

SERVICE KIT NO. SK-112C
Supersedes SK-112B

DATE: DECEMBER 8, 1975
TITLE: INTEGRAL FUEL TANK SEALING KIT
SERIALS AFFECTED: ALL MODELS WITH INTEGRAL FUEL TANKS
WEIGHT AND BALANCE CHANGE: NEGLIGIBLE

PARTS LIST

<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	PR-1422, Class B-½	Fuel Tank Sealant (½ pt. kit) (Products Research)
2	3C-200, Class B-½	Fuel Tank Cover Sealant (½ pt. kit) (Churchill Chemical)

DESCRIPTION OF REPAIR

This Kit covers the repair of integral fuel tank leaks and the sealing of fuel tank access covers. PR-1422, Class B-½ is a two-part, room temperature curing sealant which is used for sealing internal fuel tank leaks. 3C-200, Class B-½ is a two-part, room temperature curing sealant which is used for sealing fuel tank access covers. Both types of sealants contain two parts which, when properly mixed in the specified ratios, cure into a firm rubber.

REPAIR INSTRUCTIONS

1. First determine the source of the leak. Fuel can flow along the structure of the wing, making the leak source difficult to find. A stained area is an indication of the leak source.
2. Remove all loose, chipped or cracked sealant from the area of the leak source. The best method of removing sealant is with a chisel-like tool made of hard fiber. Remaining sealant may then be removed with aluminum wool, 3M Elek-Tro-Cut cloth, or aluminum oxide paper. DO NOT USE STEEL WOOL OR SILICON GRIT ABRASIVES.

NOTE

VACUUM AREA THOROUGHLY TO ENSURE THAT ALL LOOSE MATERIAL IS REMOVED FROM TANK AREA.

3. Using a lint-free cheesecloth that has been dempened with MEK, alcohol (99% isopropyl), or acetone, wipe the surfaces to be sealed until the cheesecloth shows no sign of dark smudge or stain,

NOTE

CHECKING AND CORRECTING FOR LOOSE RIVETS AND/OR OTHER MECHANICAL FASTENERS IS RECOMMENDED PRIOR TO APPLYING SEALANT. CHECK AREA OF LEAK FOR DEFECTS IN BOND JOINTS. AREAS OF CRACKED BOND FILLETS OR SEPERATED BOND JOINTS MUST BE REPAIRED. CONTACT THE GRUMMAN AMERICAN AVIATION CORPORATION CUSTOMER SERVICE DEPARTMENT FOR FURTHER INFORMATION. DO NOT ALLOW THE CLEANED AREA TO BECOME RECONTAMINATED PRIOR TO APPLYING SEALANT.

4. The PR-1422, Class B- $\frac{1}{2}$ sealant can be readily mixed by hand. This is accomplished by pre-weighing or pre-measuring the base component and then adding to the base, a pre-weighed or pre-measured quantity of accelerator using the ratios as shown below. The two components are blended together by stirring until the color is a uniform gray. For example, if about $\frac{1}{2}$ pint of the base was to be prepared, 3-4 minutes of continuous hand mixing would normally be sufficient to provide a uniform dispersion of accelerator in the base compound.

CAUTION

EXACT RATIOS OF MIXTURE ARE IMPORTANT TO OBTAIN PROPER CURE.

PR-1422	<u>Base</u>	<u>Accelerator</u>
Mixture ratio by weight	7.5	1.0

NOTE

IF WEIGHING FACILITIES ARE NOT AVAILABLE, MIX ENTIRE QUANTITIES OF BOTH CONTAINERS TOGETHER. THIS WILL PROVIDE PROPER RATIO. APPLICATION TIME OR MINIMUM WORK LIFE OF SEALANT IS $\frac{1}{2}$ HOUR.

5. Joints which provide a direct fuel path out of the tank area must have sealant pressed between these surfaces thoroughly and then fillet sealed on the fuel side. Fillet sealing is applying sealant to the edge of all joints, joggles, bend reliefs, voids, all rivets and/or fasteners through the boundary of the tank, and any other place that a fuel leak has occurred.

SEALING FUEL TANK ACCESS COVERS

1. Remove all existing old sealant from access covers and mating surfaces of the tank. Using a lint-free cheesecloth that has been dampened with MEK, alcohol (99% isopropyl), or acetone, wipe the surfaces to be sealed until the cheesecloth shows no sign of dark smudge or stain.
2. Mix 3C-200 sealant with its 3C-200A accelerator by hand in a weight ratio of 10 to 1. Mix thoroughly for approximately 3-4 minutes or until no streaks of unmixed material are visible.

NOTE

ONE SEALANT KIT IS PROVIDED FOR EACH WING (FOUR ACCESS COVERS). IF WEIGHING FACILITIES ARE NOT AVAILABLE, MIX THE ENTIRE CONTENTS OF BOTH CONTAINERS IN ONE $\frac{1}{2}$ PINT KIT TOGETHER FOR EACH WING BEING SEALED. THIS WILL PROVIDE THE PROPER MIXING RATIO. APPLICATION TIME OR MINIMUM WORK LIFE OF SEALANT IS $\frac{1}{2}$ HOUR AFTER MIXING.

NOTE

WAX THE FUEL TANK FLOAT TO PREVENT IT FROM STICKING TO ANY SEALANT.

3. Apply a layer (approximately 1/16" thick), of the mixed sealant to the access cover mounting flange surfaces in the wing. Install the covers and wipe any excess sealant from the joints.

SEALANT CURING

1. Curing rate is 10 hours for the tank and access cover sealant, under standard conditions of 77 degrees F and 50% relative humidity. Application, tack free and cure time increase and decrease conversely with temperature. Low humidities increase tack free and cure times markedly.
2. The repaired area and the access cover sealant may be exposed to fuel and the aircraft returned to service, 10 hours after application of the sealant. This exposure to fuel and return to service is based on standard conditions of 77 degrees F and 50% relative humidity, throughout the 10 hours.

NOTE

THE PR-1422, CLASS B-½ TANK SEALANT MAY BE EXPOSED TO FUEL AFTER 10 HOURS AT STANDARD CONDITIONS OF 77 DEGREES F AND 50% RELATIVE HUMIDITY. THE 3C-200 CLASS B-½ ACCESS COVER SEALANT REQUIRES A CURE OF 10 HOURS AT STANDARD CONDITIONS, BEFORE BEING EXPOSED TO FUEL.

PRESSURE TESTING FUEL TANK

1. Plug vent line at outboard end.
2. To the fuel line leading from the sump to the fuel selector, attach a water manometer capable of measuring 20 inches of water.
3. To the quick drain, connect a well regulated supply of air (½ PSI MAXIMUM OR 13.8 INCHES OF WATER). Nitrogen may be used where the tank might be exposed to temperature changes while testing.
4. Insure filler cap is installed and sealed.

CAUTION

DO NOT ATTEMPT TO APPLY PRESSURE TO THE TANK WITHOUT A GOOD REGULATOR AND A POSITIVE SHUT OFF IN THE SUPPLY LINE. DO NOT PRESSURIZE THE FUEL TANK TO MORE THAN ½ PSI OR DAMAGE MAY OCCUR.

5. Apply pressure slowly until ½ PSI or 13.8 inches of water is obtained.

NOTE

TEMPERATURE CHANGES WILL AFFECT PRESSURE READINGS. BE SURE
TANK AND OUTSIDE AIR TEMPERATURES ARE EQUAL AND STABLE.

6. Allow time for pressure to stabilize.
7. Apply soap solution to any suspected leak areas and watch for bubbles.
8. If tank holds for 15 minutes, without pressure loss, tank is acceptable. If leakage does occur, make certain it has not been caused by a leaky fuel cap, fitting caps or vent line.
9. Reseal and retest if any leaks are found.

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NOTE: REVISION "A" INCORPORATED THE ADDITION OF 3C-200, CLASS B-2 SEALANT FOR
ACCESS COVERS.

NOTE: REVISION "B" CHANGES TANK AND COVER PART NUMBER FROM CLASS B-2 TO
CLASS B-½, REDUCES POT LIFE AND REVISES CURE TIMES.

NOTE: REVISION "C" ADDS PR-1422 SEALANT, DELETES EC-1675 SEALANT, REVISES CURE
TIMES AND EXPOSE TO FUEL TIMES.