




DOOSAN TC101 Remote Controller User Manual

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DOOSAN TC101 Remote Controller



Product Information

Remote Controller

The Remote Controller is a device used to control a drone. It operates at a frequency of 2.4GHz and has a battery of 3.7V/5000mAh, providing an endurance time of about 10 hours. The USB-A interface supplies a voltage/current of 5.0V/2A, and the controller is designed to work in temperatures ranging from -20 to 50 degrees Celsius. The controller features an antenna, display, left and right joysticks, power switch, ignition and flame-out buttons (for oil-activated drones), return to landing button, menu carousel, lanyard perforation, charging port, control mode switch button, and flight mode switch button (for composite wing drones).

Product Usage Instructions

Power On

To power on the remote control, toggle the POWER button upwards (with a beep). The display will show the remote control status, including signal strength, battery level, and remote control mode.

Adjusting the Antenna

When maneuvering the drone, be sure to keep it within optimal communication range. Adjust the orientation or distance between the controller and the aircraft to ensure that the aircraft is always in the best communication range. Unfold the remote control antenna and adjust its position for different signal strength.

Joystick Control

Please wait for the GNSS positioning and orientation status to show RTK1.0 on the ground control station software before takeoff.

Use the left joystick for motor start/stop and the right joystick for rotor/fixed-wing operation.

Control Mode Switching

The factory default control mode of the remote control is M1 (Japanese hand). To switch control modes, toggle the Control Mode Switching button.

Flight Mode Switching

To switch flight modes for composite wing drones, double-click the Flight Mode Switch button.

Idle Speed Adjustment

Adjust the idle speed by moving the Calibration Rocker to the neutral position.

Menu Options

To access menu options, long press the dial. Turning Dial 9 switches between items in Option Settings. Click on Dial to select Confirm, Cancel, or Expand option. Calibration function is used to calibrate the position of the left and right joysticks. Select Calibration in the Inquiry Page and release the joystick so that the rocker automatically returns to the neutral position. Save calibration settings when prompted.

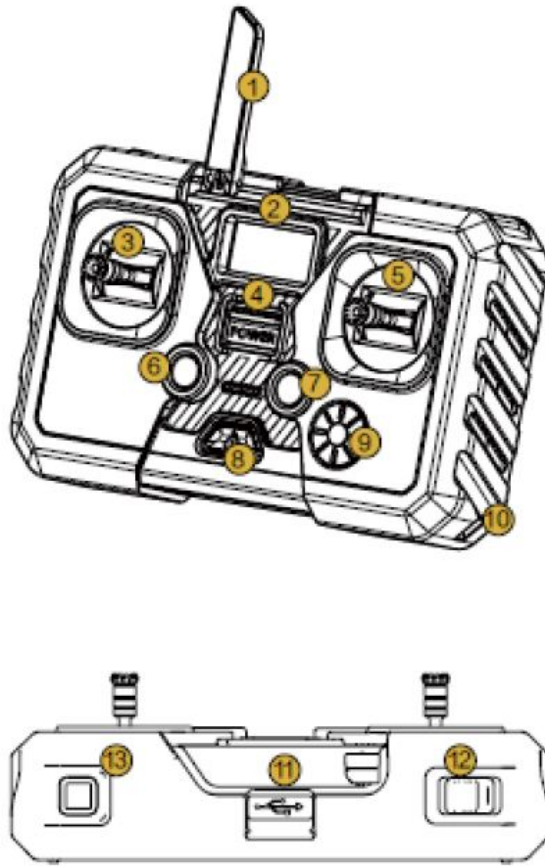
Care and Maintenance

Keep the remote control clean and dry. Do not expose it to extreme temperatures or humidity. Store it in a cool and dry place when not in use. Avoid dropping or hitting the remote control as it may damage the internal components.

Cautions

- Do not use the remote control in areas with strong radio interference.
- Do not disassemble or modify the remote control.
- Do not use the remote control if it is damaged or malfunctioning.
- Keep the remote control away from children and pets.

Introduction



1. Antenna
2. Display
3. Left joystick
4. Power Switch
5. Right joystick
6. Ignition button (oil-activated drone)
7. Flame-out button (oil-activated drone)
8. Return to landing
9. Menu carousel
10. Lanyard perforation
11. Charging port
12. Control mode switch button
13. Flight mode switch button (composite wing)

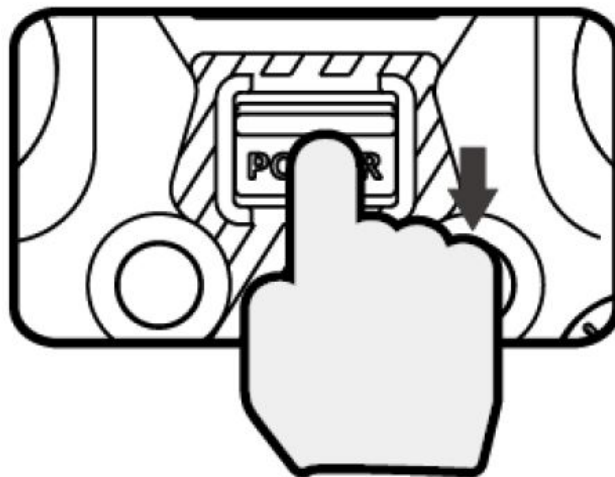
Function and Performance

| | |
|---------------------|--------------|
| Operating frequency | 2.4GHz |
| Battery | 3.7V/5000mAh |

| | |
|--|----------------|
| Endurance time | About 10 hours |
| USB-A interface supply voltage/current | 5.0V/2A |
| Working environment temperature | -20°C~50°C |

Use

Power on



Toggle the POWER button upwards (with a beep) to power on the remote control.

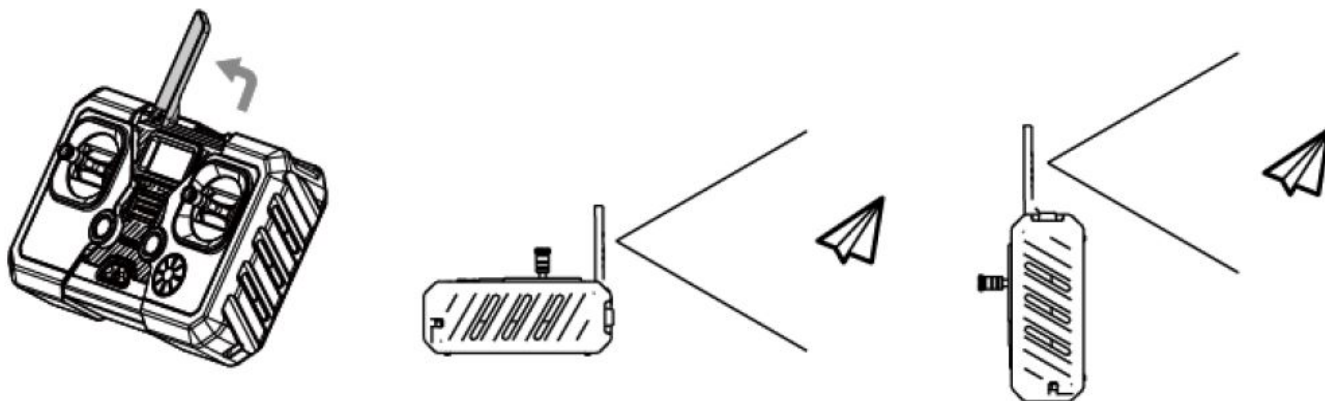
View the remote control status through the display, including signal strength, battery level, and remote control mode.

The main interface is used to display the communication status of the remote control and itself, and the interface is as follows.

| Serial number | Name | Function |
|---------------|-------------|--|
| 1 | Signal | Signal is displayed, NC when no signal is present |
| 2 | electricity | Estimation of remaining battery |
| 3 | Information | Display the corresponding information in case of key and fault |

Adjusting the antenna

When maneuvering the vehicle, be sure to keep the vehicle within optimal communication range. Even adjust the orientation or distance between the controller and the aircraft to ensure that the aircraft is always in the best communication range. Unfold the remote control antenna and adjust the position, different antenna positions receive different signal strength. When the antenna is at a 90° or 180° angle to the back of the remote control and the antenna plane is facing the aircraft, it allows the best signal quality between the remote control and the aircraft.



Joystick control

Please make sure to wait for the GNSS positioning and orientation status to show “RTK1.0” on the ground control station software before takeoff.

1. Motor start/stop



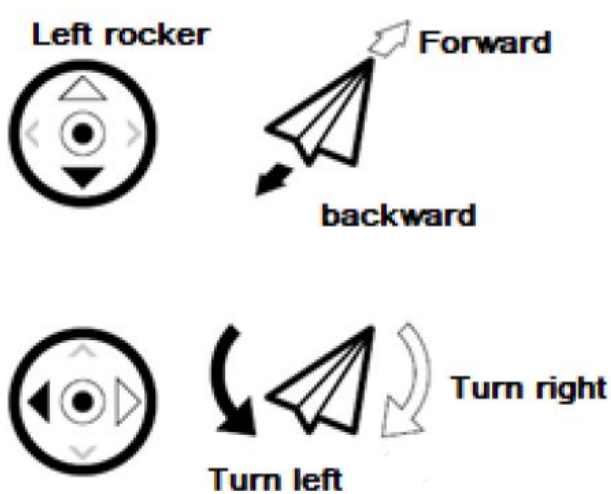
switch on



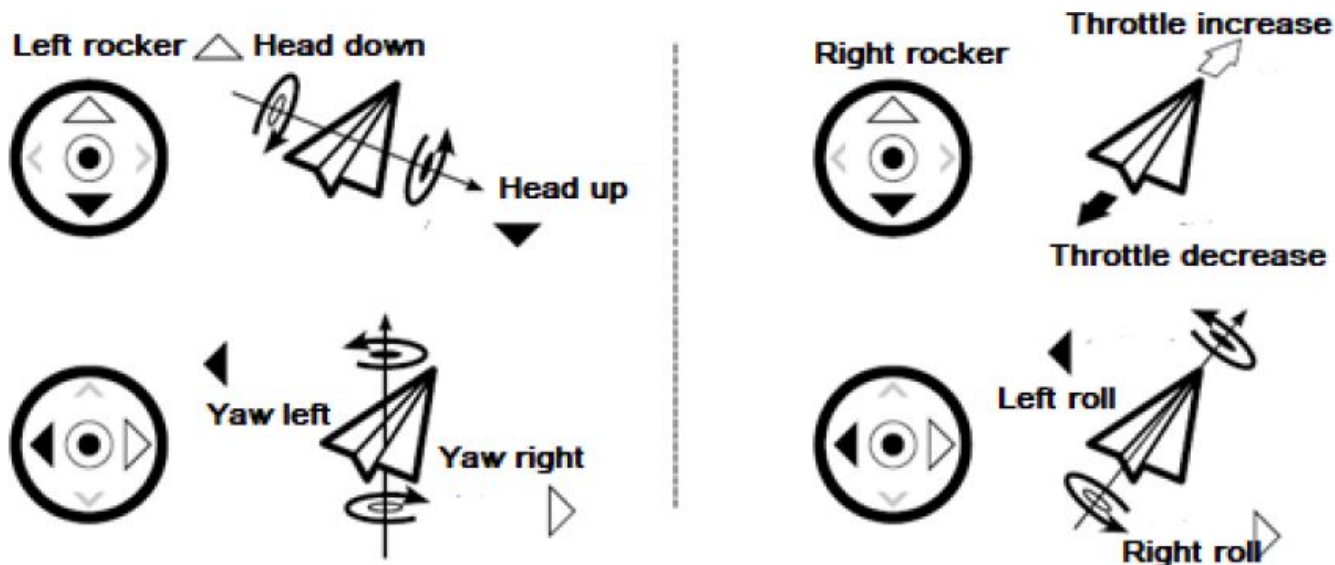
stop

2. The factory default control mode of the remote control is “M1” (Japanese hand)

- Rotor operation



- Fixed-wing operation



Function Operation

| Function | Operation |
|-------------------------------------|--|
| Control mode switching | Toggle in the upper left corner |
| Ignition command | Double click ignition button ⑥ |
| Flame out command | Double-click the flameout button (7) |
| Return order | Double click to return to landing ⑧ |
| Fixed wing, rotor switch command | Double-click flight mode switch (composite wing) ⑩13 |
| Idle speed adjustment | Perform in the menu |
| Calibration rocker neutral position | Perform in the menu |
| Switching remote control mode | Perform in the menu |
| Pairing with receivers | menu, the reboot takes effect |
| Language Switching | menu, the reboot takes effect |

Menu Options Operation

Long press the “dial ⑨”: you can switch between “main interface” and “option settings”.

Turning “Dial 9”: In “Option Settings”, turn “Dial 9” to switch items Click on “Dial ⑨”: you can select the action you want to point to: Confirm, Cancel, Expand option.

When no button is specified, the following operations are performed on “Carousel dial 9” by default.

Idle speed adjustment

1. Long press the “dial ⑨” in the main interface to enter the option settings
2. Turn the dial to select “Idle Speed” and click the middle button
3. At the “Is idle speed adjustment performed?” inquiry, turn the dial and select “OK”
4. In the Adjustment Page, turn the dial to adjust the white box to the number you want to adjust, click the dial to expand the option, turn the dial to adjust the appropriate number, and click the dial again to close the option.

5. After closing the option, turn the dial to select OK.
6. If “Modified successfully” is displayed, the modified value takes effect.
 - **a) Calibrating**

The calibration function is used to calibrate the position of the left and right joysticks.

1. Long press to enter the option and select “Calibration”
2. Release the joystick so that the rocker automatically returns to the neutral position and keeps the rocker free.
3. In the “Inquiry Page”, select “OK”.
4. After about 0.5s, the rocker calibration is completed and “Save successfully” is prompted.
5. If you are prompted with “Save failed” or “Calibration failed”, please retry. Multiple failed retries indicate a hardware abnormality.

1. Mode

Mode switching is used to switch the joystick matching mode of remote control.

At present, there are 3 selectable joystick modes in TC-101, M1/M2/M3. They correspond to the commonly used American hand, Japanese hand, and Chinese hand, respectively. The corresponding relationship is as follows

1. Long press on the home page to enter the option
2. Select the “Mode” page and confirm to enter the configuration.
3. Select M1/M2/M3 and click to expand the options.
4. Use the dial to adjust the desired option and click to select.
5. Select “Confirm” to save the settings.

2. Pairing

The pairing function is used for one-to-one connection pairing with the receiver.

You need to power on the aircraft and set RC pairing in Commander to operate it.

1. Power on the aircraft, connect the ground control station and start Commander.
2. TC101 long press on the home page to enter the option, select “Pairing”, the inquiry page will pop up.
3. Click “RC Pairing” in Commander to start the pairing mode of the receiver.
4. In the “Pairing Inquiry” of TC101, click “OK” to enter the pairing process.
5. Depending on the actual situation, pairing will take 10~15 seconds. After successful pairing, “pairing successful” will pop up, restart TC101 and the connection will take effect.
6. If “pairing failed” pops up, please try again or check the receiver.

3. Language Switching

TC101 supports two languages switching: English/Chinese.

The English interface is fixed in the language switch, and does not change with the current language to prevent users of other languages from operating incorrectly and leading them to not know how to switch back.

1. Long press in the home page to access the options.
2. Select “Language” and click to go to the selection page.
3. Select “Chinese” or “EN” on the left, click to expand the options, “Chinese” corresponds to the target language as Chinese, “EN ” corresponds to the target language is English.
4. Use the dial to adjust the desired option and click to select.

5. Click “YES” to save the settings.
6. Some of the language changes to the interface will take effect after a reboot.

Care and maintenance

- Toggle the “Control Mode Switch ”, the buzzer will sound, but there is no change in the “Auto/Semi-Auto/Manual” interface.
- Cause of failure: Wireless configuration failure
- Solution: Please contact after-sales for remote processing.
- The interface shows “RF Fault” and the signal is “NC”.
- RF hardware failure. Need to return to factory for processing.
- Failure during rocker neutral calibration.
- Please check if the rocker status is free to return to the neutral position. If the error is tried several times, please contact the after-sales service.

Cautions

- Charging must be done at room temperature, charging at low temperature is strictly prohibited.
- If the ground control station is exposed to water, please dry the water after use and place it in a ventilated and dry place to dry fully.

FCC Compliance Notice

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.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment . This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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