Beech Aircraft Corporation

OVERHAUL SPECIFICATION

INDUCTION VIBRATORS - MODEL C-45G, C-45H, AND SNB-5

Overhaul Specification 3611

ISSUED April 22, 1953

REVISED March 4, 1954

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1. SCOPE

1.1 Purpose.- The purpose of this specification is to provide instructions for reconditioning and modifying VJR24B3, VJR24B3X, VJR24B5, VJR24B5X, VJR24C3, VJR24C5, VJR24C6, and 700703 induction vibrators for use on C-45G, C-45H, and SNB-5 aircraft.

1.2 Application.- All reconditioning operations and repairs covered by this specification may be accomplished where required without further authorization. Repairs not authorized by this specification cannot be performed without further authorization.

1.3 List of Pages and Revisions.- This specification consists of the pages listed below. An asterisk (*) denotes the pages revised by the current revision.

Page	Date	Description of Revision	Serial Effectivity
* 1	3-4-54	Record revision	Record change
2	8-5-53	To include SNB-5	Record change
* 3	3-4-54	Change Para. 3.1.2 to add VJR24C6 induction vibrator to parts to be reconditioned	Record change
4	8-5-53	To include SNB-5	Record change
5	8-5-53	To include SNB-5	Record change
6	8-5-53	To include SNB-5	Record change
7	8-5-53	To include SNB-5	Record change
8	8-5-53	To include SNB-5	Record change

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2. APPLICABLE PUBLICATIONS

2.1 Beech.-

08 7008 General Acceptable Quality Standards

2.2 Technical Orders.- Compliance with this specification constitutes compliance with the technical orders listed below.

03-5-2	Starting Vibrators - Types B3 and B5 (American Boesch), dated January 5, 1945
03-5-48	Starting Vibrators - Type 700703 (General Electric), dated January 9, 1950
03-5-75	Replacement of Type 7007 Starting Vibrator, dated May 19, 1945
03-5-81	Starting Vibrators, Models VJR24C3, VJR24C5, and VJR24C6, dated November 1, 1951

3. REQUIREMENTS

3.1 Parts Involved:

3.1.1 Parts Not Used.- None

3.1.2 Parts to be Reconditioned.- The following parts are to be reconditioned in accordance with the instructions contained herein. "Reconditioned" means the disassembly, cleaning, inspection and correction of discrepancies, repair and/or replacement of components, and modifications to incorporate changes in accordance with applicable engineering drawings to assure an operationally safe and serviceable aircraft.

VJR24B3	Induction vibrator
VJR24B3X	Induction vibrator
VJR24B5	Induction vibrator

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3.1.2 Parts to be Reconditioned.- (Continued)

VJR24B5X	Induction vibrator
VJR24B6X	Induction vibrator
VJR24C3	Induction vibrator
VJR24C5	Induction vibrator
VJR24C6	Induction vibrator
700703	Induction vibrator

NOTE: The B3 and C3 series have no radio interference eliminator.

3.1.3 Parts to be Supplied New.- None

3.2 Cause for Rejection.- The following specific conditions as well as damage or wear which cannot be corrected by one or more of the methods described herein is cause for rejection.

3.2.1 Starting Vibrator.-

(a) Cracked or worn housing.
(b) Loose stud and/or yokes.
(c) Worn or damaged threads of threaded parts.
(d) Damaged or loosely connected relay and vibrator coils.
(e) Cracked or worn mounting bushings.

3.2.1.1 Relay Armature Plate.-

(a) Broken, cracked or loose springs.

3.2.1.2 Vibrator Armature Plate and Contact Screw.-

(a) Broken, cracked or loose spring.
(b) Points badly worn, eroded, or showing evidence of excessive burning or transfer of metal.

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3.3 Reconditioning Operations.-

(a) Disassemble as follows:

(1) Remove top cover.

(2) Remove cables with washers, insulation glands, terminals and terminal nut assemblies on "MAG" and "IGN" switch outlets.

(3) Remove cable and terminal clip through positive terminal outlet.

(b) Before proceeding further with disassembly, test the unit as follows: (Reference Figure 1 of this specification)

(1) Connect a wire from "MAG" outlet on the vibrator to a standard 6-volt battery ignition coil and ground the other side of the coil.

(2) Connect a lead from the high-tension terminal of the coil to a spark gap having sharp points and set at 9 MM. Connect other side of spark gap to ground.

(3) Connect a wire from the positive side of a fully charged 12- or 24-volt storage battery through a single pole, single throw switch, and an ammeter having a range of 0 to 5 amperes, to the positive cable post in the induction vibrator. The negative side of the storage battery must be connected to ground.

(4) The vibrator should be well grounded during the testing operations. A suitable ground connected to one or all of the mounting bushings is sufficient.

(5) When the switch from the storage battery to the induction vibrator is closed, the vibrator must fire the 9 MM gap without missing and the ammeter reading must be between 2.6 and 3.1 amperes.

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3.3 Reconditioning Operations.- (Continued)

(c) If the vibrator passes the above test, further disassembly is discouraged. As the unit is not in use during flight and is used only to start the engine, and then only for a matter of seconds, very little, if any, wear will be in evidence. The contact points should not be misconstrued as being subjected to the same wear or needing the same attention as magneto contact points. A smoky appearance and evidence of contact arcing are normal and should not be considered of sufficient importance to require disassembly and cleaning. In very remote and extreme cases, after a very long period of use, it may become necessary to clean and adjust the points. However, if the unit passes the above test, it can be assumed that the points do not need cleaning and are in proper alignment.

(d) If the unit fails to pass the above test, then, and then only, the following disassembly instructions should be followed.

(1) Remove the contact screw with point.

(2) Remove the vibrator plate with point. Remove the small two-hole plate under hinged end of the armature plate.

(3) Remove the armature plate.

(e) No further disassembly of the unit should be attempted.

(f) Inspect parts for nonrepairable conditions.

(g) Repair as necessary as authorized in Paragraph 3.4 of this specification.

(h) Wash the contact point of the relay armature plate in trichlorethylene degreaser, and dry immediately with a blast of compressed air. Clean the stationary point on the relay yoke with a carbon tetrachloride dampened rag, being careful that drops of the fluid do not fall into the vibrator, and dry immediately with a blast of compressed air.

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3.3 Reconditioning Operations.- (Continued)

(i) Make adjustments and reassemble as follows:

(1) Replace the relay armature plate. Align the points.

(2) Adjust the relay point opening. This must be .015 to .020 with the relay armature plate resting flatly against both arms.

(3) Replace the vibrator armature plate with contact point.

(4) Replace supporting plate.

(5) Replace contact screw. Tighten down until vibrator points just touch. Align points.

(j) Test and adjust as outlined in Paragraph 3.5 of this specification.

3.4 Authorized Repairs.-

(a) If only slight transfer of metal has taken place at the contact points, the peaks may be removed with a fine dressing stone. Wash the points with carbon tetrachloride and dry with a blast of compressed air.

3.5 Test Procedure:

3.5.1 Electrical Testing Equipment.-

(a) The test stand on which the electrical test is made must ground the vibrator housing. The test stand should consist of a fully charged 12- or 24-volt storage battery, 20 to 30-ohm potentiometer rheostat with a current carrying capacity of approximately 1 ampere, 0-5 scale ammeter, 0 to 15 or 0 to 30 scale voltmeter, 6-volt battery ignition coil, adjustable spark gap and a double-pole, double-throw switch.

(b) The equipment above should be wired as shown in Figure 2 of this specification.

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3.5.2 Testing Voltage and Adjusting Cut-in Point.-

(a) With switch in position marked "1" in Figure 2, drop voltage by means of potentiometer to nearly zero and then gradually increase voltage and note the point of cut-in, or volts at which the relay points close. If other than 8 to 10 volts, turn the relay armature plate tension adjusting nut or in extreme cases, change relay contact point opening within limits, to obtain the proper cut-in point.

(b) If the proper cut-in point cannot be obtained by the above methods, replace the complete unit.

3.5.3 Testing and adjusting Amperage.-

(a) Throw the switch to the position marked "2" in Figure 2, and note ammeter reading. If other than 2.6 to 3.1 amperes, adjust both vibrator and tension arms evenly until proper ammeter readings are obtained. After this adjustment, the unit must fire the 9 MM gap without missing.

(b) If the proper adjustments and readings cannot be obtained by the above methods, replace the complete unit.

(c) If proper adjustments and readings have been obtained, the unit is now ready to be installed.

3.6 Storage.- In cases where the unit is not to be reinstalled, but is to be stored for future use, install top cover with top cover gasket after thorough inspection. If gasket is worn or badly compressed, replace with a new aluminum gasket. Do not shellac aluminum gasket to top cover. Outlets must be plugged or capped to prevent moisture or foreign material from getting into the vibrator. Wrap the unit in water-proof paper and store in a dry location.

4. INSPECTION

4.1 General.- The parts will be inspected to the general acceptable quality standards of OS 7008.

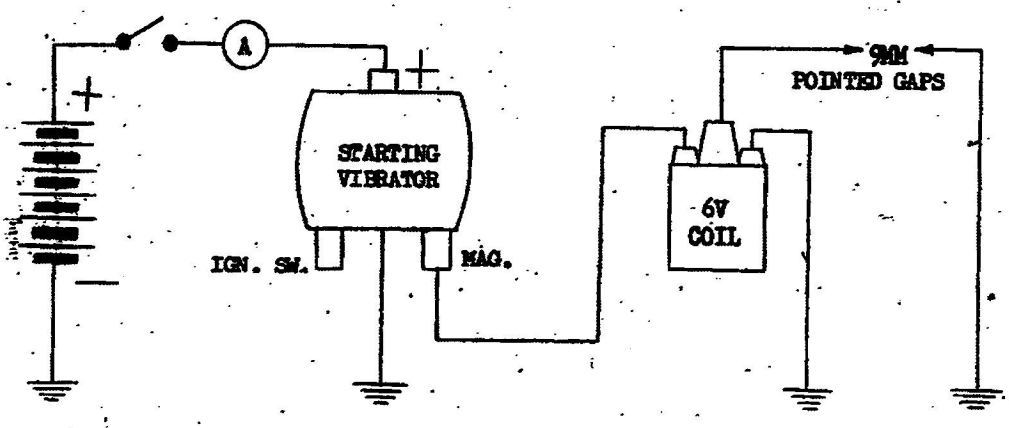

FIGURE 1 - WIRING DIAGRAM - PRE-DISASSEMBLY TEST

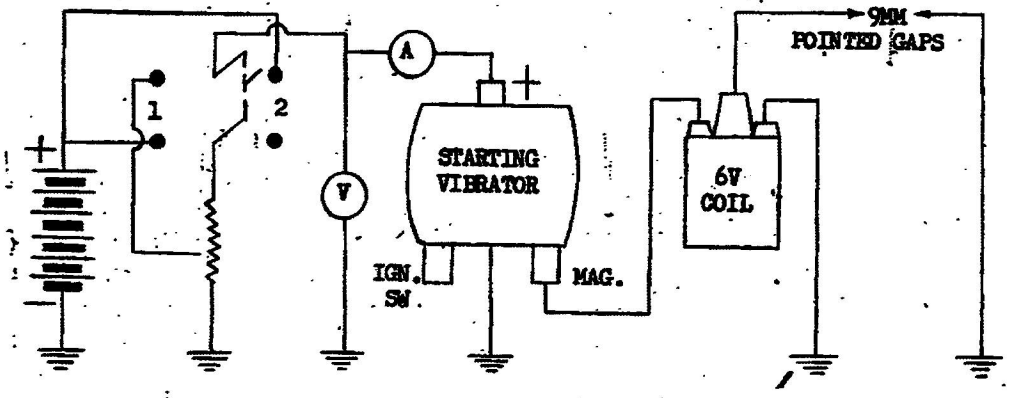

FIGURE 2 - WIRING DIAGRAM - TEST AT OVERHAUL

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