



MADE IN FRANCE



USER'S MANUAL & INSTRUCTIONS

UNIVERSAL PARACHUTE RECOVERY SYSTEM KRONOS MINI

PRS KRONOS MINI

summary

universal parachute recovery system (-2KG)

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INTRODUCTION

by our CEO



"At Dronavia, we've been developing a wide, innovative range of accessories to secure your professional drones since 2015. Based in France, we think up all our products in our design office, before bringing them to life in our workshop, with unique technological know-how.

The fruit of more than 8 years of research and innovation, our new range of Kronos parachutes and FTS has been developed and tested in accordance with the standards imposed by the EASA and the DGAC, to comply with MOC2511 and the MOC M2.

Thanks to its standardised safety accessories, Dronavia ensures that remote pilots have the best risk management and safety measures at their disposal during their flying missions. You'll be flying in complete safety thanks to the Kronos Mini parachute.

Thank you for your confidence & enjoy your flight!



Ludovic Pelletey, Dronavia's CEO.



GENERAL presentation

Dear customer,

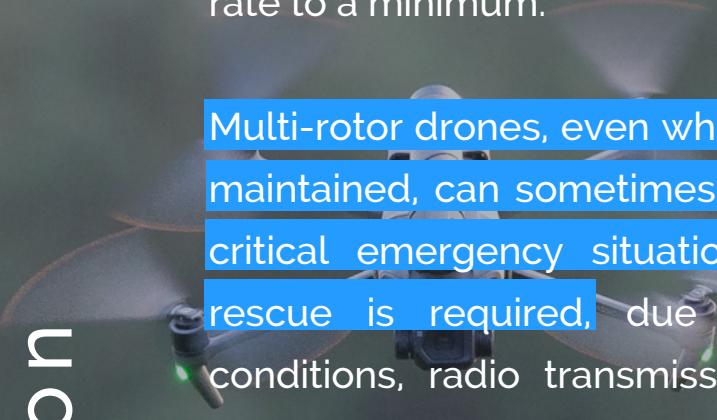
Congratulations on the purchase of your new Kronos Mini autonomous deployment parachute system.

You have chosen what we are sure is the best performing system of its kind. Extensive research and testing have gone into making it as safe and effective as possible.

Based in Remiremont, France, DRONAVIA is at your service to advise you on the purchase of your Kronos Mini parachute recovery system (PRS) and to answer any questions of a technical or commercial nature.

GENERAL presentation

The Kronos Mini parachute has been designed for aircraft weighing less than 2 kg, such as DJI (Mavic 2 / 3 / Zoom / Pro / Air / Enterprise) , Autel (Evo II), Parrot (Anafi USA & Anafi Ai). It has been developed with the aim of being deployed as quickly as possible while keeping the crash rate to a minimum.



Multi-rotor drones, even when properly used and maintained, can sometimes find themselves in a critical emergency situation where immediate rescue is required, due to severe weather conditions, radio transmission failure, technical failure of the propulsion system, loss of GPS signal, and so on.

In such situations, parachute recovery systems with autonomous deployment can make the difference between a simple scare and a more serious accident. The Kronos Mini parachute can be activated and deployed automatically in less than a second, keeping your drone safe.

GENERAL presentation



These emergency devices do not protect the integrity of the equipment or prevent damage to property or persons; they are a safety feature that complements other safety features. Neither DRONAVIA nor its distributors may be held responsible for any malfunction or operation deemed insufficient or even ineffective.

WARNINGS & precautions for use

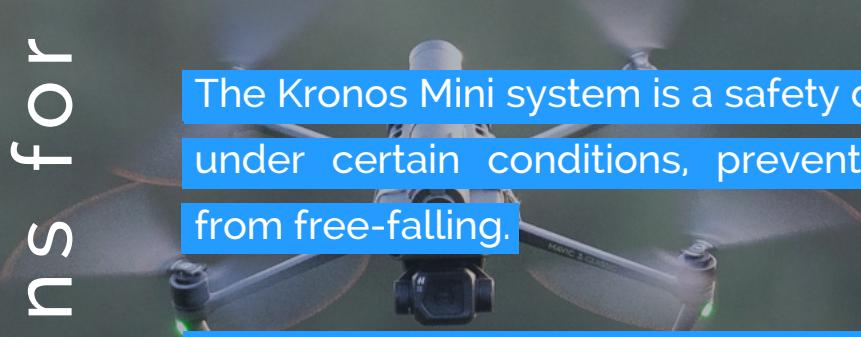
TO BE READ CAREFULLY

Dronavia may suspend the warranty and disclaim all liability to any person who fails to comply with the basic safety instructions set out below.

Before handling the Kronos Mini system you must read this manual carefully. It provides information on how to use the parachute. In addition to the important notes and information mentioned in this manual, the owner of the device must comply with all the important instructions set out below.

WARNINGS & precautions for use

TO BE READ CAREFULLY



The Kronos Mini system is a safety device which, under certain conditions, prevents the drone from free-falling.

If the parachute is activated, the drone will inevitably fall.

This equipment does not prevent technical problems occurring on the drone. Any flight with a drone implies the existence of a danger for the equipment and people in the vicinity, regardless of the safety equipment used. Using the Kronos Mini parachute should in no way increase your risk.

15 INSTRUCTIONS to follow

1

It is forbidden to carry out any manipulations other than those specified in the manual.

2

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.

3

Do not under any circumstances dismantle the various parts of the device, except when resetting it in accordance with the instructions in this manual.

4

Do not place the device in a damp or wet environment and keep it out of direct sunlight.

5

Do not expose the system to high temperatures, strong shocks, shock hazards, contact with chemicals or acids, or long-term storage in a high-humidity or dusty environment. The maximum operating temperature is 40°C and the minimum operating temperature is -5°C.

6

Check that the Kronos Mini parachute system is in good condition before each use. Do not use the device if it is damaged. If necessary, contact your reseller.

7

The Kronos Mini parachute system cannot prevent the drone from malfunctioning.

8

Any flight with a drone implies the existence of a risk for the equipment and people in the vicinity, with or without the Kronos Mini safety system.

TO BE READ CAREFULLY

15 INSTRUCTIONS

to follow

9

Using a Kronos Mini parachute system should never increase your risk-taking.



10

The Kronos Mini parachute system attempts to prevent a drone suffering a malfunction from free-falling. However, there are fall situations in which the effectiveness of the Kronos Mini parachute system may be limited or impeded.

11

The Kronos Mini parachute system can be actively activated by the user. Regular training is necessary to be able to react correctly in an emergency.

12

The spring ejection system only works once. You can recharge the system yourself by following the instructions in this manual. It is your responsibility to ensure that the system is under warranty.

13

When reloading, it is forbidden to do so with people nearby, and especially with the barrel pointing in their direction. You must take the same precautions as when handling a loaded rifle. In the event of accidental firing during this stage or mishandling, the spring could be ejected and cause serious injury. Safety glasses must be worn.

14

After the device has been triggered, it is advisable to inspect each component carefully to ensure its integrity. If in doubt, contact your reseller.

15

After switching on the system, if the LED changes to a steady red, do not use it and contact your dealer for assistance.

TO BE READ CAREFULLY



KRONOS SYSTEMS

UNIVERSAL PARACHUTE RECOVERY SYSTEMS FOR DRONE 

COMPONENTS

presentation



ADDITIONAL ACCESSORIES SUPPLIED



Micro USB cable



Adhesive fixing support



Adhesive fixing support (for accessories)



Fixing elastic

THE STATES

system

STARTING



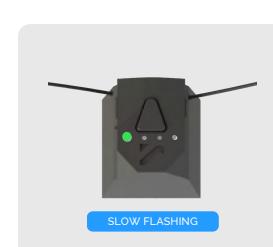
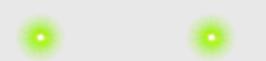
System
initialisation



CONNECTION



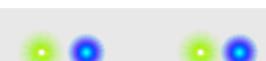
FTS only
connected



FTS & parachute
connected



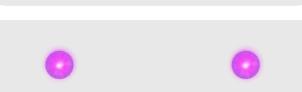
FTS & parachute connected
with autonomous
deployment



Search for activation
of autonomous
deployment



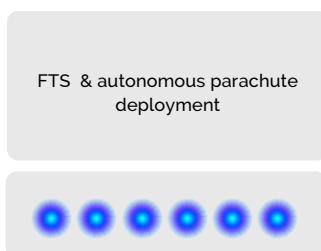
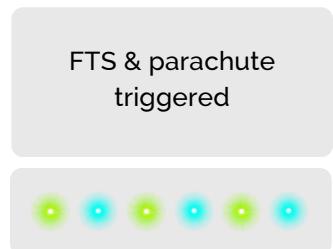
Disabling
autonomous
deployment



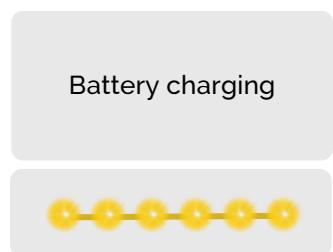
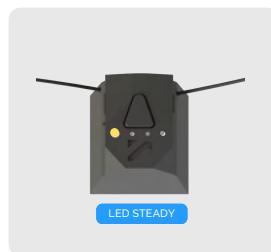
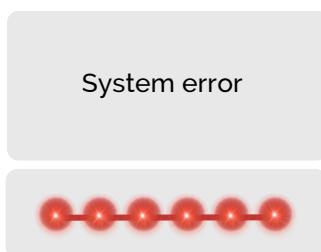
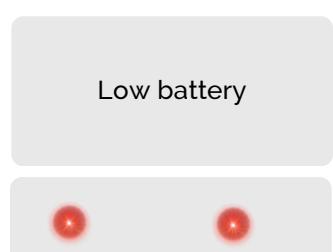
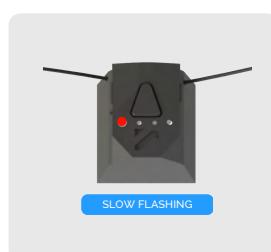
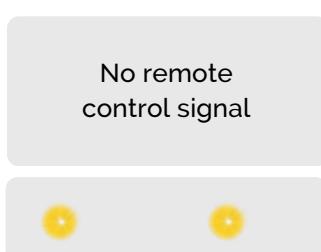
THE STATES

system

TRIGGERING



SYSTEM & BATTERY ALERT



KRONOS MINI

Technical specifications

TOTAL WEIGHT

130 GRAMMES

EJECTION DEVICE

SPRING
PRESTRESSED

MINIMUM HEIGHT
EFFICIENCY

FROM
20 METERS

COMMUNICATION
WIRELESS RADIO

SRD86o WITH
ENCRYPTED KEY
(869 MHZ / 100 MW)

RANGE OF THE
REMOTE CONTROL

1500 METERS

PARACHUTE
AUTONOMY

10 HOURS

REMOTE CONTROL
AUTONOMY

30 HOURS

ENERGY GROUND
IMPACT

< 4 JOULES

OPERATING
TEMPERATURE

-5°C À 40°C

INSTRUCTIONS

adhesive support installation

To install the adhesive support supplied with the Kronos Mini parachute, follow the instructions below in order:

Instructions

1 Make sure that the support allows the battery to be changed and that no sensor has its field of vision obstructed.

2 Apply adhesive fixings at least 24 hours before use. Adhesive fixings should only be installed on smooth surfaces. Porous or textured surfaces will not provide sufficient adhesion. When applying the fastener, apply sufficient pressure to ensure full contact over the entire surface.

3 Apply adhesive fixings only to clean, dry surfaces. Wax, oil, dirt or other debris will reduce adhesion and may cause the mount and camera to fall off.

4 Install the adhesive fixings at room temperature.

5 The adhesive in the fixings will not adhere properly if applied in cold or damp environments or on cold or damp surfaces.

INSTALLATION

of the parachute system

1

Install the adhesive parachute fixing support at the front and centre of the drone.



Warning

Make sure that the support allows no sensor to have its field of vision obstructed.

INSTALLATION

of the parachute system

2

Install the parachute assembly on the drone, sliding the parachute fixing clip into the adhesive fixing support installed earlier.



3

Pass the main parachute sling under the front right arm of the drone.



4

Pass the main parachute sling under the front left arm of the drone.



INSTALLATION

of the parachute system

5

Hook the carabiner to the main sling by passing it under the canopy ejection tube. Then pass the elastic around the tube and the main sling. Move the elastic forward until the main sling is taut.



Warning

Make sure that the parachute's main attachment sling is correctly attached to the drone's body and that there is no play that could cause it to come into contact with the propellers.

6

Your Kronos Mini parachute is operational. 

INSTALLATION

of the parachute system with accessories

1

A universal mounting bracket is supplied. It can be installed wherever you like and allows you to use the parachute and the drone with one or more accessories. The installation procedure remains the same.



Advice

A cover is also supplied to obstruct the upper sensors of the DJI Mavic 2 Enterprise drone. It ensures optimum operation of the drone with the Kronos Mini parachute.

2

Your Kronos Mini parachute is now operational. 

ACTIVATION

of the parachute system

To activate the parachute, follow these instructions in order:

Instructions

1

Switch on the parachute by holding down the black ignition button for 1 second. The LED indicates start-up by a sequence of colours and the audible alarm beeps 3 times to indicate that it is operating correctly. The LED then indicates the battery level. The LED then flashes yellow to indicate that the parachute is powered up.



The different LED states



System initialisation

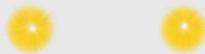
1X  25%

2X  50%

3X  75%

4X  100%

Battery level indicator



Parachute on, waiting to be activated

ACTIVATION

of the parachute system

2

Double-click the start button on the parachute or the start button on the Klick trigger remote control. The parachute LED will turn a steady purple. Your parachute is ready to detect your drone's take-off and automatically activate autonomous deployment.



Warning

Do not touch the drone or the parachute during the calibration phase, as this may trigger the parachute.

The different LED states



Search for activation of autonomous deployment

ACTIVATION

of the parachute system

3

The parachute then automatically detects the ignition of your drone's engines (or any other movement), during this phase double beeps are emitted. Once take-off has been detected, 2 beeps are emitted and the LED on the parachute and on the Klick remote control now flash dark blue to indicate that autonomous deployment is active.



The different LED states



Autonomous deployment activated

4

Your Kronos Mini parachute is active with autonomous deployment. 

Warning

If you notice that the parachute system does not detect the take-off correctly (no beep and no dark blue LED), this may be due to a slow take-off or a low take-off height. We advise you to launch quickly from a height of at least 5 metres.

DISABLE

of the parachute system

To deactivate the parachute, follow these instructions in order:

1 The parachute automatically detects a landing. After a period of approximately 5 seconds, 1 beep is emitted by the parachute and the parachute LED is no longer dark blue. The take-off detection module is deactivated (it will reactivate automatically if you take off again).

2 Switch off the parachute by pressing and holding the black ignition button for 1 second.



Warning

If you notice that the parachute system does not detect the landing correctly (no beep and no purple LED), do not handle the drone as this could trigger the parachute. Wait a further 5 seconds.

The different LED states



Disabling autonomous deployment



Parachute on, waiting to be activated



YOUR PARACHUTE IS
ACTIVE AND
OPERATIONAL!

TRIGGERING

of the parachute system

To activate the Kronos Mini parachute system (with autonomous deployment or manually), observe the following safety instructions:

Warning

- 1 Never attempt to activate the parachute on the ground.
- 2 The Kronos Mini parachute is designed to be activated at a minimum height of 20 m from the ground in standard atmospheric conditions.
- 3 For a fall from a height of 20 m, the impact on the ground is less than 4 joules with the Kronos Mini parachute system, compared with 226 joules without any device.

This data may vary according to altitude above sea level, relative wind and many other external factors. That's why we recommend a minimum height of 20 m above ground level to trigger the Kronos Mini parachute system and sufficiently limit the impact of your drone on the ground.

MANUAL

system deployment

To trigger the parachute manually, observe the following safety instructions:

Instructions

1

Find out how to activate your Kronos Mini parachute system manually using our Klick Pro trigger remote control instruction and user manual.

KLICK

manual tripping of the FTS

Consult our Klick user manual



STOP

& resetting the parachute system

To stop, switch off and reset the parachute, follow the instructions below in order:

Instructions

- 1 Press and hold (3 seconds) the ignition button, the LED indicates the battery level and then goes out. the system is switched off.



- 2 Switch off your Klick remote control.



Warning

Any manipulation of the parachute while it is still switched on (moving the drone on foot or in a car) may result in false autonomous deployment and triggering of the parachute. If the drone is stationary for more than 10 minutes, the parachute will automatically switch off.

DISASSEMBLY

the complete parachute system

To dismantle the whole parachute system, follow the installation instructions in reverse order.

CHECKING

of the parachute system battery

To check the battery status of the parachute system, follow the instructions below in order:

Instructions

- 1 Press the parachute ignition button quickly. The number of flashes indicates the remaining charge level.



The different LED states

1X		25%
2X		50%
3X		75%
4X		100%

Battery level indicator

CHARGING

of the parachute system battery

To charge the parachute battery, follow the instructions below in order:

Instructions

1

To recharge the parachute battery, simply connect the supplied micro-USB cable to the parachute's micro-USB socket located near the ignition button. Then plug the USB socket into a computer.



The different LED states



Battery charging



Battery charged

RESETTING

of the parachute system

In the event of a malfunction or any other bug, follow the instructions below in order:

Instructions

1

To reset the parachute system, there is a small hole in the back of the parachute. Slide a paper clip or other thin object through the hole, and a short press will reset the entire parachute system.

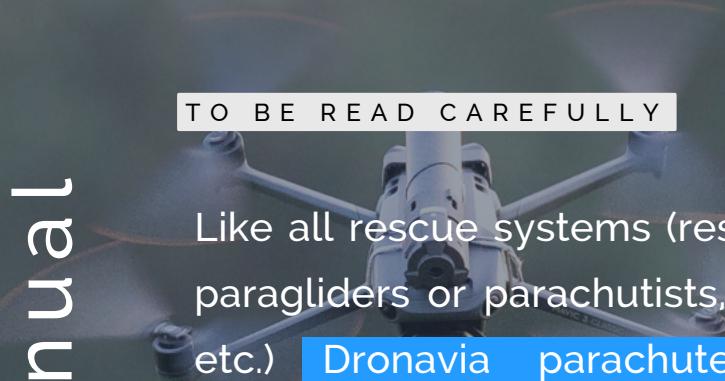


Warning

If the malfunction persists, contact Dronavia customer service or your reseller.

MINUTE parachute annual maintenance

TO BE READ CAREFULLY



Like all rescue systems (rescue parachutes for paragliders or parachutists, avalanche airbags, etc.) Dronavia parachutes must undergo preventive maintenance to be kept in optimum working order. The only preventive maintenance operation is to replace the POD. It's a quick and easy operation, which means that pilots never have to leave their drone standing idle.

A use-by date is set for each POD. Dronavia disclaims all liability and cancels the warranty if your POD has exceeded this use-by date.

USE-BY DATE

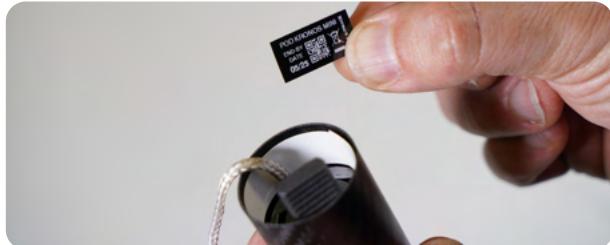
for the POD

Each POD has a use-by date to ensure that it remains in optimum working order:

The optimum life of a POD is 1 year. The use-by date is shown on the label on the back of the parachute.



A new use-by date label is supplied inside the new POD to replace the original label on the parachute.



Warnings

If a POD is used after its use-by date, Dronavia accepts no liability for partial or slower activation of the parachute system.

PROCEDURE

return of the POD for maintenance

There are several options for exchanging your POD that is past (or close to) its use-by date:

Buy 99€

- 1 Buy a POD in advance from your reseller. You'll be able to continue flying during the annual maintenance of your first POD.

Exchange 49€

- 2 Return your POD to a reseller and receive a new one at a special price.

Warning

Please plan in advance how long it will take to contact your reseller (order, delivery time, etc.) so as not to exceed the use-by date and jeopardise your flight missions.

DISASSEMBLY

of the POD system for maintenance

To remove the POD from the parachute system, follow the instructions below in order:

Instructions

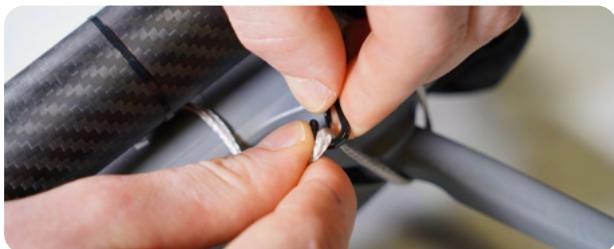
1

Switch off your drone, then remove the parachute from its mounting.



2

Remove the carabiner, then remove the main sling from around the two front arms of the drone.



DISASSEMBLY

of the POD system for maintenance

3

Remove the adhesive tape from the back of the parachute, then remove the capsule.



4

Remove the canopy from the ejector tube.



5

Send the used POD to Dronavia or your reseller.

REARMING the Kronos parachute system

TO BE READ CAREFULLY

Following a parachute activation, Kronos parachute systems have been thought out and designed to rearm quickly and allow telepilots to continue their missions following an activation.

There are some simple procedures to be carried out following a trip. As some procedures are dangerous, we advise you to read this section carefully.

A use-by date is set for each POD. Dronavia disclaims all liability and voids the warranty if your POD has exceeded this use-by date.

REARMING

of the parachute system

To rearm your parachute system, follow the instructions below in order:

Instructions

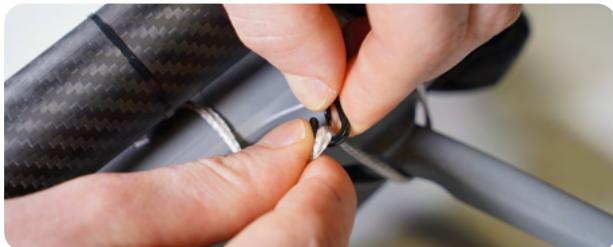
1

Switch off your drone, then remove the parachute from its fixing support.



2

Remove the carabiner, then remove the main sling from around the two front arms of the drone.

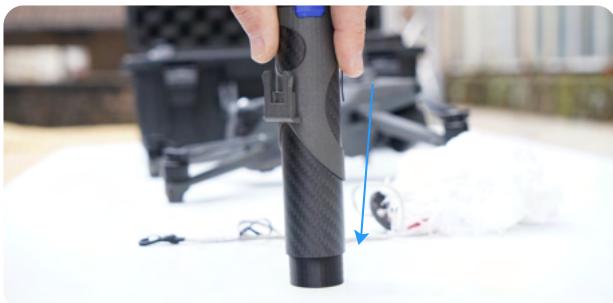
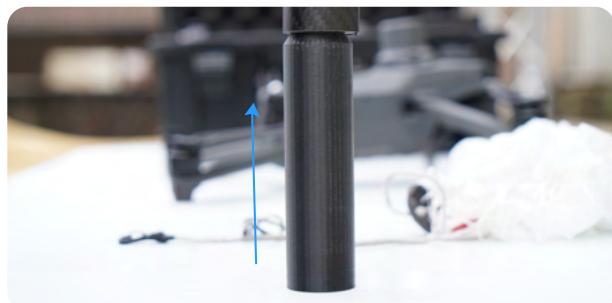


REARMING

of the parachute system

3

Push back the parachute piston using the tool provided.



4

Take your new POD and remove the adhesive tape to gain access to the canvas.



REARMING

of the parachute system

5

Remove the adhesive from the new POD, then pull the canvas out of the new POD.



REARMING

of the parachute system

6

Press the new canopy into the bottom of the tube of your Kronos Mini parachute.



Warning

Be sure to keep the main sling in line with the canopy when inserting it.

REARMING

of the parachute system

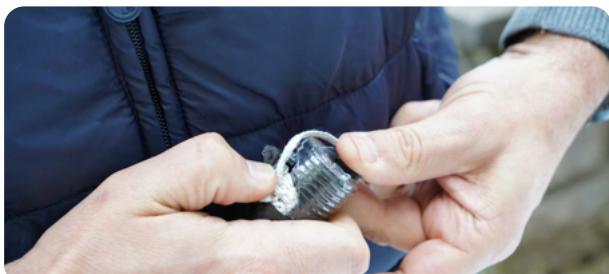
7

Maintain pressure while pulling the main sling out of the parachute.



8

Press down on the top part of the new POD to exert additional pressure and free up space for your thumb.



Warning

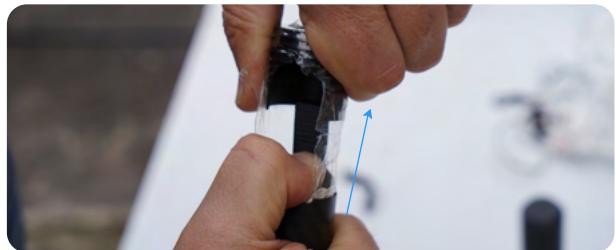
Remember to maintain firm pressure throughout.

REARMING

of the parachute system

9

Remove the plastic sleeve surrounding the new fabric by pulling it outwards.



10

While continuing to exert pressure on the inserted cloth, remove the top part of the new POD.



REARMING

of the parachute system

11

Position the capsule and close the parachute with it.



Warning

Check that none of the canopy lines are blocked by the capsule.

12

Stick the adhesive tape provided around the flat edge of the capsule.



Warning

Position the adhesive tape only on the flat edge of the capsule. If the tape supplied covers too much of the capsule, there is a risk that the parachute will not release or will release more slowly.

REARMING

of the parachute system

13

Install the parachute assembly on the drone, sliding the parachute fixing clip into the adhesive fixing support installed earlier.



14

Pass the main parachute sling under the front right arm of the drone.



15

Pass the main parachute sling under the front left arm of the drone.



REARMING

of the parachute system

16

Attach the carabiner to the main sling. Then pass the elastic around the tube and the main sling. Pull the elastic forward until the main sling is taut.



Warning

Make sure that the parachute's main attachment sling is correctly attached to the drone's body and that there is no play that could cause it to come into contact with the propellers.



YOUR PARACHUTE IS
REARMED!

PROCEDURE

for returning a used POD

There are several options for returning your used POD:

Buy 99€

1

Buy a POD from your dealer. Then carry out maintenance on your used POD.

Exchange 49€

2

Return your used POD to a dealer and receive a new POD at a special price.

Warning

Please plan in advance how long it will take to contact your dealer (order, delivery time, etc.) so as not to exceed the use-by date and jeopardise your flight missions.

MAINTENANCE & guarantees

Store the Kronos Mini parachute system in a dry place, at a temperature between 10°C and 30°C, clean and protected from UV light.

STORAGE

Dronavia takes great care in the design and production of its products. We guarantee our parachute systems for one year from the date of purchase against any defect or design fault that may arise during normal use of the product. Any abusive or incorrect use, or exposure to aggressive factors (high humidity, excessively high temperatures, etc.) that could lead to damage will invalidate this warranty.

GUARANTEE

Flying a drone, whether manual or automatic, is an activity that requires attention, specific knowledge and good judgement. Be cautious, get trained in appropriate structures, take out insurance and comply with the requirements defined by the DGAC decrees of 11 April 2012 and 17 December 2015 and the EASA.

NOTICE OF LIABILITY



Ask our sales team your questions



UNIR
to know



Ask our sales team your questions



For France, we recommend that you consult the website of the Ministry of Ecology, Sustainable Development and Energy if you have any doubts or questions. For Europe, we recommend that you consult the EASA website. Remember that you are flying under your own responsibility.

[Website of the Ministry of Ecological Transition and Territorial Cohesion](#)



[Details of MOC 2511 published by EASA :](#)



[The IGN map of restricted areas for drones](#)



[Details of the M2 MOC published by EASA :](#)



[The French Civil Aviation Authority \(DGAC\)](#)



[European Union Aviation Safety Agency \(EASA\)](#)



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