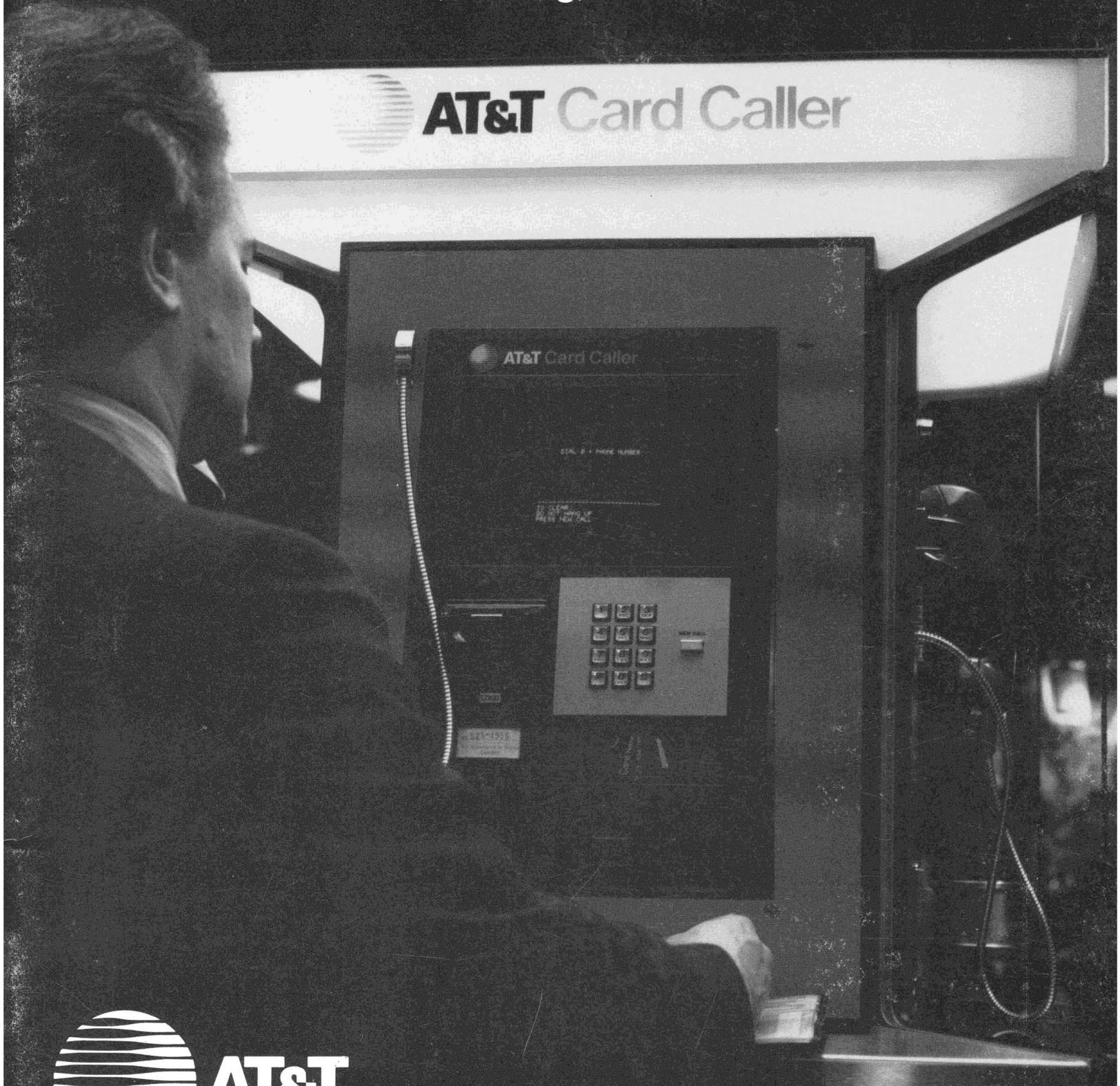


# Card Caller Telephone Station

Installation, Testing, and Maintenance

 **AT&T** Card Caller



**AT&T**

Information Systems  
Services Division

TRAINING & JOB AID

AT&T INFORMATION SYSTEMS  
SERVICES DIVISION  
CARD CALLER TELEPHONE STATION (CCTS)  
INSTALLATION, TESTING, AND MAINTENANCE  
TRAINING & JOB AID

Copyright (c) 1984  
AT&T Information Systems Inc.

## DISCLAIMERS

The use of masculine and feminine terms in this material is not intended to discriminate against any sex, individual, or groups of persons. Pronouns and other references should not be construed as favoring any individual or group of individuals because of race, creed, religion, age or national origin.

## C O N T E N T S

Hardware Requirements.....	5
Site Preparation Checklist.....	7
Station Enclosure.....	8
Enclosure Wiring.....	14
Station Wiring.....	15
Mounting Station to Enclosure.....	20
Setting Option Switch.....	22
Recording Station Data.....	24
Powering Up.....	25
Troubles Escalation.....	26
Setting Station I.D. Number.....	27
Interactive Station Field Test.....	29
Interactive Diagnostic Testing.....	33
Failure to Pass Test.....	35
Diagnostic Messages.....	36
Call Test Sequences.....	45
Call Test Messages.....	51

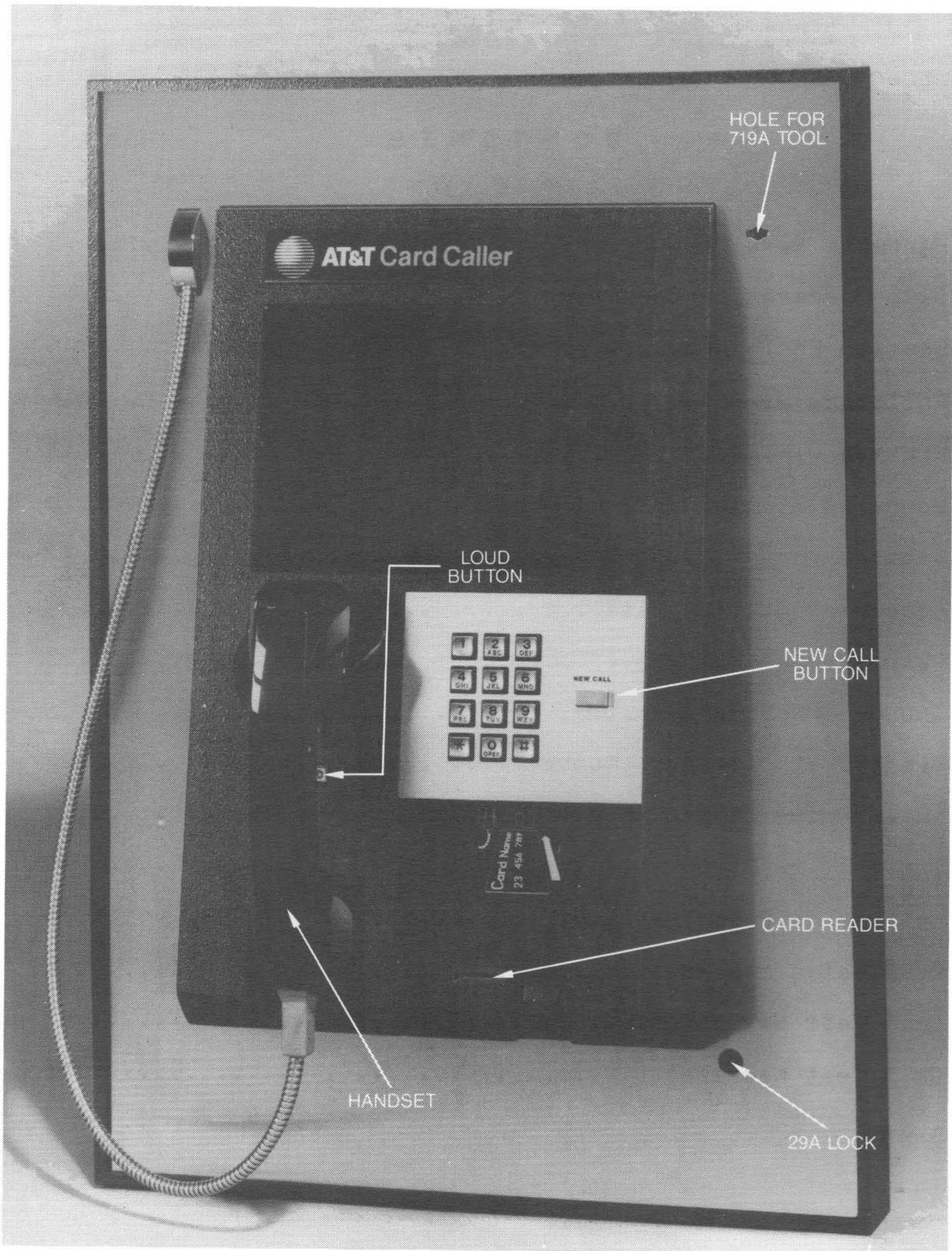


FIGURE 1: CARD CALLER TELEPHONE STATION (CCTS)

AT&T INFORMATION SYSTEMS - PROPRIETARY  
Use pursuant to Company instructions

## HARDWARE REQUIREMENTS

In order to begin installation of the F-61859 Card Caller<sup>TM</sup> Telephone Station (CCTS), you will need the following hardware and tools:

- o Station enclosure: Shelf mount type.
- o Assembled Telephone Station: Shelf mount model

F-61859. (See Figure 1)

- o #10148 Handset.
- o #719A Tool
- o KS-8320 L1 Orange Stick
- o KS-21107 Releaser
- o Wire Stripper
- o Voltmeter
- o 11/32-inch and 3/8 inch nut driver
- o Screwdriver with 8-inch blade
- o 29A Lock key
- o TEST credit card
- o Six 1/4-20 x 3/4 pan head and one 1/4-20 x 3/4 flathead screws (furnished with station) for mounting station to the enclosure. (With the KS-19426 housing, four 1/4-20 x 3/4 mounting lugs will replace four of the pan head screws.)

<sup>TM</sup> - Card Caller is a Trademark of AT&T Communications, Inc.

Where venting and wire hole modifications are required, you will also need:

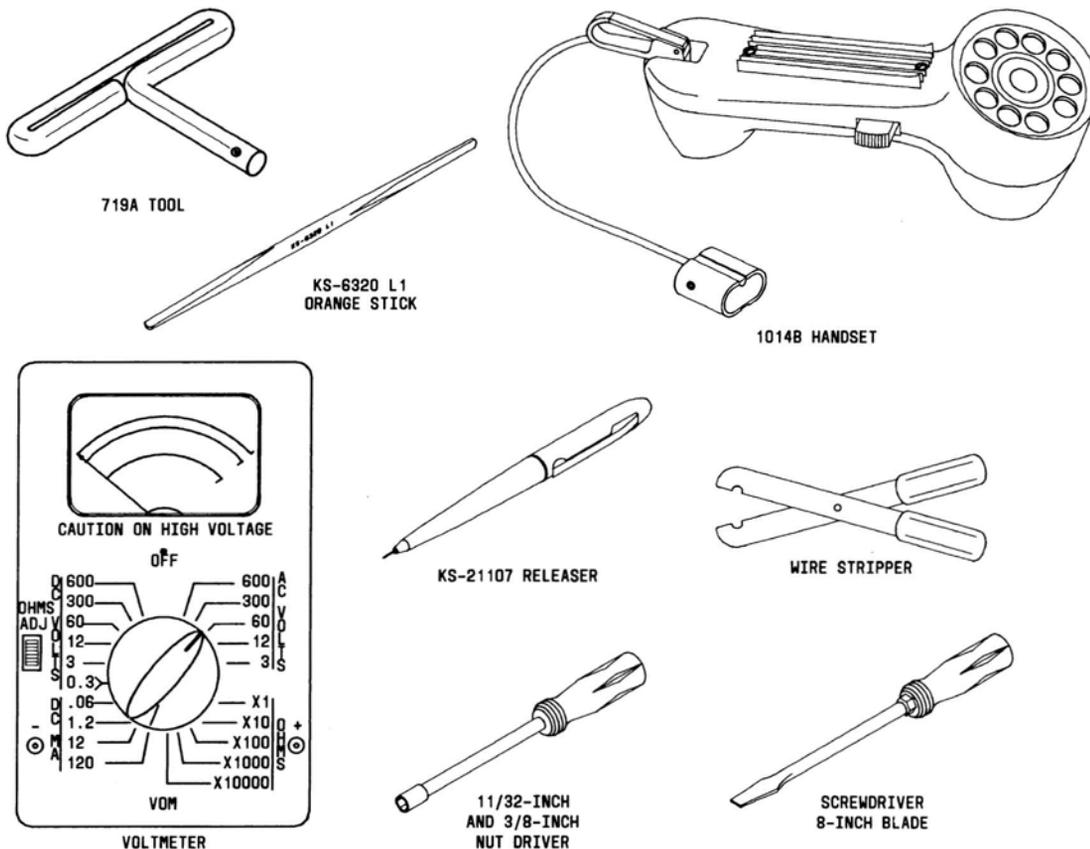
- o 3-inch (76.2mm) Greenlee die (PN#s 5004188, 5004258, and 5004259) for 3-inch hole cut.

- o 2-inch (50.8mm) Greenlee die (PN#s 5004231, 5004232, 5004042) for 2-inch hole cut.

- o 5/32, 1/2 and 3/4 inch drill bits and power drill for drilling starter and mounting holes.

- o Optional templates for positioning starter and mounting holes during modification to KS-19426 Housing or non-standard housing. (See Figure 2A, B, C, D)

**HARDWARE REQUIRED FOR INSTALLATION**



**SITE PREPARATION CHECKLIST**

1. Is enclosure an existing on site enclosure? If so, check what wire, mounting and vent hole modifications will be necessary to adapt it for use with the Card Caller Telephone Station (CCTS). See related portions of this document as well as Job aid on enclosure modification.

2. Alternately, is enclosure custom-designed for use with the CCTS? If so, no hole modifications will be required. See Job aid for enclosure installation.

3. Do you have the correct types of mounting screws on hand? If not, get them.

4. Has inside wiring been provided? If not, confirm how it is to be provided.

5. Where is the network interface for voice facilities located? Has voice line been extended to the station location? Is dial tone present on voice line? If not, how and when will this be completed?

6. Where is the Call Processor (CP) located? Has CP line been extended to the station location? Is line operational? If not, how and when will this be completed?

7. Is processor installed or on schedule? If not, how and when will installation be completed?

8. Have you confirmed the station I.D. number with the line operator? If not, do so during installation.

9. Do you have a copy of the Commercial Credit Card System Trouble/Maintenance Report for use in initial reporting of Card Cage and Circuit Pack SN#s? If not, contact source listed in this document.

10. Are you aware of the necessity to properly ground yourself before handling the PWB chassis and boards? To avoid potentially damaging static electrical discharges, you MUST touch a known reliable ground before touching microprocessor-based components or boards. This will discharge any static electrical buildup in a safe manner before contacting sensitive components.

11. Is AC power available at station location? Is AC outlet switchable or non-switchable?

12. Do bonding and grounding meet the requirements of NEC and local electrical codes? If not, what can you do to assure compliance?

13. Are you familiar with troubles escalation procedures in the event that a station needs replacement? (Call AT&T-COM at the 800 number printed on the Station Number Card supplied with the station, or otherwise announced to affected Services Division personnel.

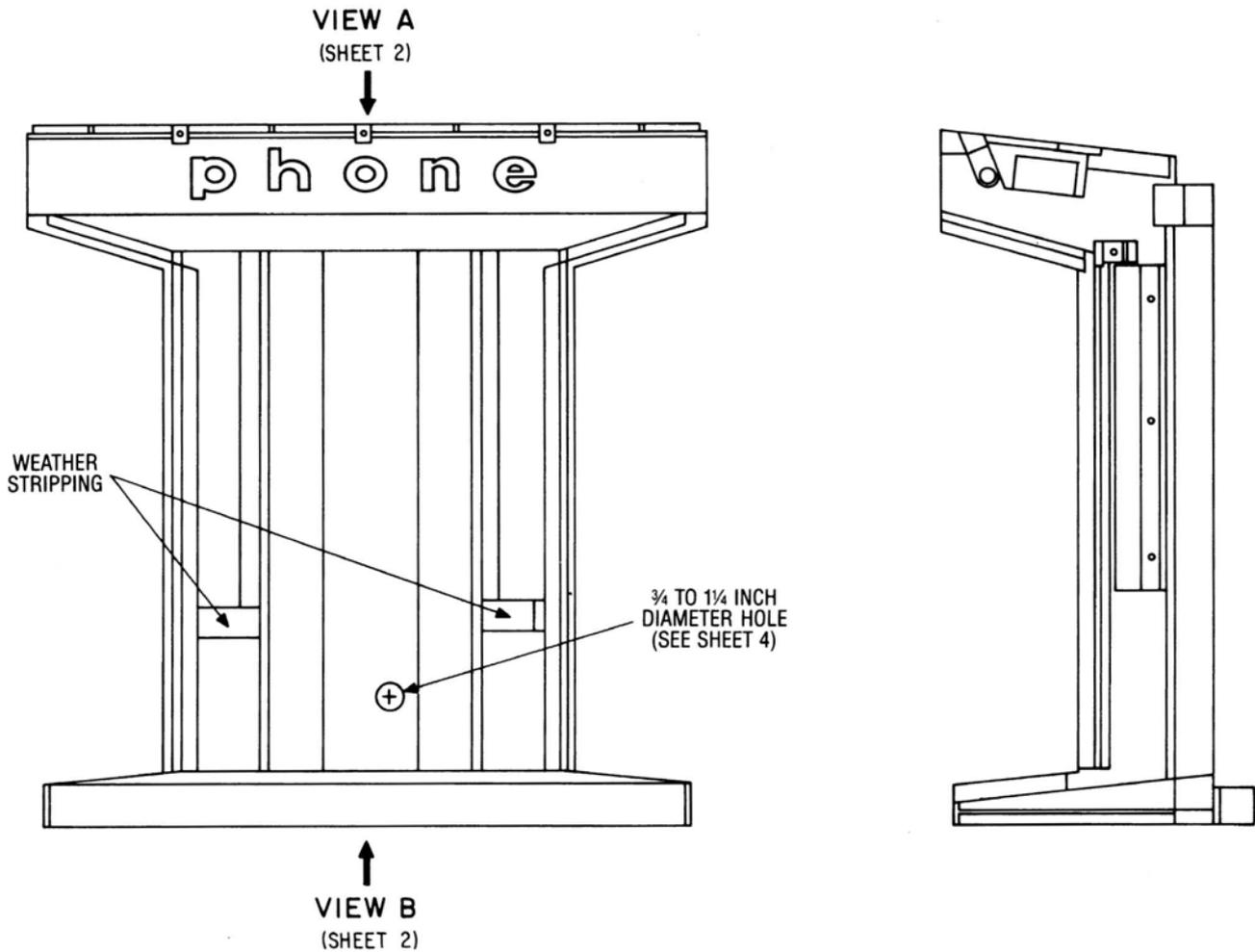
**STATION ENCLOSURE**

The Card Caller Telephone Station (CCTS) may be installed in an appropriate existing on-site enclosure or in a custom enclosure designed specifically for the CCTS.

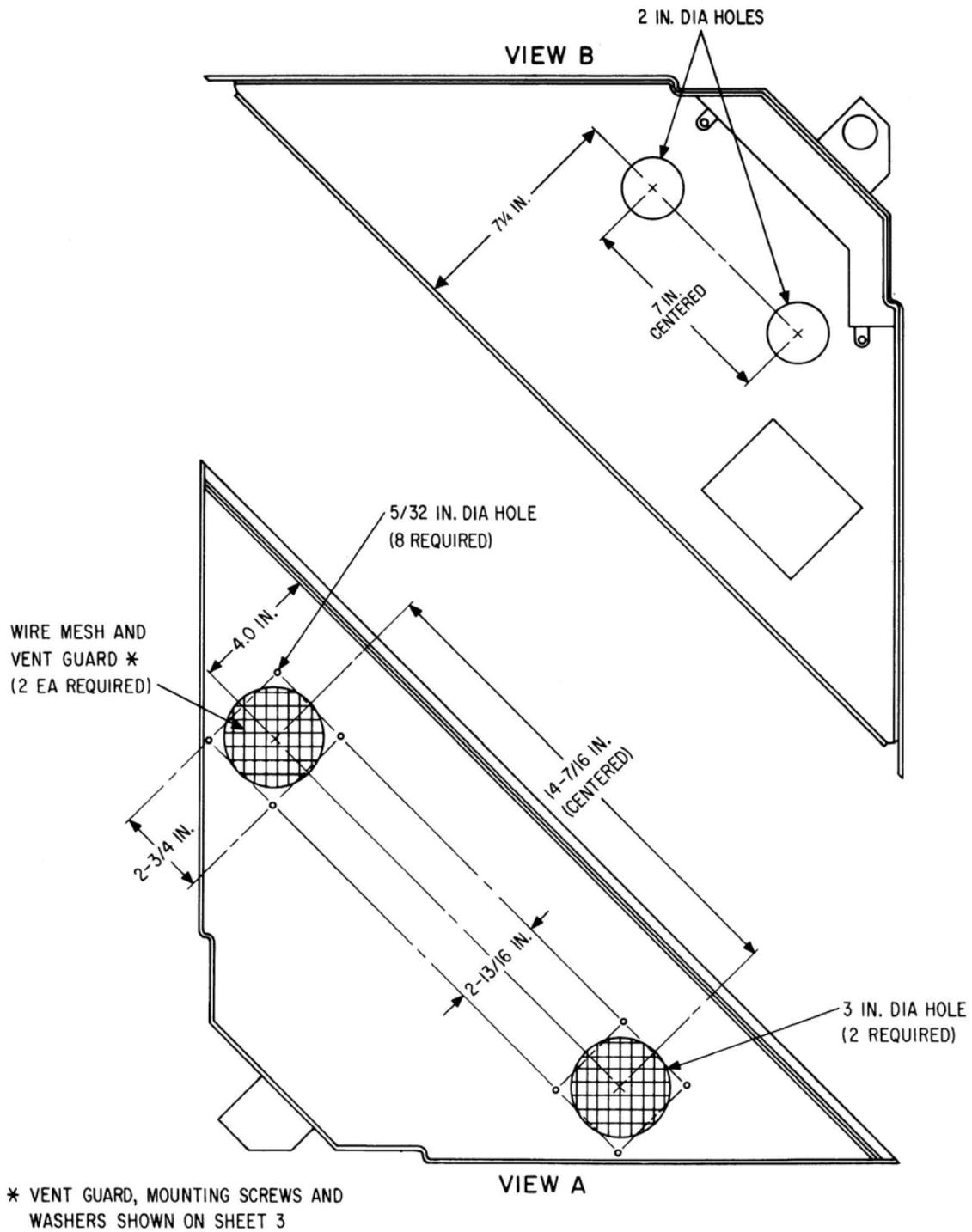
Generally, existing enclosures will require on site modifications for wiring, mounting, and venting holes required by the CCTS. Custom enclosures will not require such modification.

For details, see manufacturers instructions for the enclosure being used, as well as the separate job aid for modification of on site and non-custom enclosures.

Figures 2A, B, C, D are line drawings showing wire, venting, and mounting hole modifications required for the KS-19426 Housing to adapt it for CCTS use. This housing, which was used in the first field installation of the CCTS, is shown strictly as an example of modifications that may be required to adapt an existing enclosure for CCTS use.

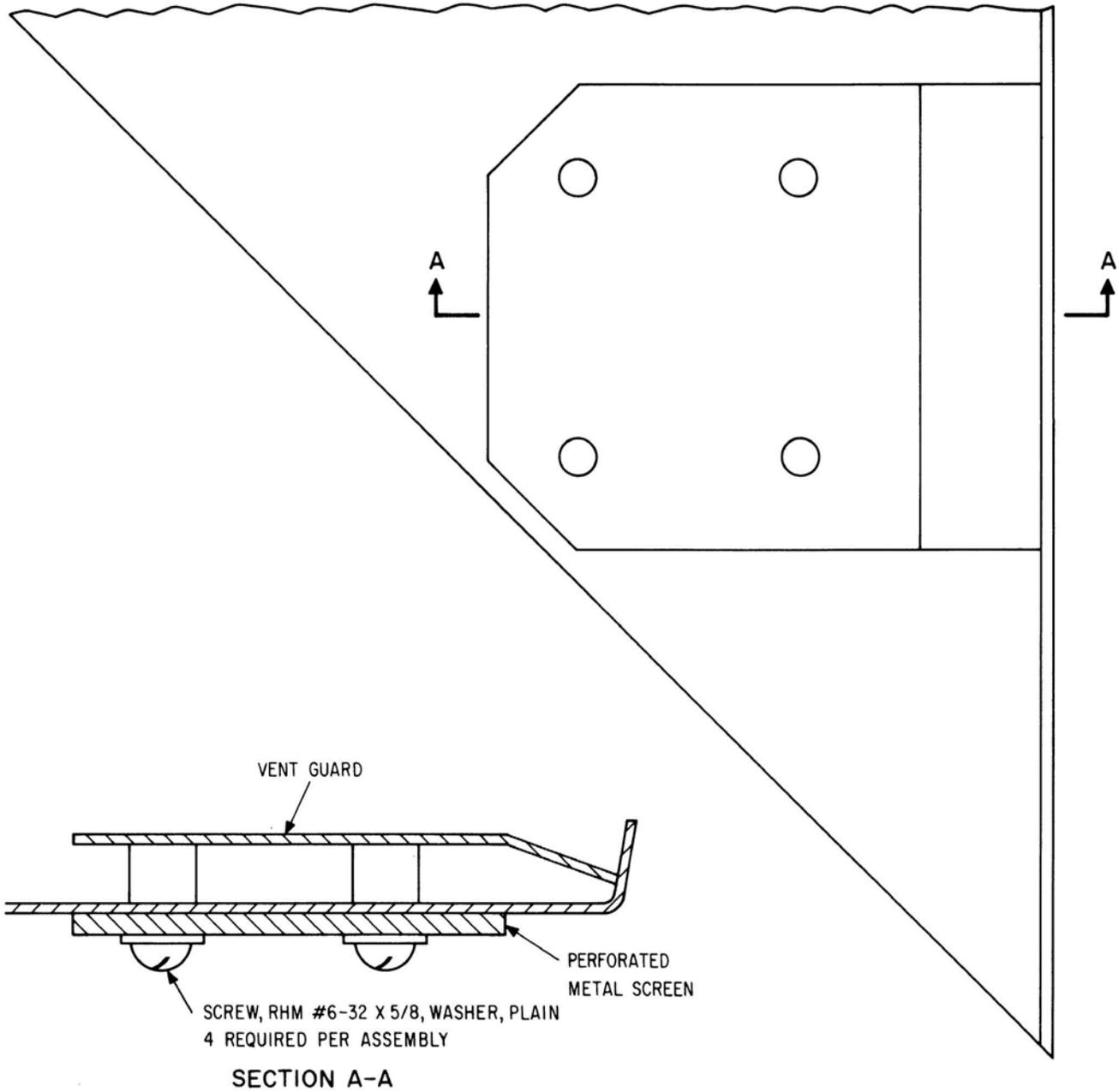


**FIGURE 2A: AIR FLOW MODIFICATION TO KS-19426 HOUSING**  
In this modification, weather stripping is applied on the left and right side panels to prevent air flow from going around the station housing instead of through it. In addition, a 3/4 to 1 1/4-inch hole is drilled at the rear of the enclosure to accommodate CO and CP cords.

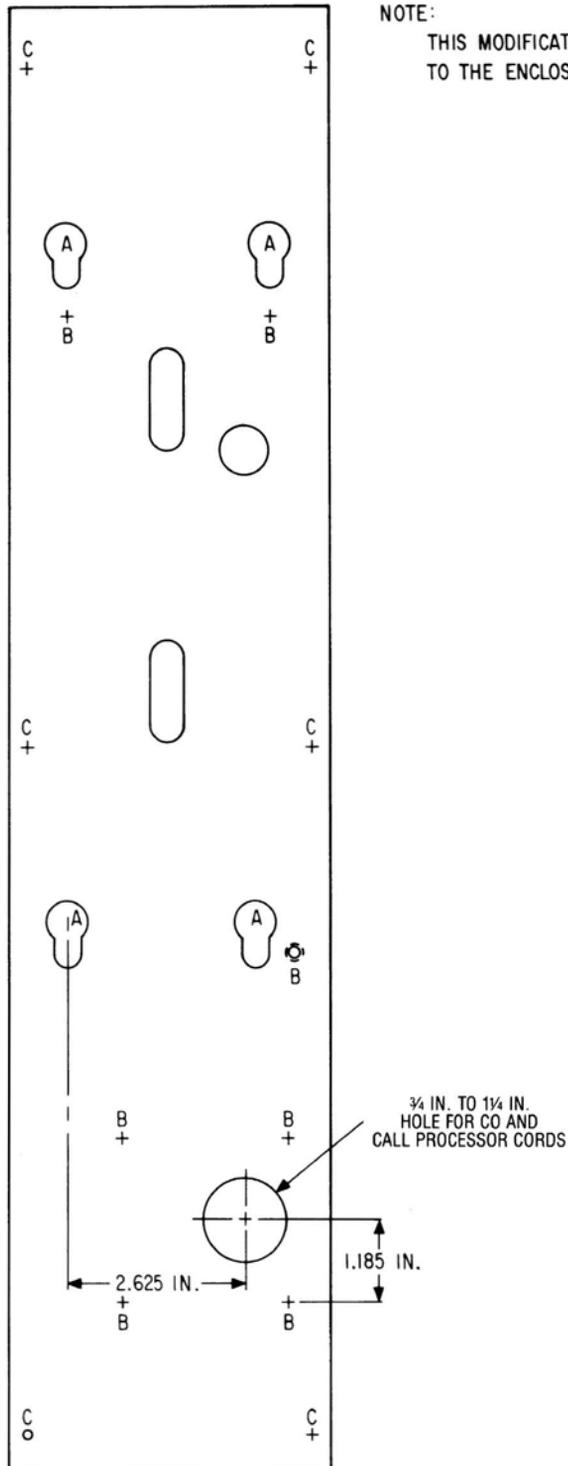


**FIGURE 2B: VENT HOLE MODIFICATION TO KS-19426 HOUSING**

In this modification, 2 and 3-inch Greenlee dies are used to cut holes in the top (View A) and bottom (View B) of the enclosure to enhance air flow through the station itself. Templates are recommended for fast, accurate positioning of the drill holes. Wire mesh and vent guards are used to cover the holes in the top of the housing. (See Fig. 2C.)



**FIGURE 2C: VENT GUARD MODIFICATION TO KS-19426 HOUSING**  
(Details of wire mesh and vent guard installation.)



**FIGURE 2D: WIRE AND MOUNTING HOLE MODIFICATIONS**  
 Mounting lugs fit into keyhole slots at rear of KS-19426 enclosure. A  
 3/4 to 1 1/4-inch hole is drilled to accommodate CO and CP cords.

**ENCLOSURE WIRING**

AC power will terminate at the enclosure in an outlet box with an approved ground, as specified by the NEC and local electrical codes. Access to the AC outlet box is required at the enclosure. The outlet box may be provided with an optional ON/OFF switch.

Before starting any modifications or wiring, remove the front top panel or light shield from the enclosure. Turn AC outlet switch (if provided) to OFF. Disconnect lighting fixture if any hole cutting or drilling is required in the vicinity of the lighting fixtures. Check with voltmeter to be certain AC is OFF.

Complete any required modifications to enclosure for wire, vent and mounting holes. Mount self-adhesive weather stripping on left and right rear wing panels of enclosure as shown in Figure 2A. This is required to make sure that vented air flow moves through the station instead of behind it. (See separate Job aid on enclosure installation.)

Feed the tip and ring line cord through the 3/4" to 1-1/4" opening at the rear of the enclosure.

Feed the CP lines (data pair) through the opening provided in the enclosure.

**STATION WIRING**

Place station on shelf of enclosure.

The AC power cord will normally come with one end already plugged into the power supply inside the station. Check that the power supply switch is OFF.

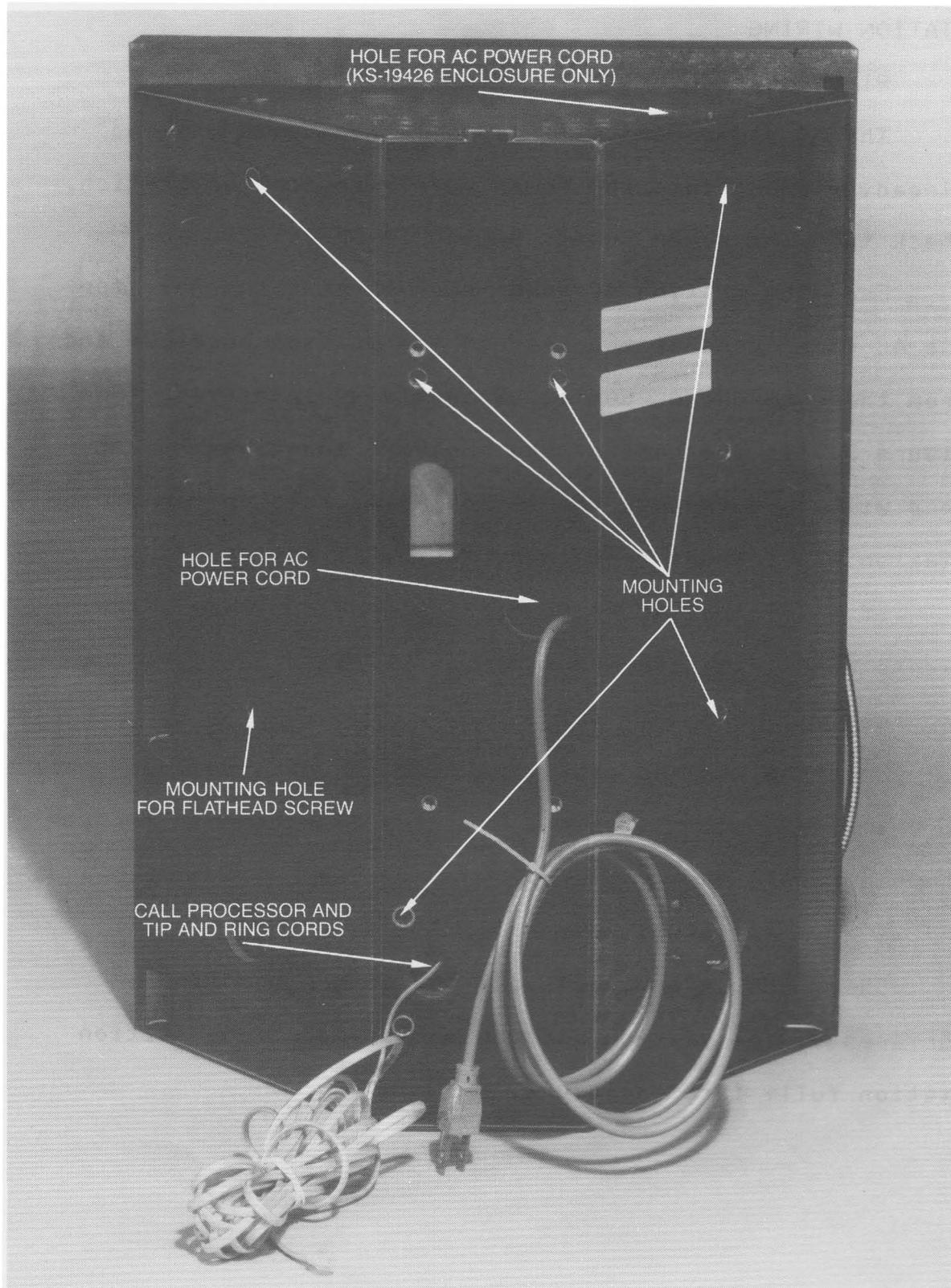
Feed the station AC power cord through the hole for the AC power cord at the rear of the station housing, and from there to the AC outlet. Do not plug in as yet. (See Figure 3.) In the case of the KS-19426 mounting, the AC cord will feed through the 1-inch diam. hole on top of the station housing and from there to the AC outlet.

If the 7-foot AC power cord is too long, dress the excess cord in a safe and neat manner using the wire tie provided with the station.

Feed the tip and ring line cord through the lower hole in the rear station housing. Feed the CP data pair through the same opening.

(Refer to Figures 3 and 4.)

Check that all wires clear the common mounting surfaces of the station and the enclosure. Then position station fully into enclosure.



**FIGURE 3: BACK HOUSING (REAR VIEW)**

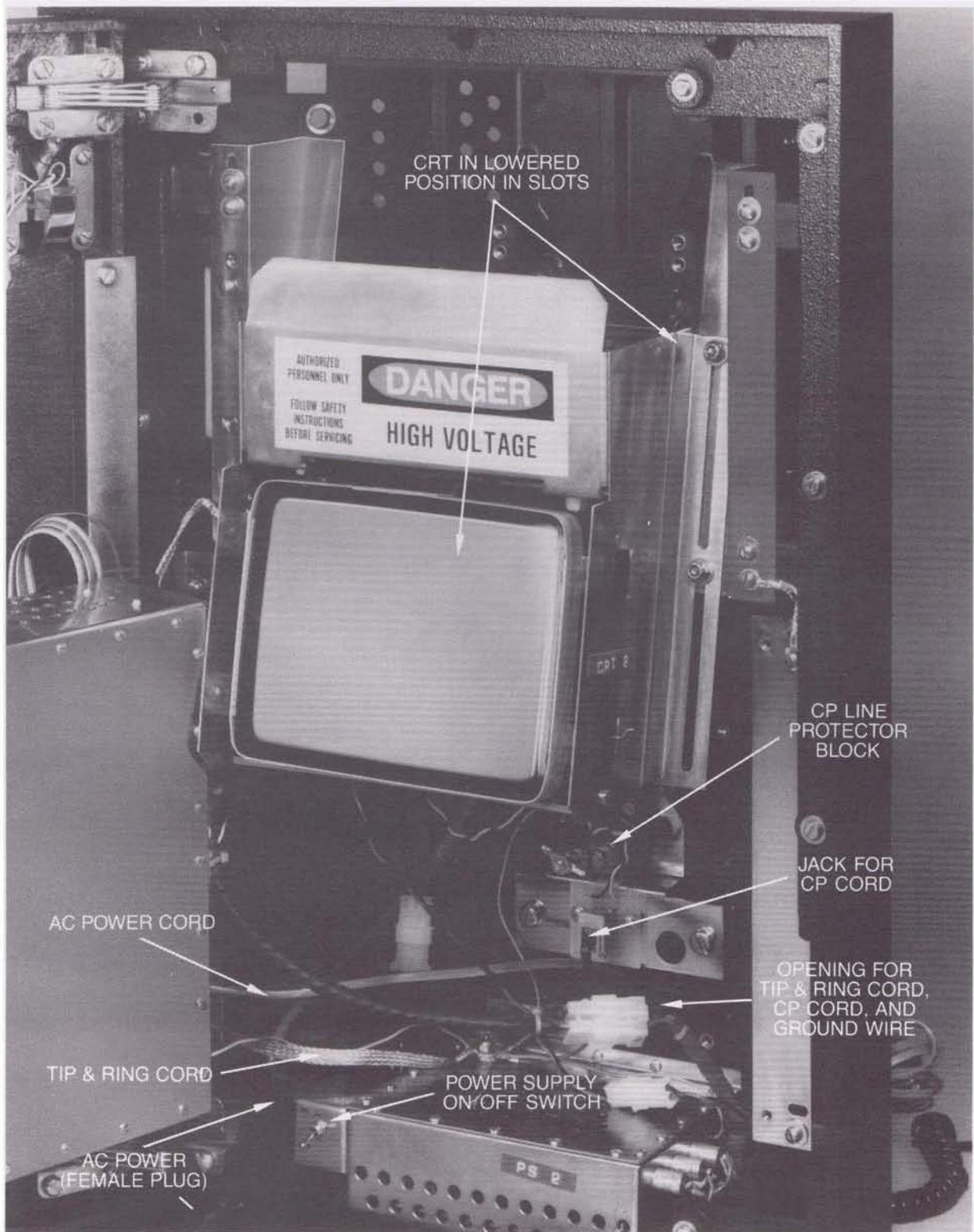


FIGURE 4: INSIDE VIEW WITH OUTSIDE DOOR AND PWB CHASSIS OPEN.

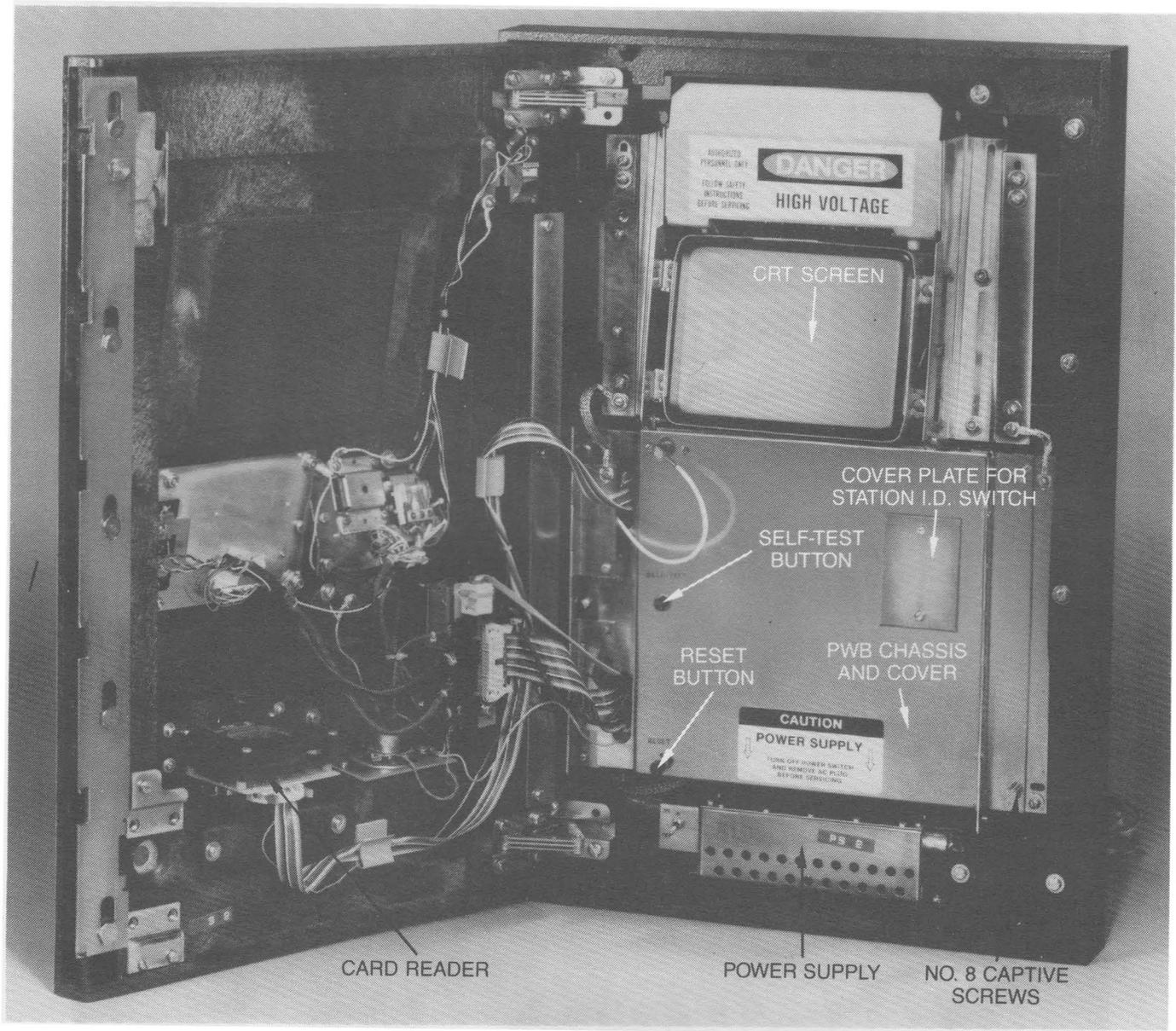
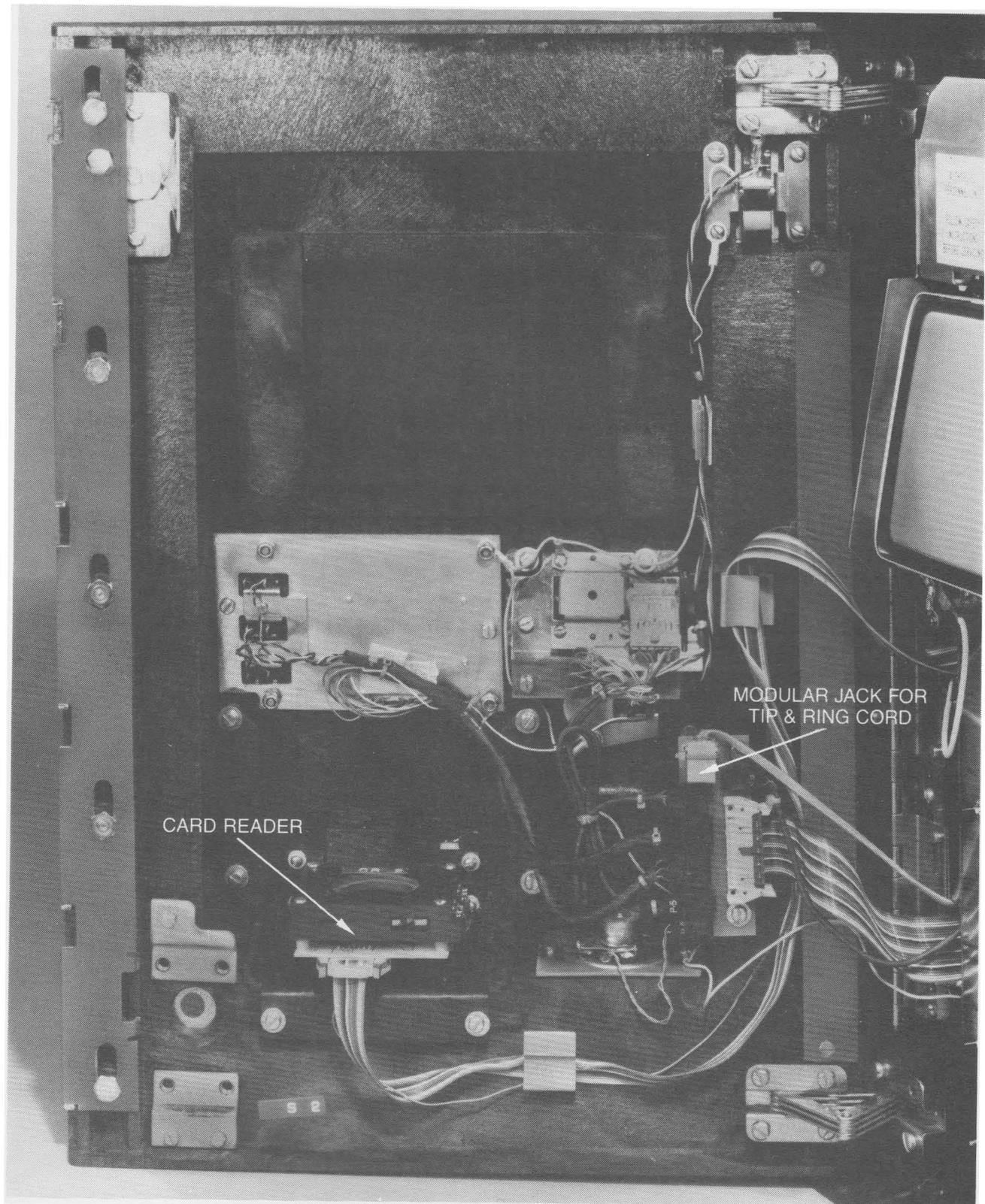


FIGURE 5: INSIDE VIEW WITH PWB CHASSIS CLOSED.



CARD READER

MODULAR JACK FOR  
TIP & RING CORD

FIGURE 6: DETAIL VIEW OF INSIDE FRONT DOOR

### MOUNTING STATION TO ENCLOSURE

The following steps are required to provide access to the station mounting screws:

Open outer door of station using 29A Lock Key and 719A tool. Door must open about 115 degrees to complete installation. (On the KS-19426 enclosure, the glass wing on the left side must be removed for this procedure.)

As you open the door, make sure you do not catch or bind the armored handset cord between inside door edge and housing. (See Figure 1 and 5.)

Loosen two No. 8 captive screws on right-hand side of Printed wiring board (PWB) chassis.

Swing PWB chassis open. Finish dressing wires through opening in back of station housing.

---

#### DANGER!

INSTALLER MUST BE CAUTIOUS ABOUT HIGH VOLTAGE  
IN THE CRT. ALWAYS OBSERVE THE DANGER LABEL  
WHEN WORKING NEAR THE CRT!

---

Prepare to loosen four No. 8 lock nuts on cathode ray tube (CRT) chassis. IMPORTANT! The CRT chassis must be held in place while lock nuts are loosened to prevent it from dropping abruptly in its mounting slots. Use an 11/32-inch nut driver to loosen lock nuts while holding chassis in place. Gently slide CRT chassis down. (See Figure 4.)

Install six 1/4-20 x 3/4-inch long pan head machine screws in mounting holes specified. (See Figure 3.) Install one 1/4-20 x 3/4-inch long flathead screw in remaining mounting hole on right rear housing panel.

NOTE - On the KS-19426 Housing, four 1/4-20 x 3/4-inch mounting lugs replace four of the six pan head machine screws mentioned above. These are installed on the rear of the station housing to align with the keyhole openings at the rear of the enclosure. (See four keyholes marked A on Figure 2D.) This is done before installing any other screws. Position station fully into the enclosure. Gently raise it to engage lugs in the keyhole openings, and then lower until lugs lock into place. Finish installing the remaining screws.

Now gently slide CRT chassis into its UP position. Hold it there and tighten the four lock nuts using your 11/32-inch nut driver.

Next, plug the call processing (CP) cord into the modular jack above the wire hole on the inside of the rear housing. (See Figure 4.)

Direct the tip and ring line cord along a path from the wire hole on the inside of the rear housing to the left behind the PWB chassis. (See Figures 4 and 6.)

Partially close the PWB chassis and feed the Tip and Ring cord through the lower hole near the hinge in the PWB chassis. Then plug the Tip and Ring line cord into the

modular Jack on the inside of the front door adjacent to the hinge.

Attach No. 12 AWG Ground wire to the center lug of the 123-type protector used for the CP line with a 3/8-inch nut driver. This is optional when data lines are run ONLY inside the building. It is MANDATORY when data lines run outside the building.

Double check to make sure that all wiring clears the PWB chassis, allowing it to swing freely on its hinges and to close without obstruction. Feed any slack in ground wire, line cord, CP cord, and AC power cord back through the wiring holes at the rear of the station. Tuck any remaining slack into space clear of the PWB chassis.

#### SET OPTION SWITCH

This is an appropriate point to set the Option Switch located on the digital PWB board and to make a visual check of the PWB boards at the same time.

There are eight available positions on the Option Switch. How they are set is a variable that depends on the hardware and software configuration of each unit. SPECIFIC INSTRUCTIONS WILL BE ISSUED FOR EACH UNIT. If there are any questions, contact AT&T Consumer Products, Holmdel, N.J. 07733.

For example, for FIRMWARE ISSUE 7.3, Generic 1, AMEX card use was disabled by setting Switch 3 to ON. To reset

Switch 3, the PWB boards must first be removed.

To remove the PWB boards, the following procedure must be STRICTLY followed:

- a) Check that power supply switch is OFF.
- b) Touch a reliable ground to discharge any static electrical buildup before handling PWB chassis or boards.
- c) Swing PWB chassis to open position.
- d) Remove PWB chassis cover. (See Figures 5 and 8.)
- e) FIRST remove the Analog PWB board by gently sliding it out. This is the rearmost PWB board. (THIS SEQUENCE MUST BE STRICTLY OBSERVED OR THE PWB BOARDS WILL BE DAMAGED.)

NEXT remove the Digital PWB board.

- f) Visually check both boards for any loose IC chip connectors. If any loose chips are found, gently press them back into position.

g) Set the Option Switch. In this example, only one position needs resetting:

POSITION	1	2	3	4	5	6	7	8
SETTING	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF

(IN THIS CASE, TURNING SWITCH 3 "ON" DISABLES AMEX.)

- h) Note the Station I.D. Switch, located in the upper right front quadrant of the Digital PWB board. There is no need to set this switch at this time.

## REPORT STATION DATA

i) Use this opportunity to record the STATION DATA on the Commercial Credit Card System Trouble Maintenance Report required for each new station installed. This data includes:

CARD CAGE SN#:

STATION LOCATION:

STATION ID# (AREA-CO-EXT):

CIRCUIT PACKS:   A-                   SER-           (ANALOG/SERIES)

                  D-                   SER-           (DIGITAL/SERIES)

The Card Cage and Circuit Pack #s will be found on labels on the PWB chassis and PWB boards. Enter them on the form provided. This data is essential for trial data collection and should be mailed to: R.L. Wise, Rm 1G634, AT&T Consumer Products, Holmdel, NJ 07733.

j) Replace both PWB boards in exactly the reverse sequence as you removed them. FIRST replace the Digital PWB board into the front section of the PWB chassis. THEN replace the Analog PWB board.

k) Replace the PWB chassis cover.

l) Close the PWB chassis, gently tucking any slack wires clear of the PWB chassis.

m) Tighten PWB chassis mounting screws.

Now you are ready to POWER UP the station.

**POWERING UP**

With station securely in place, check to make sure that power supply switch is OFF. Then plug AC power cord into AC outlet.

If AC outlet is switchable, turn AC outlet ON. Turn power supply switch to ON. The station is now powered.

After approximately 10 seconds, the CRT should warm up sufficiently to function properly, and a user message will appear on the screen. If message does not appear, do the following:

1. Check AC connections with a voltmeter and verify that AC exists at the AC outlet.
2. Turn power supply off and check fuse at left rear corner of power supply, both visually and with ohmmeter.

If both of these checks are okay and unit still does not work, the problem is not associated with AC power and a replacement station will be necessary.

**TROUBLES ESCALATION**

It is the technician's responsibility to escalate troubles resolution in the event that a replacement station is necessary. To do so, call AT&T - Communications at the 800 number printed on the Station Number Card for each station, and report the nature of the difficulty. Customers will use the same 800 number to report problems with the station. (At this writing, this 800 number has not yet been issued. As soon as it is assigned, an announcement will be made to all affected Services Division personnel.)

**SET STATION I.D. NUMBER**

Before setting the Station I.D. number, call the line operator to confirm that station I.D. number you have is correct. When you have confirmed the number, open the Station I.D. Cover Plate located on the right front of the PWB chassis by removing the top screw on the cover plate. Loosen bottom screw and swing coverplate down.

Using a KS-21107 tool, set the station I.D. number as follows: Area Code - Columns A, B, and C; CO Exchange - Columns D, E, and F; Extension - Columns G, H, J, and K. Close the cover plate and tighten the screws. The Station I.D. number will be displayed as part of Diagnostic Message #5 when you run the Interactive Diagnostic Field Test.

To insert the station I.D. number in the Station Number Card Window, you must do so from inside the front door of the station housing. (See Figure 7.)

First remove the number card retainer from the station number card window, using a KS-6320 orange stick. Insert the orange stick into the opening behind the number card retainer and push it out completely.

Fill out the number card to identify the station, and place the number card in the card retainer. Replace the retainer by inserting one end of the retainer into its enclosure. Then bend it slightly and slip the other end of the retainer into place.

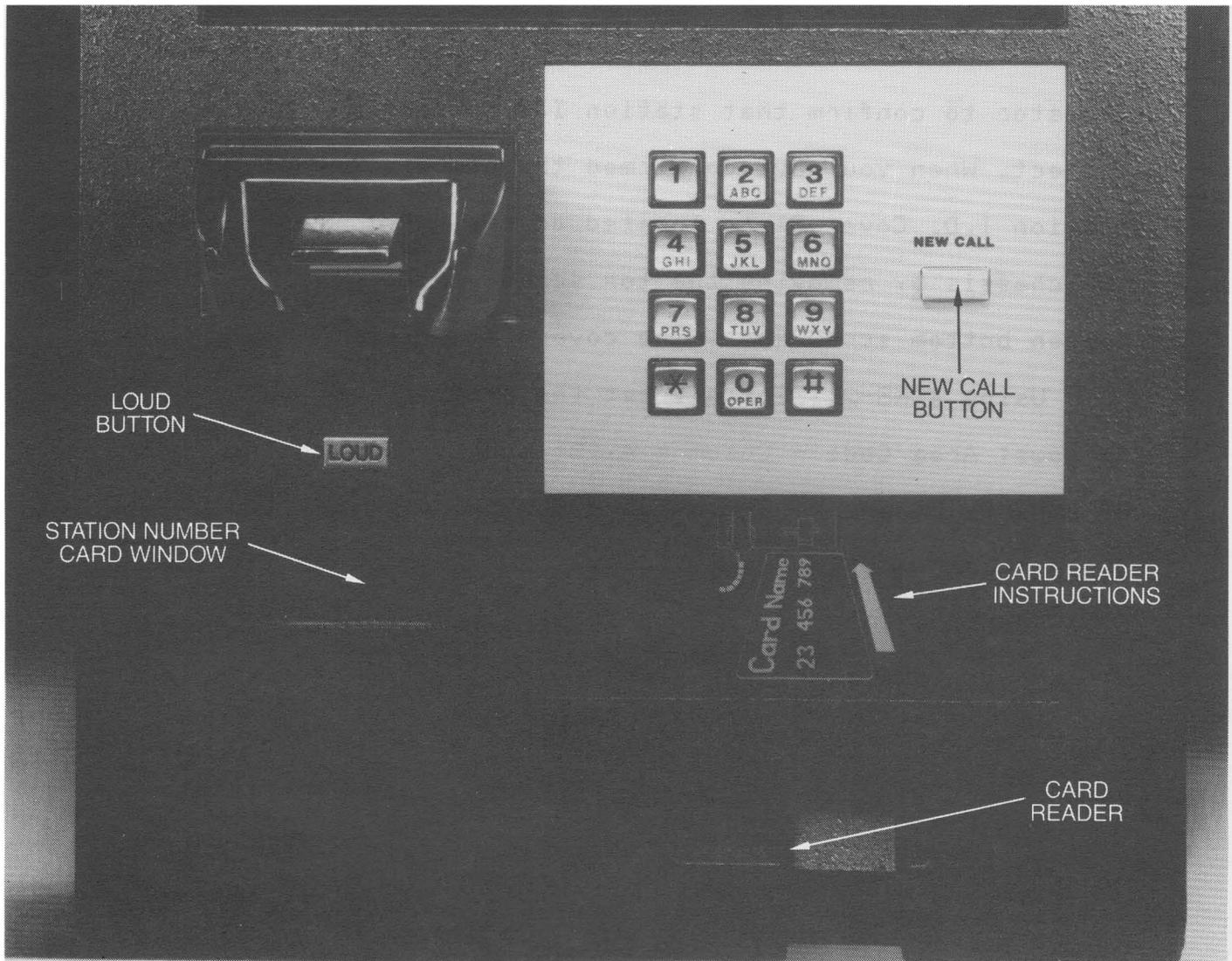


FIGURE 7: FRONT VIEW SHOWING STATION NUMBER CARD WINDOW AND CARD READER INSTRUCTIONS

INTERACTIVE STATION FIELD TEST

The Card Caller Station is capable of a wide range of interactive test procedures designed to identify troubles with specific fault messages.

1. STATION TEST.

Turn power supply switch to ON.

The CRT screen should respond with MESSAGE #M1, as follows:

-----  
READY TO SERVE YOU  
FOR THE FOLLOWING CALLS

-----  
AT&T CARD  
CALLING CARD  
AMEX CARD (OR MAJOR CREDIT CARD)  
COLLECT  
800 TOLL FREE  
DIRECTORY ASSISTANCE  
EMERGENCY  
-----

LIFT HANDSET FOR INSTRUCTIONS.

-----  
(Note - If the period (.) does NOT appear after the word INSTRUCTIONS, this indicates that data pair (CP line) is inoperative. Check that data link is operative before station is put into service.)

CRT screen may respond instead with MESSAGE #M0 below:

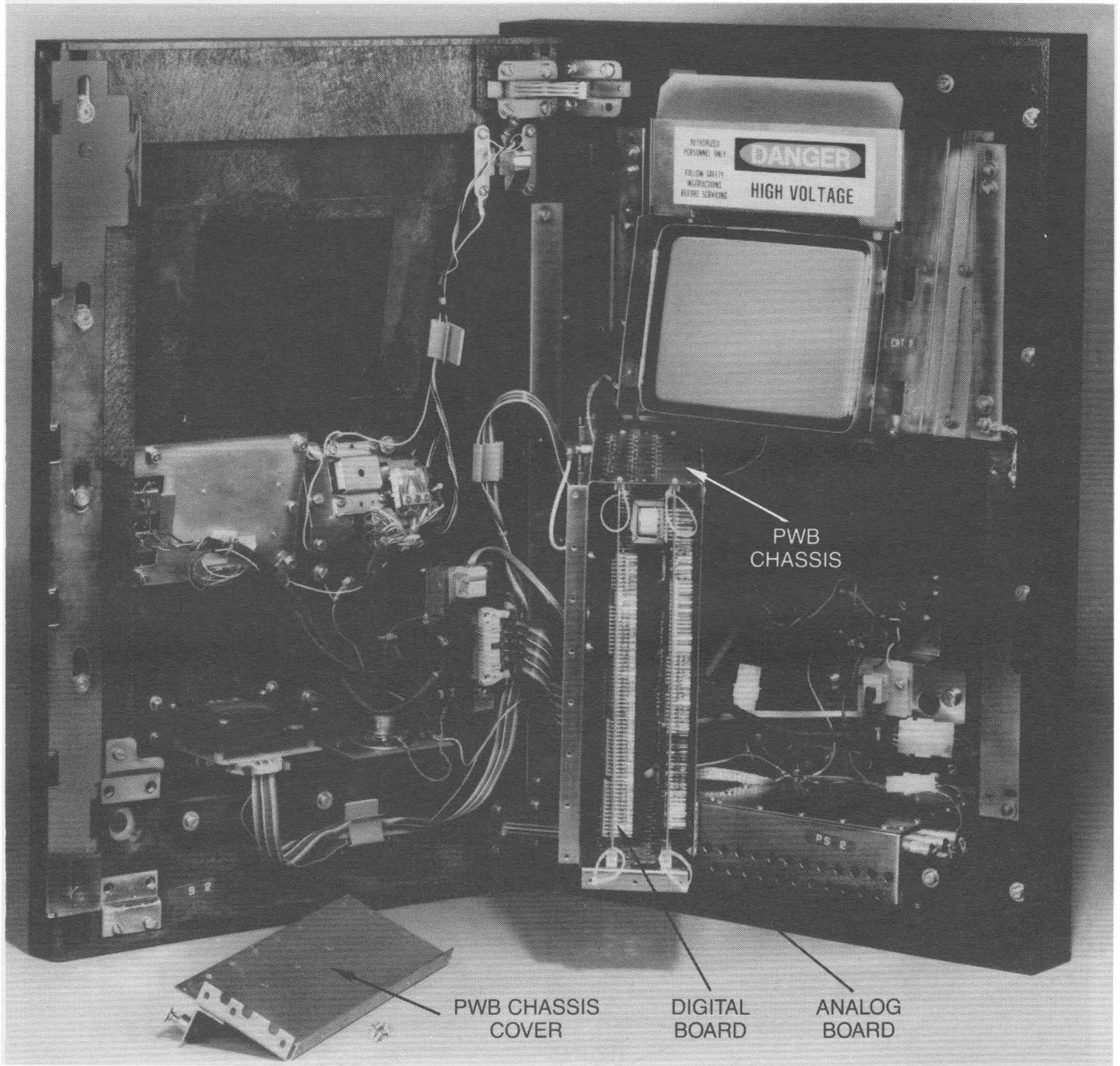
-----

PHONE NOT IN SERVICE

-----

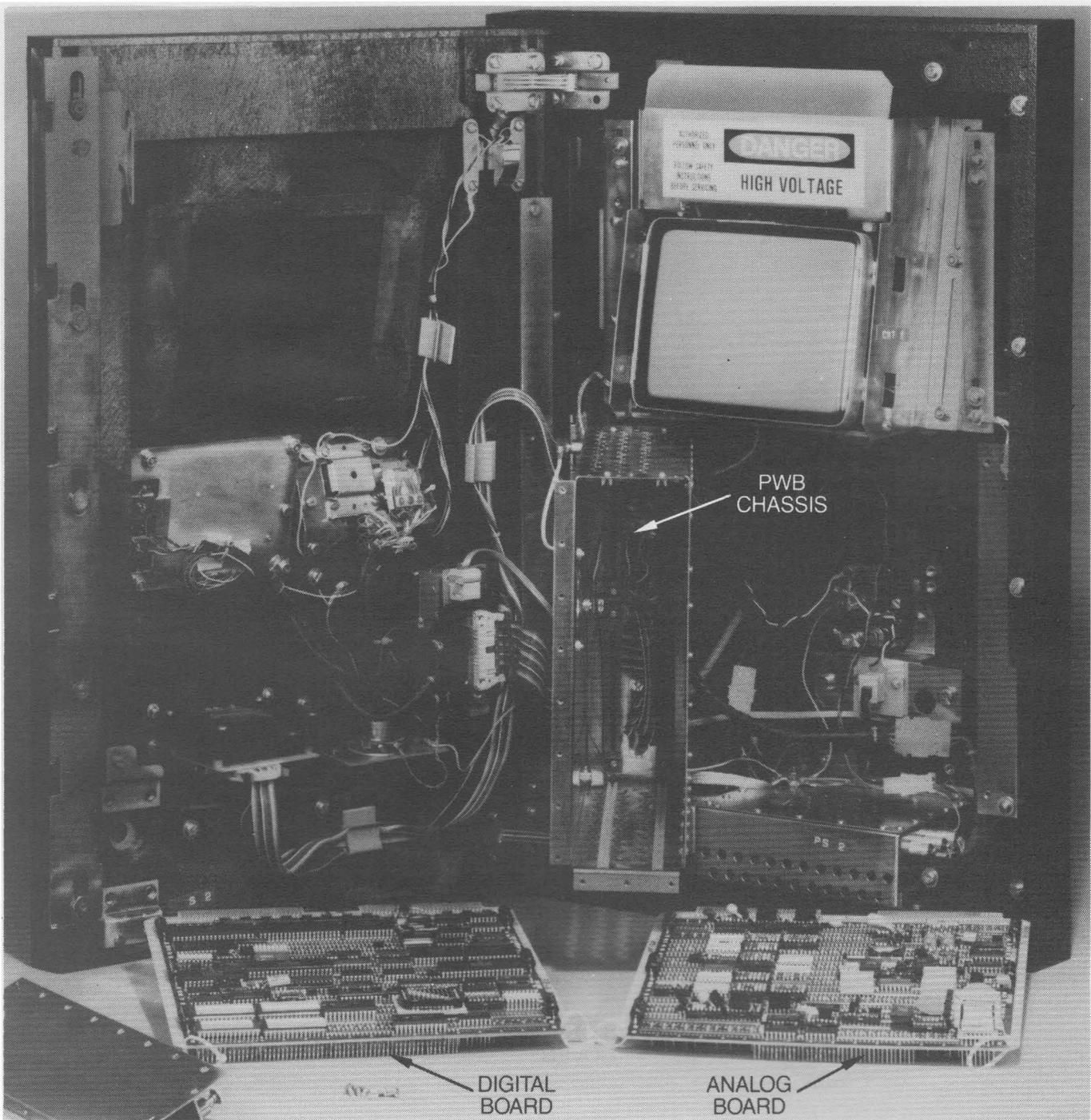
If so, check whether card reader has a card inserted. Remove card and press RESET button, and CRT screen should respond with MESSAGE #M1.

After MESSAGE #M1 appears, you may proceed with the Interactive Diagnostic Field Test procedure.



**FIGURE 8: INSIDE VIEW SHOWING COVER REMOVED FROM PWB CHASSIS AND LOCATION OF ANALOG AND DIGITAL BOARDS.**

NOTE—When removing analog and digital boards, the rearmost board (analog) must always be removed first; then the digital board may be removed. If this sequence is not STRICTLY observed, the boards will be damaged. When replacing the boards, insert the digital (frontmost) board first, and the analog board second.



**FIGURE 8A: INSIDE VIEW SHOWING THE ANALOG AND DIGITAL BOARDS REMOVED FROM THE PWB CHASSIS.**

NOTE—When removing analog and digital boards, the rearmost board (analog) must always be removed first; then the digital board may be removed. If this sequence is not STRICTLY observed, the boards will be damaged. When replacing the boards, insert the digital (frontmost) board first, and the analog board second.

## 2. INTERACTIVE DIAGNOSTIC TEST

To start test sequence, press Self-Test Button on the left front of the PWB chassis (See Figure 5.)

CRT screen will respond with DIAGNOSTIC MESSAGE #D1:

---

SW Release 4.0 Generation 1  
Self Diagnostic is Running.

PROM	PASSED (FAILED)
MAIN RAM	PASSED (FAILED)
CRT RAM	PASSED (FAILED)
CRT CONTROLLER	PASSED (FAILED)
I/O PORTS	PASSED (FAILED)
INTERRUPT CONT	PASSED (FAILED)
TIMES	PASSED (FAILED)
DATA LINK	PASSED (FAILED)
DT GEN & DET	PASSED (FAILED)
# TONE DET	PASSED (FAILED)
CARD READER	PASSED (FAILED)

PRESS \* TO CONTINUE

---

If CARD READER is listed as FAILED, verify that the connector is properly in place. (See Figure 6.) After checking connector at the back of the card reader, press Self-Test button again. If Card Reader is still listed as FAILED, a replacement Card Reader or a replacement station must be installed. (See TROUBLES ESCALATION, P. 23)

If any other component is listed as FAILED, proceed as follows:

- a) Turn power supply OFF (See Figure 4.)
- b) Check all connectors. If any are loose or improperly terminated, terminate them properly. (See Figures 4 and 6.)

c) Turn power supply ON.

d) Press Self-Test button to reinitiate diagnostics.

If any components are still listed as FAILED, proceed as follows:

a) Turn power supply OFF.

b) Check that you are properly grounded before handling PWB chassis or boards.

c) Swing PWB chassis to open position.

d) Remove PWB chassis cover. (See Figures 5 and 8.)

e) FIRST remove the Analog PWB board. This is the rearmost PWB board. (THIS SEQUENCE MUST BE STRICTLY OBSERVED OR THE PWB BOARDS WILL BE DAMAGED.)

NEXT remove the Digital PWB board.

f) Check both PWB boards for any loose IC chip connectors. If any loose chips are found, press them gently back into position.

g) Replace boards in the reverse sequence as you removed them. FIRST replace the Digital PWB board into the front of the PWB chassis. NEXT replace the Analog PWB board.

h) Replace PWB chassis cover.

i) Close PWB chassis and turn power supply ON.

j) Press RESET button on PWB chassis. MESSAGE #M1 will reappear.

k) Press Self-Test button to reinitiate diagnostics.

**FAILURE TO PASS TEST**

If any components are still listed as FAILED, repeat steps a) through e) above. Then continue as follows:

- f) Insert replacement Digital Board.
- g) Insert replacement Analog Board.
- h) Replace PWB chassis cover.
- i) Close PWB chassis and turn power supply ON.
- j) Press RESET button on PWB chassis. MESSAGE #M1 will

reappear.

- k) Press Self-Test button to reinitiate diagnostics.

IF ANY COMPONENTS ARE STILL IN A FAILED STATE, A REPLACEMENT STATION WILL BE REQUIRED. (See TROUBLES ESCALATION, P. 23)

If all components are listed as PASSED, proceed with remainder of Diagnostic Field Test (MESSAGES D2 through D16). All of the DIAGNOSTIC MESSAGES are listed immediately following this section.

If any segment of the Diagnostic Field Test must be repeated, the Field Test Procedure can be reinitiated by pressing the Self Test Button on the PWB chassis.

When Diagnostic Testing is completed, you should close the outer door of the station and lock it, using the 719A tool and the 29A Lock Key. (See Figure 1.)

The station is now fully operational, and you may proceed with CALL TEST SEQUENCES #1 through #6. These are listed at the end of this section.

## DIAGNOSTIC MESSAGE #D1

-----  
SW Release 4.0 Generation 1

Self Diagnostic Is Running.

PROM	PASSED (FAILED)
MAIN RAM	PASSED (FAILED)
CRT RAM	PASSED (FAILED)
CRT CONTROLLER	PASSED (FAILED)
I/O PORTS	PASSED (FAILED)
INTERRUPT CONT	PASSED (FAILED)
TIMES	PASSED (FAILED)
DATA LINK	PASSED (FAILED)
DT GEN & DET	PASSED (FAILED)
# TONE DET	PASSED (FAILED)
CARD READER	PASSED (FAILED)

PRESS \* TO CONTINUE

-----

NOTE - All components should be listed as PASSED.

## DIAGNOSTIC MESSAGE #D2

-----  
TEST PATTERN 1 SHALL BE:  
A CROSS HATCH TO CHECK FOR  
A STABLE & CENTERED DISPLAY

TEST PATTERN 2 SHALL BE:  
TOP HALF OF SCREEN  
FILLED WITH %'S AND  
BOTTOM HALF OF SCREEN  
FILLED WITH Z'S

PRESS \* KEY TO CONTINUE

-----



DIAGNOSTIC MESSAGE #D5

-----  
CHECK STATION ID SWITCH

STATION ID IS: 0000000000 (10 DIGIT NUMBER)

SWITCH IS: ON HOOK (OFF HOOK)

OPTION SWITCH 5 - OFF (ON)

OPTION SWITCH 3 - OFF

OPTION SWITCH 1 - OFF

PRESS \* KEY TO CONTINUE

-----  
NOTE - Lift handset to change ON HOOK condition to OFF HOOK  
condition. (Some static may appear on the CRT screen when  
this message is displayed.)

DIAGNOSTIC MESSAGE #D6

---

LISTEN FOR 12 TOUCH-TONE  
FREQUENCIES SHOWN BELOW:

DIAL KEY 1  
DIAL KEY 2  
DIAL KEY 3  
DIAL KEY 4  
DIAL KEY 5  
DIAL KEY 6  
DIAL KEY 7  
DIAL KEY 8  
DIAL KEY 9  
DIAL KEY 0  
DIAL KEY #  
DIAL KEY \*

PRESS # KEY TO REPEAT TEST.  
PRESS \* KEY TO CONTINUE.

---

NOTE - Lift handset off hook and listen for tones as you press each key in succession. Replace handset on hook and press \* Key to continue diagnostic sequence.

NOTE - Failure to pass the Tone Generation Test or the # Tone Det Test (See Diagnostic Message #D1) may indicate a need to reset Option Switch 5 from OFF to ON, or from ON to OFF. This setting varies depending on whether an old or new type tone generation chip is used in the station. If a change in the position of Option Switch 5 does not cause a change from a FAIL to a PASS condition, then a replacement station may be required. (See Troubles Escalation.)

DIAGNOSTIC MESSAGE #D7

---

RECEIVER OFF TEST

LIFT HANDSET AND LISTEN  
FOR DIAL TONE.

PRESS # KEY TO DISABLE  
AND ENABLE.

RECEIVER ON (OFF)

PRESS \* KEY TO CONTINUE

---

NOTE - Press # Key to disable and enable receiver. RECEIVER  
ON will change to RECEIVER OFF when receiver is disabled,  
and vice versa. Check to be sure dial tone is enabled upon  
completion of this test.

DIAGNOSTIC MESSAGE #D8

---

SIDETONE AND TRANSMIT OFF TEST

BLOW INTO HANDSET  
PRESS # KEY TO DISABLE  
AND ENABLE TRANSMITTER.

TRANSMITTER ON (OFF)

PRESS \* KEY TO CONTINUE

---

NOTE - When you press # Key, transmitter is enabled or  
disabled and display reads TRANSMITTER ON (or OFF).

DIAGNOSTIC MESSAGE #D9

---

KEYPAD ENTER TEST

PRESS EACH DIAL KEY (EXCEPT \*)  
AND CHECK FOR PROPER DISPLAY

1234567890#  
(DIGITS DISPLAYED IN SUCCESSION)

PRESS \* KEY TO CONTINUE

---

NOTE - As you press each key, it will be displayed in  
sequence and the proper tone will sound for each key.

DIAGNOSTIC MESSAGE #D10

---

NEW CALL BUTTON TEST

PRESS NEW CALL BUTTON

NEW CALL BUTTON OK (NOT OK)

PRESS \* KEY TO CONTINUE

---

NOTE - Press NEW CALL button and NEW CALL BUTTON OK message  
will appear.

DIAGNOSTIC MESSAGE #11

---

LOUD BUTTON TEST

PRESS LOUD BUTTON AND  
LISTEN FOR INCREASED VOLUME

PRESS \* KEY TO CONTINUE

---

NOTE - Press LOUD BUTTON twice to increase volume. Third  
press restores volume to original level.

DIAGNOSTIC MESSAGE #12

---

CARD READER TEST

INSERT TEST CARD INTO READER

(CRT MESSAGE APPEARS)  
BAD CARD READ ON INSERTION  
REMOVE TEST CARD FROM READER

(OR)

GOOD CARD READ ON INSERTION  
000000 (CARD NUMBER)  
REMOVE TEST CARD FROM READER

PRESS \* KEY TO CONTINUE

---

NOTE - If card is not read on insertion, "BAD CARD READ"  
message appears. If card is read on insertion, "GOOD CARD  
READ" message appears, followed by Card Number.

DIAGNOSTIC MESSAGE #13

---

CARD READER TEST

BAD CARD READ ON REMOVAL  
PRESS # KEY TO REPEAT TEST

(OR)

GOOD CARD READ ON REMOVAL  
000000 (CARD NUMBER)  
PRESS # KEY TO REPEAT TEST

PRESS \* KEY TO CONTINUE

---

NOTE - This message indicates either a BAD CARD reading on removal or a GOOD CARD reading and the card number (000000)

DIAGNOSTIC MESSAGE #D14

---

LIFT HANDSET AND PRESS # KEY

LOOP CONNECT - PASSED  
PRESS # KEY TO REPEAT TEST

PRESS \* KEY TO CONTINUE

---

NOTE - PASSED appears when handset is lifted OFF hook and # Key is pressed.

DIAGNOSTIC MESSAGE #D15

---

ALERTING TONE TEST

PRESS # KEY TO ENABLE AND  
DISABLE ALERTING TONE

ALERTING TONE ON (OFF)

PRESS \* KEY TO CONTINUE

---

NOTE - Press # Key to enable and disable Alerting tone.  
Alerting tone sounds and ON message appears when tone is  
enabled. Alerting tone ends and OFF message appears when #  
Key is Pressed again.

DIAGNOSTIC MESSAGE #D16

---

INTERACTIVE TEST COMPLETE

PRESS FIELD TEST BUTTON  
OR  
PRESS RESET BUTTON

---

NOTE - Press FIELD TEST button to repeat Diagnostic Test  
Sequence. Press RESET button to restore Message #M1. Alarm  
beeps when RESET button is Pressed.

THIS ENDS THE DIAGNOSTIC TEST SEQUENCE. FOR THE CALL TEST  
SEQUENCE, SEE THE FOLLOWING SECTION.

**CALL TEST SEQUENCES.**

The following Call Test Sequences are used to test station operation using valid and invalid credit cards or when making emergency, collect, and 800 calls or Calling Card calls without the card reader.

Where references are made to specific Call Test Messages, the Message # will be given together with a significant portion of the Test Message in order to avoid unnecessary repetition of message texts. The complete messages are listed in the next section, CALL TEST MESSAGES.

TEST SEQUENCE 1: TO CHECK USE OF VALID AMERICAN EXPRESS  
CARD USING THE CARD READER.

OPERATION	MESSAGE
1. HANDSET ON HOOK.	#M1 "READY TO SERVE YOU..."
2. LIFT HANDSET	#M2 "INSERT YOUR CARD BELOW"
3. INSERT VALID AMEX CARD	
BAD READING?	#M10 "YOUR CARD WAS NOT READ. CAREFULLY REINSERT IT BELOW."
GOOD READING?	#M4 "DIAL 0 + PHONE NUMBER."
4. DIAL 0 + PHONE NUMBER.	
BAD PHONE NUMBER?	#M9 "SORRY, YOUR CALL CANNOT BE COMPLETED AS DIALED."
PHONE NUMBER OK?	
5. AMEX CHECK	#M5 DIALED PHONE NUMBER APPEARS ON SCREEN FOR TWO SECONDS AND THEN DISAPPEARS. MESSAGE READS "PLEASE LISTEN"
6. NETWORK CHECK	
UNCOMPLETED CALL?	#M17 "SORRY WE ARE EXPERIENC- ING SYSTEM DIFFICULTIES. PRESS NEW CALL AND TRY AGAIN"
NETWORK OK?	CALL IS COMPLETED.
7. HANG UP.	#MB "THANK YOU FOR CHOOSING AT&T...."
(AFTER FIVE SECONDS)	#M1 "READY TO SERVE YOU..."

TEST SEQUENCE 2: TO CHECK USE OF VALID AT&T CALLING CARD USING THE CARD READER.

This sequence is essentially the same as Test Sequence 1, except that Step 5 (AMEX CHECK) is eliminated.

TEST SEQUENCE 3: TO CHECK USE OF AT&T CALLING CARD WITHOUT USING THE CARD READER.

OPERATION	MESSAGE
1. HANDSET ON HOOK	#M1 (SAME AS ABOVE)
2. LIFT HANDSET	#M2 "DIAL Ø + PHONE NUMBER"
3. DIAL PHONE NUMBER	
BAD PHONE NUMBER?	#M9 "SORRY, YOUR CALL CANNOT BE COMPLETED AS DIALED."
PHONE NUMBER OK?	#M5 DIALED PHONE NUMBER APPEARS ON SCREEN FOR TWO SECONDS AND THEN DISAPPEARS. MESSAGE READS "PLEASE LISTEN"
4. NETWORK CHECK.	
UNCOMPLETED CALL?	#M17 "SORRY, WE ARE EXPERIENCING SYSTEM DIFFICULTIES."
NETWORK OK?	OPERATOR INSTRUCTIONS TO DIAL CARD NUMBER. CALL COMPLETED.
5. HANG UP.	#MB "THANK YOU FOR CHOOSING AT&T..."
(AFTER FIVE SECONDS)	#M1 "READY TO SERVE YOU..."

TEST SEQUENCE 4: NON-AMEX, NON-AT&T, NON-BELL CARD USING  
CARD READER.

OPERATION	MESSAGE
1. HANDSET ON HOOK	#M1 "READY TO SERVE YOU..."
2. LIFT HANDSET	#M2 "INSERT YOUR CARD BELOW"
3. INSERT NON-APPROVED CARD	
BAD READING?	#M10 "SORRY, YOUR CARD WAS NOT READ. CAREFULLY REINSERT IT BELOW. TO PLACE A CALL WITHOUT A CARD, PLEASE DIAL 0 + PHONE NUMBER."
GOOD READING?	#M12 "SORRY, THIS PHONE ACCEPTS ONLY: AT&T CARDS, MAJOR CREDIT CARD. PLEASE INSERT A VALID CARD."
4. HANG UP	#MB "THANK YOU FOR CHOOSING AT&T..."
AFTER FIVE SECONDS...	#M1 "READY TO SERVE YOU..."

TEST SEQUENCE 5: EMERGENCY-COLLECT-800 CALLS.

OPERATION	MESSAGE
1. HANDSET ON HOOK.	#M1 "READY TO SERVE YOU..."
2. LIFT HANDSET.	#M2 "FOR OTHER TYPES OF CALLS DIAL 0 + PHONE NUMBER"
3. DIAL 0 + PHONE NUMBER	
INVALID PHONE NUMBER?	#M9 "SORRY, YOUR CALL CANNOT BE COMPLETED AS DIALED."
PHONE NUMBER OK?	#M5 DIALED PHONE NUMBER SHOWS ON SCREEN FOR 2 SECONDS AND THEN DISAPPEARS. MESSAGE READS: "PLEASE LISTEN."
DIAL AGAIN?	#M5 ADDS: "TO PLACE ANOTHER CALL, DO NOT HANG UP. PRESS NEW CALL."
4. HANG UP.	#M8 "THANK YOU FOR CHOOSING AT&T..."
AFTER FIVE SECONDS	#M1 "READY TO SERVE YOU..."

TEST SEQUENCE 6: NON-EFFECTIVE AMEX CARD, USING CARD READER

OPERATION	MESSAGE
1. HANDSET ON HOOK.	#M1 "READY TO SERVE YOU..."
2. LIFT HANDSET	#M2 "INSERT YOUR CARD BELOW"
3. INSERT BAD AMEX CARD	
BAD READING?	#M10 "YOUR CARD WAS NOT READ. CAREFULLY REINSERT IT BELOW."
GOOD READING?	#M4 "DIAL 0 + PHONE NUMBER."
4. DIAL 0 + PHONE NUMBER	
BAD PHONE NUMBER?	#M9 "SORRY, YOUR CALL CANNOT BE COMPLETED AS DIALED."
PHONE NUMBER OK?	
5. AMEX CHECK	
NO ANSWER FROM AMEX	#M11 "PLEASE WAIT."
AFTER 15 SECONDS	#M5 "PLEASE LISTEN. TO PLACE ANOTHER CALL, DO NOT HANG UP. PRESS NEW CALL."
AMEX RESPONSE	#M13 "SORRY, YOUR CREDIT CARD IS NOT CURRENTLY EFFECTIVE."
6. HANG UP.	#M8 "THANK YOU FOR CHOOSING AT&T..."
AFTER FIVE SECONDS	#M1 "READY TO SERVE YOU..."

CALL TEST MESSAGES

MESSAGE #M0

-----  
PHONE NOT IN SERVICE  
-----

MESSAGE #M1

-----  
READY TO SERVE YOU  
FOR THE FOLLOWING CALLS:

-----  
AT&T CARD  
CALLING CARD  
MAJOR CREDIT CARD  
COLLECT  
800 TOLL FREE  
DIRECTORY ASSISTANCE  
EMERGENCY  
-----

LIFT HANDSET FOR INSTRUCTIONS.  
-----

MESSAGE #M2

---

TO USE YOUR  
AT&T CARD  
MAJOR CREDIT CARD

INSERT YOUR CARD BELOW

FOR OTHER TYPES OF CALLS  
DIAL 0 + PHONE NUMBER

---

MESSAGE #M3

---

THANK YOU

PLEASE REMOVE YOUR CARD NOW

---

MESSAGE #M4

---

DIAL 0 + PHONE NUMBER

---

TO CLEAR  
DO NOT HANG UP  
PRESS NEW CALL

---

MESSAGE #M5

---

0-555-1212  
PLEASE LISTEN

TO PLACE ANOTHER CALL,  
DO NOT HANG UP.  
PRESS NEW CALL.

---

MESSAGE #MB

---

AT&T COMMUNICATIONS

THANK YOU  
FOR CHOOSING AT&T

FOR CUSTOMER ASSISTANCE  
RELATED TO THIS SERVICE  
DIAL NUMBER BELOW.

---

MESSAGE #M9

---

DIAL 0 + PHONE NUMBER

SORRY, YOUR CALL CANNOT  
BE COMPLETED AS DIALED.

TO CLEAR,  
DO NOT HANG UP.  
PRESS NEW CALL.

---

MESSAGE #M10

---

SORRY, YOUR CARD WAS NOT READ.  
CAREFULLY RE-INSERT IT BELOW.

TO PLACE A CALL WITHOUT A CARD,  
PLEASE DIAL 0 + PHONE NUMBER.

---

MESSAGE #M11

---

DIAL 0 + PHONE NUMBER:

PLEASE WAIT.

TO CLEAR,  
DO NOT HANG UP.  
PRESS NEW CALL.

---

MESSAGE #M12

---

SORRY, THIS PHONE ACCEPTS ONLY:  
AT&T CARDS  
MAJOR CREDIT CARDS

PLEASE INSERT A VALID CARD.

TO PLACE A CALL WITHOUT A CARD,  
PLEASE DIAL 0 + PHONE NUMBER.

---

MESSAGE #M13

---

SORRY, YOUR CREDIT CARD  
IS NOT CURRENTLY EFFECTIVE.

---

MESSAGE #M15

---

YOUR CALL CANNOT BE CHARGED TO  
YOUR CREDIT CARD  
AT THIS TIME.

---

MESSAGE #M17

---

SORRY, WE ARE EXPERIENCING  
SYSTEM DIFFICULTIES.

PRESS NEW CALL AND TRY AGAIN.

---

TO PLACE ANOTHER CALL,  
DO NOT HANG UP.  
PRESS NEW CALL.

---

MESSAGE #M18

-----

PLEASE LISTEN.

-----

MESSAGE #M19

-----

\*\* SYSTEM DIFFICULTIES \*\*

PLEASE HANG UP AND TRY AGAIN.

-----

### FCC REGISTRATION AND REPAIR INFORMATION

This telephone has been registered with the Federal Communications Commission (FCC) in accordance with Part 68 of its rules. The FCC requires that you be advised of its requirements concerning use of this telephone.

1. Connection and Use with the Nationwide Telephone Network: This telephone must be connected to the telephone network through a registered Jack. This Jack is a modular outlet (e.g., RJ11C) which can be ordered from your local telephone company.

2. Notification to the Telephone Company: The local telephone company business office must be notified before connecting this telephone. The business office phone number will be found in the front of your local phone book.

The business office must be advised of:

a) The "line" to which the telephone will be connected, i.e., the phone number, and

b) The telephone's FCC registration number and ringer equivalence number. These numbers will be found on the back of the telephone or on the station chassis. The business office must also be notified in the event that this telephone is permanently disconnected.

This telephone may not be used with party lines.

3. Repair instructions: If you experience trouble with this telephone, trouble should be reported by calling the 800 number posted in the Station I.D. Number Card Window just below the Station number. If the telephone malfunctions, the FCC requires that it be unplugged from the modular Jack until any problems have been corrected.

Repairs to this telephone can only be made by the manufacturer and its authorized agents and by others who may be authorized by the FCC.

4. Rights of the Telephone Company: If this telephone causes harm to the telephone network, the telephone company may temporarily discontinue service. If possible, you will be notified in advance; but if advance notice is not practical, you will be notified as soon as possible thereafter. You will be given the opportunity to correct the situation, and you will be notified of your right to file a complaint with the FCC.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your telephone. If so, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

INTERFERENCE INFORMATION: PART 15 OF FCC RULES.

Telephones with electronic dials generate radio frequency energy and, if not installed and used in accordance with the instructions provided with the product, may cause interference to radio and TV reception.

This product has been tested and found to comply with the limits for a Class B computing device in accordance with the specification in Subpart J, Part 15, FCC Rules, which is designed to provide reasonable protection against such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If this telephone does cause interference to radio or TV reception, which can be determined by lifting the receiver and dialing a few digits, you are encouraged to correct the interference by one or more of the following measures:

1. Reorient the receiving radio or TV antenna.
2. Relocate the radio, TV, or other receiver further away from the telephone.

If you need further assistance, call the Customer Service Center on 1-800-555-8111. Or write for the FCC booklet, "How to Identify and Resolve Radio-TV Interference Problems." This booklet may be ordered from the U.S. Government Printing Office, Washington, D.C. 10402. The stock number is #004-000-00345-4.

FCC WARNING STATEMENT

FCC Rules require that you be notified of the following:

1. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference in radio communications.

2. This equipment has been tested and found to comply as a Class B computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

3. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to take whatever measures may be required to correct the interference at his own expense.

## T210 Card Caller<sup>TM</sup> Telephone Station Installation, Testing and Maintenance

The contract between AT&T Information Systems - Services Division and AT&T Communications specifies that AT&T Communications will control the product. However, AT&T Communications documentation is not complete, but the systems technician can obtain the information from the AT&T Communications contact on the job order. The following items are not included in the course:

- a. System acceptance tests external to built-in diagnostics.
- b. Operating, trouble shooting and maintenance procedures external to built-in diagnostics.
- c. Provision of data to satisfy the record keeping requirements of the CPC/PSSC.
- d. Overall description of Credit Card Calling System service.

<sup>TM</sup> Trademark of AT&T Communications Inc.