Assembly Instructions

We are adhering to the default setup instructions for both the RMRC Anaconda fixed-wing plane and the Hero PNP VTOL/fixed-wing drone while integrating **PX4 software** and the **PixRacer Pro** flight controller to enhance flight performance and customization.

### **RMRC Anaconda Fixed-Wing Plane:**

The RMRC Anaconda features a twin-boom, inverted-V tail pusher design, primarily intended for FPV flying and amateur aerial photography. The default setup instructions guide users through assembling the fuselage, wings, and tail components, installing the motor mount, and setting up the control surfaces.

📄 **Manual:** <https://s3.amazonaws.com/content.readymaderc.com/manuals/RMRC+Anaconda+Manual.pdf>   
 🎥 **Build Guide Videos:** (Look up on YouTube)

For PX4 integration, we configure the **PixRacer Pro** flight controller, ensuring proper parameter tuning for fixed-wing operation. The PX4 firmware allows advanced flight stabilization, mission planning, and telemetry monitoring.

### **Hero PNP VTOL/Fixed-Wing Drone – Custom Flight Controller Setup:**

We are using the **Makeflyeasy Hero Drone 2180mm UAV VTOL**, which **does not come preinstalled with a flight controller**. This requires **manual installation and configuration of the PixRacer Pro** with **PX4 firmware**. The default setup instructions cover the assembly of the fuselage, wings, V-tail, and pelvic fin, as well as the installation of electronic components.

📄 **Manual:** <https://cdn.shopify.com/s/files/1/0504/9014/6970/files/1-Hero_VTOL_Fix-wing_Aircroft.pdf?v=1701483158>

#### **Custom Flight Controller Installation & PX4 Setup:**

1. **Mounting the PixRacer Pro:** Securely install the flight controller within the fuselage, ensuring vibration isolation.
2. **Connecting Components:** Wire the servos, ESCs, GPS module, telemetry radio, and power module to the PixRacer Pro.
3. **Flashing PX4 Firmware:** Use **QGroundControl** to flash the latest PX4 firmware and select the appropriate **VTOL airframe**.
4. **Calibrating Sensors:** Perform **accelerometer, gyroscope, magnetometer, and radio calibration** through QGroundControl.
5. **Configuring VTOL Flight Modes:** Set up transition logic between **hover, cruise, and fixed-wing** flight.
6. **PID Tuning & Testing:** Adjust PID values and conduct **manual and autonomous test flights** to ensure stability.

By following these manufacturer-provided instructions while leveraging **PX4 and PixRacer Pro**, we ensure that both aircraft are assembled correctly, optimized for performance, and capable of advanced autonomous operations.