

R22 SERVICE LETTER SL-74B

(supersedes R22 SL-74A)

R44 SERVICE LETTER SL-61B

(supersedes R44 SL-61A)

DATE: 21 July 2017

REV B: 16 March 2023

TO: R22-series & R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: Riveted A185 Brackets Installation & Fiberglass Scroll Repair;
does not apply to A185 brackets attached with (12) steel, hex-drive screws.

BACKGROUND: Perform whenever looseness of a riveted A185 bracket is detected or suspected, and whenever upper or lower scroll is removed. Refer to R44 SB-113.

COMPLIANCE PROCEDURE:

1. Remove fanwheel per Maintenance Manual (MM) Chapter 6. Clean both scrolls.

NOTE

If available, the removable bearing block [housing] from an R22's A007-5 fanshaft assembly can be used as an A185 bracket alignment fixture on both R22 & R44 scrolls. Refer to R22 MM § 22-42 for bearing housing removal & installation instructions.

2. Refer to Figure 1. Inspect A185 brackets on scroll. Proceed to step 4 if any A185 bracket exhibits looseness or signs of movement.
3. If all three A185 brackets are secure on scroll:
 - a. Evaluate condition of fiberglass adjacent to rivets. If fiberglass is delaminated replace scroll and install per step 5 & subsequent.
 - b. Refer to Figure 1. Count rivets attaching three A185 brackets to scroll. If less than 3 rivets at any location (4 places), install middle 5/32-inch [shank] diameter rivets centered between existing rivets as shown. Replace all existing 1/8-inch diameter rivets with 5/32-inch diameter rivets. Proceed to step 18.

NOTE

MS20470AD5 universal-head rivets have minimum 0.296-inch diameter head.
MS20426AD5 countersunk-head rivets have minimum 0.282-inch diameter head.

(OVER)

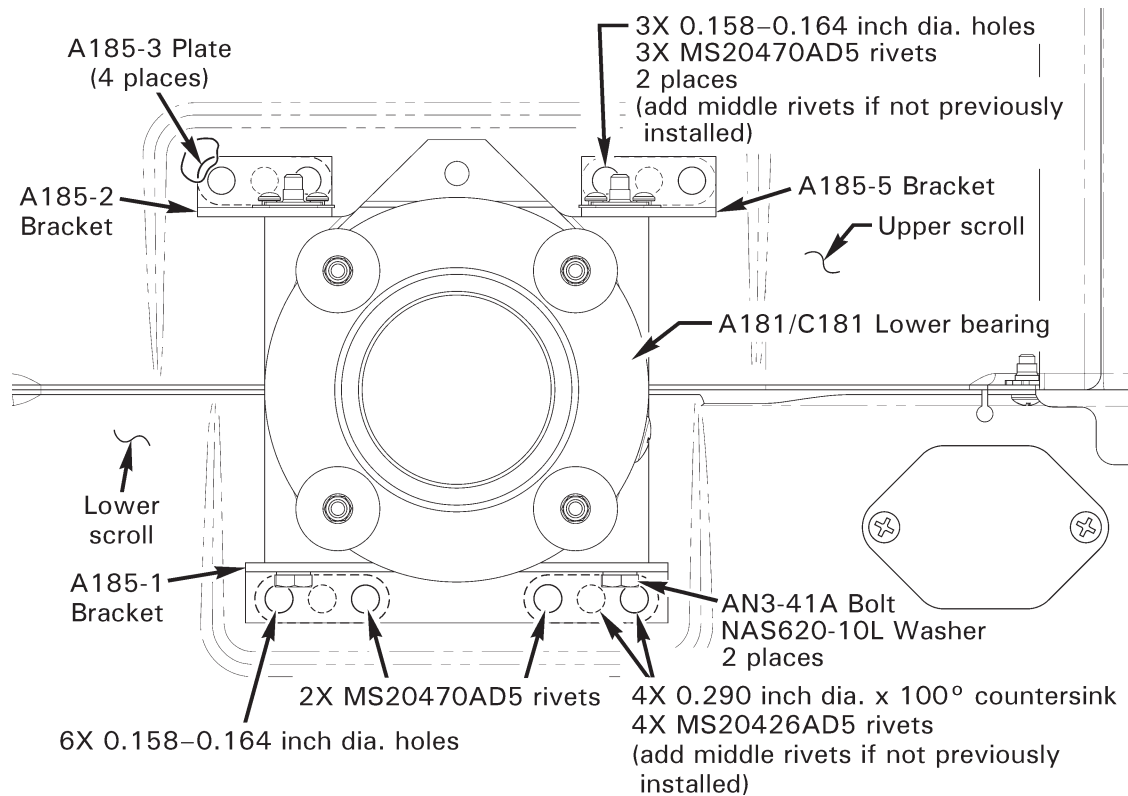


FIGURE 1

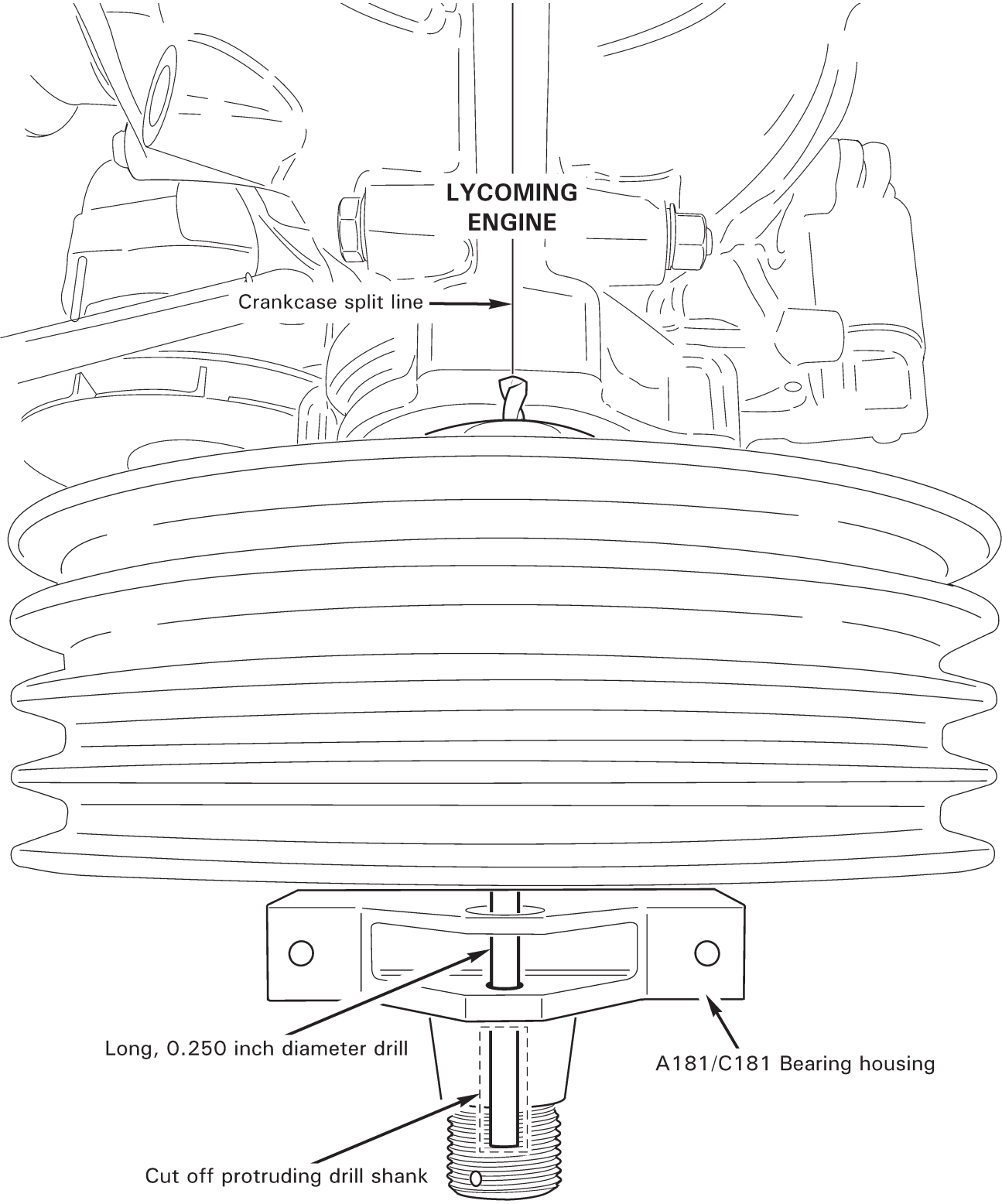
CAUTION

Use proper personal protective equipment when handling fiberglass.

4. If any of three A185 brackets are loose on scroll, or exhibits signs of movement:
 - a. Remove all brackets and inner plates by drilling out attaching rivets.
 - b. Visually inspect brackets and plates for cracks & deformation; replace damaged parts.
 - c. Evaluate condition of fiberglass adjacent to rivet holes. If fiberglass is delaminated replace scroll and install per step 5 & subsequent.
 - d. Repair (fill) all rivet holes in scroll per U.S. FAAAC 43.13-1B para 3-3.a (online at www.faa.gov). Scroll material is Style 7533, plain weave, 18x18 threads/inch, 5.8 ounce/sq.yard, fiberglass cloth with polyester resin; for repair purposes, epoxy resin is recommended instead of polyester resin.
5. Apply a light coating of layout dye (or contrasting lacquer paint) to upper scroll in area where A181/C181 bearing resides.
6. Remove lower sheave per MM § 7.290.

7. Rotate crankshaft using starter ring-gear support until largest diameter bushing in crankshaft flange (typically stamped "0" adjacent) is at 12 o'clock position and bushing bore is visually aligned with crankcase split line.
8. Without moving crankshaft, loosen alternator belt and remove starter ring gear support.
9. Install (3) NAS1149F1290P (AN960-1216) washers on each crankshaft flange bushing at 2-, 6-, & 10-o'clock positions (washers substitute for thickness of removed starter ring gear support).
10. Without moving crankshaft, install lower sheave and fan shaft & bearing assy on crankshaft using bolts at 2-, 6-, & 10-o'clock positions. Hand tighten bolts.
11. Refer to Figure 2. Visually align actuator mounting holes in A181/C181 bearing housing with upper empty bolt hole in crankshaft. Insert a sufficiently long & straight 0.250-inch diameter drill (or straight, pointed-screwdriver shank) thru holes in bearing housing until drill point contacts crankcase, then rotate bearing housing as required until drill point aligns with crankcase split line. Prevent bearing housing rotation with duct tape. Cut off the portion of drill shank protruding beyond bearing housing.
12. Position upper scroll on engine and secure corners to cooling panels with at least 6 screws & nuts.
13. Verify drill point in bearing housing remains aligned with crankcase split line; correct housing/drill position as required then immobilize housing. Using suitable scribe, trace outline of A181/C181 bearing housing into layout dye on upper scroll.
14. Remove drill, duct tape, upper scroll half, fanshaft & bearing assembly, lower sheave, and washers.
15. Refer to Figure 1. Assemble upper & lower scroll halves with screws. Assemble and secure (3) A185 brackets to A181/C181 bearing housing with AN3-41A bolts and washers. Align bearing housing and attached brackets with scribed lines on upper scroll.
16. Using A185 brackets as a guide, progressively drill twelve 0.158/0.164 inch diameter holes thru brackets, scroll, and plates, countersink brackets as required & install solid rivets per Figure 1.
17. Remove AN3-41A bolts, disassemble scroll halves, and clean up debris. Remove layout dye and paint scroll as required.
18. Install alternator belt (a new alternator belt is recommended), starter ring gear support, lower sheave and fanshaft & bearing assembly per MM § 7.290.
19. Install fanwheel per MM § 6.220. On lower A185 bracket, apply torque seal in a horizontal stripe across both outboard rivets to lower scroll to facilitate future inspections.
20. Make appropriate maintenance record entries.

(OVER)



VIEW LOOKING DOWN
(R22 shown, R44 is similar)

FIGURE 2