

LORDEL LM-625 SPECIALTY TELEPHONE SET KIT
INSTALLATION AND MAINTENANCE

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1. GENERAL

1.01 This Section provides installation and maintenance instructions covering the LM-625 kit of parts for functional activation of decorator, custom and antique reproduction telephone set housings which are identified as conforming to B.T.L. drawing B-696501. Such housings are sold to the public in retail stores and remain the property and maintenance responsibility of the customer. The LM-625 kit is installed in the housing at the customer's premises, connected to his line for service, and remains the property and maintenance responsibility of the telephone company.

1.02 If a customer offers for functional activation a decorator, custom, antique or antique reproduction telephone set housing which is not identified as conforming to B.T.L. drawing B-696501, or which has been equipped with a kit of functional components of other than Lordel manufacture, or which was built as a complete functional telephone set, the housing or set must be turned in to the telephone instrument repair shop for evaluation. In such cases, explain to the customer that installation of General System standard components in his housing by shop personnel, if found to be practicable, may involve a higher charge, in accordance with locally applicable tariffs, than installation of the LM-625 kit in a conforming housing on the customer's premises. If the customer then authorizes evaluation of his housing or set by the instrument repair shop, follow local procedures in issuing an appropriate receipt for the property to be removed.

1.03 The illustrations in this section show installation of the LM-625 kit in a Model US-4 antique reproduction housing manufactured in Japan for the United States Telephone Company. The kit was designed to function with this housing, but on the basis of the dimensions specified in B.T.L. drawing B-696501, it is expected to function properly with any other housing conforming thereto.

See
Addendum

2. PRECAUTIONS

2.01 Although the customer is responsible for any maintenance or repair required by his housing subsequent to installation, the telephone company and its employees are responsible for any damage done to the housing during installation of the components kit. To minimize the possibility of such damage, proper tools must be used to disassemble and reassemble the housing and handset. For example, the Model US-4 housing requires the following items in addition to those used for normal installation:

- (a) a thin-bladed screw driver not more than $\frac{3}{16}$ " wide
- (b) a $\frac{5}{16}$ " hex nut driver
- (c) a $\frac{3}{8}$ " hex nut driver (the $\frac{3}{8}$ " end of a protector terminal wrench will be satisfactory if new or free from burrs and worn edges).

2.02 The transmission network provided in the LM-625 kit is not designed to operate with the transmitter required by the dimensions of the decorator handset. Do not install the kit at a station in the inner half of transmission zone 3 without authorization and instructions from the transmission engineer.

3. INSTALLATION

Preparation

3.01 The Model US-4 housing, as purchased by the customer, simulates the appearance of a functional instrument by means of a dummy dial and dummy handset cord. Lift the handset from the cradle and set it aside. Using a $\frac{5}{16}$ " nut driver, carefully loosen the two decorative cap screws which fasten the housing to its base. Take

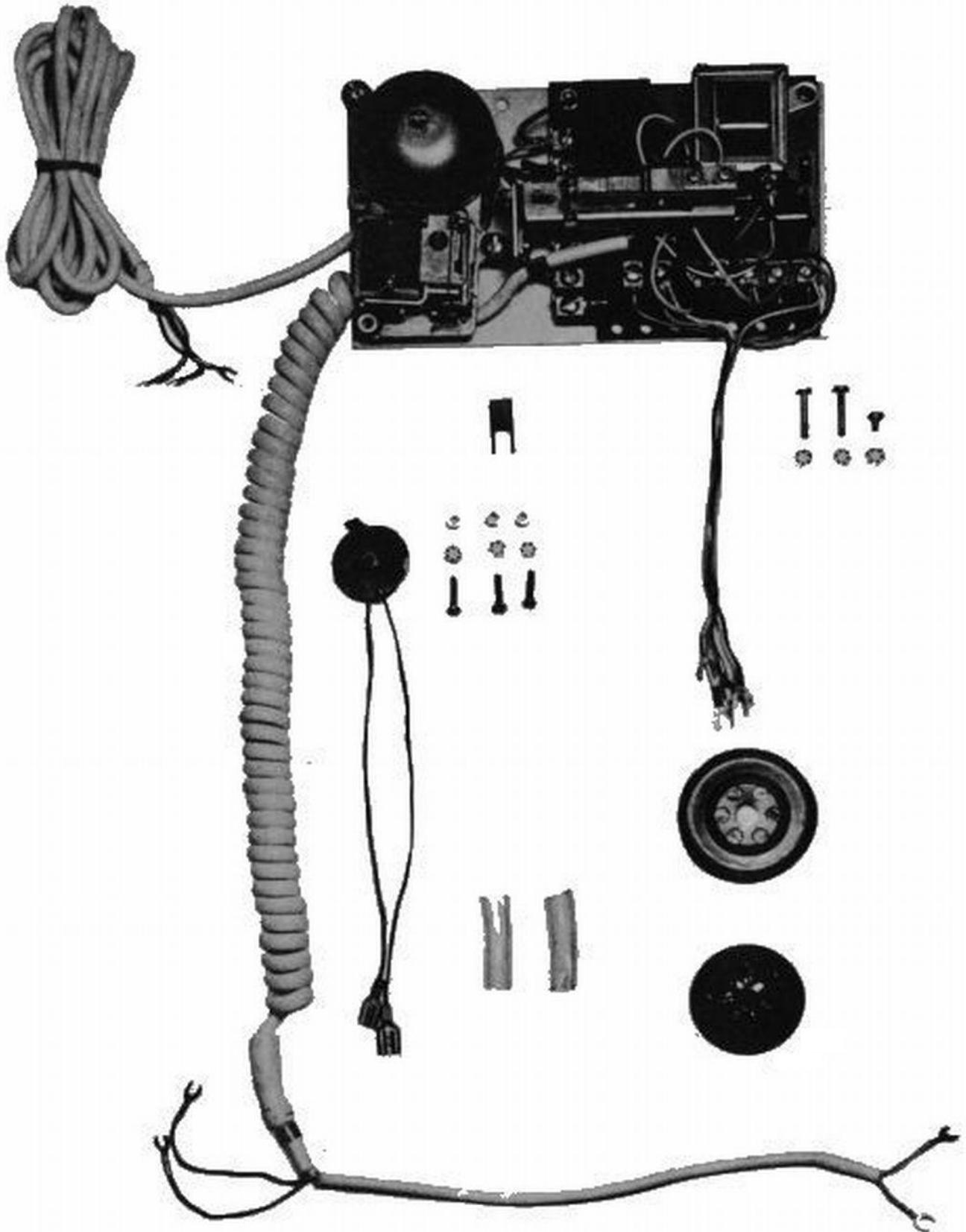


Figure 1. Components of LM-625 Specialty Telephone Set Kit.

great care to avoid scratching the housing or damaging the screw heads. Lift the housing clear of the base and disengage the dummy cord from its slot.

3.02 Using a thin-bladed screw driver, carefully loosen the strain relief retention screw on the rear of the handset at the cord entry point. Grasp the simulated strain relief grommet of the dummy cord and pull it free of the handset.

3.03 Using a thin-bladed screw driver, carefully loosen the three screws which support the dial bracket in the dial cup. Remove the screws and set them aside for re-use. Lift the dummy dial and dial bracket out of the dial cup. Remove the three screws which hold the dial bracket onto the dummy dial and set the bracket aside for re-use. Unless the

decorator housing lacks a rectangular number strip escutcheon, or the dial to be installed with the kit is equipped with the current, one-piece acrylic fingerwheel, carefully remove the card escutcheon from the dummy dial, lift the decorative card from the escutcheon, and set the card aside for re-use.

3.04 Re-install the empty escutcheon on the dummy dial, replace the bracket-mounting screws in the three legs of the dummy dial, and return the dummy cord and dummy dial to the customer.

Housing-Enclosed Components

3.05 All components of the kit which are to be enclosed within the decorator housing are pre-mounted and pre-wired on a steel base (see Figure 1). This assembly presently consists of a WA-1120-

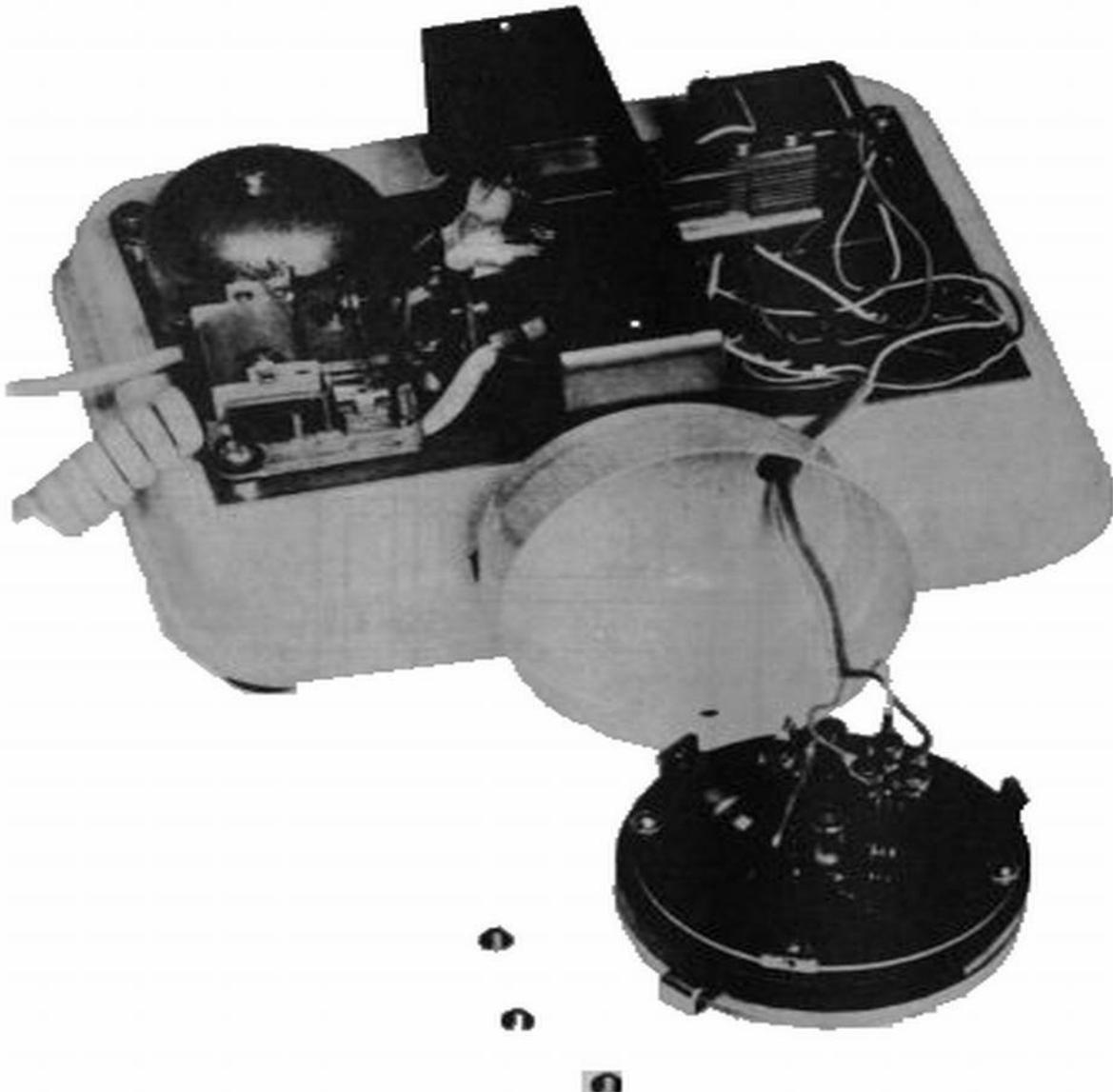


Figure 2. LM-625 Kit Components Installed on Base of Decorator Telephone Set.

A printed-circuit board transmission network, a styrene insulator on which it is mounted, a Type 46 straight line ringer and associated capacitor, and a bracket-mounted hookswitch assembly similar to that used in the Type 183 suspension telephone set. Line and handset cords enter the assembly at the left, and a dial cord assembly protrudes from the right front.

NOTE: Kits from the first production run used the WA-1063-A network.

3.06 Pass the line and handset cords under the housing support bracket mounted on the decorator set base, and set the kit in place, insert-

ing it from right to left, ringer end first (see Figure 2). Since the acrylic dust shield on the hookswitch assembly is a close fit under the support bracket, be sure that nothing protrudes above the shield. Align the kit plate so its three mounting holes coincide with three of the four tapped holes in the base. Place a lock washer on the 4-40 x 3/16" screw furnished in the kit, insert it in the plate mounting hole adjacent to the ringer gong, and screw it into the base. Place a lock washer on each of the two 4-40 x 5/8" screws furnished, and insert them into the mounting holes at the left front and right rear of the plate. The screw at the left front corner also serves to hold down the ringer, while the one at the right rear corner fastens the network and its insu-

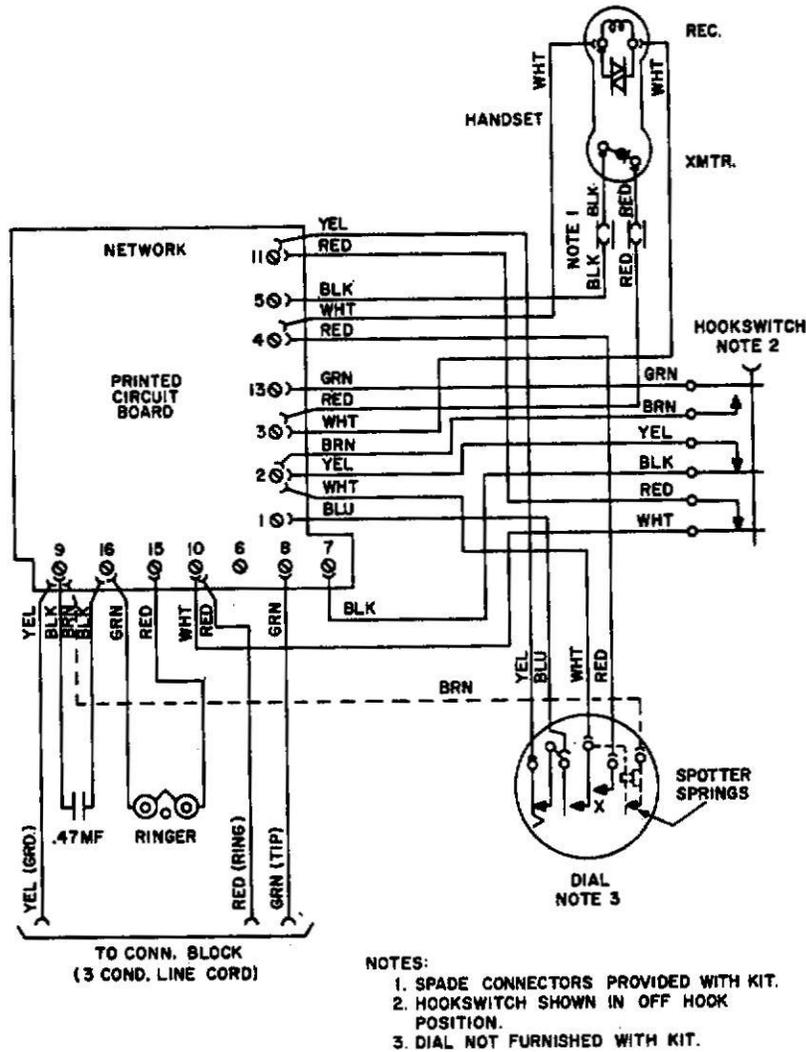


Figure 3. Wiring Diagram of Specialty Telephone Set Equipped With LM-625 Kit.

lator, as well as the plate. Tighten all three screws snugly and feed the dial lead assembly through the hole in the rear of the dial cup.

Dial

3.07 The standard dial expected to be offered with decorator set service in General System areas is a Type 51A, equipped with a metropolitan number plate and an acrylic fingerwheel. However, when a customer has previously been furnished service in the same decorator housing at a previous location in a different operating area, he may be accustomed to a fingerwheel which matches the metal plating of his handset and cradle. To allow flexibility in dial supply, this item is not furnished as part of the kit, but must be added from local stocks. This store of rehabilitated units may include some equipped with D-78540-K or D-780649-E lacquered brass fingerwheels, D-78540-L or D-780649-C polished chrome plated fingerwheels, and D-780697-A acrylic fingerwheels, in addition to the current standard D-780896-A one-piece acrylic fingerwheel. Since the earlier D-780697-A acrylic fingerwheel can only be furnished with a chrome plated escutcheon ring, it should not be used on a decorator set which has a brass handset and cradle.

3.08 Set the dial, fingerwheel side down, on a flat surface covered by a suitable pad to protect against scratching. Lay the three tubular aluminum spacers on the dial base, one above each of the mounting holes, and rest the mounting bracket removed from the dummy dial atop the spacers. Place a lock washer on each of the three 4-36 x $\frac{3}{8}$ " screws furnished in the kit and insert them into the dial mounting holes to retain the bracket and spacers.

3.09 Gently try inserting the dial base into the dial cup. In some cases, depending on age, finish and tolerance, this may be a rather snug fit. If so, burnish the inner rim of the cup with fine emery cloth, and wipe the cup carefully to remove all abrasive and metal dust. In extreme cases it may be necessary to provide dials on a selective-fit basis.

3.10 After verifying that the dial will fit into the cup, connect the dial leads as shown in Figure 3. When terminating the white lead, bend the shank of the spade terminal perpendicular to the dial base, so that it will clear the side of the mounting cup. If an SATT identity dial is required, add a brown lead from the spotter contact terminal and connect it to network terminal 9.

3.11 Align the dial above the cup, rotating it to the proper position with a minimum of lead twisting, and slide the base into the cup. Using a thin-

bladed screw driver, install the three burnished-head screws which support the bracket and dial within the cup.

Handset

3.12 Using a thin-bladed screw driver, loosen the three screws which fasten together the two sections of what, in a genuine antique set, would be the transmitter housing. Rotate the outer section counter-clockwise a few degrees to the end of the retaining slots and pull it free. The white styrene simulated mouthpiece, which in a genuine antique set would have an open outer end of a slightly smaller diameter, serves as the transmitter cavity in the decorator reproduction and is provided with a threaded, perforated transmitter cap. The simulated transmitter housing will be used in the decorator set to contain spliced connections between the handset cord conductors and extender leads required to reach the transmitter unit (see Figure 4).

3.13 Using a $\frac{3}{8}$ " nut driver, carefully remove the two threaded caps which provide access to the tubular cord channel at the rear of the transmitter and receiver housings. Insert a length of suitably stiff wire into the opening thus provided at the receiver end, and run it through the tubular channel in the handset handle, past the access opening at the rear of the transmitter housing, and out the cord entry opening. Using this as a fish wire, begin drawing the two white receiver conductors of the handset cord into the tubular channel. As the strain relief grommet approaches the cord entry opening, insert the red and black transmitter conductors into the channel, draw them out at the access opening, and reinsert them through that opening into the transmitter housing. Draw the fish wire out the other access opening, pulling the receiver conductors through until the strain relief grommet is fully inside the channel and across the access opening at the transmitter end.

3.14 Using a thin-bladed screw driver, carefully remove the four screws which fasten the two sections of tubular channel to the handset handle, and telescope the channel sections into the handle to gain more slack in the cord conductors at the receiver end. Remove the receiver cap, push the receiver leads through the access opening into the receiver housing, and terminate them on the receiver unit furnished in the kit. Because of the shortness of the leads, it may be necessary to tilt the receiver unit part way into the housing in order to terminate the second lead.

3.15 Withdraw the receiver unit, align it properly with the housing, and reinsert it while taking

up the slack in the cord conductors. Replace the receiver cap, extend the channel sections from the handset handle to their normal position, and reinstall the four screws which retain them. Draw the cord strain relief grommet out of the channel until the crimped portion lies about a quarter inch in from the end, rotate the grommet in the opening so that the axis of the cord coils will be vertical when the handset is resting in its cradle, and tighten the strain relief retention screw on the rear of the channel. Using only the fingers, reinstall the threaded caps in the access openings. The thread is quite fine, and the length of the threaded portion quite short, so great care must be taken to avoid cross-threading. When the caps have been seated, *tighten them gently* with a $\frac{3}{8}$ " nut driver.

3.16 Remove the transmitter cap from the simulated mouthpiece, and the lengths of clear tubing from the leads of the transmitter contact

clip (unless the tubing is separately packed). Insert the leads, one at a time, into the mouthpiece and through the opening at its neck. Snap the clip securely in place on the transmitter unit furnished in the kit, set the transmitter unit in place in the mouthpiece, and replace the transmitter cap.

3.17 Slip the lengths of clear tubing over the handset cord transmitter conductors, and seat the spade terminals of those conductors in the connectors of the correspondingly-colored leads from the transmitter contact clip. Using a pair of long, narrow-nose pliers to grasp the connector by its shank, force the tubing over each connector to insulate it. Coil the spliced leads inside the transmitter housing and reassemble the two sections of the housing, taking care not to pinch the leads in so doing. Rotate the outer section a few degrees to seat it in the retaining slots, and tighten the three retaining screws with a thin-bladed screw driver.

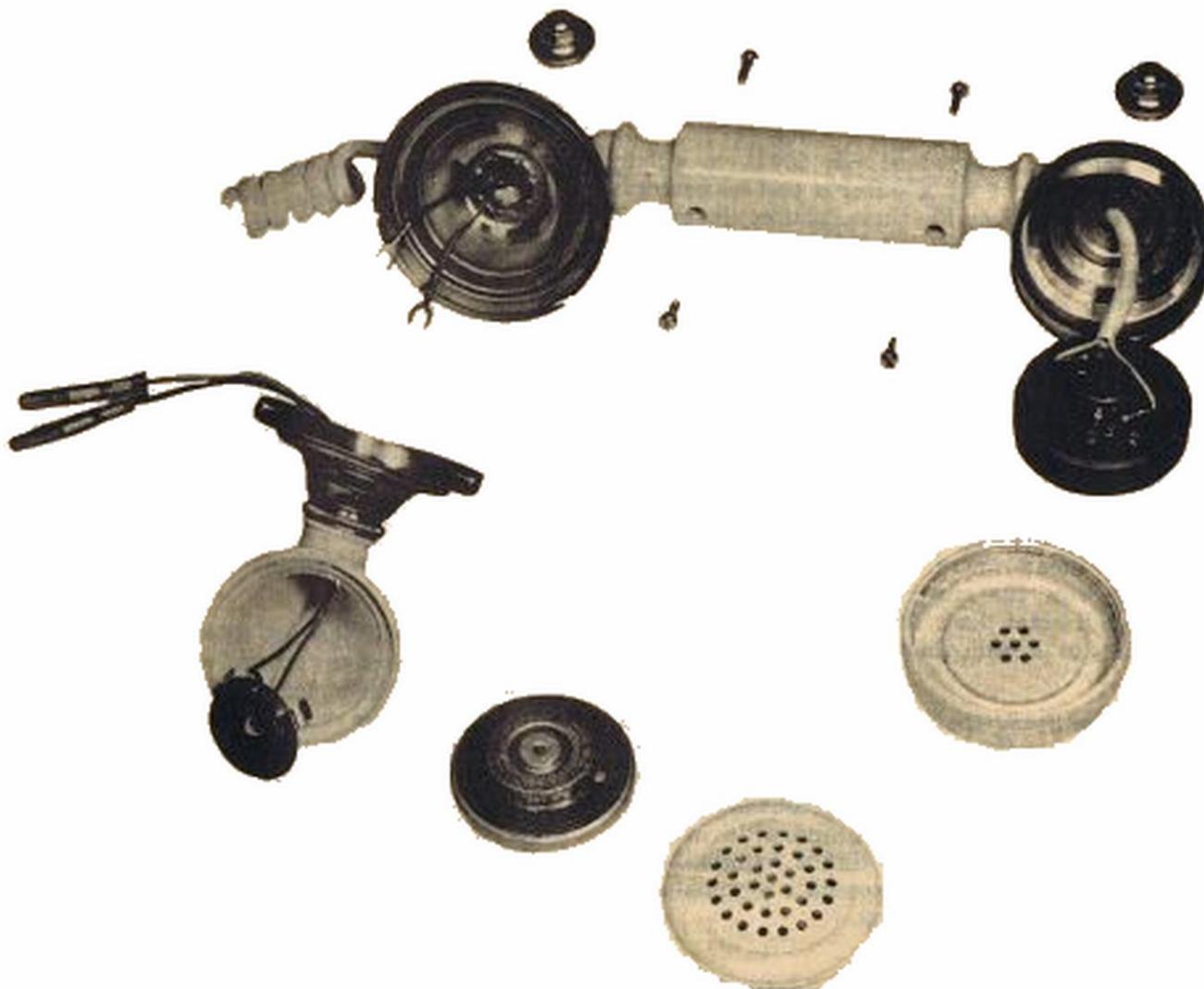


Figure 4. Installation of LM-625 Kit Components in Handset of Decorator Telephone Set.

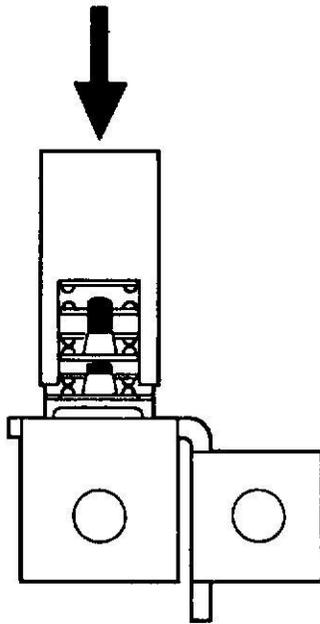


Figure 5. Hookswitch Actuation, LM-625 Kit.

Reassembly, Connections and Tests

3.18 Install the rectangular, glass fiber actuator block furnished in the kit over the hookswitch springs, so that the thin walls of its cut-out end fit between the springs and the walls of the acrylic shield, as shown in Figure 5.

NOTE: Kits from the first production run included a bushing turned from nylon rod, which is fitted over the hookswitch actuating plunger of the decorator housing. In some cases

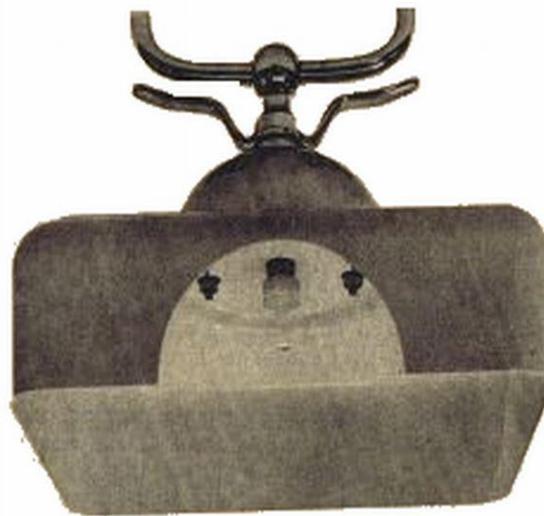


Figure 6. Installation of Hookswitch Actuating Bushing Supplied in Early LM-625 Kits.

this bushing is a very tight fit, while in others it may be necessary to use a piece of paper as a shim in order to ensure secure attachment (see Figure 6).

3.19 Terminate the line cord at the connecting block. With the cord conductors and station wire connected on a color-for-color basis, the set is wired as a ring party station. For tip party service, reverse the red and green line cord conductors at the connecting block. At a bridged-ringing station, connect the yellow line cord conductor together with the green conductor at terminal L2. At present the LM-625 kit is not arranged for tip party ANI service. For a schematic drawing, see Figure 7.

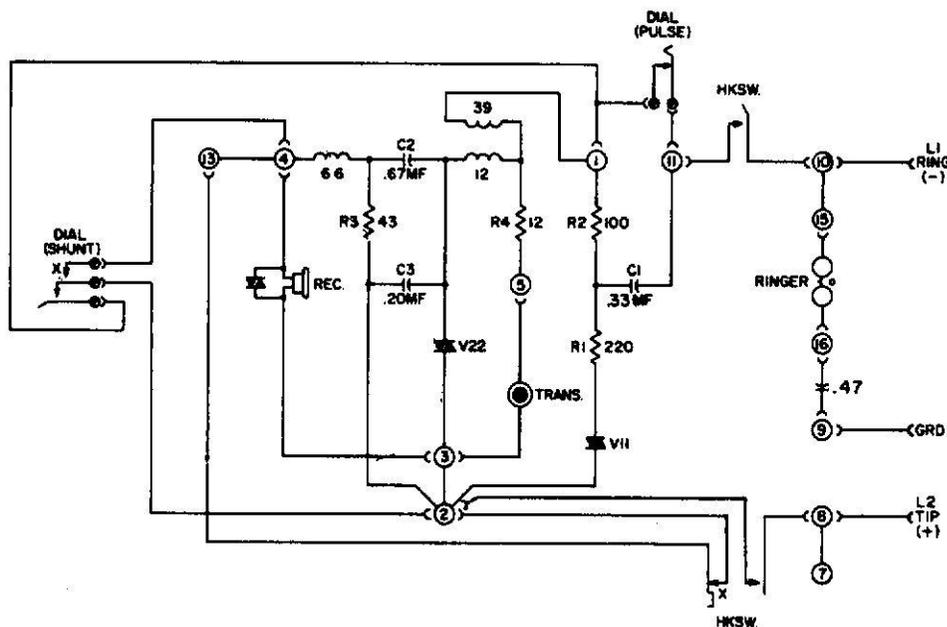


Figure 7. Schematic of Specialty Telephone Set Equipped With LM-625 Kit.

3.20 Place a call to the reverting call connector, testboard or operator for a ringer check. Depress the hookswitch actuator block and await the incoming ring from the central office. If necessary, adjust the ringer bias or gong position.

3.21 Position the handset cord above the line cord, midway along the left side of the base, and lower the housing into position so the cords enter the grommeted slot. Insert the two decorative cap screws which secure the housing to the base, finger tighten them, and seat them gently with a $\frac{1}{16}$ " nut driver. Place the handset on the cradle.

3.22 If the dial is equipped with the current, one-piece acrylic fingerwheel, remove the fingerwheel, insert the preprinted station number disc supplied for this installation (or imprint one to suit, if required), and replace the fingerwheel (see Figure 8). If the dial fingerwheel is an earlier type with a metal escutcheon, and the decorator set housing is equipped with a rectangular number strip escutcheon, select the preprinted Touch Calling style number strip supplied for this installation (or imprint one), and install it in the housing escutcheon, trimming one end to fit as required. Install the decorative disc removed from the dummy dial in the circular escutcheon on the fingerwheel. If the fingerwheel has a metal escutcheon and the decorator set housing has no strip escutcheon, install the station number disc in the fingerwheel escutcheon.

3.23 Make an operational test of the decorator set to verify proper hookswitch, handset and dial function. Using a soft cloth, wipe the decorator set free of finger marks, and leave the installation area clean and orderly.

4. MAINTENANCE

4.01 Company responsibility for maintenance of a decorator telephone set is limited to adjustment and replacement of components of the LM-625 kit. If, during a repair visit, the trouble is found to be caused by malfunction of the decorator housing, the decorator set should be disconnected and a standard black desk telephone instrument connected in its place. Advise the customer of the difficulty, so he may arrange for repair or adjustment of his housing before requesting reconnection of the decorator set. In such cases a set-change charge applies for both station visits.

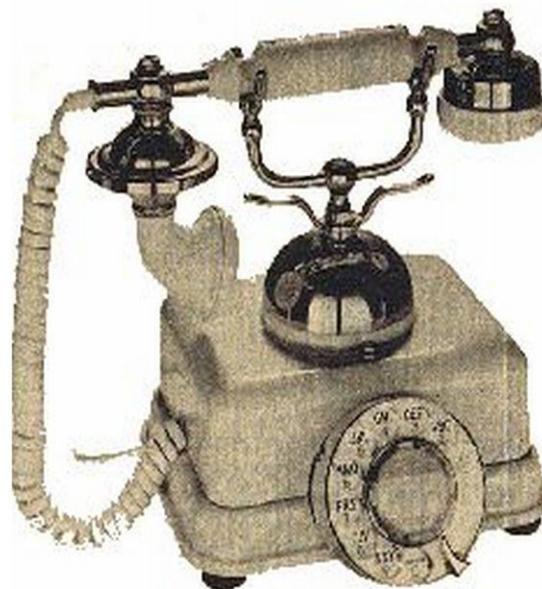


Figure 8. Model US-4 Decorator Telephone Set Housing, with LM-625 Kit Installed.

4.02 If trouble is found in the company-owned apparatus, it can usually be corrected by substitution of components, which are common items widely used on other telephone sets. The ringer, network and line cord are the same as those used on the Type 182A compact desk set, the dial is the same as that used on the Type 183 suspension set, the handset cord is the same as that used on 500-series sets, and the transmitter and receiver units are the same as those used on 100- and 500-series instruments. Line cord replacement will require that the kit plate be loosened from the decorator base to permit access to the network terminals.

4.03 If trouble is found to require replacement of the kit mounting plate, hookswitch, bracket or actuator, replace the housing-enclosed components with those from another LM-625 kit, if available. If no replacement kit is available, disconnect the decorator set and connect a suitable set of appropriate color in its place. Advise the customer that it will be necessary to remove his decorator set for a day or so in order to repair it, and follow local procedures in issuing him an appropriate receipt. Tag the defective set to indicate the nature of the defect and return it to the telephone instrument repair shop for replacement of the kit. In such cases, of course, the repair visit and return call are made at no charge to the customer.