



# KV10++ INSTRUCTION GUIDE



We Thank you for purchasing our agriculture drone "KV10++".  
Please read this instruction manual carefully before operating  
and retain it for future reference.

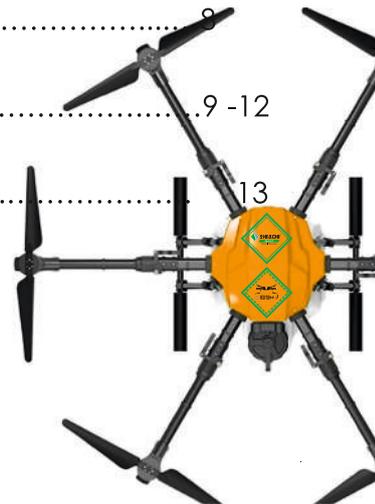


[shrachiagrimech.com](http://shrachiagrimech.com)

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## About Shrachi Agrimech



Shrachi Agrimech provides modern technologies to farmers for SMART farming, developed in collaboration with leading experts, providing tools that increases farm yields while at the same time reducing input cost by deploying drones, robots & farming kits.

Our cutting-edge technology offers near-real time field mapping, soil & crop health monitoring, along with a data driven decision support system for farmers to make informed decisions & further helping farmers in pesticides spraying, seed spreading, yield & weather data management.

## Benefits of KV10++



Drone Pilot training



Monthly Earning Opportunity



Sprays 1 Acre in 5-7 Minutes.



30 Acres Per Day



25%+ Reduces in Agri Inputs Cost



8% -15%+ Increases Agri Outputs



90 % . Saves Water



Spray Covers each & Every Leaves



Health Benefits-no fume inhalation



Drone Pilot Certificate



Entrepreneurship Opportunity



## Models of KV10++



KV10++ Variants			
3 Models			
Particulars	Model-1	Model-2	Model-3
Model	KV 10	KV 10+	KV 10++
Features	Spraying Drone	1. Spraying Drone 2. Inbuilt Camera 3. Inbuilt Flow Meter	1. Spraying Drone 2. Inbuilt Camera 3. Inbuilt Flow Meter 4. Inbuilt Terrain Radar 5. Inbuilt Obstacle Radar

## Features of KV10++



Cross-folding structure



Obstacle Avoidance



Altitude Radar



Plug-In Battery



FPV Camera



Auto Pilot mode



Android based Remote



Powerful Lithium-ion Battery



High Quality Carbon Fibre Propellers



## Do's & Don't for Flying KV10++



### Do's

1. Fly only during daytime hours (after sunrise to before sunset)
2. Fly in favorable weather which involves wind speed up to 10 m/s, bright sky, and avoid rain or stormy conditions.
3. Check for KV10++ readiness before flying like calibration needs, battery level, tightness of propellers, clean tank and nozzles, functioning pump, and link with ground control station GCS.
4. Before flying KV10++ , it must be kept on a levelled surface with no obstructions nearby, and people to keep themselves away from it for at least 20 feet.
5. Ensure proper geo-fencing of fields on remote control with no obstructions,
6. Set the height of KV10++ at least 1.5 meters above crops for spraying.
7. The pilot must be alertly focused during flying and must avoid attending phone calls.
8. Ensure smooth landing of KV10++ on a levelled surface
9. After the operation of KV10++ , proper maintenance must be ensured like charging of the battery, cleaning of nozzles and tank, tightening of screws, etc.
10. KV10++ must be carefully handled during its movement in the carry box.
11. Battery charging must be done in properly ventilated rooms with a good power supply 16 A switch board.
12. KV10++ and its accessories must be stored in a waterproof space.
13. Avoid tampering with electronic circuits and mechanical parts, contact Shrachi Agrimech helpline for any support or repairs.
14. Warranty will be void and will have no effect, if any tampering is done with KV10++ by an unauthorized service provider.
15. Use recommended spares only
16. Handle fertilizers and other Agro chemicals carefully



## Don'ts



1. Avoid flying KV10++ close to airports, heliports, electric stations, defense establishments, VIP areas, and other critical establishments.
2. Do not fly KV10++ over crowds of people, public events, or crowded stadiums without prior permission.
3. Do not fly the KV10++ over private property without permission.
4. Do not fly KV10++ in controlled airspace near airports without a flight plan or clearance from the AAI/ADC (at least 24 hours before actual operation).
5. Do not drop or transport dangerous materials.
6. Do not fly KV10++ if you are under the influence of drugs or alcohol.
7. Do not attempt to fly KV10++ from a moving vehicle, ship, or plane.
8. Do not KV10++ with any hazardous material
9. Do not modify flight parameters or its structure as it may lead to an accident, contact Shrachi Agrimech support for any assistance
10. Do not use an exhausted or weak battery for flying
11. Do not short power supply terminals
12. Do not use spares other than recommended by Shrachi Agrimech
13. Do not operate KV10++ by unauthorized person
14. Do not attend phone calls and talk during flying
15. Do not tamper or repair KV10++ from an unauthorized service provider.
16. Do not fly KV10++ in rain or stormy weather

## Accessories List:

PARTICULARS	QUANTITY
KV10++ Hexacopter	01
Ground Control Station with charger and carry case	01
16000 mAh, 44.4 Volt Battery Set	02
Battery Charger	01
Drone Carry/ Flight Box	01
User Instruction Manual	01



## Specification



<b>KEY FEATURES</b>	Structure	Hexacopter body, durable body with cross folding structure
	Return to Home	Lost connectivity, Battery drained, Mission Complete
	Tank Capacity	10 Litre
<b>AIRCRAFT</b>	Maximum Takeoff Weight	25 Kg.
	Diagonal Wheelbase of Frame	1407 mm
	Extended size (L x Bx H)	1495 * 1308 *500mm
	Folded (L x Bx H)	945 * 848 *500 MM
	Maximum average Speed	6 mps
	Maximum Flight Time on average	15 minutes (with payload)
	Maximum Hovering Time on average	25 minutes (without payload)
	Operating Temperature Range	-10°C ~ +55°C
<b>SPRAY SYSTEM</b>	Tank Volume	11 L
	Max Payload carrying capacity	10 Kg
	Material Of Nozzles	Polypropylene housing with Metal/ Plastic/ Ceramic tips
	Maximum Spray Speed Per Nozzle	0.85 L/min (per nozzle for water)
	Spray Width	3.5 meters (4 nozzles, 1.5 m~ 2.5 m above the crops)
	Number of Pumps	1
<b>BATTERY</b>	Capacity	16000 mAh
	Voltage	44.4 V
	Type	Lithium Polymer
	Charging Time	50~ 120 minutes (depends on charger)
	Life Cycles	Up to 200 cycles



## Safety precautions



1. Fly in warm, clear, less wind weather. Do not fly in severe weather conditions such as overheating, strong wind, rainstorms, etc. Please choose an outdoor area, and keep a safe distance from people, pets, empty overhead wires, and other obstacles. Do not let the aircraft out of sight.
2. After the aircraft is started, please do not contact the high-speed rotating parts of the aircraft and keep a safe distance from the high-speed rotating propeller to avoid the risk of strangulation.
3. During and after the use of the aircraft, the battery and motor will generate high temperatures. Please do not touch it to avoid the risk of injury.
4. Do not look directly at the light beam of the LED to avoid affecting the eyes.
5. The use of non-original accessories may pose a hazard, so use original spares only.

## Pre-flight inspection

1. Make sure the remote controller and aircraft battery is fully charged.
2. Make sure the propellers are intact and installed correctly.
3. Make sure that arms and propellers are fully unfolded.
4. Make sure that the camera lens is clean.
5. Ensure that the battery is firmly installed.
6. Always use original components or accessories certified by the manufacturer.



### light environmental requirements



1. Do not fly the aircraft in bad weather such as high wind, snow, rain, foggy weather, etc.
2. Choose a wide, open place with no tall building surrounding as a flight site. The building that uses a lot of steel bars may affect the compass work and block GPS signals resulting in poor positioning or even an inability to locate the aircraft.
3. Do not fly in areas that have high voltage lines, communication base stations or transmission towers, etc. to avoid signal interference of the remote controller.
4. When flying, please keep aircraft in sight, away from obstacles, crowds, water, etc.

### Charging instruction

1. The battery must be charged by using the original charger only.
2. Do not short circuit and squeeze the battery to avoid explosion.
3. The battery should not be short-circuited, decomposed, or put into the fire.
4. Battery should not be placed in a high temperature and heated place (such as in a fire or near an electric heating device).
5. Charger can only be used indoors.
6. After the flight, the battery needs to be charged before storing. If not using it, it is recommended to charge the battery at least once a month to avoid permanent battery damage due to excessive discharge.
7. Battery charger Indication details:

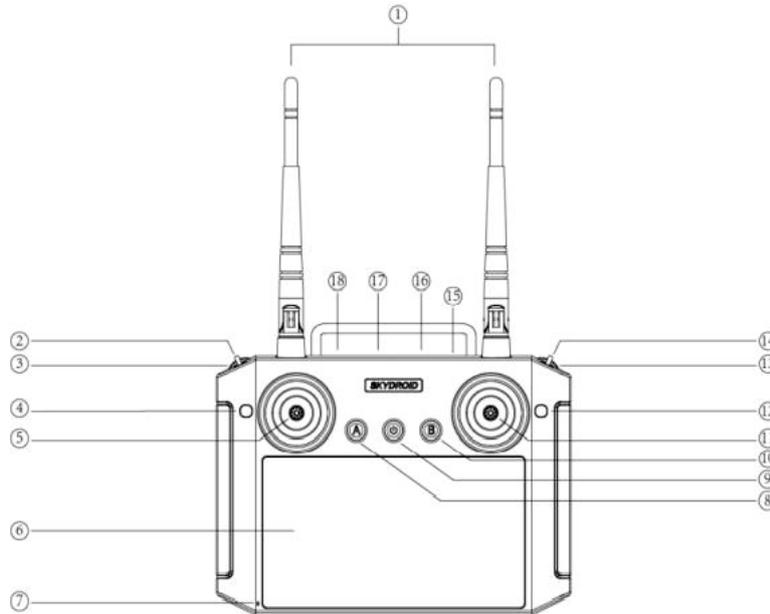
**Green Led ON-** (Charge ON) Charger is on we can connect the battery for charging or Battery is Fully charged.

**Red Led ON -** (Battery ON) Charging is in progress.

**Red and Green Led ON-** Charging Complete disconnect battery.

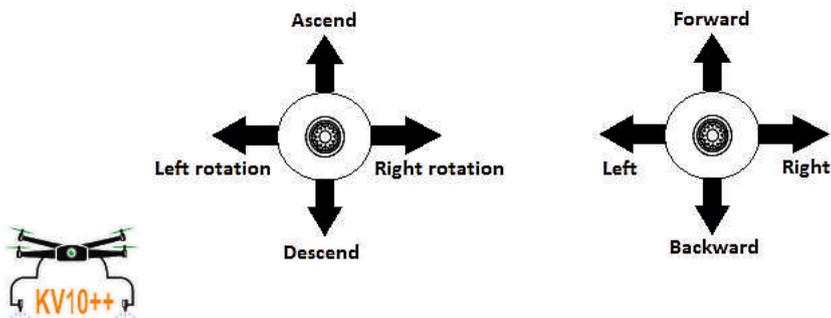


## Ground Control Station Functions



Number	Annotation	Number	Annotation
1	2.4 3db antenna	10	Button B (CH8)
2	Toggle 3 positions switch E (CH5)	11	Stick X2 (CH1), Y2 (CH2)
3	Thumbwheel switch G (CH11)	12	Button D (CH10)
4	Button C (CH9)	13	Thumbwheel switch H (CH12)
5	Stick X1 (CH4), Y1 (CH3)	14	Toggle 3 positions switch F (CH6)
6	5.5inch screen	15	Speaker
7	Mic port	16	SIM card slot
8	Button A (CH7) Spray	17	Charging port
9	Power switch	18	PPM output

### Throttle Control



## Environment & Operating Conditions



1. Working temperature: -10°C to +55°C
2. Storage temperature : -25°C to +70°C.
3. Relative humidity: Not to exceed 85%.
4. Atmospheric pressure: 86 kPa to 106 kPa
5. Working environment should not contain explosive material or any corrosive or harmful as it may cause interference in the operation.
6. Avoid work rain, snow, wind, sand, and dust.

## Working conditions

1. Power supply and attention
2. H12 series uses a built-in Li-ion battery.
3. Charging port is compatible with Micro USB 5V chargers (Such as cell phones, digital cameras' USB chargers)
4. In case of smoke, heat, or unusual smell during charging, please stop charging immediately and return to our company for servicing as soon as possible.
5. Do not leave the product unattended while charging. Do not leave the product in a place where children can reach. Do not charge when room temperature is over 60



## Operation



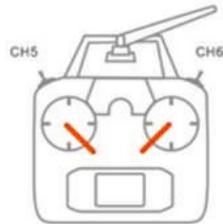
### Preparation and pre-checking before use

1. Check battery level.
2. Check the position of the antenna to get the best performance
3. Make sure the firmware is the latest version
4. DO NOT operate under the influence of alcohol or drugs

## Unlock and lock

### Unlock

Unlock it as shown in the figure. After unlocking, the motor enters the idle state.



Unlock

### Lock

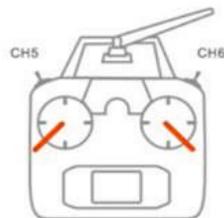
#### A. Lock now

In any flight mode, the motor will stop immediately after the motor is started as shown in the figure.

Note: An emergency occurs during the flight of the aircraft. Please operate the figure to prevent accidents.

#### B Automatic lock

All flight modes have an automatic landing recognition function, which will automatically control the stall. The aircraft will not stop the motor when the throttle is pulled to the minimum during flight.



Lock



## LED Status indications on KV10++



Flight Mode Representation	Light State Indication	Priority Level
Attitude (Stability Enhancement, Altitude Setting)	Green Single Flash ●	Low
GPS Mode (Angle, Speed)	Green Double Flashes ●●	Low
Function Mode (Circle, Cruise, Agriculture, etc.)	Green Three Flashes ●●●	Low
Intelligent Direction on	Green Four Flashes ●●●●	Low
Self-Driving Mode (Ground station Control, Return)	Green Flashes Mobs ●●●●●	Medium
GPS Representation	Light State Indication	Priority Level
GPS not connected / GPS not Receiving satellite	Red Three Flashes ●●●	Low
Poor GPS Signal	Red Double Flashes ●●	Low
General GPS signal	Red Single Flash ●	Low
The GPS Signal is very good	Red No Flash ○	Low
RTK Positioning	Yellow Single Flash ●	
Low Voltage Alarm Indication	Light State Indication	Priority Level
First Level alarm	Yellow Three Flashes ●●●	Low
Secondary alarm	Yellow Flashes Mobs ●●●●●	High
Tow-side magnetic Calibration Indication	Light State Indication	Priority Level
Level Calibration	The Yellow Light is always on on ●—	Medium
Vertical Calibration	The Green Light is always on on ●—	Medium
Calibration failed	The Red Light is always on on ●—	Medium
Calibration successful	Red, Green Yellow Alternate Flashing ●●●	Medium
Accelerometer Calibration Representation	Light State Indication	Priority Level
Calibration	Red, Green Yellow Alternate Flashing ●●●	Medium
Calibration Complete	The Green Light is always on On ●—	Medium
Abnormal State Representation	Light State Indication	Priority Level
Remote control out of control	Red Flashes Mobs ●●●●●	High
Magnetic compass interference / abnormality	Yellow Green Alternate Flashing ●●●	High
GPS satellite lost / abnormal	Red Green Alternate Flashing ●●●	High
IMU vibration is too larger / abnormal	Red, Yellow Alternate Flashing ●●●	High
Other state representation	Light State Indication	Priority Level
Power on initialization	Red, Green Yellow Alternate Flashing ●●●	High
Unlock representation	Red, Green Yellow Alternate Flashing ●●●	High
Unlock failed	The Red Light is always on On ●—	High





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