



BALANCING BASICS

Step-by-Step Guide to Dynamically Balancing Your Propeller

Many aircraft owners and operators wonder if dynamically balancing their propellers is a job better left to those who do it often and do it well. We've developed a set of basic step-by-step instructions to help you decide whether this is a job you're willing to tackle.

The basic balancing procedure is as follows:

STEP ONE

Insure all Airworthiness Directives have been accomplished for the aircraft you are balancing.

STEP TWO

You should inspect the Propeller assembly for nicks, dents, cracks, etcetera. FAA Advisory Circular 20-37E should be used as a reference for propeller inspections.

STEP THREE

Remove any old or previously installed dynamic balance weights.

DO NOT REMOVE STATIC BALANCE WEIGHTS INSTALLED BY A CERTIFIED PROPELLER SHOP.

STEP FOUR

To select the balancing RPM you should first check for a manufacturers recommended balancing RPM. If none exists, you may use the speed of the complaint or cruise, which ever is desirable. Cruise RPM is the power band where the aircraft will spend most of its time. Balancing at this RPM will give the greatest results.

STEP FIVE

Place the balancer in the cabin. Install the vibration sensor and Phototach. Route the vibration and Phototach cables into the cabin and connect them to the balancer.

STEP SIX

Turn the balancer on.

STEP SEVEN

Start the engine and taxi to a location that will avoid prop and jet was from other aircraft and avoid any wind anomalies that may occur. Allow the engine to warm to a regular operating temperature.

STEP EIGHT

Enter the required information into the balancer (HP and RPM).

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STEP NINE

When prompted increase the engine RPM to your designated balancing RPM. When prompted, by the balancer, return the engine to idle and allow it to cool. When the engine has sufficiently cooled, shut down the engine.

STEP TEN

Install the suggested trial weight.

Enter into the balancer the weight (in grams) and location (in degrees) of the weight you physically installed on the propeller.

STEP ELEVEN

When prompted by the balancer, start the engine.

Allow the engine to warm to a regular operating temperature.

When prompted increase the engine RPM to your designated balancing RPM.

When prompted, by the balancer, return the engine to idle and allow it to cool.

When the engine has sufficiently cooled, shut down the engine.

STEP TWELVE

Remove the old weight suggestion.

Install the new suggested dynamic balance weight.

Enter into the balancer the weight (in grams) and location (in degrees) of the weight you physically installed on the propeller.

STEP THIRTEEN

The process will repeat until the vibration has been driven below 0.07 IPS.

STEP FOURTEEN

Once the vibration level has been reduced below 0.07 IPS, install the permanent weight.



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