



FlyInside JetExec User Manual

By FlyInside Simulation.

Programming - Eddward P Jeremy W. Dan C.

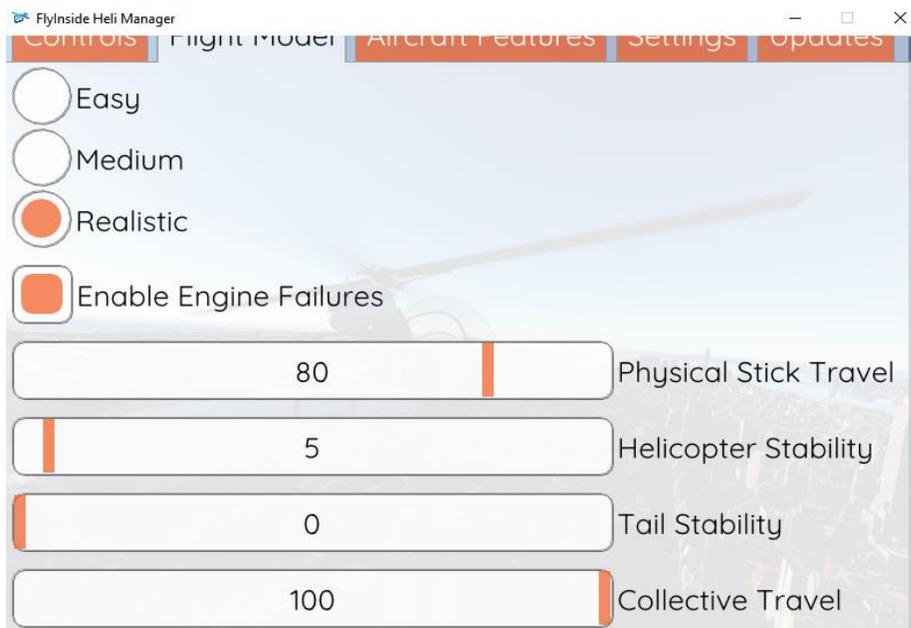
Flight Dynamics - Rick M.

Modeling, Artwork and Sound - Tyler B.

Marketplace Version Heli Manager

The website and Marketplace versions of the JetExec are nearly identical, featuring the same artwork, systems, customizability, and flight dynamics. The only difference is the integration of the “Heli Manager.”

In the Marketplace version of the JetExec, the Heli Manager is integrated directly into the cockpit, rather than functioning as a separate program. To dismiss it, simply click the “X” in the upper right corner.



To open Heli Manager again, simply flip the Heli Manager switch on the lower left of the helicopter panel.

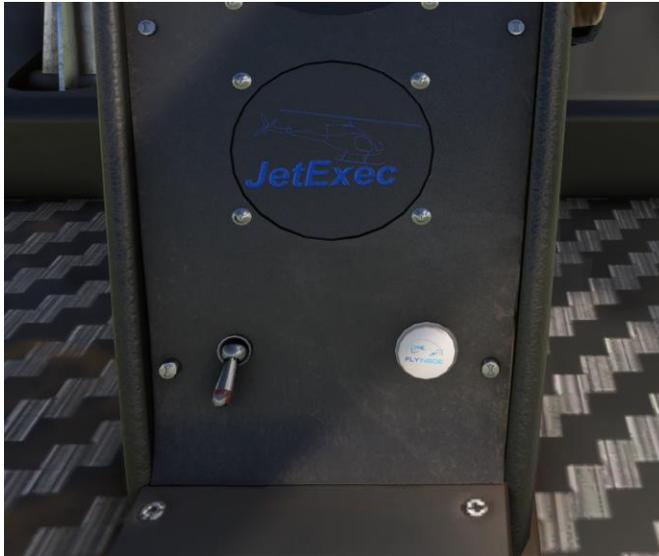


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1. Introduction

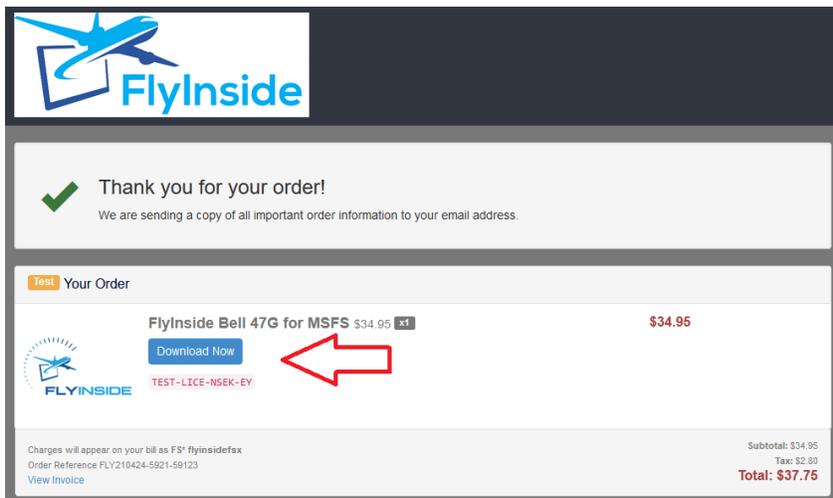
Welcome to the FlyInside JetExec. With this aircraft, we've authentically recreated a Mid to Late 2000;s JetExec with Solar T62-32 turbine engine. The JetExec ships with highly realistic flight dynamics, accurate systems, and beautiful artwork. We hope that you enjoy this experience!



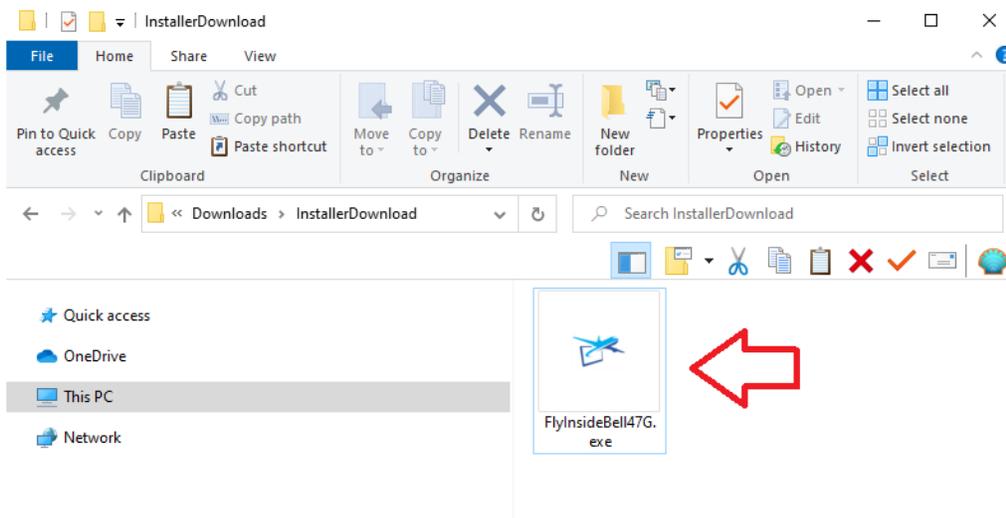
2. Installation and Activation

The FlyInside JetExec installs via an easy-to-use setup program. If you encounter any issues, cannot find your installer, or haven't received a license key, please contact support@flyinside-fsx.com

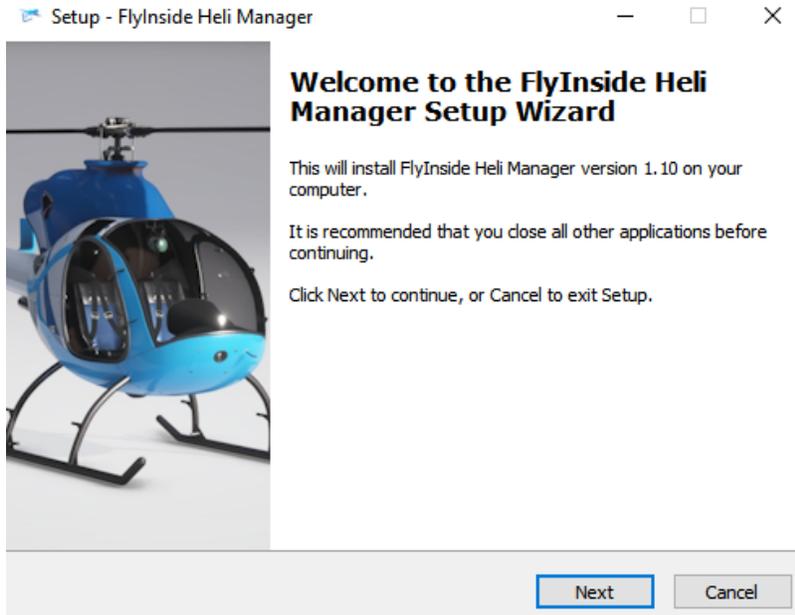
1. Download the installer via the link on your purchase receipt page



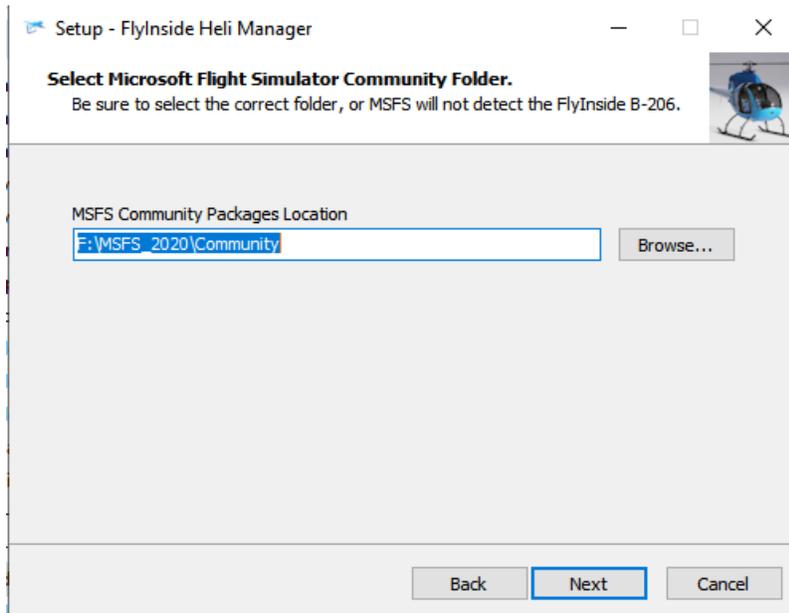
2. Double click the installer to run, and accept any prompts that appear.



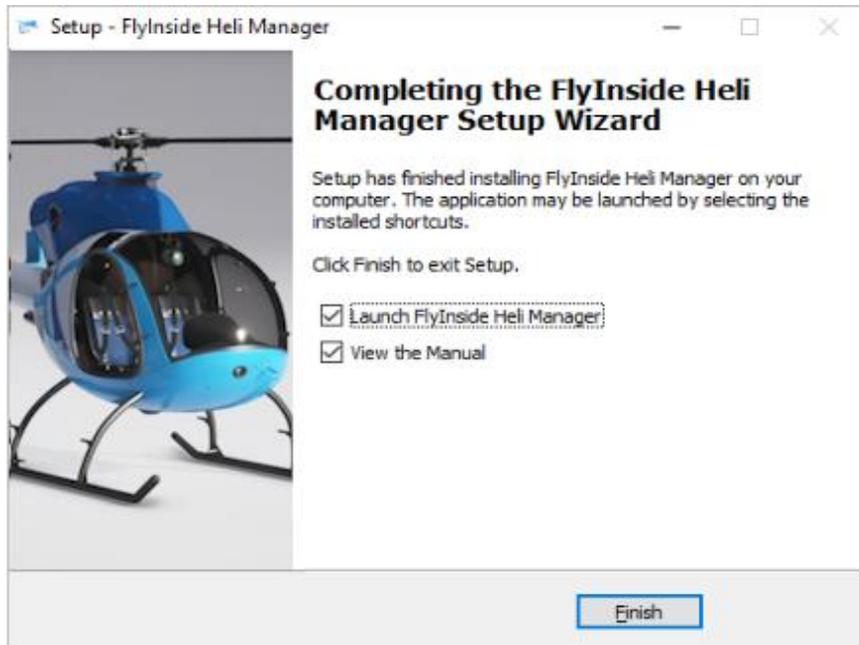
3. Click through the installer



4. Double check that the installer correctly locates your MSFS Community packages folder. If this location is not correct, MSFS will not detect the aircraft.



5. After the installer completes, allow it to launch FlyInside Heli Manager.



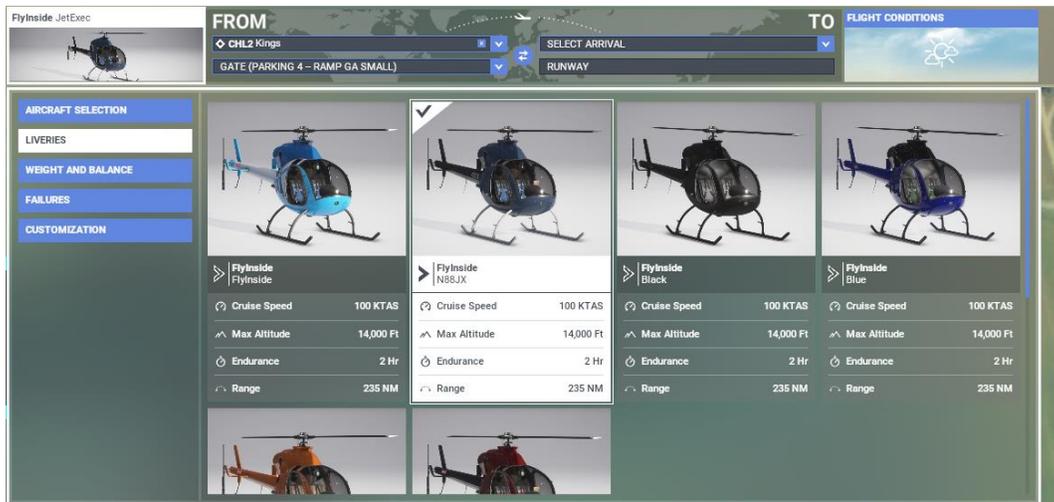
A Note on FlyInside Heli Manager

FlyInside Heli Manager handles copyright protection for the FlyInside JetExec, and allows you to customize the flight model and features as well as matching your joystick hardware to the aircraft. By default, FlyInside Heli Manager will run in the background when you turn on your computer. You can easily disable this from within Heli Manager

FlyInside Heli Manager doesn't log any data, or call home randomly. It will communicate with our servers when you activate a license key, and occasionally to check for new versions. It's also designed to use minimum system resources; it won't affect frame-rates or heat up your CPU while running in the background.

FlyInside Heli Manager runs in the background purely for convenience, so that you won't need to launch it manually when flying our helicopters. If you prefer though, you can turn off the System Start option in Heli Manager, and launch FlyInside Heli Manager manually as needed.

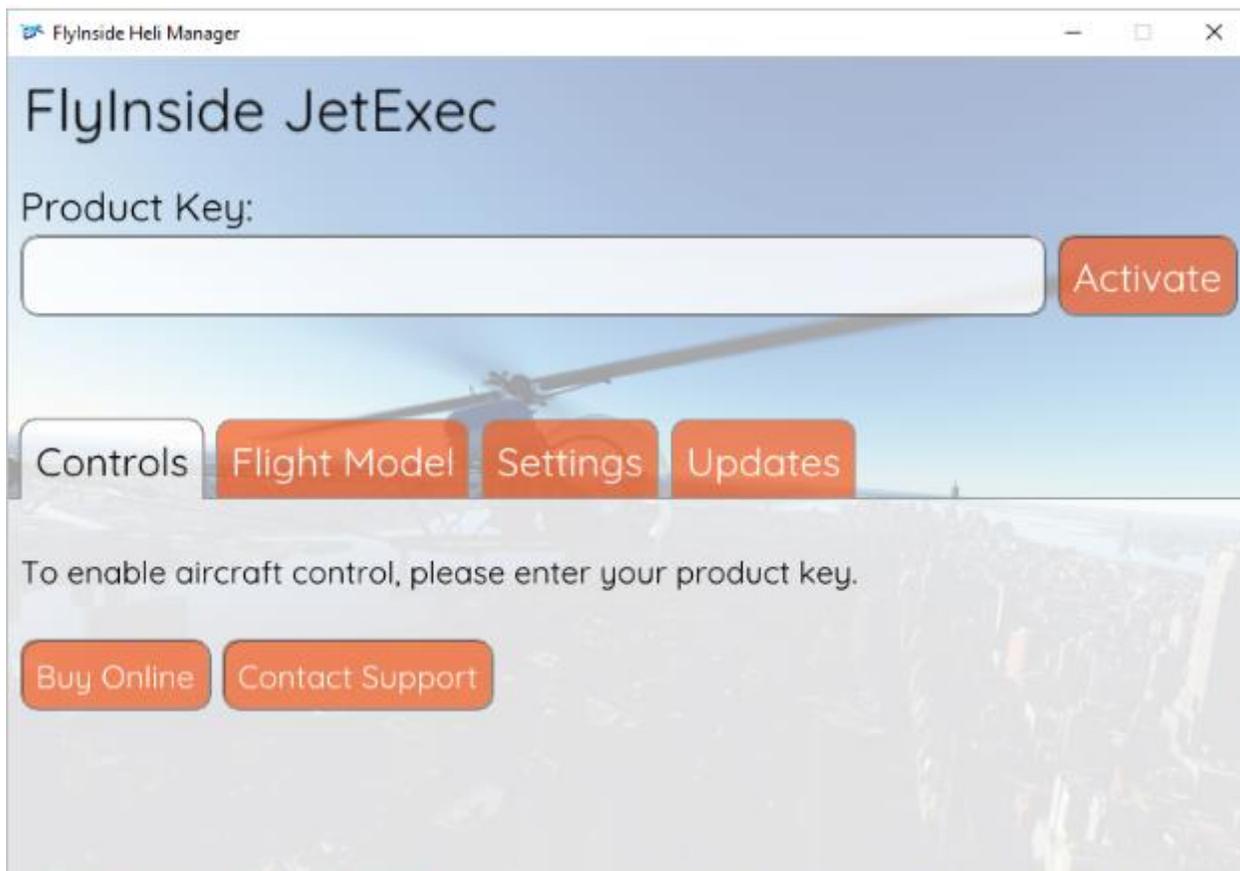
6. Open Microsoft Flight Simulator, and select the FlyInside JetExec as your aircraft. Note that the JetExec will appear in the Helicopters category, choose your livery by clicking on “Liveries” in the left-hand column.



7. Select a departure airport and load a flight. The first time you load the FlyInside JetExec may take several minutes as MSFS compiles our flight-model code for your PC. Once loaded, the JetExec will have an in-cockpit message prompting you to run FlyInside Heli Manager, or to enter an activation key.



8. FlyInside Heli Manager should appear on your desktop. If not, you can click on the system tray icon (if it is running), or run “FlyInside Heli Manager” from your Start Menu.



9. You should have received a product key in your FastSpring email receipt. Enter the product key (you may use Ctrl+V to paste it), and press “Activate.”

10. If you started on a runway, the rotors should start spinning up, you’re ready to fly! If you selected a parking spot or helipad, you’ll be cold and dark, and ready to start up and go fly!

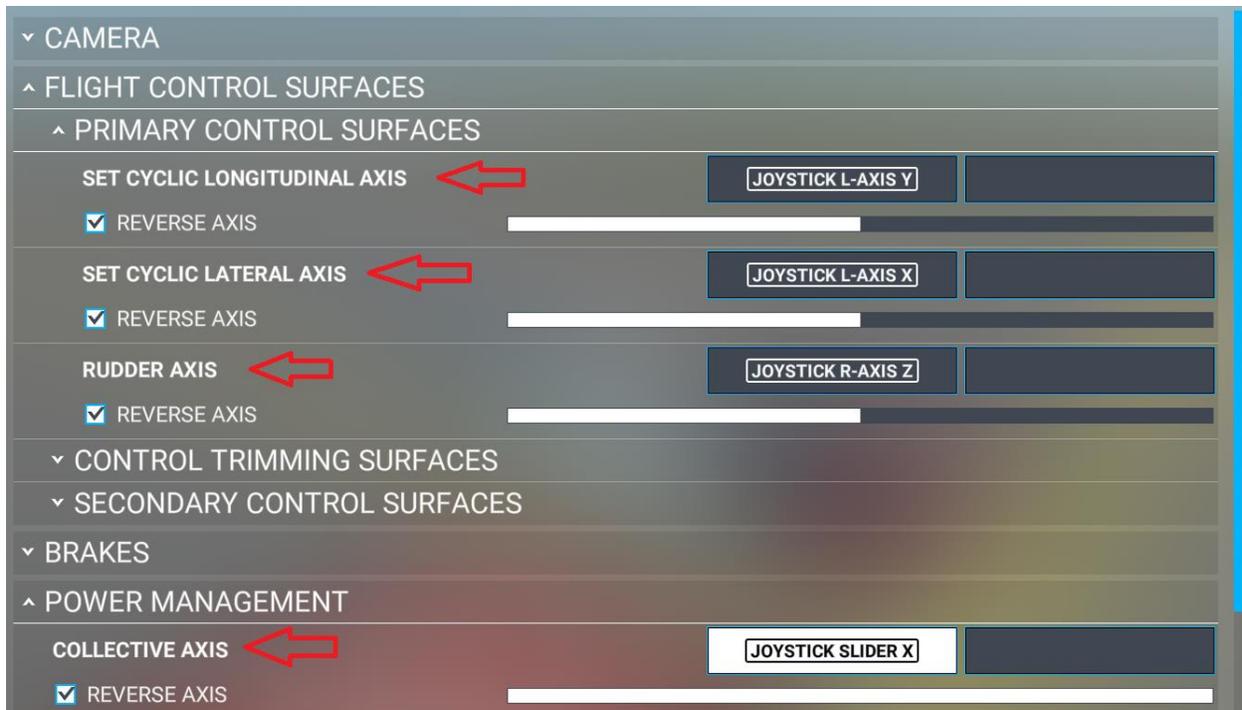
For startup, follow your checklist (in the in-game tab menu).

****NOTE:** See Section 6 for a complete Startup Walkthrough

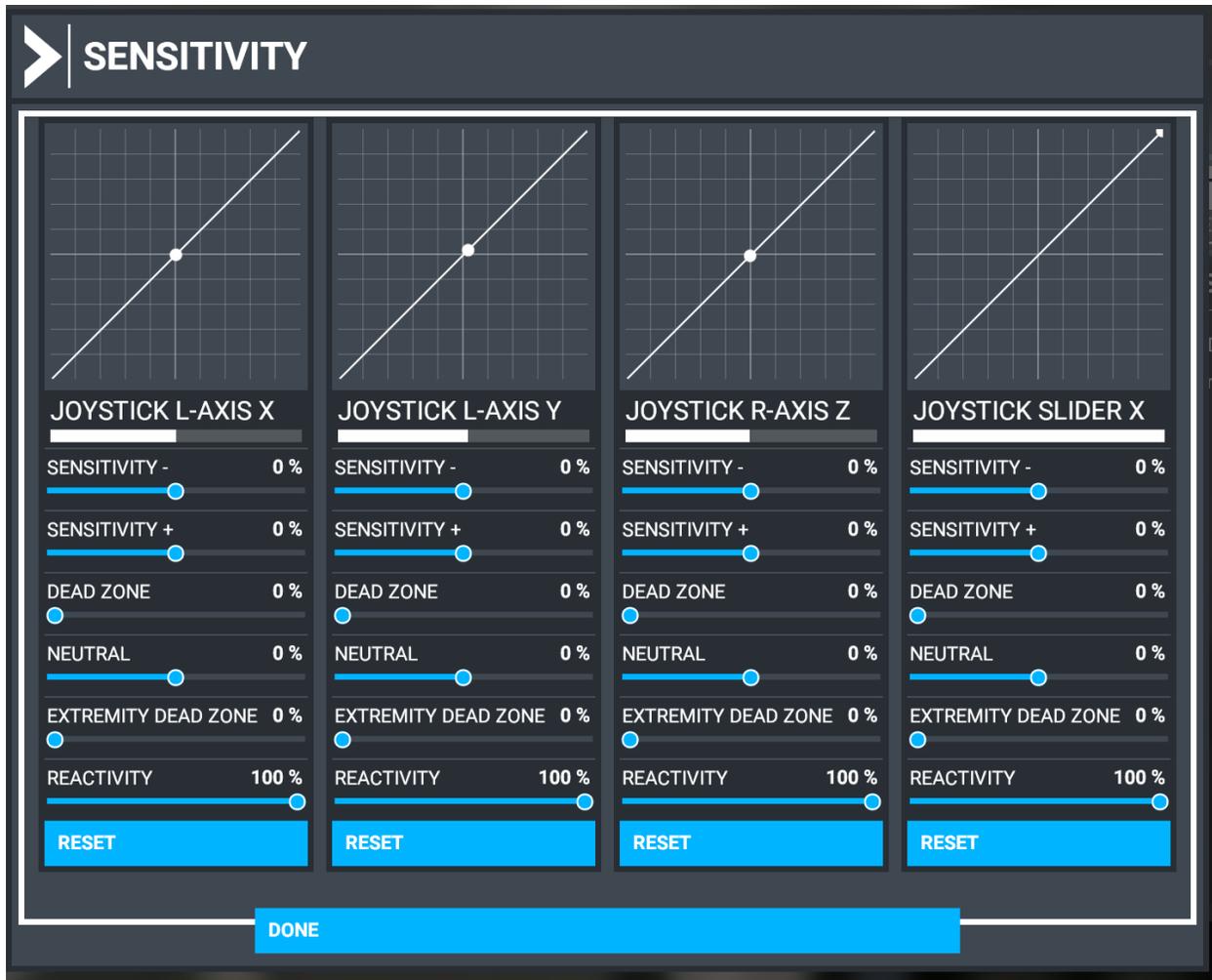
3. Flight Controls Setup

The FlyInside JetExec should work with your standard Microsoft Flight Simulator control bindings. At a minimum you'll need the following controls

1. Bind the joystick axis you'd like to use for cyclic roll (left/right) control to either the MSFS "Cyclic Lateral Axis" or the "Ailerons Axis"
2. Bind your cyclic pitch (fore/aft) control to the MSFS "Cyclic Longitudinal Axis" or "Elevator Axis"
3. Bind your pedals or yaw control to the MSFS "Rudder Axis"
4. Bind your collective control (or throttle paddle) to the MSFS "Collective Axis"
5. You may have to reverse some axes depending upon your hardware.



For realistic control response, you'll want to ensure that MSFS "Sensitivity" is set to 0%, 'Dead Zone' 0%, 'Neutral' 0%, 'Extremity Dead Zone' 0%, and 'Reactivity' 100%, for all axis.



Throttle Control

For realistic startups, you'll want to bind a throttle control. The helicopter must be started with zero throttle, it will stabilize at the start at 50% and then have fuel fed in up to 100% on the 'E' Gauge with your Throttle Axis. If you have a collective with twist grip (or another free joystick axis), you can bind the twist grip to the "Set Helicopter Throttle Axis." Otherwise, you can use keyboard/button bindings on "Increase Helicopter Throttle" and "Decrease Helicopter Throttle."

Misc. Bindings

For startups, the “Set Starter 1” binding is recommended, or you may also click on the virtual starter button within the cockpit.

CYCLIC LATERAL/LONGITUDINAL Force Trim bindings are supported. Though the real helicopter does not have force trim.

Mouse Click Spots

Many locations both inside and outside the aircraft are “click-able” The sliding vent windows on the cockpit crew doors open and close. The center post light is able to be turned on and off. The Headphones (individually) can be clicked to put them on and reduce cockpit noise. Doors can be opened and closed by clicking on the handles. Once outside, you can open every inspection door and cover on the aircraft. and, of course, all the aircraft passenger doors.

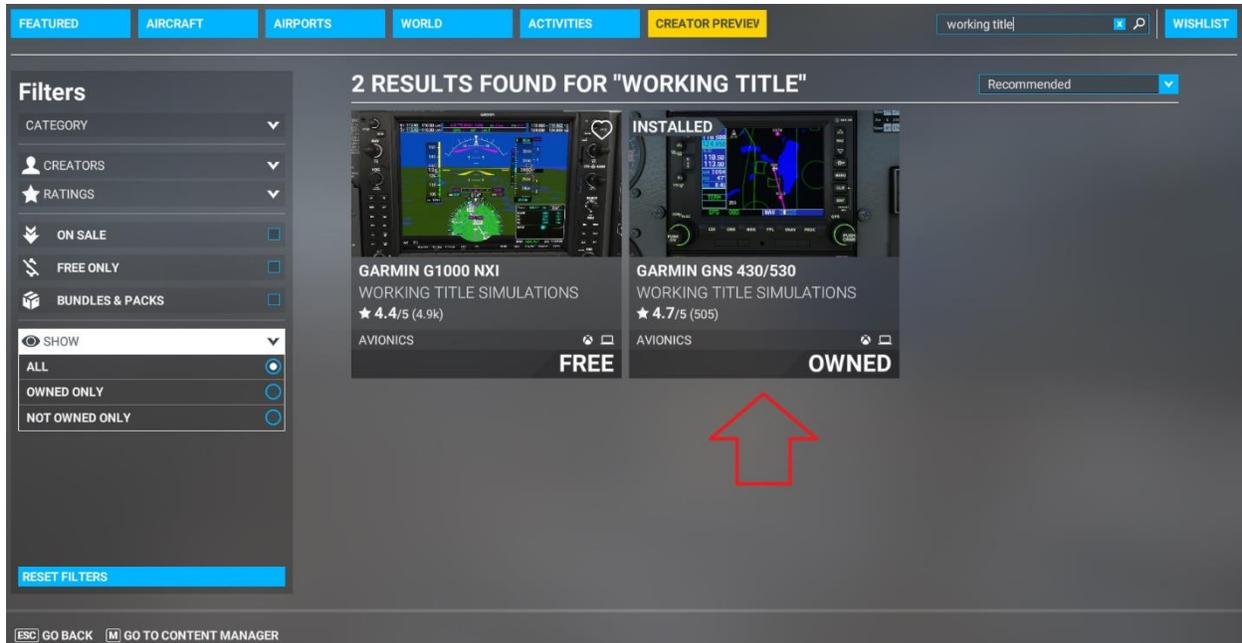
Mechanical Animations

Every control system is faithfully reproduced. Go ahead and move your cyclic and collective. Watch the Swashplate, Main Rotor Head and Blades react correctly. Move your pedals, watch the Tail Rotor and Delta hinge move the right way! It’s all there.



4. GPS Installation

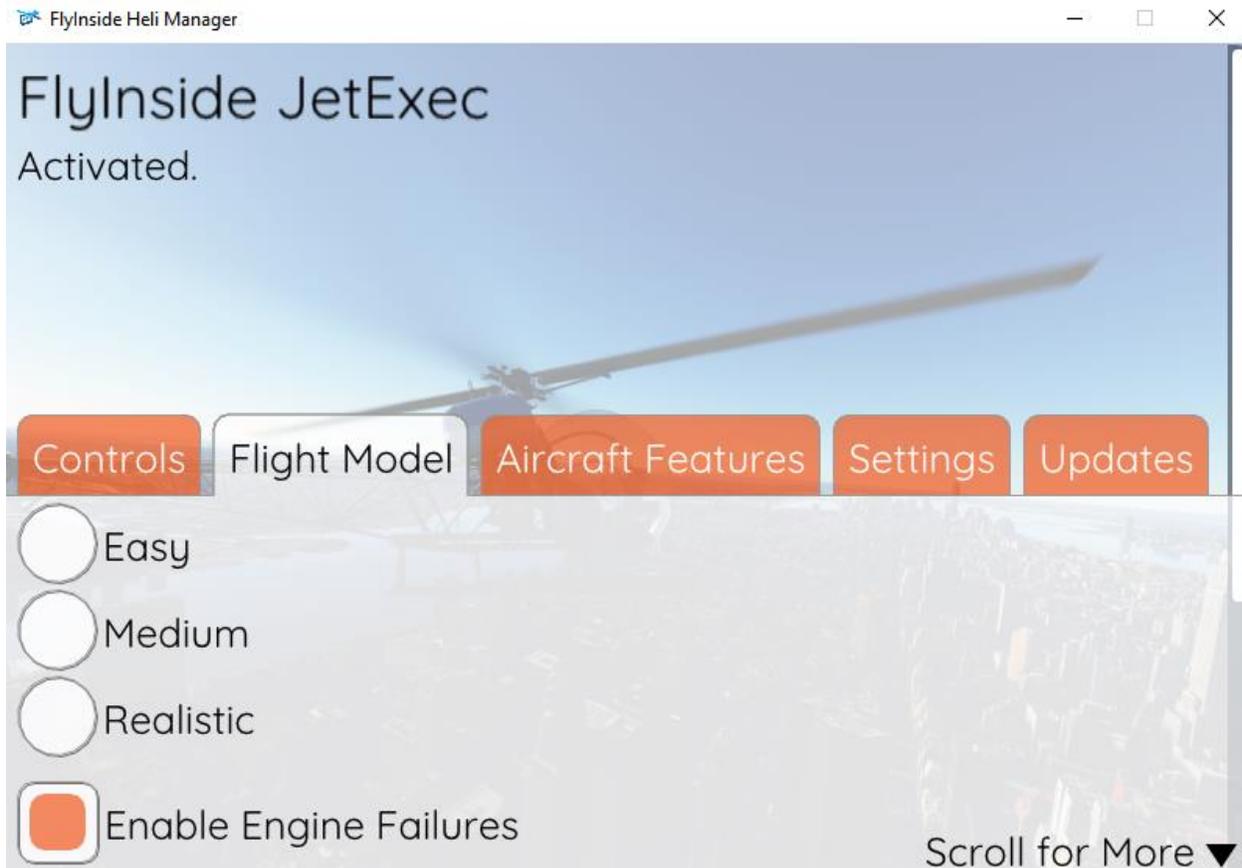
The FlyInside JetExec uses the Working Title GNS 430 base code to provide navigation. In order for the GPS to work, the battery must be on, the GPS circuit breaker must be in, and the Working Title 430 must be installed. If the GPS remains black when power is applied, you'll need to install the Working Title 430.



To do so, open MSFS and navigate to Marketplace. Search for Working Title, and install the free “Garmin GNS 430/530” by “Working Title Simulations”

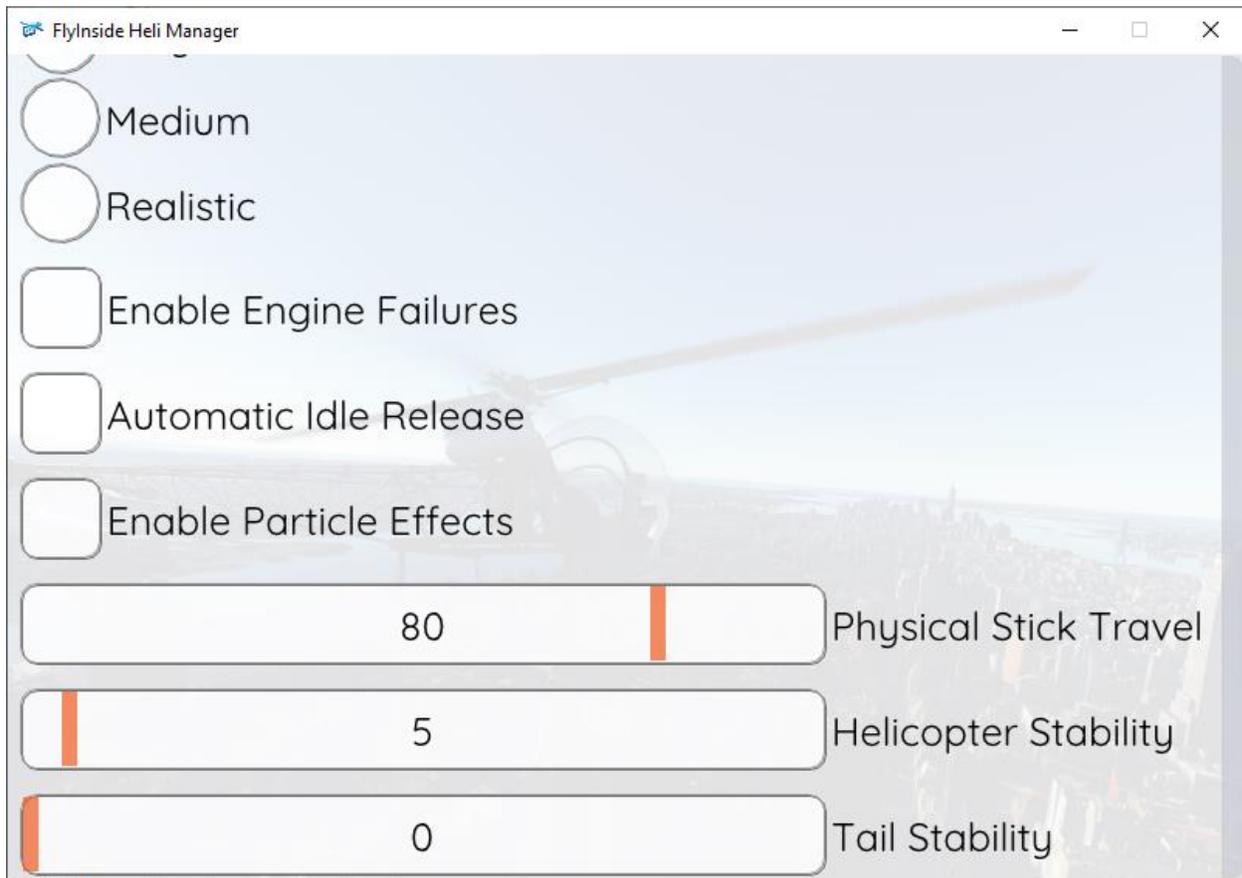
5. Flight Model Options

The FlyInside JetExec supports multiple realism levels and options to suit your control setup and skill level. To configure these, run FlyInside Heli Manager, and go to the Flight Model tab.



Easy, Medium, and Realistic allow you to change the flight difficulty. Realistic flies just like the real thing, requiring minute control inputs and a gentle touch. Easy is self-stabilizing, has little torque effect, and offers a gentle introduction to helicopter flight. Medium of course falls in-between.

In addition, you can scroll down to customize several settings, as well as the difficulty level.



Failures

If you try to pull too much torque, or over-temp the engine, it can fail. Turning off “Enable Engine Failures” will allow you to climb using your full control range without risking engine failure.

Shutdown from 50%

The JetExec throttle cannot be used to shutdown the engine accidentally. It will only allow reduction of RPM to 50% On the overhead panel open the safety cover on flip the Fuel Valve to complete the shutdown. Then turn off the rest of the switches and the KEY

Detailed Flight Model Options

Physical Stick Travel adjusts your Joystick hardware to match the Artwork (and the Flight Model) in the aircraft. For the most realistic control feel and accuracy, use the slider so that the virtual aircraft cyclic travel matches your physical joystick's travel. You can then tweak it up or down to your liking.

Helicopter Stability causes the helicopter to return to an upright hover on its own. In real life, (and on Realistic mode), a helicopter is not self-stable. If you don't constantly correct, it can eventually tip over in any direction. Stability prevents this, meaning you'll need to hold the joystick forward to keep the helicopter tilted forwards.

Tail Stability determines whether the helicopter is at the mercy of torque effects. In Realistic, if you pull in more collective, your helicopter will spin opposite the direction of rotation, and you'll need to compensate for this with the anti-torque pedals. As you turn up tail stability, this becomes less and less prominent.

Collective Travel allows you to adjust how far the in-game collective moves in relation to your physical collective control. Note that this isn't a difficulty setting, and should normally be left at 100%. The main use is for when you have an especially sensitive collective control that you need to tone down.

If you'd like to enter a value outside of the 0-100 range (for a more sensitive cyclic, for example), you can hold the CTRL key and click on any of the sliders. The slider will then let you type any value you'd like into it. Note that excessive values will cause poor flight behavior.

6. Helicopter Flight

If you've only flown helicopters in video games before, you'll find the FlyInside JetExec a real challenge. You may want to start on Easy or Medium, and work your way up as you become more comfortable and experienced. You may also start on realistic, and adjust the stability sliders to your liking.

Although the JetExec has a powerful turbine engine, pulling too much collective can still damage it. Helicopters can hover, however, they don't normally climb vertically, except close to the ground during take-off and landing. You'll almost never see them climb straight up.

When pulling up into a hover, pay close attention to the attitude of the helicopter. Correct for any tilt or yaw with cyclic and pedals before lift-off. Depending upon your current weight and balance, the helicopter will become "light on the skids" before liftoff. Use that to level the aircraft before you leave the ground.

As such, be gentle on the collective, and once in a hover, in order to take off, gain a little forward speed. As you gain speed the efficiency of the rotor disk increases, and you'll be able to climb out more quickly.

Keep an eye on the engine and rotor gauges and the temp gauges. There are redlines, the maximum engine power you can safely operate at. If you're pulling more power than this, you can cook the engine and experience in-flight engine failure! At lower altitudes you'll find yourself torque limited (even if the engine can make the power, you could break or damage parts). At higher altitudes you'll instead be temperature limited.

The Solar T62-32 turbine in the JetExec is limited to 164hp maximum continuous power. Be very careful exceeding these limits.

At high power settings, the torque may start to override pedal authority in a hover. If you want to turn left, and the helicopter won't let you, just lower the collective to reduce the power needed.

The last thing to keep in mind, is that helicopters aren't stable. If you tip the nose forward, it won't come back on its own. You'll need to pull back on the stick to pull the nose back up. In fact, different flight forces will tilt the helicopter in different directions as you speed up and slow down. You'll need to constantly correct for this. Unlike an airplane, a helicopter doesn't want to stay in place on its own. You need to keep it there.

7. Startup Procedure

To start the helicopter, you need air, fuel and a spark. From cold and dark you'll want to do the following:

1. Turn on the KEY switch on the overhead panel
2. Ensure the Alternator switch is in the OFF position.
3. Ensure that the throttle is fully closed.
4. Open the cover on the fuel valve on the overhead and turn on the FUEL VALVE
5. Push both fuel pump circuit breakers in.
6. Press and **hold** the Starter switch on the overhead. (or your Starter Binding)
7. When the Engine Gauge reaches 50%, it becomes self sustaining Release the starter button. You'll hear light-off occur, and see temperatures climb.
8. Turn on your ALTERNATOR
9. Wait 1 minute to stabilize temperatures.
10. Slowly Increase throttle until the Engine Gauge and Rotor RPM Gauge 100%.
11. On the overhead panel, be sure that all breakers are pushed in, switches for gyros, lights, etc. are turned on.
12. Go fly!



Engine Shutdown:

1. Roll your throttle down Zero
2. Wait 2 Minutes for Temps to stabilize
3. Turn off non-essential electrical systems.
4. Watch all Gauges for Temperature reduction.
5. Open Cover on Fuel Valve. Turn FUEL VALVE switch to OFF
6. Keep Cyclic Centered until Blades stop.
7. Turn off any remaining systems and shut off KEY switch.

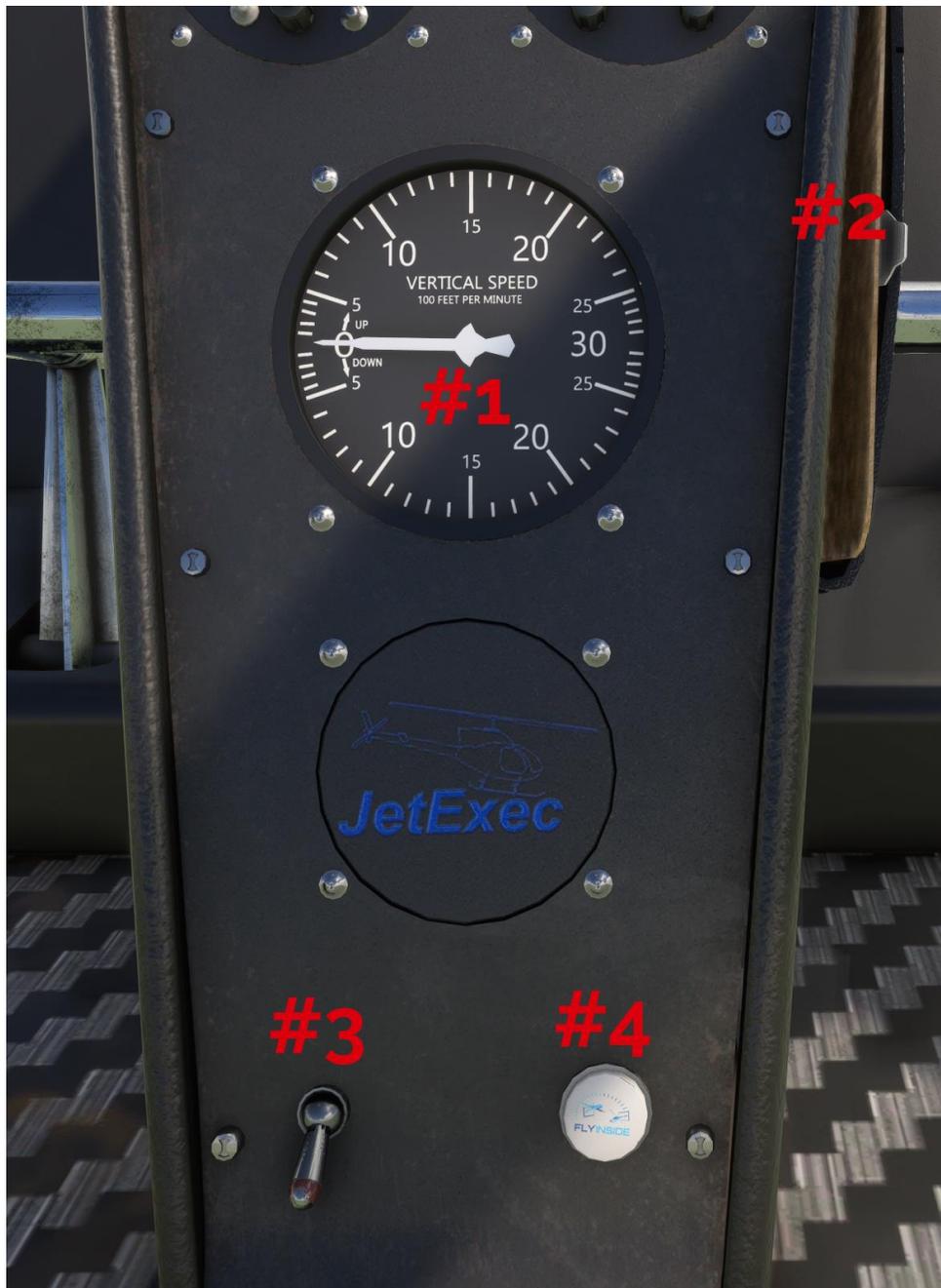


1. Chip Detector Main Rotor Gearbox
2. Chip Detector Transmission Reduction Gearbox
3. Chip Detector Transmission
4. Chip Detector Tail Rotor Gearbox
5. Low Oil Pressure Warning
6. Low Fuel
7. Navigation/GPS Display
8. Engine/Operations Gauges
(See Next Page)
9. GPS/NAV Input
10. Screen Brightness
11. Comm Radio
12. Transponder

****Note:** Below and to the right of the OAT Gauge is a small button. Use this to open Heli Manager in the Marketplace version.



1. Fuel Level
2. Fuel Pressure Hi
3. Fuel Pressure Low
4. Reduction Gearbox Temp
5. Tail Rotor Gearbox Temp
6. Main Rotor Gearbox Temp
7. Main Rotor RPM %
8. Engine RPM %
9. Turbine Outlet Temperature (TOT)
10. Engine Oil Temp
11. Engine Oil Pressure
12. Fuel Flow



1. VSI
2. CLIPBOARD [Click to Open]
3. SPARE
4. HELI MANAGER [MSFS Marketplace Version]

1. Engine:

The Solar T62-32 turbine, as installed in the JetExec is a very robust and reliable powerplant, as long as you mind its' limitations. Watch the Gauges! Pulling too much power and exceeding torque/temp limits will cause failures!

Max. Continuous Temp is 1080 degrees C on the Gauge. You can go Higher for short periods. But be careful!

2. Airframe

The JetExec airframe has some limitations to be mindful of.

Airspeed Limits - 0-100 Knots (0-115MPH) Normal Range, Redline. Go much above that and you will begin to experience severe buffeting and eventually Retreating Blade Stall.

Keep some forward Airspeed during descents. If you Must do a vertical descent keep your rate below 300FPM. Failing to do that may result in VRS (Vortex Ring State) which is when you descend into your own turbulent downwash, killing your lift and entering an uncontrolled Rapid descent. You can Recover. Just decrease your Collective Pitch while moving your Cyclic either forward or laterally to get out of the disturbed column of air. It takes a fair bit of practice to do this without losing too much altitude.

Autorotations - In order to make a safe landing with an engine failure and some Tail Rotor Failures an Autorotation is necessary. The BLUE Line (100 Knots) on your Airspeed Indicator is the Max. Speed for an Autorotative Descent.

1. Reduce Collective to maintain in the Green on the RRPM Gauge (90-107%)
2. Adjust Speed for conditions (100Kts or below). Slowest Descent Rate is 52 Knots (60 MPH) Maximum Glide Range 69 Knots (80 Mph)

3. At approximately 75 feet begin flare (Rotor RPM will increase) to arrest forward motion. Simultaneously slightly raise collective, to begin slowing your descent rate.
4. Level aircraft to horizontal
5. Pull Collective pitch to cushion landing (prior to 70% RRPM)
6. Reduce Collective

This takes practice. You may “run on” or slide a bit on touchdown. This is OK.

10. Common Issues

1. My engine quit in flight

The engine will unexpectedly quit in flight for two main reasons. First, if you are pulling too much power and exceeding torque/temp limits. Secondly, if you run out of fuel (check your fuel gauge), the engine will quit.

2. I was descending and suddenly fell out of the sky

You most likely encountered vortex ring state, also known as settling with power. VRS occurs when you descend quickly into the turbulence created by your own downwash. To avoid this, either keep some forward airspeed in descents, or vertically descend at less than 300 fpm. You can recover from VRS if you have enough altitude by lowering the collective and going either forwards or sideways to gain airspeed.

4. I got a “Rotor Overspeed” pop-up

Autorotations, as well as excessive descent rates can cause the Rotor RPM to climb above 100%. If it goes too far above the redline, a rotor failure can result.

To prevent this, avoid descents with a fully bottomed out collective. If you see RRPM climbing excessively or above the redline, raise your collective as necessary to return it to the green.

Thank You

Thank you for reading, we hope you enjoy the FlyInside JetExec!

For questions you can contact us directly at support@flyinside-fsx.com

Be sure to check out our forums at <https://forum.flyinside-helis.com/>