

SERVICE BULLETIN 105 REVISION A MANDATORY

SUBJECT: Retractable Landing Gear Oleo Strut, Weld Inspection and Repair

APPLICATION: Glasair I and II Retractable Landing Gear, Serial Numbers 071 through 302.

NOTE: The landing gear serial number is stamped on the main gear half fork, on the inboard side of the collar where the fork attaches to the oleo cylinder flange.

DESCRIPTION: We have received two reports of small cracks found on the upper weld of the chrome oleo cylinder flange on Glasair RG retractable landing gear manufactured by our original subcontractor. X-rays and cross-sectional visual inspections of the cracks have revealed the problem to be a lack of fusion (cold weld) between weld passes. Neither over stress nor fatigue are suspected to be the cause.

The upper and lower oleo cylinder flange welds were each formed by three passes by a semiautomatic TIG welding machine. The subcontractor tells us that lack of fusion was something they had to watch for during the start and stop cycles of the automatic welding machine. Since they were aware of the possible problem at the time of manufacture and inspected closely for it, they suspect that only a few may have escaped without detection. Lack of fusion when starting or stopping the weld process would have affected just a relatively small area of the weld; nevertheless, to minimize any potential for crack propagation or catastrophic failure, any cracks found in these welds must be repaired.

SOLUTION:

*****WARNING: COMPLIANCE WITH THIS SERVICE BULLETIN IS MANDATORY*****

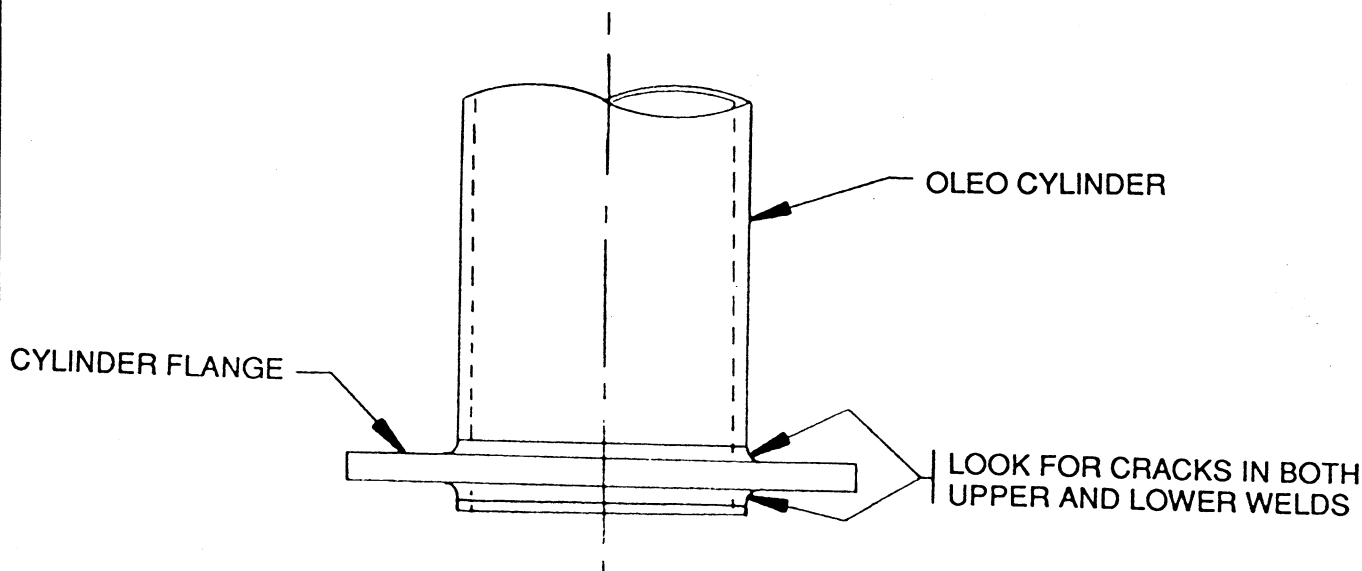



FIGURE (1)

 STODDARD-HAMILTON AIRCRAFT, INCORPORATED			
MODEL GLASAIR RG	ASSEMBLY NAME SERVICE BULLETIN 105	REVISION A	DATE 11/07/91
		VOLUME	PAGE 1 of 2

MODEL
GLASAIR RG

ASSEMBLY NAME
SERVICE BULLETIN 105

REVISION
A

DATE
11/07/91

VOLUME

PAGE
1 of 2

If this service bulletin applies to your landing gear, all three struts must be inspected for cracks in both the upper and the lower welds that secure the fork flange to the chrome oleo cylinder. Inspecting the welds requires that the nose gear fork and the main gear half forks be disassembled from the oleo cylinder flanges. If cracks are found, the affected oleo cylinders must be removed from the landing gear struts and repaired by welding.

CAUTION: The internal oleo strut pressure must be relieved before disassembling the forks from the oleo cylinders; otherwise, the internal pressure will forcibly blow out the lower cylinder plug and the strut's hydraulic fluid when the fork is removed. Also, after inspection and/or repair, the nose gear fork and the half forks must be securely bolted in place on the oleo cylinder flanges before pressurizing the struts.

INSPECTION AND REPAIR PROCEDURES

First release the pressure in each oleo strut by depressing the Schrader valve core.

CAUTION: Cover the valve with a rag when releasing the pressure to prevent spraying hydraulic fluid into your eyes.

Remove the nose gear fork and the half forks from the oleo cylinder flanges. Be careful not to dislodge the lower cylinder plugs when removing the forks; if a plug is dislodged, the strut's hydraulic fluid will spill.

Using dye penetrant inspection equipment, which should be available at most local FBOs, inspect both the upper and lower welds that join the fork flange to the oleo cylinder on all three struts, as shown in FIGURE (1). If a crack is found in any of the welds, the cylinder must be removed from the oleo strut and returned to Stoddard-Hamilton Aircraft for repair.

NOTE: Contact Stoddard-Hamilton Aircraft for oleo strut disassembly instructions and for the special tools required.

If no cracks are found, reassemble the struts, top them up with hydraulic fluid, if necessary, and pressurize the struts with nitrogen. (Refer to your Owner's Manual for strut filling and pressurizing procedures).

Builders who find cracks in their oleo cylinders must return them to us by November 29, 1991. We will repair the cylinders and return them to you by February 15, 1992. Cylinders to be repaired must be tagged with the builder's name, kit number, and a signed, dated statement saying, "Repair per Service Bulletin 105." The cost for repairing the oleo cylinders is \$125.00 each, plus shipping and packing.



MODEL GLASAIR RG	ASSEMBLY NAME SERVICE BULLETIN 105	REVISION A	DATE 11/07/91	VOLUME	PAGE 2 of 2
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