



## General Rules for Operating Fiber Optic Drones

**BEFORE USE, IT IS NECESSARY TO READ THE OPERATING INSTRUCTIONS PROVIDED BY THE MANUFACTURER\*! THIS WILL HELP TO MINIMIZE THE RISK OF FIBER OPTIC BREAKAGE!**

A fiber-optic drone is not susceptible to electronic warfare (EW) and is not limited by the radio horizon. This allows for flights at ultra-low altitudes, operations under bridges, directly inside buildings, and so on. The fiber optic cable is strong in terms of tensile strength but fragile when bent or broken

### Preparing the drone for flight:

- Typically, the fiber on the spool is in a tensioned state and secured with a clamp.
- During unwinding, the fiber will release from the clamp. From that moment, it must always remain under tension to prevent the formation of loops and to maintain proper tension.
- As for rewinding the fiber optic cable onto the spool, different manufacturers may have varying restrictions. However, as a general rule, rewinding the fiber back onto the spool is prohibited.
- The fiber should only be released from the clamp immediately before takeoff

### Flight:

- Drone takeoff must be performed as smoothly as possible and at the minimum allowable speed.
- Remember that while the fiber maintains tension, it is quite fragile and can break if a loop forms when it is not under tension.
- The control process requires maximum smoothness and flight stability, avoiding sharp turns to prevent fiber breakage.
- The takeoff angle should not exceed 40°.
- As the flight distance increases, the likelihood of breakage decreases, and the tension allows for higher speeds and steeper angles.
- The fiber optic release tube should be oriented opposite the direction of flight. It is recommended to avoid lateral maneuvers, and the deviation of the spool axis from the flight line should not exceed 30°.
- If the drone performs a turn and moves in the opposite direction, the turning radius should be no less than 7 meters to avoid pulling previously unwound fiber, which could result in loop formation.
- Sudden ascents and especially descents should be avoided, as they may cause the fiber to be thrown by the airflow, reduce tension, and lead to it being wound around the propellers.
- Wind gusts at altitudes above 60 meters can cause excessive unwinding of the fiber optic cable, reducing flight range and potentially leading to a loss of connection.

**\* Each manufacturer may have its own methodology, limitations, etc. Before the flight, it is important to familiarize yourself with the manufacturer's instructions**