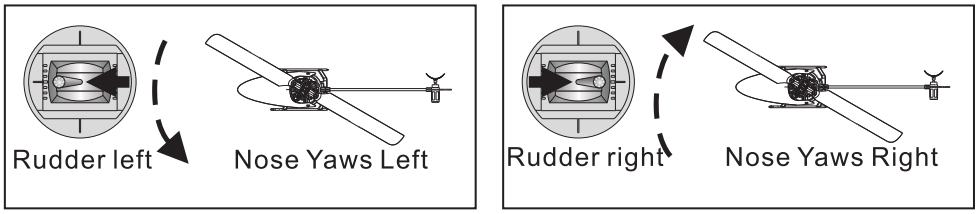
Flight Controls

If you are unfamiliar with the flight controls on you Optim 80 CP please review them in the illustrations below.

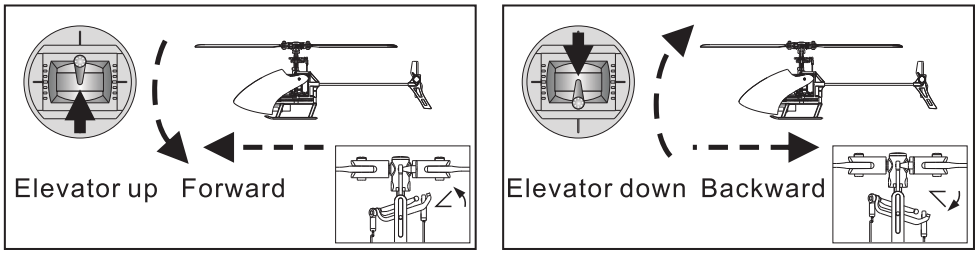
Throttle



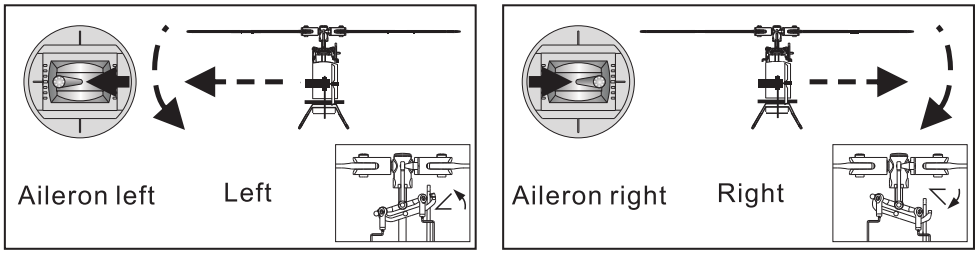
Rudder



Elevator



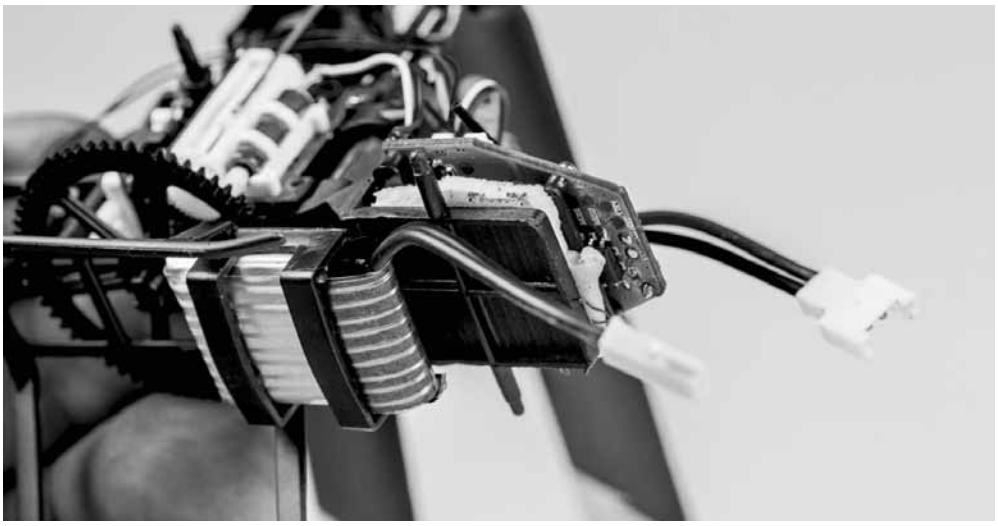
Aileron



Binding Procedure

Your Optim 80 comes bound from the factory. However, if you need to re-bind your helicopter please follow these instructions. With the transmitter off, plug the flight battery into the 3-in-1 control unit. You will notice a green LED on the control board begin to flash. Once the green LED is flashing, turn on the transmitter, the green LED will flash quickly and then go solid. Once the LED turns solid the helicopter is bound and ready to fly.

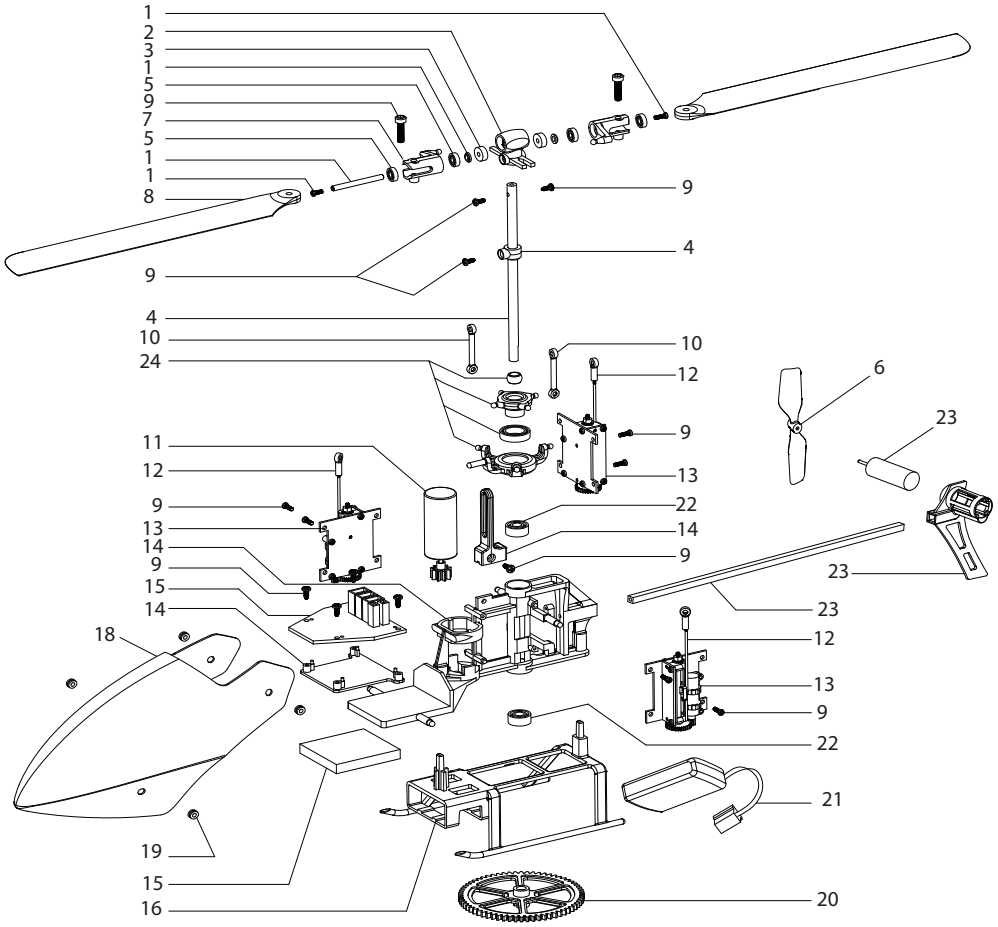
Flight Battery Install



Slide the charged LiPo battery into battery holder with the wires to the front of the helicopter. With battery in place and the transmtter turned on, plug battery into control board making sure that you have the polarity correct (red wire to red wire).

After plugging the battery in, set the helicopter on a level surface and allow the control system to initialize. This usually takes a few seconds, when complete the servos twitch and control from the transmitter is established.

Exploded View



Parts Legend

1	AZSZ2444	Feathering Shaft W/Hardware: Optim 80 CP
2	AZSZ2445	Head Block: Optim 80 CP
3	AZSZ2487	Main Rotor Head Dampers (4): Optim 80 CP
4	AZSZ2448	Main Shaft W/Collar: Optim 80 CP
5	AZSZ2489	Blade Grip Bearing Set 1.5x4x1.2 (2): Optim 80 CP
6	AZSZ2439	Tail Rotor: Optim 80 CP
7	AZSZ2442	Main Blade Grip: Optim 80 CP
8	AZSZ2449	Main Blade Set: Optim 80 CP
9	AZSZ2431	Complete Hardware Set: Optim 80 CP
10	AZSZ2447	Linkage Set: Optim 80 CP
11	AZSZ2476	Main Motor: Optim 80 CP
12	AZSZ2459	Servo Push Rod Set: Optim 80 CP
13	AZSZ2478C	Cyclic Servo: Optim 80 CP
14	AZSZ2430	Main Frame Set: Optim 80 CP
15	AZSZ2407	3-in-1 Control unit: Optim 80 CP
16	AZSZ2434	Landing gear set: Optim 80 CP
18	AZSZ2471W	Canopy (White): Optim 80 CP
	AZSZ2472R	Canopy (Red): Optim 80 CP
19	AZSZ2486	Canopy Grommets: Optim 80 CP
20	AZSZ2419	Main Gear: Optim 80 CP
21	AZSZ2473	3.7v 180 mAh 25c Battery: Optim 80 CP
22	AZSZ2406	Main Shaft Bearing Set:2.5x6x2.6: Optim 80 CP
23	AZSZ2408	Complete Tail Assembly Motor/Boom/Motor Mount:
24	AZSZ2423	Precision Swashplate Assembly: Optim 80 CP

Warranty Information

30-Day Limited Warranty Term Period:
We warranty that the Product(s) purchased (the “Product”) will be free from defects in materials and workmanship when the product is new (before being used) for the limited warranty term period, 30 days, from the date of purchase by the Purchaser.

If you believe a defect in material, workmanship, etc. was not apparent when the Product was new and only became evident after the Product was used, take the following steps. If you purchased the Product at a HobbyTown store, please contact your local HobbyTown store for warranty support and/or service. If you purchased the Product from the Firelands website, use the contact information found under the Support heading to contact Firelands directly.

If you contact Firelands, you may be asked to send the product to Firelands, at your cost, for inspection. Provided the warranty conditions have been met within the warranty term period, the components that are found to be defective, incorrectly manufactured or assembled may be repaired or replaced, at the sole discretion of Firelands. Your warranty item will be returned to you at Firelands’ expense. In the event your product needs repair or a replacement part that is not covered by this warranty, your local HobbyTown store or Firelands can assist you with support and in obtaining the genuine replacement parts to repair your Product. Firelands will charge $40.00 per hour plus the cost of replacement parts to service your vehicle if after contacting you, you so authorize such repairs. Your product will be returned to you at your expense.

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