Static Thrust Calculator

Propeller diameter	18 inch
Pitch	8 inch
Propeller type	Standard propeller CF 1
No. of blades	2
RPM	7400
Air temperature	77 Fahrenheit
Air density	1.1843 (kg/m³)

After entering/modifying the input data, hit the Calculate button »»»	Calculate!

Static thrust =	246.21 **oz**
Static thrust =	15.41 pound
Static thrust =	6.98 kg
Perimeter speed =	177.05 m/s
Required engine power =	**2.312 HP = 1.700 kW**
Estimated flying speed =	56.0 mph = 48.6 Knots

Hungarian version:

Important remarks: **The propeller's pitch has a significant effect on the required engine power! Therefore any results in the calculated engine power field should be monitored carefully!** As the propeller (with high-pitch) rotates faster and faster it is stalling more and more. It does generate higher inducted turbulent-resistance which takes engine power, preventing to produce enough thrust instead. **In the real world the engine cannot rotate a stalled prop as fast as a lower-pitch prop would be rotated!** By entering higher pitch with leaving other details the same, the calculator can NOT update the entered RPM but it will increase the required power (or vica versa)! In the real world by increasing the load (diameter or pich) the maximum RPM will be decreased, and by decreasing the load the maximum RPM will increase as **the [load] and [maxRPM] are inversely proportional to each other.**

Above all, counting with propeller's "high-pitch stalling" is important when the airplane is standing on the ground. If the airplane is flying then the propeller's pitch becomes more important, since the air that the propeller uses is "arriving" to the blades with the same speed the aircraft is flying. The perimeter speed of the propeller blades also very important! It should never be higher than the standard supersonic limit (approx. 320 m/s). The supersonic speed causes the blades to take a very high load due to the special airflow waves generated by the subsonic and supersonic changes! And finally, the Estimated flying speed field gives only an estimated information about the expected horizontal flying speed at full throttle. (The real speed may vary in extreme situations like acrobatic flying.)