

Main Gear Installation on a 180/185

By Steve Knopp

March 15, 1999

Question:

I am installing 185 main gear springs on my 57 180. There is a slight amount of play fore and aft in the outer casting. In the service manual they don't show any shims in this area. If I were to shim the gear to prevent movement fore and aft at the outer casting should I shim the front or rear of the gear?

Answer:

P. Ponk Aviation manufactures a beefed up version of Cessna's outboard gearbox bracket. Many of our parts are purchased by consumers because wedges and shims were improperly installed. They were driven in too far and too hard, damaging the upper portion of the original casting by reforming the metal into a sharp edge, causing stress fractures on the upper portion of the original bracket. In my 30 some years experience, I have inspected hundreds of brackets damaged in this manner.

The wedges and shims are intended to take up any slack and hold the gear to the bottom of the bracket, and will hold the landing gear from moving forward after landing when you set the tail on the ground. They will not hold the gear from moving aft under the load of landing and braking, no matter how hard you POUND them in.

Steps to Installation

- 1) Hoist the airplane.
- 2) Install your gear in the aft position. This should leave you 1/16th to 3/32nds inch gap between the gear and the front of the bracket. If the gap is larger than this, check the rear portion of the bracket that touches the landing gear to see if it has compression damage due to years of use and striking objects with the landing gear. (Inspect for stress fractures and cracks in any compressed areas.) A symptom of "too large a gap" is a chronic "clunk" when you land or take off. Tightening the shims is only a temporary fix for the problem...the "clunk" usually comes back.
- 3) Install the wedges and shims so that they do not push all the way in and

bottom out. If they bottom out, install an extra shim. (Parts Manual allows more than one shim. You also may need a thicker wedge.) There are 2 sets of shims and wedges holding each set of gear in place.

4) Tap the forward wedge lightly with an aluminum punch and hammer to set the wedge. Screw your 1/4" bolt up snug to the wedge.

5) Repeat this procedure for the rear wedge.

6) Tap the forward wedge again lightly with a punch and hammer to reset the wedge, and again snug up the 1/4" bolt.

7) Repeat this procedure for the rear wedge.

Note: Do not over tighten this bolt...it is there only to keep the wedge from backing out. DO NOT POUND IN THESE WEDGES, THINKING YOU WILL KEEP THE GEAR FROM MOVING. You only will damage the outboard brackets (and keep me in business).

For those of you who are reading this, if you are interested in seeing how your landing gear is installed in your aircraft, go to our web site <http://www.pponk.com> and click on the picture of the outboard gear box bracket(it takes some time to load...just wait for it. It is worth it. This is an exploded view of the landing gear box.

Steve Knopp

P. Ponk Aviation

p&n@pponk.com