

SERVICE BULLETIN 126:

SUBJECT: G-III Main Landing Gear Strength Upgrade

APPLICATION: All G-IIIs kits shipped prior to December 1993 that have main landing gear serial numbers up-to but not including #263 (gear strut serial numbers are located on the top surface of the trunnion cylinder).

DESCRIPTION: The installation of additional fuel tanks, turbo-charging, and full IFR radio equipment, has led some G-IIIs to operate at very high weight levels, some in excess of gross weight limits established by Stoddard-Hamilton Aircraft. We have analyzed those Glasair components providing the most significant limit on gross weight and have engineered two landing gear up-upgrades that provide an additional margin of protection against side loads, obstacle impact, and rough field operation. These upgrades are highly recommended for G-IIIs operating at high gross weight levels or in rough field conditions. Since even an aircraft operating within specified gross weight limits can have a dangerously high impact, side load, or strike an obstacle on the runway, any G-III will benefit by these upgrades.

RECOMMEND ACTION:

Upgrade #1: Heavy Duty Main Landing Gear Trunnion Side Brace Stud

The existing side brace attach point on the main gear is a welded-in stud with a diameter of .375" in the area of the bearing shoulder. The heavy duty side brace stud is a separate, machined unit with a shoulder diameter of .435" and provides 150% additional strength.

To upgrade to the heavy duty side brace stud, the original stud must be cut off and the side brace saddle machined to a 3 1/2° angle. An existing side brace stud pilot hole (.510 Ø) needs to be drilled and tapped for 5/8-18 thread. A lockwire hole (3/32 Ø) should be machined at a convenient location. All affected machined surfaces will then need to be primed.

These procedures are likely beyond the capabilities of most builders (access to a machine shop is necessary), so Stoddard-Hamilton is putting together a program with our landing gear vendor to upgrade a group run of gear legs, taking advantage of quantity pricing.

NOTE: These heavy duty side brace studs require the use of the Heavy Duty G-III Side Braces (353-5205-103 and 104) and Down Lock Component Kits (353-5290-501). The heavy duty side brace arms are sized to use larger bearings for the trunnion attach points. These bearings have an internal ID of .437" to coincide with the shoulder of the new replaceable trunnion stud. These side braces also have an increased cross sectional area to brace the main gear against side loads that may be encountered. If not already installed, these parts can be purchased from our order desk. If the G-III Emergency Gear Ext. Retrofit Kit (353-5800-502) has been installed, then the Heavy Duty Side Brace and Down Lock assemblies have also been installed because of the requirement to use the heavier side braces for this installation. In this case a bushing would have been used to adapt the heavy duty side braces to the existing smaller diameter trunnion studs.



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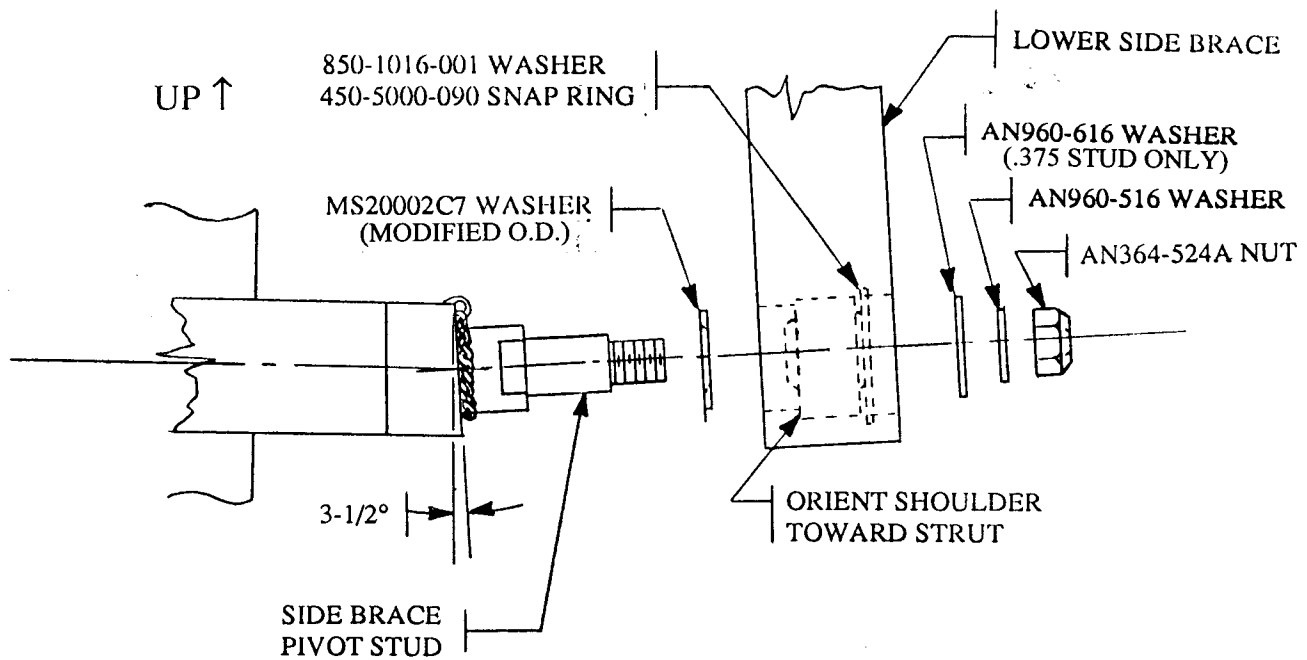


FIGURE (1)

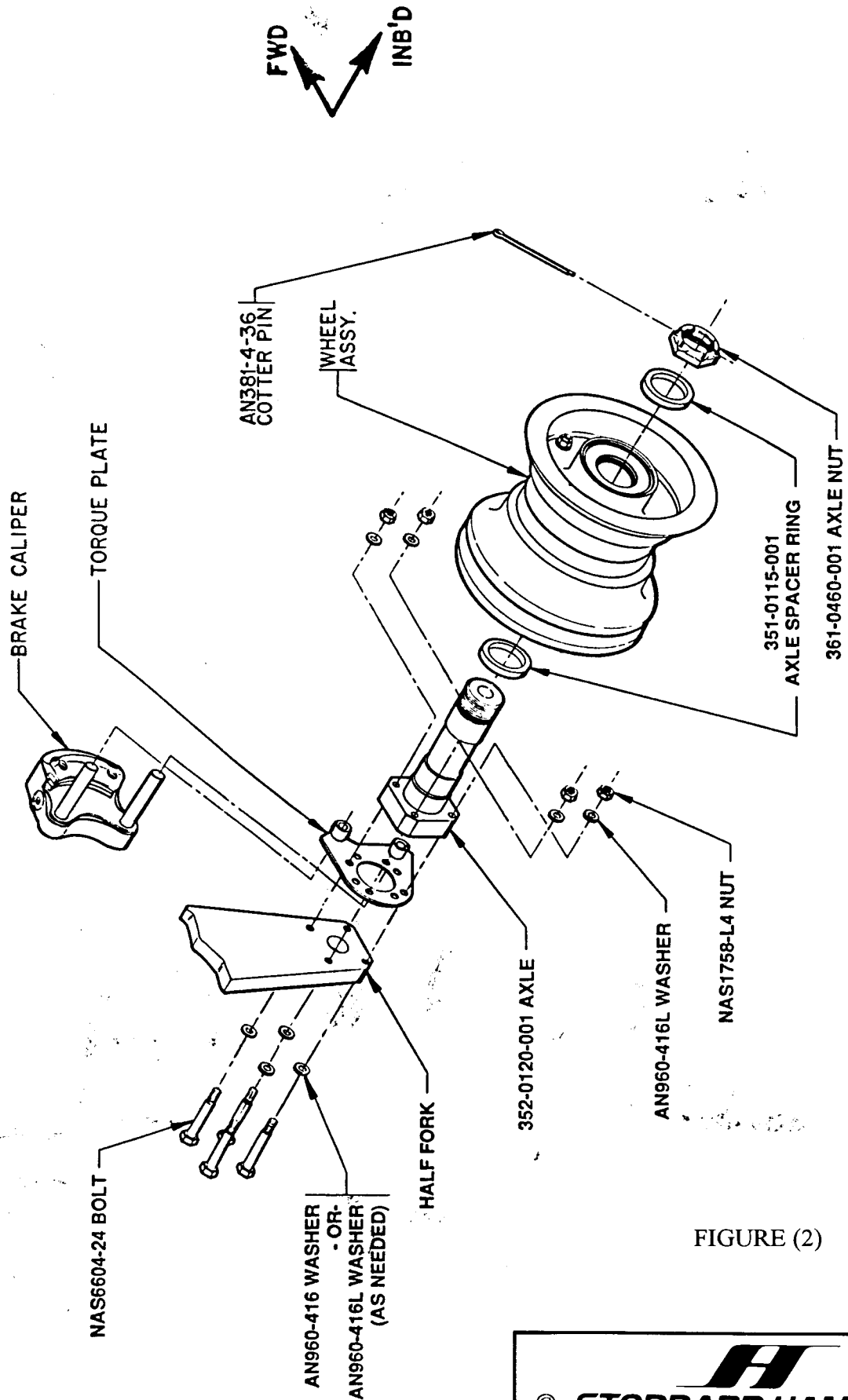
Upgrade #2: High Strength Axle Securing Bolts

The part number for the original bolts used to secure the axle to the half fork is: AN4H13A. Because these bolts can be subjected to high tension and shear loads during hard landings or obstacle impact at high gross weights, we recommend that these bolts be upgraded to NAS6604-24s. These bolts provide 30% additional increase in strength to this joint for operation at the higher gross weights. To install them, it will be necessary to drill out the existing .250" diameter threaded holes for through bolts. The new NAS bolts will no longer screw into threads in the half fork, but will be secured by high strength NAS1758-L4 nuts.

One of our builders informed us that the brake caliper torque plate can be mounted in place of the axle spacer plate (#363-5121-001) between the half fork and the axle. This requires rotating the torque plate so that the bushings are pointed inboard, as shown in Figure (2). This orientation gives better bushing engagement onto the caliper pins and eliminates the spacer plates. The NAS6604-24 bolt length is sized for this configuration.

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LEFT SIDE SHOWN

FIGURE (2)


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Cost: If you wish to up-grade your G-III main gear as described in upgrade #1, the gear legs must be returned to us no later than March 31st. The upgraded unit will be returned to the builder approximately eight weeks after the above date, at a one time offer of \$184.60 per set.

Send your main gear struts to us complete less the axles, brake calipers, upper trunnion bearing housings, and side braces. We will modify the trunnion studs and drill out the half forks before returning them to you. Please attach a tag to each strut with your name, kit number, and address for identification.

If you wish to up-grade only the axle bolts at this time, they can be ordered separately. Please see the following instructions.

Axle Bolt Replacement Instructions

In order to install the higher strength NAS6604-24 bolts, remove the existing AN4H13A bolts connecting the axle to the half fork. Drill out the threads with a .250" dia. drill. After each hole is drilled, prime the bare metal inside each hole with an epoxy primer. Install the torque plates and axles using the NAS6604-24 bolts, AN960-416L washers, and NAS1758-L4 nuts as shown in Figure (2).

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