

Inspection

- Ensure all Airworthiness Directives have been complied with for the propeller you are going to balance.
- Determine if there is an established propeller balance procedure from the airframe, engine, or propeller manufacturer. These procedures, if established, must be adhered to and take precedence over any methods recommended in this manual.
- Inspect your propeller for damage as recommended in FAA Advisory Circular 20-37E.
- If balancing composite propeller blades, refer to the propeller manufacturer's procedures for repairing the propeller.
- Inspect propeller assembly for proper installation and security.
- Inspect the spinner and spinner bulkhead for cracks, stop drills, and welding.

Warning

Trim weights MUST NOT be attached to a part with cracks, stop drills, or welding.

- Inspect your sensor and its attached cable for obvious damage, such as, chips, pinches, or cuts in the plastic on the cable, and dints or scratches on the sensor, etcetera.
- Inspect your tachometer and its attached cable for obvious damage, such as, chips, pinches, or cuts in the plastic on the cable, scratches on the tachometer lens, etcetera.
- Ensure the batteries in your analyzer have a sufficient charge to complete the balance job.
- Remove all dynamic balance weights installed on previous balance jobs.

Warning

Static balance weights attached by a certified propeller shop MUST NOT be removed.

Equipment Installation

- Remove any cowlings necessary to access the forward section of the engine.
- Install the vibration sensor on the forward most section of the engine as close to the engine bearing as possible on the centerline of the engine. Ensure the sensor connector is pointing up and no rotating components will contact the cable or sensor. Take care to allow adequate clearance between the sensor and cowlings and baffles.
- Install any cowlings previously removed.
- Route the vibration sensor cable through the cowling. Secure the cable to ensure hot sections and rotating components are avoided.
- Rotate the propeller by hand until one blade is pointing directly up at the 12 o'clock position.
- Install the Phototach 12 to 18 inches behind the propeller and centered on the propeller. Secure the Phototach with duct tape.
- Attach a 2 inch long strip of reflective tape to the aft side of the propeller blade, centered on the blade and at a height that is centered on the Phototach. The analyzer should be turned on with the Phototach cable connected. Power will be delivered to the Phototach and the alignment may be checked using a mirror to view the indicator light on the back of the Phototach. When the reflective tape is aligned and installed, turn the analyzer off and disconnect the tachometer cable.
- Route all cables to the cabin and secure all cables along the airframe with duct tape or wire ties.
- Connect the cables to their color coded connectors on the Model 1015 ProBalancer Sport.

Operation

- Turn the analyzer on.
- Enter the horse power of your engine into the "HP" field.
- Enter your target RPM into the "RPM" field.
- Press [GO] to continue.
- When the "Remove all trim weights" screen appears press [GO] to continue.
- Start the engine when prompted to do so by the analyzer.
- When the "Warm up Engine" screen appears, advance to the RPM shown on the screen.
- The "Acquiring Data" screen will appear then automatically progress to the condition screen.
- When the condition screen appears, select [1] to retake the data, or [2] to continue to the next screen.
- Shut down the aircraft when prompted to do so by the analyzer.
- The analyzers recommendation will appear next. Press [1] to split the solution between 2 holes, or [2] to use one hole.
- If you selected to split the weight between 2 holes, enter the hole angles and press[GO] to continue.
- Place the weight onto the suggested hole(s), and enter the angle and weight in grams for the actual weight(s) you installed. Press [GO] to continue.
- Repeat this process until the vibration has been lowered to an acceptable level.

Removal

- Disconnect the cables from the analyzer.
- Remove the reflective tape from the propeller.
- Remove the tachometer from the aircraft.
- Remove any cowlings necessary to access the forward section of the engine.
- Remove the vibration sensor.
- Install any cowlings previously removed.
- Clean any residue left from the tape used to secure the cable or left by the reflective tape.
- Inventory equipment to ensure no equipment was left on the airframe.