



LIFT AIRCRAFT HEXA - EVTOL DRONE

USER GUIDE



HEXA is a full Fly-By-Wire electric Vertical Takeoff and Landing (eVTOL) aircraft designed to be piloted by anyone and experience the thrill of vertical flight!

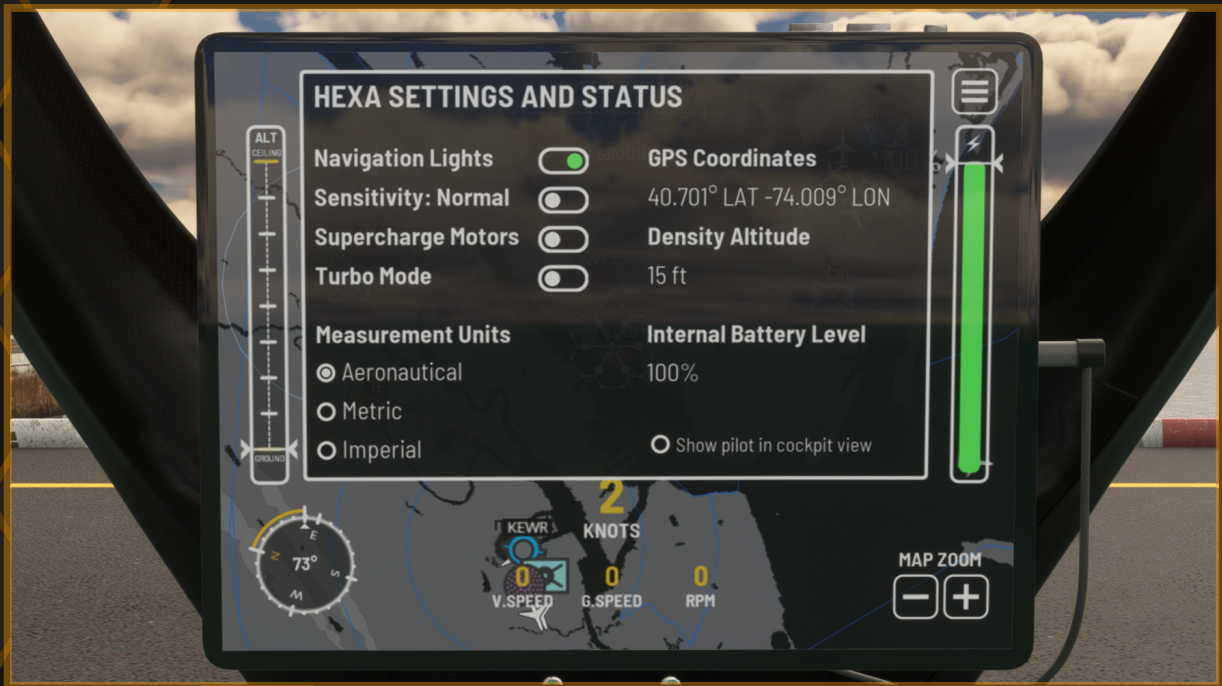
Hexa's entire structure is made of carbon fiber. The total weight is only 432 pounds (approximately 196 kg). It complies with FAA Powered Ultralight classification, so no pilot license is required to fly.

Hexa features eighteen independent electric motors and corresponding propellers. These are the only moving components needed for perfectly stable and controlled flight.



A 3-axis joystick is all that's required to fly. Automatic take-off and landing procedure available.

It has six perimeter floats for buoyancy and stability, along with a fifth central float filled with energy-absorbing foam for additional buoyancy and protection during challenging landings.



Hexa's tablet, working as the main instruments panel has multiple functions, accessible via the menu button on the top right of the screen. Here is a list of these functions and what they do:

Navigation lights: turns on and off the navigation lights.

Normal sensitivity: the standard hexa yoke sensitivity, featuring low aircraft pitch and roll tilting near the neutral yoke position for an easy flight experience.

High sensitivity: the yoke movement directly commands the aircraft pitch and roll tilting, resulting in a more snappy flight experience.

Supercharge Motors (fictional): while the hexa can't fly at altitudes higher than ~5000ft HD, the Supercharge function lets the user bypass the maximum rotors speed, granting the possibility to fly even in thin atmospheric air density.

Turbo Mode (fictional): once activated, this mode grants 2.5x speed and greatly decreases drag in order to achieve an arcade flight experience!

Show pilot in cockpit view: once checked, this toggle grants the possibility to spawn the pilot in the internal cockpit views.

NOTICE:

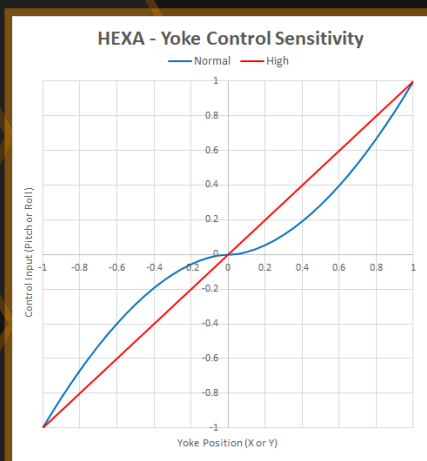
"Deactivate Turbo mode before landing or using the auto landing function".



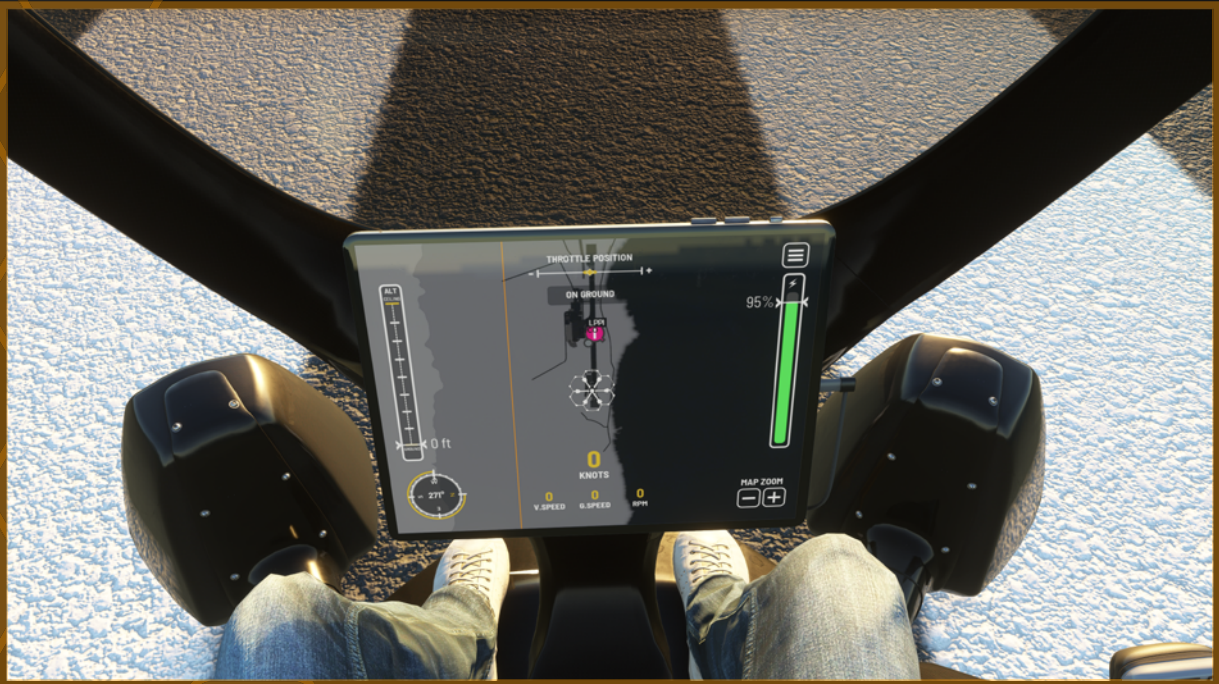
Hexa's yoke allows you to control the drone pitch and roll, and gives you access to some very interesting functions: auto take-off and auto-landing. Once you have pressed the corresponding button on the top of the yoke, if the conditions for initiating those procedures are met a message will appear on the tablet, asking you to confirm or abort the requested procedure via the green on red buttons on the yoke, or tapping on the corresponding icons on the tablet screen.

Auto Take-off: allows you to take-off the drone in total autonomy. The engines will start and the Hexa will take-off and climb until 50ft of altitude, then the controls will be released to the pilot.

Auto Landing: allows you to land the drone in total autonomy. To activate the function, Hexa must be at an altitude of 250 ft or less. Once activated, the drone will land and stop engines automatically once on ground, then the controls will be released to the pilot.



The graph on the left shows how the two different sensitivity modes affect the yoke sensitivity.



Being the aircraft full FBW, the throttle slider works as an indirect rpm variation control.

Considering the minimum throttle value at 0% and the maximum one at 100%, a neutral zone is defined in the range 45%—55% (the yellow bold line at the center of the throttle gauge). In this neutral zone no rpm variation is performed, and if the aircraft is flying an auto-leveler function constantly adjusts the engines speed in order to achieve a fixed point hovering status (given instabilities). This autoleveling function also works while moving the yoke, resulting in level flight.

The range 0%—45% is to be intended as the rpm reduction range, resulting in descent flight while in air. A position closer to 45% will slowly reduce the engines speed, while being closer to 0% will imply a more aggressive reduction. If the aircraft is on ground, the speed will be greatly decreased approaching the rotor stop.

The range 55%—100% is to be intended as the rpm increase range, resulting in climb flight while in air. A position closer to 55% will slowly increase the engines speed, while being closer to 100% will imply a more aggressive increase. If the aircraft is on ground, the speed will be rapidly increased approaching the take-off condition.



Hexa has 18 full electric engines. Each of them has a battery that allows them to work. Once the charge reaches low power, it is possible to recharge it. To do this, you can select one of the two engines beside the pilot, on the left or on the right. After you have selected the engines, an animation will start and the battery will be recharged. Make sure that the system is shut down before this operation.



With power off, click right (or left) battery cover to change batteries.

Click power on/off button to turn on/off the systems.



Click the options button to show the settings of the drone.

Click and drag 'move tablet' button to tilt the tablet.





Click 'auto-take off' button to choose auto-take off procedure.



Click 'auto-landing' button to choose auto-landing procedure.



Click 'accept' button to initiate auto-take off or auto-landing procedure.



Click 'refuse' button to decline the choose to auto-take off or auto-landing procedure.



Hexa comes with a custom animated pilot designed to blend with the aircraft animations, granting an immersive experience also in VR when the Show pilot in cockpit view toggle is checked and the Hexa custom pilot is selected in the appropriate menu, as shown in the image above.

(Settings -> General options -> Misc -> Pilot avatar -> Hexa Pilot)

Moreover, the pilot comes including two different outfits. The first one includes a jacket for windy and cold weather, while the second one includes a t-shirt for warmer conditions.



Outfit for cold days: it is activated when the temperature is under 20° C / 68° F.



Outfit for warm days: it is activated when temperature is over 20° C / 68° F



CREDITS

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