Experiment with a gravity engine using two rotors directly connected to a motor

Translation date: November 19, 2026

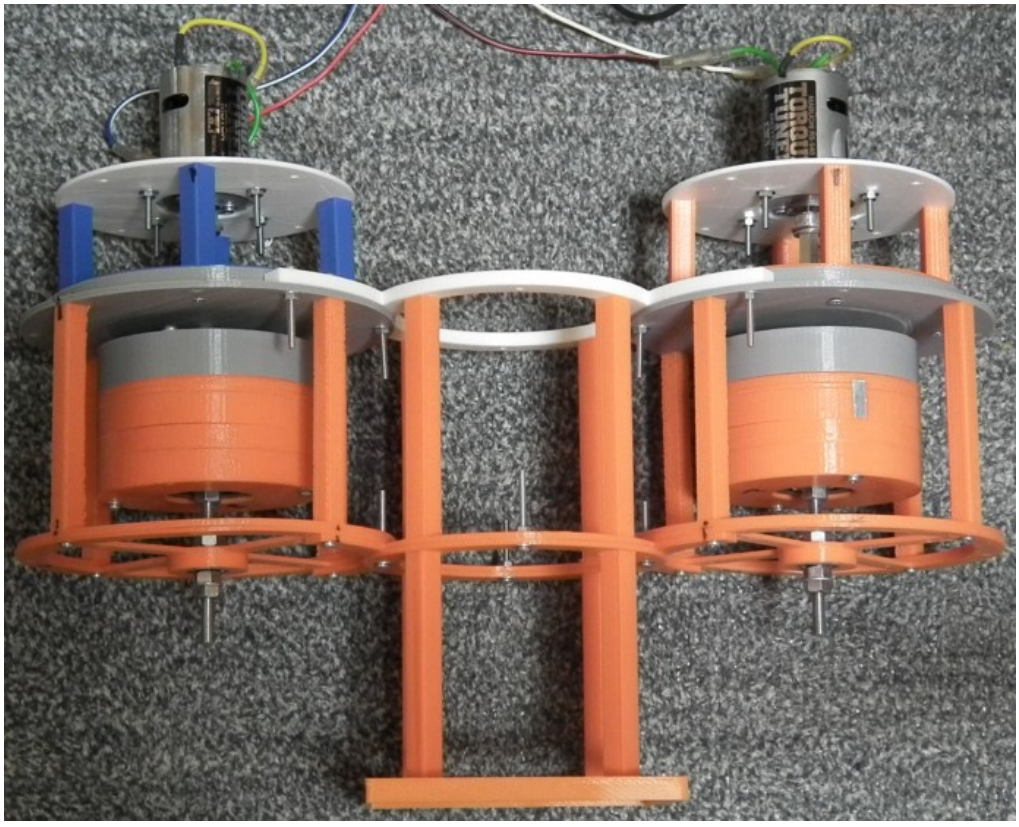
Publication date: October 17, 2024

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The plan was to try a four-rotor setup this time, but rather than taking the easy way out and jumping straight into a four-rotor system, it seemed more reasonable to start with a two-rotor system using parts from the previous project, so that's what we decided to do. If that's all it takes, there's no need to go for a four-rotor system.

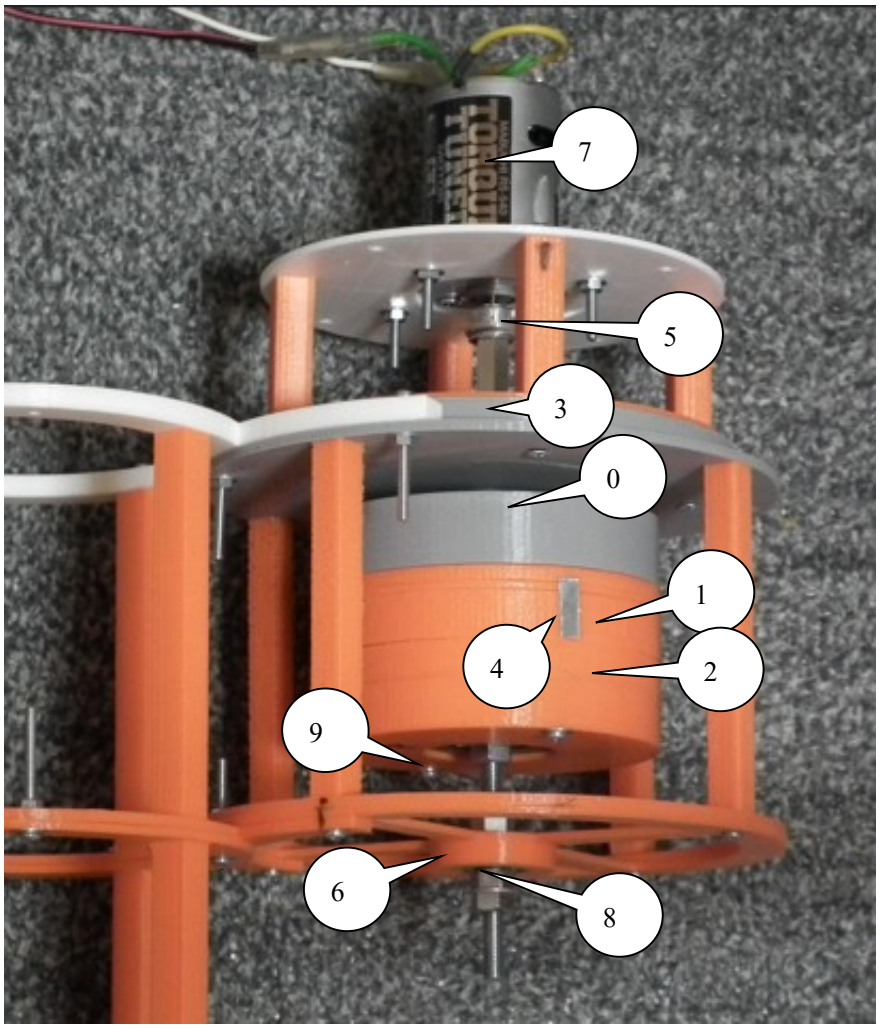
As before, the motor is directly connected to a rotor consisting of two layers of conical roller bearings using a collet type, and the experiment is conducted with two rotors placed side by side. The white connecting arm is thicker this time, at 6mm. (Relatively rigid structure) If you look closely, the orientation is different, but this is a modification to make the gear larger, as was done when there were two motors (it doesn't affect the overall structure).



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<Structure>

■Overall Configuration Diagram ⓪ The rotor section is basically the same as before, using a 5mm bolt to connect to the motor with a collet. (Collet-type fittings using 6mm bolts also exist.)



①Contains a disc equivalent to a conical roller bearing (NTN_30306) (outer diameter 72mm, inner diameter 30mm) inside. ② Contains a disc equivalent to a conical roller bearing (NTN_30302) (outer diameter 42mm, inner diameter 15mm) inside. ③ Contains a bearing inside. ④ Reflective tape for measuring rotational speed. ⑤ Collet-type fitting for connecting a motor. ⑥ Contains bearings inside. ⑦ TAMIYA 540 Torque Tune motor, capable of input of approximately 7.2[V]. ⑧ The aim is to eliminate play here and use a flexible leaf spring structure so that the double conical roller bearings are always in contact with the outer ring, thereby maintaining the roller's propulsion force as much as possible. ⑨ It is 3mm in diameter and 35mm in length, and is secured with pan-head tapping screws (two on each side).

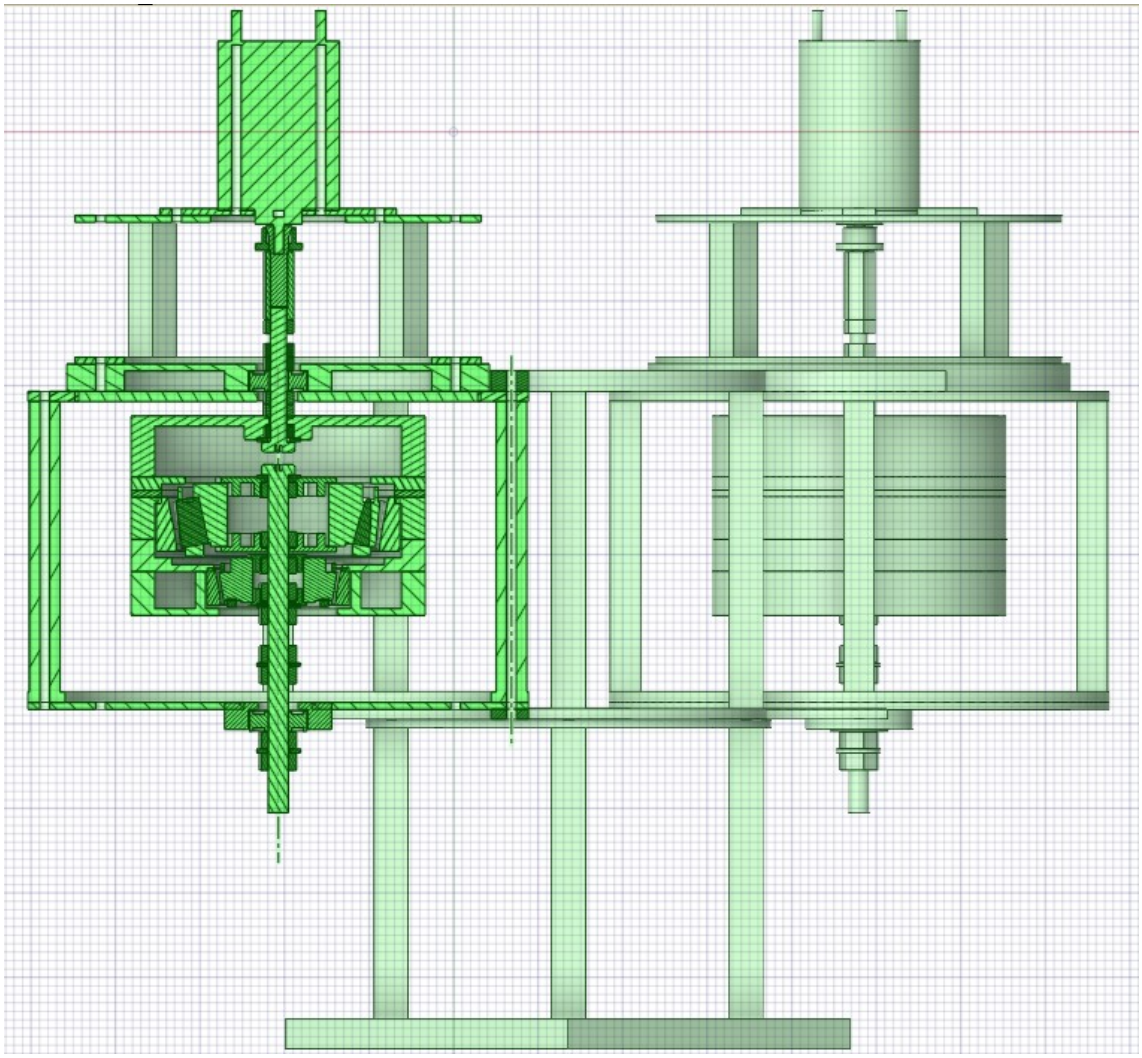
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- Weight and internal structure of the same type of turbine

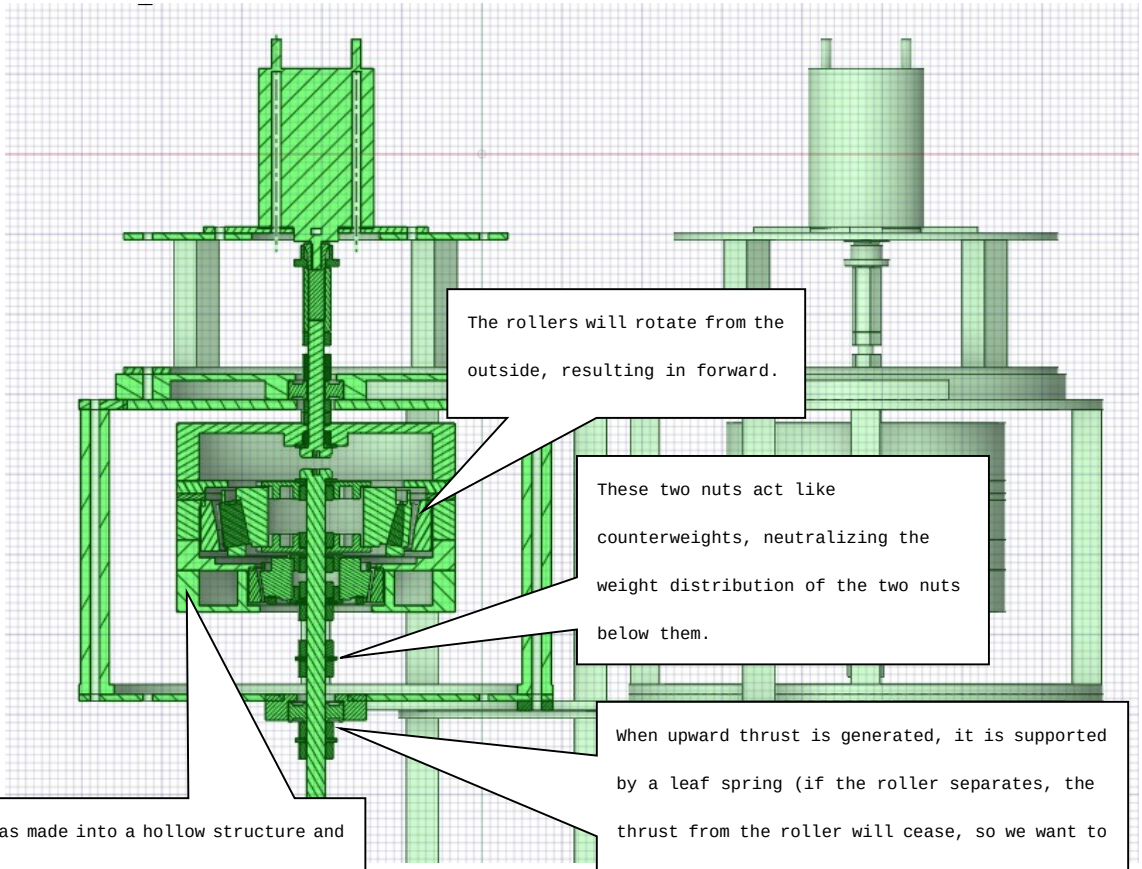


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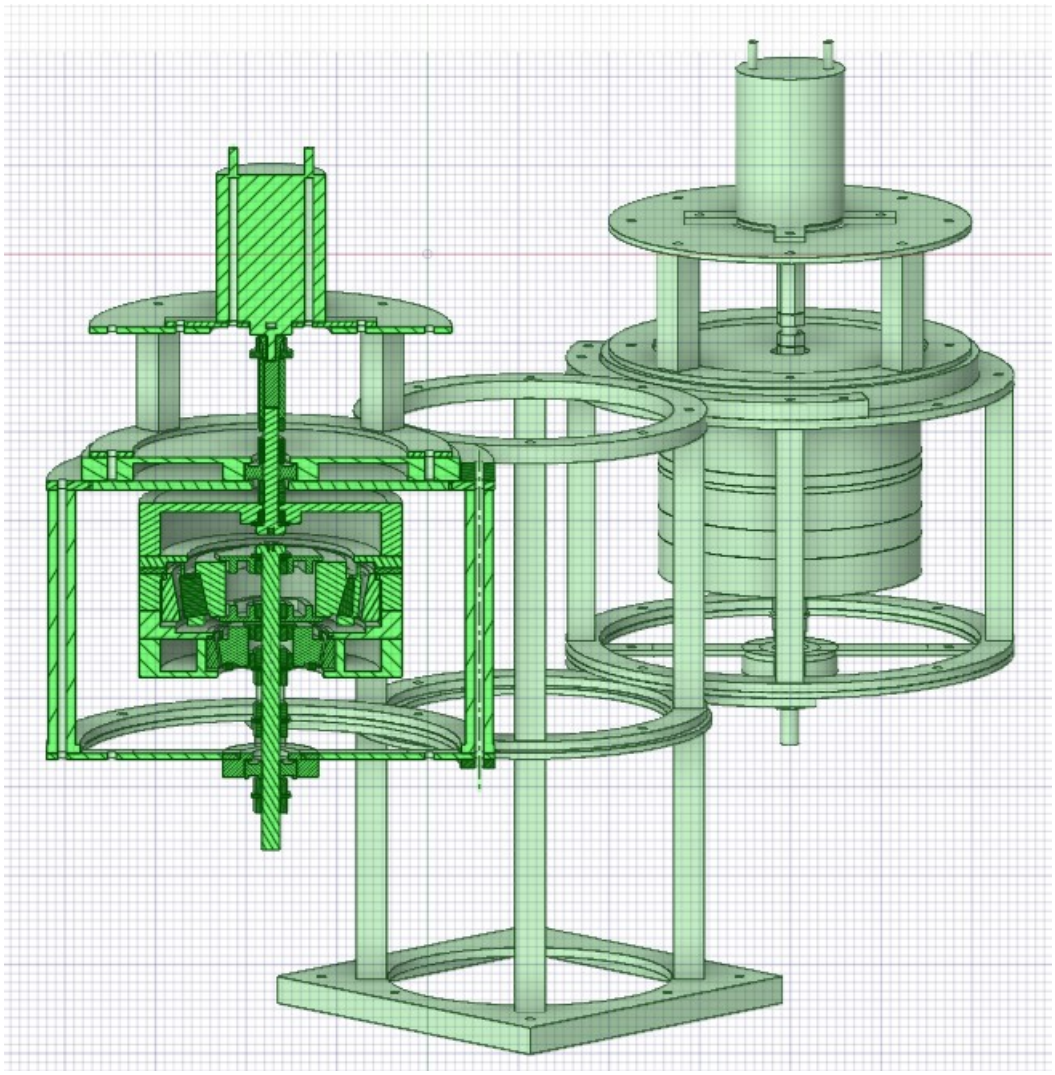


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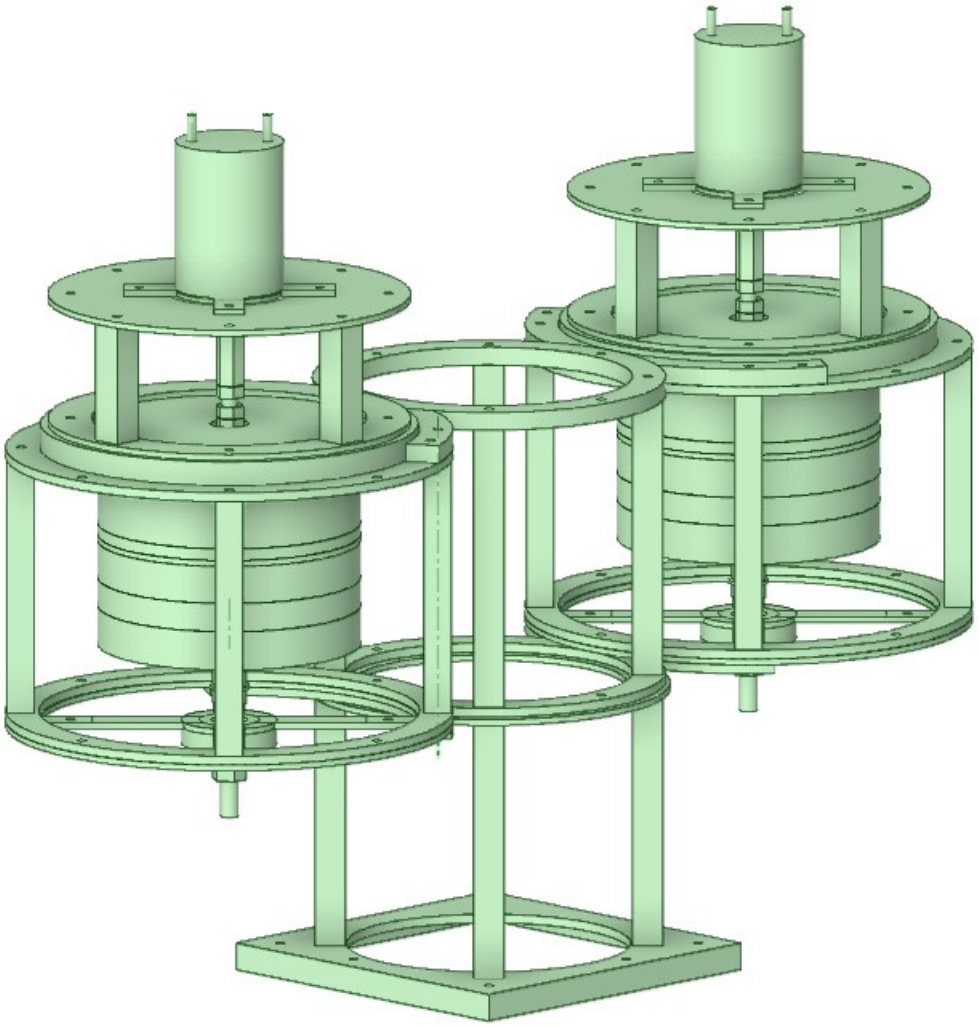
Each square is approximately 1.5 mm.(The bolt on the roller side has a diameter of 6mm and a threaded portion length of 100mm.) (There are some slight differences from the actual product, such as the omission of the tapping screw.)

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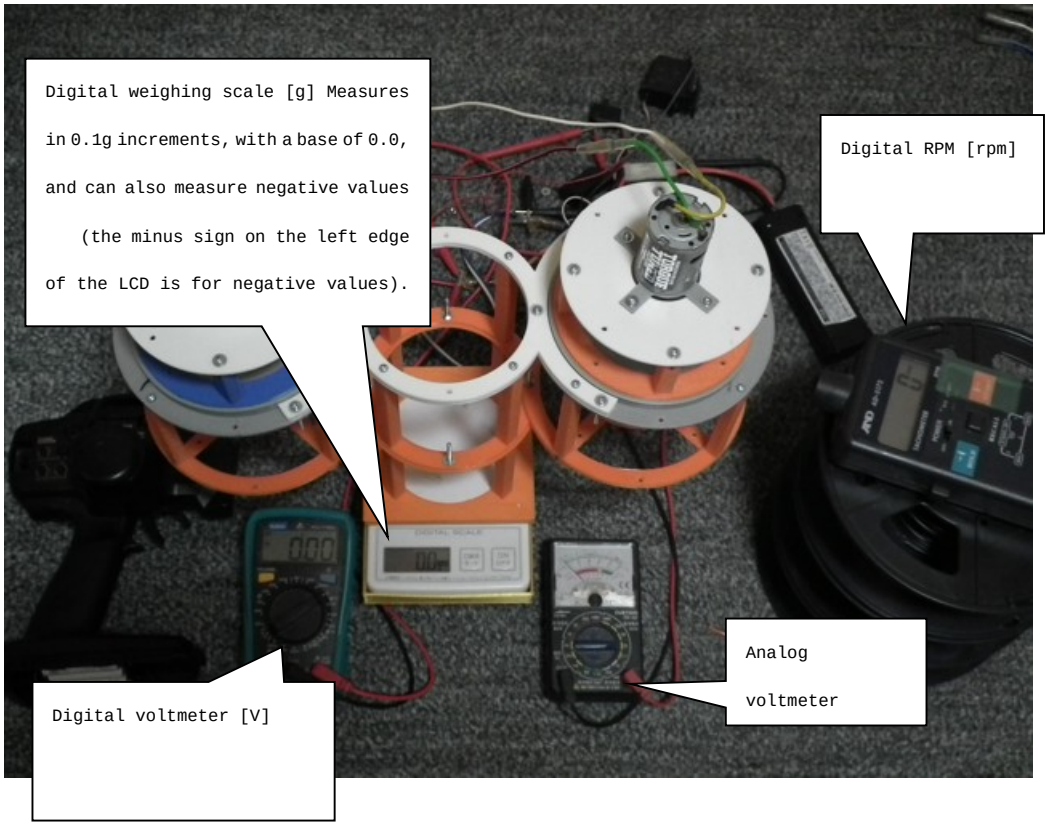
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<Experiment>

■Experimental equipment



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■ Levitation experiment using two rotors directly connected to a motor

The two motors are made to rotate in opposite directions.



Although it's hard to see, there's a "-" at the left end of the scale, indicating that it's -20.9[g] lighter.

-20.9[g]、0:39、4.10[V]、6244.9[rpm]

Measured values (values obtained from recorded video [TR83/DSCF5286.mp4])				
No.	Voltage[v]①	Rotational speed[rpm]②	(Duration of video)	Weight[g]③
1	0.00	0	0:01	0.0
2	4.00	6094.0	0:38	0.0
3	4.10	6244.9	0:39	-20.9
4	1.90	5500.2	0:39	8888.8(error)
5	0.28	683.0	1:04	0

No. 1: Experiment begins.

No. 2 was not observed to become lighter until just before surfacing.

No. 3 is about to surface.Unit

No. 4 has a body weight of approximately 2.3 kg, and after surfacing, the scale can only measure up to 2 kg, resulting in an error. The calculation shows that after surfacing, its weight became -2.3 kg.

No. 5 represents the state where the rotation speed has been reduced and the weight

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has returned to 0 [g].

In No. 4, the reason it surfaced and moved to the left was likely because the upward thrust was slightly greater on the right side. The scale had spikes underneath, preventing it from easily shifting, and the upward movement allowed it to surface and move to the left.

Just as a balance scale will tip significantly if one side is even slightly heavier, a twin-rotor aircraft will tilt sharply if the thrust of either rotor is even slightly greater, suggesting that twin-rotor designs are structurally difficult.

With four rotors, each rotor would be competing against three other rotors, making it much less likely to tilt.

It levitated at approximately 6200 rpm, similar to the previous time. The voltage could be increased further to around 4.0[V], but the experiment would have to be stopped if the main unit tilted.

The main takeaway from this test was that there was almost no vibration, and the vibration isolation structure of the cross-shaped motor worked better than expected.

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■Conclusion for the next step

As previously discussed, a three-rotor system is not symmetrical, including in the direction of rotation, so a four-rotor system is preferable.

So, in the end, we'll have to experiment with a four-rotor system next time.

That's all.

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