

Parachute and Circuit Breaker System DJI MATRICE 30



Read this manual carefully before handling the parachute system.

PRESENTATION

Flying Eye is your partner in drone technology since 2009. We develop parachute systems since the appearance of the drone regulation in 2012. Pyrotechnic system from aviation technology, you have the most efficient and lightest system on the market.

Flying Eye could not be held responsible for any malfunction or inefficient operation.

We are at your disposal for any technical or commercial information.

WARNINGS AND PRECAUTIONS FOR USE

Flying Eye may suspend the warranty and disclaim any liability to anyone who fails to observe the basic safety precautions set forth below. Flying Eye is not responsible for any damage or injury directly or indirectly related to the use of the fireworks or by the use of fireworks that do not meet the safety requirements and standards.

- No other operation is permitted other than that specified in the manual.
- The device should only be used by (or under the supervision of) a responsible adult. Always keep the device out of the reach of children. Do not let them play with it.
- Under no circumstances should you disassemble any part of the device, except during scheduled maintenance and in accordance with the instructions in this manual.
- Do not place the device in a damp or wet environment and keep it away from UV light.
- Do not expose the system to low or high temperatures, strong shocks, contact with chemicals, acids, or long-term storage in a humid or dusty environment. Incorrect use may cause the pyrotechnic cartridges to explode and put your life in danger. The maximum temperature of use is 40°C and the minimum temperature of use is -15°C.
- The good condition of the parachute system must be checked before each use. Do not use the device if it is damaged or malfunctioning. If this is the case, contact your dealer.
- The parachute cannot prevent the drone from malfunctioning.
- Any flight with a drone implies the existence of a risk for the equipment and people in the vicinity, with or without a parachute.
- The use of a parachute should not increase your risk.
- The parachute must be activated manually by the user. Regular training is necessary to be able to react correctly in case of an emergency. Therefore, for the safety of the equipment and third parties, practice dummy releases on the ground regularly.
- The ejection system works only once. It must be returned to your dealer to be recharged.

TECHNICAL DESCRIPTION

DESCRIPTION :

Reliable and lightweight safety system for the S2 and S3 certification of the DJI MATRICE 30. It includes a double ultra fast parachute, a circuit breaker, an alarm and a secure radio trigger that is attached to the pilot's remote controller.

The parachutes are removable in a few seconds.

The center of gravity of the Matrice 30 is maintained. Redundancy of the parachutes for a totally infallible system. The MATRICE 30 lands on its feet, when the parachutes are released, to avoid the breakage of an arm or a landing gear. Works correctly from 15 meters high thanks to the pyrotechnic technology borrowed from microlights.

Very low air penetration coefficient, which means that no vibrations are generated at high speeds, thus maintaining a perfectly stable image.

Reliable, robust and light high-tech materials.

The assembly and disassembly of the system is doable by the customer. The system does not modify the integrity of the DJI MATRICE 30. The DJI manufacturer's warranty is retained. Fits in the original case of the Matrix 30.

TECHNICAL SPECIALIZATIONS :

- Weight of the complete system: 540g
- Impact energy: 61 J
- Approved for 4.9kg
- Redundancy of the power cut electronics
- Double trigger button on the remote control
- Safety pin for handling pyrotechnic charges
- Encrypted frames (256 bits) - checksum to authenticate the frame. Association in both directions.
- Remote control autonomy of 40 hours (1800mAh lipo battery rechargeable by USB-C)
- Auto power Off (after 30 minutes without connection)
- Battery voltage display on the remote control
- Backup power allowing to trigger the parachutes up to 1 minute after a loss of power of the drone
- Firmware update via USB-C
- Secure remote control power on and off (like a DJI system)
- Possibility to pair up to 4 remotes per drone

Each element of the kit can be purchased separately on our website: www.flyingeye.fr

CONTENT:

- 2 parachute pods
- 1 left exoskeleton
- 1 right exoskeleton
- 1 battery module
- 1 Buzzer
- 1 long screw
- 2 charging plugs
- 2 pyrotechnic charges
- 1 remote control
- 2 test leds
- 2 battery latches
- 1 locking screw for radio control support
- 1 remote control support
- 1 pin
- 2 electronic tabs



REMOTE CONTROL PARACHUTE



Charge level of the radio control :

To check the charge level, press the "POWER" button once.

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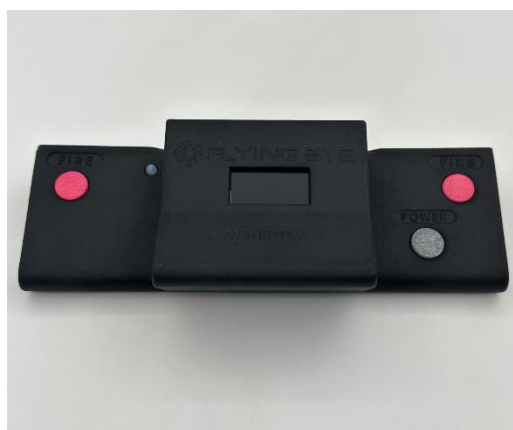
Switching on :

To switch on the radio control parachute, press and hold the "POWER" button.

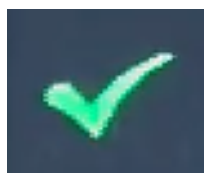
"POWER" BUTTON.

Activation:

The parachute is released by pressing the 2 "FIRE" buttons simultaneously.



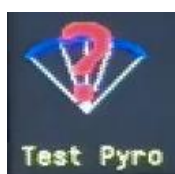
The different alerts on the remote controller of the system :



Operational system



Loss of connection with the drone



Safety pin in place



Missing pyrotechnic charge(s)



Triggering the system

ASSEMBLY OF RADIO CONTROL PARACHUTE

OPERATING MODE

Take the following 3 pieces (and the M30 radio control):



Radio control



Parachute RC support



Support screw

Insert the RC bracket on the parachute radio control and screw the 2 small screws with an allen key (supplied with the M30) as below:



Then attach it to the M30 radio control by inserting the 2 small pins of the RC bracket into the 2 holes (orange arrows) and then insert the screw of the bracket into the thread of the M30 radio control (green arrow) as below:



INSTALLATION

Installation of the battery locks:



Replace the original M30 locks with those supplied with the system and check the springs, be careful not to invert the springs (left spring to left / right spring to right):



Then install the exoskeleton (right and left) on the M30:



Insert the exoskeleton as below:



Then screw in the long screw to hold the exoskeleton in place on the M30 :



Insert the electronic tabs on the battery module as shown below:



Insert it into the battery compartment of the M30 (all the way to the bottom), pushing the tabs slightly inwards so that they do not rub against the side:



Then screw the tabs onto the exoskeleton:



Then insert the buzzer (slightly at an angle) on the battery module and re-center it once inserted:



Insert the M30 batteries all the way in and lock them with the previously installed locks (keep the drone switched off):



Insert the pin before installing the pyrotechnic charges:



Finally install the parachute pods:

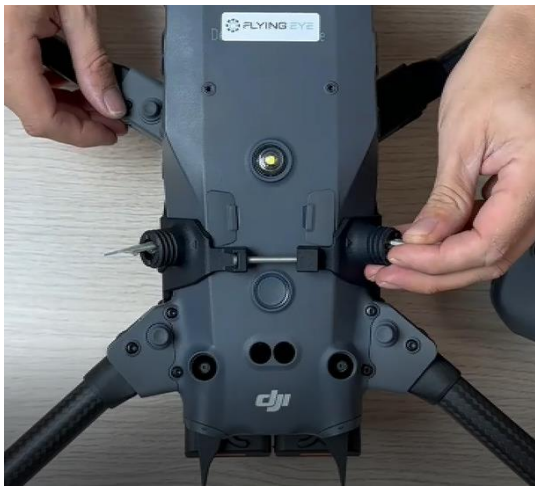




FUNCTIONAL TEST

Before each flight, you must check all the components of the system and verify its integrity. If any anomaly is found, do not proceed with the flight and contact your dealer.

Test for proper operation on the ground:

- Ensure that the entire drone system is powered down. Batteries disengaged.
- Insert the safety pin
- Remove the "parachute" pods by unscrewing them.
- Remove the 2 pyrotechnic charges.
- Put in place the 2 test leds in place of the charges



- Put in place the 2 batteries and lock.
- Switch on the radio control of the drone.
- Switch on the radio control "parachute".
- Turn on the drone, the symbol  appears.
- Remove the safety pin, the symbol  appears.
- Switch on the drone's motors.
- Activate the "parachute" system by pressing the 2 "FIRE" buttons:
- The four motors stop. The 110dB buzzer sounds.

The symbol  appears.

The two test leds light up for 2 seconds in red or green.

- The buzzer continues to sound as long as the batteries are in place.
- Unlock and remove the batteries:

The system will remain powered for about one minute and the buzzer will stop.

- Turn off both radio controls.

MAINTENANCE

ANNUAL MAINTENANCE

Change of pyrotechnic charges every 12 months (contact dealer).

Ventilation of the sail for 24 hours, inspection of the cloth, lines and folding.

For an optimal functioning of the system, the annual maintenance of the sail is essential (contact your dealer).

STORAGE AND WARRANTY

SPECIFIC MAINTENANCE :

You must dry the glider immediately after any contact with moisture or water to avoid any deterioration. Contact with solvents, chemicals, or fuel may alter the mechanical properties of the canopy.

The canopy and lines should be cleaned only with soap-free water and then dried.

WARRANTY:

We guarantee our parachutes for one year from the date of purchase against any defect or design fault that may occur during normal use of the product.

Any abusive or incorrect use, any exposure to aggressive factors (high humidity, high temperature...) which would lead to damage will invalidate this warranty.



Contact Us :

Flying Eye

80 route des lucioles

Bat. I14

06560 SOPHIA ANTIPOLIS

Mail : info@flyingeye.fr

Phone : 09 72 62 78 50