INSTRUCTIONS FOR INSTALLING MANUAL TOUCH-TONE AND CARD DIAL ON TELETYPE MODEL 33 OR 35 KEYBOARD SEND-RECEIVE SET (KSR) AND AUTOMATIC SEND-RECEIVE SET (ASR) USING MODIFICATION KIT 182488, 182498, 193488 OR 195927

1. GENERAL

a. The 182498 or 193488 Modification Kit, when installed on a Teletype Model 33 or 35 (respectively) Keyboard Send-Receive Set (KSR) and Automatic Send-Receive Set (ASR), equips the set with a manual push-button and automatic card multi-frequency dial.

b. Depression of the push buttons, corresponding to the number dialed, generates various frequencies which are fed through the loudspeaker amplifier into the telephone line via the sending amplifier in the 101C or 105A Data Set. In addition, insertion of a coded card into the slot generates dialing frequencies corresponding to the code punched into the card. As the station connects, the output of the touch-tone dial is disconnected from the Data Set so that there is no hazard connected with improper operation of the touch-tone dial at that time.

c. The 182488 or 195927 Modification Kit is like the 182498 or 193488 Kit (respectively) except the 182621 Touch-Tone and Card Dial is not included.

d. The 182488, 182498, 193488 or 195927 Modification Kits consist of:

2	87993	Screw	1	182494	Card Set, Index
2	124177	Washer, Lock	2	182495	Card Set, Dialing
3	181241	Screw w/Lock Washer	1	182621	Dial, Touch-Tone and Card (Not in 182488 or 195927 Kit)
1	181287	Holder, Card			
1	181289	Window			
1	181292	Window	1	182686	Resistor w/Bracket, Variable
1	181901	Faceplate (For 182488 or 182498 Kit)	1	182725	Plate
1	181905	Faceplate (For 193488 or 195927 Kit)	1	182799	Capacitor w/Terminals

e. For parts referred to, other than those included in the kits, refer to Teletype Parts Bulletin 1184B (Model 33 KSR and ASR Sets) or 1187B (Model 35 KSR and ASR Sets).

2. INSTALLATION (Figures 1 and 2)

a. REMOVAL OF THE COVER

(1) Remove the faceplate by removing the screw at each end of the faceplate.

*General Revision

Lift the front and back of the faceplate simultaneously and place aside. Retain the screws. For the later Model 35 Cabinet, only the back screw must be removed to take off the faceplate.

(2) For Model 35 Sets only - Unlatch the latch under the dome to the right of the printer and carefully remove the cover. On sets not equipped with the hinged lower cover assembly, lift the cover assembly off the set.

(3) For Model 33 Sets only

(a) Remove the platen knob and volume control knob by pulling outward.

(b) Remove the name plate by prying the lower section forward, then downward.

(c) Remove the cover from the unit after removing the seven screws that hold the cover to the base. Lift the cover carefully.

b. REMOVAL OF ROTARY DIAL

(1) In order to install the touch-tone and card dial on a Model 33 or 35 Set it is required that the rotary dial and associated parts be removed, if present. Proceed as instructed in subsequent paragraphs.

(2) Remove and retain the two 181241 Screws that hold the 182727 and 182728 or the 181281 and 181282 Brackets and 181283 Spacer. Loosen the four screws on the 182717 Terminal Strip ("TS3" for Model 33 Sets or "H" for Model 35 Sets) and remove the four leads (two white, blue and green) connecting the dial to the terminal strip. Remove and discard the two screws and lock washers that secure the 182532 Filter to the 182709 Support Bracket (Right). On units that have the filter mounted on the 181282 Bracket (Left) the filter need not be removed. Loosen the screws on terminals 14, 15, and 16 of the terminal strip and remove the red, black and yellow wires leading from the filter.

(3) On the 182717 Terminal Strip ("TS3" for Model 33 Sets or "H" for Model 35 Sets) move the R-BL wire from terminal 5 to terminal 6, the O-G wire from terminal 7 to terminal 6, the BR-S wire from terminal 16 to terminal 15 and the W-O-BL wire from terminal 10 to terminal 4. In early Model 35 Sets the W-O-BL wire is on terminal 4. In these sets remove the strap between terminal 4 and terminal 10.

c. INSTALLATION OF TOUCH-TONE AND CARD DIAL (Figures 1 and 2)

(1) Assemble the 182621 Touch-Tone and Card Dial to the 182725 Plate using two 87993 Screws and 124177 Lock Washers.

(2) Mount the 182686 Variable Resistor w/Bracket to the right side of the dial using the Touch-Tone Dial Clamping Screw (present) and a 181241 Screw w/Lock Washer.

(3) Wire the dial with assembled variable resistor, to the 182717 Terminal Strip ("TS3" for Model 33 Sets or "H" for Model 35 Sets) together with the 182799 Capacitor, in accordance with Figure 1. Tighten all loosened terminal screws.

(4) Install the touch-tone and card dial assembly on the 182723 Bracket using the two 181241 Screws retained in Paragraph 2.b.(2). Use two 181241 Screws in the additional mounting points.

(5) There should be at least 1/64 inch clearance between the variable resistor bracket and the 182717 Terminal Strip. There should also be adequate clearance to allow the bell clapper to operate (the dial should be approximately centered laterally). Position the dial assembly by means of its slotted mounting holes to meet these requirements. Tighten the mounting screws.

(6) Install the new faceplate using the screws retained in Paragraph 2.a.(1). For the later Model 35 Cabinet, transfer the front locating bracket and its hardware from the removed faceplate to the new faceplate. Discard the removed faceplate.

(7) For Model 33 Sets only - Reinstall the cover, name plate, volume control knob and platen knob removed in Paragraph 2.a.(3).

(8) Insert the 181287 Card Holder and 181289 and 181292 Windows into the slots provided in the faceplate.

3. TEST PROCEDURES AND ADJUSTMENTS

NOTE

These test procedures and adjustments (except Paragraph f.) are necessary only when Data Set is not present. Paragraph f. applies when Data Set is present (Bell System: If Data Set is present, refer to BSP Section 591-018-300, Paragraph 9.09).

a. Equipment required.

(1) Power Supply +20V, 30 ma
-20V, 30 ma

(2) AC Vacuum Tube Voltmeter HP400D, or equivalent.

b. On the "P" Connector, connect +20V to terminal 25, -20V to terminal 41, and ground terminals 49 and 39. Connect the voltmeter to terminals 47 and 49.

c. Operate the touch-tone dial key Digit No. 1. Adjust the 182686 Variable Resistor fully clockwise, for maximum output. The voltmeter should read over 1.5V rms.

NOTE

As the output level is increased, the meter will behave erratically. This is due to distorted wave shape caused by overload in the amplifier. The distortion will also be noticable by listening to the loudspeaker.

d. Operate key digit No. 1 and adjust the variable resistor counterclockwise for 1.25V rms as read on the meter.

NOTE

This adjustment will be close to the final variable resistor setting which will be determined at the time of Data Set installation.

e. With the variable resistor adjusted as in Paragraph d., operate keys digit No. 1 and No. 2 simultaneously. The voltmeter should read .80-1.05V rms; operate keys digit No. 3 and 6 simultaneously, the meter should read .95-1.15V rms.

f. With the set connected to the line and the Data Set installed, the variable resistor should be adjusted so that the touch-tone levels will equal the normal F_1 tone as required by the particular drop on the line.

4. CODING OF DIALING CARDS (Figure 3)

a. To code a card, a pointed instrument (such as a pencil) is needed. Write the telephone number in the small boxes on the extreme right side of the card, as shown on Figure 3. Include any sequence (such as an area code) needed to obtain an outside line if these calls are originated through a PBX switchboard. It should be noted that the card dial senses a character in a particular row and simultaneously transmits the digits, and then advances the card to the next row.

b. Identify the station whose number is to be coded into the card in the space provided at the top of the card.

c. Code the first digit of the telephone number in the first horizontal row by punching a hole under the groups of numbers at the top of the card which contain this number. For example, if the first number is 2, as shown on Figure 3, punch a hole under the groups that contain the number 2 (holes shown in solid black). Also, punch a hole under STOP in the first row.

d. Code the second row, the third row, etc., in the same manner except that a hole under STOP is not punched, except as instructed below.

e. When dialing must be stopped after a sequence of numbers has been dialed, punch a hole under STOP in the row after the last number in the sequence. For example, on Figure 3, the card must stop after the first three digits (area code 258) have been dialed so the operator can hear a dial tone. Therefore, a hole under STOP is punched in the fourth

row. To continue dialing depress the START bar.

f. It is not necessary to punch a STOP hole following the telephone number provided there are no other punched holes. However, a STOP hole may be punched, but this requires the operator to depress the RELEASE bar to release the card from the card dial.

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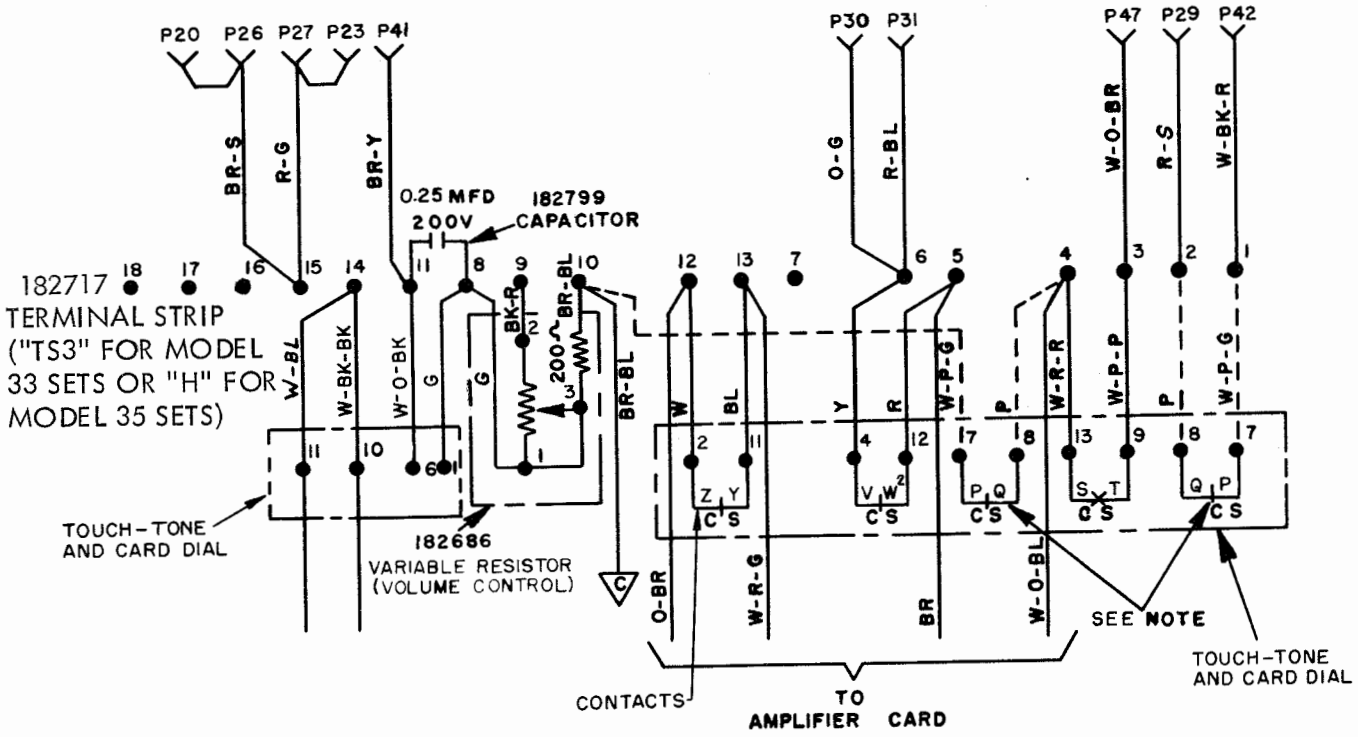
TOUCH-TONE AND CARD DIAL CONNECTIONS



NOTE

ON STATIONS EQUIPPED WITH DIAL TONE DETECTION, CONNECT THE Q, P CONTACT TO TERMINALS 1 AND 2 AS SHOWN.

ON STATIONS WITHOUT DIAL TONE DETECTION, CONNECT THE P, Q CONTACT TO TERMINALS 4 AND 10 AS SHOWN.

FIGURE 1.

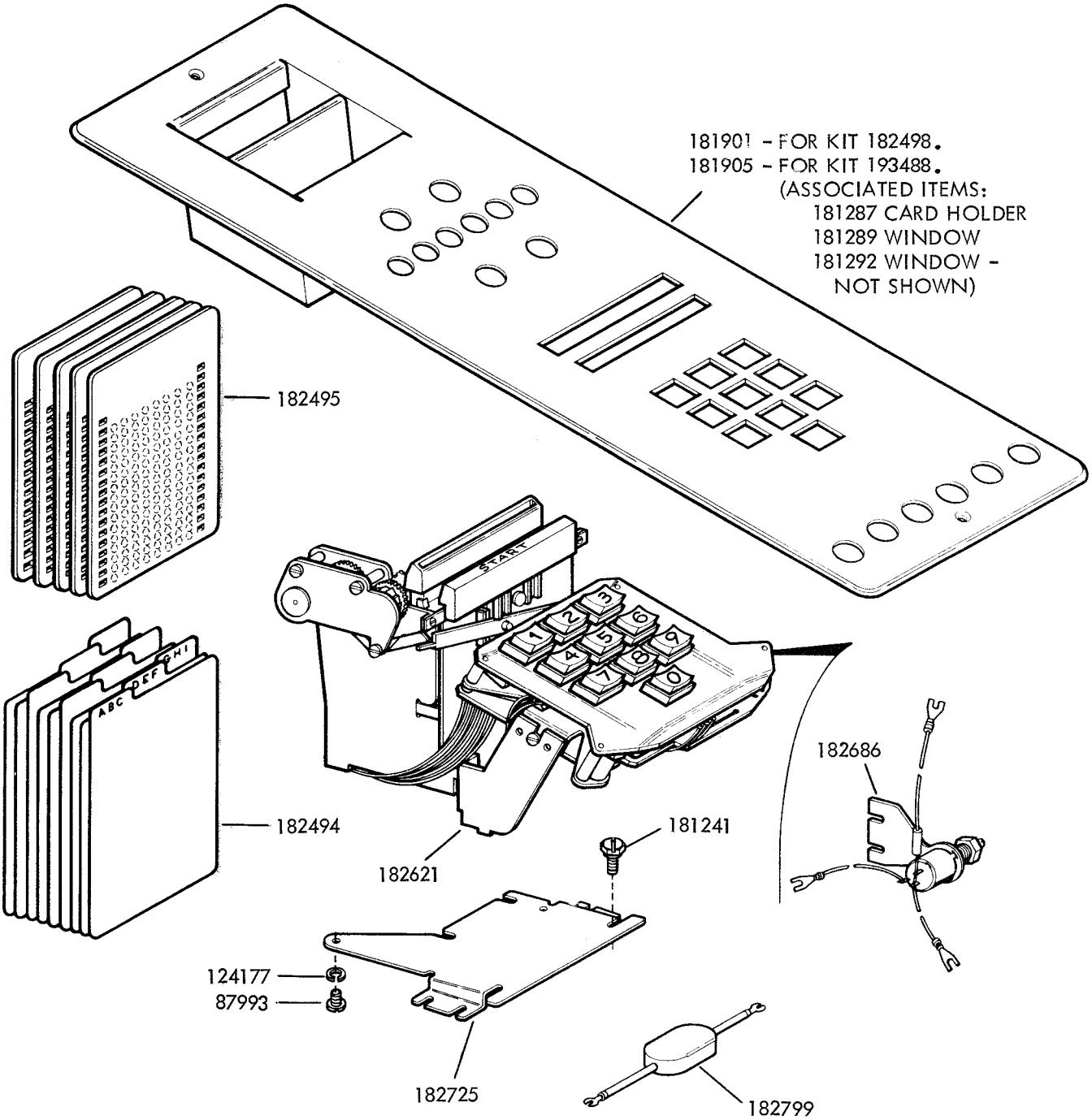

181901 - FOR KIT 182498.
181905 - FOR KIT 193488.
(ASSOCIATED ITEMS:
181287 CARD HOLDER
181289 WINDOW
181292 WINDOW -
NOT SHOWN)
182495
182494
182621
181241
182686
124177
87993
182725
182799

FIGURE 2

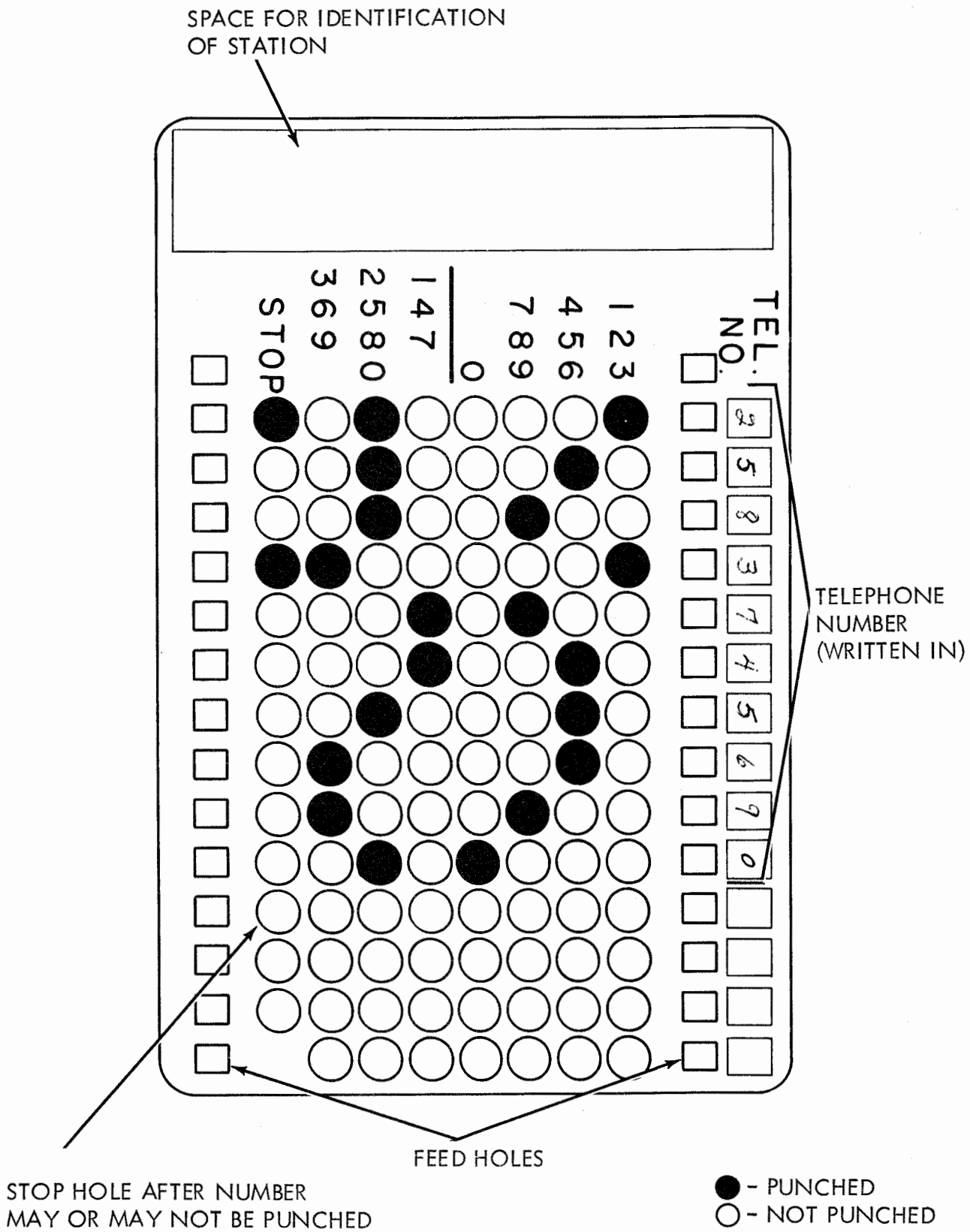

SPACE FOR IDENTIFICATION OF STATION
STOP
3 6 9
2 5 8 0
1 4 7
0
7 8 9
4 5 6
1 2 3
TEL. NO.
TELEPHONE NUMBER (WRITTEN IN)
FEED HOLES
STOP HOLE AFTER NUMBER MAY OR MAY NOT BE PUNCHED
● - PUNCHED
○ - NOT PUNCHED

FIGURE 3