

HOOKSWITCH DIALING INHIBITOR MODIFICATIONS FOR COIN TELEPHONE USE

1. GENERAL

1.01 This section provides description, installation, and operation information on the hookswitch dialing inhibitor. The hookswitch dialing inhibitor prevents free local calls from being made from hookswitch pulsing on prepay and local prepay coin telephone sets.

1.02 The inhibitor is required for all local prepay coin telephone sets and those prepay coin telephone sets that are served by central office equipment that does not contain coin detection circuitry for the restriction of dialing.

1.03 The hookswitch dialing inhibitor (KH-840401-A20A) is mounted on a printed wiring card that measures 1-13/16 inches by 1-5/8 inches. It can be added to all existing coin telephone sets and is easily attached because of its adhesive backing.

1.04 This section is reissued because of the extensive changes to the hookswitch inhibitor and to add information on installation in the single-slot coin telephone. Marginal arrows have been omitted because of these changes. Remove Issue 1 of this section from the binder and/or microfiche file and replace it with this issue.

2. DESCRIPTION

2.01 The hookswitch dialing inhibitor (Figure 1) stops the use of the hookswitch for dialing by providing a delay of 350 milliseconds (approximately) in reclosing the line after the hookswitch contacts are momentarily opened. This delay acts as a disconnect signal and causes release of the switching equipment.

2.02 When the calling party goes off-hook, an initial delay occurs; the inhibitor then turns on for as long as the hookswitch contacts remain closed. The inhibitor will not produce on turn-on delay due to dialing, or due to a break in line current caused by CO equipment during the progress of a call.

2.03 No delay is produced on a hookswitch flash under reverse battery conditions, preventing accidental release of the line on completed local calls to or from local prepay coin telephone sets. In prepay systems, reverse battery is not returned to the coin telephone set.

3. INSTALLATION

Mounting

3.01 To mount the hookswitch dialing inhibitor, proceed as follows:

- (a) Remove the upper housing of the coin telephone set (not necessary for multislot panel installations).
- (b) For multislot sets, the inhibitor mounts in the lower housing (Figure 2) alongside the coin relay. Orient the inhibitor to a vertical position so the large capacitor is at the top and the wire leads are at the top rear of the card. Remove the paper backing from the inhibitor and position the inhibitor against the right side and at the far rear of the coin relay mounting base. Press the inhibitor's card firmly against the surface until the adhesive adheres. For the multislot panel sets, mount the inhibitor on the inside surface of the panel (Figure 3). Orient the inhibitor with the large capacitor at the top and the wire leads at the top left of the card. Remove the paper backing from the inhibitor and position it directly below the hookswitch assembly. Press the card firmly against the surface until the adhesive adheres. For the single slot set, the inhibitor mounts in the upper housing (Figure 4). Orient the inhibitor to a vertical position with the large capacitor at the top and the wire leads at the top left of the card. Remove the paper backing and position the inhibitor on the vertical surface of the dial housing just above the terminal board and to the left of the hookswitch springs. Press the card firmly against the surface until the adhesive backing adheres.
- (c) Refer to Table 1 and make the proper connections.
- (d) Dress the wires so that excess length does not interfere with the function of other parts of the telephone set.
- (e) Replace the upper housing.

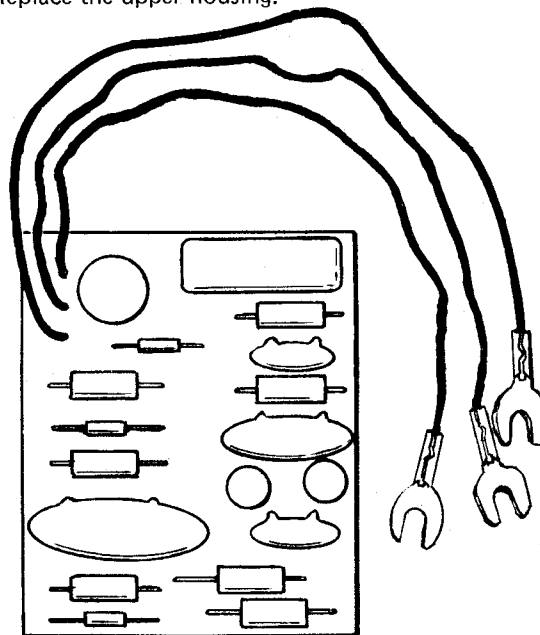


Figure 1. Hookswitch Dialing Inhibitor.

Testing

3.02 Verify that the inhibitor operates properly by trying to place a call by using the hookswitch. Momentary operation of the hookswitch should release the line and seize a new line.

4. OPERATION

4.01 In the on-hook condition capacitor C2, (Figure 5) is charged from the line through a path from the GRN (+) lead through resistors R1 and R4, capacitor C2, diode CR1 and resistor R5 to the BLK (-) lead.

4.02 In the off-hook condition, capacitor C2 discharges through the central office battery via a path through the hookswitch contacts, which bridge the RED and BLK leads, capacitor C2, and resistor R2 to the GRN lead.

4.03 As soon as capacitor C2 has discharged to zero, it starts charging in the opposite direction from the line through the hookswitch contacts and resistor R2. When capacitor C2 has charged sufficiently to raise the base voltage of transistor Q1 to approximately 0.7 volt, transistor Q1 turns on, which in turn turns on transistor Q2 firing silicon-controlled rectifier SCR1.

4.04 When silicon-controlled rectifier SCR1 fires, line current flows from the GRN lead through SCR1 to the RED lead. Capacitor C2 discharges through resistor R2 and silicon controlled rectifier SCR1 (approximately 0.8 volt). The base voltage of transistor Q1 falls below 0.7 volt and Q1 turns off, turning off transistor Q2. Varistor VR1 protects the circuitry against line surges while diode CR3 protects against reverse battery and also provides a nondelay path during reverse battery conditions.

4.05 A hookswitch flash (momentary opening and re-closing of the contacts) removes the minimum holding current from silicon controlled rectifier SCR1 and it turns off. During the open period of the hookswitch contacts, capacitor C2 discharges through the line to central office battery by a path from the GRN lead through resistors R1 and R4, a capacitor C2, diode CR1, and resistor R5 to the BLK lead. (If the hookswitch contacts are open long enough, capacitor C2 will charge in the opposite direction as described in paragraph 4.01. It will discharge upon re-closure of the hookswitch contacts, causing capacitor C2 to charge in the same manner described in paragraph 4.03, creating a time delay in turning on silicon-controlled rectifier SCR1 sufficiently to cause release of the switching equipment and reseizure of a new line.

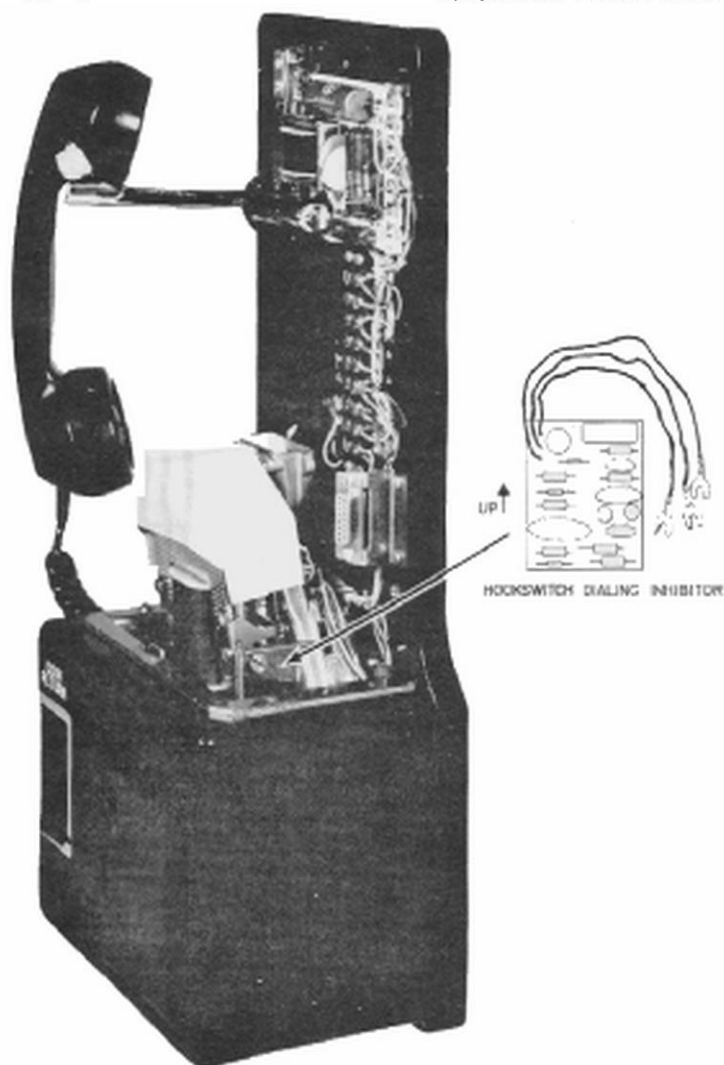


Figure 2. Inhibitor Installation in Multislot Set.

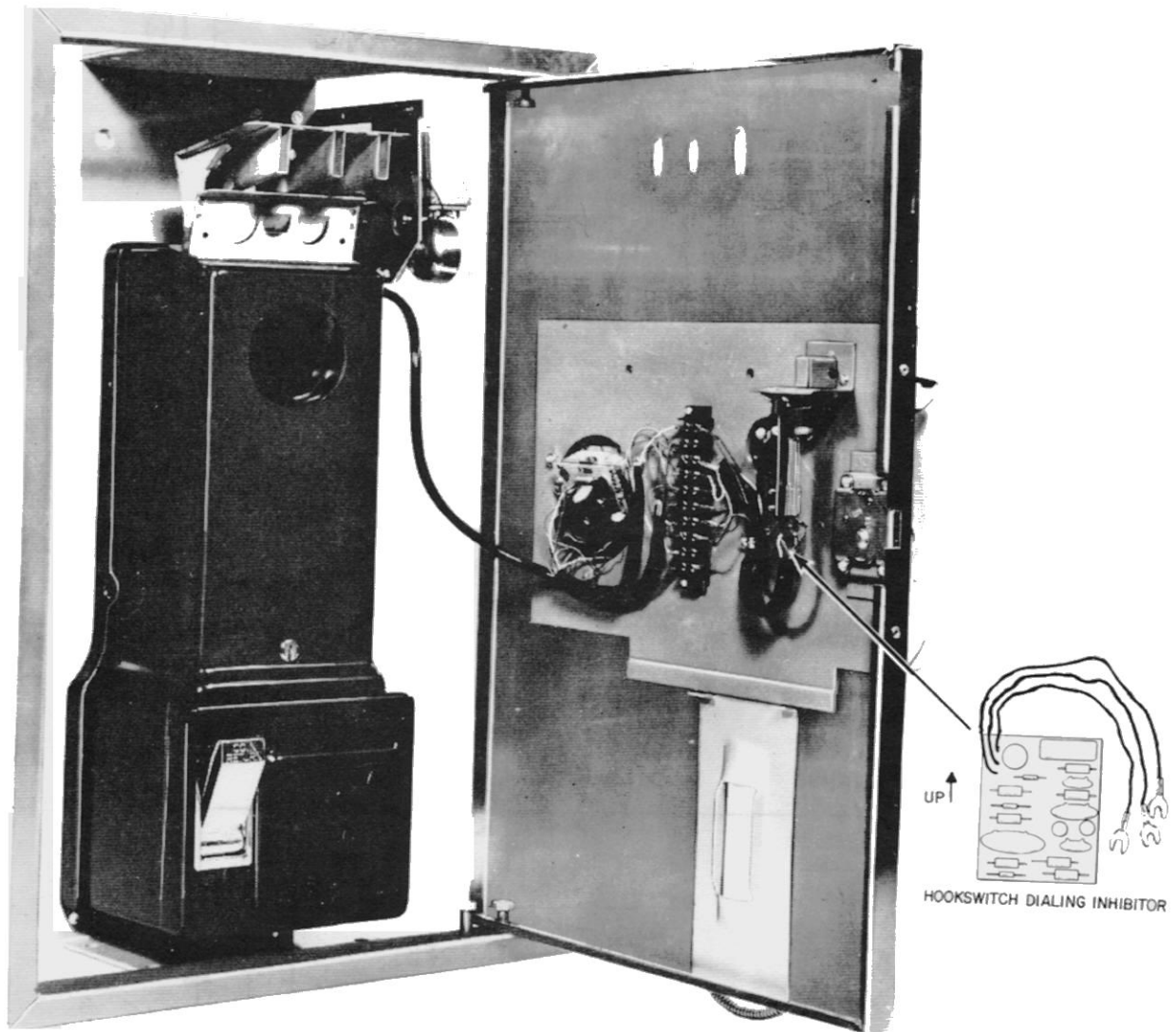


Figure 3. Inhibitor Installation in Multislot Panel Set.

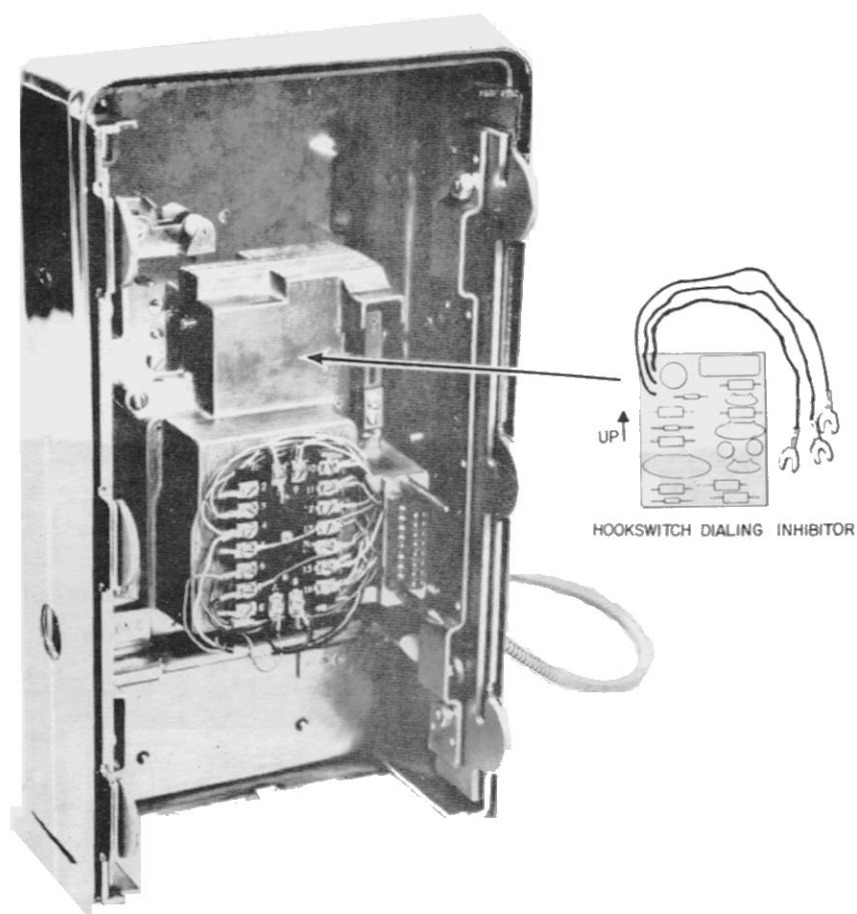


Figure 4. Inhibitor Installation in Single Slot Set.

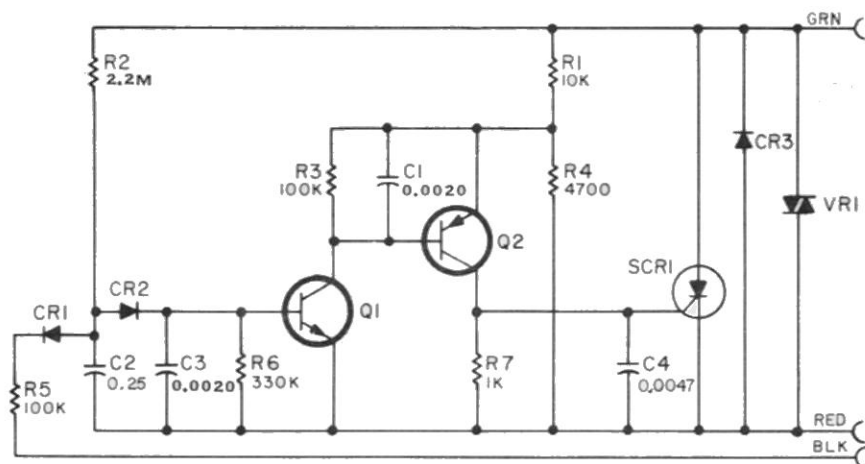


Figure 5. Hookswitch Dialing Inhibitor Circuit.

Table 1. Hookswitch Dialing Inhibitor Connections.

TELEPHONE SERIES	CONNECT INHIBITOR LEADS		
	RED to:	GRN to:	BLK to:
LPA-82	Cut BLK hookswitch lead at terminal block spring 5 and splice to RED inhibitor lead.	GRN lead at coin relay break contact.	Induction coil terminal 6.
LPA-89	Remove BLU hookswitch lead from L1 and connect to RED inhibitor lead with spade connector.	L1	WHT and BLK leads at coin relay made contact.
LPB-82 -89	Remove GRN hookswitch lead from induction coil terminal 1 and connect to RED inhibitor lead with spade connector.	Induction coil terminal 1.	L1
LPB-82 T/C Field Conversion	Cut GRN hookswitch lead at terminal block spring 3 and splice to RED inhibitor lead.	C	L1
LPB-89 T/C Field Conversion	Cut BLK lead between hookswitch and terminal block spring 4 at midpoint. Splice RED inhibitor lead to BLK lead from hookswitch.	Splice GRN inhibitor lead to BLK lead from terminal block spring 4.	L1
LPC-72 -79 -82 -89	Remove WHT hookswitch lead from terminal S and connect to RED inhibitor lead with spade connector.	S	L1
Dial Panels LPB-82 -89 LPC-82 -89 T/C Panels LPB-82 LPC-72 -79	Remove BLU hookswitch lead from panel terminal block and connect to RED inhibitor lead with spade connector.	Panel terminal that BLU hookswitch lead was removed.	GRN hookswitch lead.
T/C Panel LPB-89	Remove WHT hookswitch lead from panel terminal block and connect to RED inhibitor lead with spade connector.	Panel terminal that WHT hookswitch lead was removed.	RED hookswitch lead.
120A Single Slot	Remove PINK hookswitch lead from terminal 11 and connect to terminal 13 with RED inhibitor lead.	Terminal 11	Terminal 3