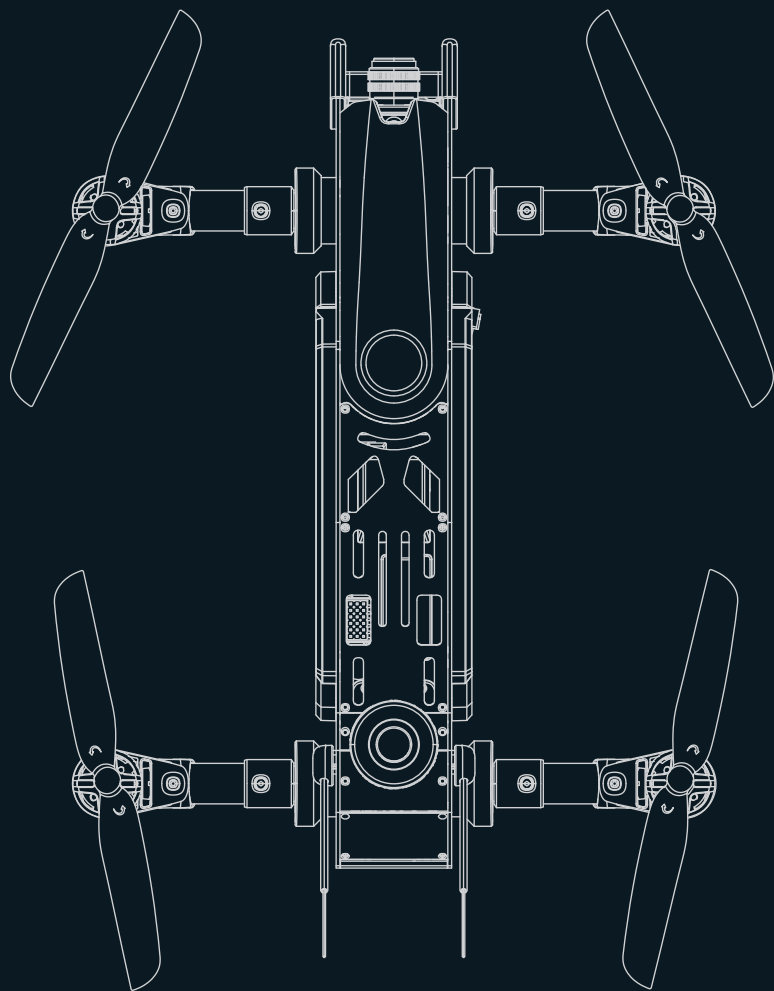


FURIOUS 320 G

QUICK START GUIDE **V1.0**

16th-DEC-2015

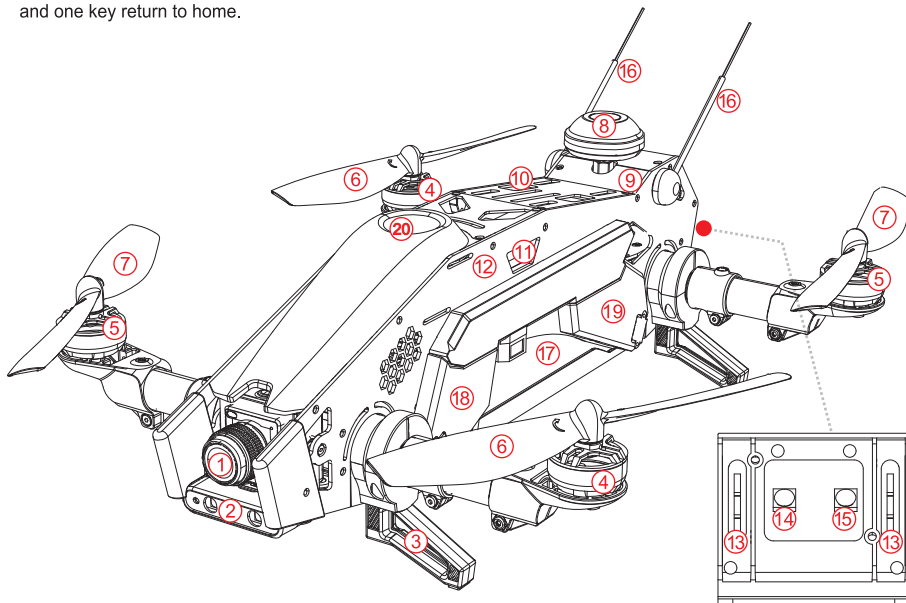


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1.0 Get to know your aircraft

- Adopting the CFP material for the main body, the racer possesses superior toughness and strong anti-impact ability.
- The brand new industrial and modular design, greatly improve the product extension, which enable it much easier to maintain and upgrade.
- The 5.8G real-time image transmission system and OSD system, can bring you the unforgettable visual enjoyment.
- Equip with dual GPS module, the FURIOUS 320 advance can realize GPS hold mode, and one key return to home.






- | | |
|--|---|
| 1. Camera | 11. FURIOUS 320(G) Main Controller |
| 2. Front LED light | 12. FURIOUS 320 OSD(G) |
| 3. Landing gear | 13. Direction indicator light |
| 4. Clockwise motor (levogyrate thread is counterclockwise) | 14. Left LED light |
| 5. Counterclockwise motor (dextrogyrate thread is clockwise) | 15. Right LED light |
| 6. Clockwise propeller | 16. Receiver antenna |
| 7. Counterclockwise propeller | 17. Battery: 14.8V 2600mAh 25C 4S Li-Po |
| 8. Mushroom antenna | 18. Brushless ESC(CW) |
| 9. TX5821(FCC)/TX5820(CE) emitter | 19. Brushless ESC(CCW) |
| 10. DEVO-RX712 Receiver | 20. GPS position |

2.0 Get to know your Remote Controller

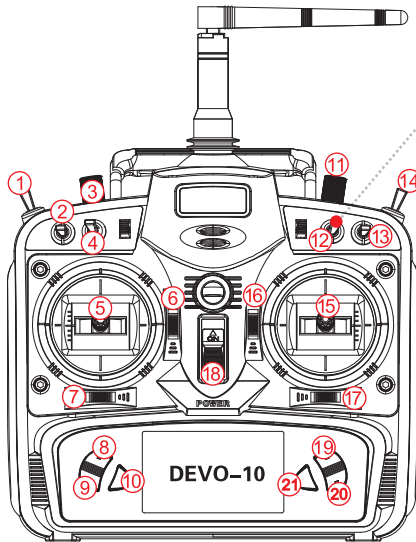
Equipped with the Manual Mode/GPS hold mode/one key return to home, camera control etc function switch, the Furious 320 is easier to control.

(You can select suitable flight mode according to your flying skill.)

MODE 2 (Throttle stick on the left)	Left stick	THRO/RUDD stick
	Right stick	ELEV/AILE stick
	Left trim	THRO trim
	Right trim	ELEV trim
MODE 1 (Throttle stick on the right)	Left stick	ELEV/RUDD stick
	Right stick	THRO/AILE stick
	Left trim	ELEV trim
	Right trim	THRO trim

Manual Mode	GPS-hold Mode	Return TO Home
		
MIX Switch to "0"	MIX Switch to "1"	MIX Switch to "2"

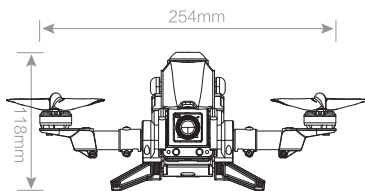
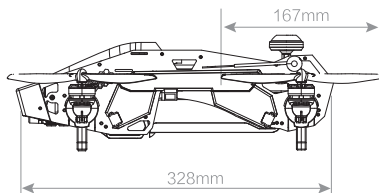
1. RUDD D/R switch
2. ELEV D/R Switch
3. AUX4 Knob
4. **GEAR switch - Camera start/Stop**
5. Left stick
6. Left trim
7. RUDD trim
8. UP key
9. DN key
10. EXT key
11. AUX5 Knob
12. **MIX - Flight Mode Switch**
13. AILE D/R Switch
14. FMOD Switch
15. Right stick
16. Right trim
17. AILE trim
18. Power switch
19. R key
20. L key
21. ENT key



3.0 Specifications

Aircraft

Main Rotor Dia.:	167mm
Overall (L x W x H):	328 x 254 x 118mm
Weight:	837g (Battery excluded)
Remote Controller:	DEVO 10
Receiver:	DEVO-RX712
Main Controller:	FURIOUS 320(G)
Emitter:	TX5821(FCC)/TX5820(CE)
OSD:	FURIOUS 320 OSD(G)
Brushless Motor:	WK-WS-28-015(CW/CCW)
Brushless ESC:	FURIOUS 320(CW/CCW)
Battery:	14.8V 2600mAh 25C 4S LiPo
Flight Time:	9~10mins
Working Temperature:	-10 C ~ +40 C



Camera(1920x1080P)

Video Resolution:	1920x1080P 60FPS
Micro SD card:	Max 32G
Video Format:	MOV
Photo:	4000x3000 Pixels
Photo Format:	JPG
Power Input:	DC 5V

Camera(800TVL)

Horizontal Resolution:	800TVL
System Committee:	PAL/NTSC
Video Out:	1.0Vp-p/75Ω
Power Input:	DC 12V

TX5821(FCC) / TX5820(CE) Emitter

5.8G wireless image transmission

TX5821(FCC) Bind B section: 4 channels

TX5820(CE) B section: 8 channels

TX5821(FCC) output power ≤200mW

TX5820(CE) output power ≤25mW

4.0 Attention before flight

- This product is suitable for people who has flight experience of hobby model and ages 14+.
- Please do not fly the FURIOUS 320 advance in the situation that the windpower is more than level 3, either in rainy, sowny or foggy etc bad weather.
- Please choose the open, legal field to fly, and consider your flight skills and mental status.
- Please keep a certain distance with aircraft and away from the highspeed rotating parts (such as propellers, brushless motor) during flying.
- Do not fly it in where there is high-voltage lines, communication base stations or radio towers, in order to avoid signal interference.
- Don't fly in no-fly zone according to the local laws and regulations.

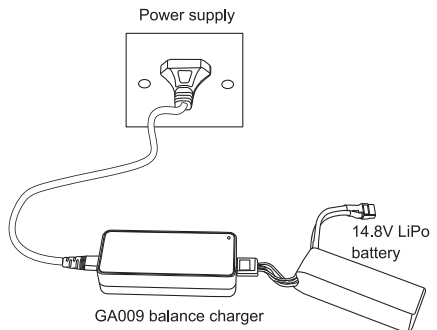
5.0 Charge the Battery

- ① Insert the power adapter(100~240V 50/60HZ), connect the output end to the GA009 balance charger, the balance charger is green LED light flashing.
- ② Insert the balanced pin of LiPo battery into GA009.
- ③ During charging, the red LED light is solid. When the charger will be completed, the red and green LED lights flash alternately. The charging is completed, the green LED light is solid.



Attention:

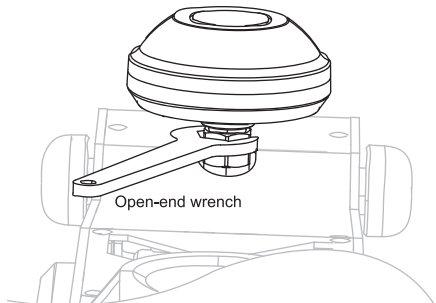
- (1) When the yellow LED light flashes, there may be something wrong with charger or battery, so please stop charging
- (2) Please refer to Page 20 for details of GA009 balance charger.



6.0 Assemble

Install mushroom antenna

Firstly install mushrooms antenna onto the emitter, and tighten with open-end wrench.



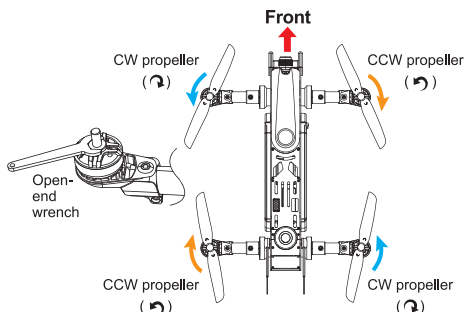
Install propellers

Fix the clockwise propeller onto the clockwise motor according to the direction of blue arrow, and fix the counterclockwise propeller onto the counterclockwise motor according to the direction of orange arrow. Tighten the propellers manually and make sure the propeller is installed in proper way and fastened.



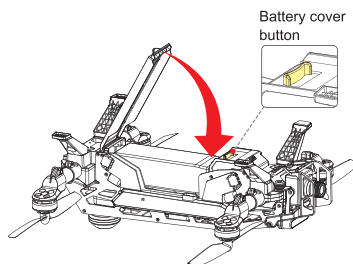
Attention:

To convenient install or take off the propellers, please use the open-end wrench to hold the motor side hood (shown at right).



Battery installation

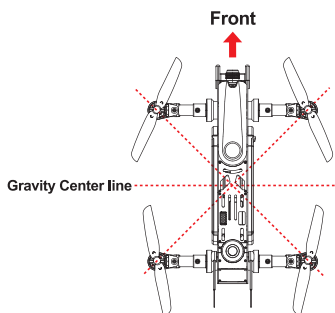
Move battery cover button, open the battery cover, put the battery into the drone, adjust the drone's center of gravity, so th head and tail are in the same horizontal line, after adjusted, fix the battery with belt and close the battery cover.



Gravity center adjustment:

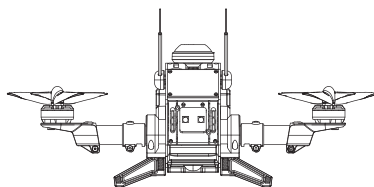
Hold the gravity center line for the fulcrum to balance it. If the head inclines to drop, indicates the gravity center in the head part, require to move the battery backward;

On the contrary, If the tail inclines to drop, indicates the gravity center in the tail part, require to move the battery forward.



Attention:

The receiver antenna has to be straightened before the flight, to lengthen the communication distance.



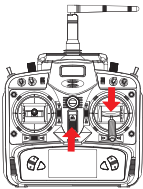
7.0 Ready for flight

⚠ Attention:

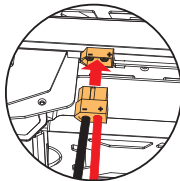
- (1) Place the aircraft on a flat surface, in an open space, with the back facing you.
- (2) Put all the function switches to the 0 position, put all trims/knobs to the Middle position, move the throttle to the lowest position, then turn on the Remote Controller.
- (3) FURIOUS 320 has low voltage warning, no low voltage protection:
When the voltage below 14.4V, Left and right direction lights will flash slowly and the buzzer will alarm, please land ASAP, to avoid crash.

7.1 Binding of the FURIOUS 320

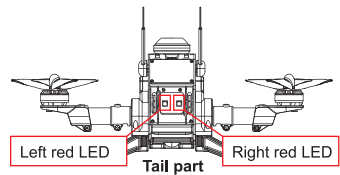
- ① Turn on the Remote Controller. (Make sure all the function switches, all trims/knobs and throttle stick at the correct position)
- ② Put the aircraft to the horizontal place and connect the aircraft power. (make sure the positive and negative connected correctly)
- ③ Within approx. 40 sec. the left red LED light will stop flashing indicating that the code binding has finished. (Note: When binding, do not move the FURIOUS 320.)



①



②



③

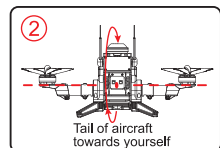
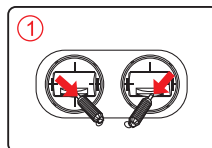
7.2 Compass Calibration

⚠ Attention:

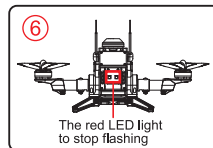
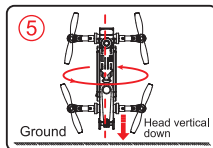
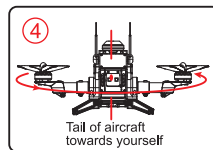
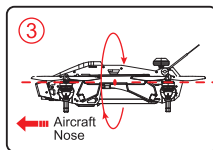
- (1) When come to a new flying ground or change the flying ground far away from original place, please calibrate compass first.(the motor must be locked and left red LED go out)
- (2) When binding, please choose the open field that is away from the strong electromagnetic.

The compass calibration steps are as follow:

- ① Enter the calibration mode. Do this by moving both sticks DOWN and to the middle position at the same time. The aircraft will start a blinking fast RED.
- ② Forward rotation. Smoothly rotate the aircraft forward in 90 degree increments, pausing for 1 second every 90 deg. (0 / 90 / 180 / 270 / 360)



- ③ Clockwise rotation. Rotate the aircraft around the roll axis smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ④ Horizontal rotation. Rotate the aircraft around the YAW axis smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ⑤ Nose down rotation. Rotate the aircraft facing the nose down. rotate smoothly in 90 deg increments. Pausing 1 second for each 90 deg. (0 / 90 / 180 / 270 / 360)
- ⑥ Place the aircraft in normal position. The rapid RED blinking will stop. This indicates that the calibration is finished. Disconnect the battery to save the settings.



7.3 GPS indicator lights

GPS Satellites	<6	6	7	8	9	10	11	12	13
The right red LED status	No blinking	Blinking once	Blinking 2 times	Blinking 3 times	Blinking 4 times	Blinking 5 times	Blinking 6 times	Blinking 7 times	Blinking 8 times

IMPORTANT: For SAFE flight in GPS flight mode:

The right red LED light should at least "double" blink, (two blinks at a time).

It is highly recommended that you wait for "triple blink" 8 satellites before starting the flight.

NEVER attempt to AUTO-START with less than "triple blinks"

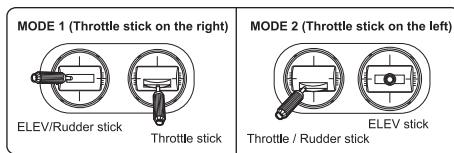
7.4 Motor Unlock / Lock

● Motor Unlock

After binding the DEVO-10 to the Furious 320, Check that all trims are neutral, the throttle stick is ALL the way Down with the display indicating 0% throttle. Check that ALL switches are in the UP position. Gently push the throttle stick down and move the rudder (YAW) stick to the left side. (on mode 2 radios throttle and rudder is the same stick). You will see the left red LED light turn on, indicating that motors are unlocked.

Be very careful at this point, as pushing the throttle up will start the motors.

You can test by pushing the stick up a little, the motors should start.

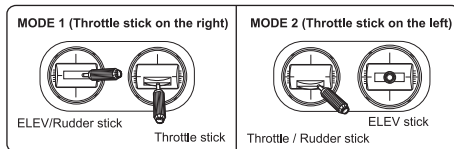


● Motor Lock

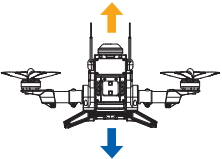
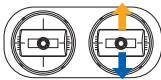
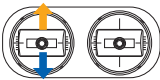
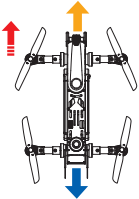
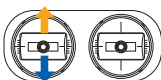
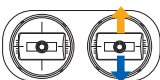
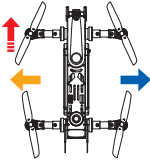
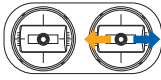
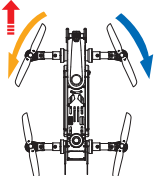
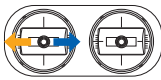
Lock the motors by moving the throttle stick all the way down and the rudder (YAW) stick all the way to the right. The left red LED light will go out when the motors are disarmed.

TEST: Push the throttle stick up a little, the motors will not start when locked.

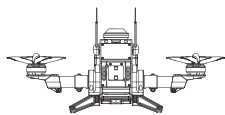
NOTICE: The motors are LOCKED by default after successful binding.



8.0 Operation Instruction

Aircraft posture(← the direction of head)	Remote Controller control instruction	
<p>THROTTLE Up/down The tail toward operator</p> 	 <p>MODE 1 (Throttle stick on the right)</p>	 <p>MODE 2 (Throttle stick on the left)</p>
<p>PITCH Forward/backward When backward, the left/ right direction indicator lights will be solid.</p> 	 <p>MODE 1 (Throttle stick on the right)</p>	 <p>MODE 2 (Throttle stick on the left)</p>
<p>ROLL (lean) Left / right When lean left, the left direction indicator light will be solid. When lean right, the right direction indicator light will be solid.</p> 	 <p>MODE 1 / MODE 2</p>	
<p>YAW (turn) Left / right When turn left, the left direction indicator light will flash. When turn right, the right direction indicator light will flash.</p> 	 <p>MODE 1 / MODE 2</p>	

GPS hold mode



MIX switch on "0" position



MIX switch to "1" position



Throttle stick return neutral

Ground

Attention:

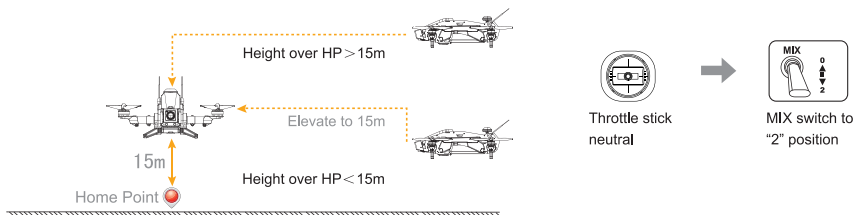
- (1) Enable that you've received GPS signals well (Right red LED light blinks).
- (2) Before switching mode, always put the throttle stick to middle position(50%).
- (3) IF the GPS signal degrades, the FURIOUS 320 will automatically enter "Altitude hold mode" notein this mode it will drift, but will hold its altitude.

After flying 50% of the battery, do NOT switch from GPS mode to Manual, this may cause a sudden drop / crash.

You can land in GPS mode, after landing, keep the throttle stick DOWN and switch to manual, then lock the motors.

(4) In the manual mode, the FURIOUS 320 advance can not realize the altitude hold function.

RETURN TO HOME

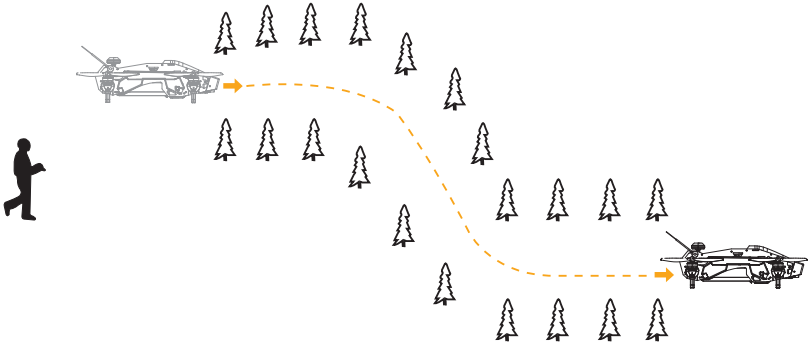


- a. If the flight altitude is higher than 15m, the aircraft will keep the current altitude and return above the Home Point then descend vertically.
- b. When the flight altitude is lower than 15m, the aircraft will elevate automatically to 15m then fly back above the Home Point and land vertically.

Attention:

- (1) Enable that you've received GPS signals well (Right red LED light blinks).
- (2) After engaging Return to Home mode, leave the throttle stick at 50% (centered) DO NOT touch any switches on the Remote Controllers. To REGAIN control of the FURIOUS 320, make sure the throttle is centered, then flip the MIX switch to position "0" .
In an emergency such as losing the control link between the Remote Controllers and the FURIOUS 320, the Failsafe system will automatically start RTH.
 You may not be able to interrupt an emergency RTH, simply let the aircraft continue until it lands.
- (3) When in the process of RETURN TO HOME, if the battery voltage is too low, the aircraft will fall, but can't automaticly return, please control the aircraft direction manually, till the aircraft land safely.

Dream Baron



Attention:

- (1) Dream Baron is more suitable for experienced pilots.
 - (2) During the flying, please keep in sight of 50 meters or video control range within 300 meters to control the flight. (Actual range depending on the flight environment and weather conditions.)
 - (3) During the flying, please avoid obstacles such as people, animals and power lines.
-

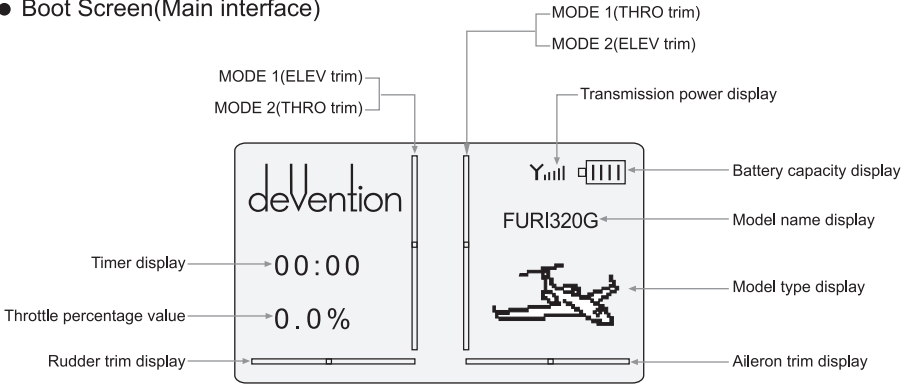
9.0 End flight

- ① Manual landing or return to home function landing.
- ② First, power off aircraft battery, then power off Remote Controller battery.
- ③ Take the battery out of aircraft.

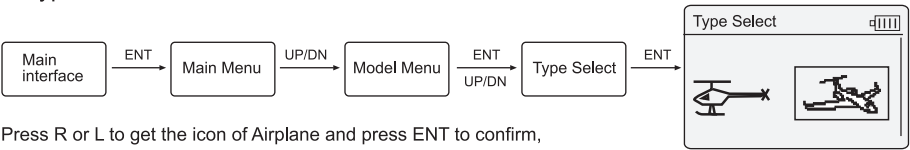
10.0 Additional remark

10.1 DEVO-10 Remote Controller Setting

- Boot Screen(Main interface)

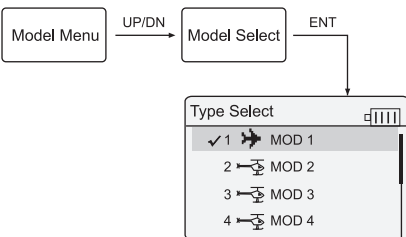


- Type Select



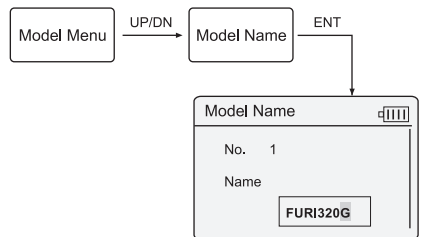
Press R or L to get the icon of Airplane and press ENT to confirm, then press EXT to return to Model Menu.

- Model Select



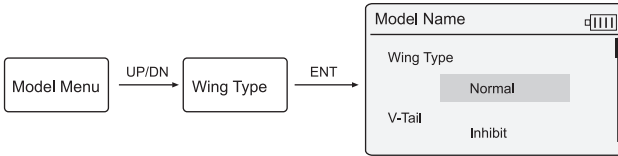
Press UP or DN to select MOD 1, press ENT to confirm and then press EXT to return to Model Menu.

- Model Name



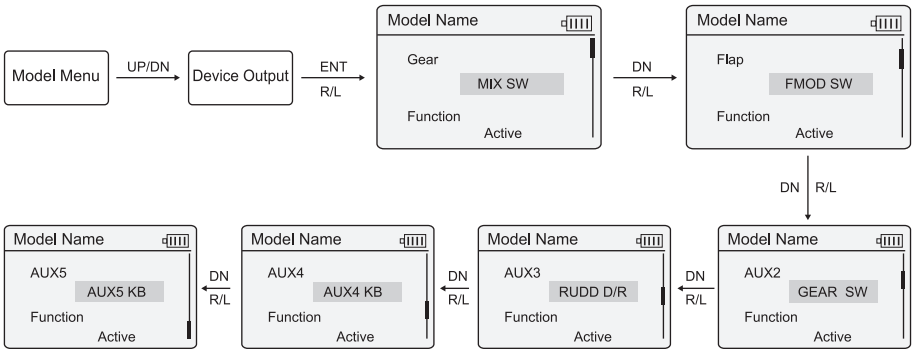
Press UP or DN to select the character and figure which need to be changed Press R or L to change the character and figure, named model as FURI320G. Press ENT to confirm and then press EXT to return to Model Menu.

● Wing Type



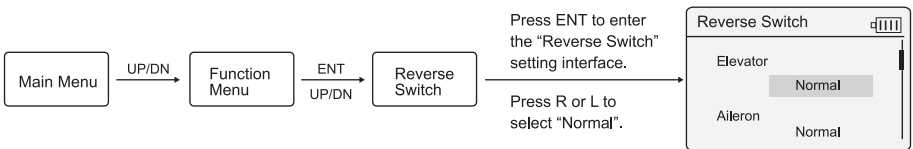
Press UP or DN to select Wing Type setting, press R or L to select Normal, then press ENT to confirm and then press EXT to return to Model Menu.

● Device Output



After finish settings, press ENT to confirm and then press EXT to return to Main Menu.

● Reverse Switch



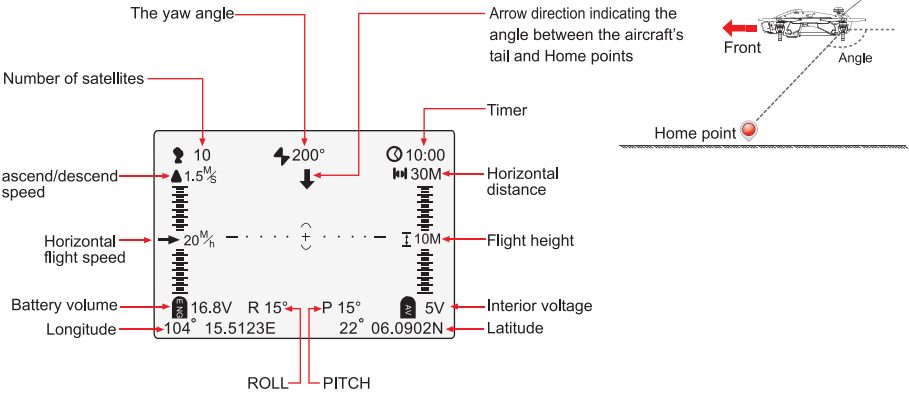
Press ENT to enter the "Reverse Switch" setting interface.
Press R or L to select "Normal".

Elevator	Aileron	Throttle	Rudder	Gear	Flap	AUX2	AUX3	AUX4	AUX5
Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

After finish settings, press ENT to confirm and then press EXT to return to main interface.

10.2 OSD(G) information

The OSD(G) information will display only if there is video-receiving equipment.



Attention:

- (1) When the arrow points straight down, pull back the ELEV stick, then the drone will fly back to Home position.
- (2) Slide the video switch and OSD module code switch "1" to "ON", please refer to page 15-16.

10.3 TX5821(FCC)/TX5820(CE) emitter transmitting channel selection

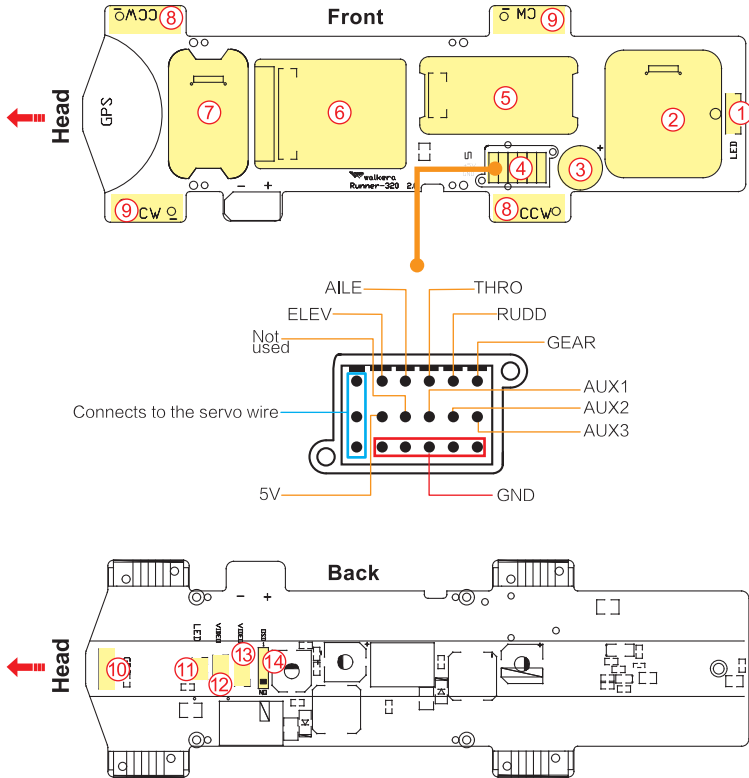
There are 8 different channels can be selected. You can choose the best channel according to the image quality as bellow:

Channel	1	2	3	4	5	6	7	8
Frequency	5866MHz	5847MHz	5828MHz	5809MHz	5790MHz	5771MHz	5752MHz	5733MHz
Code position (on/off)								

Attention:

- (1) Only 2, 4, 6, 8 channels are available for the TX5821(FCC) emitter.
- (2) Emitter transmitting channel and remote controller image receiving channel must be correspondent with each other.

10.4 Introduction for power board

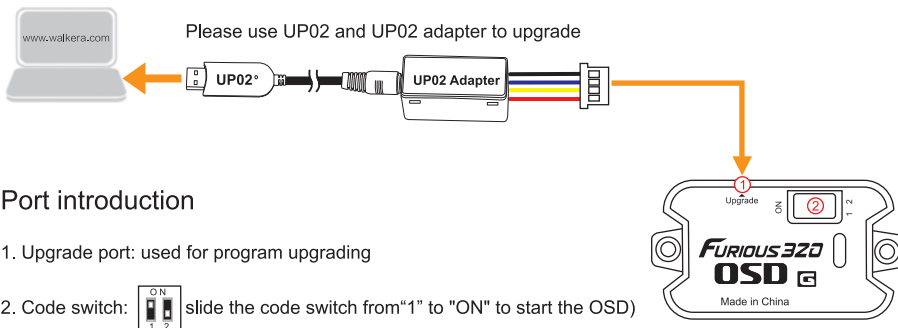


- | | |
|--|--|
| <p>1. Rear LED connection port</p> <p>2. TX5821(FCC) or TX5820(CE) emitter install position</p> <p>3. Buzzer: a kind of alarm device which will alarm automatically when the signal between the aircraft and remote controller lost suddenly or battery voltage lower than 14.4V.</p> <p>4. Receiver input/output channel</p> <p>5. DEVO-RX712 Receiver install position</p> <p>6. FURIOUS 320(G) Main Controller install position</p> <p>7. OSD module install position</p> | <p>8. Brushless ECS(CCW) connect position</p> <p>9. Brushless ECS(CW) connect position</p> <p>10. GPS connect port</p> <p>11. Front LED connect port</p> <p>12. 800TVL camera connect Port: (3 pins/11.1V)</p> <p>13. 1920x1080P camera connect Port: (5 pins/5V)</p> <p>14. Video Switch: <input type="checkbox"/> ON Slide the switch to "ON" to start the video</p> |
|--|--|

10.5 Introduction for FURIOUS 320 OSD(G)

Upgrade

Please go to Walkera official website for online upgrade, cable connection as follows:



Port introduction

10.6 Introduction for DEVO-RX712 receiver

Flexible flat cable connection

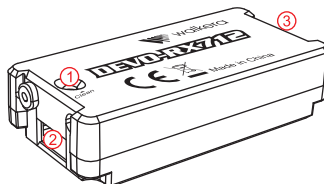
The metal surface of flexible flat cable plug should be inserted upward to receiver port properly.



The metal surface of flexible flat cable plug should be inserted downward to power board port properly.

Port introduction

1. Clean button: Fixed ID clear button
2. Idle port: Not used
3. Connection port: used to connect flexible flat cable



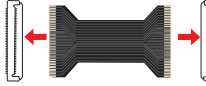
Fixed ID code cleaning up method

If you want to clear the fixed ID after setting by Remote Controller (Fixed ID setting, details please refer the Remote Controller manual), please press the clean button and power on the aircraft. The receiver fixed ID memory is cleared if the receiver RED LED will flash slowly. Remote Controller fixed ID settings status should be OFF.

10.7 Introduction for FURIOUS 320(G) Main Controller

Flexible flat cable connection

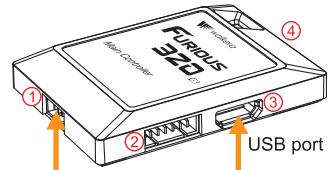
The metal surface of flexible flat cable plug should be inserted upward to main controller port properly.



The metal surface of flexible flat cable plug should be inserted downward to power board port properly.

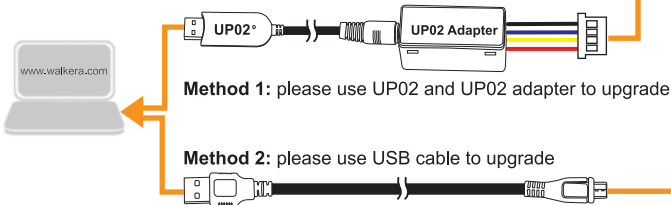
Port introduction

1. UART port: used for program upgrading
2. GPS Port: connect GPS module
3. USB port: used for upgrading and setting parameter
4. Connection port: used to connect flexible flat cable

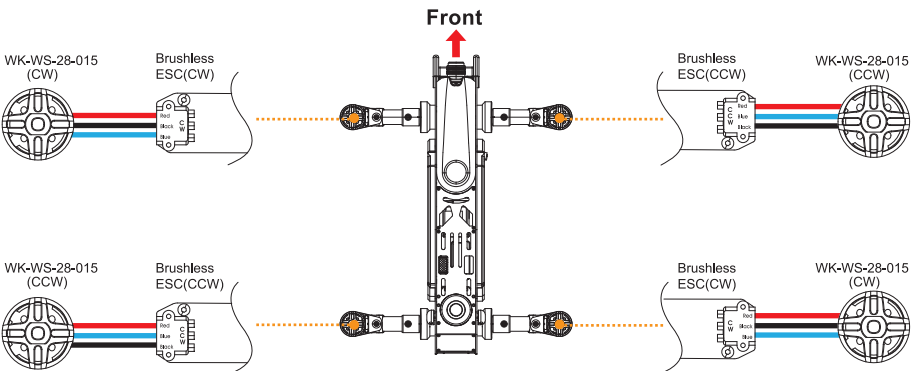


Upgrade

Please go to Walkera official website for online upgrade, cable connection as follows:



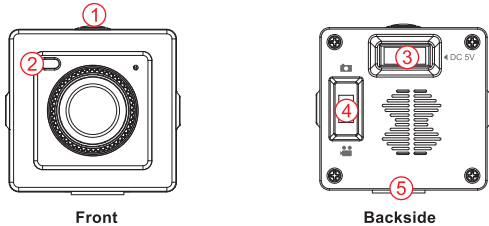
10.8 Brushless ESC and Brushless Motor connection diagram



11.0 Camera(1920x1080P) Instructions

11.1 Pictures illustration

1. Shutter Button
2. Red Indicator
3. Power port(DC 5V)
4. Video/Photo Switch
5. Micro SD card slot




Warm tips:


- (1) A Micro SD card must be inserted into the camera before power on and removed after power off. (A high speed SD card is recommended.)
- (2) Insert the Micro SD card, after the camera power on, the red indicator will keeps solid.

11.2 Video instruction

Manual Operation


Turn the Video/Photo Switch to , press the shutter button once to start recording (the Red indicator flashes for 0.5sec interval); Press the shutter button again to stop recording (The Red indicator keeps solid).

Remote Controller Operation


Switch	Remote Controller setting	Instructions
GEAR	Model Menu	① Please turn the video/photo switch to “  ” position.
	↓	
	Device Output	② Start video: turn the GEAR switch from “0” position to “1” position, wait for 1-2 seconds, then return to the “0” position, the camera will start recording (the red indicator keeps flashing with an interval of 0.5 second).
	↓	
	AUX2	Stop recording: turn the GEAR switch from “0” position to “1” position, wait for 1-2 seconds, then return to the “0” position, the camera will stop recording (the red indicator keeps solid red).
	↓	
	GEAR SW	
	↓	
	Active	Note: You must stop recording to store the video on the SD card. The video will not be stored if you turn off the power before stopping the recording.

11.3 Photo instruction

Manual Operation

Turn the video/photo switch to , press the shutter button once, camera will take a photo (the red indicator light out once then keeps solid red), press the shutter button again, it will take another photo.

Remote Controller Operation

Switch	Remote Controller setting	Instructions
GEAR	Model Menu ↓ Device Output ↓ AUX2 ↓ GEAR SW ↓ Active	① Please turn the video/photo switch to “  ” position. ② Turn the GEAR switch from “0” position to “1” position, wait for 1-2 seconds, then return to the “0” position, the camera will start to take a photo (the red indicator light out once then keeps solid red), operate again to take another photo, and so on.

12.0 Instructions for GA009 balance charger

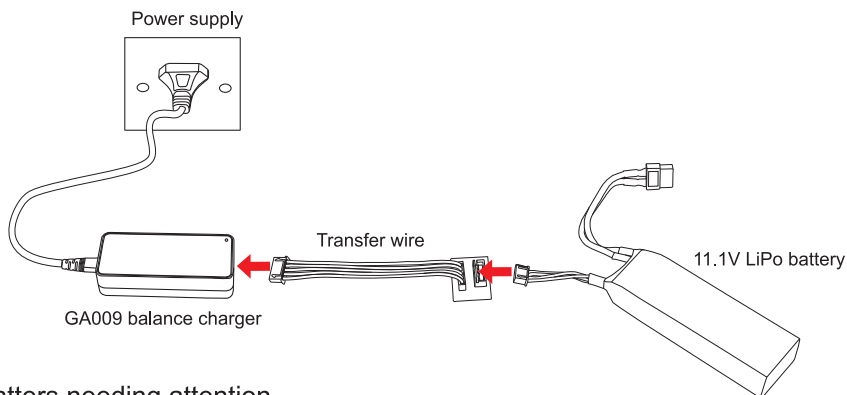
Parameters of GA009 balance charger

Input voltage	Output current	Output Power	Dimension
100-240V 50/60HZ	3.3A	60W	137 x 57 x 32mm

Instruction of GA009 balance charger

- GA009 adopts microcomputer chips to monitor and control over the whole charging process in a balanced way with LED indicator to display the charging status at real time.
- GA009 is suitable for 11.1V/ 14.8V Li-ion or Li-polymer battery pack.


The diagram of GA009 charger connecting to 11.1V li-po battery



Matters needing attention

- GA009 is only used to charging a 3S or 4S Li-ion or Li-polymer battery. It is forbidden to simultaneously charge two or more sets of batteries. Either the charger or battery may be damaged.
- During charging, GA009 should be put in dry and ventilated place and be far away from heat sources and inflammable and explosive substances.
- When charging, the battery should be removed from your aircraft. Never leave the charger unsupervised during the process of charging in order to avoid risk of accidents.
- Never immediately charge your battery as soon as the flight is finished, or when its temperature doesn't cool down. Otherwise the battery will take a risk in swelling, even a fire.
- Ensure the correctness of polarity before connecting the battery to charger.
- Avoid drop and violence during the process of charging. Drop and violence will result in internal short circuit of the battery.
- To make sure the safe use, please ensure you use the factory's charger and battery. If the battery is aging and swelling owing to long time using, please replace it in time.



 Tel: 400-9318-878

User manual is subject to change without prior notice.

Please go to Walkera official website to get the latest version.

