



## **Q&A on Marsh Brothers' Landing Gear Door Hinge Kits for Beech Bonanza/Baron/Debonair/Travelair**

### **Will one kit do the entire aircraft? That is, both right and left main gears?**

Yes, one kit will do both the left and right main landing gear doors.

### **Do I also need the 05-12241 install kit? What does that consist of?**

Accessing the main landing gear door hinge brackets is difficult. The install kit, P/N# 05-12241, is not essential but it is highly recommended because it makes the installation of our main landing gear door hinge kits much easier. The install kit includes a 0.251" reamer to re-size the ID of the bushings in case they are tight, a press-out and press-in jack that can be used to push out the OEM bushings and press in the new polymer bushings, a push pin which is an adapter for the screw jack, some "Stick-it" for holding washers etc. in place during installation and a temporary distance piece to keep the housing flanges from bending.

### **How do our kits differ from the OEM parts they replace?**

Our kits fit in exactly the same space that the OEM parts do. However, the most important difference is that the parts in our kits cannot corrode and seize together because we use self-lubricating polymer bushings to replace the steel bushings. If the steel OEM parts corrode and seize, the result is costly repairs to the supporting structure in the wing.

### **Why did Marsh Brothers develop and certify this kit?**

It started with an article by Ron Roberts in the July 2011 issue of the ABS magazine with the title "The Continuing Saga of Beechcraft Landing Gear Idiosyncrasies". Ron explains how the failure of the OEM bushings in his main gear doors led to a very costly fix. The difficulty in getting lubrication into the space between the OEM steel sleeves and bushings results in corrosion and eventual seizing. Once the bushing starts turning in the housing, the hinge bracket becomes damaged and requires replacement, with extensive de-riveting required to gain access.

The landing gear door hinges are hard to inspect and typically "out of sight, out of mind". Don't wait until they fail – it will be expensive!

### **Why should I install the Marsh Brothers kit?**

Consider it as insurance. By the time you have a problem, it's too late. Install our kits and forget it. Our philosophy is that if we can't make a part better than the OEM part it replaces, then we won't sell it.



## **Who is Marsh Brothers?**

Marsh Brothers ([www.marshbrothersaviation.com](http://www.marshbrothersaviation.com)) is the aerospace arm of the Thomson-Gordon Group, which makes polymer bushings and bearings for very large installations like ship propeller shafts and hydroturbines. The Group has been in business for more than a century and sells its products in more than 85 countries around the world.

## **How do I know it will work?**

The Chairman of the Thomson-Gordon Group, Sandy Thomson, is an aviation enthusiast and a long-time Bonanza owner. To quote Sandy directly: "This is an exciting time for Marsh Brothers Aviation, as we introduce more and more new products made from advanced polymers to the aviation marketplace. All of our products have been installed and flown by me in my own aircraft, so I can personally vouch for how well they work! At Marsh Brothers, we strive to be recognized by our customers as their best choice for the products and services that we provide. To be the best demands a genuine commitment to innovation, problem solving, service and quality. Our goal is to provide products and services that represent the best possible value for our customers' needs."

## **What is the polymer used in the kits?**

We developed a new polymer formulation specifically for aerospace which we call AeroTough™ GF, for "Grease Free". Lubricant is built into the polymer, completely eliminating any need for periodic lubrication.

## **How easy are the kits to install?**

It's just a matter of removing the doors, pressing out the steel bushings and then pressing in the replacement parts. The kits include all of the necessary hardware including new bolts and spacers. Where the OEM sleeve part is flanged, we make up the space with a thin washer.

We have produced short videos and posted them on YouTube to demonstrate our kit installation:

Main landing gear doors: <https://www.youtube.com/watch?v=b2mnlALNF5c>

Nose landing gear doors: <https://www.youtube.com/watch?v=hkdxNikyfGw>

## **How are the Marsh Brothers kits approved?**

The US FAA and Transport Canada have both issued Supplemental Type Certificates for our kits. All of our kits are eligible for installation on aircraft registered in the USA and Canada, and anywhere else in the world where these approvals are recognized.

## **What if I lubricate the polymer bushings?**

You don't need it of course, but it's no problem if someone doesn't know our bushings have been fitted and decides to squirt some lubrication into the hinges. Our bushings are quite happy to run in oil or grease – it's just not necessary!