

331-TYPE TELEPHONE SET

INSTALLATION AND MAINTENANCE

1.00 GENERAL

1.01 This section covers the installation and maintenance of the 331A telephone set primarily intended for use by radio broadcasting companies in supervising connections at pickup points which are remote from the broadcasting station or at other control points. This is a portable-type set employing local battery talking and hand generator signaling. It may also be used for private-line service. Information relating to the use of 52-B head telephone set in lieu of the F3B-3 handset, with which the 331A telephone set is normally equipped, is also contained in this section.

1.02 This section is reissued to change the type of crank used with the 331-type telephone set.

1.03 Sections dealing with description, connections, and component parts of these sets should be consulted for information pertinent to the installation and maintenance procedures covered herein.

2.00 INSTALLATION

2.01 In selecting a location for the portable 331-type telephone set, be guided primarily by the wishes of the customer and any specific instructions included in the service order.

2.02 Upper Compartment: For access, unlock the housing loop catch. Place indicator in a location where the best visibility from all points of vantage may be obtained. Insert handset plug into jack mounting. If head telephone set is provided in place of the handset, connect plug accordingly.

2.03 Lower Compartment: For access, turn winged catch located in rear center of shelf counter-clockwise and rotate hinged shelf and hinged front plate toward front of set. Remove fiber tube from battery holder and insert two 1-1/2-volt dry cells connected in series (total 3 volts). Install fiber tube and dry cells in battery holder. Locate biasing spring of ringer in center notch. Close lower compartment and lock hinged shelf.

2.04 Remove hand-generator crank from clip on inside surface of front cover and install on generator shaft.

2.05 Line connections are usually made by connecting the line conductors to the binding posts located on the shelf in the upper compartment. Where line receptacles are provided, insert the 3-prong plug of the jacketed line cord into the corresponding line receptacle.

2.06 A number card holder is provided on the top of the housing into which a rectangular number card 2-1/8 by 1-9/16 inches may be inserted. The number card may be obtained locally and should be installed in accordance with local instructions.

3.00 MAINTENANCE

3.01 The following is a list of replaceable parts for 331-type telephone sets. The telephone set may be replaced as a unit if any parts not included in this list are in need of replacement.

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ORDERING INFORMATION AND DESCRIPTION

Assembly	P-470771, FOOT ASSEMBLY.
Battery	BATTERY, KS-6522. (2 required).
Block	BLOCK, CONNECTING, 11A.
Bushing	BUSHING, RELIEF, STRAIN, HEYMAN MFG. CO. SR No. 5. For use in anchoring indicator cord to metal shelf. BUSHING, RELIEF, STRAIN, HEYMAN MFG. CO. SR No. 6. For use in anchoring SV5300 cord to metal shelf.

INDEX	ORDERING INFORMATION AND DESCRIPTION
Cap	CAP, GRIP, CORD, HARVEY HUBBELL INC. No. 9750.
Capacitor	CAPACITOR, 195A.
Coil	COIL, INDUCTION, 104A.
Cord	CORD, D3AY. 5 feet x 6 inches. For connecting 21B-3 indicator to set terminals (cut off yellow lead at both ends of cord). CORD, WHITNEY BLAKE CO. SV5300. 15 feet. For use with No. 9750 cap.
Crank	CRANK, P-10E190.
Generator	GENERATOR, HAND, KS-13766.
Indicator	INDICATOR, 21B-3.
Jack	JACK, 215A. JACK, 223A.
Mounting	MOUNTING, JACK, 215B.
Nut	P-125952, NUT. Hexagonal nut used as locknut for P-125043, P-174581, P-174583 screws and No. 7909 binding post. P-250003, NUT. Hexagonal nut used as locknut for P-174582 screw in mounting 11A connecting block.
Post	POST, BINDING, H. H. EBY INC. No. 7909.
Ringer	RINGER, B1AL (LESS GONGS).
Screw	P-125043, SCREW. RHM screw for mounting 104A induction coil, 215A and 223A jacks. P-174579, SCREW. Special head screw for mounting KS-13766 hand generator. P-174580, SCREW. Special head screw for fastening 195A capacitor clamp. P-174581, SCREW. Special head screw for mounting 215B jack mounting. P-174582, SCREW. Special head screw for mounting 11A mounting block. P-174583, SCREW. Special head screw for mounting B1AL ringer. P-205652, SCREW. RHM screw for mounting P-470771 foot assembly.
Set	SET, HAND, F3B-3. Complete assembly including 12-foot, 4-conductor cord, and 289B plug.

INDEX	ORDERING INFORMATION AND DESCRIPTION
Set (contd)	SET, TELEPHONE HEAD, 52B. Complete assembly including 10-foot, 4-conductor cord, 289B plug, KS-8010 switch, and 29A connecting block.
Switch	SWITCH, CUTLER HAMMER, No. 8280-K14. SPST switch with No. 828-228-F3 designation plate for use as ringer cutoff switch.
Terminal	P-95912, TERMINAL. For use on the No. 7909 binding post between the P-284188 washer and the P-283716 washer.
Tube	P-340432, BATTERY TUBE.
Varistor	VARISTOR, 37A.
Washer	P-242132, LOCKWASHER. For use with screws in mounting the 11A connecting block and P-470771 foot assembly.
	P-283716, LOCKWASHER. For use with screws in mounting the 104A induction coil, 215B jack mounting, B1AL ringer, and the No. 7909 binding post.
	P-284188, WASHER. For use on the No. 7909 binding post between the P-34902 washer and P-95912 terminal.
	P-34902, WASHER. For use on the No. 7909 binding post between the metal shelf and the P-284188 washer.
	P-42A014, LOCKWASHER. For use with screws in mounting the KS-13766 hand generator.

HANDSET

3.02 The F3B-3 handset shall be serviced in accordance with Section C32.275, Handset, Maintenance, except that repairs or adjustment of push-button contact springs shall not be made in the field. Handsets having defective springs or requiring adjustment shall be replaced by an equivalent handset.

HEADSET

3.03 The 52B head telephone set when used with the 331-type telephone set shall be serviced in accordance with the B203 series, except that repairs or adjustment of the KS-8010 switch should not be made in the field. If the switch sticks or fails to operate properly, replace the switch.

BATTERY HOLDER

3.04 When batteries are removed, battery contact springs shall be depressed a minimum 1/4 inch closer to each other than when the batteries are installed. Gauge visually.

3.05 Battery tube springs should have sufficient tension to hold the tube and batteries firmly in place. Adjust as required.

HAND GENERATOR

3.06 The automatic cutout should positively open and close the contacts when the handle is rocked back and forth to the point where the armature just starts to turn. If the cutout fails to operate properly, correct this condition when possible by adjustment of the contact springs or lubrication of the moving parts with a small amount of oil per KS-6232. The oil may be applied with a toothpick. If the contact springs require adjustment, adjust these as necessary with a No. 466A tool or equivalent without making a visible kink in the springs. In the unoperated position, the force of the transfer springs fiber crosslink, against the end of the generator shaft, shall be maximum 60 grams. Use 68B gram or equivalent. It is permissible, however, for the crosslink to clear the end of the shaft by as much as 1/32 inch. Gauge visually. Contact follow between the contact springs and transfer springs should be approximately 1/32 inch. Gauge visually.

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3.07 When operating the hand generator, if there is a tendency of the shaft to stick or turn hard due to lack of lubrication, apply a small amount of KS-6232 oil with a toothpick to the gears and shaft bearings. If generator still turns hard, it may be due to poor insulation of the bushings in the spring pile-up or partial short circuit in the armature. If the generator turns freely but no ringing current is applied to the line binding posts, spring adjustment may be faulty or armature winding open. Replace generator if armature is defective.

Note: Hand generators bearing the designation B in rek ink above the KS number have their bearings, cam surfaces, and gears lubricated at the factory with KS-14774, List 2 lubricating grease.

RINGER AND CUTOFF SWITCH

3.08 The B1AL ringer should be adjusted as outlined in the Section C31.205, Ringers and Loud Ringing Bells, Tests and Adjustments for B-type Ringers, except that the biasing spring should be placed in the center notch.

3.09 If ringer cutoff switch sticks or fails to operate properly, replace the switch.

INDUCTION COIL

3.10 The 104A induction coil may be replaced by removing the right-hand mounting screw, lock-washer, and nut, and sliding the coil away from the other mounting screw.

CAPACITOR

3.11 The 195A capacitor may be replaced by removing the left-hand mounting screw and slid-

ing the capacitor, which is mounted under the clamp, toward the rear of the set.

JACKS

3.12 The 215A and 223A jacks should require little or no maintenance. However, if the contacts of the 215A jack become dirty, they should be burnished with a 265C tool or equivalent.

INDICATOR

3.13 The 21B-3 indicator should be serviced in accordance with Section C54.311, Indicators, Description and Installation.

FEET

3.14 Feet, or friction pads if present, should not be cut, worn, or have foreign matter imbedded in them to an extent which might scratch the surfaces on which the set is placed. If necessary, the feet may be cleaned by rubbing briskly with a piece of cloth or a stiff bristle brush.

3.15 Feet that do not meet the requirements in 3.14 should be equipped with triangular friction pad KS-8035. If the set is already equipped with friction pads which do not meet specified requirements, they should be replaced with new friction pads.

STATION TESTING

3.16 After replacing defective equipment or otherwise correcting troubles, make ringing and talking tests with other stations in accordance with local practice.