

KEY TELEPHONE SETS

DIAL RESTRICTION

USING 420B DIODE

1.00 GENERAL

1.01 This section describes a method to prevent dialing on certain lines on a multibutton key telephone set while permitting dialing on others.

1.02 To accomplish this, a 420B diode is placed across pulsing contacts of dial. The diode will pass or block current depending on the polarity of the line. When arrow on diode is pointed toward ring side of line (negative battery), polarity is such that line current will conduct, thus shunting pulsing contact.

1.03 Each application of the diode must be investigated locally to ensure that there is no change in line polarity during the dialing interval. It should be noted that in any tandem dialing situation where polarity on the line to the station becomes reversed, further dialing will be prevented, immediately. This could occur if a trunk or tie line supplying battery to the station is inadvertently reversed or returns reversed battery supervision when further dialing is still required. For this reason the dialing traffic path should be checked for proper polarity at the time of diode installation.

1.04 Dial restriction of individual lines on a key telephone set will depend on the polarity of the line on each key. In this discussion it is assumed that battery is on ring and ground is on tip of each line.

1.05 This section is reissued to permit the 420B diode to be connected so that the minimum number of lines terminating on a key telephone

set need be reversed to restrict dialing on an assigned line or lines.

1.06 Due to extensive changes marginal arrows have been omitted.

2.00 INSTALLATION

400-Type Key Set

2.01 Connect 420B diode between Y and BK terminals of the dial on 400-type key sets (see Fig. 1 and 2).

2.02 Assume battery on ring ground on tip of dialing circuit. With diode poled so that arrow is pointed toward BK terminal (see Fig. 2), diode will conduct current and all lines will be restricted. Reverse tip and ring of line, or lines, on which dialing is required. This will remove shunt from across pulsing contacts on these lines.

2.03 With arrow on diode pointed toward the Y terminal (see Fig. 2), no line will be restricted. Reverse tip and ring of line, or lines, on which dialing is to be restricted. This will shunt the pulsing contacts on these lines.

2.04 Terminate diode so that the least number of lines will have to be reversed.

Note: Make sure bare leads of the diode do not come into contact with case of network, with terminals, or with other components of the set. Use insulating sleeving if necessary.

420B DIODE

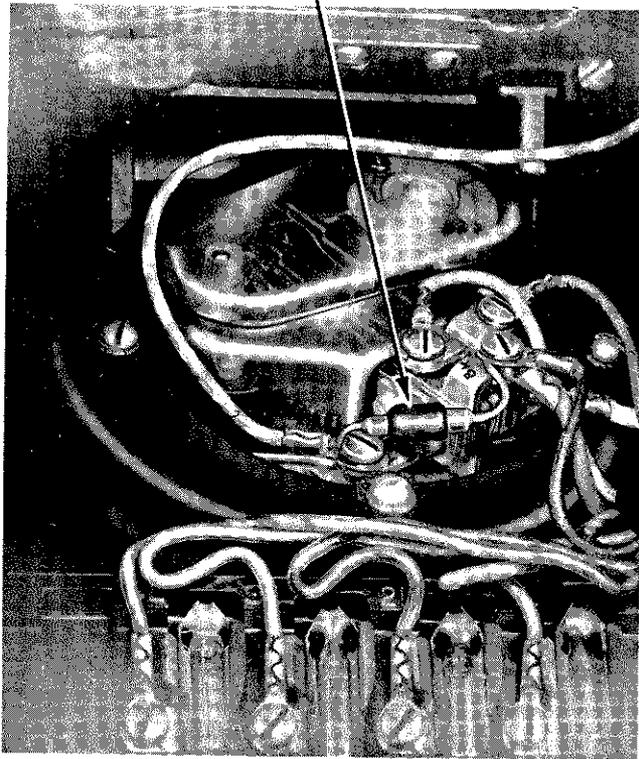


Fig. 1 — 400-Type Set with 420B Diode

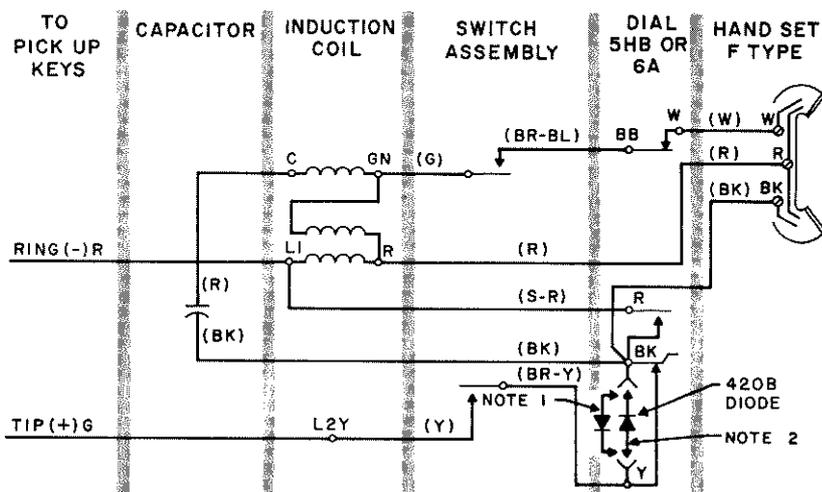
500-Type Key Sets

2.05 Connect 420B diode between F and RR terminals of the network on 500-type key sets (see Fig. 3 and 4).

2.06 Assume negative battery is on ring and ground is on tip of dialing circuit. With the arrow on diode pointing toward RR terminal, all lines will be restricted. Reverse tip and ring of line, or lines, on which dialing is required. This will remove shunt from across pulsing contacts on these lines.

2.07 With arrow on diode pointed toward F terminal, no line will be restricted. Reverse tip and ring of line, or lines, on which dialing is to be restricted. This will shunt pulsing contacts on these lines.

2.08 Terminate diode on network so that the least number of lines will have to be reversed.



^a *Note 1:* Read 2.01, 2.03, and 2.04 in text of this section.

Note 2: Read 2.01, 2.02, and 2.04 in text of this section.

Fig. 2 — 400-Type Key Set, 420B Diode Connections

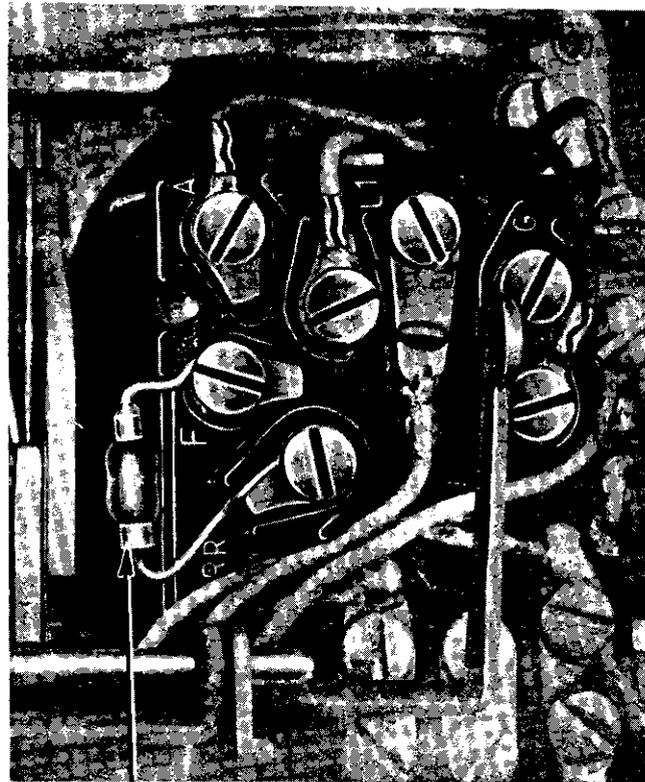
- For stations operating on key telephone system 1A1, reverse tip and ring of line conductors of mounting cord at connecting block. Where set cord is equipped with a 50-conductor plug, reverse tip and ring at free end of cable.
- For stations operating on key telephone system 1A, reverse tip and ring of line ahead of common equipment. This is done to avoid failure of holding feature.

Note: To avoid bell tap, transpose line ringer leads at stations that have tip and ring of lines reversed.

3.00 TESTING

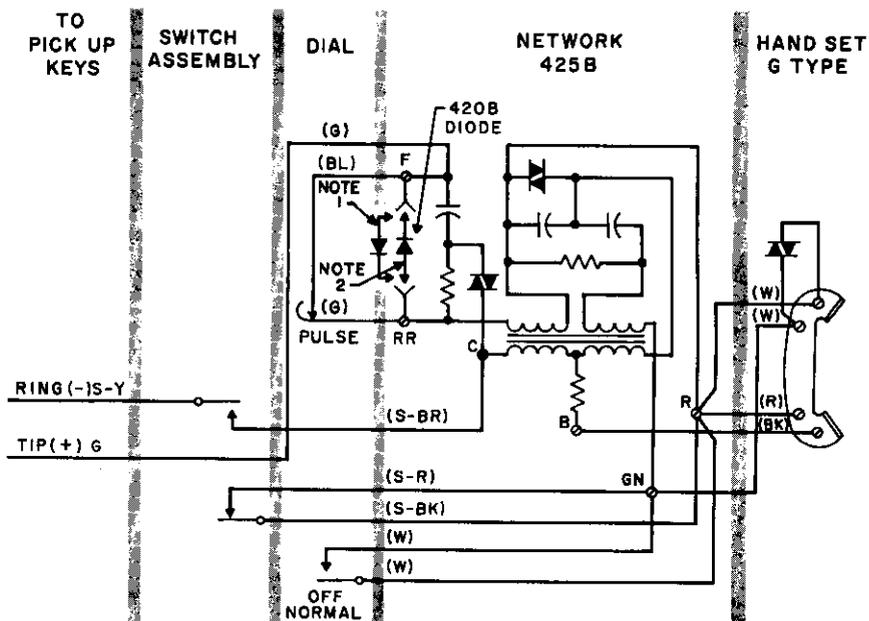
3.01 Test for line restriction or nonrestriction, as necessary.

3.02 Refer to section entitled Procedures to be Followed When Working on Circuits Containing Diodes, Varistors, or Transistors before attempting tests on the 420B diode.



420B DIODE

Fig. 3 – 500-Type Set with 420B Diode



Note 1: Read 2.05, 2.06 and 2.08 in text of this section.

Note 2: Read 2.07 and 2.08 in text of this section.

Fig. 4 – 500-Type Key Set, 420B Diode Connections