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

1. GENERAL

1.01 Modification kit 193488, when installed on a Teletype Model 33 or 35 (respectively) Keyboard Send-Receive Set (KSR) or Automatic Send-Receive Set (ASR), equips the set with a manual pushbutton and automatic card multifrequency dial.

1.02 Depression of the pushbuttons, 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 dial at that time.

1.03 Modification kit 195927 is like kit 193488 except Touch-Tone card dial assembly 182621 is not included.

1.04 Modification kits 193488 and 195927 consist of:

2	87993	Screw	1	182494	Card Set, Index
2	124177	Lockwasher	2	182495	Card Set, Dialing
3	181241	Screw w/lockwasher	1	182621	Dial Assembly, Touch-Tone Card (Not in 195927 kit)
1	181287	Holder, Card			
1	181289	Window			
1	181292	Window	1	182686	Potentiometer w/bracket
1	181901	Faceplate (For 193488 or 195927 kit)	1	182725	Plate
			1	182799	Capacitor w/terminals

1.05 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

REMOVAL OF THE COVER

2.01 Remove the faceplate by removing the screw at each end of the faceplate. 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. (For installation information, refer to Figures 1, 2, 3, 4, and 5.)

2.02 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.

2.03 For model 33 sets only

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

(b) On friction feed sets, remove the platen knob by pulling it outward. On sprocket feed sets, remove the platen knob screw with washer, then remove the knob by pulling it outward.

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

(d) Remove the cover from the unit after removing the seven screws that hold the cover to the base. Lift the cover carefully. (On Automatic Send-Receive Sets (ASR), also loosen the reader cover screw.)

REMOVAL OF ROTARY DIAL

2.04 In order to install the card dialer, it is required that the rotary dial and associated parts be removed if present. Proceed as instructed in subsequent paragraphs.

2.05 Remove and retain the two screws holding the DC rotary dial assembly to the crossbar bracket. Loosen the five screws on terminal strip 182717, and remove the four dial leads, two white, one blue, and one green; and three filter leads 182532 — red, black, and yellow. Remove the assembly. Remove the two screws with lockwashers holding filter 182532 on the right support bracket. On units having filter 182532 mounted on bracket 181281, the filter need not be removed. Do not tighten the screws until the dialer has been installed.

INSTALLATION OF CARD DIAL ASSEMBLY

2.06 Assemble card dial assembly 182621 (Figures 1, 2, 3, and 4) to plate 182725 using two screws 87993 and lockwashers 124177.

2.07 Mount potentiometer w/bracket 182686 to the right side of the dial using the dial clamping screw (present) and screw w/lockwasher 181241.

2.08 Make the necessary wire changes on terminal strip 182717, and connect the dialer, potentiometer 182686, and the capacitor 182799 wires to the proper terminals of the terminal strip 182717. Tighten all terminal screws. Refer to Figures 1, 2, and 3.

2.09 Install the card dial assembly on bracket 182725 using the two screws 181241 retained in paragraph 2.05.

2.10 There should be at least 1/64 inch clearance between the potentiometer bracket and terminal strip 182717. 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. Remove all wires from under bracket 182725 before tighting the mounting screws.

2.11 For model 35 sets only — lower the set cover to its closed position, and install the new faceplate. For the later model 35 cabinet, transfer the lower locating bracket and its hardware from the removed faceplate to the new faceplate. Discard the removed faceplate.

2.12 For model 33 sets only — Reinstall the cover, nameplate, volume control knob, and new faceplate.

2.13 Insert card holder 181287 and windows 181289 and 181292 into the slots provided in the new faceplate.

2.14 Be sure to have physical possession of 182494 and 182495 for purposes of test and adjustment.

3. TEST PROCEDURES AND ADJUSTMENTS

Note: The dialer must meet the following voltage output requirements when operated without a data set. If the adjustment is made using a data set, refer to BSP SECTION 591-018-300, paragraph 9.09.

3.01 Equipment required for testing and adjusting these kits consist of:

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

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

3.02 On the connector receptacle 182733, connect +20v to terminal 25, -20v to terminal 41, and ground terminals 49 and 39. Connect the AC VTVM to terminals 47 and 49. (Terminal 49 is common).

3.03 Operate the dial key digit no. 1. Adjust potentiometer 182686 fully clockwise, for maximum output. The AC VTVM 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.

3.04 Operate key digit no. 1 and adjust the potentiometer counterclockwise for 1.25v rms as read on the meter.

Note: This adjustment will be close to the final potentiometer setting which will be determined at the time of data set installation.

3.05 With the potentiometer adjusted as in paragraph 3.04, operate keys digit no. 1 and no. 2 simultaneously. The AC VTVM should read .80-1.05v rms; operate keys digit no. 3 and 6 simultaneously, the meter should read .95-1.15v rms.

3.06 The final adjustment of the 50K potentiometer 182686 is made only after the card dialer is installed in a set equipped with a data set and is connected on-line. Then potentiometer 182686 must be adjusted so that the tone levels will equal the normal F_1 tone required by the particular line drop.

4. CODING OF DIALING CARDS

4.01 To code a dialing card (Figure 3), one needs a pointed instrument (such as a pencil). 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.

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

4.03 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 5, 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.

4.04 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.

4.05 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 5, 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.

4.06 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 START bar to release the card from the card dial.

Note: On stations equipped with dial tone detection, connect the q, p contact to 182717 terminal strip terminals 2 and 1 as shown.

On stations not equipped with dial tone detection, connect the q, p contact to 182717 terminal strip terminals 4 and 10 as shown.

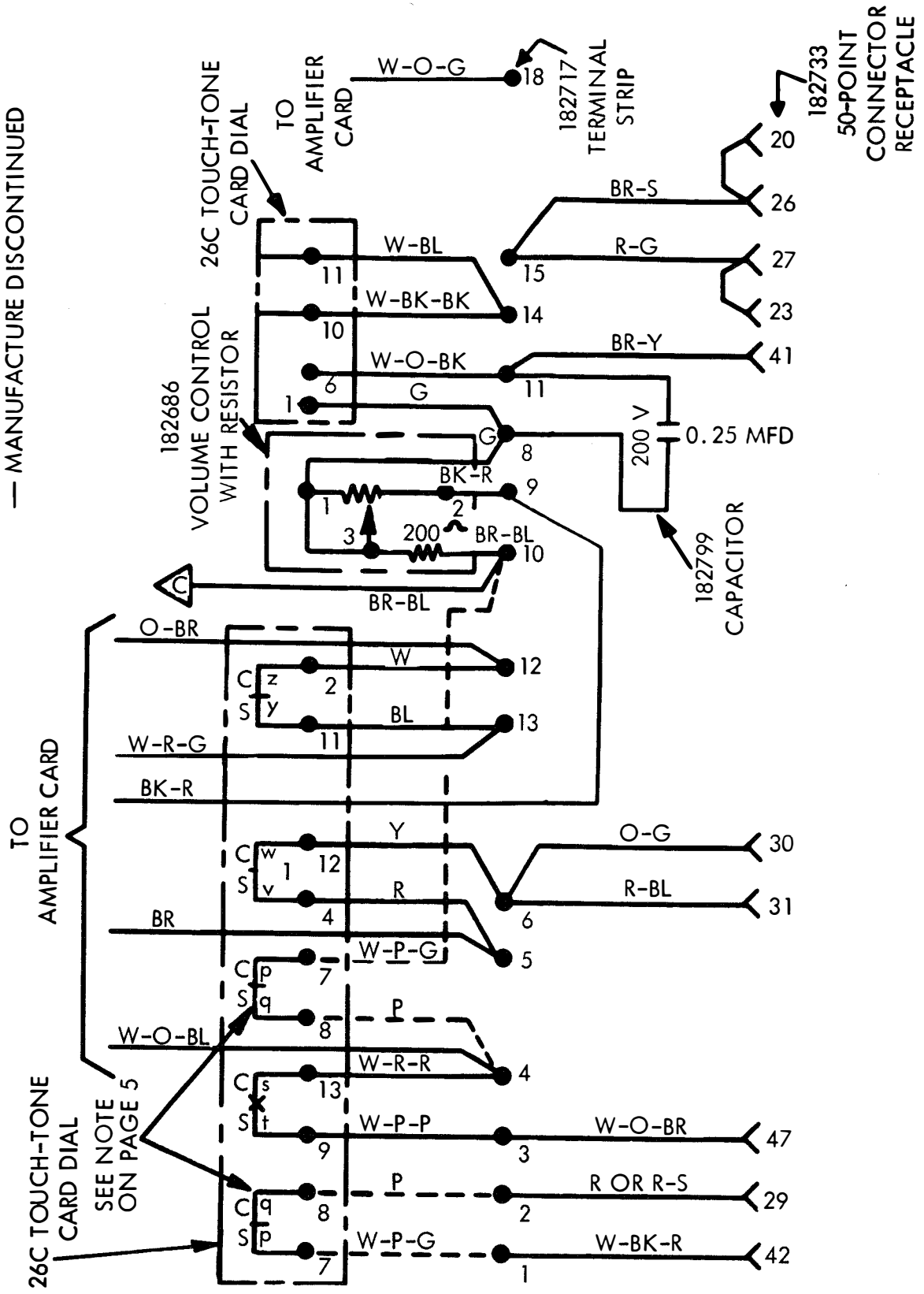

Figure 1 - Touch-Tone Card Dialer Connections

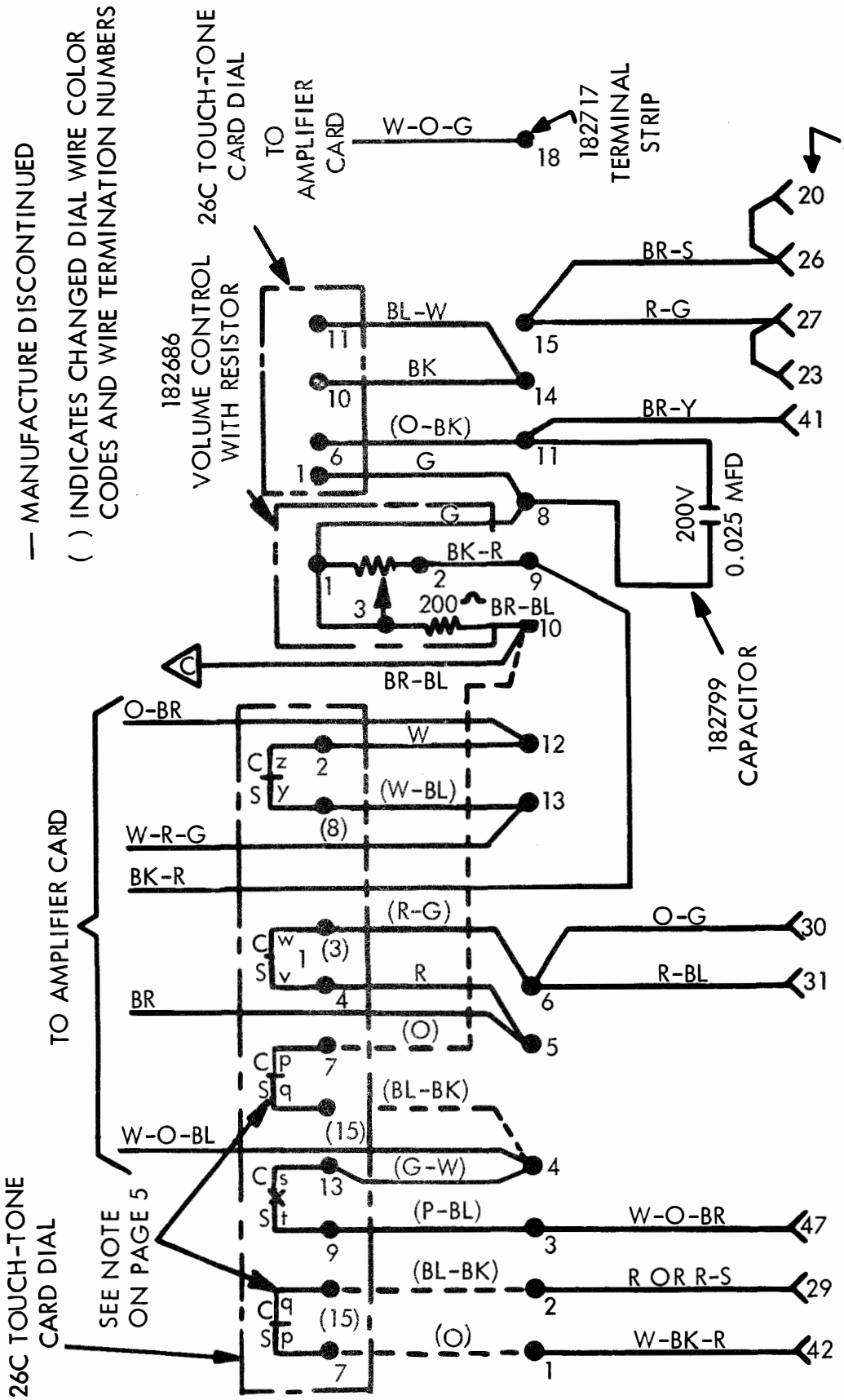

Figure 2 - Touch-Tone Card Dialer Connections

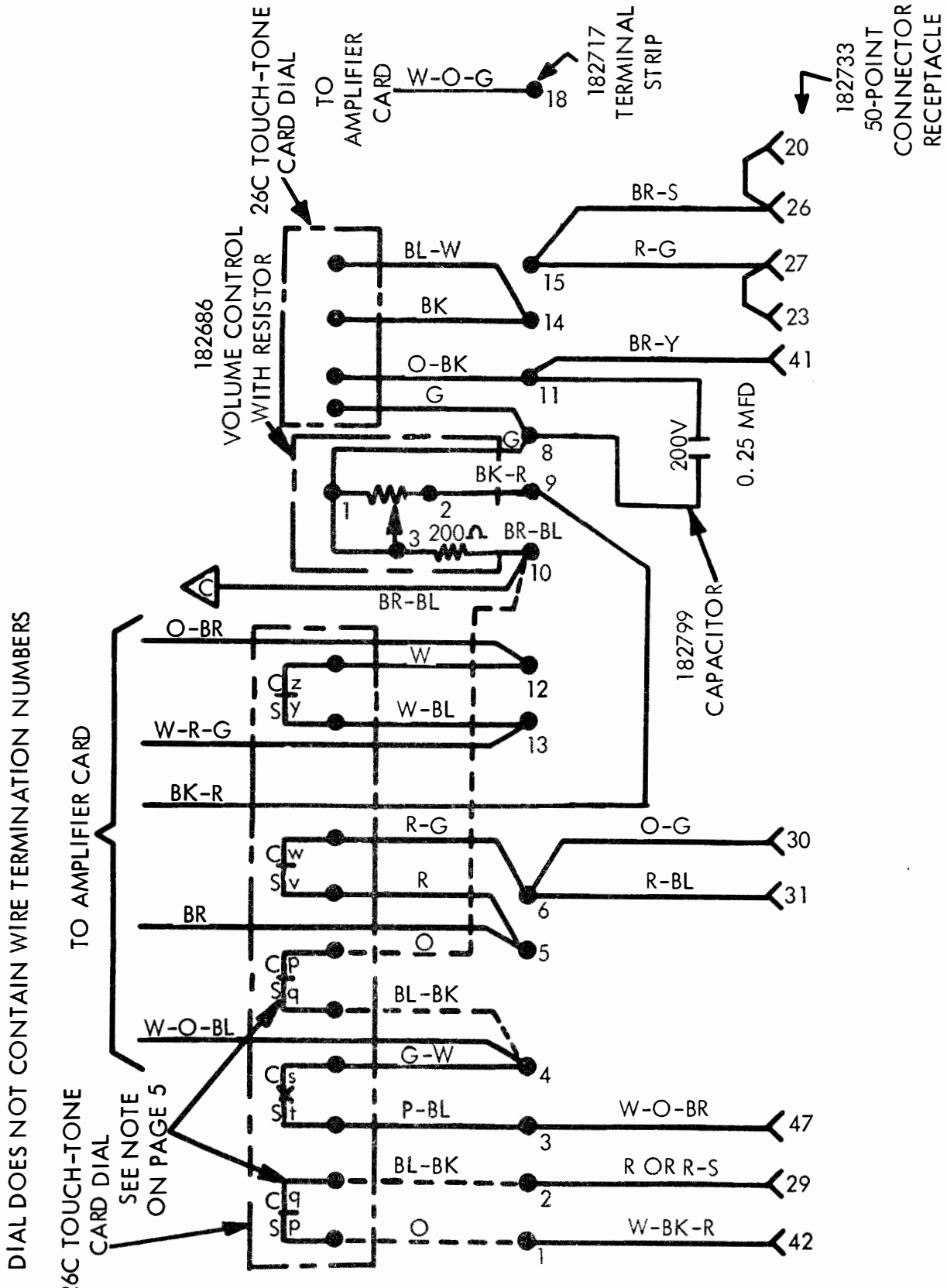

Figure 3 - Touch-Tone Card Dialer Connections

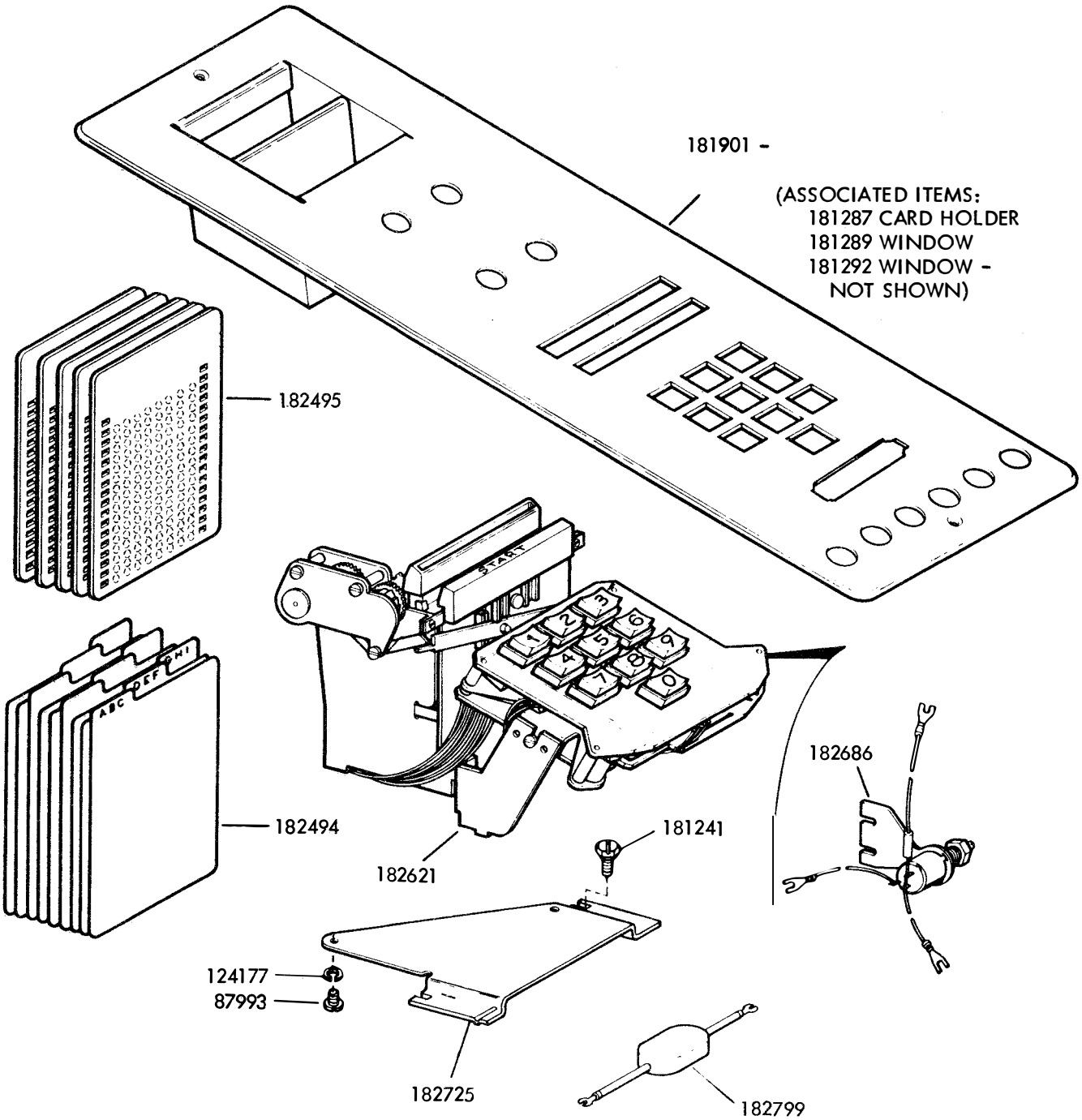
181901 -
(ASSOCIATED ITEMS:
181287 CARD HOLDER
181289 WINDOW
181292 WINDOW -
NOT SHOWN)
182495
182494
182621
181241
182686
124177
87993
182725
182799

Figure 4

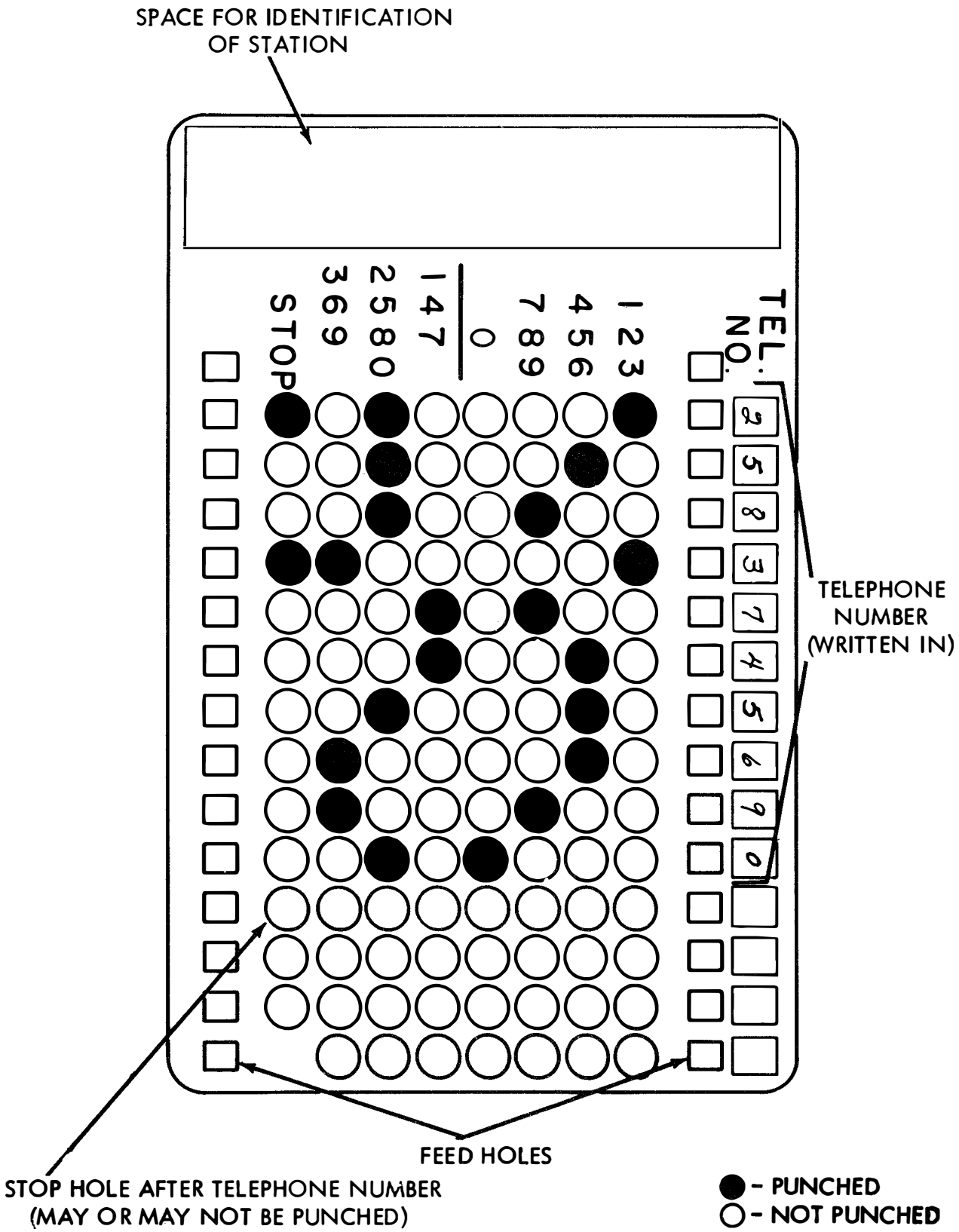
SPACE FOR IDENTIFICATION OF STATION
STOP
3 6 9
2 5 8 0
1 4 7
0
7 8 9
4 5 6
1 2 3
TEL. NO.
2
5
8
3
7
4
5
6
9
0
TELEPHONE NUMBER (WRITTEN IN)
FEED HOLES
STOP HOLE AFTER TELEPHONE NUMBER (MAY OR MAY NOT BE PUNCHED)
● - PUNCHED
○ - NOT PUNCHED

Figure 5